

Embroidermodder

2.0.0 alpha

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## 1 Overview

Version

2.0.0-alpha

Author

The Embroidermodder Team

This folder contains the GUI and application code for the development version Embroidermodder 2 using Dear ImGui and GLFW.

Stuff that is now supposed to be generated by Doxygen:

**Todo** Bibliography style to plainnat.

**Todo** Serif font for printed docs.

**Todo** US letter paper version of printed docs.

(*UNDER MAJOR RESTRUCTURING, PLEASE WAIT FOR VERSION 2*)

<http://www.libembroidery.org>

Embroidermodder is a free machine embroidery application. The newest version, Embroidermodder 2 can:

- edit and create embroidery designs
- estimate the amount of thread and machine time needed to stitch a design
- convert embroidery files to a variety of formats
- upscale or downscale designs
- run on Windows, Mac and Linux

Embroidermodder 2 is very much a work in progress since we're doing a ground up rewrite to an interface in C using the GUI toolkit SDL2. The reasoning for this is detailed in the issues tab.

For a more in-depth look at what we are developing read our [website]url{ <https://www.libembroidery.org>} which includes these docs as well as the up-to date printer-friendly versions. These discuss recent changes, plans and has user and developer guides for all the Embroidermodder projects.

To see what we're focussing on right now, see the [Open Collective News]url{ <https://opencollective.com/embroidermodder>}.

The current printer-friendly version of the manual is (here)[ [https://www.libembroidery.org/embroidermodder\\_2.0.0-alpha\\_manual.pdf](https://www.libembroidery.org/embroidermodder_2.0.0-alpha_manual.pdf)].

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### 1.0.2 The Embroidermodder Project and Team

The *Embroidermodder 2* project is a collection of small software utilities for manipulating, converting and creating embroidery files in all major embroidery machine formats. The program *Embroidermodder 2* itself is a larger graphical user interface (GUI) which is at the heart of the project.

The tools and associated documents are:

- This website ([www.libembroidery.org](http://www.libembroidery.org)), which is maintained [here](#).
- [The manual](#) covering all these projects.
- The GUI (`embroidermodder`), maintained [here](#).
- The core library of low-level functions: [libembroidery](#).
- The CLI `embroider` which is part of [libembroidery](#).
- Mobile embroidery format viewers and tools ([EmbroideryMobile](#)).
- Specs for an open hardware embroidery machine called Embroiderbot (not started yet) which is also part of [libembroidery](#).

They are all tools to make the standard user experience of working with an embroidery machine better without expensive software which is locked to specific manufacturers and formats. But ultimately we hope that the core *Embroidermodder 2* is a practical, ever-present tool in larger workshops, small cottage industry workshops and personal hobbyist's bedrooms.

Embroidermodder 2 is licensed under the zlib license and we aim to keep all of our tools open source and free of charge. If you would like to support the project check out our [Open Collective](#) group. If you would like to help, please join us on GitHub. This document is written as developer training as well helping new users (see the last sections) so this is the place to learn how to start changing the code.

The Embroidermodder Team is the collection of people who've submitted patches, artwork and documentation to our three projects. The team was established by Jonathan Greig and Josh Varga. The full list of contributors who wish to be credited is [here](#).

## 1.1 About

### 1.1.1 The Embroidermodder Project and Team

The *Embroidermodder 2* project is a collection of small software utilities for manipulating, converting and creating embroidery files in all major embroidery machine formats. The program *Embroidermodder 2* itself is a larger graphical user interface (GUI) which is at the heart of the project.

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- Mobile embroidery format viewers and tools [EmbroideryMobile](#).
- The core library of functions ([libembroidery](#)) and its manual.
- The Python version of the library of functions (`libembroidery-python`) which is part of [libembroidery](#).
- The CLI (`embroider`) which is part of [libembroidery](#).
- Specs for an open hardware embroidery machine called Embroiderbot (not started yet) which is part of [libembroidery](#).
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They all tools to make the standard user experience of working with an embroidery machine better without expensive software which is locked to specific manufacturers and formats. But ultimately we hope that the core *Embroidermodder 2* is a practical, ever-present tool in larger workshops, small cottage industry workshops and personal hobbyist's bedrooms.

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The Embroidermodder Team is the collection of people who've submitted patches, artwork and documentation to our three projects. The team was established by Jonathan Greig and Josh Varga. The full list is actively maintained below.

### 1.1.2 for Embroidermodder 2, libembroidery and all other related code

If you have contributed and wish to be added to this list, alter the [README on Embroidermodder github page](#) and we'll copy it to the libembroidery source code since that is credited to "The Embroidermodder Team".

### 1.1.3 "Embroidermodder 1"

The Embroidermodder Team is also inspired by the original Embroidermodder that was built by Mark Pontius and the same Josh Varga on SourceForge which unfortunately appears to have died from linkrot. We may create a distribution on here to be the official "legacy" Embroidermodder code but likely in a separate repository because it's GNU GPL v3 and this code is written to be zlib (that is, permissive licensed) all the way down.

One reason why this is useful is that the rewrite by Jonathan Greig, John Varga and Robin Swift for Embroidermodder 2 should have no regressions: no features present in v1 should be missing in v2.

### 1.1.4 Features

Embroidermodder 2 has many advanced features that enable you to create awesome designs quicker, tweak existing designs to perfection, and can be fully customized to fit your workflow.

A summary of these features:

- Cross Platform
- Realistic rendering
- Various grid types and auto-adjusting rulers
- Many measurement tools
- Add text to any design
- Supports many formats
- Batch Conversion
- Scripting API

**1.1.4.1 Cross Platform** If you use multiple operating systems, it's important to choose software that works on all of them.

Embroidermodder 2 runs on Windows, Linux and Mac OS X. Let's not forget the [Raspberry Pi](#).

**1.1.4.2 Realistic Rendering** It is important to be able to visualize what a design will look like when stitched and our pseudo '3D' realistic rendering helps achieve this.

Realistic rendering sample #1:

Realistic rendering sample #2:

Realistic rendering sample #3:

Various grid types and auto-adjusting rulers

Making use of the automatically adjusting ruler in conjunction with the grid will ensure your design is properly sized and fits within your embroidery hoop area.

Use rectangular, circular or isometric grids to construct your masterpiece!

Multiple grids and rulers in action:

**1.1.4.3 Realistic Rendering** Taking measurements is a critical part of creating great designs. Whether you are designing mission critical embroidered space suits for NASA or some other far out design for your next meet-up, you will have precise measurement tools at your command to make it happen. You can locate individual points or find distances between any 2 points anywhere in the design!

Take quick and accurate measurements:

**1.1.4.4 Realistic Rendering** Need to make company apparel for all of your employees with individual names on them? No sweat. Just simply add text to your existing design or create one from scratch, quickly and easily. Didn't get it the right size or made a typo? No problem. Just select the text and update it with the property editor.

Add text and adjust its properties quickly:

**1.1.4.5 Realistic Rendering** Embroidery machines all accept different formats. There are so many formats available that it can sometimes be confusing whether a design will work with your machine.

Embroidermodder 2 supports a wide variety of embroidery formats as well as several vector formats, such as SVG and DXF. This allows you to worry less about which designs you can use.

**1.1.4.6 Batch Conversion** Need to send a client several different formats? Just use libembroidery-convert, our command line utility which supports batch file conversion.

There are a multitude of formats to choose from:

**1.1.4.7 Scripting API** If you've got programming skills and there is a feature that isn't currently available that you absolutely cannot live without, you have the capability to create your own custom commands for Embroidermodder 2. We provide an QtScript API which exposes various application functionality so that it is possible to extend the application without requiring a new release. If you have created a command that you think is worth including in the next release, just [contact us](#) and we will review it for functionality, bugs, and finally inclusion.

An Embroidermodder 2 command excerpt:

## 1.1.5 "Build and Install"

Assuming you already have the SDL2 libraries you can proceed to using the fast build, which assumes you want to build and test locally.

The fast build should be:

```
bash build.sh
```

or, on Windows:

```
.\build.bat
```

Then run using the `run.bat` or `run.sh` scripts in the build/ directory.

Otherwise, follow the instructions below.

If you plan to install the dev version to your system (we recommend you wait for the official installers and beta release first) then use the CMake build instead.

**1.1.5.1 Install on Desktop** We recommend that if you want to install the development version you use the CMake build. Like this:

```
git submodule init  
git submodule update  
  
mkdir build  
cd build  
cmake ..  
cmake --build .  
sudo cmake --install .
```

These lines are written into the file:

```
./build_install.sh
```

On Windows use the next section.

## 1.2 About

### 1.2.1 "Core Development Team"

Embroidermodder 2:

- Jonathan Greig
- Josh Varga
- Robin Swift

Embroidermodder 1:

- Josh Varga
- Mark Pontius

### 1.2.2 History

Embroidermodder 1 was started by Mark Pontius in 2004 while staying up all night with his son in his first couple months. When Mark returned to his day job, he lacked the time to continue the project. Mark made the decision to focus on his family and work, and in 2005, Mark gave full control of the project to Josh Varga so that Embroidermodder could continue its growth.

Embroidermodder 2 was conceived in mid 2011 when Jonathan Greig and Josh Varga discussed the possibility of making a cross-platform version. It is currently in active development and will run on GNU/Linux, Mac OS X, Microsoft Windows and Raspberry Pi.

All [Embroidermodder downloads](#) are hosted on SourceForge.

The [source code for Embroidermodder 1](#) has always been hosted on Sourceforge.

The [source code for Embroidermodder 2](#) was moved to GitHub on July 18, 2013.

The [website for Embroidermodder](#) was moved to GitHub on September 9, 2013.

## 1.3 Contact us

For general questions email:

`embroidermodder at gmail.com`

To request a new feature [open an issue on the main Embroidermodder GitHub repository](#). We'll move it to the correct repository.

## 1.4 Downloads

### 1.4.1 Alpha Build

This is a highly experimental build: we recommend users wait for the beta release when the basic features are functional.

Visit our [GitHub Releases page](#) for the current build. Unfortunately, earlier builds went down with the Sourceforge page we hosted them on.

## 2 Embroidermodder 2

This folder contains the GUI and application code for Embroidermodder 2.

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Version 1.3, 3 November 2008

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## 4 Tutorials

### 4.1 Basic Features

#### 4.1.1 Move a single stitch in an existing pattern

1. In the File menu, click Open.... When the open dialog appears find and select your file by double clicking the name of the file. Alternatively, left click the file once then click the Open button.
- 2.
3. In the 'File' menu

TIP: For users who prefer

### 4.2 Altering a Single Stitch (2022-09-19)

In this tutorial we cover the scenarios where:

1. you have a design that you want to move a few points in but make no major changes
2. you have a design that you want to remove a few stitches from
3. you have a design that has some stitches in the wrong colour

In all cases, open Embroidermodder 2 and use File > Open to get the open file dialog.

(TO BE COMPLETED.)

#### 4.2.1 Convert one pattern to another format

1. In the File menu, click Open....
2. The
3. In the dropdown menu within the save dialog select the

### 4.3 Advanced Features

## 5 History

\seciton open-collective Open Collective and New Plan (2021-12-19)

Hi, welcome to our first update after switching to Open Collective.

I hope that we can get people excited about open software and hardware for embroidery again. Clearly there was some real talent and effort from Jonathon, Mark and other contributors in making this happen. Hopefully, Josh and I can make these programs a standard fixture of garage workshops by making them easy to install, modify, build and distribute.

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*Embroidermodder 2* is a zlib licensed software and we endeavour to keep it free and well documented. Check out our [main github page](#) to see.

Cheers,

Robin

## 5.1 Fast Forward (2014-02-13)

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Last but not least, I have a demonstration of our libembroidery code embedded on an Arduino. The video below simulates the stitching by drawing it to a 2.8" TFT display (v1) made by [Adafruit](https://adafruit.com). It's really fast so I slowed it down for the video. Instead of drawing, we could change it to control motors and other hardware to create an open source embroidery machine. This is what the brain of an embroidery machine looks like and it just needs a heart and body. Enjoy the [video](https://www.youtube.com/watch?v=KqiKfn4lxBk)! [frameborder="0" allowfullscreen></iframe>](https://www.youtube.com/embed/KqiKfn4lxBk) Jonathan [Permanent link to this article](news0.html::demo) @section jan22news January 2022 Development Notes For Embroidermodder 2 (2022-01-31) Hi backers, since the last update development has been focused on mostly not user-facing aspects of the program. This is what we planned in the timetable, aiming to release the libembroidery library for the end of the month. The idea being that if we can fix an API for libembroidery early, it will focus development into a program that remains more consistent by the height of the Summer. Unfortunately, this was too ambitious. But we can discuss what has changed, and why a later date is better than focusing on hitting this milestone. @subsection broad-development-goals Broad Development Goals We want: \* A small codebase. \* A separation of code and data in procedural style. \* A separation of basic library functions

from GUI code. \* A build system without non-standard dependencies (i.e. not including windows.h, X11, GL). \* A software that runs without installation \* A software that can keep records of its state that can be loaded on reboot To meet these goals we are making a C/FreeGLUT application: \* Runs on more systems because it has less (and less high level) dependencies. \* Requires less specialist knowledge from our potential new developers of Qt, C++ and the build system. \* Compiles with less faff since the only dependencies are the graphics libraries of the host system (meeting broad development goal 4). Other decisions made to meet these goals are detailed below. @subsection new-settings-system The New Settings System In the attempt to convert the mostly C++ codebase to C, we developed a basic system for storing the data of Embroidermodder (including all the icons) as a single JSON file weighing in at about 6Mb. This allows the second broad development goal to be met. @subsection reducing-reliance-on-qt5 Reducing Reliance on Qt5 The FreeGLUT variant of the code (in gui.c) will eventually be the software. The broad development goals should make that very complex change a sequence of smaller, less complex changes. For example: breaking apart highly object-oriented code that relies on high level Qt function calls into data and code and then separating out the code parts into C and C++ functions. @subsection color-palettes Color Palettes Using a custom script we converted all the icons into xpm, then using another reduced their palettes down to 16 colors + transparency. This hasn't affected their appearance significantly, and makes making a global GUI palette feasible. With a global GUI palette we can make icon themes be a simple remap of the palette. @subsection conclusion Conclusion Overall, the software is easier to understand. But not easy enough for it to be worth committing to extensive documentation that will likely have to change. This also makes deciding on a API difficult. Based on this, a short term aim can be writing more high level documentation like this update to clarify (even just to the team) why we made the decisions we have. Cheers, Robin Swift The Embroidermodder Team @section June 2022 Backer Update (2022-06-22) Hi backers, since it's mainly me developing as a hobbyist at the moment successes are rare so I thought it would be good to share these with you. @subsection working-fill-algorithm Working Fill Algorithms I've managed to get two fills working from the command line using the commands: @icode \$ embroider -fill input\_image.ppm 130 output.dst \$ embroider --cross-stitch input\_image.ppm 130 output.dst @endicode So given this version of the banner logo:  It is cross-stitched like this:  There are major limitations, it requires an input that has depth 8 and is 1000x1000 pixels and it only takes in ppm format images. Your other format images could be converted to this format using: @icode \$ convert input.png -depth 8 -geometry 1000x1000 output.ppm @endicode A command like this will be embedded into the software to allow more image types but it would require the user to install imagemagick first. Here's another example using the imagemagick wizard:  @subsection working-render-algorithm Working Render Algorithm The renders shown above were also made by the program using the commands: @icode \$ embroider --render input.dst output.ppm \$ convert output.ppm output.png @endicode @subsection timetable Timetable As for the timetable, obviously that was too ambitious given the lack of a large team and the slow growth of interest. A tentative timetable is on the README, but that's uncertain as long as the major rewrite to C/SDL2 is underway, hopefully it'll still be a 2.0 release this year. I'll try and share some more examples next month! Cheers, Robin @subpage kickstarter-live Our Kickstarter Crowdfunding Campaign is LIVE!"

## Author

Jonathan and Josh

date = "2014-03-17"

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... also check out our shamrockin' embroidery design created with Embroidermodder 2 using work-in-progress manual satin command!

Lucky you! [Download Here.](#)

–Jonathan and Josh

[Permanent link to this article](#)

[New Website! \(2013-09-09\)](#) New Website! (2013-09-09)

#### Author

Jonathan

The Embroidermodder website now has a fresh new look. The content has been updated to reflect the upcoming version, Embroidermodder 2. Check out our [features page](#) for a summary of what to expect with Embroidermodder 2.

The background is a tiled image of an actual design that was stitched out during the pre-alpha stage. It was created by Nina Paley and Theodore Gray using Mathematica in conjunction with our software. They have graciously allowed us to use it for the project in whichever way we wish. We thought it looked so good, that it has become the new theme for Embroidermodder 2. To check out some of the more interesting embroidery projects they are working on, [look here](#).

The old website which was for Embroidermodder 1 has been preserved and can be found [here](#) for anyone interested.

–Jonathan

[Permanent link to this article](#)

[crowdfunding-1](#) Crowdfunding Campaign Coming Soon!

#### Author

Jonathan

There has been a considerable amount of development time put into Embroidermodder 2 over the past several months. To be able to keep up this momentum, there needs to be at least one full time developer working on it. We are planning on launching a Kickstarter campaign in early October if everything goes according to plan. We also plan to release an alpha version during this timeframe, so there are many good things on the horizon! Successful funding will have a major impact on how soon the final version will be released.

The preview link to our campaign is [here](#), feel free to leave feedback and spread the word via Twitter, Facebook, email, or word of mouth. Keep an eye out, because it's coming!

–Jonathan (2013-09-09)

[Permanent link to this article](#)

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Cheers,

Robin

## 5.3 January 2022 Development Notes For Embroidermodder 2 (2022-01-31)

Hi backers,

since the last update development has been focused on mostly not user-facing aspects of the program. This is what we planned in the timetable, aiming to release the libembroidery library for the end of the month.

The idea being that if we can fix an API for libembroidery early, it will focus development into a program that remains more consistent by the height of the Summer.

Unfortunately, this was too ambitious. But we can discuss what has changed, and why a later date is better than focusing on hitting this milestone.

### 5.3.1 Broad Development Goals

We want:

- A small codebase.
- A separation of code and data in procedural style.
- A separation of basic library functions from GUI code.
- A build system without non-standard dependencies (i.e. not including windows.h, X11, GL).
- A software that runs without installation
- A software that can keep records of its state that can be loaded on reboot

To meet these goals we are making a C/FreeGLUT application:

- Runs on more systems because it has less (and less high level) dependencies.
- Requires less specialist knowledge from our potential new developers of Qt, C++ and the build system.
- Compiles with less faff since the only dependencies are the graphics libraries of the host system (meeting broad development goal 4).

Other decisions made to meet these goals are detailed below.

### 5.3.2 The New Settings System

In the attempt to convert the mostly C++ codebase to C, we developed a basic system for storing the data of Embroidermudder (including all the icons) as a single JSON file weighing in at about 6Mb.

This allows the second broad development goal to be met.

### 5.3.3 Reducing Reliance on Qt5

The FreeGLUT variant of the code (in gui.c) will eventually be the software.

The broad development goals should make that very complex change a sequence of smaller, less complex changes. For example: breaking apart highly object-oriented code that relies on high level Qt function calls into data and code and then separating out the code parts into C and C++ functions.

### 5.3.4 Palettes

Using a custom script we converted all the icons into xpm, then using another reduced their palettes down to 16 colors + transparency.

This hasn't affected their appearance significantly, and makes making a global GUI palette feasible. With a global GUI palette we can make icon themes be a simple remap of the palette.

### 5.3.5 Conclusion

Overall, the software is easier to understand. But not easy enough for it to be worth committing to extensive documentation that will likely have to change. This also makes deciding on a API difficult.

Based on this, a short term aim can be writing more high level documentation like this update to clarify (even just to the team) why we made the decisions we have.

Cheers,

Robin Swift

The Embroidermudder Team

## 5.4 June 2022 Backer Update (2022-06-22)

Hi backers,

since it's mainly me developing as a hobbyist at the moment successes are rare so I thought it would be good to share these with you.

### 5.4.1 Fill Algorithms

I've managed to get two fills working from the command line using the commands:

```
$ embroider --fill input_image.ppm 130 output.dst  
$ embroider --cross-stitch input_image.ppm 130 output.dst
```

So given this version of the banner logo:

It is cross-stitched like this:

There are major limitations, it requires an input that has depth 8 and is 1000x1000 pixels and it only takes in ppm format images. Your other format images could be converted to this format using:

```
$ convert input.png -depth 8 -geometry 1000x1000 output.ppm
```

A command like this will be embedded into the software to allow more image types but it would require the user to install imagemagick first.

Here's another example using the imagemagick wizard:

### 5.4.2 Working Render Algorithm

The renders shown above were also made by the program using the commands:

```
$ embroider --render input.dst output.ppm  
$ convert output.ppm output.png
```

### 5.4.3 Timetable

As for the timetable, obviously that was too ambitious given the lack of a large team and the slow growth of interest. A tentative timetable is on the README, but that's uncertain as long as the major rewrite to C/SDL2 is underway, hopefully it'll still be a 2.0 release this year.

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## 6 Changelog

## 7 embedded

### 7.1 Embroiderbot and Libembroidery on Embedded Systems

The libembroidery library is designed to support embedded environments, so it can be used in CNC applications.

#### 7.1.1 Compatible Boards

We recommend using an Arduino\index{Arduino} Mega 2560 or another board with equal or greater specs. That being said, we have had success using an Arduino Uno R3 but this will likely require further optimization and other improvements to ensure continued compatibility with the Uno. See below for more information.

#### 7.1.2 Arduino Considerations

There are two main concerns here: Flash Storage and SRAM.

libembroidery continually outgrows the 32KB of Flash storage on the Arduino Uno and every time this occurs, a decision has to be made as to what capabilities should be included or omitted. While reading files is the main focus on arduino, writing files may also play a bigger role in the future. Long term, it would be most practical to handle the inclusion or omission of any feature via a single configuration header file that the user can modify to suit their needs.

SRAM is in extremely limited supply and it will deplete quickly so any dynamic allocation should occur early during the setup phase of the sketch and sparingly or not at all later in the sketch. To help minimize SRAM consumption on Arduino and ensure libembroidery can be used in any way the sketch creator desires, it is required that any sketch using libembroidery must implement event handlers. See the ino-event source and header files for more information.

There is also an excellent article by Bill Earl on the Adafruit Learning System which covers these topics in more depth: <http://learn.adafruit.com/memories-of-an-arduino?view=all>.

#### 7.1.3 Space

Since a stitch takes 3 bytes of storage and many patterns use more than 10k stitches, we can't assume that the pattern will fit in memory. Therefore we will need to buffer the current pattern on and off storage in small chunks. By the same reasoning, we can't load all of one struct before looping so we will need functions similar to binaryRead←Int16 for each struct.

This means the EmbArray approach won't work since we need to load each element and dynamic memory management is unnecessary because the arrays lie in storage.

**Todo** Replace EmbArray functions with embPattern load functions.

### 7.1.4 Tables

All thread tables and large text blocks are too big to compile directly into the source code. Instead we can package the library with a data packet that is compiled from an assembly program in raw format so the specific padding can be controlled.

In the user section above we will make it clear that this file needs to be loaded on the pattern USB/SD card or the program won't function.

**Todo** Start file with a list of offsets to data with a corresponding table to load into with macro constants for each label needed.

### 7.1.5 Current Pattern Memory Management

It will be simpler to make one file per EmbArray so we keep an EmbFile\* and a length, so no malloc call is necessary. So there needs to be a consistent tmpfile naming scheme.

**Todo** For each pattern generate a random string of hexadecimal and append it to the filenames like `stitch↔List\_A16F.dat`. Need to check for a file which indicates that this string has been used already.

### 7.1.6 Special Notes

Due to historical reasons and to remain compatible with the Arduino 1.0 IDE, this folder must be called ``utility''. Refer to the arduino build process for more info: <https://arduino.github.io/arduino-cli/0.19/sketch-build-process/>.

libembroidery relies on the Arduino SD library for reading files. See the ino-file source and header files for more information.

### 7.1.7 The Assembly Split

One problem to the problem of supporting both systems with abundant memory (such as a 2010s or later desktop) and with scarce memory (such as embedded systems) is that they don't share the same assembly language. To deal with this: there will be two equivalent software which are hand engineered to be similar but one will be in C and the other in the assembly dialects we support.

All assembly will be intended for embedded systems only, since a slightly smaller set of features will be supported. However, we will write a x86 version since that can be tested.

That way the work that has been done to simplify the C code can be applied to the assembly versions.

## 8 `embroider_cli`

### 8.1 The `<tt>embroider</tt>` Command Line Program

**Todo** Move back to libembroidery now we have the combined docs build.

### 8.1.1 Embroider pipeline

Adjectives apply to every following noun so

```
embroider --satin 0.3,0.6 --thickness 2 --circle 10,20,5 \
--border 3 --disc 30,40,10 --arc 30,50,10,60 output.pes
```

Creates:

- a circle with properties: thickness 2, satin 0.3,0.6
- a disc with properties:
- an arc with properties:

in that order then writes them to the output file `output.pes`.

### 8.1.2 embroider CLI

- Make `--circle` flag to add a circle to the current pattern.
- Make `--rect` flag to add a rectangle to the current pattern.
- Make `--fill` flag to set the current satin fill algorithm for the current geometry. (for example `--fill crosses --circle 11,13,10` fills a circle with center 11mm, 13mm with radius 10mm with crosses).
- Make `--ellipse` flag to add an ellipse to the current pattern.
- Make `--bezier` flag to add a bezier curve to the current pattern.

## 9 Geometry and Algorithms

### 9.1 To Do

**Todo** (Arduino) Fix emb-outline files

**Todo** (Arduino) Fix thread-color files

**Todo** (Arduino) Logging of Last Stitch Location to External USB Storage(commonly available and easily replaced)  
...wait until TRE is available to avoid rework

**Todo** (Arduino) inotool.org - seems like the logical solution for Nightly/CI builds

**Todo** (Arduino) Smoothieboard experiments

**Todo** (testing) looping test that reads 10 times while running valgrind. See \texttt{\\_loadExternalColorFile()}

Arduino leak note for more info.

## 9.2 Development

If you wish to develop with us you can chat via the contact email on the [website][url{ https://libembroidery.org }](https://libembroidery.org) or in the issues tab on the [github page][url{ https://github.com/Embroidermodder/Embroidermodder/issues }](https://github.com/Embroidermodder/Embroidermodder/issues). People have been polite and friendly in these conversations and I (Robin) have really enjoyed them. If we do have any arguments please note we have a [Code of Conduct] [CODE\\_OF\\_CONDUCT.md](#) so there is a consistent policy to enforce when dealing with these arguments.

The first thing you should try is building from source using the [build advice](build) above. Then read some of the [manual] [url{ https://libembroidery.org/embroidermodder\\_2.0\\_manual.pdf }](https://libembroidery.org/embroidermodder_2.0_manual.pdf) to get the general layout of the source code and what we are currently planning.

## 9.3 Testing

To find unfixed errors run the tests by launching from the command line with:

```
$ embroidermodder --test
```

then dig through the output. It's currently not worth reporting the errors, since there are so many but if you can fix anything reported here you can submit a PR.

## 9.4 Contributing

### 9.4.1 Funding

The easiest way to help is to fund development (see the Donate button above), since we can't afford to spend a lot of time developing and only have limited kit to test out libembroidery on.

### 9.4.2 Programming and Engineering

Should you want to get into the code itself:

- Low level C developers are needed for the base library `libembroidery`.
- Low level assembly programmers are needed for translating some of `libembroidery` to `EmbroiderBot`.
- Hardware Engineers to help design our own kitbashed embroidery machine `EmbroiderBot`, one of the original project aims in 2013.
- Scheme developers and C/SDL developers to help build the GUI.
- Scheme developers to help add designs for generating of custom stitch-filled emblems like the heart or dolphin. Note that this happens in `Embroidermodder` not `libembroidery` (which assumes that you already have a function available).

### 9.4.3 Writing

We also need people familiar with the software and the general machine embroidery ecosystem to contribute to the [documentation](#).

We need researchers to find references for the documentation: colour tables, machine specifications etc. The history is murky and often very poorly maintained so if you know anything from working in the industry that you can share: it'd be appreciated!

## 9.5 Embroidermodder Project Coding Standards

A basic set of guidelines to use when submitting code.

Code structure is more important than style, so first we advise you read ``Design'' and experimenting before getting into the specifics of code style.

### 9.5.1 Where Code Goes

Anything that deals with the specifics of embroidery file formats, threads, rendering to images, embroidery machinery or command line interfaces should go in `libembroidery` not here.

Should your idea pass this test:

- A new kind of GUI structure it goes in `src/ui.c`.
- If it's something the user can do, make a section of the `actuator` function (which lives in `src/actuator.c`) using the guide "The Actuator's Behaviour".
- Potentially variable data that is global goes in `src/data.c`.
- If the data will not vary declare it as a compiler definition using the "Compiler definitions" section and put it in `src/em2.h`.
- All other C code goes in `src/em2.c`.

### 9.5.2 Where Non-compiled Files Go

**Todo** Like most user interfaces Embroidermodder is mostly data, so here we will have a list describing where each CSV goes.

### 9.5.3 Ways in which we break style on purpose

Most style guides advise you to keep functions short. We make a few pointed exceptions to this where the overall health and functionality of the source code should benefit.

The `actuator` function will always be a mess and it should be: we're keeping the total source lines of code down by encoding all user action into a discrete sequence of strings that are all below `\texttt{STRING_LENGTH}` in length. See the section on the `actuator` (TODO) describing why any other solution we could think here would mean more code without a payoff in speed of execution or clarity.

### 9.5.4 Naming Conventions

Name variables and functions intelligently to minimize the need for comments. It should be immediately obvious what information it represents. Short names such as \texttt{x} and \texttt{y} are fine when referring to coordinates. Short names such as \texttt{i} and \texttt{j} are fine when doing loops.

Variable names should be `camelCase`, starting with a lowercase word followed by uppercase word(s). C Functions that attempt to simulate namespacing, should be \texttt{nameSpace\_camelCase}.

All files and directories shall be lowercase and contain no spaces.

## 9.6 Code Style

Tabs should not be used when indenting. Setup your IDE or text editor to use 4 spaces.

### 9.6.1 Braces

For functions: please put each brace on a new line.

```
void function_definition(int argument)
{
    /* code block */
}
```

For control statements: please put the first brace on the same line.

```
if (condition) {
    /* code block */
}
```

Use exceptions sparingly.

Do not use ternary operator (`? :`) in place of if/else.

Do not repeat a variable name that already occurs in an outer scope.

## 9.7 Version Control

Being an open source project, developers can grab the latest code at any time and attempt to build it themselves. We try our best to ensure that it will build smoothly at any time, although occasionally we do break the build. In these instances, please provide a patch, pull request which fixes the issue or open an issue and notify us of the problem, as we may not be aware of it and we can build fine.

Try to group commits based on what they are related to: features/bugs/comments/graphics/commands/etc...

## 9.8 Donations

Creating software that interfaces with hardware is costly. A summary of some of the costs involved:

- Developer time for 2 core developers
- Computer equipment and parts
- Embroidery machinery
- Various electronics for kitbashing Embroiderbot
- Consumable materials (thread, fabric, stabilizer, etc...)

If you have found our software useful, please consider funding further development by donating to the project on Open Collective (`\url{ https://opencollective.com/embroidermodder }`).

### 9.8.1 Format Support

Support for Singer FHE, CHE (Compucon) formats?

## 9.9 Embroidermodder Project Coding Standards

A basic set of guidelines to use when submitting code.

### 9.9.1 Naming Conventions

Name variables and functions intelligently to minimize the need for comments. It should be immediately obvious what information it represents. Short names such as x and y are fine when referring to coordinates. Short names such as i and j are fine when doing loops.

Variable names should be "camelCase", starting with a lowercase word followed by uppercase word(s). C++ Class Names should be "CamelCase", using all uppercase word(s). C Functions that attempt to simulate namespacing, should be "nameSpace\\_camelCase".

All files and directories shall be lowercase and contain no spaces.

## 9.10 Code Style

Tabs should not be used when indenting. Setup your IDE or text editor to use 4 spaces.

### 9.10.1 Braces

For functions: please put each brace on a new line.

```
void function_definition(int argument)
{
}
```

For control statements: please put the first brace on the same line.

```
if (condition) {
}
```

Use exceptions sparingly.

Do not use ternary operator (?:) in place of if/else.

Do not repeat a variable name that already occurs in an outer scope.

### 9.10.2 Version Control

Being an open source project, developers can grab the latest code at any time and attempt to build it themselves. We try our best to ensure that it will build smoothly at any time, although occasionally we do break the build. In these instances, please provide a patch, pull request which fixes the issue or open an issue and notify us of the problem, as we may not be aware of it and we can build fine.

Try to group commits based on what they are related to: features/bugs/comments/graphics/commands/etc...

### 9.10.3 Comments

When writing code, sometimes there are items that we know can be improved, incomplete or need special clarification. In these cases, use the types of comments shown below. They are pretty standard and are highlighted by many editors to make reviewing code easier. We also use shell scripts to parse the code to find all of these occurrences so someone wanting to go on a bug hunt will be able to easily see which areas of the code need more love.

libembroidery and Embroidermodder are written in C and adheres to C89 standards. This means that any C99 or C++ comments will show up as errors when compiling with gcc. In any C code, you must use:

```
/* Use C Style Comments within code blocks. */

/**
 * Use Doxygen style code blocks to place todo items like this:
 * \todo EXAMPLE: This code clearly needs more work or further review.
 */

/**
 * BUG: This code is definitely wrong. It needs fixed.
 */

/**
 * HACK: This code shouldn't be written this way or I don't feel right about it. There may a better solution
 */

/**
 * WARNING: Think twice (or more times) before changing this code. I put this here for a good reason.
 */

/**
 * NOTE: This comment is much more important than lesser comments.
*/
```

## 9.11 Ideas

### 9.11.1 Why this document

I've been trying to make this document indirectly through the Github issues page and the website we're building but I think a straightforward, plain-text file needs to be the ultimate backup for this. Then I can have a printout while I'm working on the project.

### 9.11.2 googletests

gtest are non-essential, testing is for developers not users so we can choose our own framework. I think the in-built testing for libembroidery was good and I want to re-instate it.

### 9.11.3 Qt and dependencies

I'm switching to SDL2 (which is a whole other conversation) which means we can ship it with the source code package meaning only a basic build environment is necessary to build it.

### 9.11.4 Documentation

Can we treat the website being a duplicate of the docs a non-starter? I'd be happier with tex/pdf only and (I know this is counter-intuitive) one per project.

### 9.11.5 Social Platform

So... all the issues and project boards etc. being on Github is all well and good assuming that we have our own copies. But we don't if Github goes down or some other major player takes over the space and we have to move (again, since this started on SourceForge).

This file is a backup for that which is why I'm repeating myself between them.

### 9.11.6 Identify the meaning of these TODO items

- Saving CSV/SVG (rt) + CSV read/write UNKNOWN interpreted as COLOR bug #179
- Lego Mindstorms NXT/EV3 ports and/or commands

### 9.11.7 Progress Chart

The chart of successful from-to conversions (previously a separate issue) is something that should appear in the README.

### 9.11.8 Style

Rather than maintain our own standard for style, please defer to the Python's PEP 7 [[pep7](#)] for C style. If it passes the linters for that we consider it well styled for a pull request.

As for other languages we have no house style other than whatever "major" styles exist, for example Java in Google style [[google\\_java](#)] would be acceptable. We'll elect specific standards if it becomes an issue.

### 9.11.9 Standard

The criteria for a good Pull Request from an outside developer has these properties, from most to least important:

- No regressions on testing.
- Add a feature, bug fix or documentation that is already agreed on through GitHub issues or some other way with a core developer.
- No GUI specific code should be in libembroidery, that's for Embroidermodder.
- Pedantic/ansi C unless there's a good reason to use another language.
- Meet the style above (i.e. [PEP 7](#), [Code Lay-out](#)). We'll just fix the style if the code's good and it's not a lot of work.
- `embroider` should be in POSIX style as a command line program.
- No dependancies that aren't "standard", i.e. use only the C Standard Library.

### 9.11.10 Image Fitting

A currently unsolved problem in development that warrants further research is the scenario where a user wants to feed `embroider` an image that can then be .

### 9.11.11 To Place

A *right-handed coordinate system* is one where up is positive and right is positive. Left-handed is up is positive, left is positive. Screens often use down is positive, right is positive, including the OpenGL standard so when switching between graphics formats and stitch formats we need to use a vertical flip (`embPattern\_flip`).

`0x20` is the space symbol, so when padding either 0 or space is preferred and in the case of space use the literal '`'`.

### 9.11.12 To Do

We currently need help with:

- Thorough descriptions of each embroidery format.
- Finding resources for each of the branded thread libraries (along with a full citation for documentation).
- Finding resources for each geometric algorithm used (along with a full citation for documentation).
- Completing the full `--full-test-suite` with no segfaults and at least a clear error message (for example not implemented yet).
- Identifying best guesses for filling in missing information when going from, say `.csv` to a late `.pes` version. What should the default be when the data doesn't clarify?
- Improving the written documentation.
- Funding, see the Sponsor button above. We can treat this as work and put far more hours in with broad support in small donations from people who want specific features.

Beyond this the development targets are categories sorted into:

- Basic Features
- Code quality and user friendliness
- embroider CLI
- Documentation
- GUI
- electronics development

### 9.11.13 Basic features

- Incorporate `#if 0ed` parts of `libembroidery.c`.
- Interpret how to write formats that have a read mode from the source code and vice versa.
- Document the specifics of the file formats here for embroidery machine specific formats. Find websites and other sources that break down the binary formats we currently don't understand.
- Find more and better documentation of the structure of the headers for the formats we do understand.

### 9.11.14 Code quality and user friendliness

- Document all structs, macros and functions (will contribute directly on the web version).
- Incorporate experimental code, improve support for language bindings.
- Make stitch x, y into an EmbVector.

### 9.11.15 Documentation

- Create csv data files for thread tables.
- Convert tex to markdown, make tex an output of `build.bash`.
- Run `sloccount` on `extern/` and `.` (and `)` so we know the current scale of the project, aim to get this number low. Report the total as part of the documentation.
- Try to get as much of the source code that we maintain into C as possible so new developers don't need to learn multiple languages to have an effect. This bars the embedded parts of the code.

### 9.11.16 GUI

- Make EmbroideryMobile (Android) also backend to `libembroidery` with a Java wrapper.
- Make EmbroideryMobile (iOS) also backend to `libembroidery` with a Swift wrapper.
- Share some of the MobileViewer and iMobileViewer layout with the main EM2. Perhaps combine those 3 into the Embroidermodder repository so there are 4 repositories total.
- Convert layout data to JSON format and use cJSON for parsing.

## 9.12 Electronics development

- Currently experimenting with Fritzing[8](8), upload netlists to embroiderbot when they can run simulations using the `asm` in `libembroidery`.
- Create a common assembly for data that is the same across chipsets `libembroidery\_\_data\_\_internal.s`.
- Make the defines part of `embroidery.h` all systems and the function list `c code only`. That way we can share some development between assembly and C versions.

## 9.13 Development

### 9.13.1 Contributing

If you're interested in getting involved, here's some guidance for new developers. Currently The Embroidermodder Team is all hobbyists with an interest in making embroidery machines more open and user friendly. If you'd like to support us in some other way you can donate to our Open Collective page (click the Donate button) so we can spend more time working on the project.

All code written for `libembroidery` should be ANSI C89 compliant if it is C. Using other languages should only be used where necessary to support bindings.

### 9.13.2 Debug

If you wish to help with development, run this debug script and send us the error log.

```
#!/bin/bash

rm -fr libembroidery-debug

git clone http://github.com/embroidermodder/libembroidery libembroidery-debug
cd libembroidery-debug

cmake -DCMAKE_BUILD_TYPE=DEBUG .
cmake --build . --config=DEBUG

valgrind ./embroider --full-test-suite
```

While we will attempt to maintain good results from this script as part of normal development it should be the first point of failure on any system we haven't tested or format we understand less.

### 9.13.3 Binary download

We need a current `embroider` command line program download, so people can update without building.

## 10 Formats

### 10.1 Overview

### 10.2 Read/Write Support Levels

The table of read/write format support levels uses the status levels described here:

Status Label	Description
<code>rw-none</code>	Either the format produces no output, reporting an error. Or it produces a Tajima dst file as an alternative.
<code>rw-poor</code>	A file somewhat similar to our examples is produced. We don't know how well it runs on machines in practice as we don't have any user reports or personal tests.
<code>rw-basic</code>	Simple files in this format run well on machines that use this format.
<code>rw-standard</code>	Files with non-standard features work on machines and we have good documentation on the format.
<code>rw-reliable</code>	All known features don't cause crashes. Almost all work as expected.
<code>rw-complete</code>	All known features of the format work on machines that use this format. Translations from and to this format preserve all features present in both.

These can be split into `r-basic w-none`, for example, if they don't match.

So all formats can, in principle, have good read and good write support, because it's defined in relation to files that we have described the formats for.

#### 10.2.1 Test Support Levels

Status Label	Description
test-none	No tests have been written to test the specifics of the format.
test-basic	Stitch Lists and/or colors have read/write tests.
test-thorough	All features of that format has at least one test.
test-fuzz	Can test the format for uses of features that we haven't thought of by feeding in nonsense that is designed to push possibly dangerous weaknesses to reveal themselves.
test-complete	Both thorough and fuzz testing is covered.

So all formats can, in principle, have complete testing support, because it's defined in relation to files that we have described the formats for.

### 10.2.2 Documentation Support Levels

Status Label	Description
doc-none	We haven't researched this beyond finding example files.
doc-basic	We have a rough sketch of the size and contents of the header if there is one. We know the basic stitch encoding (if there is one), but not necessarily all stitch features.
doc-standard	We know some good sources and/or have tested all the features that appear to exist. They mostly work the way we have described.
doc-good	All features that were described somewhere have been covered here or we have thoroughly tested our ideas against other softwares and hardwares and they work as expected.
doc-complete	There is a known official description and our description covers all the same features.

Not all formats can have complete documentation because it's based on what information is publically available. So the total score is reported in the table below based on what level we think is available.

### 10.2.3 Overall Support

Since the overall support level is the combination of these 4 factors, but rather than summing up their values it's an issue of the minimum support of the 4.

Status Label	Description
read-only	If write support is none and read support is not none.
write-only	If read support is none and write support is not none.
unstable	If both read and write support are not none but testing or documentation is none.
basic	If all ratings are better than none.
reliable	If all ratings are better than basic.
complete	If all ratings could not reasonably be better (for example any improvements rely on information that we may never have access to). This is the only status that can be revoked, since if the format changes or new documentation is released it is no longer complete.
experimental	For all other scenarios.

### 10.2.4 Table of Format Support Levels

Overview of documentation support by format.

Format	Ratings	Score
Toyota Embroidery Format (.100)	rw-basic doc-none test-none	unstable
Toyota Embroidery Format (.10o)	rw-basic doc-none test-none	unstable
Bernina Embroidery Format (.art)	rw-none doc-none test-none	experimental
Bitmap Cache Embroidery Format (.bmc)	r-basic w-none doc-none test-none	unstable
Bits and Volts Embroidery Format (.bro)	rw-none doc-none test-none	experimental
Melco Embroidery Format (.cnd)	rw-none doc-none test-none	experimental
Embroidery Thread Color Format (.col)	rw-basic doc-none test-none	experimental
Singer Embroidery Format (.csd)	rw-none doc-none test-none	experimental
Comma Separated Values (.csv)	rw-none doc-none test-none	experimental

| Barudan Embroidery Format (.dat) | rw-none doc-none test-none | experimental | Melco Embroidery Format (.dem)  
| rw-none doc-none test-none | experimental | | Barudan Embroidery Format (.dsb) | rw-none doc-none test-none  
| experimental | | Tajima Embroidery Format (.dst) | rw-none doc-none test-none | experimental | | ZSK USA Em-  
broidery Format (.dsz) | rw-none doc-none test-none | experimental | | Drawing Exchange Format (.dxf) | rw-none  
doc-none test-none | experimental | | Embird Embroidery Format (.edr) | rw-none doc-none test-none | experimental  
| | Elna Embroidery Format (.emd) | rw-none doc-none test-none | experimental | | Melco Embroidery Format (.exp)  
| rw-none doc-none test-none | experimental | | Eltac Embroidery Format (.exy) | rw-none doc-none test-none |  
experimental | | Sierra Expanded Embroidery Format (.eys) | rw-none doc-none test-none | experimental | | Fortron  
Embroidery Format (.fxy) | rw-none doc-none test-none | experimental | | Smoothie G-Code Embroidery Format  
(.gc) | rw-none doc-none test-none | experimental | | Great Notions Embroidery Format (.gnc) | rw-none doc-none  
test-none | experimental | | Gold Thread Embroidery Format (.gt) | rw-none doc-none test-none | experimental |  
| Husqvarna Viking Embroidery Format (.hus) | rw-none doc-none test-none | experimental | | Inbro Embroidery  
Format (.inb) | rw-none doc-none test-none | experimental | | Embroidery Color Format (.inf) | rw-none doc-none  
test-none | experimental | | Janome Embroidery Format (.jef) | rw-none doc-none test-none | experimental | | Pfaff  
Embroidery Format (.ksm) | rw-none doc-none test-none | experimental | | Pfaff Embroidery Format (.max) | rw-none  
doc-none test-none | experimental | | Mitsubishi Embroidery Format (.mit) | rw-none doc-none test-none |  
experimental | | Ameco Embroidery Format (.new) | rw-none doc-none test-none | experimental | | Melco Em-  
broidery Format (.ofm) | rw-none doc-none test-none | experimental | | Pfaff Embroidery Format (.pcd) | rw-none  
doc-none test-none | experimental | | Pfaff Embroidery Format (.pcm) | rw-none doc-none test-none | experimental  
| | Pfaff Embroidery Format (.pcq) | rw-none doc-none test-none | experimental | | Pfaff Embroidery Format (.pcs)  
| rw-none doc-none test-none | experimental | | Brother Embroidery Format (.pec) | rw-none doc-none test-none |  
experimental | | Brother Embroidery Format (.pel) | rw-none doc-none test-none | experimental | | Brother Embro-  
dery Format (.pem) | rw-none doc-none test-none | experimental | | Brother Embroidery Format (.pes) | rw-none  
doc-none test-none | experimental | | Brother Embroidery Format (.phb) | rw-none doc-none test-none | experimen-  
tal | | Brother Embroidery Format (.phc) | rw-none doc-none test-none | experimental | | AutoCAD Embroidery  
Format (.plt) | rw-none doc-none test-none | experimental | | RGB Embroidery Format (.rgb) | rw-none doc-none  
test-none | experimental | | Janome Embroidery Format (.sew) | rw-none doc-none test-none | experimental | |  
Husqvarna Viking Embroidery Format (.shv) | rw-none doc-none test-none | experimental | | Sunstar Embroidery  
Format (.sst) | rw-none doc-none test-none | experimental | | Data Stitch Embroidery Format (.stx) | rw-none doc-  
none test-none | experimental | | Scalable Vector Graphics (.svg) | rw-none doc-none test-none | experimental |  
| Pfaff Embroidery Format (.t01) | rw-none doc-none test-none | experimental | | Pfaff Embroidery Format (.t09)  
| rw-none doc-none test-none | experimental | | Happy Embroidery Format (.tap) | rw-none doc-none test-none |  
experimental | | ThredWorks Embroidery Format (.thr) | rw-none doc-none test-none | experimental | | Text File  
(.txt) | rw-none doc-none test-none | experimental | | Barudan Embroidery Format (.u00) | rw-none doc-none test-  
none | experimental | | Barudan Embroidery Format (.u01) | rw-none doc-none test-none | experimental | | Pfaff  
Embroidery Format (.vip) | rw-none doc-none test-none | experimental | | Pfaff Embroidery Format (.vp3) | rw-none  
doc-none test-none | experimental | | Singer Embroidery Format (.xxx) | rw-none doc-none test-none | experimental  
| | ZSK USA Embroidery Format (.zsk) | rw-none doc-none test-none | experimental

## 10.3 Toyota Embroidery Format (.100)

\index{100}\index{Toyota}

The Toyota 100 format is a stitch-only format that uses an external color file.

The stitch encoding is in 4 byte chunks.

### 10.3.1 Toyota Embroidery Format (.10o)

\index{10o}\index{Toyota}

The Toyota 10o format is a stitch-only format that uses an external color file.

The stitch encoding is in 3 byte chunks.

## 10.4 Bernina Embroidery Format (.art)

\index{art}\index{Bernina}

We don't know much about this format.

**Todo** Find a source.

## 10.5 Bitmap Cache Embroidery Format (.bmc)

\index{bmc}\index{Bitmap Cache}

We don't know much about this format.

**Todo** Find a source.

## 10.6 Bits and Volts Embroidery Format (.bro)

\index{bro}\index{Bits and Volts}

The Bits and Volts bro format is a stitch-only format that uses an external color file.

The header is 256 bytes. There's a series of unknown variables in the header.

The stitch list uses a variable length encoding which is 2 bytes for any stitch

## 10.7 Melco Embroidery Format (.cnd)

\index{cnd}\index{Melco}

The Melco cnd format is a stitch-only format.

We don't know much about this format.

**Todo** Find a source.

## 10.8 Embroidery Thread Color Format (.col)

\index{col}

An external color file format for formats that do not record their own colors.

It is a human-readable format that has a header that is a single line containing only the number of threads in decimal followed by the windows line break `textbackslash{}r\textbackslash{}n`.

Then the rest of the file is a comma seperated value list of all threads with 4 values per line: the index of the thread then the red, green and blue channels of the color in that order.

### 10.8.1 Example

If we had a pattern called "example" with four colors: black, red, magenta and cyan in that order then the file is (with the white space written out):

example.col

```
4\r\n
0,0,0,0\r\n
1,255,0,0\r\n
2,0,255,0\r\n
3,0,0,255\r\n
```

## 10.9 Singer Embroidery Format (.csd)

\index{csd} \index{Singer}

Stitch Only Format

## 10.10 Comma Separated Values (.csv)

\index{csv}

Comma Seperated Values files aren't a universal system, here we aim to offer a broad support. The dialect is detected based on the opening lines, as each manufacturer should label their CSV files there.

### 10.10.1 Embroidermodder 2.0 CSV Dialect

Our own version has the identifier comment line:

```
| Control Symbol | Type | Description | —— | # | COMMENT | | | > | VARIABLE | To store records of a pattern's
width, height etc. This means that data stored in the header of say a .dst file is preserved. | | $ | THREAD | | | *
| STITCH | | | * | JUMP | | | * | COLOR | To change a color: used for trim as well | | * | END | To end a pattern. | | *
| UNKNOWN | For any feature that we can't identify.
```

### 10.10.2 EmBird CSV Dialect

\index{Embird}

## 10.11 Barudan Embroidery Format (.dat)

\index{dat}\index{Barudan}

Stitch Only Format

## 10.12 Melco Embroidery Format (.dem)

\index{dem}\index{Melco}

Stitch Only Format

## 10.13 Barudan Embroidery Format (.dsb)

\index{dsb}\index{Barudan}

- Stitch Only Format.
- [X] Basic Read Support
- [o] Basic Write Support
- [o] Well Tested Read
- [o] Well Tested Write

## 10.14 Tajima Embroidery Format (.dst)

\index{dst}\index{Tajima}

- Stitch Only Format.
- [X] Basic Read Support
- [X] Basic Write Support
- [ ] Well Tested Read
- [ ] Well Tested Write

.DST (Tajima) embroidery file read/write routines Format comments are thanks to [tspilman@dalcoathletic.com](mailto:tspilman@dalcoathletic.com) who's notes appeared at <http://www.wotsit.org> under Tajima Format.

Other references: [\[kde\\_tajima\]](#), [\[acatina\]](#).

### 10.14.1 Header

The header contains general information about the design. It is in lines of ASCII, so if you open a DST file as a text file, it's the only part that's easy to read. The line ending symbol is `0x0D}. The header is necessary for the file to be read by most softwares and hardwares.

The header is 125 bytes of data followed by padding spaces to make it 512 bytes in total.

The lines are as follows.

<b>Label</b>	<b>Size</b>	<b>Description</b>	<b>Example</b>
LA:	17	The design name with no path or extension. The space reserved is 16 characters, but the name must not be longer than 8 and be padded to 16 with spaces (0x20).	"LA:Star "
ST:	8	<p>The stitch count. An integer in the format \%07d}, that is: a 7 digit number padded by leading zeros. This is the total across all possible stitch flags.</p> <p>\ilinebr &lt;/td&gt; &lt;td class="markdownTableBody&lt;br&gt;None"&gt; \ilinebr &lt;/td&gt; &lt;/tr&gt;&lt;/table&gt;  CO:  4  </p> <p>The number of color changes (not to be confused with thread count, an all black design we would have the record \textbf{000}). An integer in the format%03d}, that is: a 3 digit number padded by leading zeros.</p> <p>   +X:   6   The extent of the pattern in the positive x direction in millimeters. An integer in the format \%05d}, that is: a 5 digit number padded by leading zeros.    -X:   6   The extent of the pattern in the negative x direction in millimeters. An integer in the format%05d}, that is: a 5 digit integer padded by leading zeros.    +Y:   6   The extent of the pattern in the positive y direction in millimeters. An integer in the format \%05d}, that is: a 5 digit integer padded by leading zeros.    -Y:   6   The extent of the pattern in the negative y direction in millimeters. An integer in the format%05d}, that is: a 5 digit integer padded by leading zeros.    AX:   7   The difference of the end from the start in the x direction in 0.1mm, the first char should be the sign, followed by an integer in the format %05d, that is: a 5 digit integer padded by leading zeros.    AY:   7   The difference of the end from the start in the y direction in 0.1mm, the first char should be the sign, followed by an integer in the format %05d, that is: a 5 digit integer padded by leading zeros.    MX:   7   The x co-ordinate of the last point in the previous file should the design span multiple files. Like AX, it is the sign, followed by a 5 digit integer. If we have a one file design set it to zero.    MY:   7   The y co-ordinate of the last point in the previous file should the design span multiple files. Like AY, it is the sign, followed by a 5 digit integer. If we have a one file design set it to zero.    PD:   10   Information about multivolume designs.</p>	

### 10.14.2 Stitch Data

Uses 3 byte per stitch encoding with the format as follows:

<b>Bit</b>	<b>7</b>	<b>6</b>	<b>5</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>1</b>	<b>0</b>
Byte 0	y+1	y-1	y+9	y-9	x-9	x+9	x-1	x+1
Byte 1	y+3	y-3	y+27	y-27	x-27	x+27	x-3	x+3
Byte 2	jump	color change	y+81	y-81	x-81	x+81	set	set

T01 and Tap appear to use Tajima Ternary.

Where the stitch type is determined as:

- Normal Stitch 0b00000011 0x03

- Jump Stitch 0b10000011 0x83
- Stop/Change Color 0b11000011 0xC3
- End Design 0b11110011 0xF3

Inclusive or'ed with the last byte.

Note that the max stitch length is the largest sum of  $1+3+9+27+81=121$  where the unit length is 0.1mm so 12.1mm. The coordinate system is right handed.

## 10.15 ZSK USA Embroidery Format (.dsz)

\index{dsz}\index{ZSK USA}

The ZSK USA dsz format is stitch-only.

## 10.16 Drawing Exchange Format (.dxf)

\index{dxf}\index{AutoCAD}\index{AutoDesk}

Graphics format for drawing files designed and used by AutoDesk for their AutoCAD program.

# 11 Contributor Covenant Code of Conduct

## 11.1 Our Pledge

We as members, contributors, and leaders pledge to make participation in our community a harassment-free experience for everyone, regardless of age, body size, visible or invisible disability, ethnicity, sex characteristics, gender identity and expression, level of experience, education, socio-economic status, nationality, personal appearance, race, religion, or sexual identity and orientation.

We pledge to act and interact in ways that contribute to an open, welcoming, diverse, inclusive, and healthy community.

## 11.2 Our Standards

Examples of behavior that contributes to a positive environment for our community include:

- Demonstrating empathy and kindness toward other people
- Being respectful of differing opinions, viewpoints, and experiences
- Giving and gracefully accepting constructive feedback
- Accepting responsibility and apologizing to those affected by our mistakes, and learning from the experience
- Focusing on what is best not just for us as individuals, but for the overall community

Examples of unacceptable behavior include:

- The use of sexualized language or imagery, and sexual attention or advances of any kind
- Trolling, insulting or derogatory comments, and personal or political attacks
- Public or private harassment
- Publishing others' private information, such as a physical or email address, without their explicit permission
- Other conduct which could reasonably be considered inappropriate in a professional setting

### 11.3 Enforcement Responsibilities

Community leaders are responsible for clarifying and enforcing our standards of acceptable behavior and will take appropriate and fair corrective action in response to any behavior that they deem inappropriate, threatening, offensive, or harmful.

Community leaders have the right and responsibility to remove, edit, or reject comments, commits, code, wiki edits, issues, and other contributions that are not aligned to this Code of Conduct, and will communicate reasons for moderation decisions when appropriate.

### 11.4 Scope

This Code of Conduct applies within all community spaces, and also applies when an individual is officially representing the community in public spaces. Examples of representing our community include using an official e-mail address, posting via an official social media account, or acting as an appointed representative at an online or offline event.

### 11.5 Enforcement

Instances of abusive, harassing, or otherwise unacceptable behavior may be reported to the community leaders responsible for enforcement at [embroidermodder@gmail.com](mailto:embroidermodder@gmail.com). All complaints will be reviewed and investigated promptly and fairly.

All community leaders are obligated to respect the privacy and security of the reporter of any incident.

### 11.6 Enforcement Guidelines

Community leaders will follow these Community Impact Guidelines in determining the consequences for any action they deem in violation of this Code of Conduct:

#### 11.6.1 1. Correction

**Community Impact:** Use of inappropriate language or other behavior deemed unprofessional or unwelcome in the community.

**Consequence:** A private, written warning from community leaders, providing clarity around the nature of the violation and an explanation of why the behavior was inappropriate. A public apology may be requested.

#### 11.6.2 2. Warning

**Community Impact:** A violation through a single incident or series of actions.

**Consequence:** A warning with consequences for continued behavior. No interaction with the people involved, including unsolicited interaction with those enforcing the Code of Conduct, for a specified period of time. This includes avoiding interactions in community spaces as well as external channels like social media. Violating these terms may lead to a temporary or permanent ban.

### 11.6.3 3. Temporary Ban

**Community Impact:** A serious violation of community standards, including sustained inappropriate behavior.

**Consequence:** A temporary ban from any sort of interaction or public communication with the community for a specified period of time. No public or private interaction with the people involved, including unsolicited interaction with those enforcing the Code of Conduct, is allowed during this period. Violating these terms may lead to a permanent ban.

### 11.6.4 4. Permanent Ban

**Community Impact:** Demonstrating a pattern of violation of community standards, including sustained inappropriate behavior, harassment of an individual, or aggression toward or disparagement of classes of individuals.

**Consequence:** A permanent ban from any sort of public interaction within the community.

## 11.7 Attribution

This Code of Conduct is adapted from the [Contributor Covenant](https://www.contributor-covenant.org/version/2/0/code_of_conduct.html), version 2.0, available at [https://www.contributor-covenant.org/version/2/0/code\\_of\\_conduct.html](https://www.contributor-covenant.org/version/2/0/code_of_conduct.html).

Community Impact Guidelines were inspired by Mozilla's code of conduct enforcement ladder.

For answers to common questions about this code of conduct, see the FAQ at <https://www.contributor-covenant.org/faq>. Translations are available at <https://www.contributor-covenant.org/translations>.

## 12 Privacy Policy for Embroidery Viewer

Last updated December 15, 2021

Embroidermodder (“we” or “us” or “our”) respects the privacy of our users (“user” or “you”). This Privacy Policy explains how we collect, use, disclose, and safeguard your information when you visit our mobile application (the “Application”). Please read this Privacy Policy carefully. IF YOU DO NOT AGREE WITH THE TERMS OF THIS PRIVACY POLICY, PLEASE DO NOT ACCESS THE APPLICATION.

We reserve the right to make changes to this Privacy Policy at any time and for any reason. We will alert you about any changes by updating the “Last updated” date of this Privacy Policy. You are encouraged to periodically review this Privacy Policy to stay informed of updates. You will be deemed to have been made aware of, will be subject to, and will be deemed to have accepted the changes in any revised Privacy Policy by your continued use of the Application after the date such revised Privacy Policy is posted.

This Privacy Policy does not apply to the third-party online/mobile store from which you install the Application or make payments. We are not responsible for any of the data collected by any such third party.

We do not knowingly collect information from anyone other than what is already provided by the app store. If you become aware of any data we have collected, please contact us using the contact information provided below.

### 12.0.1 CONTACT US

If you have questions or comments about this Privacy Policy, please contact us at:

[Embroidermodder@gmail.com](mailto:Embroidermodder@gmail.com)

## 13 Todo List

### Member **actuator** (char command\_line[200])

These should be part of init\_view rulerMetric = settings.ruler\_metric; rulerColor = EmbColor(settings.ruler\_color); rulerPixelSize = settings.ruler\_pixel\_size;

Make day vision color settings.

Make night vision color settings.

check-for-updates should create a dialog.

changelog

### Member **add\_point\_action** (void)

document this.

### Member **add\_regular\_polygon** (EmbReal centerX, EmbReal centerY, int sides, int mode, EmbReal rad, EmbReal rot, bool fill)

finish add\_regular\_polygon.

### Member **add\_rubber\_action** (void)

handle this type break; } case EMB\_RECT: { addRectangle(mx, my, mx, my, 0, 0, OBJ\_RUBBER\_ON); break; } case EMB\_SPLINE: {

handle dim radius type

handle dim ordinate type

handle dim linear type

handle arc type

handle block type

handle DimAligned type

handle DimAngular rubber action.

handle DimArcLength rubber action.

handle DimDiameter rubber action.

handle ellipse arc type

handle hatch type

handle image type

handle infinite line type

handle path type

handle point type

handle this type break; } case EMB\_TEXTSINGLE: { addTextSingle("", mx, my, 0, false, OBJ\_RUBBER\_ON); break; } default: break; }

handle this type break; } case EMB\_TEXTMULTI: {

### Member **add\_slot\_action** (void)

slot fill

Use [UndoableAddCommand](#) for slots

**Member `add_text_single` (const char \*str, EmbReal x, EmbReal y, EmbReal rot, bool fill, int rubberMode)**  
single line text fill

**Member `allow_rubber` (void)**  
the rubberRoomList size check should be removed later.

**Member `background_color_action` (void)**  
document this.

**Member `bcf_directory`**  
possibly add a directory tree in the future.

**Member `bcf_file_header`**  
CLSID should be a separate type.

**Member `binaryWriteInt` (FILE \*f, int data)**  
replace with emblnt\_read

**Member `binaryWriteIntBE` (FILE \*f, int data)**  
replace with emblnt\_read

**Member `binaryWriteShort` (FILE \*f, short data)**  
replace with emblnt\_read

**Member `binaryWriteUInt` (FILE \*f, unsigned int data)**  
replace with emblnt\_read

**Member `binaryWriteUIntBE` (FILE \*f, unsigned int data)**  
replace with emblnt\_read

**Member `binaryWriteUShort` (FILE \*f, unsigned short data)**  
replace with emblnt\_read

**Member `binaryWriteUShortBE` (FILE \*f, unsigned short data)**  
replace with emblnt\_read

**Member `button_tip_of_the_day_clicked` (int button)**  
document this.

**Member `calculate_angle` (EmbReal x1, EmbReal y1, EmbReal x2, EmbReal y2)**  
finish CalculateAngle.

**Member `calculate_angle_action` (void)**  
Get mouse point.

**Member `calculate_distance_action` (void)**  
Get mouse point.

**Member `checkForUpdates` (void)**  
Check website for new versions, commands, etc...

**Member `circle_action` (void)**  
circle fill

**Member `clear_rubber` (void)**  
document this.

**Member `clearRubberRoom` (void)**  
document this.

**Member `close_action` (void)**  
finish copy\_action

**Member `close_event` (int \*event)**  
need close\_view\_event and close\_window\_event? or action

**Member CmdPromptInput::processInput (const QChar &rapidChar=QChar())**

```
sort Qt::Return if(rapidChar == Qt::Key_Enter || rapidChar == Qt::Key_Return) { emit appendHistory(curText, prefix.length()); emit runCommand(curCmd, "RAPID_ENTER"); curText.clear(); clear(); return; } else if(rapidChar == Qt::Key_Space) { updateCurrentText(curText + " "); emit runCommand(curCmd, cmdtxt + " "); return; } else { emit runCommand(curCmd, cmdtxt); return; }
```

**Member colorSelectorIndexChanged (int index)**

Handle ByLayer and ByBlock and Other...

**Member context\_menu\_event (void)**

document this.

**Member copy (void)**

Prompt to select objects if nothing is preselected.

**Member copy\_action (void)**

finish copy\_action

**Member copy\_selected (void)**

Get mouse point/move

**Member copy\_trim (char const \*s)**

description

**Member cornerButtonClicked (void)**

document this.

**Member create\_group\_box\_block (int id, EmbBlock \*obj)**

editors for blocks.

**Member create\_group\_box\_dim\_aligned (int id, EmbAlignedDim \*obj)**

editors for aligned dimension.

**Member create\_group\_box\_dim\_linear (int id, EmbLinearDim \*obj)**

editors for linear dimension.

**Member create\_group\_box\_dim\_ordinate (int id, EmbOrdinateDim \*obj)**

editors for linear dimension.

**Member create\_group\_box\_dim\_radius (int id, EmbRadiusDim \*dim\_radius)**

editors for radius dimension.

**Member create\_tab\_lineweight (void)**

finish this

**Member createAllActions (void)**

Finish All Commands ... <.<

Set What's This Context Help to statusTip for now so there is some infos there. Make custom whats this context help popup with more descriptive help than just the status bar/tip one liner(short but not real long) with a hyperlink in the custom popup at the bottom to open full help file description. Ex: like wxPython AGW's SuperToolTip.

SCENE\_QSNAP\_POINT for each scene

**Member createGridIso (void)**

document this.

**Member createGridPolar (void)**

document this.

**Member createGridRect (void)**

document this.

**Member [createObjectList](#) (EmbArray \*list)**

cut/copy images  
cut/copy infinite lines  
cut/copy linear dimensions  
cut/copy ordinate dimensions  
cut/copy radius dimensions  
cut/copy blocks  
cut/copy aligned dimensions  
cut/copy elliptical arcs

**Member [createOrigin](#) (void)**

Make Origin Customizable

**Member [crosshair\\_color\\_action](#) (void)**

document this.

**Member [cut](#) (void)**

document this.

**Member [cut\\_action](#) (void)**

finish cut\_action

**Member [cut\\_selected](#) (void)**

Get mouse point/move

**Member [delete\\_pressed](#) (void)**

document this.

**Member [delete\\_selected](#) (void)**

document this.

**Member [details\\_dialog](#) (void)**

Color Histogram  
Stitch Distribution Histogram  
Move majority of the calculation code into libembroidery

**Member [dim\\_leader\\_action](#) (void)**

Finish dim\_leader\_action.

**Member [disable\\_move\\_rapid\\_fire](#) (void)**

document this.

**Member [disablePromptRapidFire](#) (void)**

document this.

**Member [draw\\_grid](#) (void)**

document this.

**Member [draw\\_rulers](#) (void)**

labels for measurements.

**Member [emb\\_clamp](#) (EmbReal lower, EmbReal x, EmbReal upper)**

Move to libembroidery.

**Member [embArc\\_print](#) (EmbArc arc)**

move to arc.c

**Page [embedded](#)**

Replace EmbArray functions with embPattern load functions.

Start file with a list of offsets to data with a corresponding table to load into with macro constants for each label needed.

For each pattern generate a random string of hexadecimal and append it to the filenames like stitchList\←\_A16F.dat. Need to check for a file which indicates that this string has been used already.

**Member `embGeometry_vulcanize` (`EmbGeometry *obj`)**

Review. This could be controlled by a simple flag.

**Member `embPattern_stitchEllipse` (`EmbPattern *p, EmbEllipse ellipse, int thread_index, int style`)**

finish stitchEllipse

**Member `embPattern_stitchPath` (`EmbPattern *p, EmbPath path, int thread_index, int style`)**

finish stitch path

**Member `embPattern_stitchPolygon` (`EmbPattern *p, EmbPolygon polygon, int thread_index, int style`)**

finish stitch polygon

**Member `embPattern_stitchPolyline` (`EmbPattern *p, EmbPolyline polyline, int thread_index, int style`)**

finish stitch polyline

**Page `embroider_cli`**

Move back to libembroidery now we have the combined docs build.

**Member `embVector_multiply` (`EmbVector vector, EmbReal magnitude, EmbVector *result`)**

make result return argument.

**Member `embVector_normalize` (`EmbVector vector, EmbVector *result`)**

make result return argument.

**Member `enableMoveRapidFire` (`void`)**

document this.

**Member `enablePromptRapidFire` (`void`)**

document this.

**Member `end_command` (`void`)**

document this.

**Member `enter_event` (`int *event`)**

document this.

**Member `escape_pressed` (`void`)**

document this.

**Member `exit_action` (`void`)**

document this.

**Page `Formats`**

Find a source.

Find a source.

Find a source.

**Member `formatTable` [`numberOfFormats`]**

This list needs reviewed in case some stitch formats also can contain object data (EMBFORMAT\_↔ STCHANDOBJ). \*

**Member `fread_int32_be` (`FILE *f`)**

replace with emblnt\_read

**Member `fread_uint16` (`FILE *f`)**

replace with emblnt\_read

**Member `generate_dragon_curve` (`char *state, int iterations`)**

find citation for paper folding method

## Page Geometry and Algorithms

(testing) looping test that reads 10 times while running valgrind. See \texttt{embPattern\\_loadExternalColorFile()}

Arduino leak note for more info.

Like most user interfaces Embroidermodder is mostly data, so here we will have a list describing where each CSV goes.

(Arduino) Smoothieboard experiments

(Arduino) Logging of Last Stitch Location to External USB Storage(commonly available and easily replaced)  
...wait until TRE is available to avoid rework

(Arduino) inotool.org - seems like the logical solution for Nightly/CI builds

(Arduino) Fix thread-color files

(Arduino) Fix emb-outline files

### Member `getCurrentColor (void)`

return color ByLayer

### Member `grid_color_action (void)`

document this.

### Member `heart_init (void)`

document this.

### Member `Help (void)`

document this.

### Member `horizontal_dimension_action (void)`

document this.

### Member `image_action (void)`

finish image\_action.

### Member `Index`

document this.

### Member `IndexEntry`

document this.

### Member `infinite_line_action (void)`

document this.

### Member `init_command (void)`

document this.

### Member `init_view (void)`

Dropping files onto dock on Mac to open them?

Originally, EM2 allowed for multiple views of the same file, we can allow for this, but currently means we have multiple pattern pointers. So we'd need to set the memory locations to be the same place.

automatically maximises, but it could allow for multiple views, panes and windows.

### Member `just_opened`

Move to the settings struct.

### Member `languages [20]`

this should be loaded from configuration.

### Member `layer_manager (View *view)`

document this.

### Member `layerManager (void)`

document this.

### Member `layerPrevious (void)`

document this.

**Member [line\\_action \(void\)](#)**

document this.

**Member [load\\_formats \(void\)](#)**

document this.

**Member [log\\_debug \(const char \\*msg\)](#)**

log current time and process id alongside all debug information.

**Member [main \(int argc, char \\*argv\[\]\)](#)**

add icons and shortcut prompts to menus.

detail all possible error return values here.

**Member [MainWindow \(void\)](#)**

Prevent memory leaks by deleting any unpasted objects.

**Member [messagebox\\_action \(void\)](#)**

document this.

**Member [mirror\\_selected\\_action \(EmbLine line\)](#)**

document this.

**Member [move\\_main \(void\)](#)**

Prompt to select objects if nothing is preselected

**Member [move\\_selected\\_action \(void\)](#)**

Get mouse point/move

**Member [new\\_file\\_action \(void\)](#)**

document this.

**Member [on\\_window\\_activated \(void\)](#)**

document this.

**Member [open\\_file\\_action \(int argc, char argv\[10\]\[200\]\)](#)**

warn user of too many open tabs.

**Member [open\\_recent\\_file \(void\)](#)**

document this.

**page [Overview](#)**

(2.x/ideas) EPS format? Look at using Ghostscript as an optional add-on to libembroidery...

(2.x/ideas) optional compile option for including LGPL/GPL libs etc... with warning to user about license require-

ments.

- (2.x/ideas) Realistic Visualization - Bump Mapping/OpenGL/Gradients?
- (2.x/ideas) Stippling Fill
- (2.x/ideas) User Designed Custom Fill
- (2.x/ideas) Honeycomb Fill
- (2.x/ideas) Hilbert Curve Fill
- (2.x/ideas) Sierpinski Triangle fill
- (2.x/ideas) Circle Grid Fill
- (2.x/ideas) Spiral Fill
- (2.x/ideas) Offset Fill
- (2.x/ideas) Brick Fill
- (2.x/ideas) Trim jumps over a certain length.
- (2.x/ideas) FAQ about setting high number of jumps for more controlled trimming.
- (2.x/ideas) Minimum stitch length option. (Many machines also have this option too)
- (2.x/ideas) Add 'Design Details' functionality to libembroidery-convert
- (2.x/ideas) Add 'Batch convert many to one format' functionality to libembroidery-convert
- (2.x/ideas) EmbroideryFLOSS - Color picker that displays catalog numbers and names.
- (beta) Realistic Visualization - Bump Mapping/OpenGL/Gradients?
- (beta) Get undo history widget back (BUG).
- (beta) Mac Bundle, .tar.gz and .zip source archive.
- (beta) NSIS installer for Windows, Debian package, RPM package
- (beta) GUI frontend for embroider features that aren't supported by embroidermodder: flag selector from a table
- (beta) Update all formats without color to check for edr or rgb files.
- (beta) Setting for reverse scrolling direction (for zoom, vertical pan)
- (beta) Keyboard zooming, panning
- (beta) New embroidermodder2.ico 16x16 logo that looks good at that scale.
- (beta) Saving dst, pes, jef.
- (beta) Settings dialog: notify when the user is switching tabs that the setting has been changed, adding apply button is what would make sense for this to happen.
- (beta) Update language translations.
- (beta) Replace KDE4 thumbnailer.
- (beta) Import raster image.
- (beta) Statistics from 1.0, needs histogram.
- (beta) SNAP/ORTHO/POLAR.
- (beta) Cut/copy allow post-selection.
- (beta) Layout into config.
- (beta) Notify user of data loss if not saving to an object format.
- (beta) Add which formats to work with to preferences.
- (beta) Cannot open file with # in the name when opening multiple files but works with opening a single file.
- (beta) Closing settings dialog with the X in the window saves settings rather than discarding them.
- (beta) Otto theme icons: units, render, selectors, what's this icon doesn't scale.
- (beta) Layer manager and Layer switcher dock widget.
- (beta) Test that all formats read data in correct scale (format details should match other programs).
- (beta) Custom filter bug – doesn't save changes in some cases.
- (beta) Tools to find common problems in the source code and suggest fixes to the developers. For example,

a translation miss: that is, for any language other than English a missing entry in the translation table should supply a clear warning to developers.

(beta) Converting Qt C++ version to native GUI C throughout.

(beta) OpenGL Rendering: Real rendering to see what the embroidery looks like, Icons and toolbars, Menu bar.

(beta) Libembroidery interfacing: get all classes to use the proper libembroidery types within them. So Ellipse has EmbEllipse as public data within it.

(beta) Move calculations of rotation and scaling into EmbVector calls.

(2.x/ideas) Reports?

(beta) Update all formats without color to check for edr or rgb files.

(beta) Setting for reverse scrolling direction (for zoom, vertical pan)

(beta) Keyboard zooming, panning

(beta) Better integrated help: I don't think the help should backend to a html file somewhere on the user's system. A better system would be a custom widget within the program that's searchable.

(beta) New embroidermodder2.ico 16x16 logo that looks good at that scale.

(beta) Settings dialog: notify when the user is switching tabs that the setting has been changed, adding apply button is what would make sense for this to happen.

(beta) Libembroidery 1.0.

(beta) Better integrated help: I don't think the help should backend to a html file somewhere on the user's system. A better system would be a custom widget within the program that's searchable.

(beta) EmbroideryFLOSS - Color picker that displays catalog numbers and names.

(beta) Custom filter bug – doesn't save changes in some cases.

(beta) Advanced printing.

(beta) Stitching simulation.

(2.x/ideas) User designed custom fill.

(beta) GUI frontend for embroider features that aren't supported by embroidermodder: flag selector from a table

(2.0.0-rc1) CAD Command review: rgb

Bibliography style to plainnat.

Serif font for printed docs.

US letter paper version of printed docs.

Screenshot a working draft to demonstrate.

(perennial) Check for memory leaks

(perennial) Clear compiler warnings on `-Wall -ansi -pedantic` for C.

(perennial) Write new tests for new code.

(perennial) Get Embroidermodder onto the current version of libembroidery.

(perennial) PEP7 compliance.

(perennial) Better documentation with more photos/screencaps.  
sort todo list.

(2.0.0-alpha1) Statistics from 1.0, needs histogram  
(2.0.0-alpha1) Saving DST/PES/JEF (varga)  
(2.0.0-alpha1) Saving CSV/SVG (rt) + CSV read/write UNKNOWN interpreted as COLOR bug  
(2.0.0-alpha2) Notify user of data loss if not saving to an object format.  
(2.0.0-alpha2) Import Raster Image  
(2.0.0-alpha2) SNAP/ORTHO/POLAR  
(2.0.0-alpha2) Layer Manager + LayerSwitcher DockWidget  
(2.0.0-alpha2) Reading DXF  
(2.0.0-alpha3) Writing DXF  
(2.0.0-alpha3) Up and Down keys cycle thru commands in the command prompt  
(2.0.0-alpha3) Amount of Thread | Machine Time Estimation (also allow customizable times for setup, color changes, manually trimming jump threads, etc...that way a realistic total time can be estimated)  
(2.0.0-alpha3) Otto Theme Icons - whatsthis icon doesn't scale well, needs redone  
(2.0.0-alpha3) embroidermodder2.ico 16 x 16 looks horrible  
(2.0.0-alpha4) CAD Command: Arc (rt)  
(2.0.0-alpha4) automate changelog and write to a javascript file for the docs: git log --pretty=format:'  
(2.0.0-beta1) Custom Filter Bug - doesn't save changes in some cases  
(2.0.0-beta1) Cannot open file with # in name when opening multiple files (works fine when opening the single

(file)

(2.0.0-beta1) Closing Settings Dialog with the X in the window saves settings rather than discards them

(2.0.0-beta1) Advanced Printing

(2.0.0-beta1) Filling Algorithms (varga)

(2.0.0-beta1) Otto Theme Icons - beta (rt) - Units, Render, Selectors

(2.0.0-rc1) QDoc Comments

(2.0.0-rc1) Review KDE4 Thumbnailer

(2.0.0-rc1) Documentation for libembroidery | formats

(2.0.0-rc1) HTML Help files

(2.0.0-rc1) Update language translations

(2.0.0-rc1) CAD Command review: line

(2.0.0-rc1) CAD Command review: circle

(2.0.0-rc1) CAD Command review: rectangle

(2.0.0-rc1) CAD Command review: polygon

(2.0.0-rc1) CAD Command review: polyline

(2.0.0-rc1) CAD Command review: point

(2.0.0-rc1) CAD Command review: ellipse

(2.0.0-rc1) CAD Command review: arc

(2.0.0-rc1) CAD Command review: distance

(2.0.0-rc1) CAD Command review: locatepoint

(2.0.0-rc1) CAD Command review: move

(2.0.0-rc1) CAD Command review: rotate

(2.0.0-rc1) CAD Command review: scale

(2.0.0-rc1) CAD Command review: singlelinetext

(2.0.0-rc1) CAD Command review: star

(2.0.0-rc1) Clean up all compiler warning messages, right now theres plenty :P

(2.0) tar.gz archive

(2.0) zip archive

(2.0) Debian Package (rt)

(2.0) NSIS Installer (rt)

(2.0) Mac Bundle?

(2.0) press release

(2.x/ideas) libembroidery.mk for MXE project (refer to qt submodule packages for qmake based building. Also refer to plibc.mk for example of how write an update macro for github.)

(2.x/ideas) libembroidery safeguard for all writers - check if the last stitch is an END stitch. If not, add an end

stitch in the writer and modify the header data if necessary.

- (2.x/ideas) Cut/Copy - Allow Post-selection
- (2.x/ideas) CAD Command: Array
- (2.x/ideas) CAD Command: Offset
- (2.x/ideas) CAD Command: Extend
- (2.x/ideas) CAD Command: Trim
- (2.x/ideas) CAD Command: BreakAtPoint
- (2.x/ideas) CAD Command: Break2Points
- (2.x/ideas) CAD Command: Fillet
- (2.x/ideas) CAD Command: Chamfer
- (2.x/ideas) CAD Command: Split
- (2.x/ideas) CAD Command: Area
- (2.x/ideas) CAD Command: Time
- (2.x/ideas) CAD Command: PickAdd
- (2.x/ideas) CAD Command: Product
- (2.x/ideas) CAD Command: Program
- (2.x/ideas) CAD Command: ZoomFactor
- (2.x/ideas) CAD Command: GripHot
- (2.x/ideas) CAD Command: GripColor | GripCool
- (2.x/ideas) CAD Command: GripSize
- (2.x/ideas) CAD Command: Highlight
- (2.x/ideas) CAD Command: Units
- (2.x/ideas) CAD Command: Grid
- (2.x/ideas) CAD Command: Find
- (2.x/ideas) CAD Command: Divide
- (2.x/ideas) CAD Command: ZoomWindow (Move out of [view.cpp](#))
- (2.x/ideas) Command: Web (Generates Spiderweb patterns)
- (2.x/ideas) Command: Guilloche (Generates Guilloche patterns)
- (2.x/ideas) Command: Celtic Knots
- (2.x/ideas) Command: Knotted Wreath
- (2.x/ideas) Lego Mindstorms NXT/EV3 ports and/or commands.
- (2.x/ideas) native function that flashes the command prompt to get users attention when using the prompt is required for a command.
- (2.x/ideas) libembroidery-composer like app that combines multiple files into one.
- (2.x/ideas) Settings Dialog, it would be nice to have it notify you when switching tabs that a setting has been changed. Adding an Apply button is what would make sense for this to happen.
- (2.x/ideas) Keyboard Zooming/Panning
- (2.x/ideas) G-Code format?
- (2.x/ideas) 3D Raised Embroidery
- (2.x/ideas) Gradient Filling Algorithms
- (2.x/ideas) Stitching Simulation
- (2.x/ideas) RPM packages?
- (2.x/ideas) Record and Playback Commands
- (2.x/ideas) Settings option for reversing zoom scrolling direction
- (2.x/ideas) Qt GUI for libembroidery-convert

**Member `pan_action (const char *mode)`**

Undo records for pan action.

**Member `paste (void)`**

document this.

**Member `paste_action (void)`**

document this.

**Member `paste_selected (void)`**

Get mouse point/move

**Member `pattern_view (void)`**

document this.

**Member `pickAddModeToggled (void)`**

document this.

**Member `polygon_action (void)`**

finish polygon\_action.

**Member `polyline_action (EmbVector start, EmbPath *p, int rubberMode)`**

finish polyline\_action.

**Member `preview_dialog (void)`**

connect the currentChanged signal to update the preview imgWidget.

get actual thumbnail image from file, lets also use a size of 128x128 for now...

make thumbnail size adjustable thru settings dialog

**Member `preview_off (void)`**

document this.

**Member `preview_on_action (void)`**

document this.

**Member `print_action (void)`**

document this.

**Member `print_area_action (void)`**

document this.

**Member `PrintArea (EmbReal x, EmbReal y, EmbReal w, EmbReal h)`**

Print Setup Stuff

**Member `promptInputNext (void)`**

document this.

**Member `promptInputPrevious (void)`**

document this.

**Member `property_editor (void)`**

Load precisionAngle from settings and provide function for updating from settings

Load precisionLength from settings and provide function for updating from settings

**Member `property_editor_hideAllGroups (void)`**

document this.

**Member `property_editor_togglePickAddMode (void)`**

document this.

**Member `quicleader_main (void)`**

Adding the text is not complete yet.

**Member `random_uniform (void)`**

move to libembroidery.

**Member ray\_action (void)**

document this.

**Member recentMenuAboutToShow (void)**

document this.

**Member rectangle\_action (void)**

rect fill for rectangle\_action

**Member redo\_action (void)**

document this.

**Member redo\_navigation (void)**

document this.

**Member repeat\_action (void)**

document this.

**Member resize\_event (void)**

document this.

**Member RGB\_MODE\_BACKGROUND**

document this.

**Member rotate\_main (void)**

Prompt to select objects if nothing is preselected

**Member rotate\_selected\_action (void)**

document this.

**Member rotateAction (void)**

document this.

**Member rounded\_rectangle\_action (void)**

document this.

**Member rubber\_point\_action (void)**

document this.

**Member rubber\_text\_action (void)**

document this.

**Member save\_bmc (void)**

figure out how to center the image, right now it just plops it to the left side.

Make BMC background into its own setting?

Is there/should there be other embedded data in the bitmap besides the image itself?

Should BMC be limited to ~32KB or is this a mix up with Bitmap Cache?

Save a Brother PEL image (An 8bpp, 130x113 pixel monochromatic? bitmap image) Why 8bpp when only 1bpp is needed?

**Member save\_save (const char \*fileName)**

Before saving to a stitch only format, Embroidermodder needs to calculate the optimal path to minimize jump stitches. Also based upon which layer needs to be stitched first, the path to the next object needs to be hidden beneath fills that will come later. When finding the optimal path, we need to take into account the color of the thread, as we do not want to try to hide dark colored stitches beneath light colored fills.

handle EMBFORMAT\_STCHANDOBJ also

handle all objects like this

check the embLog for errors and if any exist, report them.

**Member save\_toPolyline (EmbPattern \*pattern, EmbVector objPos, EmbPath objPath, const char \*layer, EmbColor color, const char \*lineType, const char \*lineWeight)**

proper lineType

**Member `SaveObject::save (const QString &fileName)`**

Before saving to a stitch only format, Embroidermodder needs to calculate the optimal path to minimize jump stitches. Also based upon which layer needs to be stitched first, the path to the next object needs to be hidden beneath fills that will come later. When finding the optimal path, we need to take into account the color of the thread, as we do not want to try to hide dark colored stitches beneath light colored fills.

**Member `scale_main (void)`**

document this.

**Member `scale_redo (void)`**

document this.

**Member `scale_selected_action (void)`**

Get mouse point/move

**Member `scale_undo (void)`**

document this.

**Member `scaleAction (void)`**

document this.

**Member `selectbox_SelectBox (void)`**

document this.

**Member `selection_changed (void)`**

document this.

**Member `set_cursor_shape_action (int shape)`**

Uses the CURSOR\_SHAPE\_ defines.

**Member `set_mouse_coord (EmbVector pos)`**

set format from settings (Architectural, Decimal, Engineering, Fractional, Scientific)

use precision from unit settings

**Member `set_prompt_prefix (const char *msg)`**

finish set\_prompt\_prefix

**Member `setCornerButton (void)`**

document this.

**Member `settings_dialog_acceptChanges (void)`**

document this.

**Member `settings_dialog_addColorsToComboBox (int *comboBox)`**

Add Other... so the user can select custom colors

**Member `settings_dialog_buttonCustomFilterClearAllClicked (void)`**

document this.

**Member `settings_dialog_buttonCustomFilterSelectAllClicked (void)`**

document this.

**Member `settings_dialog_buttonQSnapSelectAllClicked (void)`**

document this.

**Member `settings_dialog_chooseGeneralMdiBackgroundTexture (void)`**

document this.

**Member `settings_dialog_chooseGridColor (void)`**

document this.

**Member `settings_dialog_chooseRulerColor (void)`**

document this.

**Member `settings_dialog_combobox_selectionCoolGripColorCurrentIndexChanged (int index)`**

Alert user if color matched the display bg color

**Member settings\_dialog\_combobox\_selectionHotGripColorCurrentIndexChanged (int index)**

Alert user if color matched the display bg color

**Member settings\_dialog\_comboBoxQSnapLocatorColorCurrentIndexChanged (int index)**

Figure out how to abstract the slot in a way that it can be used for comboBoxes in general Currently comboBoxQSnapLocatorColorCurrentIndexChanged(int index) comboBoxSelectionCoolGripColorCurrentIndexChanged(int index) comboBoxSelectionHotGripColorCurrentIndexChanged(int index) are all similar except the dialog variable being worked on and the QVariant.

**Member settings\_dialog\_rejectChanges (void)**

inform the user if they have changed settings  
document this.

**Member single\_line\_text\_main (void)**

document this.

**Member single\_line\_text\_prompt (UiObject \*global, const char \*str)**

Rather than ending the command, calculate where the next line would be and modify the x/y to the new point }  
} else { global.text = str; setRubberText("TEXT\_RAPID", global.text); }

**Member snowflake\_main ()**

document this.

**Member spare\_rubber\_action (void)**

ClearRubber(); function

**Member stub\_testing\_action (void)**

document this.

**Member SubDescriptor\_::colorCode**

better variable naming

**Member SubDescriptor\_::someInt**

better variable naming

**Member SubDescriptor\_::someOtherInt**

better variable naming

**Member text\_multi\_action (void)**

document this.

**Member text\_single\_action (void)**

document this.

**Member textSizeSelectorIndexChanged (int index)**

check that the toReal() conversion is ok

**Member tip\_of\_the\_day\_dialog (void)**

Add icons to buttons by using wizardTipOfTheDay->setButton(CustomButton1, buttonClose)

Add icons to buttons by using wizardTipOfTheDay->setButton(CustomButton1, buttonPrevious)

Add icons to buttons by using wizardTipOfTheDay->setButton(CustomButton1, buttonNext)

**Member TipOfDay (void)**

document this.

**Member translate (const char \*string)**

check for translation\_table loaded and use it.

**Member triangle\_action (void)**

document this.

**Member undo\_action (void)**

document this.

**Member `undo_history_viewer` (void)**

document this.

**Member `undo_navigation` (void)**

document this.

**Member `UndoHistory`**

document this.

**Member `update_menu_toolbar_statusbar` (void)**

document this.

**Member `updateAllViewCrossHairColors` (unsigned int color)**

document this.

**Member `updateAllViewGridColors` (unsigned int color)**

document this.

**Member `updateAllViewscrollbars` (bool val)**

document this.

**Member `updateAllViewSelectBoxColors` (unsigned int colorL, unsigned int fillL, unsigned int colorR, unsigned int fillR, int alpha)**

document this.

**Member `vertical_dimension_action` (void)**

document this.

**Member `View_` (void)**

Review OpenGL direct calls (rather than via GLFW).

load toggleReal from file, else settings with default being true.

panDistance needs a setting.

**Member `view_empty_double_click` (void)**

document this.

**Member `view_empty_paint_event` (View \*view, int \*event)**

document this.

**Member `vulcanize_action` (void)**

document this.

**Member `whats_this_context_help_action` (void)**

document this.

**Member `window_menu_about_to_show` (void)**

document this.

**Member `zoom_action` (const char \*arg)**

Implement zoomScale.

Implement zoomRealtime.

Implement zoomPrevious.

Implement zoomDynamic.

Implement zoomCenter.

**Member `zoom_extents_all_subviews` (void)**

document this.

## 14 Bug List

**Member `create_group_box_circle` (int id, EmbCircle \*circle)**

When the user selects multiple entries across different circles then edits the program throws an error.

## 15 Hierarchical Index

### 15.1 Class Hierarchy

This inheritance list is sorted roughly, but not completely, alphabetically:

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## 16 Class Index

### 16.1 Class List

Here are the classes, structs, unions and interfaces with brief descriptions:

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<b>extern/libembroidery/src/geometry.c</b>	<b>891</b>
<b>extern/libembroidery/src/image.c</b>	<b>910</b>
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<b>As much of the code as possible, to keep the structure simple and in a procedural style</b>	

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## 18 Class Documentation

### 18.1 \_bcf\_directory Struct Reference

```
#include <embroidery_internal.h>
```

#### Public Attributes

- `bcf_directory_entry * dirEntries`
- `unsigned int maxNumberOfDirectoryEntries`

#### 18.1.1 Detailed Description

**Todo** possibly add a directory tree in the future.

#### 18.1.2 Member Data Documentation

##### 18.1.2.1 dirEntries `bcf_directory_entry* dirEntries`

##### 18.1.2.2 maxNumberOfDirectoryEntries `unsigned int maxNumberOfDirectoryEntries`

The documentation for this struct was generated from the following file:

- `extern/libembroidery/src/embroidery_internal.h`

## 18.2 \_bcf\_directory\_entry Struct Reference

```
#include <embroidery_internal.h>
```

### Public Attributes

- char `directoryEntryName` [32]
- unsigned short `directoryEntryNameLength`
- unsigned char `objectType`
- unsigned char `colorFlag`
- unsigned int `leftSiblingId`
- unsigned int `rightSiblingId`
- unsigned int `childId`
- unsigned char `CLSID` [16]
- unsigned int `stateBits`
- `EmbTime creationTime`
- `EmbTime modifiedTime`
- unsigned int `startingSectorLocation`
- unsigned long `streamSize`
- unsigned int `streamSizeHigh`
- struct `_bcf_directory_entry` \* `next`

#### 18.2.1 Member Data Documentation

**18.2.1.1 childId** unsigned int `childId`

**18.2.1.2 CLSID** unsigned char `CLSID`[16]

**18.2.1.3 colorFlag** unsigned char `colorFlag`

**18.2.1.4 creationTime** `EmbTime creationTime`

**18.2.1.5 directoryEntryName** char `directoryEntryName`[32]

**18.2.1.6 directoryEntryNameLength** unsigned short directoryEntryNameLength

**18.2.1.7 leftSiblingId** unsigned int leftSiblingId

**18.2.1.8 modifiedTime** [EmbTime](#) modifiedTime

**18.2.1.9 next** struct [\\_bcf\\_directory\\_entry](#)\* next

**18.2.1.10 objectType** unsigned char objectType

**18.2.1.11 rightSiblingId** unsigned int rightSiblingId

**18.2.1.12 startingSectorLocation** unsigned int startingSectorLocation

**18.2.1.13 stateBits** unsigned int stateBits

**18.2.1.14 streamSize** unsigned long streamSize

**18.2.1.15 streamSizeHigh** unsigned int streamSizeHigh

The documentation for this struct was generated from the following file:

- [extern/libembroidery/src/embroidery\\_internal.h](#)

## 18.3 [\\_bcf\\_file](#) Struct Reference

```
#include <embroidery_internal.h>
```

**Public Attributes**

- `bcf_file_header` header
- `bcf_file_difat` \* difat
- `bcf_file_fat` \* fat
- `bcf_directory` \* directory

**18.3.1 Member Data Documentation****18.3.1.1 `difat` `bcf_file_difat*` difat**

The header for the CompoundFile

**18.3.1.2 `directory` `bcf_directory*` directory**

The File Allocation Table for the Compound File

**18.3.1.3 `fat` `bcf_file_fat*` fat**

The "Double Indirect FAT" for the CompoundFile

**18.3.1.4 `header` `bcf_file_header` header**

The documentation for this struct was generated from the following file:

- `extern/libembroidery/src/embroidery_internal.h`

**18.4 `_bcf_file_difat` Struct Reference**

```
#include <embroidery_internal.h>
```

**Public Attributes**

- `unsigned int` `fatSectorCount`
- `unsigned int` `fatSectorEntries` [109]
- `unsigned int` `sectorSize`

**18.4.1 Member Data Documentation**

**18.4.1.1 fatSectorCount** unsigned int fatSectorCount

**18.4.1.2 fatSectorEntries** unsigned int fatSectorEntries[109]

**18.4.1.3 sectorSize** unsigned int sectorSize

The documentation for this struct was generated from the following file:

- [extern/libembroidery/src/embroidery\\_internal.h](#)

## 18.5 \_bcf\_file\_fat Struct Reference

```
#include <embroidery_internal.h>
```

### Public Attributes

- int [fatEntryCount](#)
- unsigned int [fatEntries](#) [255]
- unsigned int [numberOfEntriesInFatSector](#)

#### 18.5.1 Member Data Documentation

**18.5.1.1 fatEntries** unsigned int fatEntries[255]

**18.5.1.2 fatEntryCount** int fatEntryCount

**18.5.1.3 numberOfEntriesInFatSector** unsigned int numberOfEntriesInFatSector

The documentation for this struct was generated from the following file:

- [extern/libembroidery/src/embroidery\\_internal.h](#)

## 18.6 \_bcf\_file\_header Struct Reference

```
#include <embroidery_internal.h>
```

## Public Attributes

- `unsigned char signature [8]`
- `unsigned char CLSID [16]`
- `unsigned short minorVersion`
- `unsigned short majorVersion`
- `unsigned short byteOrder`
- `unsigned short sectorShift`
- `unsigned short miniSectorShift`
- `unsigned short reserved1`
- `unsigned int reserved2`
- `unsigned int numberOfDirectorySectors`
- `unsigned int numberOfFATSectors`
- `unsigned int firstDirectorySectorLocation`
- `unsigned int transactionSignatureNumber`
- `unsigned int miniStreamCutoffSize`
- `unsigned int firstMiniFATSectorLocation`
- `unsigned int numberOfMiniFatSectors`
- `unsigned int firstDifatSectorLocation`
- `unsigned int numberOfDifatSectors`

### 18.6.1 Detailed Description

**Todo** CLSID should be a separate type.

### 18.6.2 Member Data Documentation

**18.6.2.1 `byteOrder`** `unsigned short byteOrder`

**18.6.2.2 `CLSID`** `unsigned char CLSID[16]`

**18.6.2.3 `firstDifatSectorLocation`** `unsigned int firstDifatSectorLocation`

**18.6.2.4 `firstDirectorySectorLocation`** `unsigned int firstDirectorySectorLocation`

**18.6.2.5 `firstMiniFATSectorLocation`** `unsigned int firstMiniFATSectorLocation`

**18.6.2.6 majorVersion** unsigned short majorVersion

**18.6.2.7 miniSectorShift** unsigned short miniSectorShift

**18.6.2.8 miniStreamCutoffSize** unsigned int miniStreamCutoffSize

**18.6.2.9 minorVersion** unsigned short minorVersion

**18.6.2.10 numberOfDifatSectors** unsigned int numberOfDifatSectors

**18.6.2.11 numberOfDirectorySectors** unsigned int numberOfDirectorySectors

**18.6.2.12 numberOfFATSectors** unsigned int numberOfFATSectors

**18.6.2.13 numberOfMiniFatSectors** unsigned int numberOfMiniFatSectors

**18.6.2.14 reserved1** unsigned short reserved1

**18.6.2.15 reserved2** unsigned int reserved2

**18.6.2.16 sectorShift** unsigned short sectorShift

**18.6.2.17 signature** unsigned char signature[8]

**18.6.2.18 transactionSignatureNumber** unsigned int transactionSignatureNumber

The documentation for this struct was generated from the following file:

- `extern/libembroidery/src/embroidery_internal.h`

## 18.7 \_vp3Hoop Struct Reference

```
#include <embroidery_internal.h>
```

### Public Attributes

- int `right`
- int `bottom`
- int `left`
- int `top`
- int `threadLength`
- char `unknown2`
- unsigned char `numberOfColors`
- unsigned short `unknown3`
- int `unknown4`
- int `numberOfBytesRemaining`
- int `xOffset`
- int `yOffset`
- unsigned char `byte1`
- unsigned char `byte2`
- unsigned char `byte3`
- int `right2`
- int `left2`
- int `bottom2`
- int `top2`
- int `width`
- int `height`

### 18.7.1 Member Data Documentation

**18.7.1.1 bottom** int `bottom`

**18.7.1.2 bottom2** int `bottom2`

**18.7.1.3 byte1** unsigned char byte1

**18.7.1.4 byte2** unsigned char byte2

**18.7.1.5 byte3** unsigned char byte3

**18.7.1.6 height** int height

**18.7.1.7 left** int left

**18.7.1.8 left2** int left2

**18.7.1.9 numberOfBytesRemaining** int numberOfBytesRemaining

**18.7.1.10 numberOfColors** unsigned char numberOfColors

**18.7.1.11 right** int right

**18.7.1.12 right2** int right2

**18.7.1.13 threadLength** int threadLength

**18.7.1.14 top** int top

**18.7.1.15 top2** int top2

**18.7.1.16 unknown2** char unknown2

**18.7.1.17 unknown3** unsigned short unknown3

**18.7.1.18 unknown4** int unknown4

**18.7.1.19 width** int width

**18.7.1.20 xOffset** int xOffset

**18.7.1.21 yOffset** int yOffset

The documentation for this struct was generated from the following file:

- [extern/libembroidery/src/embroidery\\_internal.h](#)

## 18.8 Application Class Reference

```
#include <application.h>
```

### Public Member Functions

- [Application \(int argc, char \\*\\*argv\)](#)
- [void setMainWin \(MainWindow \\*mainWin\)](#)

## Protected Member Functions

- virtual bool `event` (QEvent \*e)

## Private Attributes

- `MainWindow * _mainWin`

### 18.8.1 Constructor & Destructor Documentation

#### 18.8.1.1 `Application()` `Application (`

```
    int argc,  
    char ** argv )
```

### 18.8.2 Member Function Documentation

#### 18.8.2.1 `event()` `bool event (`

```
    QEvent * e ) [protected], [virtual]
```

#### 18.8.2.2 `setMainWin()` `void setMainWin (`

```
    MainWindow * mainWin ) [inline]
```

### 18.8.3 Member Data Documentation

#### 18.8.3.1 `_mainWin` `MainWindow* _mainWin [private]`

The documentation for this class was generated from the following files:

- `embroidermodder2/application.h`
- `embroidermodder2/application.cpp`

## 18.9 ArcObject Class Reference

```
#include <object-arc.h>
```

## Public Types

- enum { `Type` = `OBJ_TYPE_ARC` }

## Public Types inherited from `BaseObject`

- enum { `Type` = `OBJ_TYPE_BASE` }

## Public Member Functions

- `ArcObject` (qreal `startX`, qreal `startY`, qreal `midX`, qreal `midY`, qreal `endX`, qreal `endY`, QRgb `rgb`, QGraphicsItem \*`parent`=0)
- `ArcObject` (`ArcObject` \*`obj`, QGraphicsItem \*`parent`=0)
- `~ArcObject` ()
- virtual int `type` () const
- QPointF `objectCenter` () const
- qreal `objectCenterX` () const
- qreal `objectCenterY` () const
- qreal `objectRadius` () const
- qreal `objectStartAngle` () const
- qreal `objectEndAngle` () const
- QPointF `objectStartPoint` () const
- qreal `objectStartX` () const
- qreal `objectStartY` () const
- QPointF `objectMidPoint` () const
- qreal `objectMidX` () const
- qreal `objectMidY` () const
- QPointF `objectEndPoint` () const
- qreal `objectEndX` () const
- qreal `objectEndY` () const
- qreal `objectArea` () const
- qreal `objectArcLength` () const
- qreal `objectChord` () const
- qreal `objectIncludedAngle` () const
- bool `objectClockwise` () const
- void `setObjectCenter` (const QPointF &`point`)
- void `setObjectCenter` (qreal `pointX`, qreal `pointY`)
- void `setObjectCenterX` (qreal `pointX`)
- void `setObjectCenterY` (qreal `pointY`)
- void `setObjectRadius` (qreal `radius`)
- void `setObjectStartAngle` (qreal `angle`)
- void `setObjectEndAngle` (qreal `angle`)
- void `setObjectStartPoint` (const QPointF &`point`)
- void `setObjectStartPoint` (qreal `pointX`, qreal `pointY`)
- void `setObjectMidPoint` (const QPointF &`point`)
- void `setObjectMidPoint` (qreal `pointX`, qreal `pointY`)
- void `setObjectEndPoint` (const QPointF &`point`)
- void `setObjectEndPoint` (qreal `pointX`, qreal `pointY`)
- void `updateRubber` (QPainter \*`painter`=0)
- virtual void `vulcanize` ()
- virtual QPointF `mouseSnapPoint` (const QPointF &`mousePoint`)
- virtual QList< QPointF > `allGripPoints` ()
- virtual void `gripEdit` (const QPointF &`before`, const QPointF &`after`)

### Public Member Functions inherited from [BaseObject](#)

- [BaseObject](#) (QGraphicsItem \*parent=0)
- virtual [~BaseObject](#) ()
- virtual int [type](#) () const
- qint64 [objectID](#) () const
- QPen [objectPen](#) () const
- QColor [objectColor](#) () const
- QRgb [objectColorRGB](#) () const
- Qt::PenStyle [objectLineType](#) () const
- qreal [objectLineWidth](#) () const
- QPainterPath [objectPath](#) () const
- int [objectRubberMode](#) () const
- QPointF [objectRubberPoint](#) (const QString &key) const
- QString [objectRubberText](#) (const QString &key) const
- QRectF [rect](#) () const
- void [setRect](#) (const QRectF &r)
- void [setRect](#) (qreal x, qreal y, qreal w, qreal h)
- QLineF [line](#) () const
- void [setLine](#) (const QLineF &li)
- void [setLine](#) (qreal x1, qreal y1, qreal x2, qreal y2)
- void [setObjectColor](#) (const QColor &color)
- void [setObjectColorRGB](#) (QRgb rgb)
- void [setObjectLineType](#) (Qt::PenStyle lineType)
- void [setObjectLineWidth](#) (qreal lineWidth)
- void [setObjectPath](#) (const QPainterPath &p)
- void [setObjectRubberMode](#) (int mode)
- void [setObjectRubberPoint](#) (const QString &key, const QPointF &point)
- void [setObjectRubberText](#) (const QString &key, const QString &txt)
- virtual QRectF [boundingRect](#) () const
- virtual QPainterPath [shape](#) () const
- void [drawRubberLine](#) (const QLineF &rubLine, QPainter \*painter=0, const char \*colorFromScene=0)
- virtual void [vulcanize](#) ()=0
- virtual QPointF [mouseSnapPoint](#) (const QPointF &mousePoint)=0
- virtual QList< QPointF > [allGripPoints](#) ()=0
- virtual void [gripEdit](#) (const QPointF &before, const QPointF &after)=0

### Protected Member Functions

- void [paint](#) (QPainter \*, const QStyleOptionGraphicsItem \*, QWidget \*)

### Protected Member Functions inherited from [BaseObject](#)

- QPen [lineWeightPen](#) () const
- qreal [pi](#) () const
- qreal [radians](#) (qreal degree) const
- qreal [degrees](#) (qreal radian) const
- void [realRender](#) (QPainter \*painter, const QPainterPath &renderPath)

**Private Member Functions**

- void [init](#) (qreal startX, qreal startY, qreal midX, qreal midY, qreal endX, qreal endY, QRgb rgb, Qt::PenStyle lineType)
- void [updatePath](#) ()
- void [calculateArcData](#) (qreal startX, qreal startY, qreal midX, qreal midY, qreal endX, qreal endY)
- void [updateArcRect](#) (qreal radius)

**Private Attributes**

- QPointF [arcStartPoint](#)
- QPointF [arcMidPoint](#)
- QPointF [arcEndPoint](#)

**18.9.1 Member Enumeration Documentation****18.9.1.1 anonymous enum** anonymous enum

Enumerator

Type	<input type="button" value=""/>
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**18.9.2 Constructor & Destructor Documentation****18.9.2.1 ArcObject() [1/2]** [ArcObject](#) (  
    qreal startX,  
    qreal startY,  
    qreal midX,  
    qreal midY,  
    qreal endX,  
    qreal endY,  
    QRgb rgb,  
    QGraphicsItem \* parent = 0 )**18.9.2.2 ArcObject() [2/2]** [ArcObject](#) (  
    [ArcObject](#) \* obj,  
    QGraphicsItem \* parent = 0 )**18.9.2.3 ~ArcObject()** [~ArcObject](#) ( )

### 18.9.3 Member Function Documentation

**18.9.3.1 allGripPoints()** `QList< QPointF > allGripPoints () [virtual]`

Implements [BaseObject](#).

**18.9.3.2 calculateArcData()** `void calculateArcData (`  
    `qreal startX,`  
    `qreal startY,`  
    `qreal midX,`  
    `qreal midY,`  
    `qreal endX,`  
    `qreal endY ) [private]`

**18.9.3.3 gripEdit()** `void gripEdit (`  
    `const QPointF & before,`  
    `const QPointF & after ) [virtual]`

Implements [BaseObject](#).

**18.9.3.4 init()** `void init (`  
    `qreal startX,`  
    `qreal startY,`  
    `qreal midX,`  
    `qreal midY,`  
    `qreal endX,`  
    `qreal endY,`  
    `QRgb rgb,`  
    `Qt::PenStyle lineType ) [private]`

**18.9.3.5 mouseSnapPoint()** `QPointF mouseSnapPoint (`  
    `const QPointF & mousePoint ) [virtual]`

Implements [BaseObject](#).

**18.9.3.6 objectArcLength()** `qreal objectArcLength () const`

**18.9.3.7 `objectArea()`** qreal objectArea ( ) const

**18.9.3.8 `objectCenter()`** QPointF objectCenter ( ) const [inline]

**18.9.3.9 `objectCenterX()`** qreal objectCenterX ( ) const [inline]

**18.9.3.10 `objectCenterY()`** qreal objectCenterY ( ) const [inline]

**18.9.3.11 `objectChord()`** qreal objectChord ( ) const

**18.9.3.12 `objectClockwise()`** bool objectClockwise ( ) const

**18.9.3.13 `objectEndAngle()`** qreal objectEndAngle ( ) const

**18.9.3.14 `objectEndPoint()`** QPointF objectEndPoint ( ) const

**18.9.3.15 `objectEndX()`** qreal objectEndX ( ) const

**18.9.3.16 `objectEndY()`** qreal objectEndY ( ) const

**18.9.3.17 `objectIncludedAngle()`** qreal objectIncludedAngle ( ) const

**18.9.3.18 objectMidPoint()** QPointF objectMidPoint ( ) const

**18.9.3.19 objectMidX()** qreal objectMidX ( ) const

**18.9.3.20 objectMidY()** qreal objectMidY ( ) const

**18.9.3.21 objectRadius()** qreal objectRadius ( ) const [inline]

**18.9.3.22 objectStartAngle()** qreal objectStartAngle ( ) const

**18.9.3.23 objectStartPoint()** QPointF objectStartPoint ( ) const

**18.9.3.24 objectStartX()** qreal objectStartX ( ) const

**18.9.3.25 objectStartY()** qreal objectStartY ( ) const

**18.9.3.26 paint()** void paint (   
     QPainter \* painter,  
     const QStyleOptionGraphicsItem \* option,  
     QWidget \* ) [protected]

**18.9.3.27 setObjectCenter() [1/2]** void setObjectCenter (   
     const QPointF & point )

---

**18.9.3.28 setObjectCenter() [2/2]** void setObjectCenter (  
    qreal pointX,  
    qreal pointY )

**18.9.3.29 setObjectCenterX()** void setObjectCenterX (   
    qreal pointX )

**18.9.3.30 setObjectCenterY()** void setObjectCenterY (   
    qreal pointY )

**18.9.3.31 setObjectEndAngle()** void setObjectEndAngle (   
    qreal angle )

**18.9.3.32 setObjectEndPoint()** [1/2] void setObjectEndPoint (   
    const QPointF & point )

**18.9.3.33 setObjectEndPoint()** [2/2] void setObjectEndPoint (   
    qreal pointX,  
    qreal pointY )

**18.9.3.34 setObjectMidPoint()** [1/2] void setObjectMidPoint (   
    const QPointF & point )

**18.9.3.35 setObjectMidPoint()** [2/2] void setObjectMidPoint (   
    qreal pointX,  
    qreal pointY )

**18.9.3.36 setObjectRadius()** void setObjectRadius (   
    qreal radius )

**18.9.3.37 setObjectStartAngle()** void setObjectStartAngle ( qreal angle )

**18.9.3.38 setObjectStartPoint() [1/2]** void setObjectStartPoint ( const QPointF & point )

**18.9.3.39 setObjectStartPoint() [2/2]** void setObjectStartPoint ( qreal pointX, qreal pointY )

**18.9.3.40 type()** virtual int type ( ) const [inline], [virtual]

Reimplemented from [BaseObject](#).

**18.9.3.41 updateArcRect()** void updateArcRect ( qreal radius ) [private]

**18.9.3.42 updatePath()** void updatePath ( ) [private]

**18.9.3.43 updateRubber()** void updateRubber ( QPainter \* painter = 0 )

**18.9.3.44 vulcanize()** void vulcanize ( ) [virtual]

Implements [BaseObject](#).

## 18.9.4 Member Data Documentation

**18.9.4.1 arcEndPoint** QPointF arcEndPoint [private]

**18.9.4.2 arcMidPoint** QPointF arcMidPoint [private]**18.9.4.3 arcStartPoint** QPointF arcStartPoint [private]

The documentation for this class was generated from the following files:

- [embroidermodder2/object-arc.h](#)
- [embroidermodder2/object-arc.cpp](#)

## 18.10 BaseObject Class Reference

```
#include <object-base.h>
```

### Public Types

- enum { [Type](#) = OBJ\_TYPE\_BASE }

### Public Member Functions

- [BaseObject](#) (QGraphicsItem \*parent=0)
- virtual [~BaseObject](#) ()
- virtual int [type](#) () const
- qint64 [objectID](#) () const
- QPen [objectPen](#) () const
- QColor [objectColor](#) () const
- QRgb [objectColorRGB](#) () const
- Qt::PenStyle [objectLineType](#) () const
- qreal [objectLineWidth](#) () const
- QPainterPath [objectPath](#) () const
- int [objectRubberMode](#) () const
- QPointF [objectRubberPoint](#) (const QString &key) const
- QString [objectRubberText](#) (const QString &key) const
- QRectF [rect](#) () const
- void [setRect](#) (const QRectF &r)
- void [setRect](#) (qreal x, qreal y, qreal w, qreal h)
- QLineF [line](#) () const
- void [setLine](#) (const QLineF &li)
- void [setLine](#) (qreal x1, qreal y1, qreal x2, qreal y2)
- void [setObjectColor](#) (const QColor &color)
- void [setObjectColorRGB](#) (QRgb rgb)
- void [setObjectLineType](#) (Qt::PenStyle lineType)
- void [setObjectLineWidth](#) (qreal lineWidth)
- void [setObjectPath](#) (const QPainterPath &p)
- void [setObjectRubberMode](#) (int mode)
- void [setObjectRubberPoint](#) (const QString &key, const QPointF &point)
- void [setObjectRubberText](#) (const QString &key, const QString &txt)
- virtual QRectF [boundingRect](#) () const
- virtual QPainterPath [shape](#) () const
- void [drawRubberLine](#) (const QLineF &rubLine, QPainter \*painter=0, const char \*colorFromScene=0)
- virtual void [vulcanize](#) ()=0
- virtual QPointF [mouseSnapPoint](#) (const QPointF &mousePoint)=0
- virtual QList< QPointF > [allGripPoints](#) ()=0
- virtual void [gripEdit](#) (const QPointF &before, const QPointF &after)=0

## Protected Member Functions

- QPen `lineWeightPen () const`
- qreal `pi () const`
- qreal `radians (qreal degree) const`
- qreal `degrees (qreal radian) const`
- void `realRender (QPainter *painter, const QPainterPath &renderPath)`

## Private Attributes

- QPen `objPen`
- QPen `lwtPen`
- QLineF `objLine`
- int `objRubberMode`
- QHash<QString, QPointF> `objRubberPoints`
- QHash<QString, QString> `objRubberTexts`
- qint64 `objID`

### 18.10.1 Member Enumeration Documentation

#### 18.10.1.1 anonymous enum anonymous enum

##### Enumerator

Type	<input type="button" value=""/>
------	---------------------------------

### 18.10.2 Constructor & Destructor Documentation

#### 18.10.2.1 BaseObject() `BaseObject (` `QGraphicsItem * parent = 0 )`

#### 18.10.2.2 ~BaseObject() `~BaseObject ( ) [virtual]`

### 18.10.3 Member Function Documentation

**18.10.3.1 allGripPoints()** virtual QList< QPointF > allGripPoints () [pure virtual]

Implemented in [ArcObject](#), [CircleObject](#), [DimLeaderObject](#), [EllipseObject](#), [ImageObject](#), [LineObject](#), [PathObject](#), [PointObject](#), [PolygonObject](#), [PolylineObject](#), [RectObject](#), and [TextSingleObject](#).

**18.10.3.2 boundingRect()** QRectF boundingRect () const [virtual]

**18.10.3.3 degrees()** qreal degrees (  
                  qreal radian ) const [inline], [protected]

**18.10.3.4 drawRubberLine()** void drawRubberLine (  
                  const QLineF & rubLine,  
                  QPainter \* painter = 0,  
                  const char \* colorFromScene = 0 )

**18.10.3.5 gripEdit()** virtual void gripEdit (  
                  const QPointF & before,  
                  const QPointF & after ) [pure virtual]

Implemented in [ArcObject](#), [CircleObject](#), [DimLeaderObject](#), [EllipseObject](#), [ImageObject](#), [LineObject](#), [PathObject](#), [PointObject](#), [PolygonObject](#), [PolylineObject](#), [RectObject](#), and [TextSingleObject](#).

**18.10.3.6 line()** QLineF line () const [inline]

**18.10.3.7 lineWeightPen()** QPen lineWeightPen () const [inline], [protected]

**18.10.3.8 mouseSnapPoint()** virtual QPointF mouseSnapPoint (  
                  const QPointF & mousePoint ) [pure virtual]

Implemented in [ArcObject](#), [CircleObject](#), [DimLeaderObject](#), [EllipseObject](#), [ImageObject](#), [LineObject](#), [PathObject](#), [PointObject](#), [PolygonObject](#), [PolylineObject](#), [RectObject](#), and [TextSingleObject](#).

**18.10.3.9 objectColor()** QColor objectColor ( ) const [inline]

**18.10.3.10 objectColorRGB()** QRgb objectColorRGB ( ) const [inline]

**18.10.3.11 objectID()** qint64 objectID ( ) const [inline]

**18.10.3.12 objectLineType()** Qt::PenStyle objectLineType ( ) const [inline]

**18.10.3.13 objectLineWidth()** qreal objectLineWidth ( ) const [inline]

**18.10.3.14 objectPath()** QPainterPath objectPath ( ) const [inline]

**18.10.3.15 objectPen()** QPen objectPen ( ) const [inline]

**18.10.3.16 objectRubberMode()** int objectRubberMode ( ) const [inline]

**18.10.3.17 objectRubberPoint()** QPointF objectRubberPoint ( const QString & key ) const

**18.10.3.18 objectRubberText()** QString objectRubberText ( const QString & key ) const

**18.10.3.19 pi()** qreal pi ( ) const [inline], [protected]

```
18.10.3.20 radians() qreal radians (
    qreal degree ) const [inline], [protected]
```

```
18.10.3.21 realRender() void realRender (
    QPainter * painter,
    const QPainterPath & renderPath ) [protected]
```

```
18.10.3.22 rect() QRectF rect ( ) const [inline]
```

```
18.10.3.23 setLine() [1/2] void setLine (
    const QLineF & li ) [inline]
```

```
18.10.3.24 setLine() [2/2] void setLine (
    qreal x1,
    qreal y1,
    qreal x2,
    qreal y2 ) [inline]
```

```
18.10.3.25 setObjectColor() void setObjectColor (
    const QColor & color )
```

```
18.10.3.26 setObjectColorRGB() void setObjectColorRGB (
    QRgb rgb )
```

```
18.10.3.27 setObjectLineType() void setObjectLineType (
    Qt::PenStyle lineType )
```

```
18.10.3.28 setObjectLineWeight() void setObjectLineWeight (
    qreal lineWidth )
```

**18.10.3.29 `setObjectPath()`** void setObjectPath ( const QPainterPath & *p* ) [inline]

**18.10.3.30 `setObjectRubberMode()`** void setObjectRubberMode ( int *mode* ) [inline]

**18.10.3.31 `setObjectRubberPoint()`** void setObjectRubberPoint ( const QString & *key*, const QPointF & *point* ) [inline]

**18.10.3.32 `setObjectRubberText()`** void setObjectRubberText ( const QString & *key*, const QString & *txt* ) [inline]

**18.10.3.33 `setRect()` [1/2]** void setRect ( const QRectF & *r* ) [inline]

**18.10.3.34 `setRect()` [2/2]** void setRect ( qreal *x*, qreal *y*, qreal *w*, qreal *h* ) [inline]

**18.10.3.35 `shape()`** virtual QPainterPath shape ( ) const [inline], [virtual]

**18.10.3.36 `type()`** virtual int type ( ) const [inline], [virtual]

Reimplemented in [ArcObject](#), [CircleObject](#), [DimLeaderObject](#), [EllipseObject](#), [ImageObject](#), [LineObject](#), [PathObject](#), [PointObject](#), [PolygonObject](#), [PolylineObject](#), [RectObject](#), and [TextSingleObject](#).

**18.10.3.37 `vulcanize()`** virtual void vulcanize ( ) [pure virtual]

Implemented in [ArcObject](#), [CircleObject](#), [DimLeaderObject](#), [EllipseObject](#), [ImageObject](#), [LineObject](#), [PathObject](#), [PointObject](#), [PolygonObject](#), [PolylineObject](#), [RectObject](#), and [TextSingleObject](#).

**18.10.4 Member Data Documentation****18.10.4.1 lwtPen** QPen lwtPen [private]**18.10.4.2 objID** qint64 objID [private]**18.10.4.3 objLine** QLineF objLine [private]**18.10.4.4 objPen** QPen objPen [private]**18.10.4.5 objRubberMode** int objRubberMode [private]**18.10.4.6 objRubberPoints** QHash<QString, QPointF> objRubberPoints [private]**18.10.4.7 objRubberTexts** QHash<QString, QString> objRubberTexts [private]

The documentation for this class was generated from the following files:

- [embroidermodder2/object-base.h](#)
- [embroidermodder2/object-base.cpp](#)

**18.11 CircleObject Class Reference**

```
#include <object-circle.h>
```

**Public Types**

- enum { [Type](#) = OBJ\_TYPE\_CIRCLE }

## Public Types inherited from [BaseObject](#)

- enum { [Type](#) = OBJ\_TYPE\_BASE }

## Public Member Functions

- [CircleObject](#) (qreal centerX, qreal centerY, qreal radius, QRgb rgb, QGraphicsItem \*parent=0)
- [CircleObject](#) ([CircleObject](#) \*obj, QGraphicsItem \*parent=0)
- [~CircleObject](#) ()
- virtual int [type](#) () const
- QPainterPath [objectSavePath](#) () const
- QPointF [objectCenter](#) () const
- qreal [objectCenterX](#) () const
- qreal [objectCenterY](#) () const
- qreal [objectRadius](#) () const
- qreal [objectDiameter](#) () const
- qreal [objectArea](#) () const
- qreal [objectCircumference](#) () const
- QPointF [objectQuadrant0](#) () const
- QPointF [objectQuadrant90](#) () const
- QPointF [objectQuadrant180](#) () const
- QPointF [objectQuadrant270](#) () const
- void [setObjectCenter](#) (const QPointF &center)
- void [setObjectCenter](#) (qreal centerX, qreal centerY)
- void [setObjectCenterX](#) (qreal centerX)
- void [setObjectCenterY](#) (qreal centerY)
- void [setObjectRadius](#) (qreal radius)
- void [setObjectDiameter](#) (qreal diameter)
- void [setObjectArea](#) (qreal area)
- void [setObjectCircumference](#) (qreal circumference)
- void [updateRubber](#) (QPainter \*painter=0)
- virtual void [vulcanize](#) ()
- virtual QPointF [mouseSnapPoint](#) (const QPointF &mousePoint)
- virtual QList< QPointF > [allGripPoints](#) ()
- virtual void [gripEdit](#) (const QPointF &before, const QPointF &after)

## Public Member Functions inherited from [BaseObject](#)

- [BaseObject](#) (QGraphicsItem \*parent=0)
- virtual [~BaseObject](#) ()
- virtual int [type](#) () const
- qint64 [objectID](#) () const
- QPen [objectPen](#) () const
- QColor [objectColor](#) () const
- QRgb [objectColorRGB](#) () const
- Qt::PenStyle [objectLineType](#) () const
- qreal [objectLineWidth](#) () const
- QPainterPath [objectPath](#) () const
- int [objectRubberMode](#) () const
- QPointF [objectRubberPoint](#) (const QString &key) const
- QString [objectRubberText](#) (const QString &key) const
- QRectF [rect](#) () const

- void [setRect](#) (const QRectF &r)
- void [setRect](#) (qreal x, qreal y, qreal w, qreal h)
- QLineF [line](#) () const
- void [setLine](#) (const QLineF &li)
- void [setLine](#) (qreal x1, qreal y1, qreal x2, qreal y2)
- void [setObjectColor](#) (const QColor &color)
- void [setObjectColorRGB](#) (QRgb rgb)
- void [setObjectLineType](#) (Qt::PenStyle lineType)
- void [setObjectLineWidth](#) (qreal lineWidth)
- void [setObjectPath](#) (const QPainterPath &p)
- void [setObjectRubberMode](#) (int mode)
- void [setObjectRubberPoint](#) (const QString &key, const QPointF &point)
- void [setObjectRubberText](#) (const QString &key, const QString &txt)
- virtual QRectF [boundingRect](#) () const
- virtual QPainterPath [shape](#) () const
- void [drawRubberLine](#) (const QLineF &rubLine, QPainter \*painter=0, const char \*colorFromScene=0)
- virtual void [vulcanize](#) ()=0
- virtual QPointF [mouseSnapPoint](#) (const QPointF &mousePoint)=0
- virtual QList<QPointF> [allGripPoints](#) ()=0
- virtual void [gripEdit](#) (const QPointF &before, const QPointF &after)=0

### Protected Member Functions

- void [paint](#) (QPainter \*, const QStyleOptionGraphicsItem \*, QWidget \*)

### Protected Member Functions inherited from [BaseObject](#)

- QPen [lineWeightPen](#) () const
- qreal [pi](#) () const
- qreal [radians](#) (qreal degree) const
- qreal [degrees](#) (qreal radian) const
- void [realRender](#) (QPainter \*painter, const QPainterPath &renderPath)

### Private Member Functions

- void [init](#) (qreal centerX, qreal centerY, qreal radius, QRgb rgb, Qt::PenStyle lineType)
- void [updatePath](#) ()

### 18.11.1 Member Enumeration Documentation

#### 18.11.1.1 anonymous enum anonymous enum

##### Enumerator

Type	<input type="button" value=""/>
------	---------------------------------

### 18.11.2 Constructor & Destructor Documentation

#### 18.11.2.1 **CircleObject()** [1/2] [CircleObject](#) (

```
    qreal centerX,  
    qreal centerY,  
    qreal radius,  
    QRgb rgb,  
    QGraphicsItem * parent = 0 )
```

#### 18.11.2.2 **CircleObject()** [2/2] [CircleObject](#) (

```
    CircleObject * obj,  
    QGraphicsItem * parent = 0 )
```

#### 18.11.2.3 **~CircleObject()** [~CircleObject](#) ( )

### 18.11.3 Member Function Documentation

#### 18.11.3.1 **allGripPoints()** [QList< QPointF > allGripPoints \( \)](#) [virtual]

Implements [BaseObject](#).

#### 18.11.3.2 **gripEdit()** [void gripEdit \(](#) const [QPointF & before,](#) const [QPointF & after \)](#) [virtual]

Implements [BaseObject](#).

#### 18.11.3.3 **init()** [void init \(](#) qreal [centerX,](#) qreal [centerY,](#) qreal [radius,](#) QRgb [rgb,](#) Qt::PenStyle [lineType \)](#) [private]

**18.11.3.4 mouseSnapPoint()** QPointF mouseSnapPoint ( const QPointF & *mousePoint* ) [virtual]

Implements [BaseObject](#).

**18.11.3.5 objectArea()** qreal objectArea ( ) const [inline]

**18.11.3.6 objectCenter()** QPointF objectCenter ( ) const [inline]

**18.11.3.7 objectCenterX()** qreal objectCenterX ( ) const [inline]

**18.11.3.8 objectCenterY()** qreal objectCenterY ( ) const [inline]

**18.11.3.9 objectCircumference()** qreal objectCircumference ( ) const [inline]

**18.11.3.10 objectDiameter()** qreal objectDiameter ( ) const [inline]

**18.11.3.11 objectQuadrant0()** QPointF objectQuadrant0 ( ) const [inline]

**18.11.3.12 objectQuadrant180()** QPointF objectQuadrant180 ( ) const [inline]

**18.11.3.13 objectQuadrant270()** QPointF objectQuadrant270 ( ) const [inline]

**18.11.3.14 objectQuadrant90()** QPointF objectQuadrant90 ( ) const [inline]

**18.11.3.15 `objectRadius()`** `qreal objectRadius ( ) const [inline]`

**18.11.3.16 `objectSavePath()`** `QPainterPath objectSavePath ( ) const`

**18.11.3.17 `paint()`** `void paint (`  
    `QPainter * painter,`  
    `const QStyleOptionGraphicsItem * option,`  
    `QWidget * ) [protected]`

**18.11.3.18 `setObjectArea()`** `void setObjectArea (`  
    `qreal area )`

**18.11.3.19 `setObjectCenter()` [1/2]** `void setObjectCenter (`  
    `const QPointF & center )`

**18.11.3.20 `setObjectCenter()` [2/2]** `void setObjectCenter (`  
    `qreal centerX,`  
    `qreal centerY )`

**18.11.3.21 `setObjectCenterX()`** `void setObjectCenterX (`  
    `qreal centerX )`

**18.11.3.22 `setObjectCenterY()`** `void setObjectCenterY (`  
    `qreal centerY )`

**18.11.3.23 `setObjectCircumference()`** `void setObjectCircumference (`  
    `qreal circumference )`

**18.11.3.24 setObjectDiameter()** void setObjectDiameter ( qreal diameter )

**18.11.3.25 setObjectRadius()** void setObjectRadius ( qreal radius )

**18.11.3.26 type()** virtual int type ( ) const [inline], [virtual]

Reimplemented from [BaseObject](#).

**18.11.3.27 updatePath()** void updatePath ( ) [private]

**18.11.3.28 updateRubber()** void updateRubber ( QPainter \* painter = 0 )

**18.11.3.29 vulcanize()** void vulcanize ( ) [virtual]

Implements [BaseObject](#).

The documentation for this class was generated from the following files:

- [embroidermodder2/object-circle.h](#)
- [embroidermodder2/object-circle.cpp](#)

## 18.12 CmdPrompt Class Reference

```
#include <cmdprompt.h>
```

## Public Slots

- `QString getHistory ()`
- `QString getPrefix ()`
- `QString getCurrentText ()`
- `void setCurrentText (const QString &txt)`
- `void setHistory (const QString &txt)`
- `void setPrefix (const QString &txt)`
- `void appendHistory (const QString &txt)`
- `void startResizingTheHistory (int y)`
- `void stopResizingTheHistory (int y)`
- `void resizeTheHistory (int y)`
- `void addCommand (const QString &alias, const QString &cmd)`
- `void endCommand ()`
- `bool isCommandActive ()`
- `QString activeCommand ()`
- `QString lastCommand ()`
- `void processInput ()`
- `void enableRapidFire ()`
- `void disableRapidFire ()`
- `bool isRapidFireEnabled ()`
- `void alert (const QString &txt)`
- `void startBlinking ()`
- `void stopBlinking ()`
- `void blink ()`
- `void setPromptTextColor (const QColor &)`
- `void setPromptBackgroundColor (const QColor &)`
- `void setPromptFontFamily (const QString &)`
- `void setPromptFontStyle (const QString &)`
- `void setPromptFontSize (int)`
- `void floatingChanged (bool)`
- `void saveHistory (const QString &fileName, bool html)`

## Signals

- `void appendTheHistory (const QString &txt, int prefixLength)`
- `void startCommand (const QString &cmd)`
- `void runCommand (const QString &cmd, const QString &cmdtxt)`
- `void deletePressed ()`
- `void tabPressed ()`
- `void escapePressed ()`
- `void upPressed ()`
- `void downPressed ()`
- `void F1Pressed ()`
- `void F2Pressed ()`
- `void F3Pressed ()`
- `void F4Pressed ()`
- `void F5Pressed ()`
- `void F6Pressed ()`
- `void F7Pressed ()`
- `void F8Pressed ()`
- `void F9Pressed ()`
- `void F10Pressed ()`
- `void F11Pressed ()`

- void `F12Pressed ()`
- void `cutPressed ()`
- void `copyPressed ()`
- void `pastePressed ()`
- void `selectAllPressed ()`
- void `undoPressed ()`
- void `redoPressed ()`
- void `shiftPressed ()`
- void `shiftReleased ()`
- void `showSettings ()`
- void `historyAppended (const QString &txt)`

### Public Member Functions

- `CmdPrompt (QWidget *parent=0)`
- `~CmdPrompt ()`

### Private Member Functions

- void `updateStyle ()`

### Private Attributes

- `CmdPromptInput * promptInput`
- `CmdPromptHistory * promptHistory`
- `QVBoxLayout * promptVBoxLayout`
- `QFrame * promptDivider`
- `CmdPromptSplitter * promptSplitter`
- `QHash<QString, QString > * styleHash`
- `QTimer * blinkTimer`
- `bool blinkState`

#### 18.12.1 Constructor & Destructor Documentation

**18.12.1.1 `CmdPrompt()`** `CmdPrompt (`  
`QWidget * parent = 0 )`

**18.12.1.2 `~CmdPrompt()`** `~CmdPrompt ( )`

#### 18.12.2 Member Function Documentation

**18.12.2.1 activeCommand** `QString activeCommand ( ) [inline], [slot]`

**18.12.2.2 addCommand** `void addCommand (`  
    `const QString & alias,`  
    `const QString & cmd ) [inline], [slot]`

**18.12.2.3 alert** `void alert (`  
    `const QString & txt ) [slot]`

**18.12.2.4 appendHistory** `void appendHistory (`  
    `const QString & txt ) [slot]`

**18.12.2.5 appendTheHistory** `void appendTheHistory (`  
    `const QString & txt,`  
    `int prefixLength ) [signal]`

**18.12.2.6 blink** `void blink ( ) [slot]`

**18.12.2.7 copyPressed** `void copyPressed ( ) [signal]`

**18.12.2.8 cutPressed** `void cutPressed ( ) [signal]`

**18.12.2.9 deletePressed** `void deletePressed ( ) [signal]`

**18.12.2.10 disableRapidFire** `void disableRapidFire ( ) [inline], [slot]`

**18.12.2.11 downPressed** void downPressed ( ) [signal]

**18.12.2.12 enableRapidFire** void enableRapidFire ( ) [inline], [slot]

**18.12.2.13 endCommand** void endCommand ( ) [inline], [slot]

**18.12.2.14 escapePressed** void escapePressed ( ) [signal]

**18.12.2.15 F10Pressed** void F10Pressed ( ) [signal]

**18.12.2.16 F11Pressed** void F11Pressed ( ) [signal]

**18.12.2.17 F12Pressed** void F12Pressed ( ) [signal]

**18.12.2.18 F1Pressed** void F1Pressed ( ) [signal]

**18.12.2.19 F2Pressed** void F2Pressed ( ) [signal]

**18.12.2.20 F3Pressed** void F3Pressed ( ) [signal]

**18.12.2.21 F4Pressed** void F4Pressed ( ) [signal]

**18.12.2.22 F5Pressed** void F5Pressed ( ) [signal]

**18.12.2.23 F6Pressed** void F6Pressed ( ) [signal]

**18.12.2.24 F7Pressed** void F7Pressed ( ) [signal]

**18.12.2.25 F8Pressed** void F8Pressed ( ) [signal]

**18.12.2.26 F9Pressed** void F9Pressed ( ) [signal]

**18.12.2.27 floatingChanged** void floatingChanged ( bool *isFloating* ) [slot]

**18.12.2.28 getCurrentText** QString getCurrentText ( ) [inline], [slot]

**18.12.2.29 getHistory** QString getHistory ( ) [inline], [slot]

**18.12.2.30 getPrefix** QString getPrefix ( ) [inline], [slot]

**18.12.2.31 historyAppended** void historyAppended ( const QString & *txt* ) [signal]

**18.12.2.32 isCommandActive** bool isCommandActive ( ) [inline], [slot]

**18.12.2.33 isRapidFireEnabled** bool isRapidFireEnabled () [inline], [slot]

**18.12.2.34 lastCommand** QString lastCommand () [inline], [slot]

**18.12.2.35 pastePressed** void pastePressed () [signal]

**18.12.2.36 processInput** void processInput () [inline], [slot]

**18.12.2.37 redoPressed** void redoPressed () [signal]

**18.12.2.38 resizeTheHistory** void resizeTheHistory (  
int y) [inline], [slot]

**18.12.2.39 runCommand** void runCommand (  
const QString & cmd,  
const QString & cmdtxt) [signal]

**18.12.2.40 saveHistory** void saveHistory (  
const QString & fileName,  
bool html) [slot]

**18.12.2.41 selectAllPressed** void selectAllPressed () [signal]

**18.12.2.42 setCurrentText** void setCurrentText (  
const QString & txt) [inline], [slot]

**18.12.2.43 `setHistory`** void setHistory ( const QString & *txt* ) [inline], [slot]

**18.12.2.44 `setPrefix`** void setPrefix ( const QString & *txt* ) [slot]

**18.12.2.45 `setPromptBackgroundColor`** void setPromptBackgroundColor ( const QColor & *color* ) [slot]

**18.12.2.46 `setPromptFontFamily`** void setPromptFontFamily ( const QString & *family* ) [slot]

**18.12.2.47 `setPromptFontSize`** void setPromptFontSize ( int *size* ) [slot]

**18.12.2.48 `setPromptFontStyle`** void setPromptFontStyle ( const QString & *style* ) [slot]

**18.12.2.49 `setPromptTextColor`** void setPromptTextColor ( const QColor & *color* ) [slot]

**18.12.2.50 `shiftPressed`** void shiftPressed ( ) [signal]

**18.12.2.51 `shiftReleased`** void shiftReleased ( ) [signal]

**18.12.2.52 `showSettings`** void showSettings ( ) [signal]

**18.12.2.53 startBlinking** void startBlinking ( ) [slot]

**18.12.2.54 startCommand** void startCommand ( const QString & cmd ) [signal]

**18.12.2.55 startResizingTheHistory** void startResizingTheHistory ( int y ) [inline], [slot]

**18.12.2.56 stopBlinking** void stopBlinking ( ) [slot]

**18.12.2.57 stopResizingTheHistory** void stopResizingTheHistory ( int y ) [inline], [slot]

**18.12.2.58 tabPressed** void tabPressed ( ) [signal]

**18.12.2.59 undoPressed** void undoPressed ( ) [signal]

**18.12.2.60 updateStyle()** void updateStyle ( ) [private]

**18.12.2.61 upPressed** void upPressed ( ) [signal]

### 18.12.3 Member Data Documentation

**18.12.3.1 blinkState** bool blinkState [private]

**18.12.3.2 blinkTimer** QTimer\* blinkTimer [private]

**18.12.3.3 promptDivider** QFrame\* promptDivider [private]

**18.12.3.4 promptHistory** CmdPromptHistory\* promptHistory [private]

**18.12.3.5 promptInput** CmdPromptInput\* promptInput [private]

**18.12.3.6 promptSplitter** CmdPromptSplitter\* promptSplitter [private]

**18.12.3.7 promptVBoxLayout** QVBoxLayout\* promptVBoxLayout [private]

**18.12.3.8 styleHash** QHash<QString, QString>\* styleHash [private]

The documentation for this class was generated from the following files:

- embroidermodder2/cmprompt.h
- embroidermodder2/cmprompt.cpp

## 18.13 CmdPromptHandle Class Reference

```
#include <cmprompt.h>
```

### Signals

- void handlePressed (int y)
- void handleReleased (int y)
- void handleMoved (int y)

### Public Member Functions

- CmdPromptHandle (Qt::Orientation orientation, QSplitter \*parent)
- ~CmdPromptHandle ()

**Protected Member Functions**

- void `mousePressEvent` (QMouseEvent \*e)
- void `mouseReleaseEvent` (QMouseEvent \*e)
- void `mouseMoveEvent` (QMouseEvent \*e)

**Private Attributes**

- int `pressY`
- int `releaseY`
- int `moveY`

**18.13.1 Constructor & Destructor Documentation**

**18.13.1.1 `CmdPromptHandle()`** `CmdPromptHandle (`  
    `Qt::Orientation orientation,`  
    `QSplitter * parent )`

**18.13.1.2 `~CmdPromptHandle()`** `~CmdPromptHandle ( )`

**18.13.2 Member Function Documentation**

**18.13.2.1 `handleMoved`** `void handleMoved (`  
    `int y ) [signal]`

**18.13.2.2 `handlePressed`** `void handlePressed (`  
    `int y ) [signal]`

**18.13.2.3 `handleReleased`** `void handleReleased (`  
    `int y ) [signal]`

**18.13.2.4 `mouseMoveEvent()`** `void mouseMoveEvent (`  
    `QMouseEvent * e ) [protected]`

**18.13.2.5 mousePressEvent()** void mousePressEvent ( QMouseEvent \* e ) [protected]

**18.13.2.6 mouseReleaseEvent()** void mouseReleaseEvent ( QMouseEvent \* e ) [protected]

### 18.13.3 Member Data Documentation

**18.13.3.1 moveY** int moveY [private]

**18.13.3.2 pressY** int pressY [private]

**18.13.3.3 releaseY** int releaseY [private]

The documentation for this class was generated from the following files:

- [embroidermodder2/cmdprompt.h](#)
- [embroidermodder2/cmdprompt.cpp](#)

## 18.14 CmdPromptHistory Class Reference

#include <cmdprompt.h>

### Public Slots

- void [appendHistory](#) (const QString &txt, int prefixLength)
- void [startResizeHistory](#) (int y)
- void [stopResizeHistory](#) (int y)
- void [resizeHistory](#) (int y)

### Signals

- void [historyAppended](#) (const QString &txt)

### Public Member Functions

- [CmdPromptHistory](#) (QWidget \*parent=0)
- [~CmdPromptHistory](#) ()

**Protected Member Functions**

- void [contextMenuEvent](#) (QContextMenuEvent \*event)

**Private Member Functions**

- QString [applyFormatting](#) (const QString &txt, int prefixLength)

**Private Attributes**

- int [tmpHeight](#)

**18.14.1 Constructor & Destructor Documentation**

**18.14.1.1 CmdPromptHistory()** CmdPromptHistory ( QWidget \* parent = 0 )

**18.14.1.2 ~CmdPromptHistory()** ~CmdPromptHistory ( )

**18.14.2 Member Function Documentation**

**18.14.2.1 appendHistory** void appendHistory ( const QString & txt, int prefixLength ) [slot]

**18.14.2.2 applyFormatting()** QString applyFormatting ( const QString & txt, int prefixLength ) [private]

**18.14.2.3 contextMenuEvent()** void contextMenuEvent ( QContextMenuEvent \* event ) [protected]

**18.14.2.4 historyAppended** void historyAppended ( const QString & txt ) [signal]

**18.14.2.5 resizeHistory** void resizeHistory ( int y ) [slot]

**18.14.2.6 startResizeHistory** void startResizeHistory ( int y ) [slot]

**18.14.2.7 stopResizeHistory** void stopResizeHistory ( int y ) [slot]

### 18.14.3 Member Data Documentation

**18.14.3.1 tmpHeight** int tmpHeight [private]

The documentation for this class was generated from the following files:

- embroidermodder2/cmdprompt.h
- embroidermodder2/cmdprompt.cpp

## 18.15 CmdPromptInput Class Reference

```
#include <cmdprompt.h>
```

### Public Slots

- void [addCommand](#) (const QString &alias, const QString &cmd)
- void [endCommand](#) ()
- void [processInput](#) (const QChar &rapidChar=QChar())
- void [checkSelection](#) ()
- void [updateCurrentText](#) (const QString &txt)
- void [checkEditedText](#) (const QString &txt)
- void [checkChangedText](#) (const QString &txt)
- void [checkCursorPosition](#) (int oldpos, int newpos)

## Signals

- void `appendHistory` (const QString &txt, int prefixLength)
- void `startCommand` (const QString &cmd)
- void `runCommand` (const QString &cmd, const QString &cmdtxt)
- void `deletePressed` ()
- void `tabPressed` ()
- void `escapePressed` ()
- void `upPressed` ()
- void `downPressed` ()
- void `F1Pressed` ()
- void `F2Pressed` ()
- void `F3Pressed` ()
- void `F4Pressed` ()
- void `F5Pressed` ()
- void `F6Pressed` ()
- void `F7Pressed` ()
- void `F8Pressed` ()
- void `F9Pressed` ()
- void `F10Pressed` ()
- void `F11Pressed` ()
- void `F12Pressed` ()
- void `cutPressed` ()
- void `copyPressed` ()
- void `pastePressed` ()
- void `selectAllPressed` ()
- void `undoPressed` ()
- void `redoPressed` ()
- void `shiftPressed` ()
- void `shiftReleased` ()
- void `showSettings` ()
- void `stopBlinking` ()

## Public Member Functions

- `CmdPromptInput` (QWidget \*parent=0)
- `~CmdPromptInput` ()

## Public Attributes

- QString `curText`
- QString `defaultPrefix`
- QString `prefix`
- QString `lastCmd`
- QString `curCmd`
- bool `cmdActive`
- bool `rapidFireEnabled`
- bool `isBlinking`

## Protected Member Functions

- void `contextMenuEvent` (QContextMenuEvent \*event)
- bool `eventFilter` (QObject \*obj, QEvent \*event)

**Private Slots**

- void `copyClip ()`
- void `pasteClip ()`

**Private Member Functions**

- void `changeFormatting (const QList< QTextLayout::FormatRange > &formats)`
- void `clearFormatting ()`
- void `applyFormatting ()`

**Private Attributes**

- QHash< QString, QString > \* `aliasHash`

**18.15.1 Constructor & Destructor Documentation**

**18.15.1.1 `CmdPromptInput()`** `CmdPromptInput (`  
    `QWidget * parent = 0 )`

**18.15.1.2 `~CmdPromptInput()`** `~CmdPromptInput ( )`

**18.15.2 Member Function Documentation**

**18.15.2.1 `addCommand`** `void addCommand (`  
    `const QString & alias,`  
    `const QString & cmd ) [slot]`

**18.15.2.2 `appendHistory`** `void appendHistory (`  
    `const QString & txt,`  
    `int prefixLength ) [signal]`

**18.15.2.3 `applyFormatting()`** `void applyFormatting ( ) [private]`

**18.15.2.4 changeFormatting()** void changeFormatting ( const QList< QTextLayout::FormatRange > & formats ) [private]

**18.15.2.5 checkChangedText** void checkChangedText ( const QString & txt ) [slot]

**18.15.2.6 checkCursorPosition** void checkCursorPosition ( int oldpos, int newpos ) [slot]

**18.15.2.7 checkEditedText** void checkEditedText ( const QString & txt ) [slot]

**18.15.2.8 checkSelection** void checkSelection ( ) [slot]

**18.15.2.9 clearFormatting()** void clearFormatting ( ) [private]

**18.15.2.10 contextMenuEvent()** void contextMenuEvent ( QContextMenuEvent \* event ) [protected]

**18.15.2.11 copyClip** void copyClip ( ) [private], [slot]

**18.15.2.12 copyPressed** void copyPressed ( ) [signal]

**18.15.2.13 cutPressed** void cutPressed ( ) [signal]

**18.15.2.14 deletePressed** void deletePressed ( ) [signal]

**18.15.2.15 downPressed** void downPressed ( ) [signal]

**18.15.2.16 endCommand** void endCommand ( ) [slot]

**18.15.2.17 escapePressed** void escapePressed ( ) [signal]

**18.15.2.18 eventFilter()** bool eventFilter (   
     QObject \* obj,   
     QEvent \* event ) [protected]

**18.15.2.19 F10Pressed** void F10Pressed ( ) [signal]

**18.15.2.20 F11Pressed** void F11Pressed ( ) [signal]

**18.15.2.21 F12Pressed** void F12Pressed ( ) [signal]

**18.15.2.22 F1Pressed** void F1Pressed ( ) [signal]

**18.15.2.23 F2Pressed** void F2Pressed ( ) [signal]

**18.15.2.24 F3Pressed** void F3Pressed ( ) [signal]

**18.15.2.25 F4Pressed** void F4Pressed ( ) [signal]

**18.15.2.26 F5Pressed** void F5Pressed ( ) [signal]

**18.15.2.27 F6Pressed** void F6Pressed ( ) [signal]

**18.15.2.28 F7Pressed** void F7Pressed ( ) [signal]

**18.15.2.29 F8Pressed** void F8Pressed ( ) [signal]

**18.15.2.30 F9Pressed** void F9Pressed ( ) [signal]

**18.15.2.31 pasteClip** void pasteClip ( ) [private], [slot]

**18.15.2.32 pastePressed** void pastePressed ( ) [signal]

**18.15.2.33 processInput** void processInput (const QChar & rapidChar = QChar() ) [slot]

**Todo** sort Qt::Return if(rapidChar == Qt::Key\_Enter || rapidChar == Qt::Key\_Return) { emit appendHistory(curText, prefix.length()); emit runCommand(curCmd, "RAPID\_ENTER"); curText.clear(); clear(); return; } else if(rapidChar == Qt::Key\_Space) { updateCurrentText(curText + " "); emit runCommand(curCmd, cmdtxt + " "); return; } else { emit runCommand(curCmd, cmdtxt); return; }

**18.15.2.34 redoPressed** void redoPressed ( ) [signal]

**18.15.2.35 runCommand** void runCommand ( const QString & cmd, const QString & cmdtxt ) [signal]

**18.15.2.36 selectAllPressed** void selectAllPressed ( ) [signal]

**18.15.2.37 shiftPressed** void shiftPressed ( ) [signal]

**18.15.2.38 shiftReleased** void shiftReleased ( ) [signal]

**18.15.2.39 showSettings** void showSettings ( ) [signal]

**18.15.2.40 startCommand** void startCommand ( const QString & cmd ) [signal]

**18.15.2.41 stopBlinking** void stopBlinking ( ) [signal]

**18.15.2.42 tabPressed** void tabPressed ( ) [signal]

**18.15.2.43 undoPressed** void undoPressed ( ) [signal]

**18.15.2.44 updateCurrentText** void updateCurrentText ( const QString & txt ) [slot]

**18.15.2.45 upPressed** void upPressed ( ) [signal]

### 18.15.3 Member Data Documentation

**18.15.3.1 aliasHash** `QHash<QString, QString>* aliasHash [private]`

**18.15.3.2 cmdActive** `bool cmdActive`

**18.15.3.3 curCmd** `QString curCmd`

**18.15.3.4 curText** `QString curText`

**18.15.3.5 defaultPrefix** `QString defaultPrefix`

**18.15.3.6 isBlinking** `bool isBlinking`

**18.15.3.7 lastCmd** `QString lastCmd`

**18.15.3.8 prefix** `QString prefix`

**18.15.3.9 rapidFireEnabled** `bool rapidFireEnabled`

The documentation for this class was generated from the following files:

- [embroidermodder2/cmdprompt.h](#)
- [embroidermodder2/cmdprompt.cpp](#)

## 18.16 CmdPromptSplitter Class Reference

```
#include <cmdprompt.h>
```

### Signals

- void `pressResizeHistory` (int y)
- void `releaseResizeHistory` (int y)
- void `moveResizeHistory` (int y)

### Public Member Functions

- `CmdPromptSplitter` (QWidget \*parent=0)
- `~CmdPromptSplitter` ()

### Protected Member Functions

- `QSplitterHandle * createHandle` ()

#### 18.16.1 Constructor & Destructor Documentation

**18.16.1.1 `CmdPromptSplitter()`** `CmdPromptSplitter` (  
    QWidget \* *parent* = 0 )

**18.16.1.2 `~CmdPromptSplitter()`** `~CmdPromptSplitter` ()

#### 18.16.2 Member Function Documentation

**18.16.2.1 `createHandle()`** `QSplitterHandle * createHandle` () [protected]

**18.16.2.2 `moveResizeHistory`** `void moveResizeHistory` (  
    int *y* ) [signal]

```
18.16.2.3 pressResizeHistory void pressResizeHistory (
    int y ) [signal]
```

```
18.16.2.4 releaseResizeHistory void releaseResizeHistory (
    int y ) [signal]
```

The documentation for this class was generated from the following files:

- embroiderymodder2/cmdprompt.h
- embroiderymodder2/cmdprompt.cpp

## 18.17 Compress Struct Reference

```
#include <embroidery_internal.h>
```

### Public Attributes

- int **bit\_position**
- char \* **input\_data**
- int **input\_length**
- int **bits\_total**
- int **block\_elements**
- huffman **character\_length\_huffman**
- huffman **character\_huffman**
- huffman **distance\_huffman**

### 18.17.1 Member Data Documentation

**18.17.1.1 bit\_position** int bit\_position

**18.17.1.2 bits\_total** int bits\_total

**18.17.1.3 block\_elements** int block\_elements

**18.17.1.4 character\_huffman** huffman character\_huffman

**18.17.1.5 character\_length\_huffman** [huffman](#) character\_length\_huffman

**18.17.1.6 distance\_huffman** [huffman](#) distance\_huffman

**18.17.1.7 input\_data** char\* input\_data

**18.17.1.8 input\_length** int input\_length

The documentation for this struct was generated from the following file:

- [extern/libembroidery/src/embroidery\\_internal.h](#)

## 18.18 Dictionary\_ Struct Reference

```
#include <gui_backend.h>
```

### Public Attributes

- [DictionaryEntry \\* data](#)
- int [length](#)
- int [max\\_length](#)

#### 18.18.1 Member Data Documentation

**18.18.1.1 data** [DictionaryEntry\\*](#) data

**18.18.1.2 length** int length

**18.18.1.3 max\_length** int max\_length

The documentation for this struct was generated from the following file:

- [embroidermodder2/gui\\_backend.h](#)

## 18.19 DictionaryEntry\_ Struct Reference

```
#include <gui_backend.h>
```

### Public Attributes

- char [key](#) [200]
- char [value](#) [200]

#### 18.19.1 Member Data Documentation

##### 18.19.1.1 **key** char key[200]

##### 18.19.1.2 **value** char value[200]

The documentation for this struct was generated from the following file:

- [embroidermodder2/gui\\_backend.h](#)

## 18.20 DimLeaderObject Class Reference

```
#include <object-dimleader.h>
```

### Public Types

- enum [ArrowStyle](#) {  
    [NoArrow](#) , [Open](#) , [Closed](#) , [Dot](#) ,  
    [Box](#) , [Tick](#) }
- enum [lineStyle](#) { [NoLine](#) , [Flared](#) , [Fletching](#) }
- enum { [Type](#) = [OBJ\\_TYPE\\_DIMLEADER](#) }

### Public Types inherited from [BaseObject](#)

- enum { [Type](#) = [OBJ\\_TYPE\\_BASE](#) }

## Public Member Functions

- `DimLeaderObject` (qreal x1, qreal y1, qreal x2, qreal y2, QRgb rgb, QGraphicsItem \*parent=0)
- `DimLeaderObject` (`DimLeaderObject` \*obj, QGraphicsItem \*parent=0)
- `~DimLeaderObject` ()
- virtual int `type` () const
- QPointF `objectEndPoint1` () const
- QPointF `objectEndPoint2` () const
- QPointF `objectMidPoint` () const
- qreal `objectX1` () const
- qreal `objectY1` () const
- qreal `objectX2` () const
- qreal `objectY2` () const
- qreal `objectDeltaX` () const
- qreal `objectDeltaY` () const
- qreal `objectAngle` () const
- qreal `objectLength` () const
- void `setObjectEndPoint1` (const QPointF &endPt1)
- void `setObjectEndPoint1` (qreal x1, qreal y1)
- void `setObjectEndPoint2` (const QPointF &endPt2)
- void `setObjectEndPoint2` (qreal x2, qreal y2)
- void `setObjectX1` (qreal x)
- void `setObjectY1` (qreal y)
- void `setObjectX2` (qreal x)
- void `setObjectY2` (qreal y)
- void `updateRubber` (QPainter \*painter=0)
- virtual void `vulcanize` ()
- virtual QPointF `mouseSnapPoint` (const QPointF &mousePoint)
- virtual QList< QPointF > `allGripPoints` ()
- virtual void `gripEdit` (const QPointF &before, const QPointF &after)

## Public Member Functions inherited from `BaseObject`

- `BaseObject` (QGraphicsItem \*parent=0)
- virtual `~BaseObject` ()
- virtual int `type` () const
- qint64 `objectID` () const
- QPen `objectPen` () const
- QColor `objectColor` () const
- QRgb `objectColorRGB` () const
- Qt::PenStyle `objectLineType` () const
- qreal `objectLineWidth` () const
- QPainterPath `objectPath` () const
- int `objectRubberMode` () const
- QPointF `objectRubberPoint` (const QString &key) const
- QString `objectRubberText` (const QString &key) const
- QRectF `rect` () const
- void `setRect` (const QRectF &r)
- void `setRect` (qreal x, qreal y, qreal w, qreal h)
- QLineF `line` () const
- void `setLine` (const QLineF &li)
- void `setLine` (qreal x1, qreal y1, qreal x2, qreal y2)
- void `setObjectColor` (const QColor &color)

- void `setObjectColorRGB` (QRgb rgb)
- void `setObjectLineType` (Qt::PenStyle lineType)
- void `setObjectLineWeight` (qreal lineWeight)
- void `setObjectPath` (const QPainterPath &p)
- void `setObjectRubberMode` (int mode)
- void `setObjectRubberPoint` (const QString &key, const QPointF &point)
- void `setObjectRubberText` (const QString &key, const QString &txt)
- virtual QRectF `boundingRect` () const
- virtual QPainterPath `shape` () const
- void `drawRubberLine` (const QLineF &rubLine, QPainter \*painter=0, const char \*colorFromScene=0)
- virtual void `vulcanize` ()=0
- virtual QPointF `mouseSnapPoint` (const QPointF &mousePoint)=0
- virtual QList< QPointF > `allGripPoints` ()=0
- virtual void `gripEdit` (const QPointF &before, const QPointF &after)=0

### Protected Member Functions

- void `paint` (QPainter \*, const QStyleOptionGraphicsItem \*, QWidget \*)

### Protected Member Functions inherited from [BaseObject](#)

- QPen `lineWeightPen` () const
- qreal `pi` () const
- qreal `radians` (qreal degree) const
- qreal `degrees` (qreal radian) const
- void `realRender` (QPainter \*painter, const QPainterPath &renderPath)

### Private Member Functions

- void `init` (qreal x1, qreal y1, qreal x2, qreal y2, QRgb rgb, Qt::PenStyle lineType)
- void `updateLeader` ()

### Private Attributes

- bool `curved`
- bool `filled`
- QPainterPath `lineStylePath`
- QPainterPath `arrowStylePath`
- qreal `arrowStyleAngle`
- qreal `arrowStyleLength`
- qreal `lineStyleAngle`
- qreal `lineStyleLength`

## 18.20.1 Member Enumeration Documentation

### 18.20.1.1 anonymous enum anonymous enum

**Enumerator**

Type	<input type="button" value=""/>
------	---------------------------------

**18.20.1.2 ArrowStyle enum `ArrowStyle`****Enumerator**

NoArrow	<input type="button" value=""/>
Open	<input type="button" value=""/>
Closed	<input type="button" value=""/>
Dot	<input type="button" value=""/>
Box	<input type="button" value=""/>
Tick	<input type="button" value=""/>

**18.20.1.3 lineStyle enum `lineStyle`****Enumerator**

NoLine	<input type="button" value=""/>
Flared	<input type="button" value=""/>
Fletching	<input type="button" value=""/>

**18.20.2 Constructor & Destructor Documentation****18.20.2.1 DimLeaderObject() [1/2] `DimLeaderObject` (**

```
qreal x1,  
qreal y1,  
qreal x2,  
qreal y2,  
QRgb rgb,  
QGraphicsItem * parent = 0 )
```

**18.20.2.2 DimLeaderObject() [2/2] `DimLeaderObject` (**

```
DimLeaderObject * obj,  
QGraphicsItem * parent = 0 )
```

**18.20.2.3 ~DimLeaderObject()** ~`DimLeaderObject` ( )

### 18.20.3 Member Function Documentation

**18.20.3.1 allGripPoints()** `QList< QPointF > allGripPoints ( ) [virtual]`

Implements [BaseObject](#).

**18.20.3.2 gripEdit()** `void gripEdit ( const QPointF & before, const QPointF & after ) [virtual]`

Implements [BaseObject](#).

**18.20.3.3 init()** `void init ( qreal x1, qreal y1, qreal x2, qreal y2, QRgb rgb, Qt::PenStyle lineType ) [private]`

**18.20.3.4 mouseSnapPoint()** `QPointF mouseSnapPoint ( const QPointF & mousePoint ) [virtual]`

Implements [BaseObject](#).

**18.20.3.5 objectAngle()** `qreal objectAngle ( ) const`

**18.20.3.6 objectDeltaX()** `qreal objectDeltaX ( ) const [inline]`

**18.20.3.7 objectDeltaY()** `qreal objectDeltaY ( ) const [inline]`

**18.20.3.8 objectEndPoint1()** QPointF objectEndPoint1 ( ) const

**18.20.3.9 objectEndPoint2()** QPointF objectEndPoint2 ( ) const

**18.20.3.10 objectLength()** qreal objectLength ( ) const [inline]

**18.20.3.11 objectMidPoint()** QPointF objectMidPoint ( ) const

**18.20.3.12 objectX1()** qreal objectX1 ( ) const [inline]

**18.20.3.13 objectX2()** qreal objectX2 ( ) const [inline]

**18.20.3.14 objectY1()** qreal objectY1 ( ) const [inline]

**18.20.3.15 objectY2()** qreal objectY2 ( ) const [inline]

**18.20.3.16 paint()** void paint (   
     QPainter \* painter,  
     const QStyleOptionGraphicsItem \* option,  
     QWidget \* ) [protected]

**18.20.3.17 setObjectEndPoint1() [1/2]** void setObjectEndPoint1 (   
     const QPointF & endPt1 )

**18.20.3.18 setObjectEndPoint1() [2/2]** void setObjectEndPoint1 ( qreal x1, qreal y1 )

**18.20.3.19 setObjectEndPoint2() [1/2]** void setObjectEndPoint2 ( const QPointF & endPt2 )

**18.20.3.20 setObjectEndPoint2() [2/2]** void setObjectEndPoint2 ( qreal x2, qreal y2 )

**18.20.3.21 setObjectX1()** void setObjectX1 ( qreal x ) [inline]

**18.20.3.22 setObjectX2()** void setObjectX2 ( qreal x ) [inline]

**18.20.3.23 setObjectY1()** void setObjectY1 ( qreal y ) [inline]

**18.20.3.24 setObjectY2()** void setObjectY2 ( qreal y ) [inline]

**18.20.3.25 type()** virtual int type ( ) const [inline], [virtual]

Reimplemented from [BaseObject](#).

**18.20.3.26 updateLeader()** void updateLeader ( ) [private]

**18.20.3.27 updateRubber()** void updateRubber (   
   QPainter \* painter = 0 )

**18.20.3.28 vulcanize()** void vulcanize ( ) [virtual]

Implements [BaseObject](#).

#### 18.20.4 Member Data Documentation

**18.20.4.1 arrowStyleAngle** qreal arrowStyleAngle [private]

**18.20.4.2 arrowStyleLength** qreal arrowStyleLength [private]

**18.20.4.3 arrowStylePath** QPainterPath arrowStylePath [private]

**18.20.4.4 curved** bool curved [private]

**18.20.4.5 filled** bool filled [private]

**18.20.4.6 lineStyleAngle** qreal lineStyleAngle [private]

**18.20.4.7 lineStyleLength** qreal lineStyleLength [private]

**18.20.4.8 lineStylePath** QPainterPath lineStylePath [private]

The documentation for this class was generated from the following files:

- [embroidermodder2/object-dimleader.h](#)
- [embroidermodder2/object-dimleader.cpp](#)

## 18.21 EllipseObject Class Reference

```
#include <object-ellipse.h>
```

### Public Types

- enum { [Type](#) = OBJ\_TYPE\_ELLIPSE }

### Public Types inherited from [BaseObject](#)

- enum { [Type](#) = OBJ\_TYPE\_BASE }

### Public Member Functions

- [EllipseObject](#) (qreal centerX, qreal centerY, qreal width, qreal height, QRgb rgb, QGraphicsItem \*parent=0)
- [EllipseObject](#) ([EllipseObject](#) \*obj, QGraphicsItem \*parent=0)
- [~EllipseObject](#) ()
- virtual int [type](#) () const
- QPainterPath [objectSavePath](#) () const
- QPointF [objectCenter](#) () const
- qreal [objectCenterX](#) () const
- qreal [objectCenterY](#) () const
- qreal [objectRadiusMajor](#) () const
- qreal [objectRadiusMinor](#) () const
- qreal [objectDiameterMajor](#) () const
- qreal [objectDiameterMinor](#) () const
- qreal [objectWidth](#) () const
- qreal [objectHeight](#) () const
- QPointF [objectQuadrant0](#) () const
- QPointF [objectQuadrant90](#) () const
- QPointF [objectQuadrant180](#) () const
- QPointF [objectQuadrant270](#) () const
- void [setObjectSize](#) (qreal width, qreal height)
- void [setObjectCenter](#) (const QPointF &center)
- void [setObjectCenter](#) (qreal centerX, qreal centerY)
- void [setObjectCenterX](#) (qreal centerX)
- void [setObjectCenterY](#) (qreal centerY)
- void [setObjectRadiusMajor](#) (qreal radius)
- void [setObjectRadiusMinor](#) (qreal radius)
- void [setObjectDiameterMajor](#) (qreal diameter)
- void [setObjectDiameterMinor](#) (qreal diameter)
- void [updateRubber](#) (QPainter \*painter=0)
- virtual void [vulcanize](#) ()
- virtual QPointF [mouseSnapPoint](#) (const QPointF &mousePoint)
- virtual QList< QPointF > [allGripPoints](#) ()
- virtual void [gripEdit](#) (const QPointF &before, const QPointF &after)

### Public Member Functions inherited from [BaseObject](#)

- [BaseObject](#) (QGraphicsItem \*parent=0)
- virtual [~BaseObject](#) ()
- virtual int [type](#) () const
- qint64 [objectID](#) () const
- QPen [objectPen](#) () const
- QColor [objectColor](#) () const
- QRgb [objectColorRGB](#) () const
- Qt::PenStyle [objectLineType](#) () const
- qreal [objectLineWidth](#) () const
- QPainterPath [objectPath](#) () const
- int [objectRubberMode](#) () const
- QPointF [objectRubberPoint](#) (const QString &key) const
- QString [objectRubberText](#) (const QString &key) const
- QRectF [rect](#) () const
- void [setRect](#) (const QRectF &r)
- void [setRect](#) (qreal x, qreal y, qreal w, qreal h)
- QLineF [line](#) () const
- void [setLine](#) (const QLineF &li)
- void [setLine](#) (qreal x1, qreal y1, qreal x2, qreal y2)
- void [setObjectColor](#) (const QColor &color)
- void [setObjectColorRGB](#) (QRgb rgb)
- void [setObjectLineType](#) (Qt::PenStyle lineType)
- void [setObjectLineWidth](#) (qreal lineWidth)
- void [setObjectPath](#) (const QPainterPath &p)
- void [setObjectRubberMode](#) (int mode)
- void [setObjectRubberPoint](#) (const QString &key, const QPointF &point)
- void [setObjectRubberText](#) (const QString &key, const QString &txt)
- virtual QRectF [boundingRect](#) () const
- virtual QPainterPath [shape](#) () const
- void [drawRubberLine](#) (const QLineF &rubLine, QPainter \*painter=0, const char \*colorFromScene=0)
- virtual void [vulcanize](#) ()=0
- virtual QPointF [mouseSnapPoint](#) (const QPointF &mousePoint)=0
- virtual QList< QPointF > [allGripPoints](#) ()=0
- virtual void [gripEdit](#) (const QPointF &before, const QPointF &after)=0

### Protected Member Functions

- void [paint](#) (QPainter \*, const QStyleOptionGraphicsItem \*, QWidget \*)

### Protected Member Functions inherited from [BaseObject](#)

- QPen [lineWeightPen](#) () const
- qreal [pi](#) () const
- qreal [radians](#) (qreal degree) const
- qreal [degrees](#) (qreal radian) const
- void [realRender](#) (QPainter \*painter, const QPainterPath &renderPath)

**Private Member Functions**

- void [init](#) (qreal centerX, qreal centerY, qreal width, qreal height, QRgb rgb, Qt::PenStyle lineType)
- void [updatePath](#) ()

**18.21.1 Member Enumeration Documentation****18.21.1.1 anonymous enum** anonymous enum

Enumerator

Type	<input type="button" value=""/>
------	---------------------------------

**18.21.2 Constructor & Destructor Documentation****18.21.2.1 EllipseObject() [1/2]** [EllipseObject](#) (

```
    qreal centerX,  
    qreal centerY,  
    qreal width,  
    qreal height,  
    QRgb rgb,  
    QGraphicsItem * parent = 0 )
```

**18.21.2.2 EllipseObject() [2/2]** [EllipseObject](#) (

```
    EllipseObject * obj,  
    QGraphicsItem * parent = 0 )
```

**18.21.2.3 ~EllipseObject()** [~EllipseObject](#) ( )**18.21.3 Member Function Documentation****18.21.3.1 allGripPoints()** [QList< QPointF > allGripPoints \(\)](#) [virtual]Implements [BaseObject](#).

```
18.21.3.2 gripEdit() void gripEdit (
    const QPointF & before,
    const QPointF & after ) [virtual]
```

Implements [BaseObject](#).

```
18.21.3.3 init() void init (
    qreal centerX,
    qreal centerY,
    qreal width,
    qreal height,
    QRgb rgb,
    Qt::PenStyle lineType ) [private]
```

```
18.21.3.4 mouseSnapPoint() QPointF mouseSnapPoint (
    const QPointF & mousePoint ) [virtual]
```

Implements [BaseObject](#).

```
18.21.3.5 objectCenter() QPointF objectCenter () const [inline]
```

```
18.21.3.6 objectCenterX() qreal objectCenterX () const [inline]
```

```
18.21.3.7 objectCenterY() qreal objectCenterY () const [inline]
```

```
18.21.3.8 objectDiameterMajor() qreal objectDiameterMajor () const [inline]
```

```
18.21.3.9 objectDiameterMinor() qreal objectDiameterMinor () const [inline]
```

```
18.21.3.10 objectHeight() qreal objectHeight () const [inline]
```

**18.21.3.11 objectQuadrant0()** QPointF objectQuadrant0 () const

**18.21.3.12 objectQuadrant180()** QPointF objectQuadrant180 () const

**18.21.3.13 objectQuadrant270()** QPointF objectQuadrant270 () const

**18.21.3.14 objectQuadrant90()** QPointF objectQuadrant90 () const

**18.21.3.15 objectRadiusMajor()** qreal objectRadiusMajor () const [inline]

**18.21.3.16 objectRadiusMinor()** qreal objectRadiusMinor () const [inline]

**18.21.3.17 objectSavePath()** QPainterPath objectSavePath () const

**18.21.3.18 objectWidth()** qreal objectWidth () const [inline]

**18.21.3.19 paint()** void paint (  
    QPainter \* painter,  
    const QStyleOptionGraphicsItem \* option,  
    QWidget \* ) [protected]

**18.21.3.20 setObjectCenter() [1/2]** void setObjectCenter (  
    const QPointF & center )

**18.21.3.21 `setObjectCenter()` [2/2]** void setObjectCenter ( qreal centerX, qreal centerY )

**18.21.3.22 `setObjectCenterX()`** void setObjectCenterX ( qreal centerX )

**18.21.3.23 `setObjectCenterY()`** void setObjectCenterY ( qreal centerY )

**18.21.3.24 `setObjectDiameterMajor()`** void setObjectDiameterMajor ( qreal diameter )

**18.21.3.25 `setObjectDiameterMinor()`** void setObjectDiameterMinor ( qreal diameter )

**18.21.3.26 `setObjectRadiusMajor()`** void setObjectRadiusMajor ( qreal radius )

**18.21.3.27 `setObjectRadiusMinor()`** void setObjectRadiusMinor ( qreal radius )

**18.21.3.28 `setObjectSize()`** void setObjectSize ( qreal width, qreal height )

**18.21.3.29 `type()`** virtual int type ( ) const [inline], [virtual]

Reimplemented from [BaseObject](#).

**18.21.3.30 updatePath()** void updatePath ( ) [private]

**18.21.3.31 updateRubber()** void updateRubber ( QPainter \* painter = 0 )

**18.21.3.32 vulcanize()** void vulcanize ( ) [virtual]

Implements [BaseObject](#).

The documentation for this class was generated from the following files:

- [embroidermodder2/object-ellipse.h](#)
- [embroidermodder2/object-ellipse.cpp](#)

## 18.22 EmbAlignedDim\_ Struct Reference

```
#include <embroidery.h>
```

### Public Attributes

- [EmbVector position](#)

#### 18.22.1 Member Data Documentation

**18.22.1.1 position** [EmbVector](#) position

The documentation for this struct was generated from the following file:

- [extern/libembroidery/src/embroidery.h](#)

## 18.23 EmbAngularDim\_ Struct Reference

```
#include <embroidery.h>
```

### Public Attributes

- [EmbVector position](#)

### 18.23.1 Member Data Documentation

#### 18.23.1.1 position `EmbVector` position

The documentation for this struct was generated from the following file:

- `extern/libembroidery/src/embroidery.h`

## 18.24 EmbArc\_ Struct Reference

absolute position (not relative)

```
#include <embroidery.h>
```

### Public Attributes

- `EmbVector start`
- `EmbVector mid`
- `EmbVector end`

#### 18.24.1 Detailed Description

absolute position (not relative)

### 18.24.2 Member Data Documentation

#### 18.24.2.1 end `EmbVector` end

#### 18.24.2.2 mid `EmbVector` mid

#### 18.24.2.3 start `EmbVector` start

The documentation for this struct was generated from the following file:

- `extern/libembroidery/src/embroidery.h`

## 18.25 EmbArcLengthDim\_ Struct Reference

```
#include <embroidery.h>
```

### Public Attributes

- [EmbVector position](#)

#### 18.25.1 Member Data Documentation

##### 18.25.1.1 **position** [EmbVector](#) position

The documentation for this struct was generated from the following file:

- [extern/libembroidery/src/embroidery.h](#)

## 18.26 EmbArray\_ Struct Reference

```
#include <embroidery.h>
```

### Public Attributes

- [EmbGeometry \\* geometry](#)
- [EmbStitch \\* stitch](#)
- [EmbThread \\* thread](#)
- [int count](#)
- [int length](#)
- [int type](#)

#### 18.26.1 Member Data Documentation

##### 18.26.1.1 **count** int count

##### 18.26.1.2 **geometry** [EmbGeometry\\*](#) geometry

**18.26.1.3 length** int length

**18.26.1.4 stitch** [EmbStitch\\*](#) stitch

**18.26.1.5 thread** [EmbThread\\*](#) thread

**18.26.1.6 type** int type

The documentation for this struct was generated from the following file:

- [extern/libembroidery/src/embroidery.h](#)

## 18.27 EmbBezier\_ Struct Reference

```
#include <embroidery.h>
```

### Public Attributes

- [EmbVector start](#)
- [EmbVector control1](#)
- [EmbVector control2](#)
- [EmbVector end](#)

### 18.27.1 Member Data Documentation

**18.27.1.1 control1** [EmbVector](#) control1

**18.27.1.2 control2** [EmbVector](#) control2

**18.27.1.3 end** [EmbVector](#) end

**18.27.1.4 start** `EmbVector` `start`

The documentation for this struct was generated from the following file:

- `extern/libembroidery/src/embroidery.h`

## 18.28 EmbBlock\_ Struct Reference

```
#include <embroidery.h>
```

### Public Attributes

- `EmbVector position`

### 18.28.1 Member Data Documentation

#### 18.28.1.1 position

The documentation for this struct was generated from the following file:

- `extern/libembroidery/src/embroidery.h`

## 18.29 EmbCircle\_ Struct Reference

```
#include <embroidery.h>
```

### Public Attributes

- `EmbVector center`
- `EmbReal radius`

### 18.29.1 Member Data Documentation

#### 18.29.1.1 center

**18.29.1.2 radius** `EmbReal radius`

The documentation for this struct was generated from the following file:

- `extern/libembroidery/src/embroidery.h`

**18.30 EmbColor\_ Struct Reference**

```
#include <embroidery.h>
```

**Public Attributes**

- `unsigned char r`
- `unsigned char g`
- `unsigned char b`

**18.30.1 Detailed Description**

`EmbColor` uses the light primaries: red, green, blue in that order.

**18.30.2 Member Data Documentation****18.30.2.1 b** `unsigned char b`**18.30.2.2 g** `unsigned char g`**18.30.2.3 r** `unsigned char r`

The documentation for this struct was generated from the following file:

- `extern/libembroidery/src/embroidery.h`

**18.31 EmbDetailsDialog Class Reference**

```
#include <embdetails-dialog.h>
```

### Public Member Functions

- `EmbDetailsDialog (QGraphicsScene *theScene, QWidget *parent=0)`
- `~EmbDetailsDialog ()`

### Private Member Functions

- `void getInfo ()`
- `QWidget * createMainWidget ()`
- `QWidget * createHistogram ()`

### Private Attributes

- `QWidget * mainWidget`
- `QDialogButtonBox * buttonBox`
- `quint32 stitchesTotal`
- `quint32 stitchesReal`
- `quint32 stitchesJump`
- `quint32 stitchesTrim`
- `quint32 colorTotal`
- `quint32 colorChanges`
- `QRectF boundingRect`

#### 18.31.1 Constructor & Destructor Documentation

**18.31.1.1 EmbDetailsDialog()** `EmbDetailsDialog (`  
    `QGraphicsScene * theScene,`  
    `QWidget * parent = 0 )`

**18.31.1.2 ~EmbDetailsDialog()** `~EmbDetailsDialog ( )`

#### 18.31.2 Member Function Documentation

**18.31.2.1 createHistogram()** `QWidget * createHistogram ( ) [private]`

**18.31.2.2 createMainWidget()** `QWidget * createMainWidget ( ) [private]`

**18.31.2.3 `getInfo()`** void getInfo () [private]

### 18.31.3 Member Data Documentation

**18.31.3.1 `boundingRect`** QRectF boundingRect [private]

**18.31.3.2 `buttonBox`** QDialogButtonBox\* buttonBox [private]

**18.31.3.3 `colorChanges`** quint32 colorChanges [private]

**18.31.3.4 `colorTotal`** quint32 colorTotal [private]

**18.31.3.5 `mainWidget`** QWidget\* mainWidget [private]

**18.31.3.6 `stitchesJump`** quint32 stitchesJump [private]

**18.31.3.7 `stitchesReal`** quint32 stitchesReal [private]

**18.31.3.8 `stitchesTotal`** quint32 stitchesTotal [private]

**18.31.3.9 `stitchesTrim`** quint32 stitchesTrim [private]

The documentation for this class was generated from the following files:

- [embroidermodder2/embdetails-dialog.h](#)
- [embroidermodder2/embdetails-dialog.cpp](#)

## 18.32 EmbDiameterDim\_ Struct Reference

```
#include <embroidery.h>
```

### Public Attributes

- [EmbVector position](#)

#### 18.32.1 Member Data Documentation

##### 18.32.1.1 position [EmbVector](#) position

The documentation for this struct was generated from the following file:

- [extern/libembroidery/src/embroidery.h](#)

## 18.33 EmbEllipse\_ Struct Reference

```
#include <embroidery.h>
```

### Public Attributes

- [EmbVector center](#)
- [EmbVector radius](#)
- [EmbReal rotation](#)

#### 18.33.1 Member Data Documentation

##### 18.33.1.1 center [EmbVector](#) center

##### 18.33.1.2 radius [EmbVector](#) radius

##### 18.33.1.3 rotation [EmbReal](#) rotation

The documentation for this struct was generated from the following file:

- [extern/libembroidery/src/embroidery.h](#)

## 18.34 EmbFormatList\_ Struct Reference

```
#include <embroidery.h>
```

### Public Attributes

- char `extension` [2+`EMBFORMAT_MAXEXT`]
- char `description` [`EMBFORMAT_MAXDESC`]
- char `reader_state`
- char `writer_state`
- int `type`
- int `color_only`
- int `check_for_color_file`
- int `write_external_color_file`

### 18.34.1 Member Data Documentation

**18.34.1.1 `check_for_color_file`** int `check_for_color_file`

**18.34.1.2 `color_only`** int `color_only`

**18.34.1.3 `description`** char `description`[`EMBFORMAT_MAXDESC`]

**18.34.1.4 `extension`** char `extension`[2+`EMBFORMAT_MAXEXT`]

**18.34.1.5 `reader_state`** char `reader_state`

**18.34.1.6 `type`** int `type`

**18.34.1.7 `write_external_color_file`** int `write_external_color_file`

**18.34.1.8 writer\_state** char writer\_state

The documentation for this struct was generated from the following file:

- `extern/libembroidery/src/embroidery.h`

**18.35 EmbGeometry\_ Struct Reference**

```
#include <embroidery.h>
```

**Public Attributes**

- union {
  - `EmbArc arc`
  - `EmbCircle circle`
  - `EmbColor color`
  - `EmbEllipse ellipse`
  - `EmbLine line`
  - `EmbPath path`
  - `EmbPoint point`
  - `EmbPolygon polygon`
  - `EmbPolyline polyline`
  - `EmbRect rect`
  - `EmbSpline spline`
  - `EmbVector vector`}
- `object`
- `EmbStitch stitch`
- `EmbThread thread`
- `int flag`
- `int type`
- `int lineType`

**18.35.1 Member Data Documentation****18.35.1.1 arc** `EmbArc arc`**18.35.1.2 circle** `EmbCircle circle`**18.35.1.3 color** `EmbColor color`

**18.35.1.4 ellipse** `EmbEllipse` `ellipse`

**18.35.1.5 flag** `int` `flag`

**18.35.1.6 line** `EmbLine` `line`

**18.35.1.7 lineType** `int` `lineType`

**18.35.1.8** `union { ... } object`

**18.35.1.9 path** `EmbPath` `path`

**18.35.1.10 point** `EmbPoint` `point`

**18.35.1.11 polygon** `EmbPolygon` `polygon`

**18.35.1.12 polyline** `EmbPolyline` `polyline`

**18.35.1.13 rect** `EmbRect` `rect`

**18.35.1.14 spline** `EmbSpline` `spline`

**18.35.1.15 stitch** `EmbStitch` `stitch`

**18.35.1.16 thread** `EmbThread` `thread`

**18.35.1.17 type** `int` `type`

**18.35.1.18 vector** `EmbVector` `vector`

The documentation for this struct was generated from the following file:

- `extern/libembroidery/src/embroidery.h`

## 18.36 EmbImage\_ Struct Reference

```
#include <embroidery.h>
```

### Public Attributes

- `EmbVector position`
- `EmbVector dimensions`
- `unsigned char * data`
- `int width`
- `int height`
- `char path [200]`
- `char name [200]`

### 18.36.1 Member Data Documentation

**18.36.1.1 data** `unsigned char*` `data`

**18.36.1.2 dimensions** `EmbVector` `dimensions`

**18.36.1.3 height** int height

**18.36.1.4 name** char name[200]

**18.36.1.5 path** char path[200]

**18.36.1.6 position** [EmbVector](#) position

**18.36.1.7 width** int width

The documentation for this struct was generated from the following file:

- [extern/libembroidery/src/embroidery.h](#)

## 18.37 EmbInfiniteLine\_ Struct Reference

```
#include <embroidery.h>
```

### Public Attributes

- [EmbVector position](#)

### 18.37.1 Member Data Documentation

**18.37.1.1 position** [EmbVector](#) position

The documentation for this struct was generated from the following file:

- [extern/libembroidery/src/embroidery.h](#)

## 18.38 EmbLayer\_ Struct Reference

```
#include <embroidery.h>
```

**Public Attributes**

- char [name](#) [100]
- [EmbArray](#) \* [geometry](#)

**18.38.1 Member Data Documentation****18.38.1.1 geometry [EmbArray](#)\* [geometry](#)****18.38.1.2 name char name[100]**

The documentation for this struct was generated from the following file:

- [extern/libembroidery/src/embroidery.h](#)

**18.39 EmbLeaderDim\_ Struct Reference**

```
#include <embroidery.h>
```

**Public Attributes**

- [EmbVector](#) [position](#)

**18.39.1 Member Data Documentation****18.39.1.1 position [EmbVector](#) [position](#)**

The documentation for this struct was generated from the following file:

- [extern/libembroidery/src/embroidery.h](#)

**18.40 EmbLine\_ Struct Reference**

```
#include <embroidery.h>
```

**Public Attributes**

- EmbVector start
- EmbVector end
- int lineType
- EmbColor color

**18.40.1 Member Data Documentation****18.40.1.1 color EmbColor color****18.40.1.2 end EmbVector end****18.40.1.3 lineType int lineType****18.40.1.4 start EmbVector start**

The documentation for this struct was generated from the following file:

- extern/libembroidery/src/embroidery.h

**18.41 EmbLinearDim\_ Struct Reference**

```
#include <embroidery.h>
```

**Public Attributes**

- EmbVector position

**18.41.1 Member Data Documentation****18.41.1.1 position EmbVector position**

The documentation for this struct was generated from the following file:

- extern/libembroidery/src/embroidery.h

## 18.42 EmbOrdinateDim\_ Struct Reference

```
#include <embroidery.h>
```

### Public Attributes

- [EmbVector position](#)

#### 18.42.1 Member Data Documentation

##### 18.42.1.1 position [EmbVector](#) position

The documentation for this struct was generated from the following file:

- `extern/libembroidery/src/embroidery.h`

## 18.43 EmbPath\_ Struct Reference

```
#include <embroidery.h>
```

### Public Attributes

- [EmbArray \\* pointList](#)
- [EmbArray \\* flagList](#)
- [int lineType](#)
- [EmbColor color](#)

#### 18.43.1 Member Data Documentation

##### 18.43.1.1 color [EmbColor](#) color

##### 18.43.1.2 flagList [EmbArray\\*](#) flagList

##### 18.43.1.3 lineType [int](#) lineType

**18.43.1.4 pointList** `EmbArray*` `pointList`

The documentation for this struct was generated from the following file:

- `extern/libembroidery/src/embroidery.h`

## 18.44 EmbPattern\_ Struct Reference

```
#include <embroidery.h>
```

### Public Attributes

- `unsigned int dstJumpsPerTrim`
- `EmbVector home`
- `EmbReal hoop_width`
- `EmbReal hoop_height`
- `EmbArray * thread_list`
- `EmbArray * stitch_list`
- `EmbArray * geometry`
- `EmbLayer layer [EMB_MAX_LAYERS]`
- `int currentColorIndex`

### 18.44.1 Member Data Documentation

#### 18.44.1.1 `currentColorIndex` `int currentColorIndex`

#### 18.44.1.2 `dstJumpsPerTrim` `unsigned int dstJumpsPerTrim`

#### 18.44.1.3 `geometry` `EmbArray*` `geometry`

#### 18.44.1.4 `home` `EmbVector` `home`

#### 18.44.1.5 `hoop_height` `EmbReal` `hoop_height`

**18.44.1.6 hoop\_width** `EmbReal` `hoop_width`

**18.44.1.7 layer** `EmbLayer` `layer[EMB_MAX_LAYERS]`

**18.44.1.8 stitch\_list** `EmbArray*` `stitch_list`

**18.44.1.9 thread\_list** `EmbArray*` `thread_list`

The documentation for this struct was generated from the following file:

- `extern/libembroidery/src/embroidery.h`

## 18.45 EmbPoint\_ Struct Reference

```
#include <embroidery.h>
```

### Public Attributes

- `EmbVector position`
- `int lineType`
- `EmbColor color`

### 18.45.1 Member Data Documentation

**18.45.1.1 color** `EmbColor` `color`

**18.45.1.2 lineType** `int` `lineType`

**18.45.1.3 position** `EmbVector` `position`

The documentation for this struct was generated from the following file:

- `extern/libembroidery/src/embroidery.h`

## 18.46 EmbRadiusDim\_ Struct Reference

```
#include <embroidery.h>
```

### Public Attributes

- EmbVector position

#### 18.46.1 Member Data Documentation

##### 18.46.1.1 position EmbVector position

The documentation for this struct was generated from the following file:

- extern/libembroidery/src/embroidery.h

## 18.47 EmbRay\_ Struct Reference

```
#include <embroidery.h>
```

### Public Attributes

- EmbVector position

#### 18.47.1 Member Data Documentation

##### 18.47.1.1 position EmbVector position

The documentation for this struct was generated from the following file:

- extern/libembroidery/src/embroidery.h

## 18.48 EmbRect\_ Struct Reference

```
#include <embroidery.h>
```

## Public Attributes

- `EmbReal top`
- `EmbReal left`
- `EmbReal bottom`
- `EmbReal right`
- `EmbReal rotation`
- `EmbReal radius`

### 18.48.1 Member Data Documentation

**18.48.1.1 bottom** `EmbReal bottom`

**18.48.1.2 left** `EmbReal left`

**18.48.1.3 radius** `EmbReal radius`

**18.48.1.4 right** `EmbReal right`

**18.48.1.5 rotation** `EmbReal rotation`

**18.48.1.6 top** `EmbReal top`

The documentation for this struct was generated from the following file:

- `extern/libembroidery/src/embroidery.h`

## 18.49 EmbSatinOutline\_Struct Reference

```
#include <embroidery.h>
```

## Public Attributes

- int `length`
- `EmbArray * side1`
- `EmbArray * side2`

### 18.49.1 Member Data Documentation

#### 18.49.1.1 `length` int `length`

#### 18.49.1.2 `side1` `EmbArray*` `side1`

#### 18.49.1.3 `side2` `EmbArray*` `side2`

The documentation for this struct was generated from the following file:

- `extern/libembroidery/src/embroidery.h`

## 18.50 EmbSpline\_ Struct Reference

```
#include <embroidery.h>
```

## Public Attributes

- `EmbArray * beziers`

### 18.50.1 Member Data Documentation

#### 18.50.1.1 `beziers` `EmbArray*` `beziers`

The documentation for this struct was generated from the following file:

- `extern/libembroidery/src/embroidery.h`

## 18.51 EmbStitch\_Struct Reference

```
#include <embroidery.h>
```

### Public Attributes

- int **flags**
- **EmbReal** **x**
- **EmbReal** **y**
- int **color**

#### 18.51.1 Member Data Documentation

##### 18.51.1.1 **color** int color

positive is up, units are in mm

##### 18.51.1.2 **flags** int flags

##### 18.51.1.3 **x** **EmbReal** **x**

uses codes defined above

##### 18.51.1.4 **y** **EmbReal** **y**

absolute position (not relative)

The documentation for this struct was generated from the following file:

- extern/libembroidery/src/[embroidery.h](#)

## 18.52 EmbTextMulti\_Struct Reference

```
#include <embroidery.h>
```

### Public Attributes

- **EmbVector** **position**
- char **text** [200]

### 18.52.1 Member Data Documentation

**18.52.1.1 position** `EmbVector` position

**18.52.1.2 text** `char` `text[200]`

The documentation for this struct was generated from the following file:

- `extern/libembroidery/src/embroidery.h`

## 18.53 EmbTextSingle\_ Struct Reference

```
#include <embroidery.h>
```

### Public Attributes

- `EmbVector` `position`
- `char` `text[200]`

### 18.53.1 Member Data Documentation

**18.53.1.1 position** `EmbVector` position

**18.53.1.2 text** `char` `text[200]`

The documentation for this struct was generated from the following file:

- `extern/libembroidery/src/embroidery.h`

## 18.54 EmbThread\_ Struct Reference

```
#include <embroidery.h>
```

**Public Attributes**

- `EmbColor color`
- `char description [50]`
- `char catalogNumber [30]`

**18.54.1 Member Data Documentation****18.54.1.1 catalogNumber** `char catalogNumber[30]`**18.54.1.2 color** `EmbColor color`**18.54.1.3 description** `char description[50]`

The documentation for this struct was generated from the following file:

- `extern/libembroidery/src/embroidery.h`

**18.55 EmbTime\_ Struct Reference**

```
#include <embroidery.h>
```

**Public Attributes**

- `unsigned int year`
- `unsigned int month`
- `unsigned int day`
- `unsigned int hour`
- `unsigned int minute`
- `unsigned int second`

**18.55.1 Member Data Documentation****18.55.1.1 day** `unsigned int day`

**18.55.1.2 hour** unsigned int hour

**18.55.1.3 minute** unsigned int minute

**18.55.1.4 month** unsigned int month

**18.55.1.5 second** unsigned int second

**18.55.1.6 year** unsigned int year

The documentation for this struct was generated from the following file:

- `extern/libembroidery/src/embroidery.h`

## 18.56 EmbVector\_ Struct Reference

```
#include <embroidery.h>
```

### Public Attributes

- `EmbReal x`
- `EmbReal y`

### 18.56.1 Detailed Description

The basic type to represent points absolutely or represent directions.

Positive y is up, units are in mm.

### 18.56.2 Member Data Documentation

#### 18.56.2.1 x `EmbReal x`

### 18.56.2.2 y EmbReal y

The documentation for this struct was generated from the following file:

- `extern/libembroidery/src/embroidery.h`

## 18.57 hoop\_padding Struct Reference

### Public Attributes

- int `left`
- int `right`
- int `top`
- int `bottom`

### 18.57.1 Member Data Documentation

#### 18.57.1.1 bottom int bottom

#### 18.57.1.2 left int left

#### 18.57.1.3 right int right

#### 18.57.1.4 top int top

The documentation for this struct was generated from the following file:

- `extern/libembroidery/src/formats/format_jef.c`

## 18.58 Huffman Struct Reference

```
#include <embroidery_internal.h>
```

## Public Attributes

- int `default_value`
- int `lengths` [1000]
- int `nlengths`
- int `table` [1000]
- int `table_width`
- int `ntable`

### 18.58.1 Member Data Documentation

**18.58.1.1 `default_value`** int `default_value`

**18.58.1.2 `lengths`** int `lengths`[1000]

**18.58.1.3 `nlengths`** int `nlengths`

**18.58.1.4 `ntable`** int `ntable`

**18.58.1.5 `table`** int `table`[1000]

**18.58.1.6 `table_width`** int `table_width`

The documentation for this struct was generated from the following file:

- `extern/libembroidery/src/embroidery_internal.h`

## 18.59 ImageObject Class Reference

```
#include <object-image.h>
```

## Public Types

- enum { `Type` = OBJ\_TYPE\_IMAGE }

### Public Types inherited from [BaseObject](#)

- enum { [Type](#) = OBJ\_TYPE\_BASE }

### Public Member Functions

- [ImageObject](#) (qreal x, qreal y, qreal w, qreal h, QRgb rgb, QGraphicsItem \*parent=0)
- [ImageObject](#) ([ImageObject](#) \*obj, QGraphicsItem \*parent=0)
- [~ImageObject](#) ()
- virtual int [type](#) () const
- QPointF [objectTopLeft](#) () const
- QPointF [objectTopRight](#) () const
- QPointF [objectBottomLeft](#) () const
- QPointF [objectBottomRight](#) () const
- qreal [objectWidth](#) () const
- qreal [objectHeight](#) () const
- qreal [objectArea](#) () const
- void [setObjectRect](#) (qreal x, qreal y, qreal w, qreal h)
- void [updateRubber](#) ( QPainter \*painter=0 )
- virtual void [vulcanize](#) ()
- virtual QPointF [mouseSnapPoint](#) (const QPointF &mousePoint)
- virtual QList< QPointF > [allGripPoints](#) ()
- virtual void [gripEdit](#) (const QPointF &before, const QPointF &after)

### Public Member Functions inherited from [BaseObject](#)

- [BaseObject](#) (QGraphicsItem \*parent=0)
- virtual [~BaseObject](#) ()
- virtual int [type](#) () const
- qint64 [objectID](#) () const
- QPen [objectPen](#) () const
- QColor [objectColor](#) () const
- QRgb [objectColorRGB](#) () const
- Qt::PenStyle [objectLineType](#) () const
- qreal [objectLineWidth](#) () const
- QPainterPath [objectPath](#) () const
- int [objectRubberMode](#) () const
- QPointF [objectRubberPoint](#) (const QString &key) const
- QString [objectRubberText](#) (const QString &key) const
- QRectF [rect](#) () const
- void [setRect](#) (const QRectF &r)
- void [setRect](#) (qreal x, qreal y, qreal w, qreal h)
- QLineF [line](#) () const
- void [setLine](#) (const QLineF &li)
- void [setLine](#) (qreal x1, qreal y1, qreal x2, qreal y2)
- void [setObjectColor](#) (const QColor &color)
- void [setObjectColorRGB](#) (QRgb rgb)
- void [setObjectLineType](#) (Qt::PenStyle lineType)
- void [setObjectLineWidth](#) (qreal lineWidth)
- void [setObjectPath](#) (const QPainterPath &p)
- void [setObjectRubberMode](#) (int mode)
- void [setObjectRubberPoint](#) (const QString &key, const QPointF &point)

- void `setObjectRubberText` (const QString &key, const QString &txt)
- virtual QRectF `boundingRect` () const
- virtual QPainterPath `shape` () const
- void `drawRubberLine` (const QLineF &rubLine, QPainter \*painter=0, const char \*colorFromScene=0)
- virtual void `vulcanize` ()=0
- virtual QPointF `mouseSnapPoint` (const QPointF &mousePoint)=0
- virtual QList< QPointF > `allGripPoints` ()=0
- virtual void `gripEdit` (const QPointF &before, const QPointF &after)=0

### Protected Member Functions

- void `paint` (QPainter \*, const QStyleOptionGraphicsItem \*, QWidget \*)

### Protected Member Functions inherited from `BaseObject`

- QPen `lineWeightPen` () const
- qreal `pi` () const
- qreal `radians` (qreal degree) const
- qreal `degrees` (qreal radian) const
- void `realRender` (QPainter \*painter, const QPainterPath &renderPath)

### Private Member Functions

- void `init` (qreal x, qreal y, qreal w, qreal h, QRgb rgb, Qt::PenStyle lineType)
- void `updatePath` ()

## 18.59.1 Member Enumeration Documentation

### 18.59.1.1 anonymous enum anonymous enum

#### Enumerator

Type	<input type="button" value=""/>
------	---------------------------------

## 18.59.2 Constructor & Destructor Documentation

### 18.59.2.1 `ImageObject()` [1/2] `ImageObject` (

```
qreal x,  
qreal y,  
qreal w,  
qreal h,
```

```
QRgb rgb,  
QGraphicsItem * parent = 0 )
```

#### 18.59.2.2 **ImageObject()** [2/2] [ImageObject](#) (

```
    ImageObject * obj,  
    QGraphicsItem * parent = 0 )
```

#### 18.59.2.3 **~ImageObject()** [~ImageObject](#) ( )

### 18.59.3 Member Function Documentation

#### 18.59.3.1 **allGripPoints()** [QList< QPointF > allGripPoints \(\)](#) [virtual]

Implements [BaseObject](#).

#### 18.59.3.2 **gripEdit()** [void gripEdit \(](#) const QPointF & *before*, const QPointF & *after* ) [virtual]

Implements [BaseObject](#).

#### 18.59.3.3 **init()** [void init \(](#) qreal *x*, qreal *y*, qreal *w*, qreal *h*, QRgb *rgb*, Qt::PenStyle *lineType* ) [private]

#### 18.59.3.4 **mouseSnapPoint()** [QPointF mouseSnapPoint \(](#) const QPointF & *mousePoint* ) [virtual]

Implements [BaseObject](#).

**18.59.3.5 `objectArea()`** `qreal objectArea () const [inline]`

**18.59.3.6 `objectBottomLeft()`** `QPointF objectBottomLeft () const`

**18.59.3.7 `objectBottomRight()`** `QPointF objectBottomRight () const`

**18.59.3.8 `objectHeight()`** `qreal objectHeight () const [inline]`

**18.59.3.9 `objectTopLeft()`** `QPointF objectTopLeft () const`

**18.59.3.10 `objectTopRight()`** `QPointF objectTopRight () const`

**18.59.3.11 `objectWidth()`** `qreal objectWidth () const [inline]`

**18.59.3.12 `paint()`** `void paint (`  
    `QPainter * painter,`  
    `const QStyleOptionGraphicsItem * option,`  
    `QWidget * ) [protected]`

**18.59.3.13 `setObjectRect()`** `void setObjectRect (`  
    `qreal x,`  
    `qreal y,`  
    `qreal w,`  
    `qreal h )`

**18.59.3.14 `type()`** `virtual int type () const [inline], [virtual]`

Reimplemented from [BaseObject](#).

**18.59.3.15 updatePath()** void updatePath ( ) [private]

**18.59.3.16 updateRubber()** void updateRubber (   
 QPainter \* painter = 0 )

**18.59.3.17 vulcanize()** void vulcanize ( ) [virtual]

Implements [BaseObject](#).

The documentation for this class was generated from the following files:

- [embroidermodder2/object-image.h](#)
- [embroidermodder2/object-image.cpp](#)

## 18.60 ImageWidget Class Reference

```
#include <imagewidget.h>
```

### Public Member Functions

- [ImageWidget](#) (const QString &filename, QWidget \*parent=0)
- [~ImageWidget](#) ()
- bool [load](#) (const QString &fileName)
- bool [save](#) (const QString &fileName)

### Protected Member Functions

- void [paintEvent](#) (QPaintEvent \*event)

### Private Attributes

- QImage [img](#)

#### 18.60.1 Constructor & Destructor Documentation

**18.60.1.1 ImageWidget()** [ImageWidget](#) (   
 const QString & filename,   
 QWidget \* parent = 0 )

**18.60.1.2 ~ImageWidget()** ~[ImageWidget](#) ( )

## 18.60.2 Member Function Documentation

**18.60.2.1 load()** bool load ( const QString & fileName )

**18.60.2.2 paintEvent()** void paintEvent ( QPaintEvent \* event ) [protected]

**18.60.2.3 save()** bool save ( const QString & fileName )

## 18.60.3 Member Data Documentation

**18.60.3.1 img** QImage img [private]

The documentation for this class was generated from the following files:

- [embroidermodder2/imagewidget.h](#)
- [embroidermodder2/imagewidget.cpp](#)

## 18.61 Index\_Struct Reference

### Public Attributes

- [IndexEntry \\* data](#)
- int [length](#)
- int [max\\_length](#)

### 18.61.1 Detailed Description

**Todo** document this.

### 18.61.2 Member Data Documentation

**18.61.2.1 data** `IndexEntry*` `data`

**18.61.2.2 length** `int` `length`

**18.61.2.3 max\_length** `int` `max_length`

The documentation for this struct was generated from the following file:

- `embroidermodder2/imgui_main.c`

## 18.62 IndexEntry\_ Struct Reference

### Public Attributes

- `char key [200]`
- `Dictionary * value`

### 18.62.1 Detailed Description

**Todo** document this.

### 18.62.2 Member Data Documentation

**18.62.2.1 key** `char` `key[200]`

**18.62.2.2 value** `Dictionary*` `value`

The documentation for this struct was generated from the following file:

- `embroidermodder2/imgui_main.c`

## 18.63 LayerManager Class Reference

```
#include <layer-manager.h>
```

## Public Member Functions

- `LayerManager (MainWindow *mw, QWidget *parent=0)`
- `~LayerManager ()`
- `void addLayer (const QString &name, const bool visible, const bool frozen, const qreal zValue, const QRgb color, const QString &lineType, const QString &lineWeight, const bool print)`

## Private Attributes

- `QStandardItemModel * layerModel`
- `QSortFilterProxyModel * layerModelSorted`
- `QTreeView * treeView`

### 18.63.1 Constructor & Destructor Documentation

#### 18.63.1.1 `LayerManager()` `LayerManager (`

```
    MainWindow * mw,
    QWidget * parent = 0 )
```

#### 18.63.1.2 `~LayerManager()` `~LayerManager ( )`

### 18.63.2 Member Function Documentation

#### 18.63.2.1 `addLayer()` `void addLayer (`

```
    const QString & name,
    const bool visible,
    const bool frozen,
    const qreal zValue,
    const QRgb color,
    const QString & lineType,
    const QString & lineWeight,
    const bool print )
```

### 18.63.3 Member Data Documentation

#### 18.63.3.1 `layerModel` `QStandardItemModel* layerModel [private]`

**18.63.3.2 layerModelSorted** `QSortFilterProxyModel* layerModelSorted [private]`**18.63.3.3 treeView** `QTreeView* treeView [private]`

The documentation for this class was generated from the following files:

- `embroidermodder2/layer-manager.h`
- `embroidermodder2/layer-manager.cpp`

## 18.64 LineObject Class Reference

```
#include <object-line.h>
```

### Public Types

- enum { `Type` = `OBJ_TYPE_LINE` }

### Public Types inherited from `BaseObject`

- enum { `Type` = `OBJ_TYPE_BASE` }

### Public Member Functions

- `LineObject` (qreal x1, qreal y1, qreal x2, qreal y2, QRgb rgb, QGraphicsItem \*parent=0)
- `LineObject` (`LineObject` \*obj, QGraphicsItem \*parent=0)
- `~LineObject` ()
- virtual int `type` () const
- QPainterPath `objectSavePath` () const
- QPointF `objectEndPoint1` () const
- QPointF `objectEndPoint2` () const
- QPointF `objectMidPoint` () const
- qreal `objectX1` () const
- qreal `objectY1` () const
- qreal `objectX2` () const
- qreal `objectY2` () const
- qreal `objectDeltaX` () const
- qreal `objectDeltaY` () const
- qreal `objectAngle` () const
- qreal `objectLength` () const
- void `setObjectEndPoint1` (const QPointF &endPt1)
- void `setObjectEndPoint1` (qreal x1, qreal y1)
- void `setObjectEndPoint2` (const QPointF &endPt2)
- void `setObjectEndPoint2` (qreal x2, qreal y2)
- void `setObjectX1` (qreal x)
- void `setObjectY1` (qreal y)
- void `setObjectX2` (qreal x)
- void `setObjectY2` (qreal y)
- void `updateRubber` (QPainter \*painter=0)
- virtual void `vulcanize` ()
- virtual QPointF `mouseSnapPoint` (const QPointF &mousePoint)
- virtual QList< QPointF > `allGripPoints` ()
- virtual void `gripEdit` (const QPointF &before, const QPointF &after)

### Public Member Functions inherited from [BaseObject](#)

- [BaseObject](#) (QGraphicsItem \*parent=0)
- virtual [~BaseObject](#) ()
- virtual int [type](#) () const
- qint64 [objectID](#) () const
- QPen [objectPen](#) () const
- QColor [objectColor](#) () const
- QRgb [objectColorRGB](#) () const
- Qt::PenStyle [objectLineType](#) () const
- qreal [objectLineWidth](#) () const
- QPainterPath [objectPath](#) () const
- int [objectRubberMode](#) () const
- QPointF [objectRubberPoint](#) (const QString &key) const
- QString [objectRubberText](#) (const QString &key) const
- QRectF [rect](#) () const
- void [setRect](#) (const QRectF &r)
- void [setRect](#) (qreal x, qreal y, qreal w, qreal h)
- QLineF [line](#) () const
- void [setLine](#) (const QLineF &li)
- void [setLine](#) (qreal x1, qreal y1, qreal x2, qreal y2)
- void [setObjectColor](#) (const QColor &color)
- void [setObjectColorRGB](#) (QRgb rgb)
- void [setObjectLineType](#) (Qt::PenStyle lineType)
- void [setObjectLineWidth](#) (qreal lineWidth)
- void [setObjectPath](#) (const QPainterPath &p)
- void [setObjectRubberMode](#) (int mode)
- void [setObjectRubberPoint](#) (const QString &key, const QPointF &point)
- void [setObjectRubberText](#) (const QString &key, const QString &txt)
- virtual QRectF [boundingRect](#) () const
- virtual QPainterPath [shape](#) () const
- void [drawRubberLine](#) (const QLineF &rubLine, QPainter \*painter=0, const char \*colorFromScene=0)
- virtual void [vulcanize](#) ()=0
- virtual QPointF [mouseSnapPoint](#) (const QPointF &mousePoint)=0
- virtual QList< QPointF > [allGripPoints](#) ()=0
- virtual void [gripEdit](#) (const QPointF &before, const QPointF &after)=0

### Protected Member Functions

- void [paint](#) (QPainter \*, const QStyleOptionGraphicsItem \*, QWidget \*)

### Protected Member Functions inherited from [BaseObject](#)

- QPen [lineWeightPen](#) () const
- qreal [pi](#) () const
- qreal [radians](#) (qreal degree) const
- qreal [degrees](#) (qreal radian) const
- void [realRender](#) (QPainter \*painter, const QPainterPath &renderPath)

### Private Member Functions

- void [init](#) (qreal x1, qreal y1, qreal x2, qreal y2, QRgb rgb, Qt::PenStyle lineType)

**18.64.1 Member Enumeration Documentation****18.64.1.1 anonymous enum** anonymous enum

Enumerator

Type	
------	--

**18.64.2 Constructor & Destructor Documentation****18.64.2.1 LineObject() [1/2]** [LineObject](#) (

```
    qreal x1,  
    qreal y1,  
    qreal x2,  
    qreal y2,  
    QRgb rgb,  
    QGraphicsItem * parent = 0 )
```

**18.64.2.2 LineObject() [2/2]** [LineObject](#) (

```
    LineObject * obj,  
    QGraphicsItem * parent = 0 )
```

**18.64.2.3 ~LineObject()** [~LineObject](#) ( )**18.64.3 Member Function Documentation****18.64.3.1 allGripPoints()** [QList< QPointF >](#) allGripPoints ( ) [virtual]Implements [BaseObject](#).**18.64.3.2 gripEdit()** void gripEdit (

```
    const QPointF & before,  
    const QPointF & after ) [virtual]
```

Implements [BaseObject](#).

**18.64.3.3 `init()`** void init ( qreal x1, qreal y1, qreal x2, qreal y2, QRgb rgb, Qt::PenStyle lineType ) [private]

**18.64.3.4 `mouseSnapPoint()`** QPointF mouseSnapPoint ( const QPointF & mousePoint ) [virtual]

Implements [BaseObject](#).

**18.64.3.5 `objectAngle()`** qreal objectAngle ( ) const

**18.64.3.6 `objectDeltaX()`** qreal objectDeltaX ( ) const [inline]

**18.64.3.7 `objectDeltaY()`** qreal objectDeltaY ( ) const [inline]

**18.64.3.8 `objectEndPoint1()`** QPointF objectEndPoint1 ( ) const [inline]

**18.64.3.9 `objectEndPoint2()`** QPointF objectEndPoint2 ( ) const

**18.64.3.10 `objectLength()`** qreal objectLength ( ) const [inline]

**18.64.3.11 `objectMidPoint()`** QPointF objectMidPoint ( ) const

**18.64.3.12 `objectSavePath()`** QPainterPath objectSavePath ( ) const

**18.64.3.13 `objectX1()`** `qreal objectX1 ( ) const [inline]`

**18.64.3.14 `objectX2()`** `qreal objectX2 ( ) const [inline]`

**18.64.3.15 `objectY1()`** `qreal objectY1 ( ) const [inline]`

**18.64.3.16 `objectY2()`** `qreal objectY2 ( ) const [inline]`

**18.64.3.17 `paint()`** `void paint (`  
    `QPainter * painter,`  
    `const QStyleOptionGraphicsItem * option,`  
    `QWidget * ) [protected]`

**18.64.3.18 `setObjectEndPoint1()` [1/2]** `void setObjectEndPoint1 (`  
    `const QPointF & endPt1 )`

**18.64.3.19 `setObjectEndPoint1()` [2/2]** `void setObjectEndPoint1 (`  
    `qreal x1,`  
    `qreal y1 )`

**18.64.3.20 `setObjectEndPoint2()` [1/2]** `void setObjectEndPoint2 (`  
    `const QPointF & endPt2 )`

**18.64.3.21 `setObjectEndPoint2()` [2/2]** `void setObjectEndPoint2 (`  
    `qreal x2,`  
    `qreal y2 )`

**18.64.3.22 `setObjectX1()`** `void setObjectX1 (`  
    `qreal x ) [inline]`

**18.64.3.23 `setObjectX2()`** void setObjectX2 ( qreal x ) [inline]

**18.64.3.24 `setObjectY1()`** void setObjectY1 ( qreal y ) [inline]

**18.64.3.25 `setObjectY2()`** void setObjectY2 ( qreal y ) [inline]

**18.64.3.26 `type()`** virtual int type ( ) const [inline], [virtual]

Reimplemented from [BaseObject](#).

**18.64.3.27 `updateRubber()`** void updateRubber ( QPainter \* painter = 0 )

**18.64.3.28 `vulcanize()`** void vulcanize ( ) [virtual]

Implements [BaseObject](#).

The documentation for this class was generated from the following files:

- embroidery2/[object-line.h](#)
- embroidery2/[object-line.cpp](#)

## 18.65 LSYSTEM Struct Reference

```
#include <embroidery.h>
```

### Public Attributes

- char [axiom](#)
- char \* [alphabet](#)
- char \* [constants](#)
- char \*\* [rules](#)

### 18.65.1 Member Data Documentation

**18.65.1.1 alphabet** char\* alphabet

**18.65.1.2 axiom** char axiom

**18.65.1.3 constants** char\* constants

**18.65.1.4 rules** char\*\* rules

The documentation for this struct was generated from the following file:

- `extern/libembroidery/src/embroidery.h`

## 18.66 MainWindow Class Reference

The [MainWindow](#) class.

```
#include <mainwindow.h>
```

### Public Slots

- void [enablePromptRapidFire](#) ()
- void [disablePromptRapidFire](#) ()
- void [enableMoveRapidFire](#) ()
- void [disableMoveRapidFire](#) ()
- void [onCloseWindow](#) ()  
*MainWindow::onCloseWindow.*
- virtual void [onCloseMdiWin](#) (MdiWindow \*)  
*MainWindow::onCloseMdiWin.*
- void [recentMenuAboutToShow](#) ()  
*MainWindow::recentMenuAboutToShow.*
- void [onWindowActivated](#) (QMdiSubWindow \*w)  
*MainWindow::onWindowActivated.*
- void [windowMenuAboutToShow](#) ()  
*MainWindow::windowMenuAboutToShow.*
- void [windowMenuActivated](#) (bool checked)  
*MainWindow::windowMenuActivated.*
- QAction \* [getAction](#) (int actionEnum)

- void `updateAllViewScrollBars` (bool val)
- void `updateAllViewCrossHairColors` (QRgb color)
- void `updateAllViewBackgroundColors` (QRgb color)
- void `updateAllViewSelectBoxColors` (QRgb colorL, QRgb fillL, QRgb colorR, QRgb fillR, int alpha)
- void `updateAllViewGridColors` (QRgb color)
- void `updateAllViewRulerColors` (QRgb color)
- void `updatePickAddMode` (bool val)
- void `pickAddModeToggled` ()
- void `settingsPrompt` ()
- void `settingsDialog` (const QString &showTab=QString())
- void `readSettings` ()
- void `writeSettings` ()
- static bool `validFileFormat` (const QString &fileName)
  - MainWindow::validFileFormat.*
- void `stub_implement` (QString txt)
  - MainWindow::stub\_implement.*
- void `stub_testing` ()
  - MainWindow::stub\_testing.*
- void `promptHistoryAppended` (const QString &txt)
- void `logPromptInput` (const QString &txt)
- void `promptInputPrevious` ()
- void `promptInputNext` ()
- void `runCommand` ()
- void `runCommandMain` (const QString &cmd)
- void `runCommandClick` (const QString &cmd, EmbReal x, EmbReal y)
- void `runCommandMove` (const QString &cmd, EmbReal x, EmbReal y)
- void `runCommandContext` (const QString &cmd, const QString &str)
- void `runCommandPrompt` (const QString &cmd, const QString &str)
- void `newFile` ()
  - MainWindow::newFile.*
- void `openFile` (bool recent=false, const QString &recentFile="")
  - MainWindow::openFile.*
- void `openFilesSelected` (const QStringList &)
  - MainWindow::openFilesSelected.*
- void `openrecentfile` ()
  - MainWindow::openrecentfile.*
- void `savefile` ()
  - MainWindow::savefile.*
- void `saveasfile` ()
  - MainWindow::saveasfile.*
- void `print` ()
- void `designDetails` ()
- void `exit` ()
  - MainWindow::exit.*
- void `quit` ()
  - MainWindow::quit.*
- void `checkForUpdates` ()
- void `tipOfTheDay` ()
- void `buttonTipOfTheDayClicked` (int)
- void `checkBoxTipOfTheDayStateChanged` (int)
- void `help` ()
- void `changelog` ()

- void `about ()`
- void `whatsThisContextHelp ()`
- void `cut ()`
- void `copy ()`
- void `paste ()`
- void `selectAll ()`
- void `closeToolBar (QAction *)`  
*MainWindow::closeToolBar.*
- void `floatingChangedToolBar (bool)`  
*MainWindow::floatingChangedToolBar.*
- void `toggleGrid ()`
- void `toggleRuler ()`
- void `toggleLwt ()`
- void `iconResize (int iconSize)`
- void `icon16 ()`
- void `icon24 ()`
- void `icon32 ()`
- void `icon48 ()`
- void `icon64 ()`
- void `icon128 ()`
- void `layerSelectorIndexChanged (int index)`
- void `colorSelectorIndexChanged (int index)`
- void `linetypeSelectorIndexChanged (int index)`
- void `lineweightSelectorIndexChanged (int index)`
- void `textFontSelectorCurrentFontChanged (const QFont &font)`
- void `textSizeSelectorIndexChanged (int index)`
- QString `textFont ()`
- EmbReal `textSize ()`
- EmbReal `textAngle ()`
- bool `textBold ()`
- bool `textItalic ()`
- bool `textUnderline ()`
- bool `textStrikeOut ()`
- bool `textOverline ()`
- void `setTextFont (const QString &str)`
- void `setTextSize (EmbReal num)`
- void `setTextAngle (EmbReal num)`
- void `setTextBold (bool val)`
- void `setTextItalic (bool val)`
- void `setTextUnderline (bool val)`
- void `setTextStrikeOut (bool val)`
- void `setTextOverline (bool val)`
- QString `getCurrentLayer ()`
- QRgb `getCurrentColor ()`
- QString `getCurrentLineType ()`
- QString `getCurrentLineWeight ()`
- void `undo ()`
- void `redo ()`
- bool `isShiftPressed ()`
- void `setShiftPressed ()`
- void `setShiftReleased ()`
- void `deletePressed ()`
- void `escapePressed ()`
- void `makeLayerActive ()`

- void `layerManager ()`
- void `layerPrevious ()`
- void `zoomRealtime ()`
- void `zoomPrevious ()`
- void `zoomWindow ()`
- void `zoomDynamic ()`
- void `zoomScale ()`
- void `zoomCenter ()`
- void `zoomIn ()`
- void `zoomOut ()`
- void `zoomSelected ()`
- void `zoomAll ()`
- void `zoomExtents ()`
- void `panrealtime ()`
- void `panpoint ()`
- void `panLeft ()`
- void `panRight ()`
- void `panUp ()`
- void `panDown ()`  
*MainWindow::panDown.*
- void `dayVision ()`  
*MainWindow::dayVision.*
- void `nightVision ()`  
*MainWindow::nightVision.*
- void `doNothing ()`

## Public Member Functions

- `MainWindow ()`  
*MainWindow::MainWindow.*
- `~MainWindow ()`  
*MainWindow::~MainWindow.*
- `MdiArea * getMdiArea ()`  
*MainWindow::getMdiArea.*
- `MainWindow * getApplication ()`  
*MainWindow::getApplication.*
- `MdiWindow * activeMdiWindow ()`
- `View * activeView ()`
- `QGraphicsScene * activeScene ()`
- `QUndoStack * activeUndoStack ()`
- void `setUndoCleanIcon (bool opened)`
- virtual void `updateMenuToolbarStatusbar ()`  
*MainWindow::updateMenuToolbarStatusbar.*
- void `actuator (std::string command)`  
*MainWindow::actuator.*
- `QString getSettingsGeneralLanguage ()`
- `QString getSettingsGeneralIconTheme ()`
- int `getSettingsGeneralIconSize ()`
- bool `getSettingsGeneralMdiBGUseLogo ()`
- bool `getSettingsGeneralMdiBGUseTexture ()`
- bool `getSettingsGeneralMdiBGUseColor ()`
- `QString getSettingsGeneralMdiBGLogo ()`

- `QString getSettingsGeneralMdiBGTexture ()`
- `QRgb getSettingsGeneralMdiBGColor ()`
- `bool getSettingsGeneralTipOfTheDay ()`
- `int getSettingsGeneralCurrentTip ()`
- `bool getSettingsGeneralSystemHelpBrowser ()`
- `bool getSettingsGeneralCheckForUpdates ()`
- `bool getSettingsDisplayUseOpenGL ()`
- `bool getSettingsDisplayRenderHintAA ()`
- `bool getSettingsDisplayRenderHintTextAA ()`
- `bool getSettingsDisplayRenderHintSmoothPix ()`
- `bool getSettingsDisplayRenderHintHighAA ()`
- `bool getSettingsDisplayRenderHintNonCosmetic ()`
- `bool getSettingsDisplayShowScrollBars ()`
- `int getSettingsDisplayScrollBarWidgetNum ()`
- `QRgb getSettingsDisplayCrossHairColor ()`
- `QRgb getSettingsDisplayBGColor ()`
- `QRgb getSettingsDisplaySelectBoxLeftColor ()`
- `QRgb getSettingsDisplaySelectBoxLeftFill ()`
- `QRgb getSettingsDisplaySelectBoxRightColor ()`
- `QRgb getSettingsDisplaySelectBoxRightFill ()`
- `uint8_t getSettingsDisplaySelectBoxAlpha ()`
- `EmbReal getSettingsDisplayZoomScaleIn ()`
- `EmbReal getSettingsDisplayZoomScaleOut ()`
- `uint8_t getSettingsDisplayCrossHairPercent ()`
- `QString getSettingsDisplayUnits ()`
- `QRgb getSettingsPromptTextColor ()`
- `QRgb getSettingsPromptBGColor ()`
- `QString getSettingsPromptFontFamily ()`
- `QString getSettingsPromptFontStyle ()`
- `uint8_t getSettingsPromptFontSize ()`
- `bool getSettingsPromptSaveHistory ()`
- `bool getSettingsPromptSaveHistoryAsHtml ()`
- `QString getSettingsPromptSaveHistoryFilename ()`
- `QString getSettingsCustomFilter ()`
- `QString getSettingsOpenFormat ()`
- `bool getSettingsOpenThumbnail ()`
- `QString getSettingsSaveFormat ()`
- `bool getSettingsSaveThumbnail ()`
- `uint8_t getSettingsRecentMaxFiles ()`
- `uint8_t getSettingsOpenSaveTrimDstNumJumps ()`
- `QString getSettingsPrintingDefaultDevice ()`
- `bool getSettingsPrintingUseLastDevice ()`
- `bool getSettingsPrintingDisableBG ()`
- `bool getSettingsGridShowOnLoad ()`
- `bool getSettingsGridShowOrigin ()`
- `bool getSettingsGridColorMatchCrossHair ()`
- `QRgb getSettingsGridColor ()`
- `bool getSettingsGridLoadFromFile ()`
- `QString getSettingsGridType ()`
- `bool getSettingsGridCenterOnOrigin ()`
- `EmbReal getSettingsGridCenterX ()`
- `EmbReal getSettingsGridCenterY ()`
- `EmbReal getSettingsGridSizeX ()`
- `EmbReal getSettingsGridSizeY ()`
- `EmbReal getSettingsGridSpacingX ()`

- `EmbReal getSettingsGridSpacingY ()`
- `EmbReal getSettingsGridSizeRadius ()`
- `EmbReal getSettingsGridSpacingRadius ()`
- `EmbReal getSettingsGridSpacingAngle ()`
- `bool getSettingsRulerShowOnLoad ()`
- `bool getSettingsRulerMetric ()`
- `QRgb getSettingsRulerColor ()`
- `uint8_t getSettingsRulerPixelSize ()`
- `bool getSettingsQSnapEnabled ()`
- `QRgb getSettingsQSnapLocatorColor ()`
- `uint8_t getSettingsQSnapLocatorSize ()`
- `uint8_t getSettingsQSnapApertureSize ()`
- `bool getSettingsQSnapEndPoint ()`
- `bool getSettingsQSnapMidPoint ()`
- `bool getSettingsQSnapCenter ()`
- `bool getSettingsQSnapNode ()`
- `bool getSettingsQSnapQuadrant ()`
- `bool getSettingsQSnapIntersection ()`
- `bool getSettingsQSnapExtension ()`
- `bool getSettingsQSnapInsertion ()`
- `bool getSettingsQSnapPerpendicular ()`
- `bool getSettingsQSnapTangent ()`
- `bool getSettingsQSnapNearest ()`
- `bool getSettingsQSnapApparent ()`
- `bool getSettingsQSnapParallel ()`
- `bool getSettingsLwtShowLwt ()`
- `bool getSettingsLwtRealRender ()`
- `EmbReal getSettingsLwtDefaultLwt ()`
- `bool getSettingsSelectionModePickFirst ()`
- `bool getSettingsSelectionModePickAdd ()`
- `bool getSettingsSelectionModePickDrag ()`
- `QRgb getSettingsSelectionCoolGripColor ()`
- `QRgb getSettingsSelectionHotGripColor ()`
- `uint8_t getSettingsSelectionGripSize ()`
- `uint8_t getSettingsSelectionPickBoxSize ()`
- `QString getSettingsTextFont ()`
- `EmbReal getSettingsTextSize ()`
- `EmbReal getSettingsTextAngle ()`
- `bool getSettingsTextStyleBold ()`
- `bool getSettingsTextStyleItalic ()`
- `bool getSettingsTextStyleUnderline ()`
- `bool getSettingsTextStyleStrikeOut ()`
- `bool getSettingsTextStyleOverline ()`
- `void setSettingsGeneralLanguage (const QString &newValue)`
- `void setSettingsGeneralIconTheme (const QString &newValue)`
- `void setSettingsGeneralIconSize (int newValue)`
- `void setSettingsGeneralMdiBGUseLogo (bool newValue)`
- `void setSettingsGeneralMdiBGUseTexture (bool newValue)`
- `void setSettingsGeneralMdiBGUseColor (bool newValue)`
- `void setSettingsGeneralMdiBGLogo (const QString &newValue)`
- `void setSettingsGeneralMdiBGTexture (const QString &newValue)`
- `void setSettingsGeneralMdiBGColor (QRgb newValue)`
- `void setSettingsGeneralTipOfDay (bool newValue)`
- `void setSettingsGeneralCurrentTip (int newValue)`
- `void setSettingsGeneralSystemHelpBrowser (bool newValue)`

- void `setSettingsGeneralCheckForUpdates` (bool newValue)
- void `setSettingsDisplayUseOpenGL` (bool newValue)
- void `setSettingsDisplayRenderHintAA` (bool newValue)
- void `setSettingsDisplayRenderHintTextAA` (bool newValue)
- void `setSettingsDisplayRenderHintSmoothPix` (bool newValue)
- void `setSettingsDisplayRenderHintHighAA` (bool newValue)
- void `setSettingsDisplayRenderHintNonCosmetic` (bool newValue)
- void `setSettingsDisplayShowScrollBars` (bool newValue)
- void `setSettingsDisplayScrollBarWidgetNum` (int newValue)
- void `setSettingsDisplayCrossHairColor` (QRgb newValue)
- void `setSettingsDisplayBGColor` (QRgb newValue)
- void `setSettingsDisplaySelectBoxLeftColor` (QRgb newValue)
- void `setSettingsDisplaySelectBoxLeftFill` (QRgb newValue)
- void `setSettingsDisplaySelectBoxRightColor` (QRgb newValue)
- void `setSettingsDisplaySelectBoxRightFill` (QRgb newValue)
- void `setSettingsDisplaySelectBoxAlpha` (uint8\_t newValue)
- void `setSettingsDisplayZoomScaleIn` (EmbReal newValue)
- void `setSettingsDisplayZoomScaleOut` (EmbReal newValue)
- void `setSettingsDisplayCrossHairPercent` (uint8\_t newValue)
- void `setSettingsDisplayUnits` (const QString &newValue)
- void `setSettingsPromptTextColor` (QRgb newValue)
- void `setSettingsPromptBGColor` (QRgb newValue)
- void `setSettingsPromptFontFamily` (const QString &newValue)
- void `setSettingsPromptFontStyle` (const QString &newValue)
- void `setSettingsPromptFontSize` (uint8\_t newValue)
- void `setSettingsPromptSaveHistory` (bool newValue)
- void `setSettingsPromptSaveHistoryAsHtml` (bool newValue)
- void `setSettingsPromptSaveHistoryFilename` (const QString &newValue)
- void `setSettingsCustomFilter` (const QString &newValue)
- void `setSettingsOpenFormat` (const QString &newValue)
- void `setSettingsOpenThumbnail` (bool newValue)
- void `setSettingsSaveFormat` (const QString &newValue)
- void `setSettingsSaveThumbnail` (bool newValue)
- void `setSettingsRecentMaxFiles` (uint8\_t newValue)
- void `setSettingsOpenSaveTrimDstNumJumps` (uint8\_t newValue)
- void `setSettingsPrintingDefaultDevice` (const QString &newValue)
- void `setSettingsPrintingUseLastDevice` (bool newValue)
- void `setSettingsPrintingDisableBG` (bool newValue)
- void `setSettingsGridShowOnLoad` (bool newValue)
- void `setSettingsGridShowOrigin` (bool newValue)
- void `setSettingsGridColorMatchCrossHair` (bool newValue)
- void `setSettingsGridColor` (QRgb newValue)
- void `setSettingsGridLoadFromFile` (bool newValue)
- void `setSettingsGridType` (const QString &newValue)
- void `setSettingsGridCenterOnOrigin` (bool newValue)
- void `setSettingsGridCenterX` (EmbReal newValue)
- void `setSettingsGridCenterY` (EmbReal newValue)
- void `setSettingsGridSizeX` (EmbReal newValue)
- void `setSettingsGridSizeY` (EmbReal newValue)
- void `setSettingsGridSpacingX` (EmbReal newValue)
- void `setSettingsGridSpacingY` (EmbReal newValue)
- void `setSettingsGridSizeRadius` (EmbReal newValue)
- void `setSettingsGridSpacingRadius` (EmbReal newValue)
- void `setSettingsGridSpacingAngle` (EmbReal newValue)
- void `setSettingsRulerShowOnLoad` (bool newValue)

- void `setSettingsRulerMetric` (bool newValue)
- void `setSettingsRulerColor` (QRgb newValue)
- void `setSettingsRulerPixelSize` (uint8\_t newValue)
- void `setSettingsQSnapEnabled` (bool newValue)
- void `setSettingsQSnapLocatorColor` (QRgb newValue)
- void `setSettingsQSnapLocatorSize` (uint8\_t newValue)
- void `setSettingsQSnapApertureSize` (uint8\_t newValue)
- void `setSettingsQSnapEndPoint` (bool newValue)
- void `setSettingsQSnapMidPoint` (bool newValue)
- void `setSettingsQSnapCenter` (bool newValue)
- void `setSettingsQSnapNode` (bool newValue)
- void `setSettingsQSnapQuadrant` (bool newValue)
- void `setSettingsQSnapIntersection` (bool newValue)
- void `setSettingsQSnapExtension` (bool newValue)
- void `setSettingsQSnapInsertion` (bool newValue)
- void `setSettingsQSnapPerpendicular` (bool newValue)
- void `setSettingsQSnapTangent` (bool newValue)
- void `setSettingsQSnapNearest` (bool newValue)
- void `setSettingsQSnapApparent` (bool newValue)
- void `setSettingsQSnapParallel` (bool newValue)
- void `setSettingsLwtShowLwt` (bool newValue)
- void `setSettingsLwtRealRender` (bool newValue)
- void `setSettingsLwtDefaultLwt` (EmbReal newValue)
- void `setSettingsSelectionModePickFirst` (bool newValue)
- void `setSettingsSelectionModePickAdd` (bool newValue)
- void `setSettingsSelectionModePickDrag` (bool newValue)
- void `setSettingsSelectionCoolGripColor` (QRgb newValue)
- void `setSettingsSelectionHotGripColor` (QRgb newValue)
- void `setSettingsSelectionGripSize` (uint8\_t newValue)
- void `setSettingsSelectionPickBoxSize` (uint8\_t newValue)
- void `setSettingsTextFont` (const QString &newValue)
- void `setSettingsTextSize` (EmbReal newValue)
- void `setSettingsTextAngle` (EmbReal newValue)
- void `setSettingsTextStyleBold` (bool newValue)
- void `setSettingsTextStyleItalic` (bool newValue)
- void `setSettingsTextStyleUnderline` (bool newValue)
- void `setSettingsTextStyleStrikeOut` (bool newValue)
- void `setSettingsTextStyleOverline` (bool newValue)
- bool `isCommandActive` ()
- QString `activeCommand` ()
- QString `platformString` ()
- void `nativeAlert` (const QString &txt)
- void `nativeBlinkPrompt` ()
- void `nativeSetPromptPrefix` (const QString &txt)
- void `nativeAppendPromptHistory` (const QString &txt)
- void `nativeEnablePromptRapidFire` ()
- void `nativeDisablePromptRapidFire` ()
- void `nativeInitCommand` ()
- void `nativeEndCommand` ()
- void `nativeEnableMoveRapidFire` ()
- void `nativeDisableMoveRapidFire` ()
- void `nativeNewFile` ()
- void `nativeOpenFile` ()
- void `nativeExit` ()
- void `nativeHelp` ()

- void `nativeAbout ()`
- void `nativeTipOfTheDay ()`
- void `nativeWindowCascade ()`
- void `nativeWindowTile ()`
- void `nativeWindowClose ()`
- void `nativeWindowCloseAll ()`
- void `nativeWindowNext ()`
- void `nativeWindowPrevious ()`
- QString `nativePlatformString ()`  
*MainWindow::nativePlatformString.*
- void `nativeMessageBox (const QString &type, const QString &title, const QString &text)`  
*MainWindow::nativeMessageBox.*
- void `nativeUndo ()`
- void `nativeRedo ()`
- void `nativeIcon16 ()`
- void `nativeIcon24 ()`
- void `nativeIcon32 ()`
- void `nativeIcon48 ()`
- void `nativeIcon64 ()`
- void `nativeIcon128 ()`
- void `nativePanLeft ()`
- void `nativePanRight ()`
- void `nativePanUp ()`
- void `nativePanDown ()`
- void `nativeZoomIn ()`  
*MainWindow::nativeZoomIn.*
- void `nativeZoomOut ()`  
*MainWindow::nativeZoomOut.*
- void `nativeZoomExtents ()`  
*MainWindow::nativeZoomExtents.*
- void `nativePrintArea (EmbReal x, EmbReal y, EmbReal w, EmbReal h)`  
*MainWindow::nativePrintArea.*
- void `nativeDayVision ()`
- void `nativeNightVision ()`
- void `nativeSetBackgroundColor (uint8_t r, uint8_t g, uint8_t b)`
- void `nativeSetCrossHairColor (uint8_t r, uint8_t g, uint8_t b)`
- void `nativeSetGridColor (uint8_t r, uint8_t g, uint8_t b)`
- QString `nativeTextFont ()`
- EmbReal `nativeTextSize ()`
- EmbReal `nativeTextAngle ()`
- bool `nativeTextBold ()`
- bool `nativeTextItalic ()`
- bool `nativeTextUnderline ()`
- bool `nativeTextStrikeOut ()`
- bool `nativeTextOverline ()`
- void `nativeSetFont (const QString &str)`
- void `nativeSetTextSize (EmbReal num)`
- void `nativeSetTextAngle (EmbReal num)`
- void `nativeSetTextBold (bool val)`
- void `nativeSetTextItalic (bool val)`
- void `nativeSetTextUnderline (bool val)`
- void `nativeSetTextStrikeOut (bool val)`
- void `nativeSetTextOverline (bool val)`
- void `nativePreviewOn (int clone, int mode, EmbReal x, EmbReal y, EmbReal data)`

- void nativePreviewOff ()
  - void nativeVulcanize ()
  - void nativeClearRubber ()
  - bool nativeAllowRubber ()
  - void nativeSpareRubber (qint64 id)
  - void nativeSetRubberMode (int mode)
  - void nativeSetRubberPoint (const QString &key, EmbReal x, EmbReal y)
  - void nativeSetRubberText (const QString &key, const QString &txt)
  - void nativeAddTextMulti (const QString &str, EmbReal x, EmbReal y, EmbReal rot, bool fill, int rubberMode)
  - void nativeAddTextSingle (const QString &str, EmbReal x, EmbReal y, EmbReal rot, bool fill, int rubberMode)
  - void nativeAddInfiniteLine (EmbReal x1, EmbReal y1, EmbReal x2, EmbReal y2, EmbReal rot)
  - void nativeAddRay (EmbReal x1, EmbReal y1, EmbReal x2, EmbReal y2, EmbReal rot)
  - void nativeAddLine (EmbReal x1, EmbReal y1, EmbReal x2, EmbReal y2, EmbReal rot, int rubberMode)
  - void nativeAddTriangle (EmbReal x1, EmbReal y1, EmbReal x2, EmbReal y2, EmbReal x3, EmbReal y3, EmbReal rot, bool fill)
  - void nativeAddRectangle (EmbReal x, EmbReal y, EmbReal w, EmbReal h, EmbReal rot, bool fill, int rubberMode)
  - void nativeAddRoundedRectangle (EmbReal x, EmbReal y, EmbReal w, EmbReal h, EmbReal rad, EmbReal rot, bool fill)
  - void nativeAddArc (EmbReal startX, EmbReal startY, EmbReal midX, EmbReal midY, EmbReal endX, EmbReal endY, int rubberMode)
  - void nativeAddCircle (EmbReal centerX, EmbReal centerY, EmbReal radius, bool fill, int rubberMode)
  - void nativeAddSlot (EmbReal centerX, EmbReal centerY, EmbReal diameter, EmbReal length, EmbReal rot, bool fill, int rubberMode)
  - void nativeAddEllipse (EmbReal centerX, EmbReal centerY, EmbReal width, EmbReal height, EmbReal rot, bool fill, int rubberMode)
  - void nativeAddPoint (EmbReal x, EmbReal y)
  - void nativeAddRegularPolygon (EmbReal centerX, EmbReal centerY, quint16 sides, uint8\_t mode, EmbReal rad, EmbReal rot, bool fill)
  - void nativeAddPolygon (EmbReal startX, EmbReal startY, const QPainterPath &p, int rubberMode)
  - void nativeAddPolyline (EmbReal startX, EmbReal startY, const QPainterPath &p, int rubberMode)
  - void nativeAddPath (EmbReal startX, EmbReal startY, const QPainterPath &p, int rubberMode)
  - void nativeAddHorizontalDimension (EmbReal x1, EmbReal y1, EmbReal x2, EmbReal y2, EmbReal legHeight)
  - void nativeAddVerticalDimension (EmbReal x1, EmbReal y1, EmbReal x2, EmbReal y2, EmbReal legHeight)
  - void nativeAddImage (const QString &img, EmbReal x, EmbReal y, EmbReal w, EmbReal h, EmbReal rot)
  - void nativeAddDimLeader (EmbReal x1, EmbReal y1, EmbReal x2, EmbReal y2, EmbReal rot, int rubberMode)
  - void nativeSetCursorShape (const QString &str)
  - EmbReal nativeCalculateAngle (EmbReal x1, EmbReal y1, EmbReal x2, EmbReal y2)
  - EmbReal nativeCalculateDistance (EmbReal x1, EmbReal y1, EmbReal x2, EmbReal y2)
  - EmbReal nativePerpendicularDistance (EmbReal px, EmbReal py, EmbReal x1, EmbReal y1, EmbReal x2, EmbReal y2)
  - int nativeNumSelected ()
  - void nativeSelectAll ()
  - void nativeAddToSelection (const QPainterPath path, Qt::ItemSelectionMode mode)
  - void nativeClearSelection ()
  - void nativeDeleteSelected ()
- MainWindow::nativeDeleteSelected.*
- void nativeCutSelected (EmbReal x, EmbReal y)
- MainWindow::nativeCutSelected.*
- void nativeCopySelected (EmbReal x, EmbReal y)
- MainWindow::nativeCopySelected.*
- void nativePasteSelected (EmbReal x, EmbReal y)
- MainWindow::nativePasteSelected.*

- void `nativeMoveSelected (EmbReal dx, EmbReal dy)`  
*MainWindow::nativeMoveSelected.*
- void `nativeScaleSelected (EmbReal x, EmbReal y, EmbReal factor)`  
*MainWindow::nativeScaleSelected.*
- void `nativeRotateSelected (EmbReal x, EmbReal y, EmbReal rot)`  
*MainWindow::nativeRotateSelected.*
- void `nativeMirrorSelected (EmbReal x1, EmbReal y1, EmbReal x2, EmbReal y2)`  
*MainWindow::nativeMirrorSelected.*
- `EmbReal nativeQSnapX ()`  
*MainWindow::nativeQSnapX.*
- `EmbReal nativeQSnapY ()`  
*MainWindow::nativeQSnapY.*
- `EmbReal nativeMouseX ()`  
*MainWindow::nativeMouseX.*
- `EmbReal nativeMouseY ()`  
*MainWindow::nativeMouseY.*

## Public Attributes

- `MainWindow * mainWin`
- `MdiArea * mdiArea`
- `CmdPrompt * prompt`
- `PropertyEditor * dockPropEdit`
- `UndoEditor * dockUndoEdit`
- `StatusBar * statusbar`
- `QList< QGraphicsItem * > cutCopyObjectList`
- `QHash< int, QAction * > actionHash`
- `QHash< QString, QToolBar * > toolbarHash`
- `QHash< QString, QMenu * > menuHash`
- `QString formatFilterOpen`
- `QString formatFilterSave`

## Protected Member Functions

- virtual void `resizeEvent (QResizeEvent *)`  
*MainWindow::resizeEvent.*
- void `closeEvent (QCloseEvent *event)`  
*MainWindow::closeEvent.*
- `QAction * getFileSeparator ()`  
*MainWindow::getFileSeparator.*
- void `loadFormats ()`  
*MainWindow::loadFormats.*

## Private Slots

- void `hideUnimplemented ()`  
*MainWindow::hideUnimplemented.*

## Private Member Functions

- `QMdiSubWindow * findMdiWindow (const QString &fileName)`  
*MainWindow::findMdiWindow.*
- `void createAllActions ()`
- `QAction * createAction (const QString icon, const QString toolTip, const QString statusTip, bool scripted=false)`
- `void createAllToolbars ()`
- `void createFileToolbar ()`
- `void createEditToolbar ()`
- `void createViewToolbar ()`
- `void createZoomToolbar ()`
- `void createPanToolbar ()`
- `void createIconToolbar ()`
- `void createHelpToolbar ()`
- `void createLayerToolbar ()`
- `void createPropertiesToolbar ()`
- `void createTextToolbar ()`
- `void createPromptToolbar ()`
- `void createAllMenus ()`
- `void createFileMenu ()`
- `void createEditMenu ()`
- `void createViewMenu ()`
- `void createSettingsMenu ()`
- `void createWindowMenu ()`
- `void createHelpMenu ()`
- `void javaInitNatives (QScriptEngine *engine)`
- `void javaLoadCommand (const QString &cmdName)`

## Private Attributes

- `QString settings_general_language`
- `QString settings_general_icon_theme`
- `int settings_general_icon_size`
- `bool settings_general_mdi_bg_use_logo`
- `bool settings_general_mdi_bg_use_texture`
- `bool settings_general_mdi_bg_use_color`
- `QString settings_general_mdi_bg_logo`
- `QString settings_general_mdi_bg_texture`
- `QRgb settings_general_mdi_bg_color`
- `bool settings_general_tip_of_the_day`
- `quint16 settings_general_current_tip`
- `bool settings_general_system_help_browser`
- `bool settings_general_check_for_updates`
- `bool settings_display_use_opengl`
- `bool settings_display_renderhint_aa`
- `bool settings_display_renderhint_text_aa`
- `bool settings_display_renderhint_smooth_pix`
- `bool settings_display_renderhint_high_aa`
- `bool settings_display_renderhint_noncosmetic`
- `bool settings_display_show_scrollbars`
- `int settings_display_scrollbar_widget_num`
- `QRgb settings_display_crosshair_color`
- `QRgb settings_display_bg_color`

- QRgb `settings_display_selectbox_left_color`
- QRgb `settings_display_selectbox_left_fill`
- QRgb `settings_display_selectbox_right_color`
- QRgb `settings_display_selectbox_right_fill`
- uint8\_t `settings_display_selectbox_alpha`
- EmbReal `settings_display_zoomscale_in`
- EmbReal `settings_display_zoomscale_out`
- uint8\_t `settings_display_crosshair_percent`
- QString `settings_display_units`
- QRgb `settings_prompt_text_color`
- QRgb `settings_prompt_bg_color`
- QString `settings_prompt_font_family`
- QString `settings_prompt_font_style`
- uint8\_t `settings_prompt_font_size`
- bool `settings_prompt_save_history`
- bool `settings_prompt_save_history_as_html`
- QString `settings_prompt_save_history_filename`
- QString `settings_opensave_custom_filter`
- QString `settings_opensave_open_format`
- bool `settings_opensave_open_thumbnail`
- QString `settings_opensave_save_format`
- bool `settings_opensave_save_thumbnail`
- uint8\_t `settings_opensave_recent_max_files`
- QStringList `settings_opensave_recent_list_of_files`
- QString `settings_opensave_recent_directory`
- uint8\_t `settings_opensave_trim_dst_num_jumps`
- QString `settings_printing_default_device`
- bool `settings_printing_use_last_device`
- bool `settings_printing_disable_bg`
- bool `settings_grid_show_on_load`
- bool `settings_grid_show_origin`
- bool `settings_grid_color_match_crosshair`
- QRgb `settings_grid_color`
- bool `settings_grid_load_from_file`
- QString `settings_grid_type`
- bool `settings_grid_center_on_origin`
- EmbReal `settings_grid_center_x`
- EmbReal `settings_grid_center_y`
- EmbReal `settings_grid_size_x`
- EmbReal `settings_grid_size_y`
- EmbReal `settings_grid_spacing_x`
- EmbReal `settings_grid_spacing_y`
- EmbReal `settings_grid_size_radius`
- EmbReal `settings_grid_spacing_radius`
- EmbReal `settings_grid_spacing_angle`
- bool `settings_ruler_show_on_load`
- bool `settings_ruler_metric`
- QRgb `settings_ruler_color`
- uint8\_t `settings_ruler_pixel_size`
- bool `settings_qsnap_enabled`
- QRgb `settings_qsnap_locator_color`
- uint8\_t `settings_qsnap_locator_size`
- uint8\_t `settings_qsnap_aperture_size`
- bool `settings_qsnap_endpoint`
- bool `settings_qsnap_midpoint`

- bool `settings_qsnap_center`
- bool `settings_qsnap_node`
- bool `settings_qsnap_quadrant`
- bool `settings_qsnap_intersection`
- bool `settings_qsnap_extension`
- bool `settings_qsnap_insertion`
- bool `settings_qsnap_perpendicular`
- bool `settings_qsnap_tangent`
- bool `settings_qsnap_nearest`
- bool `settings_qsnap_apparent`
- bool `settings_qsnap_parallel`
- bool `settings_lwt_show_lwt`
- bool `settings_lwt_real_render`
- EmbReal `settings_lwt_default_lwt`
- bool `settings_selection_mode_pickfirst`
- bool `settings_selection_mode_pickadd`
- bool `settings_selection_mode_pickdrag`
- QRgb `settings_selection_coolgrip_color`
- QRgb `settings_selection_hotgrip_color`
- uint8\_t `settings_selection_grip_size`
- uint8\_t `settings_selection_pickbox_size`
- QString `settings_text_font`
- EmbReal `settings_text_size`
- EmbReal `settings_text_angle`
- bool `settings_text_style_bold`
- bool `settings_text_style_italic`
- bool `settings_text_style_underline`
- bool `settings_text_style_overline`
- bool `settings_text_style_strikeout`
- bool `shiftKeyPressedState`
- QByteArray `layoutState`
- int `numOfDocs`
- int `docIndex`
- QList< MdiWindow \* > `listMdiWin`
- QString `openFilesPath`
- QAction \* `myFileSeparator`
- QWizard \* `wizardTipOfDay`
- QLabel \* `labelTipOfDay`
- QCheckBox \* `checkBoxTipOfDay`
- QStringList `listTipOfDay`
- QToolBar \* `toolbarFile`
- QToolBar \* `toolbarEdit`
- QToolBar \* `toolbarView`
- QToolBar \* `toolbarZoom`
- QToolBar \* `toolbarPan`
- QToolBar \* `toolbarIcon`
- QToolBar \* `toolbarHelp`
- QToolBar \* `toolbarLayer`
- QToolBar \* `toolbarText`
- QToolBar \* `toolbarProperties`
- QToolBar \* `toolbarPrompt`
- QComboBox \* `layerSelector`
- QComboBox \* `colorSelector`
- QComboBox \* `linetypeSelector`
- QComboBox \* `lineweightSelector`

- QFontComboBox \* `textFontSelector`
- QComboBox \* `textSizeSelector`
- QMenu \* `fileMenu`
- QMenu \* `editMenu`
- QMenu \* `viewMenu`
- QMenu \* `settingsMenu`
- QMenu \* `windowMenu`
- QMenu \* `helpMenu`
- QMenu \* `recentMenu`
- QMenu \* `zoomMenu`
- QMenu \* `panMenu`
- QScriptEngine \* `engine`
- QScriptEngineDebugger \* `debugger`

### 18.66.1 Detailed Description

The [MainWindow](#) class.

### 18.66.2 Constructor & Destructor Documentation

#### 18.66.2.1 `MainWindow() MainWindow( )`

`MainWindow::MainWindow`.

#### 18.66.2.2 `~MainWindow() ~MainWindow( )`

`MainWindow::~MainWindow`.

### 18.66.3 Member Function Documentation

#### 18.66.3.1 `about void about( ) [slot]`

#### 18.66.3.2 `activeCommand() QString activeCommand( ) [inline]`

#### 18.66.3.3 `activeMdiWindow() MdiWindow * activeMdiWindow( )`

**18.66.3.4 activeScene()** `QGraphicsScene * activeScene ( )`

**18.66.3.5 activeUndoStack()** `QUndoStack * activeUndoStack ( )`

**18.66.3.6 activeView()** `View * activeView ( )`

**18.66.3.7 actuator()** `void actuator ( std::string command )`

[MainWindow::actuator.](#)

**Parameters**

<code>command</code>	<input type="text"/>
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**18.66.3.8 buttonTipOfTheDayClicked** `void buttonTipOfTheDayClicked ( int button ) [slot]`

**18.66.3.9 changelog** `void changelog ( ) [slot]`

**18.66.3.10 checkBoxTipOfTheDayStateChanged** `void checkBoxTipOfTheDayStateChanged ( int checked ) [slot]`

**18.66.3.11 checkForUpdates** `void checkForUpdates ( ) [slot]`

**18.66.3.12 closeEvent()** `void closeEvent ( QCloseEvent * event ) [protected]`

[MainWindow::closeEvent.](#)

**Parameters**

<i>event</i>	<input type="text"/>
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**18.66.3.13 `closeToolBar`** void closeToolBar ( QAction \* *action* ) [slot]

[MainWindow::closeToolBar](#).

**Parameters**

<i>action</i>	<input type="text"/>
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**18.66.3.14 `colorSelectorIndexChanged`** void colorSelectorIndexChanged ( int *index* ) [slot]

**18.66.3.15 `copy`** void copy ( ) [slot]

**18.66.3.16 `createAction()`** QAction \* createAction ( const QString *icon*, const QString *toolTip*, const QString *statusTip*, bool *scripted* = false ) [private]

**18.66.3.17 `createAllActions()`** void createAllActions ( ) [private]

**18.66.3.18 `createAllMenus()`** void createAllMenus ( ) [private]

**18.66.3.19 `createAllToolbars()`** void createAllToolbars ( ) [private]

**18.66.3.20 `createEditMenu()`** void createEditMenu ( ) [private]

**18.66.3.21 `createEditToolbar()`** void createEditToolbar ( ) [private]

**18.66.3.22 `createFileMenu()`** void createFileMenu ( ) [private]

**18.66.3.23 `createFileToolbar()`** void createFileToolbar ( ) [private]

**18.66.3.24 `createHelpMenu()`** void createHelpMenu ( ) [private]

**18.66.3.25 `createHelpToolbar()`** void createHelpToolbar ( ) [private]

**18.66.3.26 `createIconToolbar()`** void createIconToolbar ( ) [private]

**18.66.3.27 `createLayerToolbar()`** void createLayerToolbar ( ) [private]

**18.66.3.28 `createPanToolbar()`** void createPanToolbar ( ) [private]

**18.66.3.29 `createPromptToolbar()`** void createPromptToolbar ( ) [private]

**18.66.3.30 `createPropertiesToolbar()`** void createPropertiesToolbar ( ) [private]

**18.66.3.31 `createSettingsMenu()`** void createSettingsMenu ( ) [private]

**18.66.3.32 `createTextToolbar()`** void createTextToolbar ( ) [private]

**18.66.3.33 `createViewMenu()`** void createViewMenu ( ) [private]

**18.66.3.34 `createViewToolbar()`** void createViewToolbar ( ) [private]

**18.66.3.35 `createWindowMenu()`** void createWindowMenu ( ) [private]

**18.66.3.36 `createZoomToolbar()`** void createZoomToolbar ( ) [private]

**18.66.3.37 `cut`** void cut ( ) [slot]

**18.66.3.38 `dayVision`** void dayVision ( ) [slot]

MainWindow::dayVision.

**18.66.3.39 `deletePressed`** void deletePressed ( ) [slot]

**18.66.3.40 `designDetails`** void designDetails ( ) [slot]

**18.66.3.41 `disableMoveRapidFire`** void disableMoveRapidFire ( ) [slot]

**18.66.3.42 disablePromptRapidFire** void disablePromptRapidFire ( ) [slot]

**18.66.3.43 doNothing** void doNothing ( ) [slot]

**18.66.3.44 enableMoveRapidFire** void enableMoveRapidFire ( ) [slot]

**18.66.3.45 enablePromptRapidFire** void enablePromptRapidFire ( ) [slot]

**18.66.3.46 escapePressed** void escapePressed ( ) [slot]

**18.66.3.47 exit** void exit ( ) [slot]

[MainWindow::exit](#).

**18.66.3.48 findMdiWindow()** QMdiSubWindow \* findMdiWindow ( const QString & *fileName* ) [private]

[MainWindow::findMdiWindow](#).

**Parameters**

<i>fileName</i>	<input type="text"/>
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**Returns**

**18.66.3.49 floatingChangedToolBar** void floatingChangedToolBar ( bool *isFloating* ) [slot]

[MainWindow::floatingChangedToolBar](#).

**Parameters**

<i>isFloating</i>	<input type="checkbox"/>
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**18.66.3.50 `getAction`** QAction \* `getAction` (  
    int *actionEnum*) [slot][MainWindow::getAction](#).**Parameters**

<i>actionEnum</i>	<input type="checkbox"/>
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**Returns****18.66.3.51 `getApplication()`** MainWindow \* `getApplication` ()[MainWindow::getApplication](#).**Returns****18.66.3.52 `getCurrentColor`** QRgb `getCurrentColor` () [slot]**18.66.3.53 `getCurrentLayer`** QString `getCurrentLayer` () [slot]**18.66.3.54 `getCurrentLineType`** QString `getCurrentLineType` () [slot]**18.66.3.55 `getCurrentLineWeight`** QString `getCurrentLineWeight` () [slot]

**18.66.3.56 getFileSeparator()** QAction \* getFileSeparator ( ) [protected]

MainWindow::getFileSeparator.

Returns

**18.66.3.57 getMdiArea()** MdiArea \* getMdiArea ( )

MainWindow::getMdiArea.

Returns

**18.66.3.58 getSettingsCustomFilter()** QString getSettingsCustomFilter ( ) [inline]

**18.66.3.59 getSettingsDisplayBGColor()** QRgb getSettingsDisplayBGColor ( ) [inline]

**18.66.3.60 getSettingsDisplayCrossHairColor()** QRgb getSettingsDisplayCrossHairColor ( ) [inline]

**18.66.3.61 getSettingsDisplayCrossHairPercent()** uint8\_t getSettingsDisplayCrossHairPercent ( ) [inline]

**18.66.3.62 getSettingsDisplayRenderHintAA()** bool getSettingsDisplayRenderHintAA ( ) [inline]

**18.66.3.63 getSettingsDisplayRenderHintHighAA()** bool getSettingsDisplayRenderHintHighAA ( ) [inline]

**18.66.3.64 `getSettingsDisplayRenderHintNonCosmetic()`** bool getSettingsDisplayRenderHintNonCosmetic ( ) [inline]

**18.66.3.65 `getSettingsDisplayRenderHintSmoothPix()`** bool getSettingsDisplayRenderHintSmoothPix ( ) [inline]

**18.66.3.66 `getSettingsDisplayRenderHintTextAA()`** bool getSettingsDisplayRenderHintTextAA ( ) [inline]

**18.66.3.67 `getSettingsDisplayScrollBarWidgetNum()`** int getSettingsDisplayScrollBarWidgetNum ( ) [inline]

**18.66.3.68 `getSettingsDisplaySelectBoxAlpha()`** uint8\_t getSettingsDisplaySelectBoxAlpha ( ) [inline]

**18.66.3.69 `getSettingsDisplaySelectBoxLeftColor()`** QRgb getSettingsDisplaySelectBoxLeftColor ( ) [inline]

**18.66.3.70 `getSettingsDisplaySelectBoxLeftFill()`** QRgb getSettingsDisplaySelectBoxLeftFill ( ) [inline]

**18.66.3.71 `getSettingsDisplaySelectBoxRightColor()`** QRgb getSettingsDisplaySelectBoxRightColor ( ) [inline]

**18.66.3.72 `getSettingsDisplaySelectBoxRightFill()`** QRgb getSettingsDisplaySelectBoxRightFill ( ) [inline]

**18.66.3.73 `getSettingsDisplayShowScrollBars()`** bool getSettingsDisplayShowScrollBars ( ) [inline]

**18.66.3.74 `getSettingsDisplayUnits()`** `QString getSettingsDisplayUnits ()` [inline]

**18.66.3.75 `getSettingsDisplayUseOpenGL()`** `bool getSettingsDisplayUseOpenGL ()` [inline]

**18.66.3.76 `getSettingsDisplayZoomScaleIn()`** `EmbReal getSettingsDisplayZoomScaleIn ()` [inline]

**18.66.3.77 `getSettingsDisplayZoomScaleOut()`** `EmbReal getSettingsDisplayZoomScaleOut ()` [inline]

**18.66.3.78 `getSettingsGeneralCheckForUpdates()`** `bool getSettingsGeneralCheckForUpdates ()` [inline]

**18.66.3.79 `getSettingsGeneralCurrentTip()`** `int getSettingsGeneralCurrentTip ()` [inline]

**18.66.3.80 `getSettingsGeneralIconSize()`** `int getSettingsGeneralIconSize ()` [inline]

**18.66.3.81 `getSettingsGeneralIconTheme()`** `QString getSettingsGeneralIconTheme ()` [inline]

**18.66.3.82 `getSettingsGeneralLanguage()`** `QString getSettingsGeneralLanguage ()` [inline]

**18.66.3.83 `getSettingsGeneralMdiBGColor()`** `QRgb getSettingsGeneralMdiBGColor ()` [inline]

**18.66.3.84 `getSettingsGeneralMdiBGLogo()`** `QString getSettingsGeneralMdiBGLogo ()` [inline]

**18.66.3.85 `getSettingsGeneralMdiBGTexture()`** `QString getSettingsGeneralMdiBGTexture () [inline]`

**18.66.3.86 `getSettingsGeneralMdiBGUseColor()`** `bool getSettingsGeneralMdiBGUseColor () [inline]`

**18.66.3.87 `getSettingsGeneralMdiBGUseLogo()`** `bool getSettingsGeneralMdiBGUseLogo () [inline]`

**18.66.3.88 `getSettingsGeneralMdiBGUseTexture()`** `bool getSettingsGeneralMdiBGUseTexture () [inline]`

**18.66.3.89 `getSettingsGeneralSystemHelpBrowser()`** `bool getSettingsGeneralSystemHelpBrowser () [inline]`

**18.66.3.90 `getSettingsGeneralTipOfDay()`** `bool getSettingsGeneralTipOfDay () [inline]`

**18.66.3.91 `getSettingsGridCenterOnOrigin()`** `bool getSettingsGridCenterOnOrigin () [inline]`

**18.66.3.92 `getSettingsGridCenterX()`** `EmbReal getSettingsGridCenterX () [inline]`

**18.66.3.93 `getSettingsGridCenterY()`** `EmbReal getSettingsGridCenterY () [inline]`

**18.66.3.94 `getSettingsGridColor()`** `QRgb getSettingsGridColor () [inline]`

**18.66.3.95 `getSettingsGridColorMatchCrossHair()`** `bool getSettingsGridColorMatchCrossHair () [inline]`

**18.66.3.96 `getSettingsGridLoadFromFile()`** `bool getSettingsGridLoadFromFile ( ) [inline]`

**18.66.3.97 `getSettingsGridShowOnLoad()`** `bool getSettingsGridShowOnLoad ( ) [inline]`

**18.66.3.98 `getSettingsGridShowOrigin()`** `bool getSettingsGridShowOrigin ( ) [inline]`

**18.66.3.99 `getSettingsGridSizeRadius()`** `EmbReal getSettingsGridSizeRadius ( ) [inline]`

**18.66.3.100 `getSettingsGridSizeX()`** `EmbReal getSettingsGridSizeX ( ) [inline]`

**18.66.3.101 `getSettingsGridSizeY()`** `EmbReal getSettingsGridSizeY ( ) [inline]`

**18.66.3.102 `getSettingsGridSpacingAngle()`** `EmbReal getSettingsGridSpacingAngle ( ) [inline]`

**18.66.3.103 `getSettingsGridSpacingRadius()`** `EmbReal getSettingsGridSpacingRadius ( ) [inline]`

**18.66.3.104 `getSettingsGridSpacingX()`** `EmbReal getSettingsGridSpacingX ( ) [inline]`

**18.66.3.105 `getSettingsGridSpacingY()`** `EmbReal getSettingsGridSpacingY ( ) [inline]`

**18.66.3.106 `getSettingsGridType()`** `QString getSettingsGridType ( ) [inline]`

**18.66.3.107 `getSettingsLwtDefaultLwt()`** `EmbReal getSettingsLwtDefaultLwt () [inline]`

**18.66.3.108 `getSettingsLwtRealRender()`** `bool getSettingsLwtRealRender () [inline]`

**18.66.3.109 `getSettingsLwtShowLwt()`** `bool getSettingsLwtShowLwt () [inline]`

**18.66.3.110 `getSettingsOpenFormat()`** `QString getSettingsOpenFormat () [inline]`

**18.66.3.111 `getSettingsOpenSaveTrimDstNumJumps()`** `uint8_t getSettingsOpenSaveTrimDstNumJumps () [inline]`

**18.66.3.112 `getSettingsOpenThumbnail()`** `bool getSettingsOpenThumbnail () [inline]`

**18.66.3.113 `getSettingsPrintingDefaultDevice()`** `QString getSettingsPrintingDefaultDevice () [inline]`

**18.66.3.114 `getSettingsPrintingDisableBG()`** `bool getSettingsPrintingDisableBG () [inline]`

**18.66.3.115 `getSettingsPrintingUseLastDevice()`** `bool getSettingsPrintingUseLastDevice () [inline]`

**18.66.3.116 `getSettingsPromptBGCOLOR()`** `QRgb getSettingsPromptBGCOLOR () [inline]`

**18.66.3.117 `getSettingsPromptFontFamily()`** `QString getSettingsPromptFontFamily () [inline]`

**18.66.3.118** `getSettingsPromptFontSize()` `uint8_t getSettingsPromptFontSize () [inline]`

**18.66.3.119** `getSettingsPromptFontStyle()` `QString getSettingsPromptFontStyle () [inline]`

**18.66.3.120** `getSettingsPromptSaveHistory()` `bool getSettingsPromptSaveHistory () [inline]`

**18.66.3.121** `getSettingsPromptSaveHistoryAsHtml()` `bool getSettingsPromptSaveHistoryAsHtml () [inline]`

**18.66.3.122** `getSettingsPromptSaveHistoryFilename()` `QString getSettingsPromptSaveHistoryFilename () [inline]`

**18.66.3.123** `getSettingsPromptTextColor()` `QRgb getSettingsPromptTextColor () [inline]`

**18.66.3.124** `getSettingsQSnapApertureSize()` `uint8_t getSettingsQSnapApertureSize () [inline]`

**18.66.3.125** `getSettingsQSnapApparent()` `bool getSettingsQSnapApparent () [inline]`

**18.66.3.126** `getSettingsQSnapCenter()` `bool getSettingsQSnapCenter () [inline]`

**18.66.3.127** `getSettingsQSnapEnabled()` `bool getSettingsQSnapEnabled () [inline]`

**18.66.3.128** `getSettingsQSnapEndPoint()` `bool getSettingsQSnapEndPoint () [inline]`

**18.66.3.129 `getSettingsQSnapExtension()`** `bool getSettingsQSnapExtension () [inline]`

**18.66.3.130 `getSettingsQSnapInsertion()`** `bool getSettingsQSnapInsertion () [inline]`

**18.66.3.131 `getSettingsQSnapIntersection()`** `bool getSettingsQSnapIntersection () [inline]`

**18.66.3.132 `getSettingsQSnapLocatorColor()`** `QRgb getSettingsQSnapLocatorColor () [inline]`

**18.66.3.133 `getSettingsQSnapLocatorSize()`** `uint8_t getSettingsQSnapLocatorSize () [inline]`

**18.66.3.134 `getSettingsQSnapMidPoint()`** `bool getSettingsQSnapMidPoint () [inline]`

**18.66.3.135 `getSettingsQSnapNearest()`** `bool getSettingsQSnapNearest () [inline]`

**18.66.3.136 `getSettingsQSnapNode()`** `bool getSettingsQSnapNode () [inline]`

**18.66.3.137 `getSettingsQSnapParallel()`** `bool getSettingsQSnapParallel () [inline]`

**18.66.3.138 `getSettingsQSnapPerpendicular()`** `bool getSettingsQSnapPerpendicular () [inline]`

**18.66.3.139 `getSettingsQSnapQuadrant()`** `bool getSettingsQSnapQuadrant () [inline]`

**18.66.3.140** `getSettingsQSnapTangent()` `bool getSettingsQSnapTangent ( ) [inline]`

**18.66.3.141** `getSettingsRecentMaxFiles()` `uint8_t getSettingsRecentMaxFiles ( ) [inline]`

**18.66.3.142** `getSettingsRulerColor()` `QRgb getSettingsRulerColor ( ) [inline]`

**18.66.3.143** `getSettingsRulerMetric()` `bool getSettingsRulerMetric ( ) [inline]`

**18.66.3.144** `getSettingsRulerPixelSize()` `uint8_t getSettingsRulerPixelSize ( ) [inline]`

**18.66.3.145** `getSettingsRulerShowOnLoad()` `bool getSettingsRulerShowOnLoad ( ) [inline]`

**18.66.3.146** `getSettingsSaveFormat()` `QString getSettingsSaveFormat ( ) [inline]`

**18.66.3.147** `getSettingsSaveThumbnail()` `bool getSettingsSaveThumbnail ( ) [inline]`

**18.66.3.148** `getSettingsSelectionCoolGripColor()` `QRgb getSettingsSelectionCoolGripColor ( ) [inline]`

**18.66.3.149** `getSettingsSelectionGripSize()` `uint8_t getSettingsSelectionGripSize ( ) [inline]`

**18.66.3.150** `getSettingsSelectionHotGripColor()` `QRgb getSettingsSelectionHotGripColor ( ) [inline]`

**18.66.3.151 `getSettingsSelectionModePickAdd()`** `bool getSettingsSelectionModePickAdd () [inline]`

**18.66.3.152 `getSettingsSelectionModePickDrag()`** `bool getSettingsSelectionModePickDrag () [inline]`

**18.66.3.153 `getSettingsSelectionModePickFirst()`** `bool getSettingsSelectionModePickFirst () [inline]`

**18.66.3.154 `getSettingsSelectionPickBoxSize()`** `uint8_t getSettingsSelectionPickBoxSize () [inline]`

**18.66.3.155 `getSettingsTextAngle()`** `EmbReal getSettingsTextAngle () [inline]`

**18.66.3.156 `getSettingsTextFont()`** `QString getSettingsTextFont () [inline]`

**18.66.3.157 `getSettingsTextSize()`** `EmbReal getSettingsTextSize () [inline]`

**18.66.3.158 `getSettingsTextStyleBold()`** `bool getSettingsTextStyleBold () [inline]`

**18.66.3.159 `getSettingsTextStyleItalic()`** `bool getSettingsTextStyleItalic () [inline]`

**18.66.3.160 `getSettingsTextStyleOverline()`** `bool getSettingsTextStyleOverline () [inline]`

**18.66.3.161 `getSettingsTextStyleStrikeOut()`** `bool getSettingsTextStyleStrikeOut () [inline]`

**18.66.3.162** `getSettingsTextStyleUnderline()` `bool getSettingsTextStyleUnderline ( ) [inline]`

**18.66.3.163** `help` `void help ( ) [slot]`

**18.66.3.164** `hideUnimplemented` `void hideUnimplemented ( ) [private], [slot]`

[MainWindow::hideUnimplemented](#).

**18.66.3.165** `icon128` `void icon128 ( ) [slot]`

**18.66.3.166** `icon16` `void icon16 ( ) [slot]`

**18.66.3.167** `icon24` `void icon24 ( ) [slot]`

**18.66.3.168** `icon32` `void icon32 ( ) [slot]`

**18.66.3.169** `icon48` `void icon48 ( ) [slot]`

**18.66.3.170** `icon64` `void icon64 ( ) [slot]`

**18.66.3.171** `iconResize` `void iconResize ( int iconSize ) [slot]`

**18.66.3.172** `isCommandActive()` `bool isCommandActive ( ) [inline]`

**18.66.3.173 `isShiftPressed`** `bool isShiftPressed ( ) [slot]`

**18.66.3.174 `javaInitNatives()`** `void javaInitNatives ( QScriptEngine * engine ) [private]`

**18.66.3.175 `javaLoadCommand()`** `void javaLoadCommand ( const QString & cmdName ) [private]`

**18.66.3.176 `layerManager`** `void layerManager ( ) [slot]`

**18.66.3.177 `layerPrevious`** `void layerPrevious ( ) [slot]`

**18.66.3.178 `layerSelectorIndexChanged`** `void layerSelectorIndexChanged ( int index ) [slot]`

**18.66.3.179 `linetypeSelectorIndexChanged`** `void linetypeSelectorIndexChanged ( int index ) [slot]`

**18.66.3.180 `lineweightSelectorIndexChanged`** `void lineweightSelectorIndexChanged ( int index ) [slot]`

**18.66.3.181 `loadFormats()`** `void loadFormats ( ) [protected]`

`MainWindow::loadFormats.`

**18.66.3.182 `logPromptInput`** `void logPromptInput ( const QString & txt ) [slot]`

**18.66.3.183 makeLayerActive** void makeLayerActive ( ) [slot]

**18.66.3.184 nativeAbout()** void nativeAbout ( )

**18.66.3.185 nativeAddArc()** void nativeAddArc (

```
EmbReal startX,
EmbReal startY,
EmbReal midX,
EmbReal midY,
EmbReal endX,
EmbReal endY,
int rubberMode )
```

**18.66.3.186 nativeAddCircle()** void nativeAddCircle (

```
EmbReal centerX,
EmbReal centerY,
EmbReal radius,
bool fill,
int rubberMode )
```

**18.66.3.187 nativeAddDimLeader()** void nativeAddDimLeader (

```
EmbReal x1,
EmbReal y1,
EmbReal x2,
EmbReal y2,
EmbReal rot,
int rubberMode )
```

**18.66.3.188 nativeAddEllipse()** void nativeAddEllipse (

```
EmbReal centerX,
EmbReal centerY,
EmbReal width,
EmbReal height,
EmbReal rot,
bool fill,
int rubberMode )
```

**18.66.3.189 nativeAddHorizontalDimension()** void nativeAddHorizontalDimension (

```
EmbReal x1,
EmbReal y1,
EmbReal x2,
EmbReal y2,
EmbReal legHeight )
```

**18.66.3.190 nativeAddImage()** void nativeAddImage (

```
const QString & img,
EmbReal x,
EmbReal y,
EmbReal w,
EmbReal h,
EmbReal rot )
```

**18.66.3.191 nativeAddInfiniteLine()** void nativeAddInfiniteLine (

```
EmbReal x1,
EmbReal y1,
EmbReal x2,
EmbReal y2,
EmbReal rot )
```

**18.66.3.192 nativeAddLine()** void nativeAddLine (

```
EmbReal x1,
EmbReal y1,
EmbReal x2,
EmbReal y2,
EmbReal rot,
int rubberMode )
```

**18.66.3.193 nativeAddPath()** void nativeAddPath (

```
EmbReal startX,
EmbReal startY,
const QPainterPath & p,
int rubberMode )
```

**18.66.3.194 nativeAddPoint()** void nativeAddPoint (

```
EmbReal x,
EmbReal y )
```

```
18.66.3.195 nativeAddPolygon() void nativeAddPolygon (
    EmbReal startX,
    EmbReal startY,
    const QPainterPath & p,
    int rubberMode )
```

```
18.66.3.196 nativeAddPolyline() void nativeAddPolyline (
    EmbReal startX,
    EmbReal startY,
    const QPainterPath & p,
    int rubberMode )
```

```
18.66.3.197 nativeAddRay() void nativeAddRay (
    EmbReal x1,
    EmbReal y1,
    EmbReal x2,
    EmbReal y2,
    EmbReal rot )
```

```
18.66.3.198 nativeAddRectangle() void nativeAddRectangle (
    EmbReal x,
    EmbReal y,
    EmbReal w,
    EmbReal h,
    EmbReal rot,
    bool fill,
    int rubberMode )
```

```
18.66.3.199 nativeAddRegularPolygon() void nativeAddRegularPolygon (
    EmbReal centerX,
    EmbReal centerY,
    quint16 sides,
    uint8_t mode,
    EmbReal rad,
    EmbReal rot,
    bool fill )
```

```
18.66.3.200 nativeAddRoundedRectangle() void nativeAddRoundedRectangle (
    EmbReal x,
    EmbReal y,
    EmbReal w,
    EmbReal h,
    EmbReal rad,
    EmbReal rot,
    bool fill )
```

---

**18.66.3.201 nativeAddSlot()** void nativeAddSlot (

```
EmbReal centerX,
EmbReal centerY,
EmbReal diameter,
EmbReal length,
EmbReal rot,
bool fill,
int rubberMode )
```

**18.66.3.202 nativeAddTextMulti()** void nativeAddTextMulti (

```
const QString & str,
EmbReal x,
EmbReal y,
EmbReal rot,
bool fill,
int rubberMode )
```

**18.66.3.203 nativeAddTextSingle()** void nativeAddTextSingle (

```
const QString & str,
EmbReal x,
EmbReal y,
EmbReal rot,
bool fill,
int rubberMode )
```

**18.66.3.204 nativeAddToSelection()** void nativeAddToSelection (

```
const QPainterPath path,
Qt::ItemSelectionMode mode )
```

**18.66.3.205 nativeAddTriangle()** void nativeAddTriangle (

```
EmbReal x1,
EmbReal y1,
EmbReal x2,
EmbReal y2,
EmbReal x3,
EmbReal y3,
EmbReal rot,
bool fill )
```

**18.66.3.206 nativeAddVerticalDimension()** void nativeAddVerticalDimension ( EmbReal x1, EmbReal y1, EmbReal x2, EmbReal y2, EmbReal legHeight )

**18.66.3.207 nativeAlert()** void nativeAlert ( const QString & txt )

**18.66.3.208 nativeAllowRubber()** bool nativeAllowRubber ( )

**18.66.3.209 nativeAppendPromptHistory()** void nativeAppendPromptHistory ( const QString & txt )

**18.66.3.210 nativeBlinkPrompt()** void nativeBlinkPrompt ( )

**18.66.3.211 nativeCalculateAngle()** qreal nativeCalculateAngle ( EmbReal x1, EmbReal y1, EmbReal x2, EmbReal y2 )

**18.66.3.212 nativeCalculateDistance()** qreal nativeCalculateDistance ( EmbReal x1, EmbReal y1, EmbReal x2, EmbReal y2 )

**18.66.3.213 nativeClearRubber()** void nativeClearRubber ( )

**18.66.3.214 nativeClearSelection()** void nativeClearSelection ( )

**18.66.3.215 nativeCopySelected()** void nativeCopySelected ( EmbReal x, EmbReal y )

MainWindow::nativeCopySelected.

**Parameters**

x	
y	

**18.66.3.216 nativeCutSelected()** void nativeCutSelected ( EmbReal x, EmbReal y )

MainWindow::nativeCutSelected.

**Parameters**

x	
y	

**18.66.3.217 nativeDayVision()** void nativeDayVision ( )

**18.66.3.218 nativeDeleteSelected()** void nativeDeleteSelected ( )

MainWindow::nativeDeleteSelected.

**18.66.3.219 nativeDisableMoveRapidFire()** void nativeDisableMoveRapidFire ( )

**18.66.3.220 nativeDisablePromptRapidFire()** void nativeDisablePromptRapidFire ( )

**18.66.3.221 nativeEnableMoveRapidFire()** void nativeEnableMoveRapidFire ( )

**18.66.3.222 nativeEnablePromptRapidFire()** void nativeEnablePromptRapidFire ( )

**18.66.3.223 nativeEndCommand()** void nativeEndCommand ( )

**18.66.3.224 nativeExit()** void nativeExit ( )

**18.66.3.225 nativeHelp()** void nativeHelp ( )

**18.66.3.226 nativeIcon128()** void nativeIcon128 ( )

**18.66.3.227 nativeIcon16()** void nativeIcon16 ( )

**18.66.3.228 nativeIcon24()** void nativeIcon24 ( )

**18.66.3.229 nativeIcon32()** void nativeIcon32 ( )

**18.66.3.230 nativeIcon48()** void nativeIcon48 ( )

**18.66.3.231 nativeIcon64()** void nativeIcon64 ( )

**18.66.3.232 nativeInitCommand()** void nativeInitCommand ( )

**18.66.3.233 nativeMessageBox()** void nativeMessageBox (   
     const QString & type,  
     const QString & title,  
     const QString & text )

MainWindow::nativeMessageBox.

**Parameters**

<i>type</i>	
<i>title</i>	
<i>text</i>	

**18.66.3.234 nativeMirrorSelected()** `void nativeMirrorSelected (`

```
    EmbReal x1,  
    EmbReal y1,  
    EmbReal x2,  
    EmbReal y2 )
```

[MainWindow::nativeMirrorSelected](#).

**Parameters**

<i>x1</i>	
<i>y1</i>	
<i>x2</i>	
<i>y2</i>	

**18.66.3.235 nativeMouseX()** `EmbReal nativeMouseX ( )`

[MainWindow::nativeMouseX](#).

**Returns****18.66.3.236 nativeMouseY()** `EmbReal nativeMouseY ( )`

[MainWindow::nativeMouseY](#).

**Returns****18.66.3.237 nativeMoveSelected()** `void nativeMoveSelected (`

```
    EmbReal dx,  
    EmbReal dy )
```

[MainWindow::nativeMoveSelected](#).

**Parameters**

<i>dx</i>	
<i>dy</i>	

**18.66.3.238 nativeNewFile()** void nativeNewFile ( )**18.66.3.239 nativeNightVision()** void nativeNightVision ( )**18.66.3.240 nativeNumSelected()** int nativeNumSelected ( )**18.66.3.241 nativeOpenFile()** void nativeOpenFile ( )**18.66.3.242 nativePanDown()** void nativePanDown ( )**18.66.3.243 nativePanLeft()** void nativePanLeft ( )**18.66.3.244 nativePanRight()** void nativePanRight ( )**18.66.3.245 nativePanUp()** void nativePanUp ( )**18.66.3.246 nativePasteSelected()** void nativePasteSelected (   
   EmReal *x*,  
   EmReal *y* )

MainWindow::nativePasteSelected.

**Parameters**

x	
y	

**18.66.3.247 nativePerpendicularDistance()** `qreal nativePerpendicularDistance (`

```
    EmbReal px,  
    EmbReal py,  
    EmbReal x1,  
    EmbReal y1,  
    EmbReal x2,  
    EmbReal y2 )
```

**18.66.3.248 nativePlatformString()** `QString nativePlatformString ( )`

[MainWindow::nativePlatformString](#).

**Returns****18.66.3.249 nativePreviewOff()** `void nativePreviewOff ( )`**18.66.3.250 nativePreviewOn()** `void nativePreviewOn (`

```
    int clone,  
    int mode,  
    EmbReal x,  
    EmbReal y,  
    EmbReal data )
```

**18.66.3.251 nativePrintArea()** `void nativePrintArea (`

```
    EmbReal x,  
    EmbReal y,  
    EmbReal w,  
    EmbReal h )
```

[MainWindow::nativePrintArea](#).

**Parameters**

<i>x</i>	
<i>y</i>	
<i>w</i>	
<i>h</i>	

**18.66.3.252 nativeQSnapX()** `qreal nativeQSnapX ( )`[MainWindow::nativeQSnapX.](#)**Returns****18.66.3.253 nativeQSnapY()** `EmbReal nativeQSnapY ( )`[MainWindow::nativeQSnapY.](#)**Returns****18.66.3.254 nativeRedo()** `void nativeRedo ( )`**18.66.3.255 nativeRotateSelected()** `void nativeRotateSelected (``EmbReal x,  
    EmbReal y,  
    EmbReal rot )`[MainWindow::nativeRotateSelected.](#)**Parameters**

<i>x</i>	
<i>y</i>	
<i>rot</i>	

**18.66.3.256 nativeScaleSelected()** void nativeScaleSelected ( EmbReal *x*, EmbReal *y*, EmbReal *factor* )

MainWindow::nativeScaleSelected.

**Parameters**

<i>x</i>	
<i>y</i>	
<i>factor</i>	

**18.66.3.257 nativeSelectAll()** void nativeSelectAll ( )

**18.66.3.258 nativeSetBackgroundColor()** void nativeSetBackgroundColor ( uint8\_t *r*, uint8\_t *g*, uint8\_t *b* )

**18.66.3.259 nativeSetCrossHairColor()** void nativeSetCrossHairColor ( uint8\_t *r*, uint8\_t *g*, uint8\_t *b* )

**18.66.3.260 nativeSetCursorShape()** void nativeSetCursorShape ( const QString & *str* )

**18.66.3.261 nativeSetGridColor()** void nativeSetGridColor ( uint8\_t *r*, uint8\_t *g*, uint8\_t *b* )

**18.66.3.262 nativeSetPromptPrefix()** void nativeSetPromptPrefix ( const QString & *txt* )

**18.66.3.263 nativeSetRubberMode()** void nativeSetRubberMode ( int mode )

**18.66.3.264 nativeSetRubberPoint()** void nativeSetRubberPoint ( const QString & key, EmbReal x, EmbReal y )

**18.66.3.265 nativeSetRubberText()** void nativeSetRubberText ( const QString & key, const QString & txt )

**18.66.3.266 nativeSetTextAngle()** void nativeSetTextAngle ( EmbReal num )

**18.66.3.267 nativeSetTextBold()** void nativeSetTextBold ( bool val )

**18.66.3.268 nativeSetFont()** void nativeSetFont ( const QString & str )

**18.66.3.269 nativeSetTextItalic()** void nativeSetTextItalic ( bool val )

**18.66.3.270 nativeSetTextOverline()** void nativeSetTextOverline ( bool val )

**18.66.3.271 nativeSetTextSize()** void nativeSetTextSize ( EmbReal num )

**18.66.3.272 nativeSetTextStrikeOut()** void nativeSetTextStrikeOut ( bool val )

**18.66.3.273 nativeSetTextUnderline()** void nativeSetTextUnderline ( bool val )

**18.66.3.274 nativeSpareRubber()** void nativeSpareRubber ( qint64 id )

**18.66.3.275 nativeTextAngle()** qreal nativeTextAngle ( )

**18.66.3.276 nativeTextBold()** bool nativeTextBold ( )

**18.66.3.277 nativeTextFont()** QString nativeTextFont ( )

**18.66.3.278 nativeTextItalic()** bool nativeTextItalic ( )

**18.66.3.279 nativeTextOverline()** bool nativeTextOverline ( )

**18.66.3.280 nativeTextSize()** qreal nativeTextSize ( )

**18.66.3.281 nativeTextStrikeOut()** bool nativeTextStrikeOut ( )

**18.66.3.282 nativeTextUnderline()** bool nativeTextUnderline ( )

**18.66.3.283 nativeTipOfTheDay()** void nativeTipOfTheDay ( )

**18.66.3.284 nativeUndo()** void nativeUndo ( )

**18.66.3.285 nativeVulcanize()** void nativeVulcanize ( )

**18.66.3.286 nativeWindowCascade()** void nativeWindowCascade ( )

**18.66.3.287 nativeWindowClose()** void nativeWindowClose ( )

**18.66.3.288 nativeWindowCloseAll()** void nativeWindowCloseAll ( )

**18.66.3.289 nativeWindowNext()** void nativeWindowNext ( )

**18.66.3.290 nativeWindowPrevious()** void nativeWindowPrevious ( )

**18.66.3.291 nativeWindowTile()** void nativeWindowTile ( )

**18.66.3.292 nativeZoomExtents()** void nativeZoomExtents ( )

MainWindow::nativeZoomExtents.

**18.66.3.293 nativeZoomIn()** void nativeZoomIn ( )

MainWindow::nativeZoomIn.

**18.66.3.294 nativeZoomOut()** void nativeZoomOut ( )

MainWindow::nativeZoomOut.

**18.66.3.295 newFile** void newFile ( ) [slot]

MainWindow::newFile.

**18.66.3.296 nightVision** void nightVision ( ) [slot]

MainWindow::nightVision.

**18.66.3.297 onCloseMdiWin** void onCloseMdiWin ( MdiWindow \* theMdiWin ) [virtual], [slot]

MainWindow::onCloseMdiWin.

**Parameters**

theMdiWin

**18.66.3.298 onCloseWindow** void onCloseWindow ( ) [slot]

MainWindow::onCloseWindow.

**18.66.3.299 onWindowActivated** void onWindowActivated ( QMdiSubWindow \* w ) [slot]

MainWindow::onWindowActivated.

**Parameters**

w

**18.66.3.300 openFile** void openFile ( bool recent = false, const QString & recentFile = "" ) [slot]

[MainWindow::openFile](#).

Parameters

<i>recent</i>	<input type="text"/>
<i>recentFile</i>	<input type="text"/>

**18.66.3.301 openFilesSelected** void openFilesSelected ( const QStringList & *filesToOpen* ) [slot]

[MainWindow::openFilesSelected](#).

Parameters

<i>filesToOpen</i>	<input type="text"/>
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**18.66.3.302 openrecentfile** void openrecentfile ( ) [slot]

[MainWindow::openrecentfile](#).

**18.66.3.303 panDown** void panDown ( ) [slot]

[MainWindow::panDown](#).

**18.66.3.304 panLeft** void panLeft ( ) [slot]

**18.66.3.305 panpoint** void panpoint ( ) [slot]

**18.66.3.306 panrealtime** void panrealtime ( ) [slot]

**18.66.3.307 panRight** void panRight ( ) [slot]

**18.66.3.308 panUp** void panUp ( ) [slot]

**18.66.3.309 paste** void paste ( ) [slot]

**18.66.3.310 pickAddModeToggled** void pickAddModeToggled ( ) [slot]

**18.66.3.311 platformString()** QString platformString ( )

**18.66.3.312 print** void print ( ) [slot]

**18.66.3.313 promptHistoryAppended** void promptHistoryAppended ( const QString & txt ) [slot]

**18.66.3.314 promptInputNext** void promptInputNext ( ) [slot]

**18.66.3.315 promptInputPrevious** void promptInputPrevious ( ) [slot]

**18.66.3.316 quit** void quit ( ) [slot]

[MainWindow::quit](#).

**18.66.3.317 readSettings** void readSettings ( ) [slot]

**18.66.3.318 recentMenuAboutToShow** void recentMenuAboutToShow ( ) [slot]

[MainWindow::recentMenuAboutToShow](#).

**18.66.3.319 redo** void redo ( ) [slot]

**18.66.3.320 resizeEvent()** void resizeEvent ( QResizeEvent \* e ) [protected], [virtual]

[MainWindow::resizeEvent](#).

**Parameters**

e	
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**18.66.3.321 runCommand** void runCommand ( ) [slot]**18.66.3.322 runCommandClick** void runCommandClick ( const QString & cmd, EmbReal x, EmbReal y ) [slot]**18.66.3.323 runCommandContext** void runCommandContext ( const QString & cmd, const QString & str ) [slot]**18.66.3.324 runCommandMain** void runCommandMain ( const QString & cmd ) [slot]**18.66.3.325 runCommandMove** void runCommandMove ( const QString & cmd, EmbReal x, EmbReal y ) [slot]**18.66.3.326 runCommandPrompt** void runCommandPrompt ( const QString & cmd, const QString & str ) [slot]**18.66.3.327 saveasfile** void saveasfile ( ) [slot]

MainWindow::saveasfile.

**18.66.3.328 savefile** void savefile ( ) [slot]

MainWindow::savefile.

**18.66.3.329 selectAll** void selectAll ( ) [slot]

**18.66.3.330 setSettingsCustomFilter()** void setSettingsCustomFilter ( const QString & newValue ) [inline]

**18.66.3.331 setSettingsDisplayBGColor()** void setSettingsDisplayBGColor ( QRgb newValue ) [inline]

**18.66.3.332 setSettingsDisplayCrossHairColor()** void setSettingsDisplayCrossHairColor ( QRgb newValue ) [inline]

**18.66.3.333 setSettingsDisplayCrossHairPercent()** void setSettingsDisplayCrossHairPercent ( uint8\_t newValue ) [inline]

**18.66.3.334 setSettingsDisplayRenderHintAA()** void setSettingsDisplayRenderHintAA ( bool newValue ) [inline]

**18.66.3.335 setSettingsDisplayRenderHintHighAA()** void setSettingsDisplayRenderHintHighAA ( bool newValue ) [inline]

**18.66.3.336 setSettingsDisplayRenderHintNonCosmetic()** void setSettingsDisplayRenderHintNonCosmetic ( bool newValue ) [inline]

- 18.66.3.337 `setSettingsDisplayRenderHintSmoothPix()`** void setSettingsDisplayRenderHintSmoothPix ( bool newValue ) [inline]
- 18.66.3.338 `setSettingsDisplayRenderHintTextAA()`** void setSettingsDisplayRenderHintTextAA ( bool newValue ) [inline]
- 18.66.3.339 `setSettingsDisplayScrollBarWidgetNum()`** void setSettingsDisplayScrollBarWidgetNum ( int newValue ) [inline]
- 18.66.3.340 `setSettingsDisplaySelectBoxAlpha()`** void setSettingsDisplaySelectBoxAlpha ( uint8\_t newValue ) [inline]
- 18.66.3.341 `setSettingsDisplaySelectBoxLeftColor()`** void setSettingsDisplaySelectBoxLeftColor ( QRgb newValue ) [inline]
- 18.66.3.342 `setSettingsDisplaySelectBoxLeftFill()`** void setSettingsDisplaySelectBoxLeftFill ( QRgb newValue ) [inline]
- 18.66.3.343 `setSettingsDisplaySelectBoxRightColor()`** void setSettingsDisplaySelectBoxRightColor ( QRgb newValue ) [inline]
- 18.66.3.344 `setSettingsDisplaySelectBoxRightFill()`** void setSettingsDisplaySelectBoxRightFill ( QRgb newValue ) [inline]
- 18.66.3.345 `setSettingsDisplayShowScrollBars()`** void setSettingsDisplayShowScrollBars ( bool newValue ) [inline]

**18.66.3.346 setSettingsDisplayUnits()** void setSettingsDisplayUnits ( const QString & newValue ) [inline]

**18.66.3.347 setSettingsDisplayUseOpenGL()** void setSettingsDisplayUseOpenGL ( bool newValue ) [inline]

**18.66.3.348 setSettingsDisplayZoomScaleIn()** void setSettingsDisplayZoomScaleIn ( EmbReal newValue ) [inline]

**18.66.3.349 setSettingsDisplayZoomScaleOut()** void setSettingsDisplayZoomScaleOut ( EmbReal newValue ) [inline]

**18.66.3.350 setSettingsGeneralCheckForUpdates()** void setSettingsGeneralCheckForUpdates ( bool newValue ) [inline]

**18.66.3.351 setSettingsGeneralCurrentTip()** void setSettingsGeneralCurrentTip ( int newValue ) [inline]

**18.66.3.352 setSettingsGeneralIconSize()** void setSettingsGeneralIconSize ( int newValue ) [inline]

**18.66.3.353 setSettingsGeneralIconTheme()** void setSettingsGeneralIconTheme ( const QString & newValue ) [inline]

**18.66.3.354 setSettingsGeneralLanguage()** void setSettingsGeneralLanguage ( const QString & newValue ) [inline]

**18.66.3.355 setSettingsGeneralMdiBGColor()** void setSettingsGeneralMdiBGColor ( QRgb newValue ) [inline]

**18.66.3.356 `setSettingsGeneralMdiBGLogo()`** void setSettingsGeneralMdiBGLogo ( const QString & newValue ) [inline]

**18.66.3.357 `setSettingsGeneralMdiBGTexture()`** void setSettingsGeneralMdiBGTexture ( const QString & newValue ) [inline]

**18.66.3.358 `setSettingsGeneralMdiBGUseColor()`** void setSettingsGeneralMdiBGUseColor ( bool newValue ) [inline]

**18.66.3.359 `setSettingsGeneralMdiBGUseLogo()`** void setSettingsGeneralMdiBGUseLogo ( bool newValue ) [inline]

**18.66.3.360 `setSettingsGeneralMdiBGUseTexture()`** void setSettingsGeneralMdiBGUseTexture ( bool newValue ) [inline]

**18.66.3.361 `setSettingsGeneralSystemHelpBrowser()`** void setSettingsGeneralSystemHelpBrowser ( bool newValue ) [inline]

**18.66.3.362 `setSettingsGeneralTipOfTheDay()`** void setSettingsGeneralTipOfTheDay ( bool newValue ) [inline]

**18.66.3.363 `setSettingsGridCenterOnOrigin()`** void setSettingsGridCenterOnOrigin ( bool newValue ) [inline]

**18.66.3.364 `setSettingsGridCenterX()`** void setSettingsGridCenterX ( EmbReal newValue ) [inline]

**18.66.3.365 `setSettingsGridCenterY()`** void setSettingsGridCenterY ( EmbReal newValue ) [inline]

**18.66.3.366 `setSettingsGridColor()`** `void setSettingsGridColor (`  
`QRgb newValue ) [inline]`

**18.66.3.367 `setSettingsGridColorMatchCrossHair()`** `void setSettingsGridColorMatchCrossHair (`  
`bool newValue ) [inline]`

**18.66.3.368 `setSettingsGridLoadFromFile()`** `void setSettingsGridLoadFromFile (`  
`bool newValue ) [inline]`

**18.66.3.369 `setSettingsGridShowOnLoad()`** `void setSettingsGridShowOnLoad (`  
`bool newValue ) [inline]`

**18.66.3.370 `setSettingsGridShowOrigin()`** `void setSettingsGridShowOrigin (`  
`bool newValue ) [inline]`

**18.66.3.371 `setSettingsGridSizeRadius()`** `void setSettingsGridSizeRadius (`  
`EmbReal newValue ) [inline]`

**18.66.3.372 `setSettingsGridSizeX()`** `void setSettingsGridSizeX (`  
`EmbReal newValue ) [inline]`

**18.66.3.373 `setSettingsGridSizeY()`** `void setSettingsGridSizeY (`  
`EmbReal newValue ) [inline]`

**18.66.3.374 `setSettingsGridSpacingAngle()`** `void setSettingsGridSpacingAngle (`  
`EmbReal newValue ) [inline]`

**18.66.3.375 `setSettingsGridSpacingRadius()`** `void setSettingsGridSpacingRadius (`  
`EmbReal newValue ) [inline]`

**18.66.3.376 `setSettingsGridSpacingX()`** void setSettingsGridSpacingX ( EmbReal newValue ) [inline]

**18.66.3.377 `setSettingsGridSpacingY()`** void setSettingsGridSpacingY ( EmbReal newValue ) [inline]

**18.66.3.378 `setSettingsGridType()`** void setSettingsGridType ( const QString & newValue ) [inline]

**18.66.3.379 `setSettingsLwtDefaultLwt()`** void setSettingsLwtDefaultLwt ( EmbReal newValue ) [inline]

**18.66.3.380 `setSettingsLwtRealRender()`** void setSettingsLwtRealRender ( bool newValue ) [inline]

**18.66.3.381 `setSettingsLwtShowLwt()`** void setSettingsLwtShowLwt ( bool newValue ) [inline]

**18.66.3.382 `setSettingsOpenFormat()`** void setSettingsOpenFormat ( const QString & newValue ) [inline]

**18.66.3.383 `setSettingsOpenSaveTrimDstNumJumps()`** void setSettingsOpenSaveTrimDstNumJumps ( uint8\_t newValue ) [inline]

**18.66.3.384 `setSettingsOpenThumbnail()`** void setSettingsOpenThumbnail ( bool newValue ) [inline]

**18.66.3.385 `setSettingsPrintingDefaultDevice()`** void setSettingsPrintingDefaultDevice ( const QString & newValue ) [inline]

**18.66.3.386 setSettingsPrintingDisableBG()** void setSettingsPrintingDisableBG ( bool newValue ) [inline]

**18.66.3.387 setSettingsPrintingUseLastDevice()** void setSettingsPrintingUseLastDevice ( bool newValue ) [inline]

**18.66.3.388 setSettingsPromptBColor()** void setSettingsPromptBColor ( QRgb newValue ) [inline]

**18.66.3.389 setSettingsPromptFontFamily()** void setSettingsPromptFontFamily ( const QString & newValue ) [inline]

**18.66.3.390 setSettingsPromptFontSize()** void setSettingsPromptFontSize ( uint8\_t newValue ) [inline]

**18.66.3.391 setSettingsPromptFontStyle()** void setSettingsPromptFontStyle ( const QString & newValue ) [inline]

**18.66.3.392 setSettingsPromptSaveHistory()** void setSettingsPromptSaveHistory ( bool newValue ) [inline]

**18.66.3.393 setSettingsPromptSaveHistoryAsHtml()** void setSettingsPromptSaveHistoryAsHtml ( bool newValue ) [inline]

**18.66.3.394 setSettingsPromptSaveHistoryFilename()** void setSettingsPromptSaveHistoryFilename ( const QString & newValue ) [inline]

**18.66.3.395 setSettingsPromptTextColor()** void setSettingsPromptTextColor ( QRgb newValue ) [inline]

**18.66.3.396 `setSettingsQSnapApertureSize()`** void setSettingsQSnapApertureSize ( uint8\_t newValue ) [inline]

**18.66.3.397 `setSettingsQSnapApparent()`** void setSettingsQSnapApparent ( bool newValue ) [inline]

**18.66.3.398 `setSettingsQSnapCenter()`** void setSettingsQSnapCenter ( bool newValue ) [inline]

**18.66.3.399 `setSettingsQSnapEnabled()`** void setSettingsQSnapEnabled ( bool newValue ) [inline]

**18.66.3.400 `setSettingsQSnapEndPoint()`** void setSettingsQSnapEndPoint ( bool newValue ) [inline]

**18.66.3.401 `setSettingsQSnapExtension()`** void setSettingsQSnapExtension ( bool newValue ) [inline]

**18.66.3.402 `setSettingsQSnapInsertion()`** void setSettingsQSnapInsertion ( bool newValue ) [inline]

**18.66.3.403 `setSettingsQSnapIntersection()`** void setSettingsQSnapIntersection ( bool newValue ) [inline]

**18.66.3.404 `setSettingsQSnapLocatorColor()`** void setSettingsQSnapLocatorColor ( QRgb newValue ) [inline]

**18.66.3.405 `setSettingsQSnapLocatorSize()`** void setSettingsQSnapLocatorSize ( uint8\_t newValue ) [inline]

**18.66.3.406 `setSettingsQSnapMidPoint()`** void setSettingsQSnapMidPoint ( bool newValue ) [inline]

**18.66.3.407 `setSettingsQSnapNearest()`** void setSettingsQSnapNearest ( bool newValue ) [inline]

**18.66.3.408 `setSettingsQSnapNode()`** void setSettingsQSnapNode ( bool newValue ) [inline]

**18.66.3.409 `setSettingsQSnapParallel()`** void setSettingsQSnapParallel ( bool newValue ) [inline]

**18.66.3.410 `setSettingsQSnapPerpendicular()`** void setSettingsQSnapPerpendicular ( bool newValue ) [inline]

**18.66.3.411 `setSettingsQSnapQuadrant()`** void setSettingsQSnapQuadrant ( bool newValue ) [inline]

**18.66.3.412 `setSettingsQSnapTangent()`** void setSettingsQSnapTangent ( bool newValue ) [inline]

**18.66.3.413 `setSettingsRecentMaxFiles()`** void setSettingsRecentMaxFiles ( uint8\_t newValue ) [inline]

**18.66.3.414 `setSettingsRulerColor()`** void setSettingsRulerColor ( QRgb newValue ) [inline]

**18.66.3.415 `setSettingsRulerMetric()`** void setSettingsRulerMetric ( bool newValue ) [inline]

**18.66.3.416 `setSettingsRulerPixelSize()`** void setSettingsRulerPixelSize ( uint8\_t newValue ) [inline]

**18.66.3.417 `setSettingsRulerShowOnLoad()`** void setSettingsRulerShowOnLoad ( bool newValue ) [inline]

**18.66.3.418 `setSettingsSaveFormat()`** void setSettingsSaveFormat ( const QString & newValue ) [inline]

**18.66.3.419 `setSettingsSaveThumbnail()`** void setSettingsSaveThumbnail ( bool newValue ) [inline]

**18.66.3.420 `setSettingsSelectionCoolGripColor()`** void setSettingsSelectionCoolGripColor ( QRgb newValue ) [inline]

**18.66.3.421 `setSettingsSelectionGripSize()`** void setSettingsSelectionGripSize ( uint8\_t newValue ) [inline]

**18.66.3.422 `setSettingsSelectionHotGripColor()`** void setSettingsSelectionHotGripColor ( QRgb newValue ) [inline]

**18.66.3.423 `setSettingsSelectionModePickAdd()`** void setSettingsSelectionModePickAdd ( bool newValue ) [inline]

**18.66.3.424 `setSettingsSelectionModePickDrag()`** void setSettingsSelectionModePickDrag ( bool newValue ) [inline]

**18.66.3.425 `setSettingsSelectionModePickFirst()`** void setSettingsSelectionModePickFirst ( bool newValue ) [inline]

**18.66.3.426 setSettingsSelectionPickBoxSize()** void setSettingsSelectionPickBoxSize ( uint8\_t newValue ) [inline]

**18.66.3.427 setSettingsTextAngle()** void setSettingsTextAngle ( EmbReal newValue ) [inline]

**18.66.3.428 setSettingsTextFont()** void setSettingsTextFont ( const QString & newValue ) [inline]

**18.66.3.429 setSettingsTextSize()** void setSettingsTextSize ( EmbReal newValue ) [inline]

**18.66.3.430 setSettingsTextStyleBold()** void setSettingsTextStyleBold ( bool newValue ) [inline]

**18.66.3.431 setSettingsTextStyleItalic()** void setSettingsTextStyleItalic ( bool newValue ) [inline]

**18.66.3.432 setSettingsTextStyleOverline()** void setSettingsTextStyleOverline ( bool newValue ) [inline]

**18.66.3.433 setSettingsTextStyleStrikeOut()** void setSettingsTextStyleStrikeOut ( bool newValue ) [inline]

**18.66.3.434 setSettingsTextStyleUnderline()** void setSettingsTextStyleUnderline ( bool newValue ) [inline]

**18.66.3.435 setShiftPressed** void setShiftPressed ( ) [slot]

**18.66.3.436 `setShiftReleased`** void setShiftReleased ( ) [slot]

**18.66.3.437 `setTextAngle`** void setTextAngle (   
   **EmbReal** num ) [slot]

**18.66.3.438 `setTextBold`** void setTextBold (   
   bool val ) [slot]

**18.66.3.439 `setTextFont`** void setTextFont (   
   const QString & str ) [slot]

**18.66.3.440 `setTextItalic`** void setTextItalic (   
   bool val ) [slot]

**18.66.3.441 `setTextOverline`** void setTextOverline (   
   bool val ) [slot]

**18.66.3.442 `setTextSize`** void setTextSize (   
   **EmbReal** num ) [slot]

**18.66.3.443 `setTextStrikeOut`** void setTextStrikeOut (   
   bool val ) [slot]

**18.66.3.444 `setTextUnderline`** void setTextUnderline (   
   bool val ) [slot]

**18.66.3.445 `settingsDialog`** void settingsDialog (   
   const QString & showTab = *QString()* ) [slot]

**18.66.3.446 settingsPrompt** void settingsPrompt () [slot]

**18.66.3.447 setUndoCleanIcon()** void setUndoCleanIcon (  
    bool opened )

**18.66.3.448 stub\_implement** void stub\_implement (  
    QString txt ) [slot]

[MainWindow::stub\\_implement.](#)

Parameters

txt	
-----	--

**18.66.3.449 stub\_testing** void stub\_testing () [slot]

[MainWindow::stub\\_testing.](#)

**18.66.3.450 textAngle** qreal textAngle () [slot]

**18.66.3.451 textBold** bool textBold () [slot]

**18.66.3.452 textFont** QString textFont () [slot]

**18.66.3.453 textFontSelectorCurrentFontChanged** void textFontSelectorCurrentFontChanged (  
    const QFont & font ) [slot]

**18.66.3.454 textItalic** bool textItalic () [slot]

**18.66.3.455 `textOverline`** `bool textOverline ( ) [slot]`

**18.66.3.456 `textSize`** `qreal textSize ( ) [slot]`

**18.66.3.457 `textSizeSelectorIndexChanged`** `void textSizeSelectorIndexChanged ( int index ) [slot]`

**18.66.3.458 `textStrikeOut`** `bool textStrikeOut ( ) [slot]`

**18.66.3.459 `textUnderline`** `bool textUnderline ( ) [slot]`

**18.66.3.460 `tipOfDay`** `void tipOfDay ( ) [slot]`

**18.66.3.461 `toggleGrid`** `void toggleGrid ( ) [slot]`

**18.66.3.462 `toggleLwt`** `void toggleLwt ( ) [slot]`

**18.66.3.463 `toggleRuler`** `void toggleRuler ( ) [slot]`

**18.66.3.464 `undo`** `void undo ( ) [slot]`

**18.66.3.465 `updateAllViewBackgroundColors`** `void updateAllViewBackgroundColors ( QRgb color ) [slot]`

**18.66.3.466 updateAllViewCrossHairColors** void updateAllViewCrossHairColors ( QRgb color ) [slot]

**18.66.3.467 updateAllViewGridColors** void updateAllViewGridColors ( QRgb color ) [slot]

**18.66.3.468 updateAllViewRulerColors** void updateAllViewRulerColors ( QRgb color ) [slot]

**18.66.3.469 updateAllViewScrollBars** void updateAllViewScrollBars ( bool val ) [slot]

**18.66.3.470 updateAllViewSelectBoxColors** void updateAllViewSelectBoxColors ( QRgb colorL, QRgb fillL, QRgb colorR, QRgb fillR, int alpha ) [slot]

**18.66.3.471 updateMenuToolbarStatusbar()** void updateMenuToolbarStatusbar ( ) [virtual]

MainWindow::updateMenuToolbarStatusbar.

**18.66.3.472 updatePickAddMode** void updatePickAddMode ( bool val ) [slot]

**18.66.3.473 validFileFormat** bool validFileFormat ( const QString & fileName ) [static], [slot]

MainWindow::validFileFormat.

#### Parameters

fileName	<input type="text"/>
----------	----------------------

**Returns****18.66.3.474 whatsThisContextHelp** void whatsThisContextHelp ( ) [slot]**18.66.3.475 windowMenuAboutToShow** void windowMenuAboutToShow ( ) [slot][MainWindow::windowMenuAboutToShow](#).**18.66.3.476 windowMenuActivated** void windowMenuActivated ( bool checked ) [slot][MainWindow::windowMenuActivated](#).**Parameters**

<i>checked</i>	<input type="checkbox"/>
----------------	--------------------------

**18.66.3.477 writeSettings** void writeSettings ( ) [slot]**18.66.3.478 zoomAll** void zoomAll ( ) [slot]**18.66.3.479 zoomCenter** void zoomCenter ( ) [slot]**18.66.3.480 zoomDynamic** void zoomDynamic ( ) [slot]**18.66.3.481 zoomExtents** void zoomExtents ( ) [slot]

**18.66.3.482 zoomIn** void zoomIn ( ) [slot]

**18.66.3.483 zoomOut** void zoomOut ( ) [slot]

**18.66.3.484 zoomPrevious** void zoomPrevious ( ) [slot]

**18.66.3.485 zoomRealtime** void zoomRealtime ( ) [slot]

**18.66.3.486 zoomScale** void zoomScale ( ) [slot]

**18.66.3.487 zoomSelected** void zoomSelected ( ) [slot]

**18.66.3.488 zoomWindow** void zoomWindow ( ) [slot]

#### 18.66.4 Member Data Documentation

**18.66.4.1 actionHash** QHash<int, QAction\*> actionHash

**18.66.4.2 checkBoxTipOfDay** QCheckBox\* checkBoxTipOfDay [private]

**18.66.4.3 colorSelector** QComboBox\* colorSelector [private]

**18.66.4.4 cutCopyObjectList** QList<QGraphicsItem\*> cutCopyObjectList

**18.66.4.5 debugger** QScriptEngineDebugger\* debugger [private]

**18.66.4.6 docIndex** int docIndex [private]

**18.66.4.7 dockPropEdit** PropertyEditor\* dockPropEdit

**18.66.4.8 dockUndoEdit** UndoEditor\* dockUndoEdit

**18.66.4.9 editMenu** QMenu\* editMenu [private]

**18.66.4.10 engine** QScriptEngine\* engine [private]

**18.66.4.11 fileMenu** QMenu\* fileMenu [private]

**18.66.4.12 formatFilterOpen** QString formatFilterOpen

**18.66.4.13 formatFilterSave** QString formatFilterSave

**18.66.4.14 helpMenu** QMenu\* helpMenu [private]

**18.66.4.15 labelTipOfDay** QLabel\* labelTipOfDay [private]

**18.66.4.16 layerSelector** QComboBox\* layerSelector [private]

**18.66.4.17 layoutState** QByteArray layoutState [private]

**18.66.4.18 linetypeSelector** QComboBox\* linetypeSelector [private]

**18.66.4.19 linewidthSelector** QComboBox\* linewidthSelector [private]

**18.66.4.20 listMdiWin** QList<MdiWindow\*> listMdiWin [private]

**18.66.4.21 listTipOfDay** QStringList listTipOfDay [private]

**18.66.4.22 mainWin** MainWindow\* mainWin

**18.66.4.23 mdiArea** MdiArea\* mdiArea

**18.66.4.24 menuHash** QHash<QString, QMenu\*> menuHash

**18.66.4.25 myFileSeparator** QAction\* myFileSeparator [private]

**18.66.4.26 numOfDocs** int numOfDocs [private]

**18.66.4.27 openFilesPath** `QString openFilesPath [private]`

**18.66.4.28 panMenu** `QMenu* panMenu [private]`

**18.66.4.29 prompt** `CmdPrompt* prompt`

**18.66.4.30 recentMenu** `QMenu* recentMenu [private]`

**18.66.4.31 settings\_display\_bg\_color** `QRgb settings_display_bg_color [private]`

**18.66.4.32 settings\_display\_crosshair\_color** `QRgb settings_display_crosshair_color [private]`

**18.66.4.33 settings\_display\_crosshair\_percent** `uint8_t settings_display_crosshair_percent [private]`

**18.66.4.34 settings\_display\_renderhint\_aa** `bool settings_display_renderhint_aa [private]`

**18.66.4.35 settings\_display\_renderhint\_high\_aa** `bool settings_display_renderhint_high_aa [private]`

**18.66.4.36 settings\_display\_renderhint\_noncosmetic** `bool settings_display_renderhint_noncosmetic [private]`

**18.66.4.37 settings\_display\_renderhint\_smooth\_pix** `bool settings_display_renderhint_smooth_pix [private]`

**18.66.4.38 settings\_display\_renderhint\_text\_aa** bool settings\_display\_renderhint\_text\_aa [private]

**18.66.4.39 settings\_display\_scrollbar\_widget\_num** int settings\_display\_scrollbar\_widget\_num [private]

**18.66.4.40 settings\_display\_selectbox\_alpha** uint8\_t settings\_display\_selectbox\_alpha [private]

**18.66.4.41 settings\_display\_selectbox\_left\_color** QRgb settings\_display\_selectbox\_left\_color [private]

**18.66.4.42 settings\_display\_selectbox\_left\_fill** QRgb settings\_display\_selectbox\_left\_fill [private]

**18.66.4.43 settings\_display\_selectbox\_right\_color** QRgb settings\_display\_selectbox\_right\_color [private]

**18.66.4.44 settings\_display\_selectbox\_right\_fill** QRgb settings\_display\_selectbox\_right\_fill [private]

**18.66.4.45 settings\_display\_show\_scrollbars** bool settings\_display\_show\_scrollbars [private]

**18.66.4.46 settings\_display\_units** QString settings\_display\_units [private]

**18.66.4.47 settings\_display\_use\_opengl** bool settings\_display\_use\_opengl [private]

**18.66.4.48 settings\_display\_zoomscale\_in** EmbReal settings\_display\_zoomscale\_in [private]

**18.66.4.49 settings\_display\_zoomscale\_out** `EmbReal settings_display_zoomscale_out [private]`

**18.66.4.50 settings\_general\_check\_for\_updates** `bool settings_general_check_for_updates [private]`

**18.66.4.51 settings\_general\_current\_tip** `quint16 settings_general_current_tip [private]`

**18.66.4.52 settings\_general\_icon\_size** `int settings_general_icon_size [private]`

**18.66.4.53 settings\_general\_icon\_theme** `QString settings_general_icon_theme [private]`

**18.66.4.54 settings\_general\_language** `QString settings_general_language [private]`

**18.66.4.55 settings\_general\_mdi\_bg\_color** `QRgb settings_general_mdi_bg_color [private]`

**18.66.4.56 settings\_general\_mdi\_bg\_logo** `QString settings_general_mdi_bg_logo [private]`

**18.66.4.57 settings\_general\_mdi\_bg\_texture** `QString settings_general_mdi_bg_texture [private]`

**18.66.4.58 settings\_general\_mdi\_bg\_use\_color** `bool settings_general_mdi_bg_use_color [private]`

**18.66.4.59 settings\_general\_mdi\_bg\_use\_logo** `bool settings_general_mdi_bg_use_logo [private]`

**18.66.4.60 settings\_general\_mdi\_bg\_use\_texture** bool settings\_general\_mdi\_bg\_use\_texture [private]

**18.66.4.61 settings\_general\_system\_help\_browser** bool settings\_general\_system\_help\_browser [private]

**18.66.4.62 settings\_general\_tip\_of\_the\_day** bool settings\_general\_tip\_of\_the\_day [private]

**18.66.4.63 settings\_grid\_center\_on\_origin** bool settings\_grid\_center\_on\_origin [private]

**18.66.4.64 settings\_grid\_center\_x** EmbReal settings\_grid\_center\_x [private]

**18.66.4.65 settings\_grid\_center\_y** EmbReal settings\_grid\_center\_y [private]

**18.66.4.66 settings\_grid\_color** QRgb settings\_grid\_color [private]

**18.66.4.67 settings\_grid\_color\_match\_crosshair** bool settings\_grid\_color\_match\_crosshair [private]

**18.66.4.68 settings\_grid\_load\_from\_file** bool settings\_grid\_load\_from\_file [private]

**18.66.4.69 settings\_grid\_show\_on\_load** bool settings\_grid\_show\_on\_load [private]

**18.66.4.70 settings\_grid\_show\_origin** bool settings\_grid\_show\_origin [private]

**18.66.4.71 settings\_grid\_size\_radius** `EmbReal` `settings_grid_size_radius` [private]

**18.66.4.72 settings\_grid\_size\_x** `EmbReal` `settings_grid_size_x` [private]

**18.66.4.73 settings\_grid\_size\_y** `EmbReal` `settings_grid_size_y` [private]

**18.66.4.74 settings\_grid\_spacing\_angle** `EmbReal` `settings_grid_spacing_angle` [private]

**18.66.4.75 settings\_grid\_spacing\_radius** `EmbReal` `settings_grid_spacing_radius` [private]

**18.66.4.76 settings\_grid\_spacing\_x** `EmbReal` `settings_grid_spacing_x` [private]

**18.66.4.77 settings\_grid\_spacing\_y** `EmbReal` `settings_grid_spacing_y` [private]

**18.66.4.78 settings\_grid\_type** `QString` `settings_grid_type` [private]

**18.66.4.79 settings\_lwt\_default\_lwt** `EmbReal` `settings_lwt_default_lwt` [private]

**18.66.4.80 settings\_lwt\_real\_render** `bool` `settings_lwt_real_render` [private]

**18.66.4.81 settings\_lwt\_show\_lwt** `bool` `settings_lwt_show_lwt` [private]

**18.66.4.82 settings\_opensave\_custom\_filter** `QString settings_opensave_custom_filter` [private]

**18.66.4.83 settings\_opensave\_open\_format** `QString settings_opensave_open_format` [private]

**18.66.4.84 settings\_opensave\_open\_thumbnail** `bool settings_opensave_open_thumbnail` [private]

**18.66.4.85 settings\_opensave\_recent\_directory** `QString settings_opensave_recent_directory` [private]

**18.66.4.86 settings\_opensave\_recent\_list\_of\_files** `QStringList settings_opensave_recent_list_of_files` [private]

**18.66.4.87 settings\_opensave\_recent\_max\_files** `uint8_t settings_opensave_recent_max_files` [private]

**18.66.4.88 settings\_opensave\_save\_format** `QString settings_opensave_save_format` [private]

**18.66.4.89 settings\_opensave\_save\_thumbnail** `bool settings_opensave_save_thumbnail` [private]

**18.66.4.90 settings\_opensave\_trim\_dst\_num\_jumps** `uint8_t settings_opensave_trim_dst_num_jumps` [private]

**18.66.4.91 settings\_printing\_default\_device** `QString settings_printing_default_device` [private]

**18.66.4.92 settings\_printing\_disable\_bg** `bool settings_printing_disable_bg` [private]

**18.66.4.93 `settings_printing_use_last_device`** bool settings\_printing\_use\_last\_device [private]

**18.66.4.94 `settings_prompt_bg_color`** QRgb settings\_prompt\_bg\_color [private]

**18.66.4.95 `settings_prompt_font_family`** QString settings\_prompt\_font\_family [private]

**18.66.4.96 `settings_prompt_font_size`** uint8\_t settings\_prompt\_font\_size [private]

**18.66.4.97 `settings_prompt_font_style`** QString settings\_prompt\_font\_style [private]

**18.66.4.98 `settings_prompt_save_history`** bool settings\_prompt\_save\_history [private]

**18.66.4.99 `settings_prompt_save_history_as_html`** bool settings\_prompt\_save\_history\_as\_html [private]

**18.66.4.100 `settings_prompt_save_history_filename`** QString settings\_prompt\_save\_history\_filename [private]

**18.66.4.101 `settings_prompt_text_color`** QRgb settings\_prompt\_text\_color [private]

**18.66.4.102 `settings_qsnap_aperture_size`** uint8\_t settings\_qsnap\_aperture\_size [private]

**18.66.4.103 `settings_qsnap_apparent`** bool settings\_qsnap\_apparent [private]

**18.66.4.104 `settings_qsnap_center`** bool settings\_qsnap\_center [private]

**18.66.4.105 `settings_qsnap_enabled`** bool settings\_qsnap\_enabled [private]

**18.66.4.106 `settings_qsnap_endpoint`** bool settings\_qsnap\_endpoint [private]

**18.66.4.107 `settings_qsnap_extension`** bool settings\_qsnap\_extension [private]

**18.66.4.108 `settings_qsnap_insertion`** bool settings\_qsnap\_insertion [private]

**18.66.4.109 `settings_qsnap_intersection`** bool settings\_qsnap\_intersection [private]

**18.66.4.110 `settings_qsnap_locator_color`** QRgb settings\_qsnap\_locator\_color [private]

**18.66.4.111 `settings_qsnap_locator_size`** uint8\_t settings\_qsnap\_locator\_size [private]

**18.66.4.112 `settings_qsnap_midpoint`** bool settings\_qsnap\_midpoint [private]

**18.66.4.113 `settings_qsnap_nearest`** bool settings\_qsnap\_nearest [private]

**18.66.4.114 `settings_qsnap_node`** bool settings\_qsnap\_node [private]

**18.66.4.115 `settings_qsnap_parallel`** bool settings\_qsnap\_parallel [private]

**18.66.4.116 `settings_qsnap_perpendicular`** bool settings\_qsnap\_perpendicular [private]

**18.66.4.117 `settings_qsnap_quadrant`** bool settings\_qsnap\_quadrant [private]

**18.66.4.118 `settings_qsnap_tangent`** bool settings\_qsnap\_tangent [private]

**18.66.4.119 `settings_ruler_color`** QRgb settings\_ruler\_color [private]

**18.66.4.120 `settings_ruler_metric`** bool settings\_ruler\_metric [private]

**18.66.4.121 `settings_ruler_pixel_size`** uint8\_t settings\_ruler\_pixel\_size [private]

**18.66.4.122 `settings_ruler_show_on_load`** bool settings\_ruler\_show\_on\_load [private]

**18.66.4.123 `settings_selection_coolgrip_color`** QRgb settings\_selection\_coolgrip\_color [private]

**18.66.4.124 `settings_selection_grip_size`** uint8\_t settings\_selection\_grip\_size [private]

**18.66.4.125 `settings_selection_hotgrip_color`** QRgb settings\_selection\_hotgrip\_color [private]

**18.66.4.126 `settings_selection_mode_pickadd`** bool settings\_selection\_mode\_pickadd [private]

**18.66.4.127 `settings_selection_mode_pickdrag`** bool settings\_selection\_mode\_pickdrag [private]

**18.66.4.128 `settings_selection_mode_pickfirst`** bool settings\_selection\_mode\_pickfirst [private]

**18.66.4.129 `settings_selection_pickbox_size`** uint8\_t settings\_selection\_pickbox\_size [private]

**18.66.4.130 `settings_text_angle`** EmbReal settings\_text\_angle [private]

**18.66.4.131 `settings_text_font`** QString settings\_text\_font [private]

**18.66.4.132 `settings_text_size`** EmbReal settings\_text\_size [private]

**18.66.4.133 `settings_text_style_bold`** bool settings\_text\_style\_bold [private]

**18.66.4.134 `settings_text_style_italic`** bool settings\_text\_style\_italic [private]

**18.66.4.135 `settings_text_style_overline`** bool settings\_text\_style\_overline [private]

**18.66.4.136 `settings_text_style_strikeout`** bool settings\_text\_style\_strikeout [private]

**18.66.4.137 settings\_text\_style\_underline** bool settings\_text\_style\_underline [private]

**18.66.4.138 settingsMenu** QMenu\* settingsMenu [private]

**18.66.4.139 shiftKeyPressedState** bool shiftKeyPressedState [private]

**18.66.4.140 statusbar** StatusBar\* statusbar

**18.66.4.141 textFontSelector** QFontComboBox\* textFontSelector [private]

**18.66.4.142 textSizeSelector** QComboBox\* textSizeSelector [private]

**18.66.4.143 toolbarEdit** QToolBar\* toolbarEdit [private]

**18.66.4.144 toolbarFile** QToolBar\* toolbarFile [private]

**18.66.4.145 toolbarHash** QHash<QString, QToolBar\*> toolbarHash

**18.66.4.146 toolbarHelp** QToolBar\* toolbarHelp [private]

**18.66.4.147 toolbarIcon** QToolBar\* toolbarIcon [private]

**18.66.4.148 toolbarLayer** QToolBar\* toolbarLayer [private]

**18.66.4.149 toolbarPan** QToolBar\* toolbarPan [private]

**18.66.4.150 toolbarPrompt** QToolBar\* toolbarPrompt [private]

**18.66.4.151 toolbarProperties** QToolBar\* toolbarProperties [private]

**18.66.4.152 toolbarText** QToolBar\* toolbarText [private]

**18.66.4.153 toolbarView** QToolBar\* toolbarView [private]

**18.66.4.154 toolbarZoom** QToolBar\* toolbarZoom [private]

**18.66.4.155 viewMenu** QMenu\* viewMenu [private]

**18.66.4.156 windowMenu** QMenu\* windowMenu [private]

**18.66.4.157 wizardTipOfDay** QWizard\* wizardTipOfDay [private]

**18.66.4.158 zoomMenu** `QMenu* zoomMenu [private]`

The documentation for this class was generated from the following files:

- [embroidermodder2/mainwindow.h](#)
- [embroidermodder2/mainwindow-actions.cpp](#)
- [embroidermodder2/mainwindow-commands.cpp](#)
- [embroidermodder2/mainwindow-menus.cpp](#)
- [embroidermodder2/mainwindow-settings.cpp](#)
- [embroidermodder2/mainwindow-toolbars.cpp](#)
- [embroidermodder2/mainwindow.cpp](#)

## 18.67 MdiArea Class Reference

```
#include <mdiarea.h>
```

### Public Slots

- `void cascade ()`
- `void tile ()`

### Public Member Functions

- `MdiArea (MainWindow *mw, QWidget *parent=0)`
- `~MdiArea ()`
- `void useBackgroundLogo (bool use)`
- `void useBackgroundTexture (bool use)`
- `void useBackgroundColor (bool use)`
- `void setBackgroundLogo (const QString &fileName)`
- `void setBackgroundTexture (const QString &fileName)`
- `void setBackgroundColor (const QColor &color)`

### Protected Member Functions

- `virtual void mouseDoubleClickEvent (QMouseEvent *e)`
- `virtual void paintEvent (QPaintEvent *e)`

### Private Member Functions

- `void zoomExtentsAllSubWindows ()`
- `void forceRepaint ()`

### Private Attributes

- `MainWindow * mainWin`
- `bool useLogo`
- `bool useTexture`
- `bool useColor`
- `QPixmap bgLogo`
- `QPixmap bgTexture`
- `QColor bgColor`

**18.67.1 Constructor & Destructor Documentation****18.67.1.1 MdiArea()** `MdiArea (`  
    `MainWindow * mw,`  
    `QWidget * parent = 0 )`**18.67.1.2 ~MdiArea()** `~MdiArea ( )`**18.67.2 Member Function Documentation****18.67.2.1 cascade** `void cascade ( ) [slot]`**18.67.2.2 forceRepaint()** `void forceRepaint ( ) [private]`**18.67.2.3 mouseDoubleClickEvent()** `void mouseDoubleClickEvent (`  
    `QMouseEvent * e ) [protected], [virtual]`**18.67.2.4 paintEvent()** `void paintEvent (`  
    `QPaintEvent * e ) [protected], [virtual]`**18.67.2.5 setBackgroundColor()** `void setBackgroundColor (`  
    `const QColor & color )`**18.67.2.6 setBackgroundLogo()** `void setBackgroundLogo (`  
    `const QString & fileName )`

**18.67.2.7 setBackgroundTexture()** void setBackgroundTexture ( const QString & fileName )

**18.67.2.8 tile** void tile ( ) [slot]

**18.67.2.9 useBackgroundColor()** void useBackgroundColor ( bool use )

**18.67.2.10 useBackgroundLogo()** void useBackgroundLogo ( bool use )

**18.67.2.11 useBackgroundTexture()** void useBackgroundTexture ( bool use )

**18.67.2.12 zoomExtentsAllSubWindows()** void zoomExtentsAllSubWindows ( ) [private]

### 18.67.3 Member Data Documentation

**18.67.3.1 bgColor** QColor bgColor [private]

**18.67.3.2 bgLogo** QPixmap bgLogo [private]

**18.67.3.3 bgTexture** QPixmap bgTexture [private]

**18.67.3.4 mainWin** MainWindow\* mainWin [private]

**18.67.3.5 useColor** bool useColor [private]

**18.67.3.6 useLogo** bool useLogo [private]

**18.67.3.7 useTexture** bool useTexture [private]

The documentation for this class was generated from the following files:

- [embroidermodder2/mdiarea.h](#)
- [embroidermodder2/mdiarea.cpp](#)

## 18.68 MdiWindow Class Reference

```
#include <mdiwindow.h>
```

### Public Slots

- void [closeEvent](#) (QCloseEvent \*e)
- void [onWindowActivated](#) ()
- void [currentLayerChanged](#) (const QString &layer)
- void [currentColorChanged](#) (const QRgb &color)
- void [currentLinetypeChanged](#) (const QString &type)
- void [currentLineweightChanged](#) (const QString &weight)
- void [updateColorLinetypeLineweight](#) ()
- void [deletePressed](#) ()
- void [escapePressed](#) ()
- void [showViewScrollBars](#) (bool val)
- void [setViewCrossHairColor](#) (QRgb color)
- void [setViewBackgroundColor](#) (QRgb color)
- void [setViewSelectBoxColors](#) (QRgb colorL, QRgb fillL, QRgb colorR, QRgb fillR, int alpha)
- void [setViewGridColor](#) (QRgb color)
- void [setViewRulerColor](#) (QRgb color)
- void [print](#) ()
- void [saveBMC](#) ()
- void [promptHistoryAppended](#) (const QString &txt)
- void [logPromptInput](#) (const QString &txt)
- void [promptInputPrevious](#) ()
- void [promptInputNext](#) ()

### Signals

- void [sendCloseMdiWin](#) (MdiWindow \*)

## Public Member Functions

- `MdiWindow` (const int theIndex, `MainWindow` \*mw, `QMdiArea` \*parent, Qt::WindowFlags wflags)
- `~MdiWindow` ()
- virtual `QSize sizeHint` () const
- `QString getCurrentFile` ()
- `QString getShortCurrentFile` ()
- `View` \* `getView` ()
- `QGraphicsScene` \* `getScene` ()
- `QString getCurrentLayer` ()
- `QRgb getCurrentColor` ()
- `QString getCurrentLineType` ()
- `QString getCurrentLineWeight` ()
- void `setCurrentLayer` (const `QString` &layer)
- void `setCurrentColor` (const `QRgb` &color)
- void `setCurrentLineType` (const `QString` &lineType)
- void `setCurrentLineWeight` (const `QString` &lineWeight)
- void `designDetails` ()
- bool `loadFile` (const `QString` &fileName)
- bool `saveFile` (const `QString` &fileName)

## Private Member Functions

- void `setCurrentFile` (const `QString` &fileName)
- `QString fileExtension` (const `QString` &fileName)
- void `promptInputPrevNext` (bool prev)

## Private Attributes

- `MainWindow` \* `mainWin`
- `QMdiArea` \* `mdiArea`
- `QGraphicsScene` \* `gscene`
- `View` \* `gview`
- bool `fileWasLoaded`
- `QString promptHistory`
- `QList<QString>` `promptInputList`
- int `promptInputNum`
- `QPrinter` `printer`
- `QString curFile`
- int `myIndex`
- `QString curLayer`
- `QRgb curColor`
- `QString curLineType`
- `QString curLineWeight`

### 18.68.1 Constructor & Destructor Documentation

---

**18.68.1.1 MdiWindow()** `MdiWindow (`  
    `const int theIndex,`  
    `MainWindow * mw,`  
    `QMdiArea * parent,`  
    `Qt::WindowFlags wflags )`

**18.68.1.2 ~MdiWindow()** `~MdiWindow ( )`

## 18.68.2 Member Function Documentation

**18.68.2.1 closeEvent** `void closeEvent (`  
    `QCloseEvent * e ) [slot]`

**18.68.2.2 currentColorChanged** `void currentColorChanged (`  
    `const QRgb & color ) [slot]`

**18.68.2.3 currentLayerChanged** `void currentLayerChanged (`  
    `const QString & layer ) [slot]`

**18.68.2.4 currentLinetypeChanged** `void currentLinetypeChanged (`  
    `const QString & type ) [slot]`

**18.68.2.5 currentLineweightChanged** `void currentLineweightChanged (`  
    `const QString & weight ) [slot]`

**18.68.2.6 deletePressed** `void deletePressed ( ) [slot]`

**18.68.2.7 designDetails()** `void designDetails ( )`

**18.68.2.8 escapePressed** void escapePressed ( ) [slot]

**18.68.2.9 fileExtension()** QString fileExtension ( const QString & *fileName* ) [private]

**18.68.2.10 getCurrentColor()** QRgb getCurrentColor ( ) [inline]

**18.68.2.11 getCurrentFile()** QString getCurrentFile ( ) [inline]

**18.68.2.12 getCurrentLayer()** QString getCurrentLayer ( ) [inline]

**18.68.2.13 getCurrentLineType()** QString getCurrentLineType ( ) [inline]

**18.68.2.14 getCurrentLineWeight()** QString getCurrentLineWeight ( ) [inline]

**18.68.2.15 getScene()** QGraphicsScene \* getScene ( ) [inline]

**18.68.2.16 getShortCurrentFile()** QString getShortCurrentFile ( )

**18.68.2.17 getView()** View \* getView ( ) [inline]

**18.68.2.18 loadFile()** bool loadFile ( const QString & *fileName* )

**18.68.2.19 logPromptInput** void logPromptInput ( const QString & *txt* ) [slot]

**18.68.2.20 onWindowActivated** void onWindowActivated ( ) [slot]

**18.68.2.21 print** void print ( ) [slot]

**18.68.2.22 promptHistoryAppended** void promptHistoryAppended ( const QString & *txt* ) [slot]

**18.68.2.23 promptInputNext** void promptInputNext ( ) [slot]

**18.68.2.24 promptInputPrevious** void promptInputPrevious ( ) [slot]

**18.68.2.25 promptInputPrevNext()** void promptInputPrevNext ( bool *prev* ) [private]

**18.68.2.26 saveBMC** void saveBMC ( ) [slot]

**18.68.2.27 saveFile()** bool saveFile ( const QString & *fileName* )

**18.68.2.28 sendCloseMdiWin** void sendCloseMdiWin ( MdiWindow \* ) [signal]

**18.68.2.29 `setCurrentColor()`** void setCurrentColor ( const QRgb & *color* ) [inline]

**18.68.2.30 `setCurrentFile()`** void setCurrentFile ( const QString & *fileName* ) [private]

**18.68.2.31 `setCurrentLayer()`** void setCurrentLayer ( const QString & *layer* ) [inline]

**18.68.2.32 `setCurrentLineType()`** void setCurrentLineType ( const QString & *lineType* ) [inline]

**18.68.2.33 `setCurrentLineWeight()`** void setCurrentLineWeight ( const QString & *lineWeight* ) [inline]

**18.68.2.34 `setViewBackgroundColor`** void setViewBackgroundColor ( QRgb *color* ) [slot]

**18.68.2.35 `setViewCrossHairColor`** void setViewCrossHairColor ( QRgb *color* ) [slot]

**18.68.2.36 `setViewGridColor`** void setViewGridColor ( QRgb *color* ) [slot]

**18.68.2.37 `setViewRulerColor`** void setViewRulerColor ( QRgb *color* ) [slot]

**18.68.2.38 setViewSelectBoxColors** void setViewSelectBoxColors ( QRgb colorL, QRgb fillL, QRgb colorR, QRgb fillR, int alpha ) [slot]

**18.68.2.39 showViewScrollBars** void showViewScrollBars ( bool val ) [slot]

**18.68.2.40 sizeHint()** QSize sizeHint ( ) const [virtual]

**18.68.2.41 updateColorLinetypeLinewidth** void updateColorLinetypeLinewidth ( ) [slot]

### 18.68.3 Member Data Documentation

**18.68.3.1 curColor** QRgb curColor [private]

**18.68.3.2 curFile** QString curFile [private]

**18.68.3.3 curLayer** QString curLayer [private]

**18.68.3.4 curLineType** QString curLineType [private]

**18.68.3.5 curLineWeight** QString curLineWeight [private]

**18.68.3.6 fileWasLoaded** bool fileWasLoaded [private]

**18.68.3.7 gscene** QGraphicsScene\* gscene [private]

**18.68.3.8 gview** View\* gview [private]

**18.68.3.9 mainWin** MainWindow\* mainWin [private]

**18.68.3.10 mdiArea** QMdiArea\* mdiArea [private]

**18.68.3.11 myIndex** int myIndex [private]

**18.68.3.12 printer** QPrinter printer [private]

**18.68.3.13 promptHistory** QString promptHistory [private]

**18.68.3.14 promptInputList** QList<QString> promptInputList [private]

**18.68.3.15 promptInputNum** int promptInputNum [private]

The documentation for this class was generated from the following files:

- [embroidermodder2/mdiwindow.h](#)
- [embroidermodder2/mdiwindow.cpp](#)

## 18.69 PathObject Class Reference

```
#include <object-path.h>
```

### Public Types

- enum { [Type](#) = OBJ\_TYPE\_PATH }

### Public Types inherited from [BaseObject](#)

- enum { [Type](#) = OBJ\_TYPE\_BASE }

### Public Member Functions

- [PathObject](#) (qreal x, qreal y, const QPainterPath p, QRgb rgb, QGraphicsItem \*parent=0)
- [PathObject](#) ([PathObject](#) \*obj, QGraphicsItem \*parent=0)
- [~PathObject](#) ()
- virtual int [type](#) () const
- QPainterPath [objectCopyPath](#) () const
- QPainterPath [objectSavePath](#) () const
- QPointF [objectPos](#) () const
- qreal [objectX](#) () const
- qreal [objectY](#) () const
- void [setObjectPos](#) (const QPointF &point)
- void [setObjectPos](#) (qreal x, qreal y)
- void [setObjectX](#) (qreal x)
- void [setObjectY](#) (qreal y)
- void [updateRubber](#) (QPainter \*painter=0)
- virtual void [vulcanize](#) ()
- virtual QPointF [mouseSnapPoint](#) (const QPointF &mousePoint)
- virtual QList< QPointF > [allGripPoints](#) ()
- virtual void [gripEdit](#) (const QPointF &before, const QPointF &after)

### Public Member Functions inherited from [BaseObject](#)

- [BaseObject](#) (QGraphicsItem \*parent=0)
- virtual [~BaseObject](#) ()
- virtual int [type](#) () const
- qint64 [objectID](#) () const
- QPen [objectPen](#) () const
- QColor [objectColor](#) () const
- QRgb [objectColorRGB](#) () const
- Qt::PenStyle [objectLineType](#) () const
- qreal [objectLineWidth](#) () const
- QPainterPath [objectPath](#) () const
- int [objectRubberMode](#) () const
- QPointF [objectRubberPoint](#) (const QString &key) const
- QString [objectRubberText](#) (const QString &key) const
- QRectF [rect](#) () const
- void [setRect](#) (const QRectF &r)

- void `setRect` (qreal x, qreal y, qreal w, qreal h)
- QLineF `line` () const
- void `setLine` (const QLineF &li)
- void `setLine` (qreal x1, qreal y1, qreal x2, qreal y2)
- void `setObjectColor` (const QColor &color)
- void `setObjectColorRGB` (QRgb rgb)
- void `setObjectLineType` (Qt::PenStyle lineType)
- void `setObjectLineWidth` (qreal lineWeight)
- void `setObjectPath` (const QPainterPath &p)
- void `setObjectRubberMode` (int mode)
- void `setObjectRubberPoint` (const QString &key, const QPointF &point)
- void `setObjectRubberText` (const QString &key, const QString &txt)
- virtual QRectF `boundingRect` () const
- virtual QPainterPath `shape` () const
- void `drawRubberLine` (const QLineF &rubLine, QPainter \*painter=0, const char \*colorFromScene=0)
- virtual void `vulcanize` ()=0
- virtual QPointF `mouseSnapPoint` (const QPointF &mousePoint)=0
- virtual QList< QPointF > `allGripPoints` ()=0
- virtual void `gripEdit` (const QPointF &before, const QPointF &after)=0

### Protected Member Functions

- void `paint` (QPainter \*, const QStyleOptionGraphicsItem \*, QWidget \*)

### Protected Member Functions inherited from `BaseObject`

- QPen `lineWeightPen` () const
- qreal `pi` () const
- qreal `radians` (qreal degree) const
- qreal `degrees` (qreal radian) const
- void `realRender` (QPainter \*painter, const QPainterPath &renderPath)

### Private Member Functions

- void `init` (qreal x, qreal y, const QPainterPath &p, QRgb rgb, Qt::PenStyle lineType)
- void `updatePath` (const QPainterPath &p)

### Private Attributes

- QPainterPath `normalPath`

### 18.69.1 Member Enumeration Documentation

#### 18.69.1.1 anonymous enum anonymous enum

Enumerator

Type	<input type="button" value=""/>
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### 18.69.2 Constructor & Destructor Documentation

#### 18.69.2.1 PathObject() [1/2] [PathObject](#) (

```
    qreal x,  
    qreal y,  
    const QPainterPath p,  
    QRgb rgb,  
    QGraphicsItem * parent = 0 )
```

#### 18.69.2.2 PathObject() [2/2] [PathObject](#) (

```
    PathObject * obj,  
    QGraphicsItem * parent = 0 )
```

#### 18.69.2.3 ~PathObject() [~PathObject](#) ( )

### 18.69.3 Member Function Documentation

#### 18.69.3.1 allGripPoints() [QList< QPointF >](#) allGripPoints ( ) [virtual]

Implements [BaseObject](#).

#### 18.69.3.2 gripEdit() [void](#) gripEdit (

```
    const QPointF & before,  
    const QPointF & after ) [virtual]
```

Implements [BaseObject](#).

```
18.69.3.3 init() void init (
    qreal x,
    qreal y,
    const QPainterPath & p,
    QRgb rgb,
    Qt::PenStyle lineType ) [private]
```

```
18.69.3.4 mouseSnapPoint() QPointF mouseSnapPoint (
    const QPointF & mousePoint ) [virtual]
```

Implements [BaseObject](#).

```
18.69.3.5 objectCopyPath() QPainterPath objectCopyPath () const
```

```
18.69.3.6 objectPos() QPointF objectPos () const [inline]
```

```
18.69.3.7 objectSavePath() QPainterPath objectSavePath () const
```

```
18.69.3.8 objectX() qreal objectX () const [inline]
```

```
18.69.3.9 objectY() qreal objectY () const [inline]
```

```
18.69.3.10 paint() void paint (
    QPainter * painter,
    const QStyleOptionGraphicsItem * option,
    QWidget * ) [protected]
```

```
18.69.3.11 setObjectPos() [1/2] void setObjectPos (
    const QPointF & point ) [inline]
```

```
18.69.3.12 setObjectPos() [2/2] void setObjectPos (
    qreal x,
    qreal y ) [inline]
```

```
18.69.3.13 setObjectX() void setObjectX (
    qreal x ) [inline]
```

```
18.69.3.14 setObjectY() void setObjectY (
    qreal y ) [inline]
```

```
18.69.3.15 type() virtual int type () const [inline], [virtual]
```

Reimplemented from [BaseObject](#).

```
18.69.3.16 updatePath() void updatePath (
    const QPainterPath & p ) [private]
```

```
18.69.3.17 updateRubber() void updateRubber (
    QPainter * painter = 0 )
```

```
18.69.3.18 vulcanize() void vulcanize () [virtual]
```

Implements [BaseObject](#).

#### 18.69.4 Member Data Documentation

```
18.69.4.1 normalPath QPainterPath normalPath [private]
```

The documentation for this class was generated from the following files:

- [embroidermodder2/object-path.h](#)
- [embroidermodder2/object-path.cpp](#)

## 18.70 PointObject Class Reference

```
#include <object-point.h>
```

### Public Types

- enum { [Type](#) = OBJ\_TYPE\_POINT }

### Public Types inherited from [BaseObject](#)

- enum { [Type](#) = OBJ\_TYPE\_BASE }

### Public Member Functions

- [PointObject](#) (qreal x, qreal y, QRgb rgb, QGraphicsItem \*parent=0)
- [PointObject](#) ([PointObject](#) \*obj, QGraphicsItem \*parent=0)
- [~PointObject](#) ()
- virtual int [type](#) () const
- QPainterPath [objectSavePath](#) () const
- QPointF [objectPos](#) () const
- qreal [objectX](#) () const
- qreal [objectY](#) () const
- void [setObjectPos](#) (const QPointF &point)
- void [setObjectPos](#) (qreal x, qreal y)
- void [setObjectX](#) (qreal x)
- void [setObjectY](#) (qreal y)
- void [updateRubber](#) (QPainter \*painter=0)
- virtual void [vulcanize](#) ()
- virtual QPointF [mouseSnapPoint](#) (const QPointF &mousePoint)
- virtual QList< QPointF > [allGripPoints](#) ()
- virtual void [gripEdit](#) (const QPointF &before, const QPointF &after)

### Public Member Functions inherited from [BaseObject](#)

- [BaseObject](#) (QGraphicsItem \*parent=0)
- virtual [~BaseObject](#) ()
- virtual int [type](#) () const
- qint64 [objectID](#) () const
- QPen [objectPen](#) () const
- QColor [objectColor](#) () const
- QRgb [objectColorRGB](#) () const
- Qt::PenStyle [objectLineType](#) () const
- qreal [objectLineWidth](#) () const
- QPainterPath [objectPath](#) () const
- int [objectRubberMode](#) () const
- QPointF [objectRubberPoint](#) (const QString &key) const
- QString [objectRubberText](#) (const QString &key) const
- QRectF [rect](#) () const
- void [setRect](#) (const QRectF &r)
- void [setRect](#) (qreal x, qreal y, qreal w, qreal h)

- `QLineF line () const`
- `void setLine (const QLineF &li)`
- `void setLine (qreal x1, qreal y1, qreal x2, qreal y2)`
- `void setObjectColor (const QColor &color)`
- `void setObjectColorRGB (QRgb rgb)`
- `void setObjectLineType (Qt::PenStyle lineType)`
- `void setObjectLineWeight (qreal lineWeight)`
- `void setObjectPath (const QPainterPath &p)`
- `void setObjectRubberMode (int mode)`
- `void setObjectRubberPoint (const QString &key, const QPointF &point)`
- `void setObjectRubberText (const QString &key, const QString &txt)`
- `virtual QRectF boundingRect () const`
- `virtual QPainterPath shape () const`
- `void drawRubberLine (const QLineF &rubLine, QPainter *painter=0, const char *colorFromScene=0)`
- `virtual void vulcanize ()=0`
- `virtual QPointF mouseSnapPoint (const QPointF &mousePoint)=0`
- `virtual QList< QPointF > allGripPoints ()=0`
- `virtual void gripEdit (const QPointF &before, const QPointF &after)=0`

### Protected Member Functions

- `void paint (QPainter *, const QStyleOptionGraphicsItem *, QWidget *)`

### Protected Member Functions inherited from [BaseObject](#)

- `QPen lineWeightPen () const`
- `qreal pi () const`
- `qreal radians (qreal degree) const`
- `qreal degrees (qreal radian) const`
- `void realRender (QPainter *painter, const QPainterPath &renderPath)`

### Private Member Functions

- `void init (qreal x, qreal y, QRgb rgb, Qt::PenStyle lineType)`

#### 18.70.1 Member Enumeration Documentation

##### 18.70.1.1 anonymous enum anonymous enum

###### Enumerator

Type	<input type="button" value=""/>
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### 18.70.2 Constructor & Destructor Documentation

**18.70.2.1 PointObject() [1/2]** `PointObject (`  
    `qreal x,`  
    `qreal y,`  
    `QRgb rgb,`  
    `QGraphicsItem * parent = 0 )`

**18.70.2.2 PointObject() [2/2]** `PointObject (`  
    `PointObject * obj,`  
    `QGraphicsItem * parent = 0 )`

**18.70.2.3 ~PointObject()** `~PointObject ( )`

### 18.70.3 Member Function Documentation

**18.70.3.1 allGripPoints()** `QList< QPointF > allGripPoints ( ) [virtual]`

Implements [BaseObject](#).

**18.70.3.2 gripEdit()** `void gripEdit (`  
    `const QPointF & before,`  
    `const QPointF & after ) [virtual]`

Implements [BaseObject](#).

**18.70.3.3 init()** `void init (`  
    `qreal x,`  
    `qreal y,`  
    `QRgb rgb,`  
    `Qt::PenStyle lineType ) [private]`

**18.70.3.4 mouseSnapPoint()** QPointF mouseSnapPoint ( const QPointF & *mousePoint* ) [virtual]

Implements [BaseObject](#).

**18.70.3.5 objectPos()** QPointF objectPos ( ) const [inline]

**18.70.3.6 objectSavePath()** QPainterPath objectSavePath ( ) const

**18.70.3.7 objectX()** qreal objectX ( ) const [inline]

**18.70.3.8 objectY()** qreal objectY ( ) const [inline]

**18.70.3.9 paint()** void paint ( QPainter \* *painter*, const QStyleOptionGraphicsItem \* *option*, QWidget \* ) [protected]

**18.70.3.10 setObjectPos() [1/2]** void setObjectPos ( const QPointF & *point* ) [inline]

**18.70.3.11 setObjectPos() [2/2]** void setObjectPos ( qreal *x*, qreal *y* ) [inline]

**18.70.3.12 setObjectX()** void setObjectX ( qreal *x* ) [inline]

**18.70.3.13 `setObjectY()`** void setObjectY ( qreal y ) [inline]

**18.70.3.14 `type()`** virtual int type () const [inline], [virtual]

Reimplemented from [BaseObject](#).

**18.70.3.15 `updateRubber()`** void updateRubber ( QPainter \* painter = 0 )

**18.70.3.16 `vulcanize()`** void vulcanize () [virtual]

Implements [BaseObject](#).

The documentation for this class was generated from the following files:

- [embroidermodder2/object-point.h](#)
- [embroidermodder2/object-point.cpp](#)

## 18.71 PolygonObject Class Reference

#include <object-polygon.h>

### Public Types

- enum { [Type](#) = OBJ\_TYPE\_POLYGON }

### Public Types inherited from [BaseObject](#)

- enum { [Type](#) = OBJ\_TYPE\_BASE }

### Public Member Functions

- [PolygonObject](#) (qreal x, qreal y, const QPainterPath &p, QRgb rgb, QGraphicsItem \*parent=0)
- [PolygonObject](#) ([PolygonObject](#) \*obj, QGraphicsItem \*parent=0)
- [~PolygonObject](#) ()
- virtual int [type](#) () const
- QPainterPath [objectCopyPath](#) () const
- QPainterPath [objectSavePath](#) () const
- QPointF [objectPos](#) () const
- qreal [objectX](#) () const
- qreal [objectY](#) () const
- void [setObjectPos](#) (const QPointF &point)
- void [setObjectPos](#) (qreal x, qreal y)
- void [setObjectX](#) (qreal x)
- void [setObjectY](#) (qreal y)
- void [updateRubber](#) (QPainter \*painter=0)
- virtual void [vulcanize](#) ()
- virtual QPointF [mouseSnapPoint](#) (const QPointF &mousePoint)
- virtual QList< QPointF > [allGripPoints](#) ()
- virtual void [gripEdit](#) (const QPointF &before, const QPointF &after)

**Public Member Functions inherited from BaseObject**

- `BaseObject` (QGraphicsItem \*parent=0)
- virtual `~BaseObject` ()
- virtual int `type` () const
- qint64 `objectID` () const
- QPen `objectPen` () const
- QColor `objectColor` () const
- QRgb `objectColorRGB` () const
- Qt::PenStyle `objectLineType` () const
- qreal `objectLineWidth` () const
- QPainterPath `objectPath` () const
- int `objectRubberMode` () const
- QPointF `objectRubberPoint` (const QString &key) const
- QString `objectRubberText` (const QString &key) const
- QRectF `rect` () const
- void `setRect` (const QRectF &r)
- void `setRect` (qreal x, qreal y, qreal w, qreal h)
- QLineF `line` () const
- void `setLine` (const QLineF &li)
- void `setLine` (qreal x1, qreal y1, qreal x2, qreal y2)
- void `setObjectColor` (const QColor &color)
- void `setObjectColorRGB` (QRgb rgb)
- void `setObjectLineType` (Qt::PenStyle lineType)
- void `setObjectLineWidth` (qreal lineWidth)
- void `setObjectPath` (const QPainterPath &p)
- void `setObjectRubberMode` (int mode)
- void `setObjectRubberPoint` (const QString &key, const QPointF &point)
- void `setObjectRubberText` (const QString &key, const QString &txt)
- virtual QRectF `boundingRect` () const
- virtual QPainterPath `shape` () const
- void `drawRubberLine` (const QLineF &rubLine, QPainter \*painter=0, const char \*colorFromScene=0)
- virtual void `vulcanize` ()=0
- virtual QPointF `mouseSnapPoint` (const QPointF &mousePoint)=0
- virtual QList< QPointF > `allGripPoints` ()=0
- virtual void `gripEdit` (const QPointF &before, const QPointF &after)=0

**Protected Member Functions**

- void `paint` (QPainter \*, const QStyleOptionGraphicsItem \*, QWidget \*)

**Protected Member Functions inherited from BaseObject**

- QPen `lineWeightPen` () const
- qreal `pi` () const
- qreal `radians` (qreal degree) const
- qreal `degrees` (qreal radian) const
- void `realRender` (QPainter \*painter, const QPainterPath &renderPath)

## Private Member Functions

- void `init` (qreal x, qreal y, const QPainterPath &p, QRgb rgb, Qt::PenStyle lineType)
- void `updatePath` (const QPainterPath &p)
- int `findIndex` (const QPointF &point)

## Private Attributes

- QPainterPath `normalPath`
- int `gripIndex`

### 18.71.1 Member Enumeration Documentation

#### 18.71.1.1 anonymous enum anonymous enum

Enumerator

Type	
------	--

### 18.71.2 Constructor & Destructor Documentation

#### 18.71.2.1 PolygonObject() [1/2] `PolygonObject` (

```
    qreal x,  
    qreal y,  
    const QPainterPath & p,  
    QRgb rgb,  
    QGraphicsItem * parent = 0 )
```

#### 18.71.2.2 PolygonObject() [2/2] `PolygonObject` (

```
    PolygonObject * obj,  
    QGraphicsItem * parent = 0 )
```

#### 18.71.2.3 ~PolygonObject() `~PolygonObject` ( )

### 18.71.3 Member Function Documentation

**18.71.3.1 allGripPoints()** QList< QPointF > allGripPoints () [virtual]

Implements [BaseObject](#).

**18.71.3.2 findIndex()** int findIndex ( const QPointF & *point* ) [private]

**18.71.3.3 gripEdit()** void gripEdit ( const QPointF & *before*, const QPointF & *after* ) [virtual]

Implements [BaseObject](#).

**18.71.3.4 init()** void init ( qreal *x*, qreal *y*, const QPainterPath & *p*, QRgb *rgb*, Qt::PenStyle *lineType* ) [private]

**18.71.3.5 mouseSnapPoint()** QPointF mouseSnapPoint ( const QPointF & *mousePoint* ) [virtual]

Implements [BaseObject](#).

**18.71.3.6 objectCopyPath()** QPainterPath objectCopyPath () const

**18.71.3.7 objectPos()** QPointF objectPos () const [inline]

**18.71.3.8 objectSavePath()** QPainterPath objectSavePath () const

**18.71.3.9 `objectX()`** `qreal objectX() const [inline]`

**18.71.3.10 `objectY()`** `qreal objectY() const [inline]`

**18.71.3.11 `paint()`** `void paint(`  
    `QPainter * painter,`  
    `const QStyleOptionGraphicsItem * option,`  
    `QWidget * ) [protected]`

**18.71.3.12 `setObjectPos()` [1/2]** `void setObjectPos(`  
    `const QPointF & point) [inline]`

**18.71.3.13 `setObjectPos()` [2/2]** `void setObjectPos(`  
    `qreal x,`  
    `qreal y) [inline]`

**18.71.3.14 `setObjectX()`** `void setObjectX(`  
    `qreal x) [inline]`

**18.71.3.15 `setObjectY()`** `void setObjectY(`  
    `qreal y) [inline]`

**18.71.3.16 `type()`** `virtual int type() const [inline], [virtual]`

Reimplemented from [BaseObject](#).

**18.71.3.17 `updatePath()`** `void updatePath(`  
    `const QPainterPath & p) [private]`

**18.71.3.18 updateRubber()** void updateRubber ( QPainter \* painter = 0 )

**18.71.3.19 vulcanize()** void vulcanize ( ) [virtual]

Implements [BaseObject](#).

#### 18.71.4 Member Data Documentation

**18.71.4.1 gripIndex** int gripIndex [private]

**18.71.4.2 normalPath** QPainterPath normalPath [private]

The documentation for this class was generated from the following files:

- [embroidermodder2/object-polygon.h](#)
- [embroidermodder2/object-polygon.cpp](#)

## 18.72 PolylineObject Class Reference

```
#include <object-polyline.h>
```

### Public Types

- enum { [Type](#) = OBJ\_TYPE\_POLYLINE }

### Public Types inherited from [BaseObject](#)

- enum { [Type](#) = OBJ\_TYPE\_BASE }

## Public Member Functions

- `PolylineObject` (qreal x, qreal y, const QPainterPath &p, QRgb rgb, QGraphicsItem \*parent=0)
- `PolylineObject` (`PolylineObject` \*obj, QGraphicsItem \*parent=0)
- `~PolylineObject` ()
- virtual int `type` () const
- QPainterPath `objectCopyPath` () const
- QPainterPath `objectSavePath` () const
- QPointF `objectPos` () const
- qreal `objectX` () const
- qreal `objectY` () const
- void `setObjectPos` (const QPointF &point)
- void `setObjectPos` (qreal x, qreal y)
- void `setObjectX` (qreal x)
- void `setObjectY` (qreal y)
- void `updateRubber` (QPainter \*painter=0)
- virtual void `vulcanize` ()
- virtual QPointF `mouseSnapPoint` (const QPointF &mousePoint)
- virtual QList< QPointF > `allGripPoints` ()
- virtual void `gripEdit` (const QPointF &before, const QPointF &after)

## Public Member Functions inherited from `BaseObject`

- `BaseObject` (QGraphicsItem \*parent=0)
- virtual `~BaseObject` ()
- virtual int `type` () const
- qint64 `objectID` () const
- QPen `objectPen` () const
- QColor `objectColor` () const
- QRgb `objectColorRGB` () const
- Qt::PenStyle `objectLineType` () const
- qreal `objectLineWidth` () const
- QPainterPath `objectPath` () const
- int `objectRubberMode` () const
- QPointF `objectRubberPoint` (const QString &key) const
- QString `objectRubberText` (const QString &key) const
- QRectF `rect` () const
- void `setRect` (const QRectF &r)
- void `setRect` (qreal x, qreal y, qreal w, qreal h)
- QLineF `line` () const
- void `setLine` (const QLineF &l)
- void `setLine` (qreal x1, qreal y1, qreal x2, qreal y2)
- void `setObjectColor` (const QColor &color)
- void `setObjectColorRGB` (QRgb rgb)
- void `setObjectLineType` (Qt::PenStyle lineType)
- void `setObjectLineWidth` (qreal lineWeight)
- void `setObjectPath` (const QPainterPath &p)
- void `setObjectRubberMode` (int mode)
- void `setObjectRubberPoint` (const QString &key, const QPointF &point)
- void `setObjectRubberText` (const QString &key, const QString &txt)
- virtual QRectF `boundingRect` () const
- virtual QPainterPath `shape` () const
- void `drawRubberLine` (const QLineF &rubLine, QPainter \*painter=0, const char \*colorFromScene=0)
- virtual void `vulcanize` ()=0
- virtual QPointF `mouseSnapPoint` (const QPointF &mousePoint)=0
- virtual QList< QPointF > `allGripPoints` ()=0
- virtual void `gripEdit` (const QPointF &before, const QPointF &after)=0

### Protected Member Functions

- void [paint](#) (QPainter \*, const QStyleOptionGraphicsItem \*, QWidget \*)

### Protected Member Functions inherited from [BaseObject](#)

- QPen [lineWeightPen](#) () const
- qreal [pi](#) () const
- qreal [radians](#) (qreal degree) const
- qreal [degrees](#) (qreal radian) const
- void [realRender](#) (QPainter \*painter, const QPainterPath &renderPath)

### Private Member Functions

- void [init](#) (qreal x, qreal y, const QPainterPath &p, QRgb rgb, Qt::PenStyle lineType)
- void [updatePath](#) (const QPainterPath &p)
- int [findIndex](#) (const QPointF &point)

### Private Attributes

- QPainterPath [normalPath](#)
- int [gripIndex](#)

## 18.72.1 Member Enumeration Documentation

### 18.72.1.1 anonymous enum anonymous enum

Enumerator

Type	<input type="button" value=""/>
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## 18.72.2 Constructor & Destructor Documentation

### 18.72.2.1 PolylineObject() [1/2] [PolylineObject](#) (

```
    qreal x,  
    qreal y,  
    const QPainterPath & p,  
    QRgb rgb,  
    QGraphicsItem * parent = 0 )
```

**18.72.2.2 PolylineObject() [2/2]** `PolylineObject ()`

```
PolylineObject * obj,  
QGraphicsItem * parent = 0 )
```

**18.72.2.3 ~PolylineObject()** `~PolylineObject ()`**18.72.3 Member Function Documentation****18.72.3.1 allGripPoints()** `QList< QPointF > allGripPoints () [virtual]`

Implements [BaseObject](#).

**18.72.3.2 findIndex()** `int findIndex (const QPointF & point) [private]`**18.72.3.3 gripEdit()** `void gripEdit (const QPointF & before, const QPointF & after) [virtual]`

Implements [BaseObject](#).

**18.72.3.4 init()** `void init (qreal x, qreal y, const QPainterPath & p, QRgb rgb, Qt::PenStyle lineType) [private]`**18.72.3.5 mouseSnapPoint()** `QPointF mouseSnapPoint (const QPointF & mousePoint) [virtual]`

Implements [BaseObject](#).

**18.72.3.6 `objectCopyPath()`** `QPainterPath objectCopyPath () const`

**18.72.3.7 `objectPos()`** `QPointF objectPos () const [inline]`

**18.72.3.8 `objectSavePath()`** `QPainterPath objectSavePath () const`

**18.72.3.9 `objectX()`** `qreal objectX () const [inline]`

**18.72.3.10 `objectY()`** `qreal objectY () const [inline]`

**18.72.3.11 `paint()`** `void paint (`  
    `QPainter * painter,`  
    `const QStyleOptionGraphicsItem * option,`  
    `QWidget * ) [protected]`

**18.72.3.12 `setObjectPos()` [1/2]** `void setObjectPos (`  
    `const QPointF & point ) [inline]`

**18.72.3.13 `setObjectPos()` [2/2]** `void setObjectPos (`  
    `qreal x,`  
    `qreal y ) [inline]`

**18.72.3.14 `setObjectX()`** `void setObjectX (`  
    `qreal x ) [inline]`

**18.72.3.15 `setObjectY()`** `void setObjectY (`  
    `qreal y ) [inline]`

**18.72.3.16 type()** virtual int type ( ) const [inline], [virtual]

Reimplemented from [BaseObject](#).

**18.72.3.17 updatePath()** void updatePath (  
const QPainterPath & p ) [private]

**18.72.3.18 updateRubber()** void updateRubber (  
QPainter \* painter = 0 )

**18.72.3.19 vulcanize()** void vulcanize ( ) [virtual]

Implements [BaseObject](#).

#### 18.72.4 Member Data Documentation

**18.72.4.1 gripIndex** int gripIndex [private]

**18.72.4.2 normalPath** QPainterPath normalPath [private]

The documentation for this class was generated from the following files:

- [embroidermodder2/object-polyline.h](#)
- [embroidermodder2/object-polyline.cpp](#)

### 18.73 PreviewDialog Class Reference

```
#include <preview-dialog.h>
```

#### Public Member Functions

- [PreviewDialog](#) (QWidget \*parent=0, const QString &caption=QString(), const QString &directory=QString(), const QString &filter=QString())
- [~PreviewDialog](#) ()

### Private Attributes

- `ImageWidget * imgWidget`

### 18.73.1 Constructor & Destructor Documentation

#### 18.73.1.1 `PreviewDialog()` `PreviewDialog (`

```
    QWidget * parent = 0,
    const QString & caption = QString(),
    const QString & directory = QString(),
    const QString & filter = QString() )
```

#### 18.73.1.2 `~PreviewDialog()` `~PreviewDialog ( )`

### 18.73.2 Member Data Documentation

#### 18.73.2.1 `imgWidget` `ImageWidget* imgWidget [private]`

The documentation for this class was generated from the following files:

- `embroidermodder2/preview-dialog.h`
- `embroidermodder2/preview-dialog.cpp`

## 18.74 PropertyEditor Class Reference

```
#include <property-editor.h>
```

### Public Slots

- `void setSelectedItems (QList< QGraphicsItem * > itemList)`
- `void updatePickAddModeButton (bool pickAddMode)`

### Signals

- `void pickAddModeToggled ()`

## Public Member Functions

- `PropertyEditor` (const QString &iconDirectory=QString(), bool pickAddMode=true, QWidget \*widgetTo←Focus=0, QWidget \*parent=0)
- `~PropertyEditor` ()

## Protected Member Functions

- bool `eventFilter` (QObject \*obj, QEvent \*event)

## Private Slots

- void `fieldEdited` (QObject \*fieldObj)
- void `showGroups` (int objType)
- void `showOneType` (int index)
- void `hideAllGroups` ()
- void `clearAllFields` ()
- void `togglePickAddMode` ()

## Private Member Functions

- QToolButton \* `createToolButton` (const QString &iconName, const QString &txt)
- QLineEdit \* `createLineEdit` (const QString &validatorType=QString(), bool readOnly=false)
- QComboBox \* `createComboBox` (bool disable=false)
- QFontComboBox \* `createFontComboBox` (bool disable=false)
- void `updateLineEditStrIfVaries` (QLineEdit \*lineEdit, const QString &str)
- void `updateLineEditNumIfVaries` (QLineEdit \*lineEdit, qreal num, bool useAnglePrecision)
- void `updateFontComboBoxStrIfVaries` (QFontComboBox \*fontComboBox, const QString &str)
- void `updateComboBoxStrIfVaries` (QComboBox \*comboBox, const QString &str, const QStringList &strList)
- void `updateComboBoxBoolIfVaries` (QComboBox \*comboBox, bool val, bool yesOrNoText)
- void `mapSignal` (QObject \*fieldObj, const QString &name, QVariant value)
- QComboBox \* `createComboBoxSelected` ()
- QToolButton \* `createToolButtonQSelect` ()
- QToolButton \* `createToolButtonPickAdd` ()
- QGroupBox \* `createGroupBoxGeneral` ()
- QGroupBox \* `createGroupBoxGeometryArc` ()
- QGroupBox \* `createGroupBoxMiscArc` ()
- QGroupBox \* `createGroupBoxGeometryBlock` ()
- QGroupBox \* `createGroupBoxGeometryCircle` ()
- QGroupBox \* `createGroupBoxGeometryDimAligned` ()
- QGroupBox \* `createGroupBoxGeometryDimAngular` ()
- QGroupBox \* `createGroupBoxGeometryDimArcLength` ()
- QGroupBox \* `createGroupBoxGeometryDimDiameter` ()
- QGroupBox \* `createGroupBoxGeometryDimLeader` ()
- QGroupBox \* `createGroupBoxGeometryDimLinear` ()
- QGroupBox \* `createGroupBoxGeometryDimOrdinate` ()
- QGroupBox \* `createGroupBoxGeometryDimRadius` ()
- QGroupBox \* `createGroupBoxGeometryEllipse` ()
- QGroupBox \* `createGroupBoxGeometryImage` ()
- QGroupBox \* `createGroupBoxMisclImage` ()
- QGroupBox \* `createGroupBoxGeometryInfiniteLine` ()
- QGroupBox \* `createGroupBoxGeometryLine` ()

- `QGroupBox * createGroupBoxGeometryPath ()`
- `QGroupBox * createGroupBoxMiscPath ()`
- `QGroupBox * createGroupBoxGeometryPoint ()`
- `QGroupBox * createGroupBoxGeometryPolygon ()`
- `QGroupBox * createGroupBoxGeometryPolyline ()`
- `QGroupBox * createGroupBoxMiscPolyline ()`
- `QGroupBox * createGroupBoxGeometryRay ()`
- `QGroupBox * createGroupBoxGeometryRectangle ()`
- `QGroupBox * createGroupBoxGeometryTextMulti ()`
- `QGroupBox * createGroupBoxTextTextSingle ()`
- `QGroupBox * createGroupBoxGeometryTextSingle ()`
- `QGroupBox * createGroupBoxMiscTextSingle ()`

### Private Attributes

- `QWidget * focusWidget`
- `QString iconDir`
- `int iconSize`
- `Qt::ToolButtonStyle propertyEditorButtonStyle`
- `bool pickAdd`
- `QList< QGraphicsItem * > selectedItemList`
- `ArcObject * tempArcObj`
- `BlockObject * tempBlockObj`
- `CircleObject * tempCircleObj`
- `DimAlignedObject * tempDimAlignedObj`
- `DimAngularObject * tempDimAngularObj`
- `DimArcLengthObject * tempDimArcLenObj`
- `DimDiameterObject * tempDimDiamObj`
- `DimLeaderObject * tempDimLeaderObj`
- `DimLinearObject * tempDimLinearObj`
- `DimOrdinateObject * tempDimOrdObj`
- `DimRadiusObject * tempDimRadiusObj`
- `EllipseObject * tempEllipseObj`
- `EllipseArcObject * tempEllipseArcObj`
- `HatchObject * tempHatchObj`
- `ImageObject * tempImageObj`
- `InfiniteLineObject * tempInflLineObj`
- `LineObject * tempLineObj`
- `PathObject * tempPathObj`
- `PointObject * tempPointObj`
- `PolygonObject * tempPolygonObj`
- `PolylineObject * tempPolylineObj`
- `RayObject * tempRayObj`
- `RectObject * tempRectObj`
- `SplineObject * tempSplineObj`
- `TextMultiObject * tempTextMultiObj`
- `TextSingleObject * tempTextSingleObj`
- `int precisionAngle`
- `int precisionLength`
- `QString fieldOldText`
- `QString fieldNewText`
- `QString fieldVariesText`
- `QString fieldYesText`
- `QString fieldNoText`

- `QString fieldOnText`
- `QString fieldOffText`
- `QSignalMapper * signalMapper`
- `QComboBox * comboBoxSelected`
- `QToolButton * toolButtonQSelect`
- `QToolButton * toolButtonPickAdd`
- `QGroupBox * groupBoxGeneral`
- `QToolButton * toolButtonGeneralLayer`
- `QToolButton * toolButtonGeneralColor`
- `QToolButton * toolButtonGeneralLineType`
- `QToolButton * toolButtonGeneralLineWeight`
- `QComboBox * comboBoxGeneralLayer`
- `QComboBox * comboBoxGeneralColor`
- `QComboBox * comboBoxGeneralLineType`
- `QComboBox * comboBoxGeneralLineWeight`
- `QGroupBox * groupBoxGeometryArc`
- `QToolButton * toolButtonArcCenterX`
- `QToolButton * toolButtonArcCenterY`
- `QToolButton * toolButtonArcRadius`
- `QToolButton * toolButtonArcStartAngle`
- `QToolButton * toolButtonArcEndAngle`
- `QToolButton * toolButtonArcStartX`
- `QToolButton * toolButtonArcStartY`
- `QToolButton * toolButtonArcEndX`
- `QToolButton * toolButtonArcEndY`
- `QToolButton * toolButtonArcArea`
- `QToolButton * toolButtonArcLength`
- `QToolButton * toolButtonArcChord`
- `QToolButton * toolButtonArcIncAngle`
- `QLineEdit * lineEditArcCenterX`
- `QLineEdit * lineEditArcCenterY`
- `QLineEdit * lineEditArcRadius`
- `QLineEdit * lineEditArcStartAngle`
- `QLineEdit * lineEditArcEndAngle`
- `QLineEdit * lineEditArcStartX`
- `QLineEdit * lineEditArcStartY`
- `QLineEdit * lineEditArcEndX`
- `QLineEdit * lineEditArcEndY`
- `QLineEdit * lineEditArcArea`
- `QLineEdit * lineEditArcLength`
- `QLineEdit * lineEditArcChord`
- `QLineEdit * lineEditArcIncAngle`
- `QGroupBox * groupBoxMiscArc`
- `QToolButton * toolButtonArcClockwise`
- `QComboBox * comboBoxArcClockwise`
- `QGroupBox * groupBoxGeometryBlock`
- `QToolButton * toolButtonBlockX`
- `QToolButton * toolButtonBlockY`
- `QLineEdit * lineEditBlockX`
- `QLineEdit * lineEditBlockY`
- `QGroupBox * groupBoxGeometryCircle`
- `QToolButton * toolButtonCircleCenterX`
- `QToolButton * toolButtonCircleCenterY`
- `QToolButton * toolButtonCircleRadius`
- `QToolButton * toolButtonCircleDiameter`

- QToolButton \* `toolButtonCircleArea`
- QToolButton \* `toolButtonCircleCircumference`
- QLineEdit \* `lineEditCircleCenterX`
- QLineEdit \* `lineEditCircleCenterY`
- QLineEdit \* `lineEditCircleRadius`
- QLineEdit \* `lineEditCircleDiameter`
- QLineEdit \* `lineEditCircleArea`
- QLineEdit \* `lineEditCircleCircumference`
- QGroupBox \* `groupBoxGeometryDimAligned`
- QGroupBox \* `groupBoxGeometryDimAngular`
- QGroupBox \* `groupBoxGeometryDimArcLength`
- QGroupBox \* `groupBoxGeometryDimDiameter`
- QGroupBox \* `groupBoxGeometryDimLeader`
- QGroupBox \* `groupBoxGeometryDimLinear`
- QGroupBox \* `groupBoxGeometryDimOrdinate`
- QGroupBox \* `groupBoxGeometryDimRadius`
- QGroupBox \* `groupBoxGeometryEllipse`
- QToolButton \* `toolButtonEllipseCenterX`
- QToolButton \* `toolButtonEllipseCenterY`
- QToolButton \* `toolButtonEllipseRadiusMajor`
- QToolButton \* `toolButtonEllipseRadiusMinor`
- QToolButton \* `toolButtonEllipseDiameterMajor`
- QToolButton \* `toolButtonEllipseDiameterMinor`
- QLineEdit \* `lineEditEllipseCenterX`
- QLineEdit \* `lineEditEllipseCenterY`
- QLineEdit \* `lineEditEllipseRadiusMajor`
- QLineEdit \* `lineEditEllipseRadiusMinor`
- QLineEdit \* `lineEditEllipseDiameterMajor`
- QLineEdit \* `lineEditEllipseDiameterMinor`
- QGroupBox \* `groupBoxGeometryImage`
- QToolButton \* `toolButtonImageX`
- QToolButton \* `toolButtonImageY`
- QToolButton \* `toolButtonImageWidth`
- QToolButton \* `toolButtonImageHeight`
- QLineEdit \* `lineEditImageX`
- QLineEdit \* `lineEditImageY`
- QLineEdit \* `lineEditImageWidth`
- QLineEdit \* `lineEditImageHeight`
- QGroupBox \* `groupBoxMisclImage`
- QToolButton \* `toolButtonImageName`
- QToolButton \* `toolButtonImagePath`
- QLineEdit \* `lineEditImageName`
- QLineEdit \* `lineEditImagePath`
- QGroupBox \* `groupBoxGeometryInfiniteLine`
- QToolButton \* `toolButtonInfiniteLineX1`
- QToolButton \* `toolButtonInfiniteLineY1`
- QToolButton \* `toolButtonInfiniteLineX2`
- QToolButton \* `toolButtonInfiniteLineY2`
- QToolButton \* `toolButtonInfiniteLineVectorX`
- QToolButton \* `toolButtonInfiniteLineVectorY`
- QLineEdit \* `lineEditInfiniteLineX1`
- QLineEdit \* `lineEditInfiniteLineY1`
- QLineEdit \* `lineEditInfiniteLineX2`
- QLineEdit \* `lineEditInfiniteLineY2`
- QLineEdit \* `lineEditInfiniteLineVectorX`

- QLineEdit \* `lineEditInfiniteLineVectorY`
- QGroupBox \* `groupBoxGeometryLine`
- QToolButton \* `toolButtonLineStartX`
- QToolButton \* `toolButtonLineStartY`
- QToolButton \* `toolButtonLineEndX`
- QToolButton \* `toolButtonLineEndY`
- QToolButton \* `toolButtonLineDeltaX`
- QToolButton \* `toolButtonLineDeltaY`
- QToolButton \* `toolButtonLineAngle`
- QToolButton \* `toolButtonLineLength`
- QLineEdit \* `lineEditLineStartX`
- QLineEdit \* `lineEditLineStartY`
- QLineEdit \* `lineEditLineEndX`
- QLineEdit \* `lineEditLineEndY`
- QLineEdit \* `lineEditLineDeltaX`
- QLineEdit \* `lineEditLineDeltaY`
- QLineEdit \* `lineEditLineAngle`
- QLineEdit \* `lineEditLineLength`
- QGroupBox \* `groupBoxGeometryPath`
- QToolButton \* `toolButtonPathVertexNum`
- QToolButton \* `toolButtonPathVertexX`
- QToolButton \* `toolButtonPathVertexY`
- QToolButton \* `toolButtonPathArea`
- QToolButton \* `toolButtonPathLength`
- QComboBox \* `comboBoxPathVertexNum`
- QLineEdit \* `lineEditPathVertexX`
- QLineEdit \* `lineEditPathVertexY`
- QLineEdit \* `lineEditPathArea`
- QLineEdit \* `lineEditPathLength`
- QGroupBox \* `groupBoxMiscPath`
- QToolButton \* `toolButtonPathClosed`
- QComboBox \* `comboBoxPathClosed`
- QGroupBox \* `groupBoxGeometryPoint`
- QToolButton \* `toolButtonPointX`
- QToolButton \* `toolButtonPointY`
- QLineEdit \* `lineEditPointX`
- QLineEdit \* `lineEditPointY`
- QGroupBox \* `groupBoxGeometryPolygon`
- QToolButton \* `toolButtonPolygonCenterX`
- QToolButton \* `toolButtonPolygonCenterY`
- QToolButton \* `toolButtonPolygonRadiusVertex`
- QToolButton \* `toolButtonPolygonRadiusSide`
- QToolButton \* `toolButtonPolygonDiameterVertex`
- QToolButton \* `toolButtonPolygonDiameterSide`
- QToolButton \* `toolButtonPolygonInteriorAngle`
- QLineEdit \* `lineEditPolygonCenterX`
- QLineEdit \* `lineEditPolygonCenterY`
- QLineEdit \* `lineEditPolygonRadiusVertex`
- QLineEdit \* `lineEditPolygonRadiusSide`
- QLineEdit \* `lineEditPolygonDiameterVertex`
- QLineEdit \* `lineEditPolygonDiameterSide`
- QLineEdit \* `lineEditPolygonInteriorAngle`
- QGroupBox \* `groupBoxGeometryPolyline`
- QToolButton \* `toolButtonPolylineVertexNum`
- QToolButton \* `toolButtonPolylineVertexX`

- QToolButton \* `toolButtonPolylineVertexY`
- QToolButton \* `toolButtonPolylineArea`
- QToolButton \* `toolButtonPolylineLength`
- QComboBox \* `comboBoxPolylineVertexNum`
- QLineEdit \* `lineEditPolylineVertexX`
- QLineEdit \* `lineEditPolylineVertexY`
- QLineEdit \* `lineEditPolylineArea`
- QLineEdit \* `lineEditPolylineLength`
- QGroupBox \* `groupBoxMiscPolyline`
- QToolButton \* `toolButtonPolylineClosed`
- QComboBox \* `comboBoxPolylineClosed`
- QGroupBox \* `groupBoxGeometryRay`
- QToolButton \* `toolButtonRayX1`
- QToolButton \* `toolButtonRayY1`
- QToolButton \* `toolButtonRayX2`
- QToolButton \* `toolButtonRayY2`
- QToolButton \* `toolButtonRayVectorX`
- QToolButton \* `toolButtonRayVectorY`
- QLineEdit \* `lineEditRayX1`
- QLineEdit \* `lineEditRayY1`
- QLineEdit \* `lineEditRayX2`
- QLineEdit \* `lineEditRayY2`
- QLineEdit \* `lineEditRayVectorX`
- QLineEdit \* `lineEditRayVectorY`
- QGroupBox \* `groupBoxGeometryRectangle`
- QToolButton \* `toolButtonRectangleCorner1X`
- QToolButton \* `toolButtonRectangleCorner1Y`
- QToolButton \* `toolButtonRectangleCorner2X`
- QToolButton \* `toolButtonRectangleCorner2Y`
- QToolButton \* `toolButtonRectangleCorner3X`
- QToolButton \* `toolButtonRectangleCorner3Y`
- QToolButton \* `toolButtonRectangleCorner4X`
- QToolButton \* `toolButtonRectangleCorner4Y`
- QToolButton \* `toolButtonRectangleWidth`
- QToolButton \* `toolButtonRectangleHeight`
- QToolButton \* `toolButtonRectangleArea`
- QLineEdit \* `lineEditRectangleCorner1X`
- QLineEdit \* `lineEditRectangleCorner1Y`
- QLineEdit \* `lineEditRectangleCorner2X`
- QLineEdit \* `lineEditRectangleCorner2Y`
- QLineEdit \* `lineEditRectangleCorner3X`
- QLineEdit \* `lineEditRectangleCorner3Y`
- QLineEdit \* `lineEditRectangleCorner4X`
- QLineEdit \* `lineEditRectangleCorner4Y`
- QLineEdit \* `lineEditRectangleWidth`
- QLineEdit \* `lineEditRectangleHeight`
- QLineEdit \* `lineEditRectangleArea`
- QGroupBox \* `groupBoxGeometryTextMulti`
- QToolButton \* `toolButtonTextMultiX`
- QToolButton \* `toolButtonTextMultiY`
- QLineEdit \* `lineEditTextMultiX`
- QLineEdit \* `lineEditTextMultiY`
- QGroupBox \* `groupBoxTextTextSingle`
- QToolButton \* `toolButtonTextSingleContents`
- QToolButton \* `toolButtonTextSingleFont`

- QToolButton \* `toolButtonTextSingleJustify`
- QToolButton \* `toolButtonTextSingleHeight`
- QToolButton \* `toolButtonTextSingleRotation`
- QLineEdit \* `lineEditTextSingleContents`
- QFontComboBox \* `comboBoxTextSingleFont`
- QComboBox \* `comboBoxTextSingleJustify`
- QLineEdit \* `lineEditTextSingleHeight`
- QLineEdit \* `lineEditTextSingleRotation`
- QGroupBox \* `groupBoxGeometryTextSingle`
- QToolButton \* `toolButtonTextSingleX`
- QToolButton \* `toolButtonTextSingleY`
- QLineEdit \* `lineEditTextSingleX`
- QLineEdit \* `lineEditTextSingleY`
- QGroupBox \* `groupBoxMiscTextSingle`
- QToolButton \* `toolButtonTextSingleBackward`
- QToolButton \* `toolButtonTextSingleUpsideDown`
- QComboBox \* `comboBoxTextSingleBackward`
- QComboBox \* `comboBoxTextSingleUpsideDown`

#### 18.74.1 Constructor & Destructor Documentation

##### 18.74.1.1 `PropertyEditor()` `PropertyEditor` (

```
    const QString & iconDirectory = QString(),
    bool pickAddMode = true,
    QWidget * widgetToFocus = 0,
    QWidget * parent = 0 )
```

##### 18.74.1.2 `~PropertyEditor()` `~PropertyEditor` ( )

#### 18.74.2 Member Function Documentation

##### 18.74.2.1 `clearAllFields` `void clearAllFields ( ) [private], [slot]`

##### 18.74.2.2 `createComboBox()` `QComboBox * createComboBox (`

```
    bool disable = false ) [private]
```

##### 18.74.2.3 `createComboBoxSelected()` `QComboBox * createComboBoxSelected ( ) [private]`

**18.74.2.4 `createFontComboBox()`** `QFontComboBox * createFontComboBox ( bool disable = false ) [private]`

**18.74.2.5 `createGroupBoxGeneral()`** `QGroupBox * createGroupBoxGeneral ( ) [private]`

**18.74.2.6 `createGroupBoxGeometryArc()`** `QGroupBox * createGroupBoxGeometryArc ( ) [private]`

**18.74.2.7 `createGroupBoxGeometryBlock()`** `QGroupBox * createGroupBoxGeometryBlock ( ) [private]`

**18.74.2.8 `createGroupBoxGeometryCircle()`** `QGroupBox * createGroupBoxGeometryCircle ( ) [private]`

**18.74.2.9 `createGroupBoxGeometryDimAligned()`** `QGroupBox * createGroupBoxGeometryDimAligned ( ) [private]`

**18.74.2.10 `createGroupBoxGeometryDimAngular()`** `QGroupBox * createGroupBoxGeometryDimAngular ( ) [private]`

**18.74.2.11 `createGroupBoxGeometryDimArcLength()`** `QGroupBox * createGroupBoxGeometryDimArcLength ( ) [private]`

**18.74.2.12 `createGroupBoxGeometryDimDiameter()`** `QGroupBox * createGroupBoxGeometryDimDiameter ( ) [private]`

**18.74.2.13 `createGroupBoxGeometryDimLeader()`** `QGroupBox * createGroupBoxGeometryDimLeader ( ) [private]`

**18.74.2.14 `createGroupBoxGeometryDimLinear()`** `QGroupBox * createGroupBoxGeometryDimLinear ( )`  
[private]

**18.74.2.15 `createGroupBoxGeometryDimOrdinate()`** `QGroupBox * createGroupBoxGeometryDimOrdinate ( )` [private]

**18.74.2.16 `createGroupBoxGeometryDimRadius()`** `QGroupBox * createGroupBoxGeometryDimRadius ( )`  
[private]

**18.74.2.17 `createGroupBoxGeometryEllipse()`** `QGroupBox * createGroupBoxGeometryEllipse ( )` [private]

**18.74.2.18 `createGroupBoxGeometryImage()`** `QGroupBox * createGroupBoxGeometryImage ( )` [private]

**18.74.2.19 `createGroupBoxGeometryInfiniteLine()`** `QGroupBox * createGroupBoxGeometryInfiniteLine ( )` [private]

**18.74.2.20 `createGroupBoxGeometryLine()`** `QGroupBox * createGroupBoxGeometryLine ( )` [private]

**18.74.2.21 `createGroupBoxGeometryPath()`** `QGroupBox * createGroupBoxGeometryPath ( )` [private]

**18.74.2.22 `createGroupBoxGeometryPoint()`** `QGroupBox * createGroupBoxGeometryPoint ( )` [private]

**18.74.2.23 `createGroupBoxGeometryPolygon()`** `QGroupBox * createGroupBoxGeometryPolygon ( )`  
[private]

**18.74.2.24 `createGroupBoxGeometryPolyline()`** `QGroupBox * createGroupBoxGeometryPolyline ()`  
[private]

**18.74.2.25 `createGroupBoxGeometryRay()`** `QGroupBox * createGroupBoxGeometryRay ()` [private]

**18.74.2.26 `createGroupBoxGeometryRectangle()`** `QGroupBox * createGroupBoxGeometryRectangle ()`  
[private]

**18.74.2.27 `createGroupBoxGeometryTextMulti()`** `QGroupBox * createGroupBoxGeometryTextMulti ()`  
[private]

**18.74.2.28 `createGroupBoxGeometryTextSingle()`** `QGroupBox * createGroupBoxGeometryTextSingle ()`  
[private]

**18.74.2.29 `createGroupBoxMiscArc()`** `QGroupBox * createGroupBoxMiscArc ()` [private]

**18.74.2.30 `createGroupBoxMiscImage()`** `QGroupBox * createGroupBoxMiscImage ()` [private]

**18.74.2.31 `createGroupBoxMiscPath()`** `QGroupBox * createGroupBoxMiscPath ()` [private]

**18.74.2.32 `createGroupBoxMiscPolyline()`** `QGroupBox * createGroupBoxMiscPolyline ()` [private]

**18.74.2.33 `createGroupBoxMiscTextSingle()`** `QGroupBox * createGroupBoxMiscTextSingle ()` [private]

**18.74.2.34 `createGroupBoxTextTextSingle()`** `QGroupBox * createGroupBoxTextTextSingle ()` [private]

**18.74.2.35 `createLineEdit()`** `QLineEdit * createLineEdit (`  
    `const QString & validatorType = QString(),`  
    `bool readOnly = false ) [private]`

**18.74.2.36 `createToolButton()`** `QToolButton * createToolButton (`  
    `const QString & iconName,`  
    `const QString & txt ) [private]`

**18.74.2.37 `createToolButtonPickAdd()`** `QToolButton * createToolButtonPickAdd ( ) [private]`

**18.74.2.38 `createToolButtonQSelect()`** `QToolButton * createToolButtonQSelect ( ) [private]`

**18.74.2.39 `eventFilter()`** `bool eventFilter (`  
    `QObject * obj,`  
    `QEvent * event ) [protected]`

**18.74.2.40 `fieldEdited`** `void fieldEdited (`  
    `QObject * fieldObj ) [private], [slot]`

**18.74.2.41 `hideAllGroups`** `void hideAllGroups ( ) [private], [slot]`

**18.74.2.42 `mapSignal()`** `void mapSignal (`  
    `QObject * fieldObj,`  
    `const QString & name,`  
    `QVariant value ) [private]`

**18.74.2.43 `pickAddModeToggled`** `void pickAddModeToggled ( ) [signal]`

**18.74.2.44 setSelectedItems** void setSelectedItems ( QList< QGraphicsItem \* > itemList ) [slot]

**18.74.2.45 showGroups** void showGroups ( int objType ) [private], [slot]

**18.74.2.46 showOneType** void showOneType ( int index ) [private], [slot]

**18.74.2.47 togglePickAddMode** void togglePickAddMode ( ) [private], [slot]

**18.74.2.48 updateComboBoxBoolIfVaries()** void updateComboBoxBoolIfVaries ( QComboBox \* comboBox, bool val, bool yesOrNoText ) [private]

**18.74.2.49 updateComboBoxStrIfVaries()** void updateComboBoxStrIfVaries ( QComboBox \* comboBox, const QString & str, const QStringList & strList ) [private]

**18.74.2.50 updateFontComboBoxStrIfVaries()** void updateFontComboBoxStrIfVaries ( QFontComboBox \* fontComboBox, const QString & str ) [private]

**18.74.2.51 updateLineEditNumIfVaries()** void updateLineEditNumIfVaries ( QLineEdit \* lineEdit, qreal num, bool useAnglePrecision ) [private]

**18.74.2.52 updateLineEditStrIfVaries()** void updateLineEditStrIfVaries ( QLineEdit \* *lineEdit*, const QString & *str* ) [private]

**18.74.2.53 updatePickAddModeButton** void updatePickAddModeButton ( bool *pickAddMode* ) [slot]

### 18.74.3 Member Data Documentation

**18.74.3.1 comboBoxArcClockwise** QComboBox\* *comboBoxArcClockwise* [private]

**18.74.3.2 comboBoxGeneralColor** QComboBox\* *comboBoxGeneralColor* [private]

**18.74.3.3 comboBoxGeneralLayer** QComboBox\* *comboBoxGeneralLayer* [private]

**18.74.3.4 comboBoxGeneralLineType** QComboBox\* *comboBoxGeneralLineType* [private]

**18.74.3.5 comboBoxGeneralLineWidth** QComboBox\* *comboBoxGeneralLineWidth* [private]

**18.74.3.6 comboBoxPathClosed** QComboBox\* *comboBoxPathClosed* [private]

**18.74.3.7 comboBoxPathVertexNum** QComboBox\* *comboBoxPathVertexNum* [private]

**18.74.3.8 comboBoxPolylineClosed** QComboBox\* *comboBoxPolylineClosed* [private]

**18.74.3.9 comboBoxPolylineVertexNum** QComboBox\* comboBoxPolylineVertexNum [private]

**18.74.3.10 comboBoxSelected** QComboBox\* comboBoxSelected [private]

**18.74.3.11 comboBoxTextSingleBackward** QComboBox\* comboBoxTextSingleBackward [private]

**18.74.3.12 comboBoxTextSingleFont** QFontComboBox\* comboBoxTextSingleFont [private]

**18.74.3.13 comboBoxTextSingleJustify** QComboBox\* comboBoxTextSingleJustify [private]

**18.74.3.14 comboBoxTextSingleUpsideDown** QComboBox\* comboBoxTextSingleUpsideDown [private]

**18.74.3.15 fieldNewText** QString fieldNewText [private]

**18.74.3.16 fieldNoText** QString fieldNoText [private]

**18.74.3.17 fieldOffText** QString fieldOffText [private]

**18.74.3.18 fieldOldText** QString fieldOldText [private]

**18.74.3.19 fieldOnText** QString fieldOnText [private]

**18.74.3.20 fieldVariesText** `QString fieldVariesText [private]`

**18.74.3.21 fieldYesText** `QString fieldYesText [private]`

**18.74.3.22 focusWidget** `QWidget* focusWidget [private]`

**18.74.3.23 groupBoxGeneral** `QGroupBox* groupBoxGeneral [private]`

**18.74.3.24 groupBoxGeometryArc** `QGroupBox* groupBoxGeometryArc [private]`

**18.74.3.25 groupBoxGeometryBlock** `QGroupBox* groupBoxGeometryBlock [private]`

**18.74.3.26 groupBoxGeometryCircle** `QGroupBox* groupBoxGeometryCircle [private]`

**18.74.3.27 groupBoxGeometryDimAligned** `QGroupBox* groupBoxGeometryDimAligned [private]`

**18.74.3.28 groupBoxGeometryDimAngular** `QGroupBox* groupBoxGeometryDimAngular [private]`

**18.74.3.29 groupBoxGeometryDimArcLength** `QGroupBox* groupBoxGeometryDimArcLength [private]`

**18.74.3.30 groupBoxGeometryDimDiameter** `QGroupBox* groupBoxGeometryDimDiameter [private]`

**18.74.3.31 groupBoxGeometryDimLeader** QGroupBox\* groupBoxGeometryDimLeader [private]

**18.74.3.32 groupBoxGeometryDimLinear** QGroupBox\* groupBoxGeometryDimLinear [private]

**18.74.3.33 groupBoxGeometryDimOrdinate** QGroupBox\* groupBoxGeometryDimOrdinate [private]

**18.74.3.34 groupBoxGeometryDimRadius** QGroupBox\* groupBoxGeometryDimRadius [private]

**18.74.3.35 groupBoxGeometryEllipse** QGroupBox\* groupBoxGeometryEllipse [private]

**18.74.3.36 groupBoxGeometryImage** QGroupBox\* groupBoxGeometryImage [private]

**18.74.3.37 groupBoxGeometryInfiniteLine** QGroupBox\* groupBoxGeometryInfiniteLine [private]

**18.74.3.38 groupBoxGeometryLine** QGroupBox\* groupBoxGeometryLine [private]

**18.74.3.39 groupBoxGeometryPath** QGroupBox\* groupBoxGeometryPath [private]

**18.74.3.40 groupBoxGeometryPoint** QGroupBox\* groupBoxGeometryPoint [private]

**18.74.3.41 groupBoxGeometryPolygon** QGroupBox\* groupBoxGeometryPolygon [private]

**18.74.3.42 groupBoxGeometryPolyline** QGroupBox\* groupBoxGeometryPolyline [private]

**18.74.3.43 groupBoxGeometryRay** QGroupBox\* groupBoxGeometryRay [private]

**18.74.3.44 groupBoxGeometryRectangle** QGroupBox\* groupBoxGeometryRectangle [private]

**18.74.3.45 groupBoxGeometryTextMulti** QGroupBox\* groupBoxGeometryTextMulti [private]

**18.74.3.46 groupBoxGeometryTextSingle** QGroupBox\* groupBoxGeometryTextSingle [private]

**18.74.3.47 groupBoxMiscArc** QGroupBox\* groupBoxMiscArc [private]

**18.74.3.48 groupBoxMiscImage** QGroupBox\* groupBoxMiscImage [private]

**18.74.3.49 groupBoxMiscPath** QGroupBox\* groupBoxMiscPath [private]

**18.74.3.50 groupBoxMiscPolyline** QGroupBox\* groupBoxMiscPolyline [private]

**18.74.3.51 groupBoxMiscTextSingle** QGroupBox\* groupBoxMiscTextSingle [private]

**18.74.3.52 groupBoxTextTextSingle** QGroupBox\* groupBoxTextTextSingle [private]

**18.74.3.53 iconDir** `QString iconDir [private]`

**18.74.3.54 iconSize** `int iconSize [private]`

**18.74.3.55 lineEditArcArea** `QLineEdit* lineEditArcArea [private]`

**18.74.3.56 lineEditArcCenterX** `QLineEdit* lineEditArcCenterX [private]`

**18.74.3.57 lineEditArcCenterY** `QLineEdit* lineEditArcCenterY [private]`

**18.74.3.58 lineEditArcChord** `QLineEdit* lineEditArcChord [private]`

**18.74.3.59 lineEditArcEndAngle** `QLineEdit* lineEditArcEndAngle [private]`

**18.74.3.60 lineEditArcEndX** `QLineEdit* lineEditArcEndX [private]`

**18.74.3.61 lineEditArcEndY** `QLineEdit* lineEditArcEndY [private]`

**18.74.3.62 lineEditArcIncAngle** `QLineEdit* lineEditArcIncAngle [private]`

**18.74.3.63 lineEditArcLength** `QLineEdit* lineEditArcLength [private]`

**18.74.3.64 `lineEditArcRadius`** `QLineEdit* lineEditArcRadius [private]`

**18.74.3.65 `lineEditArcStartAngle`** `QLineEdit* lineEditArcStartAngle [private]`

**18.74.3.66 `lineEditArcStartX`** `QLineEdit* lineEditArcStartX [private]`

**18.74.3.67 `lineEditArcStartY`** `QLineEdit* lineEditArcStartY [private]`

**18.74.3.68 `lineEditBlockX`** `QLineEdit* lineEditBlockX [private]`

**18.74.3.69 `lineEditBlockY`** `QLineEdit* lineEditBlockY [private]`

**18.74.3.70 `lineEditCircleArea`** `QLineEdit* lineEditCircleArea [private]`

**18.74.3.71 `lineEditCircleCenterX`** `QLineEdit* lineEditCircleCenterX [private]`

**18.74.3.72 `lineEditCircleCenterY`** `QLineEdit* lineEditCircleCenterY [private]`

**18.74.3.73 `lineEditCircleCircumference`** `QLineEdit* lineEditCircleCircumference [private]`

**18.74.3.74 `lineEditCircleDiameter`** `QLineEdit* lineEditCircleDiameter [private]`

**18.74.3.75 `lineEditCircleRadius`** `QLineEdit* lineEditCircleRadius [private]`

**18.74.3.76 `lineEditEllipseCenterX`** `QLineEdit* lineEditEllipseCenterX [private]`

**18.74.3.77 `lineEditEllipseCenterY`** `QLineEdit* lineEditEllipseCenterY [private]`

**18.74.3.78 `lineEditEllipseDiameterMajor`** `QLineEdit* lineEditEllipseDiameterMajor [private]`

**18.74.3.79 `lineEditEllipseDiameterMinor`** `QLineEdit* lineEditEllipseDiameterMinor [private]`

**18.74.3.80 `lineEditEllipseRadiusMajor`** `QLineEdit* lineEditEllipseRadiusMajor [private]`

**18.74.3.81 `lineEditEllipseRadiusMinor`** `QLineEdit* lineEditEllipseRadiusMinor [private]`

**18.74.3.82 `lineEditImageHeight`** `QLineEdit* lineEditImageHeight [private]`

**18.74.3.83 `lineEditImageName`** `QLineEdit* lineEditImageName [private]`

**18.74.3.84 `lineEditImagePath`** `QLineEdit* lineEditImagePath [private]`

**18.74.3.85 `lineEditImageWidth`** `QLineEdit* lineEditImageWidth [private]`

**18.74.3.86 `lineEditImageX`** QLineEdit\* lineEditImageX [private]

**18.74.3.87 `lineEditImageY`** QLineEdit\* lineEditImageY [private]

**18.74.3.88 `lineEditInfiniteLineVectorX`** QLineEdit\* lineEditInfiniteLineVectorX [private]

**18.74.3.89 `lineEditInfiniteLineVectorY`** QLineEdit\* lineEditInfiniteLineVectorY [private]

**18.74.3.90 `lineEditInfiniteLineX1`** QLineEdit\* lineEditInfiniteLineX1 [private]

**18.74.3.91 `lineEditInfiniteLineX2`** QLineEdit\* lineEditInfiniteLineX2 [private]

**18.74.3.92 `lineEditInfiniteLineY1`** QLineEdit\* lineEditInfiniteLineY1 [private]

**18.74.3.93 `lineEditInfiniteLineY2`** QLineEdit\* lineEditInfiniteLineY2 [private]

**18.74.3.94 `lineEditLineAngle`** QLineEdit\* lineEditLineAngle [private]

**18.74.3.95 `lineEditLineDeltaX`** QLineEdit\* lineEditLineDeltaX [private]

**18.74.3.96 `lineEditLineDeltaY`** QLineEdit\* lineEditLineDeltaY [private]

**18.74.3.97 `lineEditLineEndX`** `QLineEdit* lineEditLineEndX` [private]

**18.74.3.98 `lineEditLineEndY`** `QLineEdit* lineEditLineEndY` [private]

**18.74.3.99 `lineEditLineLength`** `QLineEdit* lineEditLineLength` [private]

**18.74.3.100 `lineEditLineStartX`** `QLineEdit* lineEditLineStartX` [private]

**18.74.3.101 `lineEditLineStartY`** `QLineEdit* lineEditLineStartY` [private]

**18.74.3.102 `lineEditPathArea`** `QLineEdit* lineEditPathArea` [private]

**18.74.3.103 `lineEditPathLength`** `QLineEdit* lineEditPathLength` [private]

**18.74.3.104 `lineEditPathVertexX`** `QLineEdit* lineEditPathVertexX` [private]

**18.74.3.105 `lineEditPathVertexY`** `QLineEdit* lineEditPathVertexY` [private]

**18.74.3.106 `lineEditPointX`** `QLineEdit* lineEditPointX` [private]

**18.74.3.107 `lineEditPointY`** `QLineEdit* lineEditPointY` [private]

**18.74.3.108 `lineEditPolygonCenterX`** `QLineEdit* lineEditPolygonCenterX` [private]

**18.74.3.109 `lineEditPolygonCenterY`** `QLineEdit* lineEditPolygonCenterY` [private]

**18.74.3.110 `lineEditPolygonDiameterSide`** `QLineEdit* lineEditPolygonDiameterSide` [private]

**18.74.3.111 `lineEditPolygonDiameterVertex`** `QLineEdit* lineEditPolygonDiameterVertex` [private]

**18.74.3.112 `lineEditPolygonInteriorAngle`** `QLineEdit* lineEditPolygonInteriorAngle` [private]

**18.74.3.113 `lineEditPolygonRadiusSide`** `QLineEdit* lineEditPolygonRadiusSide` [private]

**18.74.3.114 `lineEditPolygonRadiusVertex`** `QLineEdit* lineEditPolygonRadiusVertex` [private]

**18.74.3.115 `lineEditPolylineArea`** `QLineEdit* lineEditPolylineArea` [private]

**18.74.3.116 `lineEditPolylineLength`** `QLineEdit* lineEditPolylineLength` [private]

**18.74.3.117 `lineEditPolylineVertexX`** `QLineEdit* lineEditPolylineVertexX` [private]

**18.74.3.118 `lineEditPolylineVertexY`** `QLineEdit* lineEditPolylineVertexY` [private]

**18.74.3.119 `lineEditRayVectorX`** QLineEdit\* lineEditRayVectorX [private]

**18.74.3.120 `lineEditRayVectorY`** QLineEdit\* lineEditRayVectorY [private]

**18.74.3.121 `lineEditRayX1`** QLineEdit\* lineEditRayX1 [private]

**18.74.3.122 `lineEditRayX2`** QLineEdit\* lineEditRayX2 [private]

**18.74.3.123 `lineEditRayY1`** QLineEdit\* lineEditRayY1 [private]

**18.74.3.124 `lineEditRayY2`** QLineEdit\* lineEditRayY2 [private]

**18.74.3.125 `lineEditRectangleArea`** QLineEdit\* lineEditRectangleArea [private]

**18.74.3.126 `lineEditRectangleCorner1X`** QLineEdit\* lineEditRectangleCorner1X [private]

**18.74.3.127 `lineEditRectangleCorner1Y`** QLineEdit\* lineEditRectangleCorner1Y [private]

**18.74.3.128 `lineEditRectangleCorner2X`** QLineEdit\* lineEditRectangleCorner2X [private]

**18.74.3.129 `lineEditRectangleCorner2Y`** QLineEdit\* lineEditRectangleCorner2Y [private]

**18.74.3.130 `lineEditRectangleCorner3X`** `QLineEdit* lineEditRectangleCorner3X` [private]

**18.74.3.131 `lineEditRectangleCorner3Y`** `QLineEdit* lineEditRectangleCorner3Y` [private]

**18.74.3.132 `lineEditRectangleCorner4X`** `QLineEdit* lineEditRectangleCorner4X` [private]

**18.74.3.133 `lineEditRectangleCorner4Y`** `QLineEdit* lineEditRectangleCorner4Y` [private]

**18.74.3.134 `lineEditRectangleHeight`** `QLineEdit* lineEditRectangleHeight` [private]

**18.74.3.135 `lineEditRectangleWidth`** `QLineEdit* lineEditRectangleWidth` [private]

**18.74.3.136 `lineEditTextMultiX`** `QLineEdit* lineEditTextMultiX` [private]

**18.74.3.137 `lineEditTextMultiY`** `QLineEdit* lineEditTextMultiY` [private]

**18.74.3.138 `lineEditTextSingleContents`** `QLineEdit* lineEditTextSingleContents` [private]

**18.74.3.139 `lineEditTextSingleHeight`** `QLineEdit* lineEditTextSingleHeight` [private]

**18.74.3.140 `lineEditTextSingleRotation`** `QLineEdit* lineEditTextSingleRotation` [private]

**18.74.3.141 `lineEditTextSingleX`** `QLineEdit* lineEditTextSingleX [private]`

**18.74.3.142 `lineEditTextSingleY`** `QLineEdit* lineEditTextSingleY [private]`

**18.74.3.143 `pickAdd`** `bool pickAdd [private]`

**18.74.3.144 `precisionAngle`** `int precisionAngle [private]`

**18.74.3.145 `precisionLength`** `int precisionLength [private]`

**18.74.3.146 `propertyEditorButtonStyle`** `Qt::ToolButtonStyle propertyEditorButtonStyle [private]`

**18.74.3.147 `selectedItemList`** `QList<QGraphicsItem*> selectedItemList [private]`

**18.74.3.148 `signalMapper`** `QSignalMapper* signalMapper [private]`

**18.74.3.149 `tempArcObj`** `ArcObject* tempArcObj [private]`

**18.74.3.150 `tempBlockObj`** `BlockObject* tempBlockObj [private]`

**18.74.3.151 `tempCircleObj`** `CircleObject* tempCircleObj [private]`

**18.74.3.152 tempDimAlignedObj** DimAlignedObject\* tempDimAlignedObj [private]

**18.74.3.153 tempDimAngularObj** DimAngularObject\* tempDimAngularObj [private]

**18.74.3.154 tempDimArcLenObj** DimArcLengthObject\* tempDimArcLenObj [private]

**18.74.3.155 tempDimDiamObj** DimDiameterObject\* tempDimDiamObj [private]

**18.74.3.156 tempDimLeaderObj** DimLeaderObject\* tempDimLeaderObj [private]

**18.74.3.157 tempDimLinearObj** DimLinearObject\* tempDimLinearObj [private]

**18.74.3.158 tempDimOrdObj** DimOrdinateObject\* tempDimOrdObj [private]

**18.74.3.159 tempDimRadiusObj** DimRadiusObject\* tempDimRadiusObj [private]

**18.74.3.160 tempEllipseArcObj** EllipseArcObject\* tempEllipseArcObj [private]

**18.74.3.161 tempEllipseObj** EllipseObject\* tempEllipseObj [private]

**18.74.3.162 tempHatchObj** HatchObject\* tempHatchObj [private]

**18.74.3.163 tempImageObj** `ImageObject* tempImageObj [private]`

**18.74.3.164 tempInfLineObj** `InfiniteLineObject* tempInfLineObj [private]`

**18.74.3.165 tempLineObj** `LineObject* tempLineObj [private]`

**18.74.3.166 tempPathObj** `PathObject* tempPathObj [private]`

**18.74.3.167 tempPointObj** `PointObject* tempPointObj [private]`

**18.74.3.168 tempPolygonObj** `PolygonObject* tempPolygonObj [private]`

**18.74.3.169 tempPolylineObj** `PolylineObject* tempPolylineObj [private]`

**18.74.3.170 tempRayObj** `RayObject* tempRayObj [private]`

**18.74.3.171 tempRectObj** `RectObject* tempRectObj [private]`

**18.74.3.172 tempSplineObj** `SplineObject* tempSplineObj [private]`

**18.74.3.173 tempTextMultiObj** `TextMultiObject* tempTextMultiObj [private]`

**18.74.3.174 tempTextSingleObj** `TextSingleObject* tempTextSingleObj [private]`

**18.74.3.175 toolButtonArcArea** `QToolButton* toolButtonArcArea [private]`

**18.74.3.176 toolButtonArcCenterX** `QToolButton* toolButtonArcCenterX [private]`

**18.74.3.177 toolButtonArcCenterY** `QToolButton* toolButtonArcCenterY [private]`

**18.74.3.178 toolButtonArcChord** `QToolButton* toolButtonArcChord [private]`

**18.74.3.179 toolButtonArcClockwise** `QToolButton* toolButtonArcClockwise [private]`

**18.74.3.180 toolButtonArcEndAngle** `QToolButton* toolButtonArcEndAngle [private]`

**18.74.3.181 toolButtonArcEndX** `QToolButton* toolButtonArcEndX [private]`

**18.74.3.182 toolButtonArcEndY** `QToolButton* toolButtonArcEndY [private]`

**18.74.3.183 toolButtonArcIncAngle** `QToolButton* toolButtonArcIncAngle [private]`

**18.74.3.184 toolButtonArcLength** `QToolButton* toolButtonArcLength [private]`

**18.74.3.185 toolButtonArcRadius** QToolButton\* toolButtonArcRadius [private]

**18.74.3.186 toolButtonArcStartAngle** QToolButton\* toolButtonArcStartAngle [private]

**18.74.3.187 toolButtonArcStartX** QToolButton\* toolButtonArcStartX [private]

**18.74.3.188 toolButtonArcStartY** QToolButton\* toolButtonArcStartY [private]

**18.74.3.189 toolButtonBlockX** QToolButton\* toolButtonBlockX [private]

**18.74.3.190 toolButtonBlockY** QToolButton\* toolButtonBlockY [private]

**18.74.3.191 toolButtonCircleArea** QToolButton\* toolButtonCircleArea [private]

**18.74.3.192 toolButtonCircleCenterX** QToolButton\* toolButtonCircleCenterX [private]

**18.74.3.193 toolButtonCircleCenterY** QToolButton\* toolButtonCircleCenterY [private]

**18.74.3.194 toolButtonCircleCircumference** QToolButton\* toolButtonCircleCircumference [private]

**18.74.3.195 toolButtonCircleDiameter** QToolButton\* toolButtonCircleDiameter [private]

**18.74.3.196 toolButtonCircleRadius** QToolButton\* toolButtonCircleRadius [private]

**18.74.3.197 toolButtonEllipseCenterX** QToolButton\* toolButtonEllipseCenterX [private]

**18.74.3.198 toolButtonEllipseCenterY** QToolButton\* toolButtonEllipseCenterY [private]

**18.74.3.199 toolButtonEllipseDiameterMajor** QToolButton\* toolButtonEllipseDiameterMajor [private]

**18.74.3.200 toolButtonEllipseDiameterMinor** QToolButton\* toolButtonEllipseDiameterMinor [private]

**18.74.3.201 toolButtonEllipseRadiusMajor** QToolButton\* toolButtonEllipseRadiusMajor [private]

**18.74.3.202 toolButtonEllipseRadiusMinor** QToolButton\* toolButtonEllipseRadiusMinor [private]

**18.74.3.203 toolButtonGeneralColor** QToolButton\* toolButtonGeneralColor [private]

**18.74.3.204 toolButtonGeneralLayer** QToolButton\* toolButtonGeneralLayer [private]

**18.74.3.205 toolButtonGeneralLineType** QToolButton\* toolButtonGeneralLineType [private]

**18.74.3.206 toolButtonGeneralLineWidth** QToolButton\* toolButtonGeneralLineWidth [private]

**18.74.3.207 toolButtonImageHeight** QToolButton\* toolButtonImageHeight [private]

**18.74.3.208 toolButtonImageName** QToolButton\* toolButtonImageName [private]

**18.74.3.209 toolButtonImagePath** QToolButton\* toolButtonImagePath [private]

**18.74.3.210 toolButtonImageWidth** QToolButton\* toolButtonImageWidth [private]

**18.74.3.211 toolButtonImageX** QToolButton\* toolButtonImageX [private]

**18.74.3.212 toolButtonImageY** QToolButton\* toolButtonImageY [private]

**18.74.3.213 toolButtonInfiniteLineVectorX** QToolButton\* toolButtonInfiniteLineVectorX [private]

**18.74.3.214 toolButtonInfiniteLineVectorY** QToolButton\* toolButtonInfiniteLineVectorY [private]

**18.74.3.215 toolButtonInfiniteLineX1** QToolButton\* toolButtonInfiniteLineX1 [private]

**18.74.3.216 toolButtonInfiniteLineX2** QToolButton\* toolButtonInfiniteLineX2 [private]

**18.74.3.217 toolButtonInfiniteLineY1** QToolButton\* toolButtonInfiniteLineY1 [private]

**18.74.3.218 toolButtonInfiniteLineY2** QToolButton\* toolButtonInfiniteLineY2 [private]

**18.74.3.219 toolButtonLineAngle** QToolButton\* toolButtonLineAngle [private]

**18.74.3.220 toolButtonLineDeltaX** QToolButton\* toolButtonLineDeltaX [private]

**18.74.3.221 toolButtonLineDeltaY** QToolButton\* toolButtonLineDeltaY [private]

**18.74.3.222 toolButtonLineEndX** QToolButton\* toolButtonLineEndX [private]

**18.74.3.223 toolButtonLineEndY** QToolButton\* toolButtonLineEndY [private]

**18.74.3.224 toolButtonLineLength** QToolButton\* toolButtonLineLength [private]

**18.74.3.225 toolButtonLineStartX** QToolButton\* toolButtonLineStartX [private]

**18.74.3.226 toolButtonLineStartY** QToolButton\* toolButtonLineStartY [private]

**18.74.3.227 toolButtonPathArea** QToolButton\* toolButtonPathArea [private]

**18.74.3.228 toolButtonPathClosed** QToolButton\* toolButtonPathClosed [private]

**18.74.3.229 toolButtonPathLength** QToolButton\* toolButtonPathLength [private]

**18.74.3.230 toolButtonPathVertexNum** QToolButton\* toolButtonPathVertexNum [private]

**18.74.3.231 toolButtonPathVertexX** QToolButton\* toolButtonPathVertexX [private]

**18.74.3.232 toolButtonPathVertexY** QToolButton\* toolButtonPathVertexY [private]

**18.74.3.233 toolButtonPickAdd** QToolButton\* toolButtonPickAdd [private]

**18.74.3.234 toolButtonPointX** QToolButton\* toolButtonPointX [private]

**18.74.3.235 toolButtonPointY** QToolButton\* toolButtonPointY [private]

**18.74.3.236 toolButtonPolygonCenterX** QToolButton\* toolButtonPolygonCenterX [private]

**18.74.3.237 toolButtonPolygonCenterY** QToolButton\* toolButtonPolygonCenterY [private]

**18.74.3.238 toolButtonPolygonDiameterSide** QToolButton\* toolButtonPolygonDiameterSide [private]

**18.74.3.239 toolButtonPolygonDiameterVertex** QToolButton\* toolButtonPolygonDiameterVertex [private]

**18.74.3.240 toolButtonPolygonInteriorAngle** QToolButton\* toolButtonPolygonInteriorAngle [private]

**18.74.3.241 toolButtonPolygonRadiusSide** QToolButton\* toolButtonPolygonRadiusSide [private]

**18.74.3.242 toolButtonPolygonRadiusVertex** QToolButton\* toolButtonPolygonRadiusVertex [private]

**18.74.3.243 toolButtonPolylineArea** QToolButton\* toolButtonPolylineArea [private]

**18.74.3.244 toolButtonPolylineClosed** QToolButton\* toolButtonPolylineClosed [private]

**18.74.3.245 toolButtonPolylineLength** QToolButton\* toolButtonPolylineLength [private]

**18.74.3.246 toolButtonPolylineVertexNum** QToolButton\* toolButtonPolylineVertexNum [private]

**18.74.3.247 toolButtonPolylineVertexX** QToolButton\* toolButtonPolylineVertexX [private]

**18.74.3.248 toolButtonPolylineVertexY** QToolButton\* toolButtonPolylineVertexY [private]

**18.74.3.249 toolButtonQSelect** QToolButton\* toolButtonQSelect [private]

**18.74.3.250 toolButtonRayVectorX** QToolButton\* toolButtonRayVectorX [private]

**18.74.3.251 toolButtonRayVectorY** QToolButton\* toolButtonRayVectorY [private]

**18.74.3.252 toolButtonRayX1** QToolButton\* toolButtonRayX1 [private]

**18.74.3.253 toolButtonRayX2** QToolButton\* toolButtonRayX2 [private]

**18.74.3.254 toolButtonRayY1** QToolButton\* toolButtonRayY1 [private]

**18.74.3.255 toolButtonRayY2** QToolButton\* toolButtonRayY2 [private]

**18.74.3.256 toolButtonRectangleArea** QToolButton\* toolButtonRectangleArea [private]

**18.74.3.257 toolButtonRectangleCorner1X** QToolButton\* toolButtonRectangleCorner1X [private]

**18.74.3.258 toolButtonRectangleCorner1Y** QToolButton\* toolButtonRectangleCorner1Y [private]

**18.74.3.259 toolButtonRectangleCorner2X** QToolButton\* toolButtonRectangleCorner2X [private]

**18.74.3.260 toolButtonRectangleCorner2Y** QToolButton\* toolButtonRectangleCorner2Y [private]

**18.74.3.261 toolButtonRectangleCorner3X** QToolButton\* toolButtonRectangleCorner3X [private]

**18.74.3.262 toolButtonRectangleCorner3Y** QToolButton\* toolButtonRectangleCorner3Y [private]

**18.74.3.263 toolButtonRectangleCorner4X** QToolButton\* toolButtonRectangleCorner4X [private]

**18.74.3.264 toolButtonRectangleCorner4Y** QToolButton\* toolButtonRectangleCorner4Y [private]

**18.74.3.265 toolButtonRectangleHeight** QToolButton\* toolButtonRectangleHeight [private]

**18.74.3.266 toolButtonRectangleWidth** QToolButton\* toolButtonRectangleWidth [private]

**18.74.3.267 toolButtonTextMultiX** QToolButton\* toolButtonTextMultiX [private]

**18.74.3.268 toolButtonTextMultiY** QToolButton\* toolButtonTextMultiY [private]

**18.74.3.269 toolButtonTextSingleBackward** QToolButton\* toolButtonTextSingleBackward [private]

**18.74.3.270 toolButtonTextSingleContents** QToolButton\* toolButtonTextSingleContents [private]

**18.74.3.271 toolButtonTextSingleFont** QToolButton\* toolButtonTextSingleFont [private]

**18.74.3.272 toolButtonTextSingleHeight** QToolButton\* toolButtonTextSingleHeight [private]

**18.74.3.273 toolButtonTextSingleJustify** QToolButton\* toolButtonTextSingleJustify [private]

**18.74.3.274 toolButtonTextSingleRotation** QToolButton\* toolButtonTextSingleRotation [private]

**18.74.3.275 toolButtonTextSingleUpsideDown** QToolButton\* toolButtonTextSingleUpsideDown [private]

**18.74.3.276 toolButtonTextSingleX** QToolButton\* toolButtonTextSingleX [private]

**18.74.3.277 toolButtonTextSingleY** QToolButton\* toolButtonTextSingleY [private]

The documentation for this class was generated from the following files:

- embroidermodder2/[property-editor.h](#)
- embroidermodder2/[property-editor.cpp](#)

## 18.75 RectObject Class Reference

```
#include <object-rect.h>
```

### Public Types

- enum { [Type](#) = OBJ\_TYPE\_RECTANGLE }

### Public Types inherited from [BaseObject](#)

- enum { [Type](#) = OBJ\_TYPE\_BASE }

### Public Member Functions

- [RectObject](#) (qreal x, qreal y, qreal w, qreal h, QRgb rgb, QGraphicsItem \*parent=0)
- [RectObject](#) ([RectObject](#) \*obj, QGraphicsItem \*parent=0)
- [~RectObject](#) ()
- virtual int [type](#) () const
- QPainterPath [objectSavePath](#) () const
- QPointF [objectPos](#) () const
- QPointF [objectTopLeft](#) () const
- QPointF [objectTopRight](#) () const
- QPointF [objectBottomLeft](#) () const
- QPointF [objectBottomRight](#) () const
- qreal [objectWidth](#) () const
- qreal [objectHeight](#) () const
- qreal [objectArea](#) () const
- void [setObjectRect](#) (qreal x, qreal y, qreal w, qreal h)
- void [updateRubber](#) (QPainter \*painter=0)
- virtual void [vulcanize](#) ()
- virtual QPointF [mouseSnapPoint](#) (const QPointF &mousePoint)
- virtual QList< QPointF > [allGripPoints](#) ()
- virtual void [gripEdit](#) (const QPointF &before, const QPointF &after)

### Public Member Functions inherited from [BaseObject](#)

- [BaseObject](#) (QGraphicsItem \*parent=0)
- virtual [~BaseObject](#) ()
- virtual int [type](#) () const
- qint64 [objectID](#) () const
- QPen [objectPen](#) () const
- QColor [objectColor](#) () const
- QRgb [objectColorRGB](#) () const
- Qt::PenStyle [objectLineType](#) () const
- qreal [objectLineWidth](#) () const
- QPainterPath [objectPath](#) () const
- int [objectRubberMode](#) () const
- QPointF [objectRubberPoint](#) (const QString &key) const
- QString [objectRubberText](#) (const QString &key) const
- QRectF [rect](#) () const
- void [setRect](#) (const QRectF &r)
- void [setRect](#) (qreal x, qreal y, qreal w, qreal h)
- QLineF [line](#) () const
- void [setLine](#) (const QLineF &li)
- void [setLine](#) (qreal x1, qreal y1, qreal x2, qreal y2)
- void [setObjectColor](#) (const QColor &color)
- void [setObjectColorRGB](#) (QRgb rgb)
- void [setObjectLineType](#) (Qt::PenStyle lineType)
- void [setObjectLineWidth](#) (qreal lineWidth)
- void [setObjectPath](#) (const QPainterPath &p)
- void [setObjectRubberMode](#) (int mode)
- void [setObjectRubberPoint](#) (const QString &key, const QPointF &point)
- void [setObjectRubberText](#) (const QString &key, const QString &txt)
- virtual QRectF [boundingRect](#) () const
- virtual QPainterPath [shape](#) () const
- void [drawRubberLine](#) (const QLineF &rubLine, QPainter \*painter=0, const char \*colorFromScene=0)
- virtual void [vulcanize](#) ()=0
- virtual QPointF [mouseSnapPoint](#) (const QPointF &mousePoint)=0
- virtual QList< QPointF > [allGripPoints](#) ()=0
- virtual void [gripEdit](#) (const QPointF &before, const QPointF &after)=0

### Protected Member Functions

- void [paint](#) (QPainter \*, const QStyleOptionGraphicsItem \*, QWidget \*)

### Protected Member Functions inherited from [BaseObject](#)

- QPen [lineWeightPen](#) () const
- qreal [pi](#) () const
- qreal [radians](#) (qreal degree) const
- qreal [degrees](#) (qreal radian) const
- void [realRender](#) (QPainter \*painter, const QPainterPath &renderPath)

**Private Member Functions**

- void [init](#) (qreal x, qreal y, qreal w, qreal h, QRgb rgb, Qt::PenStyle lineType)
- void [updatePath](#) ()

**18.75.1 Member Enumeration Documentation****18.75.1.1 anonymous enum** anonymous enum

Enumerator

Type	<input type="button" value=""/>
------	---------------------------------

**18.75.2 Constructor & Destructor Documentation****18.75.2.1 RectObject() [1/2]** [RectObject](#) (

```
    qreal x,  
    qreal y,  
    qreal w,  
    qreal h,  
    QRgb rgb,  
    QGraphicsItem * parent = 0 )
```

**18.75.2.2 RectObject() [2/2]** [RectObject](#) (

```
    RectObject * obj,  
    QGraphicsItem * parent = 0 )
```

**18.75.2.3 ~RectObject()** [~RectObject](#) ( )**18.75.3 Member Function Documentation****18.75.3.1 allGripPoints()** [QList< QPointF >](#) allGripPoints ( ) [virtual]Implements [BaseObject](#).

```
18.75.3.2 gripEdit() void gripEdit (
    const QPointF & before,
    const QPointF & after ) [virtual]
```

Implements [BaseObject](#).

```
18.75.3.3 init() void init (
    qreal x,
    qreal y,
    qreal w,
    qreal h,
    QRgb rgb,
    Qt::PenStyle lineType ) [private]
```

```
18.75.3.4 mouseSnapPoint() QPointF mouseSnapPoint (
    const QPointF & mousePoint ) [virtual]
```

Implements [BaseObject](#).

```
18.75.3.5 objectArea() qreal objectArea ( ) const [inline]
```

```
18.75.3.6 objectBottomLeft() QPointF objectBottomLeft ( ) const
```

```
18.75.3.7 objectBottomRight() QPointF objectBottomRight ( ) const
```

```
18.75.3.8 objectHeight() qreal objectHeight ( ) const [inline]
```

```
18.75.3.9 objectPos() QPointF objectPos ( ) const [inline]
```

```
18.75.3.10 objectSavePath() QPainterPath objectSavePath ( ) const
```

**18.75.3.11 objectTopLeft()** QPointF objectTopLeft ( ) const

**18.75.3.12 objectTopRight()** QPointF objectTopRight ( ) const

**18.75.3.13 objectWidth()** qreal objectWidth ( ) const [inline]

**18.75.3.14 paint()** void paint (   
     QPainter \* painter,  
     const QStyleOptionGraphicsItem \* option,  
     QWidget \* ) [protected]

**18.75.3.15 setObjectRect()** void setObjectRect (   
     qreal x,  
     qreal y,  
     qreal w,  
     qreal h )

**18.75.3.16 type()** virtual int type ( ) const [inline], [virtual]

Reimplemented from [BaseObject](#).

**18.75.3.17 updatePath()** void updatePath ( ) [private]

**18.75.3.18 updateRubber()** void updateRubber (   
     QPainter \* painter = 0 )

**18.75.3.19 vulcanize()** void vulcanize ( ) [virtual]

Implements [BaseObject](#).

The documentation for this class was generated from the following files:

- [embroidermodder2/object-rect.h](#)
- [embroidermodder2/object-rect.cpp](#)

## 18.76 SaveObject Class Reference

```
#include <object-save.h>
```

### Public Member Functions

- `SaveObject (QGraphicsScene *theScene, QObject *parent=0)`
- `~SaveObject ()`
- `bool save (const QString &fileName)`
- `void addArc (EmbPattern *pattern, QGraphicsItem *item)`
- `void addBlock (EmbPattern *pattern, QGraphicsItem *item)`
- `void addCircle (EmbPattern *pattern, QGraphicsItem *item)`
- `void addDimAligned (EmbPattern *pattern, QGraphicsItem *item)`
- `void addDimAngular (EmbPattern *pattern, QGraphicsItem *item)`
- `void addDimArcLength (EmbPattern *pattern, QGraphicsItem *item)`
- `void addDimDiameter (EmbPattern *pattern, QGraphicsItem *item)`
- `void addDimLeader (EmbPattern *pattern, QGraphicsItem *item)`
- `void addDimLinear (EmbPattern *pattern, QGraphicsItem *item)`
- `void addDimOrdinate (EmbPattern *pattern, QGraphicsItem *item)`
- `void addDimRadius (EmbPattern *pattern, QGraphicsItem *item)`
- `void addEllipse (EmbPattern *pattern, QGraphicsItem *item)`
- `void addEllipseArc (EmbPattern *pattern, QGraphicsItem *item)`
- `void addGrid (EmbPattern *pattern, QGraphicsItem *item)`
- `void addHatch (EmbPattern *pattern, QGraphicsItem *item)`
- `void addImage (EmbPattern *pattern, QGraphicsItem *item)`
- `void addInfiniteLine (EmbPattern *pattern, QGraphicsItem *item)`
- `void addLine (EmbPattern *pattern, QGraphicsItem *item)`
- `void addPath (EmbPattern *pattern, QGraphicsItem *item)`
- `void addPoint (EmbPattern *pattern, QGraphicsItem *item)`
- `void addPolygon (EmbPattern *pattern, QGraphicsItem *item)`
- `void addPolyline (EmbPattern *pattern, QGraphicsItem *item)`
- `void addRay (EmbPattern *pattern, QGraphicsItem *item)`
- `void addRectangle (EmbPattern *pattern, QGraphicsItem *item)`
- `void addSlot (EmbPattern *pattern, QGraphicsItem *item)`
- `void addSpline (EmbPattern *pattern, QGraphicsItem *item)`
- `void addTextMulti (EmbPattern *pattern, QGraphicsItem *item)`
- `void addTextSingle (EmbPattern *pattern, QGraphicsItem *item)`

### Private Member Functions

- `void toPolyline (EmbPattern *pattern, const QPointF &objPos, const QPainterPath &objPath, const QString &layer, const QColor &color, const QString &lineType, const QString &lineWeight)`

### Private Attributes

- `QGraphicsScene * gscene`
- `int formatType`

#### 18.76.1 Constructor & Destructor Documentation

**18.76.1.1 `SaveObject()`** `SaveObject (`  
    `QGraphicsScene * theScene,`  
    `QObject * parent = 0 )`

**18.76.1.2 `~SaveObject()`** `~SaveObject ( )`

## 18.76.2 Member Function Documentation

**18.76.2.1 `addArc()`** `void addArc (`  
    `EmbPattern * pattern,`  
    `QGraphicsItem * item )`

**18.76.2.2 `addBlock()`** `void addBlock (`  
    `EmbPattern * pattern,`  
    `QGraphicsItem * item )`

**18.76.2.3 `addCircle()`** `void addCircle (`  
    `EmbPattern * pattern,`  
    `QGraphicsItem * item )`

**18.76.2.4 `addDimAligned()`** `void addDimAligned (`  
    `EmbPattern * pattern,`  
    `QGraphicsItem * item )`

**18.76.2.5 `addDimAngular()`** `void addDimAngular (`  
    `EmbPattern * pattern,`  
    `QGraphicsItem * item )`

**18.76.2.6 `addDimArcLength()`** `void addDimArcLength (`  
    `EmbPattern * pattern,`  
    `QGraphicsItem * item )`

**18.76.2.7 addDimDiameter()** void addDimDiameter (

```
EmbPattern * pattern,
QGraphicsItem * item )
```

**18.76.2.8 addDimLeader()** void addDimLeader (

```
EmbPattern * pattern,
QGraphicsItem * item )
```

**18.76.2.9 addDimLinear()** void addDimLinear (

```
EmbPattern * pattern,
QGraphicsItem * item )
```

**18.76.2.10 addDimOrdinate()** void addDimOrdinate (

```
EmbPattern * pattern,
QGraphicsItem * item )
```

**18.76.2.11 addDimRadius()** void addDimRadius (

```
EmbPattern * pattern,
QGraphicsItem * item )
```

**18.76.2.12 addEllipse()** void addEllipse (

```
EmbPattern * pattern,
QGraphicsItem * item )
```

**18.76.2.13 addEllipseArc()** void addEllipseArc (

```
EmbPattern * pattern,
QGraphicsItem * item )
```

**18.76.2.14 addGrid()** void addGrid (

```
EmbPattern * pattern,
QGraphicsItem * item )
```

**18.76.2.15 addHatch()** void addHatch (

```
EmbPattern * pattern,
QGraphicsItem * item )
```

**18.76.2.16 addImage()** void addImage (

```
EmbPattern * pattern,
QGraphicsItem * item )
```

**18.76.2.17 addInfiniteLine()** void addInfiniteLine (

```
EmbPattern * pattern,
QGraphicsItem * item )
```

**18.76.2.18 addLine()** void addLine (

```
EmbPattern * pattern,
QGraphicsItem * item )
```

**18.76.2.19 addPath()** void addPath (

```
EmbPattern * pattern,
QGraphicsItem * item )
```

**18.76.2.20 addPoint()** void addPoint (

```
EmbPattern * pattern,
QGraphicsItem * item )
```

**18.76.2.21 addPolygon()** void addPolygon (

```
EmbPattern * pattern,
QGraphicsItem * item )
```

**18.76.2.22 addPolyline()** void addPolyline (

```
EmbPattern * pattern,
QGraphicsItem * item )
```

```
18.76.2.23 addRay() void addRay (
    EmbPattern * pattern,
    QGraphicsItem * item )
```

```
18.76.2.24 addRectangle() void addRectangle (
    EmbPattern * pattern,
    QGraphicsItem * item )
```

```
18.76.2.25 addSlot() void addSlot (
    EmbPattern * pattern,
    QGraphicsItem * item )
```

```
18.76.2.26 addSpline() void addSpline (
    EmbPattern * pattern,
    QGraphicsItem * item )
```

```
18.76.2.27 addTextMulti() void addTextMulti (
    EmbPattern * pattern,
    QGraphicsItem * item )
```

```
18.76.2.28 addTextSingle() void addTextSingle (
    EmbPattern * pattern,
    QGraphicsItem * item )
```

```
18.76.2.29 save() bool save (
    const QString & fileName )
```

Returns whether the save to file process was successful.

**Todo** Before saving to a stitch only format, Embroidermodder needs to calculate the optimal path to minimize jump stitches. Also based upon which layer needs to be stitched first, the path to the next object needs to be hidden beneath fills that will come later. When finding the optimal path, we need to take into account the color of the thread, as we do not want to try to hide dark colored stitches beneath light colored fills.

```
18.76.2.30 toPolyline() void toPolyline (
    EmbPattern * pattern,
    const QPointF & objPos,
    const QPainterPath & objPath,
    const QString & layer,
    const QColor & color,
    const QString & lineType,
    const QString & lineWeight ) [private]
```

### 18.76.3 Member Data Documentation

**18.76.3.1 `formatType`** int formatType [private]

**18.76.3.2 `gscene`** QGraphicsScene\* gscene [private]

The documentation for this class was generated from the following files:

- [embroidermodder2/object-save.h](#)
- [embroidermodder2/object-save.cpp](#)

## 18.77 SelectBox Class Reference

```
#include <selectbox.h>
```

### Public Slots

- [void setDirection \(int dir\)](#)
- [void setColors \(const QColor &colorL, const QColor &fillL, const QColor &colorR, const QColor &fillR, int newAlpha\)](#)

### Public Member Functions

- [SelectBox \(Shape s, QWidget \\*parent=0\)](#)

### Protected Member Functions

- [void paintEvent \(QPaintEvent \\*\)](#)

### Private Member Functions

- [void forceRepaint \(\)](#)

## Private Attributes

- QColor `leftBrushColor`
- QColor `rightBrushColor`
- QColor `leftPenColor`
- QColor `rightPenColor`
- quint8 `alpha`
- QBrush `dirBrush`
- QBrush `leftBrush`
- QBrush `rightBrush`
- QPen `dirPen`
- QPen `leftPen`
- QPen `rightPen`
- bool `boxDir`

### 18.77.1 Constructor & Destructor Documentation

```
18.77.1.1 SelectBox() SelectBox (   
     Shape s,  
     QWidget * parent = 0 )
```

### 18.77.2 Member Function Documentation

```
18.77.2.1 forceRepaint() void forceRepaint ( ) [private]
```

```
18.77.2.2 paintEvent() void paintEvent (   
     QPaintEvent * ) [protected]
```

```
18.77.2.3 setColors void setColors (   
     const QColor & colorL,  
     const QColor & fillL,  
     const QColor & colorR,  
     const QColor & fillR,  
     int newAlpha ) [slot]
```

```
18.77.2.4 setDirection void setDirection (   
     int dir ) [slot]
```

### 18.77.3 Member Data Documentation

**18.77.3.1 `alpha`** quint8 alpha [private]

**18.77.3.2 `boxDir`** bool boxDir [private]

**18.77.3.3 `dirBrush`** QBrush dirBrush [private]

**18.77.3.4 `dirPen`** QPen dirPen [private]

**18.77.3.5 `leftBrush`** QBrush leftBrush [private]

**18.77.3.6 `leftBrushColor`** QColor leftBrushColor [private]

**18.77.3.7 `leftPen`** QPen leftPen [private]

**18.77.3.8 `leftPenColor`** QColor leftPenColor [private]

**18.77.3.9 `rightBrush`** QBrush rightBrush [private]

**18.77.3.10 `rightBrushColor`** QColor rightBrushColor [private]

**18.77.3.11 rightPen** QPen rightPen [private]

**18.77.3.12 rightPenColor** QColor rightPenColor [private]

The documentation for this class was generated from the following files:

- [embroidermodder2/selectbox.h](#)
- [embroidermodder2/selectbox.cpp](#)

## 18.78 Settings\_ Struct Reference

Settings System.

### Public Attributes

- char [version](#) [200]
- bool [running](#)
- bool [testing](#)
- int [debug\\_mode](#)
- bool [show\\_about\\_dialog](#)
- bool [show\\_settings\\_editor](#)
- bool [show\\_editor](#)
- bool [show\\_details\\_dialog](#)
- bool [show\\_open\\_file\\_dialog](#)
- int [icon\\_size](#)
- char [icon\\_theme](#) [200]
- int [pattern\\_index](#)
- char [assets\\_dir](#) [200]
- bool [use\\_translation](#)
- char [language](#) [200]
- bool [mdi\\_bg\\_use\\_logo](#)
- bool [mdi\\_bg\\_use\\_texture](#)
- bool [mdi\\_bg\\_use\\_color](#)
- char [general\\_mdi\\_bg\\_logo](#) [200]
- char [general\\_mdi\\_bg\\_texture](#) [200]
- unsigned int [general\\_mdi\\_bg\\_color](#)
- bool [tip\\_of\\_the\\_day](#)
- unsigned int [general\\_current\\_tip](#)
- bool [general\\_system\\_help\\_browser](#)
- bool [general\\_check\\_for\\_updates](#)
- bool [display\\_use\\_opengl](#)
- bool [display\\_renderhint\\_aa](#)
- bool [display\\_renderhint\\_text\\_aa](#)
- bool [display\\_renderhint\\_smooth\\_pix](#)
- bool [display\\_renderhint\\_high\\_aa](#)
- bool [display\\_renderhint\\_noncosmetic](#)
- bool [display\\_show\\_scrollbars](#)
- int [display\\_scrollbar\\_widget\\_num](#)
- unsigned int [display\\_crosshair\\_color](#)

- unsigned int `display_bg_color`
- unsigned int `display_selectbox_left_color`
- unsigned int `display_selectbox_left_fill`
- unsigned int `display_selectbox_right_color`
- unsigned int `display_selectbox_right_fill`
- unsigned char `display_selectbox_alpha`
- float `display_zoomscale_in`
- float `display_zoomscale_out`
- unsigned char `display_crosshair_percent`
- char `display_units` [200]
- char `opensave_custom_filter` [200]
- char `opensave_open_format` [200]
- bool `opensave_open_thumbnail`
- char `opensave_save_format` [200]
- bool `opensave_save_thumbnail`
- unsigned char `opensave_recent_max_files`
- char `opensave_recent_list_of_files` [20][200]
- char `opensave_recent_directory` [200]
- unsigned char `opensave_trim_dst_num_jumps`
- char `printing_default_device` [200]
- bool `printing_use_last_device`
- bool `printing_disable_bg`
- bool `grid_show_on_load`
- bool `grid_show_origin`
- bool `grid_color_match_crosshair`
- unsigned int `grid_color`
- bool `grid_load_from_file`
- char `grid_type` [200]
- bool `grid_center_on_origin`
- `EmbVector grid_center`
- float `grid_size_x`
- float `grid_size_y`
- float `grid_spacing_x`
- float `grid_spacing_y`
- float `grid_size_radius`
- float `grid_spacing_radius`
- float `grid_spacing_angle`
- bool `ruler_show_on_load`
- bool `ruler_metric`
- unsigned int `ruler_color`
- unsigned char `ruler_pixel_size`
- bool `qsnap_enabled`
- unsigned int `qsnap_locator_color`
- unsigned char `qsnap_locator_size`
- unsigned char `qsnap_aperture_size`
- bool `qsnap_endpoint`
- bool `qsnap_midpoint`
- bool `qsnap_center`
- bool `qsnap_node`
- bool `qsnap_quadrant`
- bool `qsnap_intersection`
- bool `qsnap_extension`
- bool `qsnap_insertion`
- bool `qsnap_perpendicular`
- bool `qsnap_tangent`

- bool `qsnap_nearest`
- bool `qsnap_apparent`
- bool `qsnap_parallel`
- bool `lwt_show_lwt`
- bool `lwt_real_render`
- bool `shift_held`
- float `lwt_default_lwt`
- bool `selection_mode_pickfirst`
- bool `selection_mode_pickadd`
- bool `selection_mode_pickdrag`
- unsigned int `selection_coolgrip_color`
- unsigned int `selection_hotgrip_color`
- unsigned char `selection_grip_size`
- unsigned char `selection_pickbox_size`
- char `text_font` [200]
- float `text_size`
- float `text_angle`
- bool `text_style_bold`
- bool `text_style_italic`
- bool `text_style_underline`
- bool `text_style_overline`
- bool `text_style_strikeout`
- `Dictionary * texture_list`
- unsigned int `ticks_color`
- unsigned int `shine_color`
- char `to_open` [200]
- char `menu_action` [200]
- char `current_directory` [200]
- `EmbReal zoomInLimit`
- `EmbReal zoomOutLimit`
- `EmbVector grid_spacing`
- float `ruler_width`
- float `tick_depth`
- float `major_tick_seperation`
- float `needle_speed`
- float `stitch_time`

#### 18.78.1 Detailed Description

Settings System.

Rather than pollute the global namespace, we collect together all the global settings into a structure that stores them. This also allows us to create a complete copy of the settings for the purpose of restoring them if the user cancels out of the Settings Dialog.

Like all of our structs, it's C99 compliant.

#### 18.78.2 Member Data Documentation

**18.78.2.1 assets\_dir** char assets\_dir[200]

**18.78.2.2 current\_directory** char current\_directory[200]

**18.78.2.3 debug\_mode** int debug\_mode

**18.78.2.4 display\_bg\_color** unsigned int display\_bg\_color

**18.78.2.5 display\_crosshair\_color** unsigned int display\_crosshair\_color

**18.78.2.6 display\_crosshair\_percent** unsigned char display\_crosshair\_percent

**18.78.2.7 display\_renderhint\_aa** bool display\_renderhint\_aa

**18.78.2.8 display\_renderhint\_high\_aa** bool display\_renderhint\_high\_aa

**18.78.2.9 display\_renderhint\_noncosmetic** bool display\_renderhint\_noncosmetic

**18.78.2.10 display\_renderhint\_smooth\_pix** bool display\_renderhint\_smooth\_pix

**18.78.2.11 display\_renderhint\_text\_aa** bool display\_renderhint\_text\_aa

**18.78.2.12 `display_scrollbar_widget_num`** int display\_scrollbar\_widget\_num

**18.78.2.13 `display_selectbox_alpha`** unsigned char display\_selectbox\_alpha

**18.78.2.14 `display_selectbox_left_color`** unsigned int display\_selectbox\_left\_color

**18.78.2.15 `display_selectbox_left_fill`** unsigned int display\_selectbox\_left\_fill

**18.78.2.16 `display_selectbox_right_color`** unsigned int display\_selectbox\_right\_color

**18.78.2.17 `display_selectbox_right_fill`** unsigned int display\_selectbox\_right\_fill

**18.78.2.18 `display_show_scrollbars`** bool display\_show\_scrollbars

**18.78.2.19 `display_units`** char display\_units[200]

**18.78.2.20 `display_use_opengl`** bool display\_use\_opengl

**18.78.2.21 `display_zoomscale_in`** float display\_zoomscale\_in

**18.78.2.22 `display_zoomscale_out`** float display\_zoomscale\_out

**18.78.2.23 general\_check\_for\_updates** bool general\_check\_for\_updates

**18.78.2.24 general\_current\_tip** unsigned int general\_current\_tip

**18.78.2.25 general\_mdi\_bg\_color** unsigned int general\_mdi\_bg\_color

**18.78.2.26 general\_mdi\_bg\_logo** char general\_mdi\_bg\_logo[200]

**18.78.2.27 general\_mdi\_bg\_texture** char general\_mdi\_bg\_texture[200]

**18.78.2.28 general\_system\_help\_browser** bool general\_system\_help\_browser

**18.78.2.29 grid\_center** EmbVector grid\_center

**18.78.2.30 grid\_center\_on\_origin** bool grid\_center\_on\_origin

**18.78.2.31 grid\_color** unsigned int grid\_color

**18.78.2.32 grid\_color\_match\_crosshair** bool grid\_color\_match\_crosshair

**18.78.2.33 grid\_load\_from\_file** bool grid\_load\_from\_file

**18.78.2.34 `grid_show_on_load`** `bool grid_show_on_load`

**18.78.2.35 `grid_show_origin`** `bool grid_show_origin`

**18.78.2.36 `grid_size_radius`** `float grid_size_radius`

**18.78.2.37 `grid_size_x`** `float grid_size_x`

**18.78.2.38 `grid_size_y`** `float grid_size_y`

**18.78.2.39 `grid_spacing`** `EmbVector grid_spacing`

**18.78.2.40 `grid_spacing_angle`** `float grid_spacing_angle`

**18.78.2.41 `grid_spacing_radius`** `float grid_spacing_radius`

**18.78.2.42 `grid_spacing_x`** `float grid_spacing_x`

**18.78.2.43 `grid_spacing_y`** `float grid_spacing_y`

**18.78.2.44 `grid_type`** `char grid_type[200]`

**18.78.2.45 icon\_size** int icon\_size

**18.78.2.46 icon\_theme** char icon\_theme[200]

**18.78.2.47 language** char language[200]

**18.78.2.48 lwt\_default\_lwt** float lwt\_default\_lwt

**18.78.2.49 lwt\_real\_render** bool lwt\_real\_render

**18.78.2.50 lwt\_show\_lwt** bool lwt\_show\_lwt

**18.78.2.51 major\_tick\_seperation** float major\_tick\_seperation

**18.78.2.52 mdi\_bg\_use\_color** bool mdi\_bg\_use\_color

**18.78.2.53 mdi\_bg\_use\_logo** bool mdi\_bg\_use\_logo

**18.78.2.54 mdi\_bg\_use\_texture** bool mdi\_bg\_use\_texture

**18.78.2.55 menu\_action** char menu\_action[200]

**18.78.2.56 needle\_speed** float needle\_speed

**18.78.2.57 opensave\_custom\_filter** char opensave\_custom\_filter[200]

**18.78.2.58 opensave\_open\_format** char opensave\_open\_format[200]

**18.78.2.59 opensave\_open\_thumbnail** bool opensave\_open\_thumbnail

**18.78.2.60 opensave\_recent\_directory** char opensave\_recent\_directory[200]

**18.78.2.61 opensave\_recent\_list\_of\_files** char opensave\_recent\_list\_of\_files[20][200]

**18.78.2.62 opensave\_recent\_max\_files** unsigned char opensave\_recent\_max\_files

**18.78.2.63 opensave\_save\_format** char opensave\_save\_format[200]

**18.78.2.64 opensave\_save\_thumbnail** bool opensave\_save\_thumbnail

**18.78.2.65 opensave\_trim\_dst\_num\_jumps** unsigned char opensave\_trim\_dst\_num\_jumps

**18.78.2.66 pattern\_index** int pattern\_index

**18.78.2.67 printing\_default\_device** char printing\_default\_device[200]

**18.78.2.68 printing\_disable\_bg** bool printing\_disable\_bg

**18.78.2.69 printing\_use\_last\_device** bool printing\_use\_last\_device

**18.78.2.70 qsnap\_aperture\_size** unsigned char qsnap\_aperture\_size

**18.78.2.71 qsnap\_apparent** bool qsnap\_apparent

**18.78.2.72 qsnap\_center** bool qsnap\_center

**18.78.2.73 qsnap\_enabled** bool qsnap\_enabled

**18.78.2.74 qsnap\_endpoint** bool qsnap\_endpoint

**18.78.2.75 qsnap\_extension** bool qsnap\_extension

**18.78.2.76 qsnap\_insertion** bool qsnap\_insertion

**18.78.2.77 qsnap\_intersection** bool qsnap\_intersection

**18.78.2.78 `qsnap_locator_color`** `unsigned int qsnap_locator_color`

**18.78.2.79 `qsnap_locator_size`** `unsigned char qsnap_locator_size`

**18.78.2.80 `qsnap_midpoint`** `bool qsnap_midpoint`

**18.78.2.81 `qsnap_nearest`** `bool qsnap_nearest`

**18.78.2.82 `qsnap_node`** `bool qsnap_node`

**18.78.2.83 `qsnap_parallel`** `bool qsnap_parallel`

**18.78.2.84 `qsnap_perpendicular`** `bool qsnap_perpendicular`

**18.78.2.85 `qsnap_quadrant`** `bool qsnap_quadrant`

**18.78.2.86 `qsnap_tangent`** `bool qsnap_tangent`

**18.78.2.87 `ruler_color`** `unsigned int ruler_color`

**18.78.2.88 `ruler_metric`** `bool ruler_metric`

**18.78.2.89 ruler\_pixel\_size** unsigned char ruler\_pixel\_size

**18.78.2.90 ruler\_show\_on\_load** bool ruler\_show\_on\_load

**18.78.2.91 ruler\_width** float ruler\_width

**18.78.2.92 running** bool running

**18.78.2.93 selection\_coolgrip\_color** unsigned int selection\_coolgrip\_color

**18.78.2.94 selection\_grip\_size** unsigned char selection\_grip\_size

**18.78.2.95 selection\_hotgrip\_color** unsigned int selection\_hotgrip\_color

**18.78.2.96 selection\_mode\_pickadd** bool selection\_mode\_pickadd

**18.78.2.97 selection\_mode\_pickdrag** bool selection\_mode\_pickdrag

**18.78.2.98 selection\_mode\_pickfirst** bool selection\_mode\_pickfirst

**18.78.2.99 selection\_pickbox\_size** unsigned char selection\_pickbox\_size

**18.78.2.100 shift\_held** bool shift\_held

**18.78.2.101 shine\_color** unsigned int shine\_color

**18.78.2.102 show\_about\_dialog** bool show\_about\_dialog

**18.78.2.103 show\_details\_dialog** bool show\_details\_dialog

**18.78.2.104 show\_editor** bool show\_editor

**18.78.2.105 show\_open\_file\_dialog** bool show\_open\_file\_dialog

**18.78.2.106 show\_settings\_editor** bool show\_settings\_editor

**18.78.2.107 stitch\_time** float stitch\_time

**18.78.2.108 testing** bool testing

**18.78.2.109 text\_angle** float text\_angle

**18.78.2.110 text\_font** char text\_font[200]

**18.78.2.111 `text_size`** float text\_size

**18.78.2.112 `text_style_bold`** bool text\_style\_bold

**18.78.2.113 `text_style_italic`** bool text\_style\_italic

**18.78.2.114 `text_style_overline`** bool text\_style\_overline

**18.78.2.115 `text_style_strikeout`** bool text\_style\_strikeout

**18.78.2.116 `text_style_underline`** bool text\_style\_underline

**18.78.2.117 `texture_list`** Dictionary\* texture\_list

**18.78.2.118 `tick_depth`** float tick\_depth

**18.78.2.119 `ticks_color`** unsigned int ticks\_color

**18.78.2.120 `tip_of_the_day`** bool tip\_of\_the\_day

**18.78.2.121 `to_open`** char to\_open[200]

**18.78.2.122 use\_translation** bool use\_translation

**18.78.2.123 version** char version[200]

**18.78.2.124 zoomInLimit** EmbReal zoomInLimit

**18.78.2.125 zoomOutLimit** EmbReal zoomOutLimit

The documentation for this struct was generated from the following file:

- embroidermodder2/imgui\_main.c

## 18.79 Settings\_Dialog Class Reference

```
#include <settings-dialog.h>
```

### Signals

- void buttonCustomFilterSelectAll (bool)
- void buttonCustomFilterClearAll (bool)
- void buttonQSnapSelectAll (bool)
- void buttonQSnapClearAll (bool)

### Public Member Functions

- [Settings\\_Dialog \(MainWindow \\*mw, const QString &showTab=QString\(\), QWidget \\*parent=0\)](#)
- [~Settings\\_Dialog \(\)](#)

### Private Slots

- void `comboBoxLanguageCurrentIndexChanged` (const QString &)
- void `comboBoxIconThemeCurrentIndexChanged` (const QString &)
- void `comboBoxIconSizeCurrentIndexChanged` (int)
- void `checkBoxGeneralMdiBGUseLogoStateChanged` (int)
- void `chooseGeneralMdiBackgroundLogo` ()
- void `checkBoxGeneralMdiBGUseTextureStateChanged` (int)
- void `chooseGeneralMdiBackgroundTexture` ()
- void `checkBoxGeneralMdiBGUseColorStateChanged` (int)
- void `chooseGeneralMdiBackgroundColor` ()
- void `currentGeneralMdiBackgroundColorChanged` (const QColor &)
- void `checkBoxTipOfTheDayStateChanged` (int)
- void `checkBoxUseOpenGLStateChanged` (int)
- void `checkBoxRenderHintAAStateChanged` (int)
- void `checkBoxRenderHintTextAAStateChanged` (int)
- void `checkBoxRenderHintSmoothPixStateChanged` (int)
- void `checkBoxRenderHintHighAAStateChanged` (int)
- void `checkBoxRenderHintNonCosmeticStateChanged` (int)
- void `checkBoxShowScrollBarsStateChanged` (int)
- void `comboBoxScrollBarWidgetCurrentIndexChanged` (int)
- void `spinBoxZoomScaleInValueChanged` (double)
- void `spinBoxZoomScaleOutValueChanged` (double)
- void `checkBoxDisableBGStateChanged` (int)
- void `chooseDisplayCrossHairColor` ()
- void `currentDisplayCrossHairColorChanged` (const QColor &)
- void `chooseDisplayBackgroundColor` ()
- void `currentDisplayBackgroundColorChanged` (const QColor &)
- void `chooseDisplaySelectBoxLeftColor` ()
- void `currentDisplaySelectBoxLeftColorChanged` (const QColor &)
- void `chooseDisplaySelectBoxLeftFill` ()
- void `currentDisplaySelectBoxLeftFillChanged` (const QColor &)
- void `chooseDisplaySelectBoxRightColor` ()
- void `currentDisplaySelectBoxRightColorChanged` (const QColor &)
- void `chooseDisplaySelectBoxRightFill` ()
- void `currentDisplaySelectBoxRightFillChanged` (const QColor &)
- void `spinBoxDisplaySelectBoxAlphaValueChanged` (int)
- void `choosePromptTextColor` ()
- void `currentPromptTextColorChanged` (const QColor &)
- void `choosePromptBackgroundColor` ()
- void `currentPromptBackgroundColorChanged` (const QColor &)
- void `comboBoxPromptFontFamilyCurrentIndexChanged` (const QString &)
- void `comboBoxPromptFontStyleCurrentIndexChanged` (const QString &)
- void `spinBoxPromptFontSizeValueChanged` (int)
- void `checkBoxPromptSaveHistoryStateChanged` (int)
- void `checkBoxPromptSaveHistoryAsHtmlStateChanged` (int)
- void `checkBoxCustomFilterStateChanged` (int)
- void `buttonCustomFilterSelectAllClicked` ()
- void `buttonCustomFilterClearAllClicked` ()
- void `spinBoxRecentMaxFilesValueChanged` (int)
- void `spinBoxTrimDstNumJumpsValueChanged` (int)
- void `checkBoxGridShowOnLoadStateChanged` (int)
- void `checkBoxGridShowOriginStateChanged` (int)
- void `checkBoxGridColorMatchCrossHairStateChanged` (int)
- void `chooseGridColor` ()

- void `currentGridColorChanged` (const QColor &)
- void `checkBoxGridLoadFromFileStateChanged` (int)
- void `comboBoxGridTypeCurrentIndexChanged` (const QString &)
- void `checkBoxGridCenterOnOriginStateChanged` (int)
- void `spinBoxGridCenterXValueChanged` (double)
- void `spinBoxGridCenterYValueChanged` (double)
- void `spinBoxGridSizeXValueChanged` (double)
- void `spinBoxGridSizeYValueChanged` (double)
- void `spinBoxGridSpacingXValueChanged` (double)
- void `spinBoxGridSpacingYValueChanged` (double)
- void `spinBoxGridSizeRadiusValueChanged` (double)
- void `spinBoxGridSpacingRadiusValueChanged` (double)
- void `spinBoxGridSpacingAngleValueChanged` (double)
- void `checkBoxRulerShowOnLoadStateChanged` (int)
- void `comboBoxRulerMetricCurrentIndexChanged` (int)
- void `chooseRulerColor` ()
- void `currentRulerColorChanged` (const QColor &)
- void `spinBoxRulerPixelSizeValueChanged` (double)
- void `checkBoxQSnapEndPointStateChanged` (int)
- void `checkBoxQSnapMidPointStateChanged` (int)
- void `checkBoxQSnapCenterStateChanged` (int)
- void `checkBoxQSnapNodeStateChanged` (int)
- void `checkBoxQSnapQuadrantStateChanged` (int)
- void `checkBoxQSnapIntersectionStateChanged` (int)
- void `checkBoxQSnapExtensionStateChanged` (int)
- void `checkBoxQSnapInsertionStateChanged` (int)
- void `checkBoxQSnapPerpendicularStateChanged` (int)
- void `checkBoxQSnapTangentStateChanged` (int)
- void `checkBoxQSnapNearestStateChanged` (int)
- void `checkBoxQSnapApparentStateChanged` (int)
- void `checkBoxQSnapParallelStateChanged` (int)
- void `buttonQSnapSelectAllClicked` ()
- void `buttonQSnapClearAllClicked` ()
- void `comboBoxQSnapLocatorColorCurrentIndexChanged` (int)
- void `sliderQSnapLocatorSizeValueChanged` (int)
- void `sliderQSnapApertureSizeValueChanged` (int)
- void `checkBoxLwtShowLwtStateChanged` (int)
- void `checkBoxLwtRealRenderStateChanged` (int)
- void `checkBoxSelectionModePickFirstStateChanged` (int)
- void `checkBoxSelectionModePickAddStateChanged` (int)
- void `checkBoxSelectionModePickDragStateChanged` (int)
- void `comboBoxSelectionModeCoolGripColorCurrentIndexChanged` (int)
- void `comboBoxSelectionModeHotGripColorCurrentIndexChanged` (int)
- void `sliderSelectionGripSizeValueChanged` (int)
- void `sliderSelectionPickBoxSizeValueChanged` (int)
- void `acceptChanges` ()
- void `rejectChanges` ()

### Private Member Functions

- QWidget \* `createTabGeneral ()`
- QWidget \* `createTabFilePaths ()`
- QWidget \* `createTabDisplay ()`
- QWidget \* `createTabPrompt ()`
- QWidget \* `createTabOpenSave ()`
- QWidget \* `createTabPrinting ()`
- QWidget \* `createTabSnap ()`
- QWidget \* `createTabGridRuler ()`
- QWidget \* `createTabOrthoPolar ()`
- QWidget \* `createTabQuickSnap ()`
- QWidget \* `createTabQuickTrack ()`
- QWidget \* `createTabLineWeight ()`
- QWidget \* `createTabSelection ()`
- void `addColorsToComboBox (QComboBox *comboBox)`

### Private Attributes

- MainWindow \* `mainWin`
- QTabWidget \* `tabWidget`
- QDialogButtonBox \* `buttonBox`
- bool `preview_general_mdi_bg_use_logo`
- bool `preview_general_mdi_bg_use_texture`
- bool `preview_general_mdi_bg_use_color`
- QString `accept_general_mdi_bg_logo`
- QString `accept_general_mdi_bg_texture`
- QRgb `preview_general_mdi_bg_color`
- QRgb `accept_general_mdi_bg_color`
- bool `preview_display_show_scrollbars`
- QRgb `preview_display_crosshair_color`
- QRgb `accept_display_crosshair_color`
- QRgb `preview_display_bg_color`
- QRgb `accept_display_bg_color`
- QRgb `preview_display_selectbox_left_color`
- QRgb `accept_display_selectbox_left_color`
- QRgb `preview_display_selectbox_left_fill`
- QRgb `accept_display_selectbox_left_fill`
- QRgb `preview_display_selectbox_right_color`
- QRgb `accept_display_selectbox_right_color`
- QRgb `preview_display_selectbox_right_fill`
- QRgb `accept_display_selectbox_right_fill`
- quint8 `preview_display_selectbox_alpha`
- QRgb `preview_prompt_text_color`
- QRgb `accept_prompt_text_color`
- QRgb `preview_prompt_bg_color`
- QRgb `accept_prompt_bg_color`
- QString `preview_prompt_font_family`
- QString `preview_prompt_font_style`
- quint8 `preview_prompt_font_size`
- QRgb `preview_grid_color`
- QRgb `accept_grid_color`
- QRgb `preview_ruler_color`
- QRgb `accept_ruler_color`

- bool `preview_lwt_show_lwt`
- bool `preview_lwt_real_render`
- QString `dialog_general_language`
- QString `dialog_general_icon_theme`
- int `dialog_general_icon_size`
- bool `dialog_general_mdi_bg_use_logo`
- bool `dialog_general_mdi_bg_use_texture`
- bool `dialog_general_mdi_bg_use_color`
- QString `dialog_general_mdi_bg_logo`
- QString `dialog_general_mdi_bg_texture`
- QRgb `dialog_general_mdi_bg_color`
- bool `dialog_general_tip_of_the_day`
- bool `dialog_general_system_help_browser`
- bool `dialog_display_use_opengl`
- bool `dialog_display_renderhint_aa`
- bool `dialog_display_renderhint_text_aa`
- bool `dialog_display_renderhint_smooth_pix`
- bool `dialog_display_renderhint_high_aa`
- bool `dialog_display_renderhint_noncosmetic`
- bool `dialog_display_show_scrollbars`
- int `dialog_display_scrollbar_widget_num`
- QRgb `dialog_display_crosshair_color`
- QRgb `dialog_display_bg_color`
- QRgb `dialog_display_selectbox_left_color`
- QRgb `dialog_display_selectbox_left_fill`
- QRgb `dialog_display_selectbox_right_color`
- QRgb `dialog_display_selectbox_right_fill`
- quint8 `dialog_display_selectbox_alpha`
- qreal `dialog_display_zoomscale_in`
- qreal `dialog_display_zoomscale_out`
- quint8 `dialog_display_crosshair_percent`
- QString `dialog_display_units`
- QRgb `dialog_prompt_text_color`
- QRgb `dialog_prompt_bg_color`
- QString `dialog_prompt_font_family`
- QString `dialog_prompt_font_style`
- quint8 `dialog_prompt_font_size`
- bool `dialog_prompt_save_history`
- bool `dialog_prompt_save_history_as_html`
- QString `dialog_prompt_save_history_filename`
- QString `dialog_opensave_custom_filter`
- QString `dialog_opensave_open_format`
- bool `dialog_opensave_open_thumbnail`
- QString `dialog_opensave_save_format`
- bool `dialog_opensave_save_thumbnail`
- quint8 `dialog_opensave_recent_max_files`
- quint8 `dialog_opensave_trim_dst_num_jumps`
- QString `dialog_printing_default_device`
- bool `dialog_printing_use_last_device`
- bool `dialog_printing_disable_bg`
- bool `dialog_grid_show_on_load`
- bool `dialog_grid_show_origin`
- bool `dialog_grid_color_match_crosshair`
- QRgb `dialog_grid_color`
- bool `dialog_grid_load_from_file`

- `QString dialog_grid_type`
- `bool dialog_grid_center_on_origin`
- `qreal dialog_grid_center_x`
- `qreal dialog_grid_center_y`
- `qreal dialog_grid_size_x`
- `qreal dialog_grid_size_y`
- `qreal dialog_grid_spacing_x`
- `qreal dialog_grid_spacing_y`
- `qreal dialog_grid_size_radius`
- `qreal dialog_grid_spacing_radius`
- `qreal dialog_grid_spacing_angle`
- `bool dialog_ruler_show_on_load`
- `bool dialog_ruler_metric`
- `QRgb dialog_ruler_color`
- `quint8 dialog_ruler_pixel_size`
- `bool dialog_qsnap_enabled`
- `QRgb dialog_qsnap_locator_color`
- `quint8 dialog_qsnap_locator_size`
- `quint8 dialog_qsnap_aperture_size`
- `bool dialog_qsnap_endpoint`
- `bool dialog_qsnap_midpoint`
- `bool dialog_qsnap_center`
- `bool dialog_qsnap_node`
- `bool dialog_qsnap_quadrant`
- `bool dialog_qsnap_intersection`
- `bool dialog_qsnap_extension`
- `bool dialog_qsnap_insertion`
- `bool dialog_qsnap_perpendicular`
- `bool dialog_qsnap_tangent`
- `bool dialog_qsnap_nearest`
- `bool dialog_qsnap_apparent`
- `bool dialog_qsnap_parallel`
- `bool dialog_lwt_show_lwt`
- `bool dialog_lwt_real_render`
- `qreal dialog_lwt_default_lwt`
- `bool dialog_selection_mode_pickfirst`
- `bool dialog_selection_mode_pickadd`
- `bool dialog_selection_mode_pickdrag`
- `QRgb dialog_selection_coolgrip_color`
- `QRgb dialog_selection_hotgrip_color`
- `quint8 dialog_selection_grip_size`
- `quint8 dialog_selection_pickbox_size`

### 18.79.1 Constructor & Destructor Documentation

#### 18.79.1.1 Settings\_Dialog() `Settings_Dialog (`

```
    MainWindow * mw,
    const QString & showTab = QString(),
    QWidget * parent = 0 )
```

**18.79.1.2 ~Settings\_Dialog()** ~*Settings\_Dialog* ( )

## 18.79.2 Member Function Documentation

**18.79.2.1 acceptChanges** void acceptChanges ( ) [private], [slot]

**18.79.2.2 addColorsToComboBox()** void addColorsToComboBox ( QComboBox \* *comboBox* ) [private]

**18.79.2.3 buttonCustomFilterClearAll** void buttonCustomFilterClearAll ( bool ) [signal]

**18.79.2.4 buttonCustomFilterClearAllClicked** void buttonCustomFilterClearAllClicked ( ) [private], [slot]

**18.79.2.5 buttonCustomFilterSelectAll** void buttonCustomFilterSelectAll ( bool ) [signal]

**18.79.2.6 buttonCustomFilterSelectAllClicked** void buttonCustomFilterSelectAllClicked ( ) [private], [slot]

**18.79.2.7 buttonQSnapClearAll** void buttonQSnapClearAll ( bool ) [signal]

**18.79.2.8 buttonQSnapClearAllClicked** void buttonQSnapClearAllClicked ( ) [private], [slot]

**18.79.2.9 buttonQSnapSelectAll** void buttonQSnapSelectAll ( bool ) [signal]

**18.79.2.10 buttonQSnapSelectAllClicked** void buttonQSnapSelectAllClicked () [private], [slot]

**18.79.2.11 checkBoxCustomFilterStateChanged** void checkBoxCustomFilterStateChanged ( int checked ) [private], [slot]

**18.79.2.12 checkBoxDisableBGStateChanged** void checkBoxDisableBGStateChanged ( int checked ) [private], [slot]

**18.79.2.13 checkBoxGeneralMdiBGUseColorStateChanged** void checkBoxGeneralMdiBGUseColorStateChanged ( int checked ) [private], [slot]

**18.79.2.14 checkBoxGeneralMdiBGUseLogoStateChanged** void checkBoxGeneralMdiBGUseLogoStateChanged ( int checked ) [private], [slot]

**18.79.2.15 checkBoxGeneralMdiBGUseTextureStateChanged** void checkBoxGeneralMdiBGUseTextureStateChanged ( int checked ) [private], [slot]

**18.79.2.16 checkBoxGridCenterOnOriginStateChanged** void checkBoxGridCenterOnOriginStateChanged ( int checked ) [private], [slot]

**18.79.2.17 checkBoxGridColorMatchCrossHairStateChanged** void checkBoxGridColorMatchCrossHairStateChanged ( int checked ) [private], [slot]

**18.79.2.18 `checkBoxGridLoadFromFileStateChanged`** void checkBoxGridLoadFromFileStateChanged ( int *checked* ) [private], [slot]

**18.79.2.19 `checkBoxGridShowOnLoadStateChanged`** void checkBoxGridShowOnLoadStateChanged ( int *checked* ) [private], [slot]

**18.79.2.20 `checkBoxGridShowOriginStateChanged`** void checkBoxGridShowOriginStateChanged ( int *checked* ) [private], [slot]

**18.79.2.21 `checkBoxLwtRealRenderStateChanged`** void checkBoxLwtRealRenderStateChanged ( int *checked* ) [private], [slot]

**18.79.2.22 `checkBoxLwtShowLwtStateChanged`** void checkBoxLwtShowLwtStateChanged ( int *checked* ) [private], [slot]

**18.79.2.23 `checkBoxPromptSaveHistoryAsHtmlStateChanged`** void checkBoxPromptSaveHistoryAsHtmlStateChanged ( int *checked* ) [private], [slot]

**18.79.2.24 `checkBoxPromptSaveHistoryStateChanged`** void checkBoxPromptSaveHistoryStateChanged ( int *checked* ) [private], [slot]

**18.79.2.25 `checkBoxQSnapApparentStateChanged`** void checkBoxQSnapApparentStateChanged ( int *checked* ) [private], [slot]

**18.79.2.26 `checkBoxQSnapCenterStateChanged`** void checkBoxQSnapCenterStateChanged ( int *checked* ) [private], [slot]

**18.79.2.27 checkBoxQSnapEndPointStateChanged** void checkBoxQSnapEndPointStateChanged ( int *checked* ) [private], [slot]

**18.79.2.28 checkBoxQSnapExtensionStateChanged** void checkBoxQSnapExtensionStateChanged ( int *checked* ) [private], [slot]

**18.79.2.29 checkBoxQSnapInsertionStateChanged** void checkBoxQSnapInsertionStateChanged ( int *checked* ) [private], [slot]

**18.79.2.30 checkBoxQSnapIntersectionStateChanged** void checkBoxQSnapIntersectionStateChanged ( int *checked* ) [private], [slot]

**18.79.2.31 checkBoxQSnapMidPointStateChanged** void checkBoxQSnapMidPointStateChanged ( int *checked* ) [private], [slot]

**18.79.2.32 checkBoxQSnapNearestStateChanged** void checkBoxQSnapNearestStateChanged ( int *checked* ) [private], [slot]

**18.79.2.33 checkBoxQSnapNodeStateChanged** void checkBoxQSnapNodeStateChanged ( int *checked* ) [private], [slot]

**18.79.2.34 checkBoxQSnapParallelStateChanged** void checkBoxQSnapParallelStateChanged ( int *checked* ) [private], [slot]

**18.79.2.35 checkBoxQSnapPerpendicularStateChanged** void checkBoxQSnapPerpendicularStateChanged ( int *checked* ) [private], [slot]

**18.79.2.36 checkBoxQSnapQuadrantStateChanged** void checkBoxQSnapQuadrantStateChanged ( int *checked* ) [private], [slot]

**18.79.2.37 checkBoxQSnapTangentStateChanged** void checkBoxQSnapTangentStateChanged ( int *checked* ) [private], [slot]

**18.79.2.38 checkBoxRenderHintAAStateChanged** void checkBoxRenderHintAAStateChanged ( int *checked* ) [private], [slot]

**18.79.2.39 checkBoxRenderHintHighAAStateChanged** void checkBoxRenderHintHighAAStateChanged ( int *checked* ) [private], [slot]

**18.79.2.40 checkBoxRenderHintNonCosmeticStateChanged** void checkBoxRenderHintNonCosmeticStateChanged ( int *checked* ) [private], [slot]

**18.79.2.41 checkBoxRenderHintSmoothPixStateChanged** void checkBoxRenderHintSmoothPixStateChanged ( int *checked* ) [private], [slot]

**18.79.2.42 checkBoxRenderHintTextAAStateChanged** void checkBoxRenderHintTextAAStateChanged ( int *checked* ) [private], [slot]

**18.79.2.43 checkBoxRulerShowOnLoadStateChanged** void checkBoxRulerShowOnLoadStateChanged ( int *checked* ) [private], [slot]

**18.79.2.44 checkBoxSelectionModePickAddStateChanged** void checkBoxSelectionModePickAddStateChanged ( int *checked* ) [private], [slot]

**18.79.2.45 checkBoxSelectionModePickDragStateChanged** void checkBoxSelectionModePickDragStateChanged ( int checked ) [private], [slot]

**18.79.2.46 checkBoxSelectionModePickFirstStateChanged** void checkBoxSelectionModePickFirstStateChanged ( int checked ) [private], [slot]

**18.79.2.47 checkBoxShowScrollBarsStateChanged** void checkBoxShowScrollBarsStateChanged ( int checked ) [private], [slot]

**18.79.2.48 checkBoxTipOfTheDayStateChanged** void checkBoxTipOfTheDayStateChanged ( int checked ) [private], [slot]

**18.79.2.49 checkBoxUseOpenGLStateChanged** void checkBoxUseOpenGLStateChanged ( int checked ) [private], [slot]

**18.79.2.50 chooseDisplayBackgroundColor** void chooseDisplayBackgroundColor ( ) [private], [slot]

**18.79.2.51 chooseDisplayCrossHairColor** void chooseDisplayCrossHairColor ( ) [private], [slot]

**18.79.2.52 chooseDisplaySelectBoxLeftColor** void chooseDisplaySelectBoxLeftColor ( ) [private], [slot]

**18.79.2.53 chooseDisplaySelectBoxLeftFill** void chooseDisplaySelectBoxLeftFill ( ) [private], [slot]

**18.79.2.54 chooseDisplaySelectBoxRightColor** void chooseDisplaySelectBoxRightColor ( ) [private],  
[slot]

**18.79.2.55 chooseDisplaySelectBoxRightFill** void chooseDisplaySelectBoxRightFill ( ) [private],  
[slot]

**18.79.2.56 chooseGeneralMdiBackgroundColor** void chooseGeneralMdiBackgroundColor ( ) [private],  
[slot]

**18.79.2.57 chooseGeneralMdiBackgroundLogo** void chooseGeneralMdiBackgroundLogo ( ) [private],  
[slot]

**18.79.2.58 chooseGeneralMdiBackgroundTexture** void chooseGeneralMdiBackgroundTexture ( ) [private],  
[slot]

**18.79.2.59 chooseGridColor** void chooseGridColor ( ) [private], [slot]

**18.79.2.60 choosePromptBackgroundColor** void choosePromptBackgroundColor ( ) [private],  
[slot]

**18.79.2.61 choosePromptTextColor** void choosePromptTextColor ( ) [private], [slot]

**18.79.2.62 chooseRulerColor** void chooseRulerColor ( ) [private], [slot]

**18.79.2.63 comboBoxGridTypeCurrentIndexChanged** void comboBoxGridTypeCurrentIndexChanged ( const QString & type ) [private], [slot]

**18.79.2.64 comboBoxIconSizeCurrentIndexChanged** void comboBoxIconSizeCurrentIndexChanged ( int index ) [private], [slot]

**18.79.2.65 comboBoxIconThemeCurrentIndexChanged** void comboBoxIconThemeCurrentIndexChanged ( const QString & theme ) [private], [slot]

**18.79.2.66 comboBoxLanguageCurrentIndexChanged** void comboBoxLanguageCurrentIndexChanged ( const QString & lang ) [private], [slot]

**18.79.2.67 comboBoxPromptFontFamilyCurrentIndexChanged** void comboBoxPromptFontFamilyCurrentIndexChanged ( const QString & family ) [private], [slot]

**18.79.2.68 comboBoxPromptFontStyleCurrentIndexChanged** void comboBoxPromptFontStyleCurrentIndexChanged ( const QString & style ) [private], [slot]

**18.79.2.69 comboBoxQSnapLocatorColorCurrentIndexChanged** void comboBoxQSnapLocatorColorCurrentIndexChanged ( int index ) [private], [slot]

**18.79.2.70 comboBoxRulerMetricCurrentIndexChanged** void comboBoxRulerMetricCurrentIndexChanged ( int index ) [private], [slot]

**18.79.2.71 comboBoxScrollBarWidgetCurrentIndexChanged** void comboBoxScrollBarWidgetCurrentIndexChanged ( int index ) [private], [slot]

**18.79.2.72 comboBoxSelectionCoolGripColorCurrentIndexChanged** void comboBoxSelectionCoolGripColorCurrentIndexChanged ( int index ) [private], [slot]

**18.79.2.73 comboBoxSelectionHotGripColorCurrentIndexChanged** void comboBoxSelectionHotGripColorCurrentIndexChanged ( int index ) [private], [slot]

**18.79.2.74 createTabDisplay()** QWidget \* createTabDisplay () [private]

**18.79.2.75 createTabFilesPaths()** QWidget \* createTabFilesPaths () [private]

**18.79.2.76 createTabGeneral()** QWidget \* createTabGeneral () [private]

**18.79.2.77 createTabGridRuler()** QWidget \* createTabGridRuler () [private]

**18.79.2.78 createTabLineWeight()** QWidget \* createTabLineWeight () [private]

**18.79.2.79 createTabOpenSave()** QWidget \* createTabOpenSave () [private]

**18.79.2.80 createTabOrthoPolar()** QWidget \* createTabOrthoPolar () [private]

**18.79.2.81 createTabPrinting()** QWidget \* createTabPrinting () [private]

**18.79.2.82 createTabPrompt()** QWidget \* createTabPrompt () [private]

**18.79.2.83 createTabQuickSnap()** QWidget \* createTabQuickSnap () [private]

**18.79.2.84 `createTabQuickTrack()`** QWidget \* createTabQuickTrack () [private]

**18.79.2.85 `createTabSelection()`** QWidget \* createTabSelection () [private]

**18.79.2.86 `createTabSnap()`** QWidget \* createTabSnap () [private]

**18.79.2.87 `currentDisplayBackgroundColorChanged`** void currentDisplayBackgroundColorChanged ( const QColor & color ) [private], [slot]

**18.79.2.88 `currentDisplayCrossHairColorChanged`** void currentDisplayCrossHairColorChanged ( const QColor & color ) [private], [slot]

**18.79.2.89 `currentDisplaySelectBoxLeftColorChanged`** void currentDisplaySelectBoxLeftColorChanged ( const QColor & color ) [private], [slot]

**18.79.2.90 `currentDisplaySelectBoxLeftFillChanged`** void currentDisplaySelectBoxLeftFillChanged ( const QColor & color ) [private], [slot]

**18.79.2.91 `currentDisplaySelectBoxRightColorChanged`** void currentDisplaySelectBoxRightColorChanged ( const QColor & color ) [private], [slot]

**18.79.2.92 `currentDisplaySelectBoxRightFillChanged`** void currentDisplaySelectBoxRightFillChanged ( const QColor & color ) [private], [slot]

**18.79.2.93 currentGeneralMdiBackgroundColorChanged** void currentGeneralMdiBackgroundColorChanged ( const QColor & color ) [private], [slot]

**18.79.2.94 currentGridColorChanged** void currentGridColorChanged ( const QColor & color ) [private], [slot]

**18.79.2.95 currentPromptBackgroundColorChanged** void currentPromptBackgroundColorChanged ( const QColor & color ) [private], [slot]

**18.79.2.96 currentPromptTextColorChanged** void currentPromptTextColorChanged ( const QColor & color ) [private], [slot]

**18.79.2.97 currentRulerColorChanged** void currentRulerColorChanged ( const QColor & color ) [private], [slot]

**18.79.2.98 rejectChanges** void rejectChanges ( ) [private], [slot]

**18.79.2.99 sliderQSnapApertureSizeValueChanged** void sliderQSnapApertureSizeValueChanged ( int value ) [private], [slot]

**18.79.2.100 sliderQSnapLocatorSizeValueChanged** void sliderQSnapLocatorSizeValueChanged ( int value ) [private], [slot]

**18.79.2.101 sliderSelectionGripSizeValueChanged** void sliderSelectionGripSizeValueChanged ( int value ) [private], [slot]

**18.79.2.102 sliderSelectionPickBoxSizeValueChanged** void sliderSelectionPickBoxSizeValueChanged ( int value ) [private], [slot]

**18.79.2.103 spinBoxDisplaySelectBoxAlphaValueChanged** void spinBoxDisplaySelectBoxAlphaValueChanged ( int value ) [private], [slot]

**18.79.2.104 spinBoxGridCenterXValueChanged** void spinBoxGridCenterXValueChanged ( double value ) [private], [slot]

**18.79.2.105 spinBoxGridCenterYValueChanged** void spinBoxGridCenterYValueChanged ( double value ) [private], [slot]

**18.79.2.106 spinBoxGridSizeRadiusValueChanged** void spinBoxGridSizeRadiusValueChanged ( double value ) [private], [slot]

**18.79.2.107 spinBoxGridSizeXValueChanged** void spinBoxGridSizeXValueChanged ( double value ) [private], [slot]

**18.79.2.108 spinBoxGridSizeYValueChanged** void spinBoxGridSizeYValueChanged ( double value ) [private], [slot]

**18.79.2.109 spinBoxGridSpacingAngleValueChanged** void spinBoxGridSpacingAngleValueChanged ( double value ) [private], [slot]

**18.79.2.110 spinBoxGridSpacingRadiusValueChanged** void spinBoxGridSpacingRadiusValueChanged ( double value ) [private], [slot]

- 18.79.2.111 `spinBoxGridSpacingXValueChanged`** void spinBoxGridSpacingXValueChanged ( double value ) [private], [slot]
- 18.79.2.112 `spinBoxGridSpacingYValueChanged`** void spinBoxGridSpacingYValueChanged ( double value ) [private], [slot]
- 18.79.2.113 `spinBoxPromptFontSizeValueChanged`** void spinBoxPromptFontSizeValueChanged ( int value ) [private], [slot]
- 18.79.2.114 `spinBoxRecentMaxFilesValueChanged`** void spinBoxRecentMaxFilesValueChanged ( int value ) [private], [slot]
- 18.79.2.115 `spinBoxRulerPixelSizeValueChanged`** void spinBoxRulerPixelSizeValueChanged ( double value ) [private], [slot]
- 18.79.2.116 `spinBoxTrimDstNumJumpsValueChanged`** void spinBoxTrimDstNumJumpsValueChanged ( int value ) [private], [slot]
- 18.79.2.117 `spinBoxZoomScaleInValueChanged`** void spinBoxZoomScaleInValueChanged ( double value ) [private], [slot]
- 18.79.2.118 `spinBoxZoomScaleOutValueChanged`** void spinBoxZoomScaleOutValueChanged ( double value ) [private], [slot]
- 18.79.3 Member Data Documentation**
- 18.79.3.1 `accept_display_bg_color`** QRgb accept\_display\_bg\_color [private]

**18.79.3.2 accept\_display\_crosshair\_color** QRgb accept\_display\_crosshair\_color [private]

**18.79.3.3 accept\_display\_selectbox\_left\_color** QRgb accept\_display\_selectbox\_left\_color [private]

**18.79.3.4 accept\_display\_selectbox\_left\_fill** QRgb accept\_display\_selectbox\_left\_fill [private]

**18.79.3.5 accept\_display\_selectbox\_right\_color** QRgb accept\_display\_selectbox\_right\_color [private]

**18.79.3.6 accept\_display\_selectbox\_right\_fill** QRgb accept\_display\_selectbox\_right\_fill [private]

**18.79.3.7 accept\_general\_mdi\_bg\_color** QRgb accept\_general\_mdi\_bg\_color [private]

**18.79.3.8 accept\_general\_mdi\_bg\_logo** QString accept\_general\_mdi\_bg\_logo [private]

**18.79.3.9 accept\_general\_mdi\_bg\_texture** QString accept\_general\_mdi\_bg\_texture [private]

**18.79.3.10 accept\_grid\_color** QRgb accept\_grid\_color [private]

**18.79.3.11 accept\_prompt\_bg\_color** QRgb accept\_prompt\_bg\_color [private]

**18.79.3.12 accept\_prompt\_text\_color** QRgb accept\_prompt\_text\_color [private]

**18.79.3.13 accept\_ruler\_color** QRgb accept\_ruler\_color [private]

**18.79.3.14 buttonBox** QDialogButtonBox\* buttonBox [private]

**18.79.3.15 dialog\_display\_bg\_color** QRgb dialog\_display\_bg\_color [private]

**18.79.3.16 dialog\_display\_crosshair\_color** QRgb dialog\_display\_crosshair\_color [private]

**18.79.3.17 dialog\_display\_crosshair\_percent** quint8 dialog\_display\_crosshair\_percent [private]

**18.79.3.18 dialog\_display\_renderhint\_aa** bool dialog\_display\_renderhint\_aa [private]

**18.79.3.19 dialog\_display\_renderhint\_high\_aa** bool dialog\_display\_renderhint\_high\_aa [private]

**18.79.3.20 dialog\_display\_renderhint\_noncosmetic** bool dialog\_display\_renderhint\_noncosmetic [private]

**18.79.3.21 dialog\_display\_renderhint\_smooth\_pix** bool dialog\_display\_renderhint\_smooth\_pix [private]

**18.79.3.22 dialog\_display\_renderhint\_text\_aa** bool dialog\_display\_renderhint\_text\_aa [private]

**18.79.3.23 dialog\_display\_scrollbar\_widget\_num** int dialog\_display\_scrollbar\_widget\_num [private]

**18.79.3.24 dialog\_display\_selectbox\_alpha** quint8 dialog\_display\_selectbox\_alpha [private]

**18.79.3.25 dialog\_display\_selectbox\_left\_color** QRgb dialog\_display\_selectbox\_left\_color [private]

**18.79.3.26 dialog\_display\_selectbox\_left\_fill** QRgb dialog\_display\_selectbox\_left\_fill [private]

**18.79.3.27 dialog\_display\_selectbox\_right\_color** QRgb dialog\_display\_selectbox\_right\_color [private]

**18.79.3.28 dialog\_display\_selectbox\_right\_fill** QRgb dialog\_display\_selectbox\_right\_fill [private]

**18.79.3.29 dialog\_display\_show\_scrollbars** bool dialog\_display\_show\_scrollbars [private]

**18.79.3.30 dialog\_display\_units** QString dialog\_display\_units [private]

**18.79.3.31 dialog\_display\_use\_opengl** bool dialog\_display\_use\_opengl [private]

**18.79.3.32 dialog\_display\_zoomscale\_in** qreal dialog\_display\_zoomscale\_in [private]

**18.79.3.33 dialog\_display\_zoomscale\_out** qreal dialog\_display\_zoomscale\_out [private]

**18.79.3.34 dialog\_general\_icon\_size** int dialog\_general\_icon\_size [private]

**18.79.3.35 dialog\_general\_icon\_theme** `QString dialog_general_icon_theme [private]`

**18.79.3.36 dialog\_general\_language** `QString dialog_general_language [private]`

**18.79.3.37 dialog\_general\_mdi\_bg\_color** `QRgb dialog_general_mdi_bg_color [private]`

**18.79.3.38 dialog\_general\_mdi\_bg\_logo** `QString dialog_general_mdi_bg_logo [private]`

**18.79.3.39 dialog\_general\_mdi\_bg\_texture** `QString dialog_general_mdi_bg_texture [private]`

**18.79.3.40 dialog\_general\_mdi\_bg\_use\_color** `bool dialog_general_mdi_bg_use_color [private]`

**18.79.3.41 dialog\_general\_mdi\_bg\_use\_logo** `bool dialog_general_mdi_bg_use_logo [private]`

**18.79.3.42 dialog\_general\_mdi\_bg\_use\_texture** `bool dialog_general_mdi_bg_use_texture [private]`

**18.79.3.43 dialog\_general\_system\_help\_browser** `bool dialog_general_system_help_browser [private]`

**18.79.3.44 dialog\_general\_tip\_of\_the\_day** `bool dialog_general_tip_of_the_day [private]`

**18.79.3.45 dialog\_grid\_center\_on\_origin** `bool dialog_grid_center_on_origin [private]`

**18.79.3.46 dialog\_grid\_center\_x** qreal dialog\_grid\_center\_x [private]

**18.79.3.47 dialog\_grid\_center\_y** qreal dialog\_grid\_center\_y [private]

**18.79.3.48 dialog\_grid\_color** QRgb dialog\_grid\_color [private]

**18.79.3.49 dialog\_grid\_color\_match\_crosshair** bool dialog\_grid\_color\_match\_crosshair [private]

**18.79.3.50 dialog\_grid\_load\_from\_file** bool dialog\_grid\_load\_from\_file [private]

**18.79.3.51 dialog\_grid\_show\_on\_load** bool dialog\_grid\_show\_on\_load [private]

**18.79.3.52 dialog\_grid\_show\_origin** bool dialog\_grid\_show\_origin [private]

**18.79.3.53 dialog\_grid\_size\_radius** qreal dialog\_grid\_size\_radius [private]

**18.79.3.54 dialog\_grid\_size\_x** qreal dialog\_grid\_size\_x [private]

**18.79.3.55 dialog\_grid\_size\_y** qreal dialog\_grid\_size\_y [private]

**18.79.3.56 dialog\_grid\_spacing\_angle** qreal dialog\_grid\_spacing\_angle [private]

**18.79.3.57 dialog\_grid\_spacing\_radius** qreal dialog\_grid\_spacing\_radius [private]

**18.79.3.58 dialog\_grid\_spacing\_x** qreal dialog\_grid\_spacing\_x [private]

**18.79.3.59 dialog\_grid\_spacing\_y** qreal dialog\_grid\_spacing\_y [private]

**18.79.3.60 dialog\_grid\_type** QString dialog\_grid\_type [private]

**18.79.3.61 dialog\_lwt\_default\_lwt** qreal dialog\_lwt\_default\_lwt [private]

**18.79.3.62 dialog\_lwt\_real\_render** bool dialog\_lwt\_real\_render [private]

**18.79.3.63 dialog\_lwt\_show\_lwt** bool dialog\_lwt\_show\_lwt [private]

**18.79.3.64 dialog\_opensave\_custom\_filter** QString dialog\_opensave\_custom\_filter [private]

**18.79.3.65 dialog\_opensave\_open\_format** QString dialog\_opensave\_open\_format [private]

**18.79.3.66 dialog\_opensave\_open\_thumbnail** bool dialog\_opensave\_open\_thumbnail [private]

**18.79.3.67 dialog\_opensave\_recent\_max\_files** quint8 dialog\_opensave\_recent\_max\_files [private]

18.79.3.68 **dialog\_opensave\_save\_format** `QString dialog_opensave_save_format [private]`

18.79.3.69 **dialog\_opensave\_save\_thumbnail** `bool dialog_opensave_save_thumbnail [private]`

18.79.3.70 **dialog\_opensave\_trim\_dst\_num\_jumps** `quint8 dialog_opensave_trim_dst_num_jumps [private]`

18.79.3.71 **dialog\_printing\_default\_device** `QString dialog_printing_default_device [private]`

18.79.3.72 **dialog\_printing\_disable\_bg** `bool dialog_printing_disable_bg [private]`

18.79.3.73 **dialog\_printing\_use\_last\_device** `bool dialog_printing_use_last_device [private]`

18.79.3.74 **dialog\_prompt\_bg\_color** `QRgb dialog_prompt_bg_color [private]`

18.79.3.75 **dialog\_prompt\_font\_family** `QString dialog_prompt_font_family [private]`

18.79.3.76 **dialog\_prompt\_font\_size** `quint8 dialog_prompt_font_size [private]`

18.79.3.77 **dialog\_prompt\_font\_style** `QString dialog_prompt_font_style [private]`

18.79.3.78 **dialog\_prompt\_save\_history** `bool dialog_prompt_save_history [private]`

**18.79.3.79 dialog\_prompt\_save\_history\_as\_html** bool dialog\_prompt\_save\_history\_as\_html [private]

**18.79.3.80 dialog\_prompt\_save\_history\_filename** QString dialog\_prompt\_save\_history\_filename [private]

**18.79.3.81 dialog\_prompt\_text\_color** QRgb dialog\_prompt\_text\_color [private]

**18.79.3.82 dialog\_qsnap\_aperture\_size** quint8 dialog\_qsnap\_aperture\_size [private]

**18.79.3.83 dialog\_qsnap\_apparent** bool dialog\_qsnap\_apparent [private]

**18.79.3.84 dialog\_qsnap\_center** bool dialog\_qsnap\_center [private]

**18.79.3.85 dialog\_qsnap\_enabled** bool dialog\_qsnap\_enabled [private]

**18.79.3.86 dialog\_qsnap\_endpoint** bool dialog\_qsnap\_endpoint [private]

**18.79.3.87 dialog\_qsnap\_extension** bool dialog\_qsnap\_extension [private]

**18.79.3.88 dialog\_qsnap\_insertion** bool dialog\_qsnap\_insertion [private]

**18.79.3.89 dialog\_qsnap\_intersection** bool dialog\_qsnap\_intersection [private]

**18.79.3.90 dialog\_qsnap\_locator\_color** QRgb dialog\_qsnap\_locator\_color [private]

**18.79.3.91 dialog\_qsnap\_locator\_size** quint8 dialog\_qsnap\_locator\_size [private]

**18.79.3.92 dialog\_qsnap\_midpoint** bool dialog\_qsnap\_midpoint [private]

**18.79.3.93 dialog\_qsnap\_nearest** bool dialog\_qsnap\_nearest [private]

**18.79.3.94 dialog\_qsnap\_node** bool dialog\_qsnap\_node [private]

**18.79.3.95 dialog\_qsnap\_parallel** bool dialog\_qsnap\_parallel [private]

**18.79.3.96 dialog\_qsnap\_perpendicular** bool dialog\_qsnap\_perpendicular [private]

**18.79.3.97 dialog\_qsnap\_quadrant** bool dialog\_qsnap\_quadrant [private]

**18.79.3.98 dialog\_qsnap\_tangent** bool dialog\_qsnap\_tangent [private]

**18.79.3.99 dialog\_ruler\_color** QRgb dialog\_ruler\_color [private]

**18.79.3.100 dialog\_ruler\_metric** bool dialog\_ruler\_metric [private]

**18.79.3.101 dialog\_ruler\_pixel\_size** quint8 dialog\_ruler\_pixel\_size [private]

**18.79.3.102 dialog\_ruler\_show\_on\_load** bool dialog\_ruler\_show\_on\_load [private]

**18.79.3.103 dialog\_selection\_coolgrip\_color** QRgb dialog\_selection\_coolgrip\_color [private]

**18.79.3.104 dialog\_selection\_grip\_size** quint8 dialog\_selection\_grip\_size [private]

**18.79.3.105 dialog\_selection\_hotgrip\_color** QRgb dialog\_selection\_hotgrip\_color [private]

**18.79.3.106 dialog\_selection\_mode\_pickadd** bool dialog\_selection\_mode\_pickadd [private]

**18.79.3.107 dialog\_selection\_mode\_pickdrag** bool dialog\_selection\_mode\_pickdrag [private]

**18.79.3.108 dialog\_selection\_mode\_pickfirst** bool dialog\_selection\_mode\_pickfirst [private]

**18.79.3.109 dialog\_selection\_pickbox\_size** quint8 dialog\_selection\_pickbox\_size [private]

**18.79.3.110 mainWin** MainWindow\* mainWin [private]

**18.79.3.111 preview\_display\_bg\_color** QRgb preview\_display\_bg\_color [private]

**18.79.3.112 preview\_display\_crosshair\_color** QRgb preview\_display\_crosshair\_color [private]

**18.79.3.113 preview\_display\_selectbox\_alpha** quint8 preview\_display\_selectbox\_alpha [private]

**18.79.3.114 preview\_display\_selectbox\_left\_color** QRgb preview\_display\_selectbox\_left\_color [private]

**18.79.3.115 preview\_display\_selectbox\_left\_fill** QRgb preview\_display\_selectbox\_left\_fill [private]

**18.79.3.116 preview\_display\_selectbox\_right\_color** QRgb preview\_display\_selectbox\_right\_color [private]

**18.79.3.117 preview\_display\_selectbox\_right\_fill** QRgb preview\_display\_selectbox\_right\_fill [private]

**18.79.3.118 preview\_display\_show\_scrollbars** bool preview\_display\_show\_scrollbars [private]

**18.79.3.119 preview\_general\_mdi\_bg\_color** QRgb preview\_general\_mdi\_bg\_color [private]

**18.79.3.120 preview\_general\_mdi\_bg\_use\_color** bool preview\_general\_mdi\_bg\_use\_color [private]

**18.79.3.121 preview\_general\_mdi\_bg\_use\_logo** bool preview\_general\_mdi\_bg\_use\_logo [private]

**18.79.3.122 preview\_general\_mdi\_bg\_use\_texture** bool preview\_general\_mdi\_bg\_use\_texture [private]

**18.79.3.123** **preview\_grid\_color** QRgb preview\_grid\_color [private]

**18.79.3.124** **preview\_lwt\_real\_render** bool preview\_lwt\_real\_render [private]

**18.79.3.125** **preview\_lwt\_show\_lwt** bool preview\_lwt\_show\_lwt [private]

**18.79.3.126** **preview\_prompt\_bg\_color** QRgb preview\_prompt\_bg\_color [private]

**18.79.3.127** **preview\_prompt\_font\_family** QString preview\_prompt\_font\_family [private]

**18.79.3.128** **preview\_prompt\_font\_size** quint8 preview\_prompt\_font\_size [private]

**18.79.3.129** **preview\_prompt\_font\_style** QString preview\_prompt\_font\_style [private]

**18.79.3.130** **preview\_prompt\_text\_color** QRgb preview\_prompt\_text\_color [private]

**18.79.3.131** **preview\_ruler\_color** QRgb preview\_ruler\_color [private]

**18.79.3.132** **tabWidget** QTabWidget\* tabWidget [private]

The documentation for this class was generated from the following files:

- embroidermodder2/[settings-dialog.h](#)
- embroidermodder2/[settings-dialog.cpp](#)

## 18.80 StatusBar Class Reference

```
#include <statusbar.h>
```

### Public Member Functions

- `StatusBar (MainWindow *mw, QWidget *parent=0)`
- `void setMouseCoord (qreal x, qreal y)`

### Public Attributes

- `StatusBarButton * statusBarSnapButton`
- `StatusBarButton * statusBarGridButton`
- `StatusBarButton * statusBarRulerButton`
- `StatusBarButton * statusBarOrthoButton`
- `StatusBarButton * statusBarPolarButton`
- `StatusBarButton * statusBarQSnapButton`
- `StatusBarButton * statusBarQTrackButton`
- `StatusBarButton * statusBarLwtButton`
- `QLabel * statusBarMouseCoord`

#### 18.80.1 Constructor & Destructor Documentation

```
18.80.1.1 StatusBar() StatusBar (  
    MainWindow * mw,  
    QWidget * parent = 0 )
```

#### 18.80.2 Member Function Documentation

```
18.80.2.1 setMouseCoord() void setMouseCoord (  
    qreal x,  
    qreal y )
```

#### 18.80.3 Member Data Documentation

```
18.80.3.1 statusBarGridButton StatusBarButton* statusBarGridButton
```

**18.80.3.2 statusBarLwtButton** `StatusBarButton*` `statusBarLwtButton`

**18.80.3.3 statusBarMouseCoord** `QLabel*` `statusBarMouseCoord`

**18.80.3.4 statusBarOrthoButton** `StatusBarButton*` `statusBarOrthoButton`

**18.80.3.5 statusBarPolarButton** `StatusBarButton*` `statusBarPolarButton`

**18.80.3.6 statusBarQSnapButton** `StatusBarButton*` `statusBarQSnapButton`

**18.80.3.7 statusBarQTrackButton** `StatusBarButton*` `statusBarQTrackButton`

**18.80.3.8 statusBarRulerButton** `StatusBarButton*` `statusBarRulerButton`

**18.80.3.9 statusBarSnapButton** `StatusBarButton*` `statusBarSnapButton`

The documentation for this class was generated from the following files:

- `embroidermodder2/statusbar.h`
- `embroidermodder2/statusbar.cpp`

## 18.81 StatusBarButton Class Reference

```
#include <statusbar-button.h>
```

### Public Slots

- `void enableLwt ()`
- `void disableLwt ()`
- `void enableReal ()`
- `void disableReal ()`

## Public Member Functions

- `StatusBarButton (QString buttonText, MainWindow *mw, StatusBar *statbar, QWidget *parent=0)`

## Protected Member Functions

- `void contextMenuEvent (QContextMenuEvent *event=0)`

## Private Slots

- `void settingsSnap ()`
- `void settingsGrid ()`
- `void settingsRuler ()`
- `void settingsOrtho ()`
- `void settingsPolar ()`
- `void settingsQSnap ()`
- `void settingsQTrack ()`
- `void settingsLwt ()`
- `void toggleSnap (bool on)`
- `void toggleGrid (bool on)`
- `void toggleRuler (bool on)`
- `void toggleOrtho (bool on)`
- `void togglePolar (bool on)`
- `void toggleQSnap (bool on)`
- `void toggleQTrack (bool on)`
- `void toggleLwt (bool on)`

## Private Attributes

- `MainWindow * mainWin`
- `StatusBar * statusbar`

### 18.81.1 Constructor & Destructor Documentation

#### 18.81.1.1 StatusBarButton() `StatusBarButton (`

```
    QString buttonText,
    MainWindow * mw,
    StatusBar * statbar,
    QWidget * parent = 0 )
```

### 18.81.2 Member Function Documentation

**18.81.2.1 contextMenuEvent()** void contextMenuEvent ( QContextMenuEvent \* event = 0 ) [protected]

**18.81.2.2 disableLwt** void disableLwt ( ) [slot]

**18.81.2.3 disableReal** void disableReal ( ) [slot]

**18.81.2.4 enableLwt** void enableLwt ( ) [slot]

**18.81.2.5 enableReal** void enableReal ( ) [slot]

**18.81.2.6 settingsGrid** void settingsGrid ( ) [private], [slot]

**18.81.2.7 settingsLwt** void settingsLwt ( ) [private], [slot]

**18.81.2.8 settingsOrtho** void settingsOrtho ( ) [private], [slot]

**18.81.2.9 settingsPolar** void settingsPolar ( ) [private], [slot]

**18.81.2.10 settingsQSnap** void settingsQSnap ( ) [private], [slot]

**18.81.2.11 settingsQTrack** void settingsQTrack ( ) [private], [slot]

**18.81.2.12 settingsRuler** void settingsRuler ( ) [private], [slot]

**18.81.2.13 settingsSnap** void settingsSnap ( ) [private], [slot]

**18.81.2.14 toggleGrid** void toggleGrid ( bool on ) [private], [slot]

**18.81.2.15 toggleLwt** void toggleLwt ( bool on ) [private], [slot]

**18.81.2.16 toggleOrtho** void toggleOrtho ( bool on ) [private], [slot]

**18.81.2.17 togglePolar** void togglePolar ( bool on ) [private], [slot]

**18.81.2.18 toggleQSnap** void toggleQSnap ( bool on ) [private], [slot]

**18.81.2.19 toggleQTrack** void toggleQTrack ( bool on ) [private], [slot]

**18.81.2.20 toggleRuler** void toggleRuler ( bool on ) [private], [slot]

**18.81.2.21 toggleSnap** void toggleSnap ( bool on ) [private], [slot]

### 18.81.3 Member Data Documentation

**18.81.3.1 mainWin** `MainWindow* mainWin [private]`

**18.81.3.2 statusbar** `StatusBar* statusbar [private]`

The documentation for this class was generated from the following files:

- `embroidermodder2/statusbar-button.h`
- `embroidermodder2/statusbar-button.cpp`

## 18.82 StxThread\_ Struct Reference

```
#include <embroidery_internal.h>
```

### Public Attributes

- `char * colorCode`
- `char * colorName`
- `char * sectionName`
- `SubDescriptor * subDescriptors`
- `EmbColor stxColor`

### 18.82.1 Member Data Documentation

**18.82.1.1 colorCode** `char* colorCode`

**18.82.1.2 colorName** `char* colorName`

**18.82.1.3 sectionName** `char* sectionName`

**18.82.1.4 stxColor** `EmbColor` stxColor**18.82.1.5 subDescriptors** `SubDescriptor*` subDescriptors

The documentation for this struct was generated from the following file:

- `extern/libembroidery/src/embroidery_internal.h`

**18.83 SubDescriptor\_ Struct Reference**

```
#include <embroidery_internal.h>
```

**Public Attributes**

- `int someNum`
- `int someInt`
- `int someOtherInt`
- `char * colorCode`
- `char * colorName`

**18.83.1 Member Data Documentation****18.83.1.1 colorCode** `char*` colorCode

**Todo** better variable naming

**18.83.1.2 colorName** `char*` colorName**18.83.1.3 someInt** `int` someInt

**Todo** better variable naming

**18.83.1.4 someNum** int someNum

**18.83.1.5 someOtherInt** int someOtherInt

**Todo** better variable naming

The documentation for this struct was generated from the following file:

- extern/libembroidery/src/embroidery\_internal.h

## 18.84 SvgAttribute\_ Struct Reference

```
#include <embroidery_internal.h>
```

### Public Attributes

- char \* **name**
- char \* **value**

### 18.84.1 Member Data Documentation

**18.84.1.1 name** char\* name

**18.84.1.2 value** char\* value

The documentation for this struct was generated from the following file:

- extern/libembroidery/src/embroidery\_internal.h

## 18.85 TextSingleObject Class Reference

```
#include <object-textsingle.h>
```

### Public Types

- enum { **Type** = OBJ\_TYPE\_TEXTSINGLE }

**Public Types inherited from BaseObject**

- enum { `Type` = `OBJ_TYPE_BASE` }

**Public Member Functions**

- `TextSingleObject` (const `QString` &`str`, qreal `x`, qreal `y`, `QRgb` `rgb`, `QGraphicsItem` \*`parent`=0)
- `TextSingleObject` (`TextSingleObject` \*`obj`, `QGraphicsItem` \*`parent`=0)
- `~TextSingleObject` ()
- virtual int `type` () const
- `QList< QPainterPath >` `objectSavePathList` () const
- `QList< QPainterPath >` `subPathList` () const
- `QString` `objectText` () const
- `QString` `objectTextFont` () const
- `QString` `objectTextJustify` () const
- qreal `objectTextSize` () const
- bool `objectTextBold` () const
- bool `objectTextItalic` () const
- bool `objectTextUnderline` () const
- bool `objectTextStrikeOut` () const
- bool `objectTextOverline` () const
- bool `objectTextBackward` () const
- bool `objectTextUpsideDown` () const
- `QPointF` `objectPos` () const
- qreal `objectX` () const
- qreal `objectY` () const
- `QStringList` `objectTextJustifyList` () const
- void `setObjectText` (const `QString` &`str`)
- void `setObjectTextFont` (const `QString` &`font`)
- void `setObjectTextJustify` (const `QString` &`justify`)
- void `setObjectTextSize` (qreal `size`)
- void `setObjectTextStyle` (bool `bold`, bool `italic`, bool `under`, bool `strike`, bool `over`)
- void `setObjectTextBold` (bool `val`)
- void `setObjectTextItalic` (bool `val`)
- void `setObjectTextUnderline` (bool `val`)
- void `setObjectTextStrikeOut` (bool `val`)
- void `setObjectTextOverline` (bool `val`)
- void `setObjectTextBackward` (bool `val`)
- void `setObjectTextUpsideDown` (bool `val`)
- void `setObjectPos` (const `QPointF` &`point`)
- void `setObjectPos` (qreal `x`, qreal `y`)
- void `setObjectX` (qreal `x`)
- void `setObjectY` (qreal `y`)
- void `updateRubber` (`QPainter` \*`painter`=0)
- virtual void `vulcanize` ()
- virtual `QPointF` `mouseSnapPoint` (const `QPointF` &`mousePoint`)
- virtual `QList< QPointF >` `allGripPoints` ()
- virtual void `gripEdit` (const `QPointF` &`before`, const `QPointF` &`after`)

### Public Member Functions inherited from [BaseObject](#)

- [BaseObject](#) (QGraphicsItem \*parent=0)
- virtual [~BaseObject](#) ()
- virtual int [type](#) () const
- qint64 [objectID](#) () const
- QPen [objectPen](#) () const
- QColor [objectColor](#) () const
- QRgb [objectColorRGB](#) () const
- Qt::PenStyle [objectLineType](#) () const
- qreal [objectLineWidth](#) () const
- QPainterPath [objectPath](#) () const
- int [objectRubberMode](#) () const
- QPointF [objectRubberPoint](#) (const QString &key) const
- QString [objectRubberText](#) (const QString &key) const
- QRectF [rect](#) () const
- void [setRect](#) (const QRectF &r)
- void [setRect](#) (qreal x, qreal y, qreal w, qreal h)
- QLineF [line](#) () const
- void [setLine](#) (const QLineF &li)
- void [setLine](#) (qreal x1, qreal y1, qreal x2, qreal y2)
- void [setObjectColor](#) (const QColor &color)
- void [setObjectColorRGB](#) (QRgb rgb)
- void [setObjectLineType](#) (Qt::PenStyle lineType)
- void [setObjectLineWidth](#) (qreal lineWidth)
- void [setObjectPath](#) (const QPainterPath &p)
- void [setObjectRubberMode](#) (int mode)
- void [setObjectRubberPoint](#) (const QString &key, const QPointF &point)
- void [setObjectRubberText](#) (const QString &key, const QString &txt)
- virtual QRectF [boundingRect](#) () const
- virtual QPainterPath [shape](#) () const
- void [drawRubberLine](#) (const QLineF &rubLine, QPainter \*painter=0, const char \*colorFromScene=0)
- virtual void [vulcanize](#) ()=0
- virtual QPointF [mouseSnapPoint](#) (const QPointF &mousePoint)=0
- virtual QList< QPointF > [allGripPoints](#) ()=0
- virtual void [gripEdit](#) (const QPointF &before, const QPointF &after)=0

### Protected Member Functions

- void [paint](#) (QPainter \*, const QStyleOptionGraphicsItem \*, QWidget \*)

### Protected Member Functions inherited from [BaseObject](#)

- QPen [lineWeightPen](#) () const
- qreal [pi](#) () const
- qreal [radians](#) (qreal degree) const
- qreal [degrees](#) (qreal radian) const
- void [realRender](#) (QPainter \*painter, const QPainterPath &renderPath)

### Private Member Functions

- void [init](#) (const QString &str, qreal x, qreal y, QRgb rgb, Qt::PenStyle lineType)

**Private Attributes**

- `QString objText`
- `QString objTextFont`
- `QString objTextJustify`
- `qreal objTextSize`
- `bool objTextBold`
- `bool objTextItalic`
- `bool objTextUnderline`
- `bool objTextStrikeOut`
- `bool objTextOverline`
- `bool objTextBackward`
- `bool objTextUpsideDown`
- `QPainterPath objTextPath`

**18.85.1 Member Enumeration Documentation****18.85.1.1 anonymous enum** `anonymous enum`

Enumerator

Type

**18.85.2 Constructor & Destructor Documentation****18.85.2.1 `TextSingleObject()` [1/2]** `TextSingleObject (`

```
    const QString & str,
    qreal x,
    qreal y,
    QRgb rgb,
    QGraphicsItem * parent = 0 )
```

**18.85.2.2 `TextSingleObject()` [2/2]** `TextSingleObject (`

```
    TextSingleObject * obj,
    QGraphicsItem * parent = 0 )
```

**18.85.2.3 `~TextSingleObject()`** `~TextSingleObject ( )`

### 18.85.3 Member Function Documentation

**18.85.3.1 allGripPoints()** `QList< QPointF > allGripPoints ( ) [virtual]`

Implements [BaseObject](#).

**18.85.3.2 gripEdit()** `void gripEdit ( const QPointF & before, const QPointF & after ) [virtual]`

Implements [BaseObject](#).

**18.85.3.3 init()** `void init ( const QString & str, qreal x, qreal y, QRgb rgb, Qt::PenStyle lineType ) [private]`

**18.85.3.4 mouseSnapPoint()** `QPointF mouseSnapPoint ( const QPointF & mousePoint ) [virtual]`

Implements [BaseObject](#).

**18.85.3.5 objectPos()** `QPointF objectPos ( ) const [inline]`

**18.85.3.6 objectSavePathList()** `QList< QPainterPath > objectSavePathList ( ) const [inline]`

**18.85.3.7 objectText()** `QString objectText ( ) const [inline]`

**18.85.3.8 objectTextBackward()** `bool objectTextBackward ( ) const [inline]`

**18.85.3.9 `objectTextBold()`** `bool objectTextBold () const [inline]`

**18.85.3.10 `objectTextFont()`** `QString objectTextFont () const [inline]`

**18.85.3.11 `objectTextItalic()`** `bool objectTextItalic () const [inline]`

**18.85.3.12 `objectTextJustify()`** `QString objectTextJustify () const [inline]`

**18.85.3.13 `objectTextJustifyList()`** `QStringList objectTextJustifyList () const`

**18.85.3.14 `objectTextOverline()`** `bool objectTextOverline () const [inline]`

**18.85.3.15 `objectTextSize()`** `qreal objectTextSize () const [inline]`

**18.85.3.16 `objectTextStrikeOut()`** `bool objectTextStrikeOut () const [inline]`

**18.85.3.17 `objectTextUnderline()`** `bool objectTextUnderline () const [inline]`

**18.85.3.18 `objectTextUpsideDown()`** `bool objectTextUpsideDown () const [inline]`

**18.85.3.19 `objectX()`** `qreal objectX () const [inline]`

**18.85.3.20 `objectY()`** `qreal objectY () const [inline]`

**18.85.3.21 `paint()`** `void paint (`  
    `QPainter * painter,`  
    `const QStyleOptionGraphicsItem * option,`  
    `QWidget * ) [protected]`

**18.85.3.22 `setObjectPos()` [1/2]** `void setObjectPos (`  
    `const QPointF & point ) [inline]`

**18.85.3.23 `setObjectPos()` [2/2]** `void setObjectPos (`  
    `qreal x,`  
    `qreal y ) [inline]`

**18.85.3.24 `setObjectText()`** `void setObjectText (`  
    `const QString & str )`

**18.85.3.25 `setObjectTextBackward()`** `void setObjectTextBackward (`  
    `bool val )`

**18.85.3.26 `setObjectTextBold()`** `void setObjectTextBold (`  
    `bool val )`

**18.85.3.27 `setObjectTextFont()`** `void setObjectTextFont (`  
    `const QString & font )`

**18.85.3.28 `setObjectTextItalic()`** `void setObjectTextItalic (`  
    `bool val )`

**18.85.3.29 `setObjectTextJustify()`** void setObjectTextJustify ( const QString & *justify* )

**18.85.3.30 `setObjectTextOverline()`** void setObjectTextOverline ( bool *val* )

**18.85.3.31 `setObjectTextSize()`** void setObjectTextSize ( qreal *size* )

**18.85.3.32 `setObjectTextStrikeOut()`** void setObjectTextStrikeOut ( bool *val* )

**18.85.3.33 `setObjectTextStyle()`** void setObjectTextStyle ( bool *bold*, bool *italic*, bool *under*, bool *strike*, bool *over* )

**18.85.3.34 `setObjectTextUnderline()`** void setObjectTextUnderline ( bool *val* )

**18.85.3.35 `setObjectTextUpsideDown()`** void setObjectTextUpsideDown ( bool *val* )

**18.85.3.36 `setObjectX()`** void setObjectX ( qreal *x* ) [inline]

**18.85.3.37 `setObjectY()`** void setObjectY ( qreal *y* ) [inline]

**18.85.3.38 subPathList()** `QList< QPainterPath > subPathList () const`

**18.85.3.39 type()** `virtual int type () const [inline], [virtual]`

Reimplemented from [BaseObject](#).

**18.85.3.40 updateRubber()** `void updateRubber (`  
`QPainter * painter = 0 )`

**18.85.3.41 vulcanize()** `void vulcanize () [virtual]`

Implements [BaseObject](#).

#### 18.85.4 Member Data Documentation

**18.85.4.1 objText** `QString objText [private]`

**18.85.4.2 objTextBackward** `bool objTextBackward [private]`

**18.85.4.3 objTextBold** `bool objTextBold [private]`

**18.85.4.4 objTextFont** `QString objTextFont [private]`

**18.85.4.5 objTextItalic** `bool objTextItalic [private]`

**18.85.4.6 objTextJustify** `QString objTextJustify [private]`

**18.85.4.7 objTextOverline** bool objTextOverline [private]

**18.85.4.8 objTextPath** QPainterPath objTextPath [private]

**18.85.4.9 objTextSize** qreal objTextSize [private]

**18.85.4.10 objTextStrikeOut** bool objTextStrikeOut [private]

**18.85.4.11 objTextUnderline** bool objTextUnderline [private]

**18.85.4.12 objTextUpsideDown** bool objTextUpsideDown [private]

The documentation for this class was generated from the following files:

- embroiderymodder2/[object-textsingle.h](#)
- embroiderymodder2/[object-textsingle.cpp](#)

## 18.86 **thread\_color\_ Struct Reference**

```
#include <embroidery.h>
```

### Public Attributes

- char [name](#) [22]
- unsigned int [hex\\_code](#)
- int [manufacturer\\_code](#)

### 18.86.1 Member Data Documentation

**18.86.1.1 hex\_code** unsigned int hex\_code

**18.86.1.2 manufacturer\_code** int manufacturer\_code

**18.86.1.3 name** char name[22]

The documentation for this struct was generated from the following file:

- [extern/libembroidery/src/embroidery.h](#)

## 18.87 ThredExtension\_ Struct Reference

```
#include <embroidery_internal.h>
```

### Public Attributes

- float [hoopX](#)
- float [hoopY](#)
- float [stitchGranularity](#)
- char [creatorName](#) [50]
- char [modifierName](#) [50]
- char [auxFormat](#)
- char [reserved](#) [31]

### 18.87.1 Member Data Documentation

**18.87.1.1 auxFormat** char auxFormat

**18.87.1.2 creatorName** char creatorName[50]

**18.87.1.3 hoopX** float hoopX

**18.87.1.4 hoopY** float hoopY

**18.87.1.5 modifierName** char modifierName[50]

**18.87.1.6 reserved** char reserved[31]

**18.87.1.7 stitchGranularity** float stitchGranularity

The documentation for this struct was generated from the following file:

- `extern/libembroidery/src/embroidery_internal.h`

## 18.88 ThredHeader\_ Struct Reference

```
#include <embroidery_internal.h>
```

### Public Attributes

- unsigned int `sigVersion`
- unsigned int `length`
- unsigned short `numStiches`
- unsigned short `hoopSize`
- unsigned short `reserved` [7]

### 18.88.1 Member Data Documentation

**18.88.1.1 hoopSize** unsigned short hoopSize

**18.88.1.2 length** unsigned int length

**18.88.1.3 numStiches** unsigned short numStiches

**18.88.1.4 reserved** unsigned short reserved[7]

**18.88.1.5 sigVersion** `unsigned int sigVersion`

The documentation for this struct was generated from the following file:

- `extern/libembroidery/src/embroidery_internal.h`

## 18.89 UiObject\_ Struct Reference

This covers the inbuilt designs: Dolphin, Snowflake and Heart. Covers Rotate, Scale and Point UI events.

### Public Attributes

- `char fname [200]`
- `char command [200]`
- `bool firstRun`
- `EmbVector controlPoints [10]`
- `char controlPointLabels [10][200]`
- `int n_controlPoints`
- `int numPoints`
- `int minPoints`
- `int maxPoints`
- `EmbVector center`
- `EmbVector scale`
- `EmbReal rotation`
- `unsigned int mode`
- `char path_desc [1000]`
- `char text [200]`
- `int textJustify`
- `char textFont [200]`
- `float textHeight`
- `float textRotation`
- `GLuint texture_id`
- `char id [200]`
- `int pattern_index`
- `char type [200]`
- `int object_index`
- `bool selectable`
- `EmbColor color`

### 18.89.1 Detailed Description

This covers the inbuilt designs: Dolphin, Snowflake and Heart. Covers Rotate, Scale and Point UI events.

scale is how radii are stored if the object is a circle, or the semi-major and semi-minor axes if the object is an ellipse.

center perhaps should be the "anchor" instead which is the center for some objects and top left for rectangular objects.

Do angles need special storage? angleRef, angleNew

This chapter details how the source code achieves the design detailed in the previous chapter. For the low-level details, read the later chapters.

Dear ImGui (CITATION NEEDED)

**18.89.1.1 Geometry Objects** At all times the EmbPattern has all of the information about the pattern however, editing information like the rubber text labels needs to be stored during runtime. Also editing ghosts like when a rotate command is half executed.

To deal with this we have a generic object that can act as any other object that updates the associated pattern struct as changes are made.

Note that the editor state is separate from this since that is per view, not per object.

Selecting is done via this interface.

## 18.89.2 Member Data Documentation

**18.89.2.1 center** `EmbVector` center

**18.89.2.2 color** `EmbColor` color

**18.89.2.3 command** `char` command[200]

**18.89.2.4 controlPointLabels** `char` controlPointLabels[10][200]

**18.89.2.5 controlPoints** `EmbVector` controlPoints[10]

**18.89.2.6 firstRun** `bool` firstRun

**18.89.2.7 fname** `char` fname[200]

**18.89.2.8 id** `char` id[200]

**18.89.2.9 maxPoints** int maxPoints

**18.89.2.10 minPoints** int minPoints

**18.89.2.11 mode** unsigned int mode

**18.89.2.12 n\_controlPoints** int n\_controlPoints

**18.89.2.13 numPoints** int numPoints

**18.89.2.14 object\_index** int object\_index

**18.89.2.15 path\_desc** char path\_desc[1000]

**18.89.2.16 pattern\_index** int pattern\_index

**18.89.2.17 rotation** EmbReal rotation

**18.89.2.18 scale** EmbVector scale

**18.89.2.19 selectable** bool selectable

**18.89.2.20** **text** char text[200]

**18.89.2.21** **textFont** char textFont[200]

**18.89.2.22** **textHeight** float textHeight

**18.89.2.23** **textJustify** int textJustify

**18.89.2.24** **textRotation** float textRotation

**18.89.2.25** **texture\_id** GLuint texture\_id

**18.89.2.26** **type** char type[200]

The documentation for this struct was generated from the following file:

- embroidermodder2/[imgui\\_main.c](#)

## 18.90 UndoableAddCommand Class Reference

```
#include <undo-commands.h>
```

### Public Member Functions

- [UndoableAddCommand](#) (const QString &text, [BaseObject](#) \*obj, [View](#) \*v, [QUndoCommand](#) \*parent=0)
- void [undo](#) ()
- void [redo](#) ()

### Private Attributes

- [BaseObject](#) \* [object](#)
- [View](#) \* [gview](#)

### 18.90.1 Constructor & Destructor Documentation

#### 18.90.1.1 UndoableAddCommand() [UndoableAddCommand](#) (

```
    const QString & text,
    BaseObject * obj,
    View * v,
    QUndoCommand * parent = 0 )
```

### 18.90.2 Member Function Documentation

#### 18.90.2.1 redo() [void redo](#) ( )

#### 18.90.2.2 undo() [void undo](#) ( )

### 18.90.3 Member Data Documentation

#### 18.90.3.1 gview [View\\*](#) gview [private]

#### 18.90.3.2 object [BaseObject\\*](#) object [private]

The documentation for this class was generated from the following files:

- [embroidermodder2/undo-commands.h](#)
- [embroidermodder2/undo-commands.cpp](#)

## 18.91 UndoableDeleteCommand Class Reference

```
#include <undo-commands.h>
```

### Public Member Functions

- [UndoableDeleteCommand](#) (const QString &text, [BaseObject](#) \*obj, [View](#) \*v, [QUndoCommand](#) \*parent=0)
- void [undo](#) ()
- void [redo](#) ()

**Private Attributes**

- `BaseObject * object`
- `View * gview`

**18.91.1 Constructor & Destructor Documentation****18.91.1.1 UndoableDeleteCommand()** `UndoableDeleteCommand (`

```
    const QString & text,
    BaseObject * obj,
    View * v,
    QUndoCommand * parent = 0 )
```

**18.91.2 Member Function Documentation****18.91.2.1 redo()** `void redo ( )`**18.91.2.2 undo()** `void undo ( )`**18.91.3 Member Data Documentation****18.91.3.1 gview** `View* gview [private]`**18.91.3.2 object** `BaseObject* object [private]`

The documentation for this class was generated from the following files:

- `embroidermodder2/undo-commands.h`
- `embroidermodder2/undo-commands.cpp`

**18.92 UndoableGripEditCommand Class Reference**

```
#include <undo-commands.h>
```

## Public Member Functions

- `UndoableGripEditCommand` (const QPointF beforePoint, const QPointF afterPoint, const QString &text, `BaseObject` \*obj, `View` \*v, `QUndoCommand` \*parent=0)
- void `undo` ()
- void `redo` ()

## Private Attributes

- `BaseObject` \* `object`
- `View` \* `gview`
- `QPointF` `before`
- `QPointF` `after`

### 18.92.1 Constructor & Destructor Documentation

```
18.92.1.1 UndoableGripEditCommand() UndoableGripEditCommand (
```

```
    const QPointF beforePoint,  
    const QPointF afterPoint,  
    const QString & text,  
    BaseObject * obj,  
    View * v,  
    QUndoCommand * parent = 0 )
```

### 18.92.2 Member Function Documentation

```
18.92.2.1 redo() void redo ( )
```

```
18.92.2.2 undo() void undo ( )
```

### 18.92.3 Member Data Documentation

```
18.92.3.1 after QPointF after [private]
```

**18.92.3.2 before** QPointF before [private]

**18.92.3.3 gview** View\* gview [private]

**18.92.3.4 object** BaseObject\* object [private]

The documentation for this class was generated from the following files:

- embroidermodder2/undo-commands.h
- embroidermodder2/undo-commands.cpp

## 18.93 UndoableMirrorCommand Class Reference

```
#include <undo-commands.h>
```

### Public Member Functions

- [UndoableMirrorCommand](#) (qreal x1, qreal y1, qreal x2, qreal y2, const QString &text, [BaseObject](#) \*obj, [View](#) \*v, [QUndoCommand](#) \*parent=0)
- void [undo](#) ()
- void [redo](#) ()

### Private Member Functions

- void [mirror](#) ()

### Private Attributes

- [BaseObject](#) \* [object](#)
- [View](#) \* [gview](#)
- [QLineF](#) [mirrorLine](#)

### 18.93.1 Constructor & Destructor Documentation

**18.93.1.1 UndoableMirrorCommand()** [UndoableMirrorCommand](#) (

```
    qreal x1,
    qreal y1,
    qreal x2,
    qreal y2,
    const QString & text,
    BaseObject * obj,
    View * v,
    QUndoCommand * parent = 0 )
```

### 18.93.2 Member Function Documentation

**18.93.2.1 mirror()** void mirror ( ) [private]

**18.93.2.2 redo()** void redo ( )

**18.93.2.3 undo()** void undo ( )

### 18.93.3 Member Data Documentation

**18.93.3.1 gview** [View\\*](#) gview [private]

**18.93.3.2 mirrorLine** [QLineF](#) mirrorLine [private]

**18.93.3.3 object** [BaseObject\\*](#) object [private]

The documentation for this class was generated from the following files:

- [embroidermodder2/undo-commands.h](#)
- [embroidermodder2/undo-commands.cpp](#)

## 18.94 UndoableMoveCommand Class Reference

```
#include <undo-commands.h>
```

### Public Member Functions

- [UndoableMoveCommand](#) (qreal deltaX, qreal deltaY, const QString &text, [BaseObject](#) \*obj, [View](#) \*v, [QUndoCommand](#) \*parent=0)
- void [undo](#) ()
- void [redo](#) ()

**Private Attributes**

- `BaseObject * object`
- `View * gview`
- qreal `dx`
- qreal `dy`

**18.94.1 Constructor & Destructor Documentation****18.94.1.1 UndoableMoveCommand()** `UndoableMoveCommand (`

```
    qreal deltaX,
    qreal deltaY,
    const QString & text,
    BaseObject * obj,
    View * v,
    QUndoCommand * parent = 0 )
```

**18.94.2 Member Function Documentation****18.94.2.1 redo()** `void redo ( )`**18.94.2.2 undo()** `void undo ( )`**18.94.3 Member Data Documentation****18.94.3.1 dx** `qreal dx [private]`**18.94.3.2 dy** `qreal dy [private]`**18.94.3.3 gview** `View* gview [private]`

**18.94.3.4 object** `BaseObject*` `object` [private]

The documentation for this class was generated from the following files:

- `embroidermodder2/undo-commands.h`
- `embroidermodder2/undo-commands.cpp`

## 18.95 UndoableNavCommand Class Reference

```
#include <undo-commands.h>
```

### Public Member Functions

- `UndoableNavCommand` (const `QString` &`type`, `View` \*`v`, `QUndoCommand` \*`parent`=0)
- int `id` () const
- bool `mergeWith` (const `QUndoCommand` \*`command`)
- void `undo` ()
- void `redo` ()

### Private Attributes

- `QString navType`
- `QTransform fromTransform`
- `QTransform toTransform`
- `QPointF fromCenter`
- `QPointF toCenter`
- bool `done`
- `View` \* `gview`

### 18.95.1 Constructor & Destructor Documentation

**18.95.1.1 UndoableNavCommand()** `UndoableNavCommand` (  
    `const QString & type,`  
    `View * v,`  
    `QUndoCommand * parent = 0 )`

### 18.95.2 Member Function Documentation

**18.95.2.1 id()** `int id ( ) const [inline]`

**18.95.2.2 mergeWith()** bool mergeWith ( const QUndoCommand \* *command* )

**18.95.2.3 redo()** void redo ( )

**18.95.2.4 undo()** void undo ( )

### 18.95.3 Member Data Documentation

**18.95.3.1 done** bool *done* [private]

**18.95.3.2 fromCenter** QPointF *fromCenter* [private]

**18.95.3.3 fromTransform** QTransform *fromTransform* [private]

**18.95.3.4 gview** View\* *gview* [private]

**18.95.3.5 navType** QString *navType* [private]

**18.95.3.6 toCenter** QPointF *toCenter* [private]

**18.95.3.7 toTransform** QTransform *toTransform* [private]

The documentation for this class was generated from the following files:

- [embroidermodder2/undo-commands.h](#)
- [embroidermodder2/undo-commands.cpp](#)

## 18.96 UndoableRotateCommand Class Reference

```
#include <undo-commands.h>
```

### Public Member Functions

- `UndoableRotateCommand` (qreal pivotPointX, qreal pivotPointY, qreal rotAngle, const QString &text, `BaseObject` \*obj, `View` \*v, `QUndoCommand` \*parent=0)
- void `undo` ()
- void `redo` ()

### Private Member Functions

- void `rotate` (qreal x, qreal y, qreal rot)
- qreal `pi` ()
- qreal `radians` (qreal `degrees`)

### Private Attributes

- `BaseObject` \* `object`
- `View` \* `gview`
- qreal `pivotX`
- qreal `pivotY`
- qreal `angle`

#### 18.96.1 Constructor & Destructor Documentation

##### 18.96.1.1 `UndoableRotateCommand()` `UndoableRotateCommand` (

```
    qreal pivotPointX,  
    qreal pivotPointY,  
    qreal rotAngle,  
    const QString & text,  
    BaseObject * obj,  
    View * v,  
    QUndoCommand * parent = 0 )
```

#### 18.96.2 Member Function Documentation

##### 18.96.2.1 `pi()` qreal `pi` ( ) [inline], [private]

**18.96.2.2 radians()** `qreal radians ( qreal degrees ) [inline], [private]`

**18.96.2.3 redo()** `void redo ( )`

**18.96.2.4 rotate()** `void rotate ( qreal x, qreal y, qreal rot ) [private]`

**18.96.2.5 undo()** `void undo ( )`

### 18.96.3 Member Data Documentation

**18.96.3.1 angle** `qreal angle [private]`

**18.96.3.2 gview** `View* gview [private]`

**18.96.3.3 object** `BaseObject* object [private]`

**18.96.3.4 pivotX** `qreal pivotX [private]`

**18.96.3.5 pivotY** `qreal pivotY [private]`

The documentation for this class was generated from the following files:

- [embroidermodder2/undo-commands.h](#)
- [embroidermodder2/undo-commands.cpp](#)

## 18.97 UndoableScaleCommand Class Reference

```
#include <undo-commands.h>
```

### Public Member Functions

- `UndoableScaleCommand` (qreal x, qreal y, qreal scaleFactor, const QString &text, `BaseObject` \*obj, `View` \*v, `QUndoCommand` \*parent=0)
- void `undo` ()
- void `redo` ()

### Private Attributes

- `BaseObject` \* `object`
- `View` \* `gview`
- qreal `dx`
- qreal `dy`
- qreal `factor`

#### 18.97.1 Constructor & Destructor Documentation

##### 18.97.1.1 `UndoableScaleCommand()` `UndoableScaleCommand` (

```
    qreal x,
    qreal y,
    qreal scaleFactor,
    const QString & text,
    BaseObject * obj,
    View * v,
    QUndoCommand * parent = 0 )
```

#### 18.97.2 Member Function Documentation

##### 18.97.2.1 `redo()` void `redo` ( )

##### 18.97.2.2 `undo()` void `undo` ( )

#### 18.97.3 Member Data Documentation

**18.97.3.1 dx** qreal dx [private]

**18.97.3.2 dy** qreal dy [private]

**18.97.3.3 factor** qreal factor [private]

**18.97.3.4 gview** View\* gview [private]

**18.97.3.5 object** BaseObject\* object [private]

The documentation for this class was generated from the following files:

- embroidermodder2/undo-commands.h
- embroidermodder2/undo-commands.cpp

## 18.98 UndoEditor Class Reference

```
#include <undo-editor.h>
```

### Public Slots

- void [undo](#) ()
- void [redo](#) ()
- void [updateCleanIcon](#) (bool opened)

### Public Member Functions

- [UndoEditor](#) (const QString &iconDirectory=QString(), QWidget \*widgetToFocus=0, QWidget \*parent=0)
- [~UndoEditor](#) ()
- void [addStack](#) (QUndoStack \*stack)
- bool [canUndo](#) () const
- bool [canRedo](#) () const
- QString [undoText](#) () const
- QString [redoText](#) () const

## Private Attributes

- QWidget \* `focusWidget`
- QString `iconDir`
- int `iconSize`
- QUndoGroup \* `undoGroup`
- QUndoView \* `undoView`

### 18.98.1 Constructor & Destructor Documentation

#### 18.98.1.1 `UndoEditor()` `UndoEditor(`

```
    const QString & iconDirectory = QString(),
    QWidget * widgetToFocus = 0,
    QWidget * parent = 0 )
```

#### 18.98.1.2 `~UndoEditor()` `~UndoEditor( )`

### 18.98.2 Member Function Documentation

#### 18.98.2.1 `addStack()` `void addStack(`

```
    QUndoStack * stack )
```

#### 18.98.2.2 `canRedo()` `bool canRedo( ) const`

#### 18.98.2.3 `canUndo()` `bool canUndo( ) const`

#### 18.98.2.4 `redo()` `void redo( ) [slot]`

#### 18.98.2.5 `redoText()` `QString redoText( ) const`

**18.98.2.6 undo** void undo ( ) [slot]

**18.98.2.7 undoText()** QString undoText ( ) const

**18.98.2.8 updateCleanIcon** void updateCleanIcon ( bool opened ) [slot]

### 18.98.3 Member Data Documentation

**18.98.3.1 focusWidget** QWidget\* focusWidget [private]

**18.98.3.2 iconDir** QString iconDir [private]

**18.98.3.3 iconSize** int iconSize [private]

**18.98.3.4 undoGroup** QUndoGroup\* undoGroup [private]

**18.98.3.5 undoView** QUndoView\* undoView [private]

The documentation for this class was generated from the following files:

- [embroidermodder2/undo-editor.h](#)
- [embroidermodder2/undo-editor.cpp](#)

## 18.99 UndoHistory\_ Struct Reference

### Public Attributes

- char [data](#) [100][200]
- int [length](#)
- int [position](#)
- int [max\\_length](#)

### 18.99.1 Detailed Description

**Todo** document this.

### 18.99.2 Member Data Documentation

**18.99.2.1 data** char data[100] [200]

**18.99.2.2 length** int length

**18.99.2.3 max\_length** int max\_length

**18.99.2.4 position** int position

The documentation for this struct was generated from the following file:

- [embroidermodder2/imgui\\_main.c](#)

## 18.100 View Class Reference

```
#include <view.h>
```

### Public Slots

- void [zoomIn](#) ()
- void [zoomOut](#) ()
- void [zoomWindow](#) ()
- void [zoomSelected](#) ()
- void [zoomExtents](#) ()
- void [panRealTime](#) ()
- void [panPoint](#) ()
- void [panLeft](#) ()
- void [panRight](#) ()
- void [panUp](#) ()
- void [panDown](#) ()
- void [selectAll](#) ()
- void [selectionChanged](#) ()
- void [clearSelection](#) ()
- void [deleteSelected](#) ()

- void **moveSelected** (qreal dx, qreal dy)
- void **cut** ()
- void **copy** ()
- void **paste** ()
- void **repeatAction** ()
- void **moveAction** ()
- void **scaleAction** ()
- void **scaleSelected** (qreal x, qreal y, qreal factor)
- void **rotateAction** ()
- void **rotateSelected** (qreal x, qreal y, qreal rot)
- void **mirrorSelected** (qreal x1, qreal y1, qreal x2, qreal y2)
- int **numSelected** ()
- void **deletePressed** ()
- void **escapePressed** ()
- void **cornerButtonClicked** ()
- void **showScrollBars** (bool val)
- void **setCornerButton** ()
- void **setCrossHairColor** (QRgb color)
- void **setCrossHairSize** (quint8 percent)
- void **setBackgroundColor** (QRgb color)
- void **setSelectBoxColors** (QRgb colorL, QRgb fillL, QRgb colorR, QRgb fillR, int alpha)
- void **toggleSnap** (bool on)
- void **toggleGrid** (bool on)
- void **toggleRuler** (bool on)
- void **toggleOrtho** (bool on)
- void **togglePolar** (bool on)
- void **toggleQSnap** (bool on)
- void **toggleQTrack** (bool on)
- void **toggleLwt** (bool on)
- void **toggleReal** (bool on)
- bool **isLwtEnabled** ()
- bool **isRealEnabled** ()
- void **setGridColor** (QRgb color)
- void **createGrid** (const QString &gridType)
- void **setRulerColor** (QRgb color)
- void **previewOn** (int clone, int mode, qreal x, qreal y, qreal data)
- void **previewOff** ()
- void **enableMoveRapidFire** ()
- void **disableMoveRapidFire** ()
- bool **allowRubber** ()
- void **addToRubberRoom** (QGraphicsItem \*item)
- void **vulcanizeRubberRoom** ()
- void **clearRubberRoom** ()
- void **spareRubber** (qint64 id)
- void **setRubberMode** (int mode)
- void **setRubberPoint** (const QString &key, const QPointF &point)
- void **setRubberText** (const QString &key, const QString &txt)

## Public Member Functions

- `View (MainWindow *mw, QGraphicsScene *theScene, QWidget *parent)`
- `~View ()`
- `bool allowZoomIn ()`
- `bool allowZoomOut ()`
- `void recalculateLimits ()`
- `void zoomToPoint (const QPoint &mousePoint, int zoomDir)`
- `void centerAt (const QPointF &centerPoint)`
- `QPointF center ()`
- `QUndoStack * getUndoStack ()`
- `void addObject (BaseObject *obj)`
- `void deleteObject (BaseObject *obj)`
- `void vulcanizeObject (BaseObject *obj)`

## Protected Member Functions

- `void mouseDoubleClickEvent (QMouseEvent *event)`
- `void mousePressEvent (QMouseEvent *event)`
- `void mouseMoveEvent (QMouseEvent *event)`
- `void mouseReleaseEvent (QMouseEvent *event)`
- `void wheelEvent (QWheelEvent *event)`
- `void contextMenuEvent (QContextMenuEvent *event)`
- `void drawBackground (QPainter *painter, const QRectF &rect)`
- `void drawForeground (QPainter *painter, const QRectF &rect)`
- `void enterEvent (QEvent *event)`

## Private Member Functions

- `void createGridRect ()`
- `void createGridPolar ()`
- `void createGridIso ()`
- `void createOrigin ()`
- `void loadRulerSettings ()`
- `bool willUnderflowInt32 (qint64 a, qint64 b)`
- `bool willOverflowInt32 (qint64 a, qint64 b)`
- `int roundToMultiple (bool roundUp, int numToRound, int multiple)`
- `QPainterPath createRulerTextPath (float x, float y, QString str, float height)`
- `QList< QGraphicsItem * > createObjectList (QList< QGraphicsItem * > list)`
- `void copySelected ()`
- `void startGripping (BaseObject *obj)`
- `void stopGripping (bool accept=false)`
- `void updateMouseCoords (int x, int y)`
- `void panStart (const QPoint &point)`
- `void alignScenePointWithViewPoint (const QPointF &scenePoint, const QPoint &viewPoint)`
- `qreal pi ()`
- `qreal radians (qreal degrees)`

### Private Attributes

- QHash< qint64, QGraphicsItem \* > hashDeletedObjects
- QList< qint64 > spareRubberList
- QColor gridColor
- QPainterPath gridPath
- QPainterPath originPath
- bool rulerMetric
- QColor rulerColor
- quint8 rulerPixelSize
- QList< QGraphicsItem \* > previewObjectList
- QGraphicsItemGroup \* previewObjectItemGroup
- QPointF previewPoint
- qreal previewData
- int previewMode
- QPointF cutCopyMousePoint
- QGraphicsItemGroup \* pasteObjectItemGroup
- QPointF pasteDelta
- QList< QGraphicsItem \* > rubberRoomList
- bool grippingActive
- bool rapidMoveActive
- bool previewActive
- bool pastingActive
- bool movingActive
- bool selectingActive
- bool zoomWindowActive
- bool panningRealTimeActive
- bool panningPointActive
- bool panningActive
- bool qSnapActive
- bool qSnapToggle
- BaseObject \* gripBaseObj
- BaseObject \* tempBaseObj
- MainWindow \* mainWin
- QGraphicsScene \* gscene
- QUndoStack \* undoStack
- SelectBox \* selectBox
- QPointF scenePressPoint
- QPoint pressPoint
- QPointF sceneMovePoint
- QPoint movePoint
- QPointF sceneReleasePoint
- QPoint releasePoint
- QPointF sceneGripPoint
- QPoint viewMousePoint
- QPointF sceneMousePoint
- QRgb qsnapLocatorColor
- quint8 qsnapLocatorSize
- quint8 qsnapApertureSize
- QRgb gripColorCool
- QRgb gripColorHot
- quint8 gripSize
- quint8 pickBoxSize
- QRgb crosshairColor
- quint32 crosshairSize
- int panDistance
- int panStartX
- int panStartY

### 18.100.1 Constructor & Destructor Documentation

**18.100.1.1 View()** `View (`  
    `MainWindow * mw,`  
    `QGraphicsScene * theScene,`  
    `QWidget * parent )`

**18.100.1.2 ~View()** `~View ( )`

### 18.100.2 Member Function Documentation

**18.100.2.1 addObject()** `void addObject (`  
    `BaseObject * obj )`

**18.100.2.2 addToRubberRoom** `void addToRubberRoom (`  
    `QGraphicsItem * item ) [slot]`

**18.100.2.3 alignScenePointWithViewPoint()** `void alignScenePointWithViewPoint (`  
    `const QPointF & scenePoint,`  
    `const QPoint & viewPoint ) [private]`

**18.100.2.4 allowRubber** `bool allowRubber ( ) [slot]`

**18.100.2.5 allowZoomIn()** `bool allowZoomIn ( )`

**18.100.2.6 allowZoomOut()** `bool allowZoomOut ( )`

**18.100.2.7 center()** QPointF center () [inline]

**18.100.2.8 centerAt()** void centerAt (  
const QPointF & centerPoint )

**18.100.2.9 clearRubberRoom** void clearRubberRoom () [slot]

**18.100.2.10 clearSelection** void clearSelection () [slot]

**18.100.2.11 contextMenuEvent()** void contextMenuEvent (  
QContextMenuEvent \* event ) [protected]

**18.100.2.12 copy** void copy () [slot]

**18.100.2.13 copySelected()** void copySelected () [private]

**18.100.2.14 cornerButtonClicked** void cornerButtonClicked () [slot]

**18.100.2.15 createGrid** void createGrid (  
const QString & gridType ) [slot]

**18.100.2.16 createGridIso()** void createGridIso () [private]

**18.100.2.17 createGridPolar()** void createGridPolar () [private]

**18.100.2.18 `createGridRect()`** void createGridRect ( ) [private]

**18.100.2.19 `createObjectList()`** QList< QGraphicssItem \* > createObjectList ( QList< QGraphicssItem \* > list ) [private]

**18.100.2.20 `createOrigin()`** void createOrigin ( ) [private]

**18.100.2.21 `createRulerTextPath()`** QPainterPath createRulerTextPath ( float x, float y, QString str, float height ) [private]

**18.100.2.22 `cut`** void cut ( ) [slot]

**18.100.2.23 `deleteObject()`** void deleteObject ( BaseObject \* obj )

**18.100.2.24 `deletePressed`** void deletePressed ( ) [slot]

**18.100.2.25 `deleteSelected`** void deleteSelected ( ) [slot]

**18.100.2.26 `disableMoveRapidFire`** void disableMoveRapidFire ( ) [slot]

**18.100.2.27 `drawBackground()`** void drawBackground ( QPainter \* painter, const QRectF & rect ) [protected]

**18.100.2.28 drawForeground()** void drawForeground (   
   QPainter \* painter,  
   const QRectF & rect ) [protected]

**18.100.2.29 enableMoveRapidFire** void enableMoveRapidFire ( ) [slot]

**18.100.2.30 enterEvent()** void enterEvent (   
   QEvent \* event ) [protected]

**18.100.2.31 escapePressed** void escapePressed ( ) [slot]

**18.100.2.32 getUndoStack()** QUndoStack \* getUndoStack ( ) [inline]

**18.100.2.33 isLwtEnabled** bool isLwtEnabled ( ) [slot]

**18.100.2.34 isRealEnabled** bool isRealEnabled ( ) [slot]

**18.100.2.35 loadRulerSettings()** void loadRulerSettings ( ) [private]

**18.100.2.36 mirrorSelected** void mirrorSelected (   
   qreal x1,  
   qreal y1,  
   qreal x2,  
   qreal y2 ) [slot]

**18.100.2.37 mouseDoubleClickEvent()** void mouseDoubleClickEvent (   
   QMouseEvent \* event ) [protected]

**18.100.2.38 mouseMoveEvent()** void mouseMoveEvent ( QMouseEvent \* event ) [protected]

**18.100.2.39 mousePressEvent()** void mousePressEvent ( QMouseEvent \* event ) [protected]

**18.100.2.40 mouseReleaseEvent()** void mouseReleaseEvent ( QMouseEvent \* event ) [protected]

**18.100.2.41 moveAction** void moveAction ( ) [slot]

**18.100.2.42 moveSelected** void moveSelected ( qreal dx, qreal dy ) [slot]

**18.100.2.43 numSelected** int numSelected ( ) [slot]

**18.100.2.44 panDown** void panDown ( ) [slot]

**18.100.2.45 panLeft** void panLeft ( ) [slot]

**18.100.2.46 panPoint** void panPoint ( ) [slot]

**18.100.2.47 panRealTime** void panRealTime ( ) [slot]

**18.100.2.48 panRight** void panRight ( ) [slot]

**18.100.2.49 panStart()** void panStart (const QPoint & *point*) [private]

**18.100.2.50 panUp** void panUp ( ) [slot]

**18.100.2.51 paste** void paste ( ) [slot]

**18.100.2.52 pi()** qreal pi ( ) [inline], [private]

**18.100.2.53 previewOff** void previewOff ( ) [slot]

**18.100.2.54 previewOn** void previewOn (int *clone*, int *mode*, qreal *x*, qreal *y*, qreal *data*) [slot]

**18.100.2.55 radians()** qreal radians (qreal *degrees*) [inline], [private]

**18.100.2.56 recalculateLimits()** void recalculateLimits ( )

**18.100.2.57 repeatAction** void repeatAction ( ) [slot]

**18.100.2.58 rotateAction** void rotateAction ( ) [slot]

**18.100.2.59 rotateSelected** void rotateSelected ( qreal x, qreal y, qreal rot ) [slot]

**18.100.2.60 roundToMultiple()** int roundToMultiple ( bool roundUp, int numToRound, int multiple ) [private]

**18.100.2.61 scaleAction** void scaleAction ( ) [slot]

**18.100.2.62 scaleSelected** void scaleSelected ( qreal x, qreal y, qreal factor ) [slot]

**18.100.2.63 selectAll** void selectAll ( ) [slot]

**18.100.2.64 selectionChanged** void selectionChanged ( ) [slot]

**18.100.2.65 setBackgroundColor** void setBackgroundColor ( QRgb color ) [slot]

**18.100.2.66 setCornerButton** void setCornerButton ( ) [slot]

**18.100.2.67 setCrossHairColor** void setCrossHairColor ( QRgb *color* ) [slot]

**18.100.2.68 setCrossHairSize** void setCrossHairSize ( quint8 *percent* ) [slot]

**18.100.2.69 setGridColor** void setGridColor ( QRgb *color* ) [slot]

**18.100.2.70 setRubberMode** void setRubberMode ( int *mode* ) [slot]

**18.100.2.71 setRubberPoint** void setRubberPoint ( const QString & *key*, const QPointF & *point* ) [slot]

**18.100.2.72 setRubberText** void setRubberText ( const QString & *key*, const QString & *txt* ) [slot]

**18.100.2.73 setRulerColor** void setRulerColor ( QRgb *color* ) [slot]

**18.100.2.74 setSelectBoxColors** void setSelectBoxColors ( QRgb *colorL*, QRgb *fillL*, QRgb *colorR*, QRgb *fillR*, int *alpha* ) [slot]

**18.100.2.75 showScrollBars** void showScrollBars ( bool *val* ) [slot]

**18.100.2.76 `spareRubber`** void spareRubber ( qint64 id ) [slot]

**18.100.2.77 `startGripping()`** void startGripping ( BaseObject \* obj ) [private]

**18.100.2.78 `stopGripping()`** void stopGripping ( bool accept = false ) [private]

**18.100.2.79 `toggleGrid`** void toggleGrid ( bool on ) [slot]

**18.100.2.80 `toggleLwt`** void toggleLwt ( bool on ) [slot]

**18.100.2.81 `toggleOrtho`** void toggleOrtho ( bool on ) [slot]

**18.100.2.82 `togglePolar`** void togglePolar ( bool on ) [slot]

**18.100.2.83 `toggleQSnap`** void toggleQSnap ( bool on ) [slot]

**18.100.2.84 `toggleQTrack`** void toggleQTrack ( bool on ) [slot]

**18.100.2.85 `toggleReal`** void toggleReal ( bool on ) [slot]

**18.100.2.86 toggleRuler** void toggleRuler (  
    bool on ) [slot]

**18.100.2.87 toggleSnap** void toggleSnap (  
    bool on ) [slot]

**18.100.2.88 updateMouseCoords()** void updateMouseCoords (  
    int x,  
    int y ) [private]

**18.100.2.89 vulcanizeObject()** void vulcanizeObject (  
    BaseObject \* obj )

**18.100.2.90 vulcanizeRubberRoom** void vulcanizeRubberRoom ( ) [slot]

**18.100.2.91 wheelEvent()** void wheelEvent (  
    QWheelEvent \* event ) [protected]

**18.100.2.92 willOverflowInt32()** bool willOverflowInt32 (  
    qint64 a,  
    qint64 b ) [private]

**18.100.2.93 willUnderflowInt32()** bool willUnderflowInt32 (  
    qint64 a,  
    qint64 b ) [private]

**18.100.2.94 zoomExtents** void zoomExtents ( ) [slot]

**18.100.2.95 zoomIn** void zoomIn ( ) [slot]

**18.100.2.96 zoomOut** void zoomOut ( ) [slot]

**18.100.2.97 zoomSelected** void zoomSelected ( ) [slot]

**18.100.2.98 zoomToPoint()** void zoomToPoint (   
     const QPoint & *mousePoint*,  
     int *zoomDir* )

**18.100.2.99 zoomWindow** void zoomWindow ( ) [slot]

### 18.100.3 Member Data Documentation

**18.100.3.1 crosshairColor** QRgb crosshairColor [private]

**18.100.3.2 crosshairSize** quint32 crosshairSize [private]

**18.100.3.3 cutCopyMousePoint** QPointF cutCopyMousePoint [private]

**18.100.3.4 gridColor** QColor gridColor [private]

**18.100.3.5 gridPath** QPainterPath gridPath [private]

**18.100.3.6 gripBaseObj** `BaseObject*` `gripBaseObj` [private]

**18.100.3.7 gripColorCool** `QRgb` `gripColorCool` [private]

**18.100.3.8 gripColorHot** `QRgb` `gripColorHot` [private]

**18.100.3.9 grippingActive** `bool` `grippingActive` [private]

**18.100.3.10 gripSize** `quint8` `gripSize` [private]

**18.100.3.11 gscene** `QGraphicsScene*` `gscene` [private]

**18.100.3.12 hashDeletedObjects** `QHash<qint64, QGraphicsItem*>` `hashDeletedObjects` [private]

**18.100.3.13 mainWin** `MainWindow*` `mainWin` [private]

**18.100.3.14 movePoint** `QPoint` `movePoint` [private]

**18.100.3.15 movingActive** `bool` `movingActive` [private]

**18.100.3.16 originPath** `QPainterPath` `originPath` [private]

**18.100.3.17 panDistance** int panDistance [private]

**18.100.3.18 panningActive** bool panningActive [private]

**18.100.3.19 panningPointActive** bool panningPointActive [private]

**18.100.3.20 panningRealTimeActive** bool panningRealTimeActive [private]

**18.100.3.21 panStartX** int panStartX [private]

**18.100.3.22 panStartY** int panStartY [private]

**18.100.3.23 pasteDelta** QPointF pasteDelta [private]

**18.100.3.24 pasteObjectItemGroup** QGraphicsItemGroup\* pasteObjectItemGroup [private]

**18.100.3.25 pastingActive** bool pastingActive [private]

**18.100.3.26 pickBoxSize** quint8 pickBoxSize [private]

**18.100.3.27 pressPoint** QPoint pressPoint [private]

**18.100.3.28 previewActive** bool previewActive [private]

**18.100.3.29 previewData** qreal previewData [private]

**18.100.3.30 previewMode** int previewMode [private]

**18.100.3.31 previewObjectItemGroup** QGraphicsItemGroup\* previewObjectItemGroup [private]

**18.100.3.32 previewObjectList** QList<QGraphicsItem\*> previewObjectList [private]

**18.100.3.33 previewPoint** QPointF previewPoint [private]

**18.100.3.34 qSnapActive** bool qSnapActive [private]

**18.100.3.35 qsnapApertureSize** quint8 qsnapApertureSize [private]

**18.100.3.36 qsnapLocatorColor** QRgb qsnapLocatorColor [private]

**18.100.3.37 qsnapLocatorSize** quint8 qsnapLocatorSize [private]

**18.100.3.38 qSnapToggle** bool qSnapToggle [private]

**18.100.3.39** **rapidMoveActive** bool rapidMoveActive [private]

**18.100.3.40** **releasePoint** QPoint releasePoint [private]

**18.100.3.41** **rubberRoomList** QList<QGraphicsItem\*> rubberRoomList [private]

**18.100.3.42** **rulerColor** QColor rulerColor [private]

**18.100.3.43** **rulerMetric** bool rulerMetric [private]

**18.100.3.44** **rulerPixelSize** quint8 rulerPixelSize [private]

**18.100.3.45** **sceneGripPoint** QPointF sceneGripPoint [private]

**18.100.3.46** **sceneMousePoint** QPointF sceneMousePoint [private]

**18.100.3.47** **sceneMovePoint** QPointF sceneMovePoint [private]

**18.100.3.48** **scenePressPoint** QPointF scenePressPoint [private]

**18.100.3.49** **sceneReleasePoint** QPointF sceneReleasePoint [private]

**18.100.3.50 selectBox** `SelectBox*` `selectBox` [private]

**18.100.3.51 selectingActive** `bool` `selectingActive` [private]

**18.100.3.52 spareRubberList** `QList<qint64>` `spareRubberList` [private]

**18.100.3.53 tempBaseObj** `BaseObject*` `tempBaseObj` [private]

**18.100.3.54 undoStack** `QUndoStack*` `undoStack` [private]

**18.100.3.55 viewMousePoint** `QPoint` `viewMousePoint` [private]

**18.100.3.56 zoomWindowActive** `bool` `zoomWindowActive` [private]

The documentation for this class was generated from the following files:

- `embroidermodder2/view.h`
- `embroidermodder2/view.cpp`

## 18.101 View\_Struct Reference

### Public Attributes

- `EmbPattern * pattern`
- `EmbVector origin`
- `float scale`
- `char grid_type [200]`
- `int ui_mode`
- `bool snap_mode`
- `bool grid_mode`
- `bool ruler_mode`
- `bool ortho_mode`
- `bool polar_mode`
- `bool qsnap_mode`
- `bool qtrack_mode`
- `bool lwt_mode`

- bool `real_render`
- bool `metric`
- bool `simulate`
- `clock_t simulation_start`
- char `text_font` [200]
- float `text_size`
- float `text_angle`
- bool `text_style_bold`
- bool `text_style_italic`
- bool `text_style_underline`
- bool `text_style_overline`
- bool `text_style_strikeout`
- char `filename` [200]
- `UndoHistory undo_history`
- int `selected` [100]
- int `n_selected`
- int `rubber_mode`

### 18.101.1 Detailed Description

### 18.101.2 Views

The `View` describes how the render is displayed.

### 18.101.3 Member Data Documentation

#### 18.101.3.1 `filename` char `filename`[200]

#### 18.101.3.2 `grid_mode` bool `grid_mode`

#### 18.101.3.3 `grid_type` char `grid_type`[200]

#### 18.101.3.4 `lwt_mode` bool `lwt_mode`

#### 18.101.3.5 `metric` bool `metric`

**18.101.3.6 n\_selected** int n\_selected

**18.101.3.7 origin** EmbVector origin

**18.101.3.8 ortho\_mode** bool ortho\_mode

**18.101.3.9 pattern** EmbPattern\* pattern

**18.101.3.10 polar\_mode** bool polar\_mode

**18.101.3.11 qsnap\_mode** bool qsnap\_mode

**18.101.3.12 qtrack\_mode** bool qtrack\_mode

**18.101.3.13 real\_render** bool real\_render

**18.101.3.14 rubber\_mode** int rubber\_mode

**18.101.3.15 ruler\_mode** bool ruler\_mode

**18.101.3.16 scale** float scale

**18.101.3.17 selected** int selected[100]

**18.101.3.18 simulate** bool simulate

**18.101.3.19 simulation\_start** clock\_t simulation\_start

**18.101.3.20 snap\_mode** bool snap\_mode

**18.101.3.21 text\_angle** float text\_angle

**18.101.3.22 text\_font** char text\_font[200]

**18.101.3.23 text\_size** float text\_size

**18.101.3.24 text\_style\_bold** bool text\_style\_bold

**18.101.3.25 text\_style\_italic** bool text\_style\_italic

**18.101.3.26 text\_style\_overline** bool text\_style\_overline

**18.101.3.27 text\_style\_strikeout** bool text\_style\_strikeout

**18.101.3.28 text\_style\_underline** bool text\_style\_underline

**18.101.3.29 ui\_mode** int ui\_mode

**18.101.3.30 undo\_history** UndoHistory undo\_history

The documentation for this struct was generated from the following file:

- embroidermodder2/imgui\_main.c

## 18.102 VipHeader\_ Struct Reference

```
#include <embroidery_internal.h>
```

### Public Attributes

- int magicCode
- int numberOfRowsStitches
- int numberOfColors
- short positiveXHoopSize
- short positiveYHoopSize
- short negativeXHoopSize
- short negativeYHoopSize
- int attributeOffset
- int xOffset
- int yOffset
- unsigned char stringVal [8]
- short unknown
- int colorLength

### 18.102.1 Member Data Documentation

**18.102.1.1 attributeOffset** int attributeOffset

**18.102.1.2 colorLength** int colorLength

**18.102.1.3** **magicCode** int magicCode

**18.102.1.4** **negativeXHoopSize** short negativeXHoopSize

**18.102.1.5** **negativeYHoopSize** short negativeYHoopSize

**18.102.1.6** **numberOfColors** int numberOfColors

**18.102.1.7** **numberOfStitches** int numberOfStitches

**18.102.1.8** **positiveXHoopSize** short positiveXHoopSize

**18.102.1.9** **positiveYHoopSize** short positiveYHoopSize

**18.102.1.10** **stringVal** unsigned char stringVal[8]

**18.102.1.11** **unknown** short unknown

**18.102.1.12** **xOffset** int xOffset

**18.102.1.13** **yOffset** int yOffset

The documentation for this struct was generated from the following file:

- [extern/libembroidery/src/embroidery\\_internal.h](#)

## 19 File Documentation

### 19.1 CODE\_OF\_CONDUCT.md File Reference

### 19.2 embroidermodder2/application.cpp File Reference

```
#include "application.h"
#include "mainwindow.h"
```

### 19.3 embroidermodder2/application.h File Reference

```
#include <QApplication>
```

#### Classes

- class [Application](#)

### 19.4 application.h

[Go to the documentation of this file.](#)

```
00001 #ifndef APPLICATION_H
00002 #define APPLICATION_H
00003
00004 #include <QApplication>
00005
00006 class MainWindow;
00007
00008 // On Mac, if the user drops a file on the app's Dock icon, or uses Open As, then this is how the app
     actually opens the file.
00009 class Application : public QApplication
00010 {
00011     Q_OBJECT
00012 public:
00013     Application(int argc, char **argv);
00014     void setMainWin(MainWindow* mainWin) { _mainWin = mainWin; }
00015 protected:
00016     virtual bool event(QEvent *e);
00017 private:
00018     MainWindow* _mainWin;
00019 };
00020
00021 #endif // APPLICATION_H
```

### 19.5 embroidermodder2/cmdprompt.cpp File Reference

```
#include "cmdprompt.h"
#include <QApplication>
#include <QClipboard>
#include <QString>
#include <QAction>
#include <QMenu>
#include <QFile>
#include <QFrame>
#include <QVBoxLayout>
#include <QContextMenuEvent>
#include <QSplitter>
#include <QTextStream>
#include <QTimer>
```

## 19.6 embroidermodder2/cmprompt.h File Reference

```
#include <QHash>
#include <QLineEdit>
#include <QTextBrowser>
#include <QSplitter>
#include <QTextLayout>
```

### Classes

- class [CmdPromptInput](#)
- class [CmdPromptHistory](#)
- class [CmdPromptSplitter](#)
- class [CmdPromptHandle](#)
- class [CmdPrompt](#)

## 19.7 cmdprompt.h

[Go to the documentation of this file.](#)

```
00001 #ifndef CMDPROMPT_H
00002 #define CMDPROMPT_H
00003
00004 #include <QHash>
00005 #include <QLineEdit>
00006 #include <QTextBrowser>
00007 #include <QSplitter>
00008 #include <QTextLayout>
00009
00010 QT_BEGIN_NAMESPACE
00011 class QString;
00012 class QLineEdit;
00013 class QTextBrowser;
00014 class QVBoxLayout;
00015 class QAction;
00016 class QMenu;
00017 class QContextMenuEvent;
00018 class QSplitter;
00019 class QTimer;
00020 QT_END_NAMESPACE
00021
00022 class CmdPromptInput : public QLineEdit
00023 {
00024     Q_OBJECT
00025
00026 public:
00027     CmdPromptInput(QWidget* parent = 0);
00028     ~CmdPromptInput();
00029
00030     QString curText;
00031     QString defaultPrefix;
00032     QString prefix;
00033
00034     QString lastCmd;
00035     QString curCmd;
00036     bool cmdActive;
00037
00038     bool rapidFireEnabled;
00039     bool isBlinking;
00040
00041 protected:
00042     void contextMenuEvent(QContextMenuEvent *event);
00043     bool eventFilter(QObject *obj, QEvent *event);
00044
00045 signals:
00046     void appendHistory(const QString& txt, int prefixLength);
00047
00048     //These connect to the CmdPrompt signals
00049     void startCommand(const QString& cmd);
00050     void runCommand(const QString& cmd, const QString& cmdtxt);
00051     void deletePressed();
00052     void tabPressed();
```

```
00053     void escapePressed();
00054     void upPressed();
00055     void downPressed();
00056     void F1Pressed();
00057     void F2Pressed();
00058     void F3Pressed();
00059     void F4Pressed();
00060     void F5Pressed();
00061     void F6Pressed();
00062     void F7Pressed();
00063     void F8Pressed();
00064     void F9Pressed();
00065     void F10Pressed();
00066     void F11Pressed();
00067     void F12Pressed();
00068     void cutPressed();
00069     void copyPressed();
00070     void pastePressed();
00071     void selectAllPressed();
00072     void undoPressed();
00073     void redoPressed();
00074
00075     void shiftPressed();
00076     void shiftReleased();
00077
00078     void showSettings();
00079
00080     void stopBlinking();
00081
00082 public slots:
00083     void addCommand(const QString& alias, const QString& cmd);
00084     void endCommand();
00085     void processInput(const QChar& rapidChar = QChar());
00086     void checkSelection();
00087     void updateCurrentText(const QString& txt);
00088     void checkEditedText(const QString& txt);
00089     void checkChangedText(const QString& txt);
00090     void checkCursorPosition(int oldpos, int newpos);
00091 private slots:
00092     void copyClip();
00093     void pasteClip();
00094 private:
00095     QHash<QString, QString>* aliasHash;
00096
00097     void changeFormatting(const QList<QTextLayout::FormatRange>& formats);
00098     void clearFormatting();
00099     void applyFormatting();
00100 };
00101
00102 //=====
00103
00104 class CmdPromptHistory : public QTextBrowser
00105 {
00106     Q_OBJECT
00107
00108 public:
00109     CmdPromptHistory(QWidget* parent = 0);
00110     ~CmdPromptHistory();
00111
00112 protected:
00113     void contextMenuEvent(QContextMenuEvent* event);
00114
00115 public slots:
00116     void appendHistory(const QString& txt, int prefixLength);
00117     void startResizeHistory(int y);
00118     void stopResizeHistory(int y);
00119     void resizeHistory(int y);
00120
00121 signals:
00122     void historyAppended(const QString& txt);
00123
00124 private:
00125     int tmpHeight;
00126     QString applyFormatting(const QString& txt, int prefixLength);
00127 };
00128
00129 //=====
00130
00131 class CmdPromptSplitter : public QSplitter
00132 {
00133     Q_OBJECT
00134
00135 public:
00136     CmdPromptSplitter(QWidget* parent = 0);
00137     ~CmdPromptSplitter();
00138
00139 protected:
```

```

00140     QSplitterHandle* createHandle();
00141
00142 signals:
00143     void pressResizeHistory(int y);
00144     void releaseResizeHistory(int y);
00145     void moveResizeHistory(int y);
00146 };
00147
00148 //=====
00149
00150 class CmdPromptHandle : public QSplitterHandle
00151 {
00152     Q_OBJECT
00153
00154 public:
00155     CmdPromptHandle(Qt::Orientation orientation, QSplitter* parent);
00156     ~CmdPromptHandle();
00157
00158 protected:
00159     void mousePressEvent(QMouseEvent* e);
00160     void mouseReleaseEvent(QMouseEvent* e);
00161     void mouseMoveEvent(QMouseEvent* e);
00162
00163 signals:
00164     void handlePressed(int y);
00165     void handleReleased(int y);
00166     void handleMoved(int y);
00167
00168 private:
00169     int pressY;
00170     int releaseY;
00171     int moveY;
00172 };
00173
00174 //=====
00175
00176 class CmdPrompt : public QWidget
00177 {
00178     Q_OBJECT
00179
00180 public:
00181     CmdPrompt(QWidget* parent = 0);
00182     ~CmdPrompt();
00183
00184 protected:
00185
00186 public slots:
00187     QString getHistory() { return promptHistory->toHtml(); }
00188     QString getPrefix() { return promptInput->prefix; }
00189     QString getCurrentText() { return promptInput->curText; }
00190     void setCurrentText(const QString& txt) { promptInput->curText = promptInput->prefix + txt;
00191         promptInput->setText(promptInput->curText); }
00192     void setHistory(const QString& txt) { promptHistory->setHtml(txt);
00193         promptHistory->moveCursor(QTextCursor::End, QTextCursor::MoveAnchor); }
00194     void setPrefix(const QString& txt);
00195     void appendHistory(const QString& txt);
00196     void startResizingTheHistory(int y) { promptHistory->startResizeHistory(y); }
00197     void stopResizingTheHistory(int y) { promptHistory->stopResizeHistory(y); }
00198     void resizeTheHistory(int y) { promptHistory->resizeHistory(y); }
00199     void addCommand(const QString& alias, const QString& cmd) { promptInput->addCommand(alias, cmd); }
00200     void endCommand() { promptInput->endCommand(); }
00201     bool isCommandActive() { return promptInput->cmdActive; }
00202     QString activeCommand() { return promptInput->curCmd; }
00203     QString lastCommand() { return promptInput->lastCmd; }
00204     void processInput() { promptInput->processInput(); }
00205     void enableRapidFire() { promptInput->rapidFireEnabled = true; }
00206     void disableRapidFire() { promptInput->rapidFireEnabled = false; }
00207     bool isRapidFireEnabled() { return promptInput->rapidFireEnabled; }
00208
00209     void alert(const QString& txt);
00210     void startBlinking();
00211     void stopBlinking();
00212     void blink();
00213     void setPromptTextColor(const QColor&);
00214     void setPromptBackgroundColor(const QColor&);
00215     void setPromptFontFamily(const QString&);
00216     void setPromptFontStyle(const QString&);
00217     void setPromptFontSize(int);
00218
00219     void floatingChanged(bool);
00220
00221     void saveHistory(const QString& fileName, bool html);
00222
00223 private slots:
00224

```

```

00225 signals:
00226     void appendTheHistory(const QString& txt, int prefixLength);
00227
00228     //For connecting outside of command prompt
00229     void startCommand(const QString& cmd);
00230     void runCommand(const QString& cmd, const QString& cmdtxt);
00231     void deletePressed();
00232     void tabPressed();
00233     void escapePressed();
00234     void upPressed();
00235     void downPressed();
00236     void F1Pressed();
00237     void F2Pressed();
00238     void F3Pressed();
00239     void F4Pressed();
00240     void F5Pressed();
00241     void F6Pressed();
00242     void F7Pressed();
00243     void F8Pressed();
00244     void F9Pressed();
00245     void F10Pressed();
00246     void F11Pressed();
00247     void F12Pressed();
00248     void cutPressed();
00249     void copyPressed();
00250     void pastePressed();
00251     void selectAllPressed();
00252     void undoPressed();
00253     void redoPressed();
00254
00255     void shiftPressed();
00256     void shiftReleased();
00257
00258     void showSettings();
00259
00260     void historyAppended(const QString& txt);
00261
00262 private:
00263     CmdPromptInput*    promptInput;
00264     CmdPromptHistory*  promptHistory;
00265     QVBoxLayout*       promptVBoxLayout;
00266     QFrame*            promptDivider;
00267
00268     CmdPromptSplitter* promptSplitter;
00269
00270     QHash<QString, QString>* styleHash;
00271     void updateStyle();
00272     QTimer*             blinkTimer;
00273     bool                blinkState;
00274 };
00275
00276 #endif

```

## 19.8 embroidermodder2/docs/fdl-1.3.md File Reference

## 19.9 embroidermodder2/embdetails-dialog.cpp File Reference

```

#include <QApplication>
#include <QtGui>
#include <QGridLayout>
#include <QLabel>
#include <QDialogButtonBox>
#include <QScrollArea>
#include <QGroupBox>
#include "embdetails-dialog.h"
#include "embroidery.h"

```

## 19.10 embroidermodder2/embdetails-dialog.h File Reference

```
#include <QDialog>
```

## Classes

- class [EmbDetailsDialog](#)

### 19.11 embdetails-dialog.h

[Go to the documentation of this file.](#)

```
00001 #ifndef EMBDETAILS_DIALOG_H
00002 #define EMBDETAILS_DIALOG_H
00003
00004 #include <QDialog>
00005
00006 QT_BEGIN_NAMESPACE
00007 class QDialogButtonBox;
00008 class QGraphicsScene;
00009 QT_END_NAMESPACE
00010
00011 class EmbDetailsDialog : public QDialog
00012 {
00013     Q_OBJECT
00014
00015 public:
00016     EmbDetailsDialog(QGraphicsScene* theScene, QWidget *parent = 0);
00017     ~EmbDetailsDialog();
00018
00019 private:
00020     QWidget*      mainWidget;
00021
00022     void          getInfo();
00023     QWidget*      createMainWidget();
00024     QWidget*      createHistogram();
00025
00026     QDialogButtonBox* buttonBox;
00027
00028     quint32 stitchesTotal;
00029     quint32 stitchesReal;
00030     quint32 stitchesJump;
00031     quint32 stitchesTrim;
00032     quint32 colorTotal;
00033     quint32 colorChanges;
00034
00035     QRectF boundingRect;
00036 };
00037
00038 #endif
00039
00040 /* kate: bom off; indent-mode cstyle; indent-width 4; replace-trailing-space-save on; */
```

### 19.12 embroidermodder2/gui\_backend.cpp File Reference

```
#include "imgui.h"
#include "backends/imgui_impl_glfw.h"
#include "backends/imgui_impl_opengl2.h"
#include "gui_backend.h"
#include <vector>
#include <unordered_map>
#include <string>
#include <filesystem>
```

## Functions

- `ImVec2 to_ImVec2 (EmbVector v)`
- `unsigned int embColor_to_int (EmbColor c, int alpha)`  
*Wrapper for ImGui's IM\_COL32 macro.*
- `void draw_line (EmbVector start, EmbVector end, int color)`

- void `draw_circle` (`EmbVector` position, float radius, int color, bool filled)
- void `draw_rect` (`EmbVector` bottom\_left, `EmbVector` top\_right, int color, bool filled)
- void `draw_text` (`EmbVector` position, int color, const char \*text)
- void `draw_quad` (`EmbVector` c1, `EmbVector` c2, `EmbVector` c3, `EmbVector` c4, int color)
- void `begin_ui` (const char \*label, int height, int width)
- void `end_ui` (void)
- bool `begin_tab_bar` (const char \*label)
- void `end_tab_bar` (void)
- bool `begin_combo` (const char \*label, char \*data)
- bool `selectable` (const char \*label, bool current)
- void `end_combo` (void)
- bool `collapsing_header` (const char \*label)
- bool `button` (const char \*label)
- bool `begin_tab_item` (const char \*label)
- void `end_tab_item` (void)
- void `edit_int` (const char \*label, int \*data)
- void `show_real` (const char \*label, `EmbReal` data)
- void `show_int` (const char \*label, int data)
- void `translated_text` (const char \*str)
- void `checkbox_data` (const char \*label, bool \*stor, bool \*value)
- void `edit_real` (const char \*label, `EmbReal` \*data)
- void `same_line` (void)
- void `begin_child` (const char \*label)
- void `end_child` ()
- `EmbVector get_window_pos` (void)  
*Get the window pos object.*
- `EmbVector get_screen_size` (void)  
*Get the screen size object.*
- void `get_display_size` (int \*width, int \*height)  
*Get the display size object.*
- void `set_style` (char font\_file[200])  
*Set the style object.*
- void `columns` (int n, char \*label)
- void `next_column` (void)
- void `end_columns` (void)
- void `display_text` (const char \*msg)
- void `get_current_directory` (char directory[200])
- bool `menu_item` (const char \*key)
- int `load_textures` (`Dictionary` \*texture\_list)
- void `menu_separator` (void)
- bool `begin_menu` (const char \*label)
- void `end_menu` ()
- bool `image_button` (char \*texture\_label, `EmbVector` size)
- void `header` (const char \*title)
- void `set_column_width` (int start, int end)
- bool `begin_menu_bar` (void)
- void `end_menu_bar` (void)
- void `setup_main_widget` (void)
- void `setup_imgui` (`GLFWwindow` \*window)
- void `imgui_render` (`GLFWwindow` \*window)
- void `imgui_new_frame` (void)

## Variables

- ImFont \* `font`
- ImFont \* `header_font`
- std::unordered\_map< std::string, GLuint > `textures`

### 19.12.1 Function Documentation

**19.12.1.1 `begin_child()`** void begin\_child ( const char \* *label* )

#### Parameters

<i>label</i>	<input type="text"/>
--------------	----------------------

**19.12.1.2 `begin_combo()`** bool begin\_combo ( const char \* *label*, char \* *data* )

#### Parameters

<i>label</i>	<input type="text"/>
<i>data</i>	<input type="text"/>

#### Returns

true  
false

**19.12.1.3 `begin_menu()`** bool begin\_menu ( const char \* *label* )

**19.12.1.4 `begin_menu_bar()`** bool begin\_menu\_bar ( void )

**19.12.1.5 `begin_tab_bar()`** bool begin\_tab\_bar ( const char \* *label* )

**Parameters**

<i>label</i>	<input type="text"/>
--------------	----------------------

**Returns**

true  
false

**19.12.1.6 begin\_tab\_item()** `bool begin_tab_item (`  
`const char * label )`

**Parameters**

<i>label</i>	<input type="text"/>
--------------	----------------------

**Returns**

true  
false

**19.12.1.7 begin\_ui()** `void begin_ui (`  
`const char * label,`  
`int height,`  
`int width )`

**Parameters**

<i>label</i>	<input type="text"/>
<i>height</i>	<input type="text"/>
<i>width</i>	<input type="text"/>

**19.12.1.8 button()** `bool button (`  
`const char * label )`

**Parameters**

<i>label</i>	<input type="text"/>
--------------	----------------------

**Returns**

true  
false

**19.12.1.9 checkbox\_data()** void checkbox\_data ( const char \* *label*, bool \* *stor*, bool \* *value* )

**Parameters**

<i>label</i>	<input type="text"/>
<i>stor</i>	<input type="text"/>
<i>value</i>	<input type="text"/>

**19.12.1.10 collapsing\_header()** bool collapsing\_header ( const char \* *label* )

**Parameters**

<i>label</i>	<input type="text"/>
--------------	----------------------

**Returns**

true  
false

**19.12.1.11 columns()** void columns ( int *n*, char \* *label* )

**19.12.1.12 display\_text()** void display\_text ( const char \* *msg* )

**19.12.1.13 draw\_circle()** void draw\_circle ( EmbVector *position*, float *radius*, int *color*, bool *filled* )

**Parameters**

<i>position</i>	
<i>radius</i>	
<i>color</i>	
<i>filled</i>	

**19.12.1.14 draw\_line()** void draw\_line (  
    EmbVector start,  
    EmbVector end,  
    int color )**Parameters**

<i>start</i>	
<i>end</i>	
<i>color</i>	

**19.12.1.15 draw\_quad()** void draw\_quad (  
    EmbVector c1,  
    EmbVector c2,  
    EmbVector c3,  
    EmbVector c4,  
    int color )**Parameters**

<i>c1</i>	
<i>c2</i>	
<i>c3</i>	
<i>c4</i>	
<i>color</i>	

**19.12.1.16 draw\_rect()** void draw\_rect (  
    EmbVector bottom\_left,  
    EmbVector top\_right,  
    int color,  
    bool filled )**Parameters**

<i>bottom_left</i>	
<i>top_right</i>	
<i>color</i>	
<i>filled</i>	

```
19.12.1.17 draw_text() void draw_text (
    EmbVector position,
    int color,
    const char * text )
```

**Parameters**

<i>position</i>	
<i>color</i>	
<i>text</i>	

```
19.12.1.18 edit_int() void edit_int (
    const char * label,
    int * data )
```

**Parameters**

<i>label</i>	
<i>data</i>	

```
19.12.1.19 edit_real() void edit_real (
    const char * label,
    EmbReal * data )
```

**Parameters**

<i>label</i>	
<i>data</i>	

```
19.12.1.20 embColor_to_int() unsigned int embColor_to_int (
    EmbColor c,
    int alpha )
```

Wrapper for ImGui's IM\_COL32 macro.

This function doesn't deal with opacity.

**Parameters**

<i>c</i>	The color as an EmbColor.
----------	---------------------------

**Returns**

unsigned int The color encoded as an integer.

**19.12.1.21 `end_child()`** void end\_child ( void )

**19.12.1.22 `end_columns()`** void end\_columns ( void )

**19.12.1.23 `end_combo()`** void end\_combo ( void )

**19.12.1.24 `end_menu()`** void end\_menu ( )

**19.12.1.25 `end_menu_bar()`** void end\_menu\_bar ( void )

**19.12.1.26 `end_tab_bar()`** void end\_tab\_bar ( void )

**19.12.1.27 `end_tab_item()`** void end\_tab\_item ( void )

**19.12.1.28 `end_ui()`** void end\_ui ( void )

**19.12.1.29 `get_current_directory()`** void get\_current\_directory ( char *directory*[200] )

**19.12.1.30 `get_display_size()`** void get\_display\_size ( int \* *width*, int \* *height* )

Get the display size object.

**Parameters**

<i>width</i>	
<i>height</i>	

**19.12.1.31 `get_screen_size()`** `EmbVector get_screen_size (`  
`void )`

Get the screen size object.

**Returns**`EmbVector`**19.12.1.32 `get_window_pos()`** `EmbVector get_window_pos (`  
`void )`

Get the window pos object.

**Returns**`EmbVector`**19.12.1.33 `header()`** `void header (`  
`const char * title )`**19.12.1.34 `image_button()`** `bool image_button (`  
`char * texture_label,`  
`EmbVector size )`**19.12.1.35 `imgui_new_frame()`** `void imgui_new_frame (`  
`void )`**19.12.1.36 `imgui_render()`** `void imgui_render (`  
`GLFWwindow * window )`**19.12.1.37 `load_textures()`** `int load_textures (`  
`Dictionary * texture_list )`

**Parameters**

<i>texture_list</i>	<input type="text"/>
---------------------	----------------------

**Returns**

int

**19.12.1.38 menu\_item()** bool menu\_item (  
    const char \* key )**19.12.1.39 menu\_separator()** void menu\_separator (  
    void )**19.12.1.40 next\_column()** void next\_column (  
    void )**19.12.1.41 same\_line()** void same\_line (  
    void )**19.12.1.42 selectable()** bool selectable (  
    const char \* label,  
    bool current )**Parameters**

<i>label</i>	<input type="text"/>
<i>current</i>	<input type="text"/>

**Returns**true  
false

```
19.12.1.43 set_column_width() void set_column_width (
    int start,
    int end )
```

```
19.12.1.44 set_style() void set_style (
    char font_file[200] )
```

Set the style object.

```
19.12.1.45 setup_imgui() void setup_imgui (
    GLFWwindow * window )
```

```
19.12.1.46 setup_main_widget() void setup_main_widget (
    void )
```

```
19.12.1.47 show_int() void show_int (
    const char * label,
    int data )
```

#### Parameters

<i>label</i>	
<i>data</i>	

```
19.12.1.48 show_real() void show_real (
    const char * label,
    EmbReal data )
```

```
19.12.1.49 to_ImVec2() ImVec2 to_ImVec2 (
    EmbVector v ) [inline]
```

```
19.12.1.50 translated_text() void translated_text (
    const char * str )
```

**Parameters**

<code>str</code>	
------------------	--

**19.12.2 Variable Documentation****19.12.2.1 font** `ImFont* font`**19.12.2.2 header\_font** `ImFont* header_font`**19.12.2.3 textures** `std::unordered_map<std::string, GLuint> textures`**19.13 embroidermodder2/gui\_backend.h File Reference**

```
#include <stdio.h>
#include <stdbool.h>
#include <time.h>
#include <embroidery.h>
#include <GL/glew.h>
#include <GLFW/glfw3.h>
```

**Classes**

- struct [DictionaryEntry\\_](#)
- struct [Dictionary\\_](#)

**Typedefs**

- typedef struct [DictionaryEntry\\_ DictionaryEntry](#)
- typedef struct [Dictionary\\_ Dictionary](#)

## Functions

- void `log_debug` (const char \*s)  
*Rather than outputting debug information to the command line it is sent to a file called "debug.txt" which is in the current directory.*
- const char \* `translate` (const char \*)  
*Rather than using .po files we translate at runtime using this function.*
- void `set_style` (char fname[200])  
*Set the style object.*
- bool `menu_item` (const char \*)
- unsigned int `embColor_to_int` (`EmbColor` c, int alpha)  
*Wrapper for ImGui's IM\_COL32 macro.*
- void `draw_line` (`EmbVector` start, `EmbVector` end, int color)
- void `draw_circle` (`EmbVector` position, float radius, int color, bool filled)
- void `draw_rect` (`EmbVector` bottom\_left, `EmbVector` top\_right, int color, bool filled)
- void `draw_quad` (`EmbVector` c1, `EmbVector` c2, `EmbVector` c3, `EmbVector` c4, int color)
- void `draw_text` (`EmbVector` position, int color, const char \*text)
- void `begin_ui` (const char \*, int, int)
- void `end_ui` (void)
- void `begin_child` (const char \*label)
- void `end_child` (void)
- bool `begin_tab_bar` (const char \*label)
- void `end_tab_bar` (void)
- bool `begin_combo` (const char \*label, char \*data)
- bool `selectable` (const char \*label, bool)
- void `end_combo` (void)
- bool `collapsing_header` (const char \*label)
- bool `button` (const char \*)
- bool `begin_tab_item` (const char \*str)
- void `edit_int` (const char \*str, int \*data)
- void `end_tab_item` (void)
- void `show_real` (const char \*label, `EmbReal` data)
- void `show_int` (const char \*label, int data)
- void `translated_text` (const char \*str)
- void `checkbox_data` (const char \*str, bool \*stor, bool \*value)
- void `edit_real` (const char \*str, `EmbReal` \*data)
- void `same_line` (void)
- bool `begin_menu_bar` (void)
- void `end_menu_bar` (void)
- void `get_current_directory` (char directory[200])
- bool `image_button` (char \*texture\_label, `EmbVector` size)
- void `menu_separator` (void)
- `EmbVector get_window_pos` (void)  
*Get the window pos object.*
- `EmbVector get_screen_size` (void)  
*Get the screen size object.*
- `GLuint gen_gl_texture` (uint8\_t \*data, int w, int h, int wrap)
- `GLuint load_texture` (char fname[200])
- bool `begin_menu` (const char \*label)
- void `end_menu` ()
- void `setup_imgui` (GLFWwindow \*window)
- void `imgui_render` (GLFWwindow \*window)
- void `imgui_new_frame` (void)
- int `load_textures` (`Dictionary` \*texture\_list)

- void `view_tab` (int)
- void `setup_main_widget` (void)
- void `columns` (int n, char \*label)
- void `next_column` (void)
- void `end_columns` (void)
- void `display_text` (const char \*msg)
- void `header` (const char \*title)
- void `set_column_width` (int, int)
- void `get_display_size` (int \*width, int \*height)

*Get the display size object.*

### 19.13.1 Typedef Documentation

#### 19.13.1.1 `Dictionary` `typedef struct Dictionary_ Dictionary`

#### 19.13.1.2 `DictionaryEntry` `typedef struct DictionaryEntry_ DictionaryEntry`

### 19.13.2 Function Documentation

#### 19.13.2.1 `begin_child()` `void begin_child (` `const char * label )`

##### Parameters

<code>label</code>	<input type="text"/>
--------------------	----------------------

#### 19.13.2.2 `begin_combo()` `bool begin_combo (` `const char * label,` `char * data )`

##### Parameters

<code>label</code>	<input type="text"/>
<code>data</code>	<input type="text"/>

**Returns**

true  
false

**19.13.2.3 begin\_menu()** bool begin\_menu (  
const char \* *label* )

**19.13.2.4 begin\_menu\_bar()** bool begin\_menu\_bar (  
void )

**19.13.2.5 begin\_tab\_bar()** bool begin\_tab\_bar (  
const char \* *label* )

**Parameters**

<i>label</i>	<input type="text"/>
--------------	----------------------

**Returns**

true  
false

**19.13.2.6 begin\_tab\_item()** bool begin\_tab\_item (  
const char \* *label* )

**Parameters**

<i>label</i>	<input type="text"/>
--------------	----------------------

**Returns**

true  
false

**19.13.2.7 begin\_ui()** void begin\_ui (  
const char \* *label*,  
int *height*,  
int *width* )

**Parameters**

<i>label</i>	<input type="text"/>
<i>height</i>	<input type="text"/>
<i>width</i>	<input type="text"/>

**19.13.2.8 button()** `bool button ( const char * label )`**Parameters**

<i>label</i>	<input type="text"/>
--------------	----------------------

**Returns**

true  
false

**19.13.2.9 checkbox\_data()** `void checkbox_data ( const char * label, bool * stor, bool * value )`**Parameters**

<i>label</i>	<input type="text"/>
<i>stor</i>	<input type="text"/>
<i>value</i>	<input type="text"/>

**19.13.2.10 collapsing\_header()** `bool collapsing_header ( const char * label )`**Parameters**

<i>label</i>	<input type="text"/>
--------------	----------------------

**Returns**

true  
false

**19.13.2.11 columns()** void columns (

int <i>n</i> ,	
char * <i>label</i> )	

**19.13.2.12 display\_text()** void display\_text (

const char * <i>msg</i> )	
---------------------------	--

**19.13.2.13 draw\_circle()** void draw\_circle (

<i>EmbVector</i> <i>position</i> ,	
float <i>radius</i> ,	
int <i>color</i> ,	
bool <i>filled</i> )	

**Parameters**

<i>position</i>	
<i>radius</i>	
<i>color</i>	
<i>filled</i>	

**19.13.2.14 draw\_line()** void draw\_line (

<i>EmbVector</i> <i>start</i> ,	
<i>EmbVector</i> <i>end</i> ,	
int <i>color</i> )	

**Parameters**

<i>start</i>	
<i>end</i>	
<i>color</i>	

**19.13.2.15 draw\_quad()** void draw\_quad (

<i>EmbVector</i> <i>c1</i> ,	
<i>EmbVector</i> <i>c2</i> ,	
<i>EmbVector</i> <i>c3</i> ,	
<i>EmbVector</i> <i>c4</i> ,	
int <i>color</i> )	

**Parameters**

<i>c1</i>	
<i>c2</i>	

**Parameters**

<i>c3</i>	
<i>c4</i>	
<i>color</i>	

**19.13.2.16 draw\_rect()** void draw\_rect (   
     EmbVector bottom\_left,  
     EmbVector top\_right,  
     int color,  
     bool filled )**Parameters**

<i>bottom_left</i>	
<i>top_right</i>	
<i>color</i>	
<i>filled</i>	

**19.13.2.17 draw\_text()** void draw\_text (   
     EmbVector position,  
     int color,  
     const char \* text )**Parameters**

<i>position</i>	
<i>color</i>	
<i>text</i>	

**19.13.2.18 edit\_int()** void edit\_int (   
     const char \* label,  
     int \* data )**Parameters**

<i>label</i>	
<i>data</i>	

**19.13.2.19 edit\_real()** void edit\_real (

```
const char * label,
EmbReal * data )
```

**Parameters**

<i>label</i>	
<i>data</i>	

**19.13.2.20 `embColor_to_int()`** `unsigned int embColor_to_int (`  
`EmbColor c,`  
`int alpha )`

Wrapper for ImGui's IM\_COL32 macro.

This function doesn't deal with opacity.

**Parameters**

<i>c</i>	The color as an EmbColor.
----------	---------------------------

**Returns**

`unsigned int` The color encoded as an integer.

**19.13.2.21 `end_child()`** `void end_child (`  
`void )`

**19.13.2.22 `end_columns()`** `void end_columns (`  
`void )`

**19.13.2.23 `end_combo()`** `void end_combo (`  
`void )`

**19.13.2.24 `end_menu()`** `void end_menu ( )`

**19.13.2.25 `end_menu_bar()`** void end\_menu\_bar ( void )

**19.13.2.26 `end_tab_bar()`** void end\_tab\_bar ( void )

**19.13.2.27 `end_tab_item()`** void end\_tab\_item ( void )

**19.13.2.28 `end_ui()`** void end\_ui ( void )

**19.13.2.29 `gen_gl_texture()`** GLuint gen\_gl\_texture ( uint8\_t \* data, int w, int h, int wrap )

**19.13.2.30 `get_current_directory()`** void get\_current\_directory ( char directory[200] )

**19.13.2.31 `get_display_size()`** void get\_display\_size ( int \* width, int \* height )

Get the display size object.

#### Parameters

<code>width</code>	
<code>height</code>	

**19.13.2.32 `get_screen_size()`** EmbVector get\_screen\_size ( void )

Get the screen size object.

Returns

EmbVector

```
19.13.2.33 get_window_pos() EmbVector get_window_pos (
    void )
```

Get the window pos object.

Returns

EmbVector

```
19.13.2.34 header() void header (
    const char * title )
```

```
19.13.2.35 image_button() bool image_button (
    char * texture_label,
    EmbVector size )
```

```
19.13.2.36 imgui_new_frame() void imgui_new_frame (
    void )
```

```
19.13.2.37 imgui_render() void imgui_render (
    GLFWwindow * window )
```

```
19.13.2.38 load_texture() GLuint load_texture (
    char fname[200] )
```

```
19.13.2.39 load_textures() int load_textures (
    Dictionary * texture_list )
```

**Parameters**

<i>texture_list</i>	<input type="text"/>
---------------------	----------------------

**Returns**

int

**19.13.2.40 log\_debug()** void log\_debug (  
    const char \* msg )

Rather than outputting debug information to the command line it is sent to a file called "debug.txt" which is in the current directory.

*msg* The message to be written to the end of the debug file.

The benefits of always logging to file are: they are easily requested from users who need help and we can search the debug log using grep and other tool.

**Todo** log current time and process id alongside all debug information.

**19.13.2.41 menu\_item()** bool menu\_item (  
    const char \* key )**19.13.2.42 menu\_separator()** void menu\_separator (  
    void )**19.13.2.43 next\_column()** void next\_column (  
    void )**19.13.2.44 same\_line()** void same\_line (  
    void )**19.13.2.45 selectable()** bool selectable (  
    const char \* label,  
    bool current )

**Parameters**

<i>label</i>	
<i>current</i>	

**Returns**

true  
false

**19.13.2.46 set\_column\_width()** void set\_column\_width ( int *start*, int *end* )

**19.13.2.47 set\_style()** void set\_style ( char *font\_file*[200] )

Set the style object.

**19.13.2.48 setup\_imgui()** void setup\_imgui ( GLFWwindow \* *window* )

**19.13.2.49 setup\_main\_widget()** void setup\_main\_widget ( void )

**19.13.2.50 show\_int()** void show\_int ( const char \* *label*, int *data* )

**Parameters**

<i>label</i>	
<i>data</i>	

**19.13.2.51 show\_real()** void show\_real (

```
    const char * label,  
    EmbReal data )
```

### 19.13.2.52 translate() const char \* translate ( const char \* string )

Rather than using .po files we translate at runtime using this function.

*string* The string to be translated. Returns const char\* The translated string.

**Todo** check for translation\_table loaded and use it.

### 19.13.2.53 translated\_text() void translated\_text ( const char \* str )

Parameters

str	
-----	--

### 19.13.2.54 view\_tab() void view\_tab ( int )

## 19.14 gui\_backend.h

[Go to the documentation of this file.](#)

```
00001 /*  
00002 * Embroidermodder 2.  
00003 *-----  
00004 * Copyright 2013-2022 The Embroidermodder Team  
00005 * Embroidermodder 2 is Open Source Software.  
00006 * See LICENSE for licensing terms.  
00007 *-----  
00008 * Use Python's PEP7 style guide.  
00009 * https://peps.python.org/pep-0007/  
00010 */  
00011  
00012 #ifndef GUI_BACKEND_H  
00013 #define GUI_BACKEND_H  
00014  
00015  
00016 #ifndef __cplusplus  
00017 #define __cplusplus  
00018  
00019 #ifdef __cplusplus  
00020 extern "C" {  
00021 #endif  
00022  
00023 #include <stdio.h>  
00024 #include <stdbool.h>  
00025 #include <time.h>  
00026  
00027 #include <embroidery.h>  
00028
```

```

00029 #include <GL/glew.h>
00030 #include <GLFW/glfw3.h>
00031
00036 typedef struct DictionaryEntry_ {
00037     char key[200];
00038     char value[200];
00039 } DictionaryEntry;
00040
00045 typedef struct Dictionary_ {
00046     DictionaryEntry *data;
00047     int length;
00048     int max_length;
00049 } Dictionary;
00050
00051
00052 void log_debug(const char *s);
00053 const char *translate(const char *s);
00054 void set_style(char fname[200]);
00055 bool menu_item(const char *s);
00056 unsigned int embColor_to_int(EmbColor c, int alpha);
00057 void draw_line(EmbVector start, EmbVector end, int color);
00058 void draw_circle(EmbVector position, float radius, int color, bool filled);
00059 void draw_rect(EmbVector bottom_left, EmbVector top_right, int color, bool filled);
00060 void draw_quad(EmbVector c1, EmbVector c2, EmbVector c3, EmbVector c4, int color);
00061 void draw_text(EmbVector position, int color, const char *text);
00062 void begin_ui(const char *, int, int);
00063 void end_ui(void);
00064 void begin_child(const char *label);
00065 void end_child(void);
00066 bool begin_tab_bar(const char *label);
00067 void end_tab_bar(void);
00068 bool begin_combo(const char *label, char *data);
00069 bool selectable(const char *label, bool);
00070 void end_combo(void);
00071 bool collapsing_header(const char *label);
00072 bool button(const char *s);
00073 bool begin_tab_item(const char *str);
00074 void edit_int(const char *str, int *data);
00075 void end_tab_item(void);
00076 void show_real(const char *label, EmbReal data);
00077 void show_int(const char *label, int data);
00078 void translated_text(const char *str);
00079 void checkbox_data(const char *str, bool *stor, bool *value);
00080 void edit_real(const char *str, EmbReal *data);
00081 void same_line(void);
00082 bool begin_menu_bar(void);
00083 void end_menu_bar(void);
00084 void get_current_directory(char directory[200]);
00085 bool image_button(char* texture_label, EmbVector size);
00086 void menu_separator(void);
00087 EmbVector get_window_pos(void);
00088 EmbVector get_screen_size(void);
00089 GLuint gen_gl_texture(uint8_t* data, int w, int h, int wrap);
00090 GLuint load_texture(char fname[200]);
00091 bool begin_menu(const char *label);
00092 void end_menu();
00093 void setup_imgui(GLFWwindow *window);
00094 void imgui_render(GLFWwindow *window);
00095 void imgui_new_frame();
00096 int load_textures(Dictionary *texture_list);
00097 void view_tab(int);
00098 void setup_main_widget(void);
00099 void columns(int n, char *label);
00100 void next_column(void);
00101 void end_columns(void);
00102 void display_text(const char *msg);
00103 void header(const char *title);
00104 void set_column_width(int, int);
00105 void get_display_size(int *width, int *height);
00106
00107 #ifdef __cplusplus
00108 }
00109 #endif
00110
00111 #endif /* EMBROIDERMODDER_H */

```

## 19.15 embroidermodder2/imagedwidget.cpp File Reference

```
#include <QDebug>
#include "imagedwidget.h"
```

## 19.16 embroidermodder2/imagewidget.h File Reference

```
#include <QPainter>
#include <QImage>
#include <QWidget>
```

### Classes

- class [ImageWidget](#)

## 19.17 imagewidget.h

[Go to the documentation of this file.](#)

```
00001 #ifndef IMAGEWIDGET_H
00002 #define IMAGEWIDGET_H
00003
00004 #include <QPainter>
00005 #include <QImage>
00006 #include <QWidget>
00007
00008 QT_BEGIN_NAMESPACE
00009 class QPainter;
00010 class QImage;
00011 QT_END_NAMESPACE
00012
00013 class ImageWidget : public QWidget
00014 {
00015     Q_OBJECT
00016
00017 public:
00018     ImageWidget(const QString &filename, QWidget* parent = 0);
00019     ~ImageWidget();
00020
00021     bool load(const QString &fileName);
00022     bool save(const QString &fileName);
00023
00024 protected:
00025     void paintEvent(QPaintEvent* event);
00026
00027 private:
00028     QImage img;
00029 };
00030
00031 #endif
00032
00033 /* kate: bom off; indent-mode cstyle; indent-width 4; replace-trailing-space-save on; */
```

## 19.18 embroidermodder2/imgui\_main.c File Reference

```
#include <stdlib.h>
#include <string.h>
#include <stdint.h>
#include <stdbool.h>
#include <math.h>
#include <time.h>
#include <tinydir.h>
#include "stb/stb_image.h"
#include "toml.h"
#include "gui_backend.h"
```

## Classes

- struct `UiObject_`  
*This covers the inbuilt designs: Dolphin, Snowflake and Heart. Covers Rotate, Scale and Point UI events.*
- struct `UndoHistory_`
- struct `IndexEntry_`
- struct `Index_`
- struct `View_`
- struct `Settings_`  
*Settings System.*

## Macros

- `#define STB_IMAGE_IMPLEMENTATION`
- `#define WIDGET_MODE_BLOCK 0`
- `#define WIDGET_MODE_TEXT 1`
- `#define WIDGET_MODE_IMAGE 2`
- `#define WIDGET_MODE_SVG 3`
- `#define WIDGET_MODE_BACKGROUND 4`
- `#define WIDGET_MODE_SPINBOX 5`
- `#define WIDGET_MODE_COMBOBOX 6`
- `#define WIDGET_MODE_CONTAINER 7`
- `#define WIDGET_MODE_PANEL 8`
- `#define WIDGET_MODE_VIEW 9`
- `#define WIDGET_MODE_ROOT 10`
- `#define VIEW_STATE_SNAP 0x0000`
- `#define VIEW_STATE_GRIP 0x0001`
- `#define VIEW_STATE_RULER 0x0002`
- `#define VIEW_STATE_ORTHO 0x0004`
- `#define VIEW_STATE_POLAR 0x0008`
- `#define VIEW_STATE_QSNAP 0x0010`
- `#define VIEW_STATE_QTRACK 0x0020`
- `#define VIEW_STATE_LWT 0x0040`
- `#define VIEW_STATE_REAL 0x0080`
- `#define VIEW_STATE_CLOSEABLE 0x0100`
- `#define VIEW_STATE_USE_LOGO 0x0200`
- `#define VIEW_STATE_USE_TEXTURE 0x0400`
- `#define VIEW_STATE_USE_COLOR 0x0800`
- `#define VIEW_STATE_GRID 0x1000`
- `#define PERMISSIONS_USER 0`
- `#define PERMISSIONS_SYSTEM 1`
- `#define MITER_JOIN 0`
- `#define LINE_STYLE_DASHED 0`
- `#define LINE_STYLE_SOLID 1`
- `#define BRUSH_STYLE_DASHED 0`
- `#define BRUSH_STYLE_SOLID 1`
- `#define DIRECTION_RIGHT 0`
- `#define DIRECTION_LEFT 1`
- `#define RENDER_UI 0`
- `#define RENDER_TEXT_EDITOR 1`
- `#define OBJ_TYPE_NULL 0`
- `#define OBJ_TYPE_BASE 0`
- `#define OBJ_TYPE_ARC 1`
- `#define OBJ_TYPE_BLOCK 2`

- #define OBJ\_TYPE\_CIRCLE 3
- #define OBJ\_TYPE\_DIMALIGNED 4
- #define OBJ\_TYPE\_DIMANGULAR 5
- #define OBJ\_TYPE\_DIMARCLENGTH 6
- #define OBJ\_TYPE\_DIMDIAMETER 7
- #define OBJ\_TYPE\_DIMLEADER 8
- #define OBJ\_TYPE\_DIMLINEAR 9
- #define OBJ\_TYPE\_DIMORDINATE 10
- #define OBJ\_TYPE\_DIMRADIUS 11
- #define OBJ\_TYPE\_ELLIPSE 12
- #define OBJ\_TYPE\_ELLIPSEARC 13
- #define OBJ\_TYPE\_RUBBER 14
- #define OBJ\_TYPE\_GRID 15
- #define OBJ\_TYPE\_HATCH 16
- #define OBJ\_TYPE\_IMAGE 17
- #define OBJ\_TYPE\_INFINITELINE 18
- #define OBJ\_TYPE\_LINE 19
- #define OBJ\_TYPE\_PATH 20
- #define OBJ\_TYPE\_POINT 21
- #define OBJ\_TYPE\_POLYGON 22
- #define OBJ\_TYPE\_POLYLINE 23
- #define OBJ\_TYPE\_RAY 24
- #define OBJ\_TYPE\_RECTANGLE 25
- #define OBJ\_TYPE\_SLOT 26
- #define OBJ\_TYPE\_SPLINE 27
- #define OBJ\_TYPE\_TEXTMULTI 28
- #define OBJ\_TYPE\_TEXTSINGLE 29
- #define OBJ\_TYPE\_UNKNOWN 30
- #define OBJ\_LTYPE\_CONT 0
- #define OBJ\_LTYPE\_CENTER 1
- #define OBJ\_LTYPE\_DOT 2
- #define OBJ\_LTYPE\_HIDDEN 3
- #define OBJ\_LTYPE\_PHANTOM 4
- #define OBJ\_LTYPE\_ZIGZAG 5
- #define OBJ\_LTYPE\_RUNNING 6
- #define OBJ\_LTYPE\_SATIN 7
- #define OBJ\_LTYPE\_FISHBONE 8
- #define OBJ\_LWT\_BYLAYER (-2)
- #define OBJ\_LWT\_BYBLOCK (-1)
- #define OBJ\_LWT\_DEFAULT 0
- #define OBJ\_LWT\_01 1
- #define OBJ\_LWT\_02 2
- #define OBJ\_LWT\_03 3
- #define OBJ\_LWT\_04 4
- #define OBJ\_LWT\_05 5
- #define OBJ\_LWT\_06 6
- #define OBJ\_LWT\_07 7
- #define OBJ\_LWT\_08 8
- #define OBJ\_LWT\_09 9
- #define OBJ\_LWT\_10 10
- #define OBJ\_LWT\_11 11
- #define OBJ\_LWT\_12 12
- #define OBJ\_LWT\_13 13
- #define OBJ\_LWT\_14 14
- #define OBJ\_LWT\_15 15

- #define OBJ\_LWT\_16 16
- #define OBJ\_LWT\_17 17
- #define OBJ\_LWT\_18 18
- #define OBJ\_LWT\_19 19
- #define OBJ\_LWT\_20 20
- #define OBJ\_LWT\_21 21
- #define OBJ\_LWT\_22 22
- #define OBJ\_LWT\_23 23
- #define OBJ\_LWT\_24 24
- #define OBJ\_SNAP\_NULL 0
- #define OBJ\_SNAP\_ENDPOINT 1
- #define OBJ\_SNAP\_MIDPOINT 2
- #define OBJ\_SNAP\_CENTER 3
- #define OBJ\_SNAP\_NODE 4
- #define OBJ\_SNAP\_QUADRANT 5
- #define OBJ\_SNAP\_INTERSECTION 6
- #define OBJ\_SNAP\_EXTENSION 7
- #define OBJ\_SNAP\_INSERTION 8
- #define OBJ\_SNAP\_PERPENDICULAR 9
- #define OBJ\_SNAP\_TANGENT 10
- #define OBJ\_SNAP\_NEAREST 11
- #define OBJ\_SNAP\_APPINTERSECTION 12
- #define OBJ\_SNAP\_PARALLEL 13
- #define SNAP\_TYPES 14
- #define OBJ\_RUBBER\_OFF 0
- #define OBJ\_RUBBER\_ON 1
- #define OBJ\_RUBBER\_CIRCLE\_1P\_RAD 2
- #define OBJ\_RUBBER\_CIRCLE\_1P\_DIA 3
- #define OBJ\_RUBBER\_CIRCLE\_2P 4
- #define OBJ\_RUBBER\_CIRCLE\_3P 5
- #define OBJ\_RUBBER\_CIRCLE\_TTR 6
- #define OBJ\_RUBBER\_CIRCLE\_TTT 7
- #define OBJ\_RUBBER\_DIMLEADER\_LINE 8
- #define OBJ\_RUBBER\_ELLIPSE\_LINE 9
- #define OBJ\_RUBBER\_ELLIPSE\_MAJORDIAMETER\_MINORRADIUS 10
- #define OBJ\_RUBBER\_ELLIPSE\_MAJORRADIUS\_MINORRADIUS 11
- #define OBJ\_RUBBER\_ELLIPSE\_ROTATION 12
- #define OBJ\_RUBBER\_GRIP 13
- #define OBJ\_RUBBER\_LINE 14
- #define OBJ\_RUBBER\_POLYGON 15
- #define OBJ\_RUBBER\_POLYGON\_INSCRIBE 16
- #define OBJ\_RUBBER\_POLYGON\_CIRCUMSCRIBE 17
- #define OBJ\_RUBBER\_POLYLINE 18
- #define OBJ\_RUBBER\_IMAGE 19
- #define OBJ\_RUBBER\_RECTANGLE 20
- #define OBJ\_RUBBER\_TEXTSINGLE 21
- #define RUBBER\_MODES 22
- #define SPARE\_RUBBER\_OFF 0
- #define SPARE\_RUBBER\_PATH 1
- #define SPARE\_RUBBER\_POLYGON 2
- #define SPARE\_RUBBER\_POLYLINE 3
- #define PREVIEW\_CLONE\_NULL 0
- #define PREVIEW\_CLONE\_SELECTED 1
- #define PREVIEW\_CLONE\_RUBBER 2
- #define PREVIEW\_MODE\_NULL 0

- #define PREVIEW\_MODE\_OFF 0
- #define PREVIEW\_MODE\_MOVE 1
- #define PREVIEW\_MODE\_ROTATE 2
- #define PREVIEW\_MODE\_SCALE 3
- #define NUMBER\_ARCHITECTURAL 0
- #define NUMBER\_DECIMAL 1
- #define NUMBER\_ENGINEERING 2
- #define NUMBER\_FRACTIONAL 3
- #define NUMBER\_SCIENTIFIC 4
- #define DISABLE\_GRID 0
- #define RECTANGULAR\_GRID 1
- #define CIRCULAR\_GRID 2
- #define ISOMETRIC\_GRID 3
- #define ENABLE\_LWT "ENABLE\_LWT"
- #define ENABLE\_REAL "ENABLE\_REAL"
- #define VIEW\_COLOR\_CROSSHAIR "VIEW\_COLOR\_CROSSHAIR"
- #define VIEW\_COLOR\_GRID "VIEW\_COLOR\_GRID"
- #define EMB\_BLOCK -1
- #define EMB\_DIM\_ALIGNED -2
- #define EMB\_DIM\_ANGULAR -20
- #define EMB\_DIM\_ARCLENGTH -3
- #define EMB\_DIM\_LINEAR -4
- #define EMB\_DIM\_RADIUS -5
- #define EMB\_DIM\_ORDINATE -6
- #define EMB\_INFINITELINE -7
- #define EMB\_RAY -8
- #define DEFAULT\_MODE 0
- #define CIRCLE\_MODE\_1P\_RAD 1
- #define CIRCLE\_MODE\_1P\_DIA 2
- #define CIRCLE\_MODE\_2P 3
- #define CIRCLE\_MODE\_3P 4
- #define CIRCLE\_MODE\_TTR 5
- #define ELLIPSE\_MODE\_MAJORDIAMETER\_MINORRADIUS 6
- #define ELLIPSE\_MODE\_MAJORRADIUS\_MINORRADIUS 7
- #define ELLIPSE\_MODE\_ELLIPSE\_ROTATION 8
- #define DOLPHIN\_MODE\_NUM\_POINTS 9
- #define DOLPHIN\_MODE\_XSCALE 10
- #define DOLPHIN\_MODE\_YSCALE 11
- #define HEART\_MODE\_NUM\_POINTS 12
- #define HEART\_MODE\_STYLE 13
- #define HEART\_MODE\_XSCALE 14
- #define HEART\_MODE\_YSCALE 15
- #define ROTATE\_MODE\_NORMAL 16
- #define ROTATE\_MODE\_REFERENCE 17
- #define SCALE\_MODE\_NORMAL 18
- #define SCALE\_MODE\_REFERENCE 19
- #define SINGLE\_LINE\_TEXT\_MODE\_JUSTIFY 20
- #define SINGLE\_LINE\_TEXT\_MODE\_SETFONT 21
- #define SINGLE\_LINE\_TEXT\_MODE\_SETGEOM 22
- #define SINGLE\_LINE\_TEXT\_MODE\_RAPID 23
- #define STAR\_MODE\_NUM\_POINTS 24
- #define STAR\_MODE\_CENTER\_PT 25
- #define STAR\_MODE\_RAD\_OUTER 26
- #define STAR\_MODE\_RAD\_INNER 27
- #define SNOWFLAKE\_MODE\_NUM\_POINTS 28

- #define SNOWFLAKE\_MODE\_XSCALE 29
- #define SNOWFLAKE\_MODE\_YSCALE 30
- #define MSG\_CRITICAL 1
- #define MSG\_INFORMATION 2
- #define MSG\_QUESTION 3
- #define MSG\_WARNING 4
- #define JUSTIFY\_LEFT 0
- #define JUSTIFY\_RIGHT 1
- #define JUSTIFY\_ALIGN 2
- #define JUSTIFY\_MIDDLE 3
- #define JUSTIFY\_\_ 3
- #define JUSTIFY\_TOPLEFT 4
- #define JUSTIFY\_TOPCENTER 5
- #define JUSTIFY\_TOPRIGHT 6
- #define JUSTIFY\_MIDDLELEFT 7
- #define JUSTIFY\_MIDDLECENTER 8
- #define JUSTIFY\_MIDDLERIGHT 9
- #define JUSTIFY\_BOTTOMLEFT 10
- #define JUSTIFY\_BOTTOMCENTER 11
- #define JUSTIFY\_BOTTOMRIGHT 12
- #define RGB\_MODE\_BACKGROUND 0
- #define RGB\_MODE\_CROSSHAIR 1
- #define RGB\_MODE\_GRID 2

## Typedefs

- typedef struct [UiObject\\_UiObject](#)  
*This covers the inbuilt designs: Dolphin, Snowflake and Heart. Covers Rotate, Scale and Point UI events.*
- typedef struct [UndoHistory\\_UndoHistory](#)
- typedef struct [IndexEntry\\_IndexEntry](#)
- typedef struct [Index\\_Index](#)
- typedef struct [View\\_View](#)
- typedef struct [Settings\\_Settings](#)  
*Settings System.*

## Enumerations

- enum [OBJ\\_KEYS](#) {  
OBJ\_TYPE = 0 , OBJ\_NAME = 1 , OBJ\_LAYER = 2 , OBJ\_COLOR = 3 ,  
OBJ\_LTYPE = 4 , OBJ\_LWT = 5 , OBJ\_RUBBER = 6 , OBJ\_TYPE = 0 ,  
OBJ\_NAME = 1 , OBJ\_LAYER = 2 , OBJ\_COLOR = 3 , OBJ\_LTYPE = 4 ,  
OBJ\_LWT = 5 , OBJ\_RUBBER = 6 }

## Functions

- static void [createOrigin](#) (void)
- static void [clear\\_selection](#) (void)  
*Clear the current view's selection by ignoring the data contained in it.*
- static void [copy\\_selection](#) (void)  
*Prevent memory leaks by deleting any unpasted instances.*
- static void [platform\\_string](#) (char str[200])  
*Report the platform, usually as part of a debugging effort across platforms. str A character array pointer of where to store the result.*
- static void [usage](#) (void)  
*Advice to users on how to use command line arguments.*
- static void [parse\\_command](#) (int argc, char \*argv[], char command[200])
- [UndoHistory undo\\_history\\_init](#) (void)  
*Returns UndoHistory.*
- static void [undo\\_history\\_free](#) (UndoHistory \*)
- static void [add\\_to\\_undo\\_history](#) (UndoHistory \*undo\_history, const char \*command\_line)
- bool [validRGB](#) (int r, int g, int b)  
*Check that r, g and b are in the range 0-255 inclusive.*
- [View init\\_view](#) (void)  
*Create a new view to represent the file being edited.*
- static void [read\\_settings](#) (const char \*settings\_file)
- static void [write\\_settings](#) (const char \*settings\_file)  
*Write settings to file with file name settings\_file.*
- [EmbArray \\* createObjectList](#) (EmbArray \*list)  
*list Returns EmbGeometry\**
- bool [streq](#) (const char \*s1, const char \*s2)  
*Wrapper for the standard strncmp that is aware of our 200 character string limit.*
- static void [read\\_str\\_setting](#) (toml\_table\_t \*table, const char \*key, char s[200])
- int [read\\_int\\_setting](#) (toml\_table\_t \*table, const char \*key)
- bool [read\\_bool\\_setting](#) (toml\_table\_t \*table, const char \*key)
- [Dictionary \\* read\\_dictionary\\_setting](#) (toml\_table\_t \*table, const char \*key)
- static void [write\\_float\\_setting](#) (FILE \*file, const char \*key, float value)
- static void [write\\_int\\_setting](#) (FILE \*file, const char \*key, int value)
- static void [write\\_uint\\_setting](#) (FILE \*file, const char \*key, unsigned int value)
- static void [write\\_str\\_setting](#) (FILE \*file, const char \*key, const char value[200])
- static void [write\\_bool\\_setting](#) (FILE \*file, const char \*key, bool value)
- static void [write\\_dictionary\\_setting](#) (FILE \*file, const char \*key, [Dictionary](#) dict)
- static void [create\\_tab\\_general](#) (void)  
*Create a tab general object.*
- static void [create\\_tab\\_files\\_paths](#) (void)  
*Create a tab files paths object.*
- static void [create\\_tab\\_display](#) (void)  
*Create a tab display object.*
- static void [create\\_tab\\_prompt](#) (void)
- static void [create\\_tab\\_open\\_save](#) (void)  
*Create a tab open save object.*
- static void [create\\_tab\\_printing](#) (void)  
*Create a tab printing object.*
- static void [create\\_tab\\_snap](#) (void)  
*Create a tab snap object.*
- static void [create\\_tab\\_grid\\_ruler](#) (void)

- static void `create_tab_ortho_polar` (void)  
*Create a tab ortho polar object.*
- static void `create_tab_quicksnap` (void)  
*Create a tab quicksnap object.*
- static void `create_tab_quicktrack` (void)  
*Create a tab quicktrack object.*
- static void `create_tab_lineweight` (void)  
*Create a tab lineweight object.*
- static void `create_tab_selection` (void)  
*Create a tab selection object.*
- static void `arc_action` (void)  
*odo document this.*
- static void `circle_action` (void)
- static void `close_action` (void)  
*Close the current view.*
- static void `copy_action` (void)  
*Copy what is currently in active\_view->selected.*
- static void `cut_action` (void)  
*Cut what is currently in active\_view->selected.*
- static void `ellipse_action` (void)  
*odo document this.*
- static void `error_action` (const char \*msg)  
*msg*
- static void `exit_action` (void)
- static void `new_file_action` (void)
- static void `open_file_action` (int argc, char argv[10][200])  
*argc argv*
- static void `icon_action` (int new\_size)  
*new\_size*
- static void `pan_action` (const char \*mode)  
*mode*
- static void `paste_action` (void)
- static void `print_action` (void)
- static void `rectangle_action` (void)
- static void `redo_action` (void)
- static void `text_angle_action` (EmbReal angle)  
*angle*
- static void `text_font_action` (const char \*font)  
*font*
- static void `text_size_action` (EmbReal size)  
*size*
- static void `undo_action` (void)
- static void `vulcanize_action` (void)
- static void `window_action` (const char \*arg)  
*Alter the window layout based on the char array arg.*
- static void `zoom_action` (const char \*arg)  
*arg*
- static void `create_group_box_general` (int id, EmbPattern \*pattern)  
*Create a group box general object.*
- static void `create_group_box_arc` (int id, EmbArc \*arc)

- static void `create_group_box_block` (int id, `EmbBlock` \*obj)  
*Create a group box block object.*
- static void `create_group_box_circle` (int id, `EmbCircle` \*circle)  
*Create a group box circle object.*
- static void `create_group_box_dim_aligned` (int id, `EmbAlignedDim` \*obj)  
*Create a group box dim aligned object.*
- static void `create_group_box_dim_angular` (int id, `EmbAngularDim` \*obj)  
*Create a group box dim angular object.*
- static void `create_group_box_dim_arc_length` (int id, `EmbArcLengthDim` \*obj)  
*Create a group box dim arc length object.*
- static void `create_group_box_dim_diameter` (int id, `EmbDiameterDim` \*dim\_diameter)  
*Create a group box dim diameter object.*
- static void `create_group_box_dim_leader` (int id, `EmbLeaderDim` \*obj)  
*Create a group box dim leader object.*
- static void `create_group_box_dim_linear` (int id, `EmbLinearDim` \*obj)  
*Create a group box dim linear object.*
- static void `create_group_box_dim_ordinate` (int id, `EmbOrdinateDim` \*obj)  
*Create a group box dim ordinate object.*
- static void `create_group_box_dim_radius` (int id, `EmbRadiusDim` \*dim\_radius)  
*Create a group box dim radius object.*
- static void `create_group_box_ellipse` (int id, `EmbEllipse` \*ellipse)  
*Create a group box ellipse object.*
- static void `create_group_box_image` (int id, `EmblImage` \*image)  
*Create a group box image object.*
- static void `create_group_box_infinite_line` (int id, `EmblInfiniteLine` \*obj)  
*Create a group box infinite line object.*
- static void `create_group_box_line` (int id, `EmbLine` \*line)  
*Create a group box line object.*
- static void `create_group_box_path` (int id, `EmbPath` \*path)  
*Create a group box path object.*
- static void `create_group_box_point` (int id, `EmbPoint` \*point)  
*Create a group box point object.*
- static void `create_group_box_polygon` (int id, `EmbPolygon` \*polygon)  
*Create a group box polygon object.*
- static void `create_group_box_polyline` (int id, `EmbPolyline` \*polyline)  
*Create a group box polyline object.*
- static void `create_group_box_ray` (int id, `EmbRay` \*ray)  
*Create a group box ray object.*
- static void `create_group_box_rectangle` (int id, `EmbRect` \*rect)  
*Create a group box rectangle object.*
- static void `create_group_box_stitch` (int i, `EmbStitch` \*st)  
*Create a group box stitch object.*
- static void `create_group_box_stitch_list` (int id, `EmbArray` \*stitch\_list)  
*Create a group box stitch list object.*
- static void `create_group_box_text_multi` (int id, `EmbTextMulti` \*text\_multi)  
*Create a group box text multi object.*
- static void `create_group_box_text_single` (int id, `EmbTextSingle` \*text\_single)  
*Create a group box text single object.*
- static void `alert` (const char \*txt)

*Renderer for the alert dialog. Called by the main widget, with the message passed as txt.*

- static void `about_dialog` (void)  
*Renderer for the about dialog. Called by the main widget.*
- static void `changelog_dialog` (void)  
*Renderer for the changelog dialog. Called by the main widget.*
- static void `details_dialog` (void)
- static void `help_dialog` (void)  
*Renderer for the help dialog. Called by the main widget.*
- static void `tip_of_the_day_dialog` (void)
- `UiObject * UiObject_init` (int pattern\_index, char type[200], int object\_index)
- static void `UiObject_free` (`UiObject *obj`)
- `EmbRect boundingRect` (`UiObject *obj`)
- bool `clockwise` (`UiObject *obj`)
- static void `move` (`UiObject *obj`, `EmbVector delta`)
- static void `vulcanize` (`UiObject *obj`)
- `UiObject generic_design_init` (void)
- static `UiObject sandbox_main` (void)  
*float global = {};//Required global.test1; global.test2;*
- static void `sandbox_click` (`UiObject *global`, `EmbVector pos`)
- static void `sandbox_prompt` (`UiObject *global`, const char \*str)
- static `UiObject scale_main` (void)
- static void `scale_click` (`UiObject *global`, `EmbVector pos`)
- static void `scale_prompt` (`UiObject *global`, const char \*str)
- static `UiObject single_line_text_main` (void)
- static void `single_line_text_click` (`UiObject *global`, `EmbVector pos`)
- static void `single_line_text_prompt` (`UiObject *global`, const char \*str)
- static void `embArc_setCenter` (`EmbArc *arc`, `EmbVector point`)
- static void `embArc_setRadius` (`EmbArc *arc`, float radius)
- static void `embArc_setStartAngle` (`EmbArc *arc`, float angle)
- static void `embArc_setEndAngle` (`EmbArc *arc`, float angle)
- float `embArc_startAngle` (`EmbArc arc`)
- float `embArc_endAngle` (`EmbArc arc`)
- static void `embCircle_setArea` (`EmbCircle *circle`, float area)
- static void `embCircle_setCircumference` (`EmbCircle *circle`, float circumference)
- `UiObject snowflake_main` ()
- `UiObject snowflake_click` (`UiObject global`, `EmbVector position`)
- `UiObject snowflake_move` (`UiObject global`, `EmbVector delta`)  
*Move the snowflake design by a specified amount.*
- static void `updateSnowflake` (`EmbPath *path`, `UiObject global`)
- `UiObject star_main` (void)  
*Returns UiObject.*
- `UiObject star_click` (`UiObject global`, `EmbVector pos`)
- `UiObject star_move` (`UiObject global`, `EmbVector delta`)
- static void `updateStar` (`EmbPath *path`, `UiObject global`)
- `Index * index_init` (void)  
*Returns Index\*.*
- static void `index_free` (`Index *index`)
- `Dictionary * dictionary_from_index` (`Index *index`, const char \*label)
- static void `c_split` (char input[200], int \*argc, char argv[10][200])
- static void `open_file_dialog` (void)
- static void `create_tab` (int i)  
*Create the i-th view as a tab.*
- static void `load_menu` (const char \*menu\_label)
- static void `load_toolbar` (const char \*label)

- static void **simplify\_path** (char \*path)  
*Simplifies a path by removing the .. and . symbols in place.*
- static void **status\_bar** (void)
- static void **property\_editor** (void)
- static void **load\_configuration** (void)
- static void **pattern\_view** (void)
- static void **actuator** (char command\_line[200])  
*The unified user interaction system which operates like a command line parser.*
- static void **settings\_editor** (void)  
*Renderer for the interface of the settings editor, called by main\_widget.*
- int **main** (int argc, char \*argv[])  
*The program entry point on all platforms.*
- int **run\_script** (const char \*filename)  
*A basic line-by-line script processor to allow for extensions to the program.*
- **EmbReal random\_uniform** (void)  
*Generate a random number in the range (0.0, 1.0).*
- int **roundToMultiple** (int roundUp, int numToRound, int multiple)  
*Rounds integers to multiples of another given integer.*
- bool **willUnderflowInt32** (int32\_t a, int32\_t b)  
*Check whether an subtraction will cause underflow before we rely on the result.*
- bool **willOverflowInt32** (int32\_t a, int32\_t b)  
*Check whether an addition will cause overflow before we rely on the result.*
- bool **valid\_file\_format** (char \*fname)  
*Check if the filename is valid before we attempt to read or write it.*
- bool **test\_translate** (void)  
*Check that the translate call can return an entry from the table.*
- **EmbReal emb\_clamp** (EmbReal lower, EmbReal x, EmbReal upper)  
*Ensure that x lies in the range [lower, upper] by rounding up or down if x is outside of that range.*
- static void **undo\_history\_viewer** (void)
- GLuint **gen\_gl\_texture** (uint8\_t \*data, int w, int h, int wrap)
- GLuint **load\_texture** (char fname[200])
- static void **view\_empty\_double\_click** (void)
- static void **view\_empty\_paint\_event** (View \*view, int \*event)
- static void **zoom\_extents\_all\_subviews** (void)
- static void **save\_bmc** (void)
- static void **set\_current\_file** (const char \*fileName)
- const char \* **get\_short\_current\_file** (void)  
*Returns const char\*.*
- const char \* **file\_extension** (const char \*fileName)
- static void **close\_event** (int \*event)
- static void **on\_window\_activated** (void)
- **EmbVector size\_hint** (void)  
*Returns EmbVector.*
- static void **current\_layer\_changed** (const char \*layer)
- static void **current\_color\_changed** (unsigned int color)
- static void **current\_linetype\_changed** (const char \*type)
- static void **current\_lineweight\_changed** (const char \*weight)
- static void **updateColorLinetypeLineweight** (void)
- static void **show\_view\_scrollbars** (bool val)
- static void **set\_view\_crosshair\_color** (unsigned int color)
- static void **set\_view\_background\_color** (unsigned int color)

- static void `set_view_selectbox_colors` (unsigned int colorL, unsigned int fillL, unsigned int colorR, unsigned int fillR, int alpha)
- static void `set_viewGridColor` (unsigned int color)
- static void `set_viewRulerColor` (unsigned int color)
- static void `prompt_input_prev_next` (bool prev)
- static void `set_prompt_prefix` (const char \*msg)
- static void `preview_dialog` (void)
- static void `set_mouse_coord` (`EmbVector` pos)  
*Set the Mouse Coord object.*
- static void `status_bar_context_menu` (void)  
*This appears not to be used any more.*
- static void `image_widget_init` (const char \*filename)
- bool `image_widget_load` (const char \*fileName)
- bool `image_widget_save` (const char \*fileName)
- static void `image_widget_paint_event` (void)
- static void `layer_manager` (`View` \*view)
- static void `Layer_manager_add_layer` (const char \*name, bool visible, bool frozen, `EmbReal` zValue, unsigned int color, const char \*lineType, const char \*lineWeight, bool print)
- static void `View_` (void)
- static void `view_free` (void)  
*Prevent memory leaks by deleting any objects that were removed from the scene.*
- static void `enter_event` (int \*event)
- static void `add_object` (`EmbGeometry` \*obj)
- static void `delete_object` (`EmbGeometry` \*obj)  
*We really just remove the objects from the scene. Deletion actually occurs in the destructor.*
- static void `preview_on` (int clone, int mode, `EmbReal` x, `EmbReal` y, `EmbReal` data)
- static void `preview_off` (void)
- static void `enableMoveRapidFire` (void)
- static void `disable_move_rapid_fire` (void)
- bool `allow_rubber` (void)  
*Returns true Returns false.*
- static void `add_to_rubber_room` (`EmbGeometry` \*item)
- static void `vulcanize_rubber_room` (void)
- static void `vulcanizeObject` (`EmbGeometry` \*obj)
- static void `clearRubberRoom` (void)
- static void `setRubberMode` (int mode)
- static void `setRubberPoint` (const char \*key, `EmbVector` point)
- static void `setRubberText` (const char \*key, const char \*txt)
- static void `setGridColor` (unsigned int color)
- static void `setRulerColor` (unsigned int color)
- static void `createGrid` (const char \*gridType)
- static void `createGridRect` (void)
- static void `createGridPolar` (void)
- static void `createGridIso` (void)
- static void `toggleGrid` (bool on)
- static void `drawBackground` (int \*painter, const `EmbRect` rect)
- static void `drawForeground` (int \*painter, `EmbRect` rect)
- static void `update_mouse_coords` (`EmbVector` position)
- static void `setCrossHairSize` (uint8\_t percent)
- static void `setCornerButton` (void)
- static void `cornerButtonClicked` (void)
- static void `selection_changed` (void)
- static void `mouse_double_click_event` (int \*event)
- static void `mouse_press_event` (int \*event)

- static void `panStart` (`EmbVector` point)
- static void `recalculateLimits` (void)  
*NOTE: Increase the sceneRect limits if the point we want to go to lies outside of sceneRect's limits If the sceneRect limits aren't increased, you cannot pan past its limits.*
- static void `centerAt` (`EmbVector` centerPoint)
- static void `alignScenePointWithViewPoint` (`EmbVector` scenePoint, `EmbVector` viewPoint)
- static void `mouseMoveEvent` (int \*event)
- static void `mouseReleaseEvent` (int \*event)
- bool `allow_zoom_in` (void)
- bool `allow_zoom_out` (void)
- static void `wheel_event` (int \*event)
- static void `zoom_to_point` (`EmbVector` mousePoint, int zoomDir)
- static void `context_menu_event` (void)
- static void `delete_pressed` (void)
- static void `escape_pressed` (void)
- static void `start_gripping` (`EmbGeometry` \*obj)
- static void `stop_gripping` (bool accept)
- static void `delete_selected` (void)
- static void `cut` (void)
- static void `copy` (void)
- static void `paste` (void)
- static void `repeat_action` (void)
- static void `moveAction` (void)
- static void `moveSelected` (`EmbReal` dx, `EmbReal` dy)
- static void `rotateAction` (void)
- static void `rotateSelected` (`EmbReal` x, `EmbReal` y, `EmbReal` rot)
- static void `mirrorSelected` (`EmbReal` x1, `EmbReal` y1, `EmbReal` x2, `EmbReal` y2)
- static void `scaleAction` (void)
- static void `scaleSelected` (`EmbReal` x, `EmbReal` y, `EmbReal` factor)
- static void `showscrollbars` (bool val)
- static void `setCrossHairColor` (unsigned int color)
- static void `setBackgroundColor` (`EmbColor` color)
- static void `setSelectBoxColors` (unsigned int colorL, unsigned int fillL, unsigned int colorR, unsigned int fillR, int alpha)
- static void `selectbox_SelectBox` (void)
- static void `selectbox_setDirection` (int dir)
- static void `selectbox_set_colors` (`EmbColor` colorL, `EmbColor` fillL, `EmbColor` colorR, `EmbColor` fillR, int newAlpha)
- static void `selectbox_paintEvent` (int \*paint\_event)
- bool `property_editor_eventFilter` (void)  
*Returns true Returns false.*
- int \* `property_editor_createComboBoxSelected` (void)  
*Returns int\*.*
- int \* `property_editor_create_tool_buttonQSelect` (void)  
*Returns int\*.*
- int \* `property_editor_create_tool_buttonPickAdd` (void)  
*Returns int\*.*
- static void `property_editor_updatePickAddModeButton` (bool pickAddMode)
- static void `property_editor_togglePickAddMode` (void)
- static void `property_editor_set_selectedItems` (int \*item\_list, int length)
- static void `property_editor_updateLineEditStrlfVaries` (int \*lineEdit, const char \*str)
- static void `property_editor_updateLineEditNumIfVaries` (int \*lineEdit, `EmbReal` num, bool useAnglePrecision)
- static void `property_editor_updateFontComboBoxStrlfVaries` (int \*fontComboBox, const char \*str)

- static void `property_editor_updateComboBoxStrIfVaries` (int \*comboBox, const char \*str, const char \*\*strList)
- static void `property_editor_updateComboBoxBoolIfVaries` (int \*comboBox, bool val, bool yesOrNoText)
- static void `property_editor_showGroups` (int objType)
- static void `property_editor_showOneType` (int id)
- static void `property_editor_hideAllGroups` (void)
- void `log_debug` (const char \*msg)  
*Rather than outputting debug information to the command line it is sent to a file called "debug.txt" which is in the current directory.*
- const char \* `translate` (const char \*string)  
*Rather than using .po files we translate at runtime using this function.*
- `EmbLine stitch_line_to_scene` (View view, EmbStitch prev, EmbStitch st)
- int `render_pattern` (EmbPattern \*p)
- static void `render_shine` (EmbVector start, EmbVector end, EmbVector normal, float start\_frac, float end\_frac)  
*Add a rectangular shine in the direction indicated by normal.*
- static void `real_render_pattern` (EmbPattern \*p)
- static void `simulate_pattern` (EmbPattern \*p)
- static void `draw_rulers` (void)
- static void `draw_grid` (void)
- static void `settings_dialog_addColorsToComboBox` (int \*comboBox)
- static void `settings_dialog_comboBoxLanguageCurrentIndexChanged` (const char \*lang)
- static void `settings_dialog_comboBoxIconThemeCurrentIndexChanged` (const char \*theme)
- static void `settings_dialog_comboBoxIconSizeCurrentIndexChanged` (int index)
- static void `settings_dialog_checkBoxGeneralMdiBGUseLogoStateChanged` (int checked)
- static void `settings_dialog_chooseGeneralMdiBackgroundLogo` (void)
- static void `settings_dialog_checkBoxGeneralMdiBGUseTextureStateChanged` (int checked)
- static void `settings_dialog_chooseGeneralMdiBackgroundTexture` (void)
- static void `settings_dialog_checkBoxGeneralMdiBGUseColorStateChanged` (int checked)  
*checked.*
- static void `settings_dialog_chooseGeneralMdiBackgroundColor` (void)
- static void `settings_dialog_currentGeneralMdiBackgroundColorChanged` (EmbColor color)  
*color.*
- static void `settings_dialog_checkBoxShowscrollbarsStateChanged` (int checked)  
*checked.*
- static void `settings_dialog_chooseDisplayCrossHairColor` (void)
- static void `settings_dialog_currentDisplayCrossHairColorChanged` (EmbColor color)  
*color.*
- static void `settings_dialog_chooseDisplayBackgroundColor` (void)
- static void `settings_dialog_currentDisplayBackgroundColorChanged` (EmbColor color)  
*color.*
- static void `settings_dialog_chooseDisplaySelectBoxLeftColor` (void)
- static void `settings_dialog_currentDisplaySelectBoxLeftColorChanged` (EmbColor color)  
*color.*
- static void `settings_dialog_chooseDisplaySelectBoxLeftFill` (void)
- static void `settings_dialog_currentDisplaySelectBoxLeftFillChanged` (EmbColor color)  
*color.*
- static void `settings_dialog_chooseDisplaySelectBoxRightColor` (void)
- static void `settings_dialog_currentDisplaySelectBoxRightColorChanged` (EmbColor color)  
*color.*
- static void `settings_dialog_chooseDisplaySelectBoxRightFill` (void)
- static void `settings_dialog_currentDisplaySelectBoxRightFillChanged` (EmbColor color)  
*color.*
- static void `settings_dialog_spinBoxDisplaySelectBoxAlphaValueChanged` (int value)

- value.
- static void `settings_dialog_choosePromptTextColor` (void)
  - static void `settings_dialog_currentPromptTextColorChanged` (`EmbColor` color)  
*color*.
  - static void `settings_dialog_choosePromptBackgroundColor` (void)
  - static void `settings_dialog_currentPromptBackgroundColorChanged` (`EmbColor` color)  
*color*.
  - static void `settings_dialog_comboBoxPromptFontFamilyCurrentIndexChanged` (const char \**family*)  
*family*
  - static void `settings_dialog_comboBoxPromptFontStyleCurrentIndexChanged` (const char \**style*)  
*style*
  - static void `settings_dialog_spinBoxPromptFontSizeValueChanged` (int *value*)  
*value*
  - static void `settings_dialog_checkBoxCustomFilterStateChanged` (int *checked*)  
*checked*
  - static void `settings_dialog_buttonCustomFilterSelectAllClicked` (void)
  - static void `settings_dialog_buttonCustomFilterClearAllClicked` (void)
  - static void `settings_dialog_checkBoxGridColorMatchCrossHairStateChanged` (int *checked*)  
*checked*
  - static void `settings_dialog_chooseGridColor` (void)
  - static void `settings_dialog_currentGridColorChanged` (`EmbColor` color)  
*color*
  - static void `settings_dialog_checkBoxGridLoadFromFileStateChanged` (int *checked*)  
*checked*
  - static void `settings_dialog_comboBoxGridTypeCurrentIndexChanged` (const char \**type*)  
*type*
  - static void `settings_dialog_checkBoxGridCenterOnOriginStateChanged` (int *checked*)  
*checked*
  - static void `settings_dialog_comboBoxRulerMetricCurrentIndexChanged` (int *index*)  
*index*
  - static void `settings_dialog_chooseRulerColor` (void)
  - static void `settings_dialog_currentRulerColorChanged` (`EmbColor` color)  
*color*.
  - static void `settings_dialog_buttonQSnapSelectAllClicked` (void)
  - static void `settings_dialog_buttonQSnapClearAllClicked` (void)  
*odo document this.*
  - static void `settings_dialog_comboBoxQSnapLocatorColorCurrentIndexChanged` (int *index*)  
*index*.
  - static void `settings_dialog_checkBoxLwtShowLwtStateChanged` (int *checked*)  
*checked*.
  - static void `settings_dialog_checkBoxLwtRealRenderStateChanged` (int *checked*)  
*checked*.
  - static void `settings_dialog_combobox_selectionCoolGripColorCurrentIndexChanged` (int *index*)  
*index*.
  - static void `settings_dialog_combobox_selectionHotGripColorCurrentIndexChanged` (int *index*)  
*index*.
  - static void `settings_dialog_acceptChanges` (void)
  - static void `settings_dialog_rejectChanges` (void)
  - static void `stub_implement` (const char \**msg*)  
*msg*
  - static void `export_action` (const char \**filename*)

- static void `save_as_file_action` (char \*filename)  
    *filename*
- static void `triangle_action` (void)
- static void `messagebox_action` (void)
- static void `print_area_action` (void)
- static void `background_color_action` (void)
- static void `crosshair_color_action` (void)
- static void `grid_color_action` (void)
- static void `preview_on_action` (void)
- static void `set_rubber_mode_action` (char \*label, int mode)  
    *Set the rubber mode action object.*
- static void `rubber_point_action` (void)
- static void `rubber_text_action` (void)
- static void `add_rubber_action` (void)
- static void `spare_rubber_action` (void)
- static void `text_multi_action` (void)
- static void `text_single_action` (void)
- static void `infinite_line_action` (void)
- static void `ray_action` (void)
- static void `line_action` (void)
- static void `rounded_rectangle_action` (void)
- static void `add_slot_action` (void)
- static void `add_point_action` (void)
- static void `polygon_action` (void)
- static void `polyline_action` (`EmbVector` start, `EmbPath` \*p, int rubberMode)  
    *NOTE: This is different than the rest in that the Y+ is down (scripters need not worry about this)*
- static void `set_cursor_shape_action` (int shape)  
    *Set the cursor shape action object.*
- static void `calculate_angle_action` (void)
- static void `calculate_distance_action` (void)
- `EmbReal embVector_perpendicularDistance` (`EmbVector` p, `EmbLine` line)  
    *p line Returns EmbReal*
- static void `cut_selected` (void)
- static void `copy_selected` (void)
- static void `paste_selected` (void)
- static void `move_selected_action` (void)
- static void `scale_selected_action` (void)
- static void `rotate_selected_action` (void)
- static void `mirror_selected_action` (`EmbLine` line)
- static void `stub_testing_action` (void)
- static void `checkForUpdates` (void)
- static void `whats_this_context_help_action` (void)
- static void `button_tip_of_the_day_clicked` (int button)
- static void `setUndoCleanIcon` (void)  
    *Set the Undo Clean Icon object.*
- static void `updateAllViewscrollbars` (bool val)
- static void `updateAllViewCrossHairColors` (unsigned int color)
- static void `updateAllViewBackgroundColors` (unsigned int color)  
    *color*
- static void `updateAllViewSelectBoxColors` (unsigned int colorL, unsigned int fillL, unsigned int colorR, unsigned int fillR, int alpha)
- static void `updateAllViewGridColors` (unsigned int color)

- static void `updateAllViewRulerColors` (unsigned int color)  
*color*
- static void `updatePickAddMode` (bool val)  
*val*
- static void `pickAddModeToggled` (void)
- static void `makeLayerActive` (void)  
*Layer Toolbar.*
- static void `layerManager` (void)
- static void `layerPrevious` (void)
- static void `layerSelectorIndexChanged` (int index)  
*index*
- static void `colorSelectorIndexChanged` (int index)  
*index*
- static void `linetypeSelectorIndexChanged` (int index)  
*index*
- static void `lineweightSelectorIndexChanged` (int index)  
*index*
- static void `textFontSelectorCurrentFontChanged` (int font)  
*font*
- static void `textSizeSelectorIndexChanged` (int index)  
*index*
- static void `setTextFont` (const char \*str)  
*Set the Text Font object.*
- static void `setTextSize` (double num)  
*Set the Text Size object.*
- char \* `getCurrentLayer` (void)  
*Get the Current Layer object.*
- unsigned int `getCurrentColor` (void)  
*Get the Current Color object.*
- char \* `getCurrentLineType` (void)  
*Get the Current Line Type object.*
- char \* `getCurrentLineWeight` (void)  
*Get the Current Line Weight object.*
- static void `promptHistoryAppended` (const char \*txt)  
*txt*
- static void `logPromptInput` (const char \*txt)  
*txt*
- static void `promptInputPrevious` (void)
- static void `promptInputNext` (void)
- static void `enablePromptRapidFire` (void)
- static void `disablePromptRapidFire` (void)
- static void `init_command` (void)
- static void `end_command` (void)
- static void `Help` (void)
- static void `TipOfTheDay` (void)
- static void `messagebox` (int type, char title[200], char text[200])  
*type title text*
- static void `PrintArea` (EmbReal x, EmbReal y, EmbReal w, EmbReal h)  
*x y w h*
- static void `setBackgroundColor_` (int r, int g, int b)  
*Set the Background Color object.*

- static void `set_crosshair_color` (int r, int g, int b)  
*Set the crosshair color object.*
- static void `set_grid_color` (int r, int g, int b)  
*Set the grid color object.*
- static void `clear_rubber` (void)
- static void `spare_rubber` (size\_t id)  
*id.*
- static void `set_rubber_point` (const char \*key, `EmbVector` position)  
*Set the rubber point object.*
- static void `set_rubber_text` (const char \*key, const char \*txt)  
*Set the rubber text object.*
- static void `add_text_multi` (const char \*str, `EmbVector` pos, `EmbReal` rot, bool fill, int rubberMode)
- static void `add_text_single` (const char \*str, `EmbReal` x, `EmbReal` y, `EmbReal` rot, bool fill, int rubberMode)
- static void `add_infinite_line` (`EmbReal` x1, `EmbReal` y1, `EmbReal` x2, `EmbReal` y2, `EmbReal` rot)  
*x1 y1 x2 y2 rot*
- static void `add_ray` (`EmbReal` x1, `EmbReal` y1, `EmbReal` x2, `EmbReal` y2, `EmbReal` rot)  
*x1 y1 x2 y2 rot*
- static void `add_line` (`EmbLine` line, `EmbReal` rot, int rubberMode)  
*line rot rubberMode*
- static void `add_ellipse` (`EmbReal` centerX, `EmbReal` centerY, `EmbReal` width, `EmbReal` height, `EmbReal` rot, bool fill, int rubberMode)  
*centerX centerY width height rot fill rubberMode*
- static void `add_point` (`EmbReal` x, `EmbReal` y)  
*x y*
- static void `add_regular_polygon` (`EmbReal` centerX, `EmbReal` centerY, int sides, int mode, `EmbReal` rad, `EmbReal` rot, bool fill)  
*centerX centerY sides mode rad rot fill*
- static void `path_action` (`EmbReal` startX, `EmbReal` startY, `EmbPath` \*p, int rubberMode)  
*startX startY p rubberMode*
- static void `horizontal_dimension_action` (void)
- static void `vertical_dimension_action` (void)
- static void `image_action` (void)  
*Add an `EmblImage` to the current view.*
- static void `dim_leader_action` (void)  
*Add a `EmbDimLeader` to the current view.*
- `EmbReal calculate_angle` (`EmbReal` x1, `EmbReal` y1, `EmbReal` x2, `EmbReal` y2)  
*x1 y1 x2 y2 Returns EmbReal*
- `EmbReal perpendicular_distance` (`EmbVector` p, `EmbLine` line)  
*p line Returns EmbReal*
- static void `createAllActions` (void)  
*Create a All Actions object.*
- static void `create_layer_toolbar` (void)  
*Create a layer toolbar object.*
- static void `create_properties_toolbar` (void)  
*Create a properties toolbar object.*
- static void `create_text_toolbar` (void)  
*Create a text toolbar object.*
- static void `create_prompt_toolbar` (void)  
*Create a prompt toolbar object.*
- static void `MainWindow` (void)
- static void `recentMenuAboutToShow` (void)

- static void `window_menu_about_to_show` (void)
- static void `window_menu_activated` (bool checked)  
    *checked*
- static void `open_recent_file` (void)
- int `find_view` (const char \*fileName)  
    *fileName Returns int*
- static void `resize_event` (void)
- static void `update_menu_toolbar_statusbar` (void)
- static void `load_formats` (void)
- static void `close_toolbar_action` (int \*action)  
    *action*
- static void `floating_changed_toolbar_action` (bool isFloating)  
    *isFloating*
- static void `undo_editor_init` (char \*iconDirectory)  
    *iconDirectory*
- static void `update_clean_icon` (bool opened)  
    *opened*
- static void `rotate` (EmbVector point, EmbReal rot)  
*Actions that were Qt internals were here. addStack, canUndo, canRedo, undoText, redoText, undo, redo.*
- static void `scale_action` (EmbVector position, EmbReal scaleFactor, char \*text, EmbGeometry \*obj, View \*v)  
    *position scaleFactor text obj v*
- static void `scale_undo` (void)
- static void `scale_redo` (void)
- static void `undoable_navigation_command` (char \*type, View \*v)  
    *type v*
- bool `merge_with` (void)  
*Returns Boolean value representing the success or failure of the function.*
- static void `undo_navigation` (void)
- static void `redo_navigation` (void)
- static void `embCircle_click` (UiObject \*global, EmbVector position)  
    *position*
- static void `embCircle_prompt` (UiObject \*global, const char \*str)  
    *str*
- bool `save_save` (const char \*fileName)
- static void `save_toPolyline` (EmbPattern \*pattern, EmbVector objPos, EmbPath objPath, const char \*layer, EmbColor color, const char \*lineType, const char \*lineWeight)  
*Old conversion method for saving to non-design formats: move to libembroidery.*
- UiObject `dolphin_main` (void)  
*Initialise a Dolphin design element.*
- static void `updateDolphin` (EmbArray \*path, UiObject global)  
    *path global*
- static UiObject `heart_init` (void)
- static void `update_heart` (EmbPath \*path, UiObject global)  
    *path global*
- static UiObject `path_init` (void)  
*Returns UiObject.*
- static void `path_click` (UiObject \*global, EmbVector position)  
*Alter global using the supplied position, depending on the mode.*
- static void `path_prompt` (const char \*str)  
    *str*
- static UiObject `point_init` (void)
- static void `point_click` (UiObject global, EmbVector position)

- static void **point\_prompt** (const char \*str)
- static void **polygon\_main** (void)
 

*Command: Polygon.*

  - static void **polygon\_click** (float x, float y)
  - static void **polygon\_prompt** (const char \*str)
  - static void **embPolyline\_main** (void)
 

*Command: Polyline.*

    - static void **embPolyline\_click** (UiObject \*global, float x, float y)
    - static void **embPolyline\_prompt** (UiObject global, const char \*str)
    - **UiObject locate\_point\_main** (void)
 

*Initialise command: Locate Point.*

      - static void **locate\_point\_click** (UiObject \*global, EmbVector v)
 

*Process a left-click in the locate point context.*

        - static void **located\_point\_prompt** (UiObject \*global, const char \*str)
        - **UiObject move\_main** (void)
 

*Initialise move UI event.*

          - static void **move\_click** (UiObject \*global, EmbVector v)
          - static void **move\_prompt** (UiObject \*global, const char \*str)
          - **UiObject quickleader\_main** (void)
          - static void **quickleader\_click** (UiObject \*global, EmbVector v)
          - static void **quickleader\_prompt** (UiObject \*global, const char \*str)
          - **UiObject rectangle\_main** (void)
 

*Create a rectangle object on the current pattern.*

            - static void **rectangle\_click** (UiObject \*global, EmbVector position)
            - static void **rectangle\_prompt** (UiObject \*global, const char \*str)
            - **UiObject rgb\_main** (void)
 

*Command: RGB (prompt only command).*

              - static void **rgb\_prompt** (const char \*str)
              - **UiObject rotate\_main** (void)
              - static void **rotate\_click** (UiObject \*global, EmbVector pos)
              - static void **rotate\_prompt** (UiObject \*global, const char \*str)
              - static void **star\_prompt** (UiObject design, const char \*str)

## Variables

- `Settings settings`
  - `Index * menu_layout`
  - `Index * toolbar_layout`
  - `View views [50]`
  - `int n_views = 0`
  - `char menu_action [200]`
  - `char current_directory [200] = "/"`
  - `char to_open [200] = ""`
  - `char settings_dir [200]`
  - `char settings_file [200]`
  - `static Settings dialog`
  - `static Settings preview`
  - `bool just_opened = true`
  - `Dictionary * translation_table`
  - `View * active_view = NULL`
  - `static bool stor [10]`
  - `static int from_ = 0`
  - `static int to_ = 10`
  - `const char * languages [20]`

*The language strings for identifying where to look for translation tables.*

### 19.18.1 Macro Definition Documentation

**19.18.1.1 BRUSH\_STYLE\_DASHED** #define BRUSH\_STYLE\_DASHED 0

**19.18.1.2 BRUSH\_STYLE\_SOLID** #define BRUSH\_STYLE\_SOLID 1

**19.18.1.3 CIRCLE\_MODE\_1P\_DIA** #define CIRCLE\_MODE\_1P\_DIA 2

**19.18.1.4 CIRCLE\_MODE\_1P\_RAD** #define CIRCLE\_MODE\_1P\_RAD 1

**19.18.1.5 CIRCLE\_MODE\_2P** #define CIRCLE\_MODE\_2P 3

**19.18.1.6 CIRCLE\_MODE\_3P** #define CIRCLE\_MODE\_3P 4

**19.18.1.7 CIRCLE\_MODE\_TTR** #define CIRCLE\_MODE\_TTR 5

**19.18.1.8 CIRCULAR\_GRID** #define CIRCULAR\_GRID 2

**19.18.1.9 DEFAULT\_MODE** #define DEFAULT\_MODE 0

Modes for the UiObject struct.

**19.18.1.10 DIRECTION\_LEFT** #define DIRECTION\_LEFT 1

**19.18.1.11 DIRECTION\_RIGHT** #define DIRECTION\_RIGHT 0

**19.18.1.12 DISABLE\_GRID** #define DISABLE\_GRID 0

**19.18.1.13 DOLPHIN\_MODE\_NUM\_POINTS** #define DOLPHIN\_MODE\_NUM\_POINTS 9

**19.18.1.14 DOLPHIN\_MODE\_XSCALE** #define DOLPHIN\_MODE\_XSCALE 10

**19.18.1.15 DOLPHIN\_MODE\_YSCALE** #define DOLPHIN\_MODE\_YSCALE 11

**19.18.1.16 ELLIPSE\_MODE\_ELLIPSE\_ROTATION** #define ELLIPSE\_MODE\_ELLIPSE\_ROTATION 8

**19.18.1.17 ELLIPSE\_MODE\_MAJORDIAMETER\_MINORRADIUS** #define ELLIPSE\_MODE\_MAJORDIAMETER←  
\_MINORRADIUS 6

**19.18.1.18 ELLIPSE\_MODE\_MAJORRADIUS\_MINORRADIUS** #define ELLIPSE\_MODE\_MAJORRADIUS\_←  
MINORRADIUS 7

**19.18.1.19 EMB\_BLOCK** #define EMB\_BLOCK -1

These values are incorrect and need to be in libembroidery.

**19.18.1.20 EMB\_DIM\_ALIGNED** #define EMB\_DIM\_ALIGNED -2

**19.18.1.21 EMB\_DIM\_ANGULAR** #define EMB\_DIM\_ANGULAR -20

**19.18.1.22 EMB\_DIM\_ARCLENGTH** #define EMB\_DIM\_ARCLENGTH -3

**19.18.1.23 EMB\_DIM\_LINEAR** #define EMB\_DIM\_LINEAR -4

**19.18.1.24 EMB\_DIM\_ORDINATE** #define EMB\_DIM\_ORDINATE -6

**19.18.1.25 EMB\_DIM\_RADIUS** #define EMB\_DIM\_RADIUS -5

**19.18.1.26 EMB\_INFINITELINE** #define EMB\_INFINITELINE -7

**19.18.1.27 EMB\_RAY** #define EMB\_RAY -8

**19.18.1.28 ENABLE\_LWT** #define ENABLE\_LWT "ENABLE\_LWT"

**19.18.1.29 ENABLE\_REAL** #define ENABLE\_REAL "ENABLE\_REAL"

**19.18.1.30 HEART\_MODE\_NUM\_POINTS** #define HEART\_MODE\_NUM\_POINTS 12

**19.18.1.31 HEART\_MODE\_STYLE** #define HEART\_MODE\_STYLE 13

**19.18.1.32 HEART\_MODE\_XSCALE** #define HEART\_MODE\_XSCALE 14

**19.18.1.33 HEART\_MODE\_YSCALE** #define HEART\_MODE\_YSCALE 15

**19.18.1.34 ISOMETRIC\_GRID** #define ISOMETRIC\_GRID 3

**19.18.1.35 JUSTIFY\_\_** #define JUSTIFY\_\_ 3

**19.18.1.36 JUSTIFY\_ALIGN** #define JUSTIFY\_ALIGN 2

**19.18.1.37 JUSTIFY\_BOTTOMCENTER** #define JUSTIFY\_BOTTOMCENTER 11

**19.18.1.38 JUSTIFY\_BOTTOMLEFT** #define JUSTIFY\_BOTTOMLEFT 10

**19.18.1.39 JUSTIFY\_BOTTOMRIGHT** #define JUSTIFY\_BOTTOMRIGHT 12

**19.18.1.40 JUSTIFY\_LEFT** #define JUSTIFY\_LEFT 0

A kind of text justification.

**19.18.1.41 JUSTIFY\_MIDDLE** #define JUSTIFY\_MIDDLE 3

**19.18.1.42 JUSTIFY\_MIDDLECENTER** #define JUSTIFY\_MIDDLECENTER 8

**19.18.1.43 JUSTIFY\_MIDDLELEFT** #define JUSTIFY\_MIDDLELEFT 7

**19.18.1.44 JUSTIFY\_MIDDLERIGHT** #define JUSTIFY\_MIDDLERIGHT 9

**19.18.1.45 JUSTIFY\_RIGHT** #define JUSTIFY\_RIGHT 1

**19.18.1.46 JUSTIFY\_TOPCENTER** #define JUSTIFY\_TOPCENTER 5

**19.18.1.47 JUSTIFY\_TOPLEFT** #define JUSTIFY\_TOPLEFT 4

**19.18.1.48 JUSTIFY\_TOPRIGHT** #define JUSTIFY\_TOPRIGHT 6

**19.18.1.49 LINE\_STYLE\_DASHED** #define LINE\_STYLE\_DASHED 0

**19.18.1.50 LINE\_STYLE\_SOLID** #define LINE\_STYLE\_SOLID 1

**19.18.1.51 MITER\_JOIN** #define MITER\_JOIN 0

**19.18.1.52 MSG\_CRITICAL** #define MSG\_CRITICAL 1

Kinds of messagebox.

**19.18.1.53 MSG\_INFORMATION** #define MSG\_INFORMATION 2

**19.18.1.54 MSG\_QUESTION** #define MSG\_QUESTION 3

**19.18.1.55 MSG\_WARNING** #define MSG\_WARNING 4

**19.18.1.56 NUMBER\_ARCHITECTURAL** #define NUMBER\_ARCHITECTURAL 0

**19.18.1.57 NUMBER\_DECIMAL** #define NUMBER\_DECIMAL 1

**19.18.1.58 NUMBER\_ENGINEERING** #define NUMBER\_ENGINEERING 2

**19.18.1.59 NUMBER\_FRACTIONAL** #define NUMBER\_FRACTIONAL 3

**19.18.1.60 NUMBER\_SCIENTIFIC** #define NUMBER\_SCIENTIFIC 4

**19.18.1.61 OBJ\_LTYPE\_CENTER** #define OBJ\_LTYPE\_CENTER 1

**19.18.1.62 OBJ\_LTYPE\_CONT** #define OBJ\_LTYPE\_CONT 0

**19.18.1.63 OBJ\_LTYPE\_DOT** #define OBJ\_LTYPE\_DOT 2

**19.18.1.64 OBJ\_LTYPE\_FISHBONE** #define OBJ\_LTYPE\_FISHBONE 8

**19.18.1.65 OBJ\_LTYPE\_HIDDEN** #define OBJ\_LTYPE\_HIDDEN 3

**19.18.1.66 OBJ\_LTYPE\_PHANTOM** #define OBJ\_LTYPE\_PHANTOM 4

**19.18.1.67 OBJ\_LTYPE\_RUNNING** #define OBJ\_LTYPE\_RUNNING 6

**19.18.1.68 OBJ\_LTYPE\_SATIN** #define OBJ\_LTYPE\_SATIN 7

**19.18.1.69 OBJ\_LTYPE\_ZIGZAG** #define OBJ\_LTYPE\_ZIGZAG 5

**19.18.1.70 OBJ\_LWT\_01** #define OBJ\_LWT\_01 1

**19.18.1.71 OBJ\_LWT\_02** #define OBJ\_LWT\_02 2

**19.18.1.72 OBJ\_LWT\_03** #define OBJ\_LWT\_03 3

**19.18.1.73 OBJ\_LWT\_04** #define OBJ\_LWT\_04 4

**19.18.1.74 OBJ\_LWT\_05** #define OBJ\_LWT\_05 5

**19.18.1.75 OBJ\_LWT\_06** #define OBJ\_LWT\_06 6

**19.18.1.76 OBJ\_LWT\_07** #define OBJ\_LWT\_07 7

**19.18.1.77 OBJ\_LWT\_08** #define OBJ\_LWT\_08 8

**19.18.1.78 OBJ\_LWT\_09** #define OBJ\_LWT\_09 9

**19.18.1.79 OBJ\_LWT\_10** #define OBJ\_LWT\_10 10

**19.18.1.80 OBJ\_LWT\_11** #define OBJ\_LWT\_11 11

**19.18.1.81 OBJ\_LWT\_12** #define OBJ\_LWT\_12 12

**19.18.1.82 OBJ\_LWT\_13** #define OBJ\_LWT\_13 13

**19.18.1.83 OBJ\_LWT\_14** #define OBJ\_LWT\_14 14

**19.18.1.84 OBJ\_LWT\_15** #define OBJ\_LWT\_15 15

**19.18.1.85 OBJ\_LWT\_16** #define OBJ\_LWT\_16 16

**19.18.1.86 OBJ\_LWT\_17** #define OBJ\_LWT\_17 17

**19.18.1.87 OBJ\_LWT\_18** #define OBJ\_LWT\_18 18

**19.18.1.88 OBJ\_LWT\_19** #define OBJ\_LWT\_19 19

**19.18.1.89 OBJ\_LWT\_20** #define OBJ\_LWT\_20 20

**19.18.1.90 OBJ\_LWT\_21** #define OBJ\_LWT\_21 21

**19.18.1.91 OBJ\_LWT\_22** #define OBJ\_LWT\_22 22

**19.18.1.92 OBJ\_LWT\_23** #define OBJ\_LWT\_23 23

**19.18.1.93 OBJ\_LWT\_24** #define OBJ\_LWT\_24 24

**19.18.1.94 OBJ\_LWT\_BYBLOCK** #define OBJ\_LWT\_BYBLOCK (-1)

**19.18.1.95 OBJ\_LWT\_BYLAYER** #define OBJ\_LWT\_BYLAYER (-2)

**19.18.1.96 OBJ\_LWT\_DEFAULT** #define OBJ\_LWT\_DEFAULT 0

**19.18.1.97 OBJ\_RUBBER\_CIRCLE\_1P\_DIA** #define OBJ\_RUBBER\_CIRCLE\_1P\_DIA 3

For the circle object currently focussed, show two rubber points: one for the left of the diameter and one for the right. These rubber points can be moved around the circle, but they always oppose one another.

**19.18.1.98 OBJ\_RUBBER\_CIRCLE\_1P\_RAD** #define OBJ\_RUBBER\_CIRCLE\_1P\_RAD 2

For the circle object currently focussed, show two rubber points: one for the centre (the anchor) and the other at some point on the radius to adjust the radius.

**19.18.1.99 OBJ\_RUBBER\_CIRCLE\_2P** #define OBJ\_RUBBER\_CIRCLE\_2P 4

**19.18.1.100 OBJ\_RUBBER\_CIRCLE\_3P** #define OBJ\_RUBBER\_CIRCLE\_3P 5

**19.18.1.101 OBJ\_RUBBER\_CIRCLE\_TTR** #define OBJ\_RUBBER\_CIRCLE\_TTR 6

**19.18.1.102 OBJ\_RUBBER\_CIRCLE\_TTT** #define OBJ\_RUBBER\_CIRCLE\_TTT 7

**19.18.1.103 OBJ\_RUBBER\_DIMLEADER\_LINE** #define OBJ\_RUBBER\_DIMLEADER\_LINE 8

**19.18.1.104 OBJ\_RUBBER\_ELLIPSE\_LINE** #define OBJ\_RUBBER\_ELLIPSE\_LINE 9

**19.18.1.105 OBJ\_RUBBER\_ELLIPSE\_MAJORDIAMETER\_MINORRADIUS** #define OBJ\_RUBBER\_ELLIPSE←  
\_MAJORDIAMETER\_MINORRADIUS 10

**19.18.1.106 OBJ\_RUBBER\_ELLIPSE\_MAJORRADIUS\_MINORRADIUS** #define OBJ\_RUBBER\_ELLIPSE←  
\_MAJORRADIUS\_MINORRADIUS 11

**19.18.1.107 OBJ\_RUBBER\_ELLIPSE\_ROTATION** #define OBJ\_RUBBER\_ELLIPSE\_ROTATION 12

**19.18.1.108 OBJ\_RUBBER\_GRIP** #define OBJ\_RUBBER\_GRIP 13

**19.18.1.109 OBJ\_RUBBER\_IMAGE** #define OBJ\_RUBBER\_IMAGE 19

**19.18.1.110 OBJ\_RUBBER\_LINE** #define OBJ\_RUBBER\_LINE 14

**19.18.1.111 OBJ\_RUBBER\_OFF** #define OBJ\_RUBBER\_OFF 0

Rubber point modes.

**19.18.1.112 OBJ\_RUBBER\_VALUES** NOTE: Allow this enum to evaluate false and true

**19.18.1.113 OBJ\_RUBBER\_ON** #define OBJ\_RUBBER\_ON 1

**19.18.1.114 OBJ\_RUBBER\_POLYGON** #define OBJ\_RUBBER\_POLYGON 15

**19.18.1.115 OBJ\_RUBBER\_POLYGON\_CIRCUMSCRIBE** #define OBJ\_RUBBER\_POLYGON\_CIRCUMSCRIBE 17

**19.18.1.116 OBJ\_RUBBER\_POLYGON\_INSCRIBE** #define OBJ\_RUBBER\_POLYGON\_INSCRIBE 16

**19.18.1.117 OBJ\_RUBBER\_POLYLINE** #define OBJ\_RUBBER\_POLYLINE 18

**19.18.1.118 OBJ\_RUBBER\_RECTANGLE** #define OBJ\_RUBBER\_RECTANGLE 20

**19.18.1.119 OBJ\_RUBBER\_TEXTSINGLE** #define OBJ\_RUBBER\_TEXTSINGLE 21

**19.18.1.120 OBJ\_SNAP\_APPINTERSECTION** #define OBJ\_SNAP\_APPINTERSECTION 12

**19.18.1.121 OBJ\_SNAP\_CENTER** #define OBJ\_SNAP\_CENTER 3

**19.18.1.122 OBJ\_SNAP\_ENDPOINT** #define OBJ\_SNAP\_ENDPOINT 1

**19.18.1.123 OBJ\_SNAP\_EXTENSION** #define OBJ\_SNAP\_EXTENSION 7

**19.18.1.124 OBJ\_SNAP\_INSERTION** #define OBJ\_SNAP\_INSERTION 8

**19.18.1.125 OBJ\_SNAP\_INTERSECTION** #define OBJ\_SNAP\_INTERSECTION 6

**19.18.1.126 OBJ\_SNAP\_MIDPOINT** #define OBJ\_SNAP\_MIDPOINT 2

**19.18.1.127 OBJ\_SNAP\_NEAREST** #define OBJ\_SNAP\_NEAREST 11

**19.18.1.128 OBJ\_SNAP\_NODE** #define OBJ\_SNAP\_NODE 4

**19.18.1.129 OBJ\_SNAP\_NULL** #define OBJ\_SNAP\_NULL 0

**19.18.1.130 OBJ\_SNAP\_PARALLEL** #define OBJ\_SNAP\_PARALLEL 13

**19.18.1.131 OBJ\_SNAP\_PERPENDICULAR** #define OBJ\_SNAP\_PERPENDICULAR 9

**19.18.1.132 OBJ\_SNAP\_QUADRANT** #define OBJ\_SNAP\_QUADRANT 5

**19.18.1.133 OBJ\_SNAP\_TANGENT** #define OBJ\_SNAP\_TANGENT 10

**19.18.1.134 OBJ\_TYPE\_ARC** #define OBJ\_TYPE\_ARC 1

**19.18.1.135 OBJ\_TYPE\_BASE** #define OBJ\_TYPE\_BASE 0

**19.18.1.136 OBJ\_TYPE\_BLOCK** #define OBJ\_TYPE\_BLOCK 2

**19.18.1.137 OBJ\_TYPE\_CIRCLE** #define OBJ\_TYPE\_CIRCLE 3

**19.18.1.138 OBJ\_TYPE\_DIMALIGNED** #define OBJ\_TYPE\_DIMALIGNED 4

**19.18.1.139 OBJ\_TYPE\_DIMANGULAR** #define OBJ\_TYPE\_DIMANGULAR 5

**19.18.1.140 OBJ\_TYPE\_DIMARCLENGTH** #define OBJ\_TYPE\_DIMARCLENGTH 6

**19.18.1.141 OBJ\_TYPE\_DIMDIAMETER** #define OBJ\_TYPE\_DIMDIAMETER 7

**19.18.1.142 OBJ\_TYPE\_DIMLEADER** #define OBJ\_TYPE\_DIMLEADER 8

**19.18.1.143 OBJ\_TYPE\_DIMLINEAR** #define OBJ\_TYPE\_DIMLINEAR 9

**19.18.1.144 OBJ\_TYPE\_DIMORDINATE** #define OBJ\_TYPE\_DIMORDINATE 10

**19.18.1.145 OBJ\_TYPE\_DIMRADIUS** #define OBJ\_TYPE\_DIMRADIUS 11

**19.18.1.146 OBJ\_TYPE\_ELLIPSE** #define OBJ\_TYPE\_ELLIPSE 12

**19.18.1.147 OBJ\_TYPE\_ELLIPSEARC** #define OBJ\_TYPE\_ELLIPSEARC 13

**19.18.1.148 OBJ\_TYPE\_GRID** #define OBJ\_TYPE\_GRID 15

**19.18.1.149 OBJ\_TYPE\_HATCH** #define OBJ\_TYPE\_HATCH 16

**19.18.1.150 OBJ\_TYPE\_IMAGE** #define OBJ\_TYPE\_IMAGE 17

**19.18.1.151 OBJ\_TYPE\_INFINITELINE** #define OBJ\_TYPE\_INFINITELINE 18

**19.18.1.152 OBJ\_TYPE\_LINE** #define OBJ\_TYPE\_LINE 19

**19.18.1.153 OBJ\_TYPE\_NULL** #define OBJ\_TYPE\_NULL 0

**19.18.1.154 OBJ\_TYPE\_PATH** #define OBJ\_TYPE\_PATH 20

**19.18.1.155 OBJ\_TYPE\_POINT** #define OBJ\_TYPE\_POINT 21

**19.18.1.156 OBJ\_TYPE\_POLYGON** #define OBJ\_TYPE\_POLYGON 22

**19.18.1.157 OBJ\_TYPE\_POLYLINE** #define OBJ\_TYPE\_POLYLINE 23

**19.18.1.158 OBJ\_TYPE\_RAY** #define OBJ\_TYPE\_RAY 24

**19.18.1.159 OBJ\_TYPE\_RECTANGLE** #define OBJ\_TYPE\_RECTANGLE 25

**19.18.1.160 OBJ\_TYPE\_RUBBER** #define OBJ\_TYPE\_RUBBER 14

**19.18.1.161 OBJ\_TYPE\_SLOT** #define OBJ\_TYPE\_SLOT 26

**19.18.1.162 OBJ\_TYPE\_SPLINE** #define OBJ\_TYPE\_SPLINE 27

**19.18.1.163 OBJ\_TYPE\_TEXTMULTI** #define OBJ\_TYPE\_TEXTMULTI 28

**19.18.1.164 OBJ\_TYPE\_TEXTSINGLE** #define OBJ\_TYPE\_TEXTSINGLE 29

**19.18.1.165 OBJ\_TYPE\_UNKNOWN** #define OBJ\_TYPE\_UNKNOWN 30

**19.18.1.166 PERMISSIONS\_SYSTEM** #define PERMISSIONS\_SYSTEM 1

**19.18.1.167 PERMISSIONS\_USER** #define PERMISSIONS\_USER 0

**19.18.1.168 PREVIEW\_CLONE\_NULL** #define PREVIEW\_CLONE\_NULL 0

**19.18.1.169 PREVIEW\_CLONE\_RUBBER** #define PREVIEW\_CLONE\_RUBBER 2

**19.18.1.170 PREVIEW\_CLONE\_SELECTED** #define PREVIEW\_CLONE\_SELECTED 1

**19.18.1.171 PREVIEW\_MODE\_MOVE** #define PREVIEW\_MODE\_MOVE 1

**19.18.1.172 PREVIEW\_MODE\_NULL** #define PREVIEW\_MODE\_NULL 0

**19.18.1.173 PREVIEW\_MODE\_OFF** #define PREVIEW\_MODE\_OFF 0

**19.18.1.174 PREVIEW\_MODE\_ROTATE** #define PREVIEW\_MODE\_ROTATE 2

**19.18.1.175 PREVIEW\_MODE\_SCALE** #define PREVIEW\_MODE\_SCALE 3

**19.18.1.176 RECTANGULAR\_GRID** #define RECTANGULAR\_GRID 1

**19.18.1.177 RENDER\_TEXT\_EDITOR** #define RENDER\_TEXT\_EDITOR 1

**19.18.1.178 RENDER\_UI** #define RENDER\_UI 0

**19.18.1.179 RGB\_MODE\_BACKGROUND** #define RGB\_MODE\_BACKGROUND 0

**Todo** document this.

**19.18.1.180 RGB\_MODE\_CROSSHAIR** #define RGB\_MODE\_CROSSHAIR 1

**19.18.1.181 RGB\_MODE\_GRID** #define RGB\_MODE\_GRID 2

**19.18.1.182 ROTATE\_MODE\_NORMAL** #define ROTATE\_MODE\_NORMAL 16

**19.18.1.183 ROTATE\_MODE\_REFERENCE** #define ROTATE\_MODE\_REFERENCE 17

**19.18.1.184 RUBBER\_MODES** #define RUBBER\_MODES 22

The number of possible rubber values: used for checking if a rubber value is unset or in error.

**19.18.1.185 SCALE\_MODE\_NORMAL** #define SCALE\_MODE\_NORMAL 18

**19.18.1.186 SCALE\_MODE\_REFERENCE** #define SCALE\_MODE\_REFERENCE 19

**19.18.1.187 SINGLE\_LINE\_TEXT\_MODE\_JUSTIFY** #define SINGLE\_LINE\_TEXT\_MODE\_JUSTIFY 20

**19.18.1.188 SINGLE\_LINE\_TEXT\_MODE\_RAPID** #define SINGLE\_LINE\_TEXT\_MODE\_RAPID 23

**19.18.1.189 SINGLE\_LINE\_TEXT\_MODE\_SETFONT** #define SINGLE\_LINE\_TEXT\_MODE\_SETFONT 21

**19.18.1.190 SINGLE\_LINE\_TEXT\_MODE\_SETGEOM** #define SINGLE\_LINE\_TEXT\_MODE\_SETGEOM 22

**19.18.1.191 SNAP\_TYPES** #define SNAP\_TYPES 14

**19.18.1.192 SNOWFLAKE\_MODE\_NUM\_POINTS** #define SNOWFLAKE\_MODE\_NUM\_POINTS 28

**19.18.1.193 SNOWFLAKE\_MODE\_XSCALE** #define SNOWFLAKE\_MODE\_XSCALE 29

**19.18.1.194 SNOWFLAKE\_MODE\_YSCALE** #define SNOWFLAKE\_MODE\_YSCALE 30

**19.18.1.195 SPARE\_RUBBER\_OFF** #define SPARE\_RUBBER\_OFF 0

**19.18.1.196 SPARE\_RUBBER\_PATH** #define SPARE\_RUBBER\_PATH 1

**19.18.1.197 SPARE\_RUBBER\_POLYGON** #define SPARE\_RUBBER\_POLYGON 2

**19.18.1.198 SPARE\_RUBBER\_POLYLINE** #define SPARE\_RUBBER\_POLYLINE 3

**19.18.1.199 STAR\_MODE\_CENTER\_PT** #define STAR\_MODE\_CENTER\_PT 25

**19.18.1.200 STAR\_MODE\_NUM\_POINTS** #define STAR\_MODE\_NUM\_POINTS 24

**19.18.1.201 STAR\_MODE\_RAD\_INNER** #define STAR\_MODE\_RAD\_INNER 27

**19.18.1.202 STAR\_MODE\_RAD\_OUTER** #define STAR\_MODE\_RAD\_OUTER 26

**19.18.1.203 STB\_IMAGE\_IMPLEMENTATION** #define STB\_IMAGE\_IMPLEMENTATION

**19.18.1.204 VIEW\_COLOR\_CROSSHAIR** #define VIEW\_COLOR\_CROSSHAIR "VIEW\_COLOR\_CROSSHAIR"

**19.18.1.205 VIEW\_COLOR\_GRID** #define VIEW\_COLOR\_GRID "VIEW\_COLOR\_GRID"

**19.18.1.206 VIEW\_STATE\_CLOSEABLE** #define VIEW\_STATE\_CLOSEABLE 0x0100

**19.18.1.207 VIEW\_STATE\_GRID** #define VIEW\_STATE\_GRID 0x1000

**19.18.1.208 VIEW\_STATE\_GRIP** #define VIEW\_STATE\_GRIP 0x0001

**19.18.1.209 VIEW\_STATE\_LWT** #define VIEW\_STATE\_LWT 0x0040

**19.18.1.210 `VIEW_STATE_ORTHO`** `#define VIEW_STATE_ORTHO 0x0004`

**19.18.1.211 `VIEW_STATE_POLAR`** `#define VIEW_STATE_POLAR 0x0008`

**19.18.1.212 `VIEW_STATE_QSNAP`** `#define VIEW_STATE_QSNAP 0x0010`

**19.18.1.213 `VIEW_STATE_QTRACK`** `#define VIEW_STATE_QTRACK 0x0020`

**19.18.1.214 `VIEW_STATE_REAL`** `#define VIEW_STATE_REAL 0x0080`

**19.18.1.215 `VIEW_STATE_RULER`** `#define VIEW_STATE_RULER 0x0002`

**19.18.1.216 `VIEW_STATE_SNAP`** `#define VIEW_STATE_SNAP 0x0000`

**19.18.1.217 `VIEW_STATE_USE_COLOR`** `#define VIEW_STATE_USE_COLOR 0x0800`

**19.18.1.218 `VIEW_STATE_USE_LOGO`** `#define VIEW_STATE_USE_LOGO 0x0200`

**19.18.1.219 `VIEW_STATE_USE_TEXTURE`** `#define VIEW_STATE_USE_TEXTURE 0x0400`

**19.18.1.220 `WIDGET_MODE_BACKGROUND`** `#define WIDGET_MODE_BACKGROUND 4`

**19.18.1.221 WIDGET\_MODE\_BLOCK** #define WIDGET\_MODE\_BLOCK 0

**19.18.1.222 WIDGET\_MODE\_COMBOBOX** #define WIDGET\_MODE\_COMBOBOX 6

**19.18.1.223 WIDGET\_MODE\_CONTAINER** #define WIDGET\_MODE\_CONTAINER 7

**19.18.1.224 WIDGET\_MODE\_IMAGE** #define WIDGET\_MODE\_IMAGE 2

**19.18.1.225 WIDGET\_MODE\_PANEL** #define WIDGET\_MODE\_PANEL 8

**19.18.1.226 WIDGET\_MODE\_ROOT** #define WIDGET\_MODE\_ROOT 10

**19.18.1.227 WIDGET\_MODE\_SPINBOX** #define WIDGET\_MODE\_SPINBOX 5

**19.18.1.228 WIDGET\_MODE\_SVG** #define WIDGET\_MODE\_SVG 3

**19.18.1.229 WIDGET\_MODE\_TEXT** #define WIDGET\_MODE\_TEXT 1

**19.18.1.230 WIDGET\_MODE\_VIEW** #define WIDGET\_MODE\_VIEW 9

## 19.18.2 Typedef Documentation

**19.18.2.1 Index** `typedef struct Index_ Index`

**Todo** document this.

**19.18.2.2 IndexEntry** `typedef struct IndexEntry_ IndexEntry`

**Todo** document this.

**19.18.2.3 Settings** `typedef struct Settings_ Settings`

Settings System.

Rather than pollute the global namespace, we collect together all the global settings into a structure that stores them. This also allows us to create a complete copy of the settings for the purpose of restoring them if the user cancels out of the Settings Dialog.

Like all of our structs, it's C99 compliant.

**19.18.2.4 UiObject** `typedef struct UiObject_ UiObject`

This covers the inbuilt designs: Dolphin, Snowflake and Heart. Covers Rotate, Scale and Point UI events.

scale is how radii are stored if the object is a circle, or the semi-major and semi-minor axes if the object is an ellipse.

center perhaps should be the "anchor" instead which is the center for some objects and top left for rectangular objects.

Do angles need special storage? angleRef, angleNew

This chapter details how the source code achieves the design detailed in the previous chapter. For the low-level details, read the later chapters.

Dear ImGui (CITATION NEEDED)

**19.18.2.5 Geometry Objects** At all times the EmbPattern has all of the information about the pattern however, editing information like the rubber text labels needs to be stored during runtime. Also editing ghosts like when a rotate command is half executed.

To deal with this we have a generic object that can act as any other object that updates the associated pattern struct as changes are made.

Note that the editor state is separate from this since that is per view, not per object.

Selecting is done via this interface.

**19.18.2.6 UndoHistory** `typedef struct UndoHistory_ UndoHistory`

**Todo** document this.

**19.18.2.7 View** `typedef struct View_ View`**19.18.3 Views**

The `View` describes how the render is displayed.

**19.18.4 Enumeration Type Documentation****19.18.4.1 OBJ\_KEYS** `enum OBJ_KEYS`

Enumerator

OBJ_TYPE	
OBJ_NAME	
OBJ_LAYER	
OBJ_COLOR	
OBJ_LTYPE	
OBJ_LWT	
OBJ_RUBBER	
OBJ_TYPE	
OBJ_NAME	
OBJ_LAYER	
OBJ_COLOR	
OBJ_LTYPE	
OBJ_LWT	
OBJ_RUBBER	

**19.18.5 Function Documentation****19.18.5.1 about\_dialog()** `static void about_dialog (`  
`void ) [static]`

Renderer for the about dialog. Called by the main widget.

```
19.18.5.2 actuator() static void actuator (
    char command_line[200] ) [static]
```

The unified user interaction system which operates like a command line parser.

*command\_line*

In order to have a complex version of saving work, with backups, undo history and forks we need a good recording of what has happened.

An action has been taken, we are at the current head of the stack.

The action string is command similar to how a command line works: seperated by spaces we have a function followed by arguments.

**Todo** Make day vision color settings.

**Todo** check-for-updates should create a dialog.

**Todo** changelog

**Todo** Make night vision color settings.

**Todo** These should be part of init\_view rulerMetric = settings.ruler\_metric; rulerColor = EmbColor(settings.ruler\_color); rulerPixelSize = settings.ruler\_pixel\_size;

```
19.18.5.3 add_ellipse() static void add_ellipse (
    EmbReal centerX,
    EmbReal centerY,
    EmbReal width,
    EmbReal height,
    EmbReal rot,
    bool fill,
    int rubberMode ) [static]
```

*centerX centerY width height rot fill rubberMode*

```
19.18.5.4 add_infinite_line() static void add_infinite_line (
    EmbReal x1,
    EmbReal y1,
    EmbReal x2,
    EmbReal y2,
    EmbReal rot ) [static]
```

*x1 y1 x2 y2 rot*

```
19.18.5.5 add_line() static void add_line (
    EmbLine line,
    EmbReal rot,
    int rubberMode ) [static]
```

*line rot rubberMode*

```
19.18.5.6 add_object() static void add_object (
    EmbGeometry * obj ) [static]
```

```
19.18.5.7 add_point() static void add_point (
    EmbReal x,
    EmbReal y ) [static]
```

*x y*

```
19.18.5.8 add_point_action() static void add_point_action (
    void ) [static]
```

**Todo** document this.

```
19.18.5.9 add_ray() static void add_ray (
    EmbReal x1,
    EmbReal y1,
    EmbReal x2,
    EmbReal y2,
    EmbReal rot ) [static]
```

*x1 y1 x2 y2 rot*

```
19.18.5.10 add_regular_polygon() static void add_regular_polygon (
    EmbReal centerX,
    EmbReal centerY,
    int sides,
    int mode,
    EmbReal rad,
    EmbReal rot,
    bool fill ) [static]
```

*centerX centerY sides mode rad rot fill*

**Todo** finish add\_regular\_polygon.

```
19.18.5.11 add_rubber_action() static void add_rubber_action (
    void ) [static]
```

**Todo** handle arc type

- handle block type
- handle DimAligned type
- handle DimAngular rubber action.
- handle DimArcLength rubber action.
- handle DimDiameter rubber action.
- handle ellipse arc type
- handle hatch type
- handle image type
- handle infinite line type
- handle path type
- handle point type

**Todo** handle dim linear type

**Todo** handle dim ordinate type

**Todo** handle dim radius type

```
char * objType = results[0].toString().toUpperCase();

if (!allowRubber()) {
    log_debug("add_rubber(): You must use vulcanize() before you can add another rubber object.");
    return;
}

EmbReal mx = MouseX();
EmbReal my = MouseY();

switch (objType) {
case EMB_ARC: {
    break;
}
case EMB_BLOCK: {
    break;
}
case EMB_CIRCLE: {
    addCircle(mx, my, 0, false, OBJ_RUBBER_ON);
    break;
}
case EMB_DIMALIGNED: {
    break;
}
case EMB_DIMANGULAR: {
    break;
}
case EMB_DIMARCLENGTH: {
    break;
}
case EMB_DIMDIAMETER: {
    break;
}
case EMB_DIMLEADER: {
    addDimLeader(mx, my, mx, my, 0, OBJ_RUBBER_ON);
}
case EMB_DIMLINEAR: {
```

```

        break;
    }
    case EMB_DIMORDINATE: {
        break;
    }
    case EMB_DIMRADIUS: {
        break;
    }
    case EMB_ELLIPSE: {
        addEllipse(mx, my, 0, 0, 0, 0, OBJ_RUBBER_ON);
        break;
    }
    case EMB_ELLIPSEARC: {
        break;
    }
    case EMB_HATCH: {
        break;
    }
    case EMB_IMAGE: {
        break;
    }
    case EMB_INFINITELINE: {
        break;
    }
    case EMB_LINE: {
        addLine(mx, my, mx, my, 0, OBJ_RUBBER_ON);
        break;
    }
    case EMB_PATH: {
        break;
    }
    case EMB_POINT: {
        break;
    }
    case EMB_POLYGON: {
        addPolygon(mx, my, EmbPath(), OBJ_RUBBER_ON);
        break;
    }
    case EMB_POLYLINE: {
        addPolyline(mx, my, EmbPath(), OBJ_RUBBER_ON);
        break;
    }
    case EMB_RAY: {

```

**Todo** handle this type break; } case EMB\_RECT: { addRectangle(mx, my, mx, my, 0, 0, OBJ\_RUBBER\_ON); break; } case EMB\_SPLINE: {

### Todo

**Todo** handle this type break; } case EMB\_TEXTMULTI: {

### Todo

**Todo** handle this type break; } case EMB\_TEXTSINGLE: { addTextSingle("", mx, my, 0, false, OBJ\_RUBBER\_ON); break; } default: break; }

---

**19.18.5.12 add\_slot\_action()** static void add\_slot\_action ( void ) [static]

**Todo** Use [UndoableAddCommand](#) for slots

**Todo** slot fill

```
19.18.5.13 add_text_multi() static void add_text_multi (
    const char * str,
    EmbVector pos,
    EmbReal rot,
    bool fill,
    int rubberMode ) [static]
```

```
19.18.5.14 add_text_single() static void add_text_single (
    const char * str,
    EmbReal x,
    EmbReal y,
    EmbReal rot,
    bool fill,
    int rubberMode ) [static]
```

**Todo** single line text fill

```
19.18.5.15 add_to_rubber_room() static void add_to_rubber_room (
    EmbGeometry * item ) [static]
```

```
19.18.5.16 add_to_undo_history() static void add_to_undo_history (
    UndoHistory * undo_history,
    const char * command_line ) [static]
```

```
19.18.5.17 alert() static void alert (
    const char * txt ) [static]
```

Renderer for the alert dialog. Called by the main widget, with the message passed as *txt*.

```
19.18.5.18 alignScenePointWithViewPoint() static void alignScenePointWithViewPoint (
    EmbVector scenePoint,
    EmbVector viewPoint ) [static]
```

```
19.18.5.19 allow_rubber() bool allow_rubber (
    void )
```

Returns true Returns false.

**Todo** the rubberRoomList size check should be removed later.

**19.18.5.20 allow\_zoom\_in()** `bool allow_zoom_in ( void )`

**19.18.5.21 allow\_zoom\_out()** `bool allow_zoom_out ( void )`

**19.18.5.22 arc\_action()** `static void arc_action ( void ) [static]`

**Todo** document this.

**19.18.5.23 background\_color\_action()** `static void background_color_action ( void ) [static]`

**Todo** document this.

**19.18.5.24 boundingRect()** `EmbRect boundingRect ( UiObject * obj )`

**19.18.5.25 button\_tip\_of\_the\_day\_clicked()** `static void button_tip_of_the_day_clicked ( int button ) [static]`

**Todo** document this.

**19.18.5.26 c\_split()** `static void c_split ( char input[200], int * argc, char argv[10][200] ) [static]`

```
19.18.5.27 calculate_angle() EmbReal calculate_angle (
    EmbReal x1,
    EmbReal y1,
    EmbReal x2,
    EmbReal y2 )
```

*x1 y1 x2 y2* Returns EmbReal

**Todo** finish CalculateAngle.

```
19.18.5.28 calculate_angle_action() static void calculate_angle_action (
    void ) [static]
```

**Todo** Get mouse point.

```
19.18.5.29 calculate_distance_action() static void calculate_distance_action (
    void ) [static]
```

**Todo** Get mouse point.

```
19.18.5.30 centerAt() static void centerAt (
    EmbVector centerPoint ) [static]
```

```
19.18.5.31 changelog_dialog() static void changelog_dialog (
    void ) [static]
```

Renderer for the changelog dialog. Called by the main widget.

```
19.18.5.32 checkForUpdates() static void checkForUpdates (
    void ) [static]
```

**Todo** Check website for new versions, commands, etc...

```
19.18.5.33 circle_action() static void circle_action (
    void ) [static]
```

**Todo** circle fill

```
19.18.5.34 clear_rubber() static void clear_rubber (
    void ) [static]
```

**Todo** document this.

```
19.18.5.35 clear_selection() static void clear_selection (
    void ) [static]
```

Clear the current view's selection by ignoring the data contained in it.

```
19.18.5.36 clearRubberRoom() static void clearRubberRoom (
    void ) [static]
```

**Todo** document this.

```
19.18.5.37 clockwise() bool clockwise (
    UiObject * obj )
```

```
19.18.5.38 close_action() static void close_action (
    void ) [static]
```

Close the current view.

**Todo** finish copy\_action

```
19.18.5.39 close_event() static void close_event (
    int * event ) [static]
```

**Todo** need close\_view\_event and close\_window\_event? or action

```
19.18.5.40 close_toolbar_action() static void close_toolbar_action (
    int * action ) [static]
```

*action*

```
19.18.5.41 colorSelectorIndexChanged() static void colorSelectorIndexChanged (
    int index ) [static]
```

*index*

**Todo** Handle ByLayer and ByBlock and Other...

```
19.18.5.42 context_menu_event() static void context_menu_event (
    void ) [static]
```

**Todo** document this.

```
19.18.5.43 copy() static void copy (
    void ) [static]
```

**Todo** Prompt to select objects if nothing is preselected.

```
19.18.5.44 copy_action() static void copy_action (
    void ) [static]
```

Copy what is currently in active\_view->selected.

**Todo** finish copy\_action

```
19.18.5.45 copy_selected() static void copy_selected (
    void ) [static]
```

**Todo** Get mouse point/move

```
19.18.5.46 copy_selection() static void copy_selection (
    void ) [static]
```

Prevent memory leaks by deleting any unpasted instances.

```
19.18.5.47 cornerButtonClicked() static void cornerButtonClicked (
    void ) [static]
```

**Todo** document this.

```
19.18.5.48 create_group_box_arc() static void create_group_box_arc (
    int id,
    EmbArc * arc ) [static]
```

Create a group box arc object.

```
19.18.5.49 create_group_box_block() static void create_group_box_block (
    int id,
    EmbBlock * obj ) [static]
```

Create a group box block object.

**Todo** editors for blocks.

```
19.18.5.50 create_group_box_circle() static void create_group_box_circle (
    int id,
    EmbCircle * circle ) [static]
```

Create a group box circle object.

**Bug** When the user selects multiple entries across different circles then edits the program throws an error.

```
19.18.5.51 create_group_box_dim_aligned() static void create_group_box_dim_aligned (
    int id,
    EmbAlignedDim * obj ) [static]
```

Create a group box dim aligned object.

**Todo** editors for aligned dimension.

```
19.18.5.52 create_group_box_dim_angular() static void create_group_box_dim_angular (
    int id,
    EmbAngularDim * obj ) [static]
```

Create a group box dim angular object.

```
19.18.5.53 create_group_box_dim_arc_length() static void create_group_box_dim_arc_length (
    int id,
    EmbArcLengthDim * obj ) [static]
```

Create a group box dim arc length object.

```
19.18.5.54 create_group_box_dim_diameter() static void create_group_box_dim_diameter (
    int id,
    EmbDiameterDim * dim_diameter ) [static]
```

Create a group box dim diameter object.

```
19.18.5.55 create_group_box_dim_leader() static void create_group_box_dim_leader (
    int id,
    EmbLeaderDim * obj ) [static]
```

Create a group box dim leader object.

```
19.18.5.56 create_group_box_dim_linear() static void create_group_box_dim_linear (
    int id,
    EmbLinearDim * obj ) [static]
```

Create a group box dim linear object.

**Todo** editors for linear dimension.

```
19.18.5.57 create_group_box_dim_ordinate() static void create_group_box_dim_ordinate (
    int id,
    EmbOrdinateDim * obj ) [static]
```

Create a group box dim ordinate object.

**Todo** editors for linear dimension.

```
19.18.5.58 create_group_box_dim_radius() static void create_group_box_dim_radius (
    int id,
    EmbRadiusDim * dim_radius ) [static]
```

Create a group box dim radius object.

**Todo** editors for radius dimension.

```
19.18.5.59 create_group_box_ellipse() static void create_group_box_ellipse (
    int id,
    EmbEllipse * ellipse ) [static]
```

Create a group box ellipse object.

```
19.18.5.60 create_group_box_general() static void create_group_box_general (
    int id,
    EmbPattern * pattern ) [static]
```

Create a group box general object.

```
19.18.5.61 create_group_box_image() static void create_group_box_image (
    int id,
    EmbImage * image ) [static]
```

Create a group box image object.

```
19.18.5.62 create_group_box_infinite_line() static void create_group_box_infinite_line (
    int id,
    EmbInfiniteLine * obj ) [static]
```

Create a group box infinite line object.

```
19.18.5.63 create_group_box_line() static void create_group_box_line (
    int id,
    EmbLine * line ) [static]
```

Create a group box line object.

```
19.18.5.64 create_group_box_path() static void create_group_box_path (
    int id,
    EmbPath * path ) [static]
```

Create a group box path object.

```
19.18.5.65 create_group_box_point() static void create_group_box_point (
    int id,
    EmbPoint * point ) [static]
```

Create a group box point object.

```
19.18.5.66 create_group_box_polygon() static void create_group_box_polygon (
    int id,
    EmbPolygon * polygon ) [static]
```

Create a group box polygon object.

```
19.18.5.67 create_group_box_polyline() static void create_group_box_polyline (
    int id,
    EmbPolyline * polyline ) [static]
```

Create a group box polyline object.

```
19.18.5.68 create_group_box_ray() static void create_group_box_ray (
    int id,
    EmbRay * ray ) [static]
```

Create a group box ray object.

```
19.18.5.69 create_group_box_rectangle() static void create_group_box_rectangle (
    int id,
    EmbRect * rect ) [static]
```

Create a group box rectangle object.

```
19.18.5.70 create_group_box_stitch() static void create_group_box_stitch (
    int i,
    EmbStitch * st ) [static]
```

Create a group box stitch object.

```
19.18.5.71 create_group_box_stitch_list() static void create_group_box_stitch_list (
    int id,
    EmbArray * stitch_list ) [static]
```

Create a group box stitch list object.

```
19.18.5.72 create_group_box_text_multi() static void create_group_box_text_multi (
    int id,
    EmbTextMulti * text_multi ) [static]
```

Create a group box text multi object.

```
19.18.5.73 create_group_box_text_single() static void create_group_box_text_single (
    int id,
    EmbTextSingle * text_single ) [static]
```

Create a group box text single object.

```
19.18.5.74 create_layer_toolbar() static void create_layer_toolbar (
    void ) [static]
```

Create a layer toolbar object.

```
19.18.5.75 create_prompt_toolbar() static void create_prompt_toolbar (
    void ) [static]
```

Create a prompt toolbar object.

```
19.18.5.76 create_properties_toolbar() static void create_properties_toolbar (
    void ) [static]
```

Create a properties toolbar object.

```
19.18.5.77 create_tab() static void create_tab (
    int i ) [static]
```

Create the *i*-th view as a tab.

*i* Which entry in the views array to use.

```
19.18.5.78 create_tab_display() static void create_tab_display (
    void ) [static]
```

Create a tab display object.

```
19.18.5.79 create_tab_files_paths() static void create_tab_files_paths (
    void ) [static]
```

Create a tab files paths object.

```
19.18.5.80 create_tab_general() static void create_tab_general (
    void ) [static]
```

Create a tab general object.

```
19.18.5.81 create_tab_grid_ruler() static void create_tab_grid_ruler (
    void ) [static]
```

Create a tab grid ruler object.

```
19.18.5.82 create_tab_lineweight() static void create_tab_lineweight (
    void ) [static]
```

Create a tab lineweight object.

**Todo** finish this

```
19.18.5.83 create_tab_open_save() static void create_tab_open_save (
    void ) [static]
```

Create a tab open save object.

```
19.18.5.84 create_tab_ortho_polar() static void create_tab_ortho_polar (
    void ) [static]
```

Create a tab ortho polar object.

```
19.18.5.85 create_tab_printing() static void create_tab_printing (
    void ) [static]
```

Create a tab printing object.

```
19.18.5.86 create_tab_prompt() static void create_tab_prompt (
    void ) [static]
```

```
19.18.5.87 create_tab_quicksnap() static void create_tab_quicksnap (
    void ) [static]
```

Create a tab quicksnap object.

```
19.18.5.88 create_tab_quicktrack() static void create_tab_quicktrack (
    void ) [static]
```

Create a tab quicktrack object.

```
19.18.5.89 create_tab_selection() static void create_tab_selection (
    void ) [static]
```

Create a tab selection object.

```
19.18.5.90 create_tab_snap() static void create_tab_snap ( void ) [static]
```

Create a tab snap object.

```
19.18.5.91 create_text_toolbar() static void create_text_toolbar ( void ) [static]
```

Create a text toolbar object.

```
19.18.5.92 createAllActions() static void createAllActions ( void ) [static]
```

Create a All Actions object.

**Todo** SCENE\_QSNAP\_POINT for each scene

**Todo** Set What's This Context Help to statusTip for now so there is some infos there. Make custom whats this context help popup with more descriptive help than just the status bar/tip one liner(short but not real long) with a hyperlink in the custom popup at the bottom to open full help file description. Ex: like wxPython AGW's SuperToolTip.

**Todo** Finish All Commands ... <.<

```
19.18.5.93 createGrid() static void createGrid ( const char * gridType ) [static]
```

```
19.18.5.94 createGridIso() static void createGridIso ( void ) [static]
```

**Todo** document this.

```
19.18.5.95 createGridPolar() static void createGridPolar ( void ) [static]
```

**Todo** document this.

```
19.18.5.96 createGridRect() static void createGridRect (
    void ) [static]
```

**Todo** document this.

```
19.18.5.97 createObjectList() EmbArray * createObjectList (
    EmbArray * list )
```

*list* Returns EmbGeometry\*

**Todo** cut/copy blocks

**Todo** cut/copy aligned dimensions

**Todo** cut/copy elliptical arcs

**Todo** cut/copy images

**Todo** cut/copy infinite lines

**Todo** cut/copy linear dimensions

**Todo** cut/copy ordinate dimensions

**Todo** cut/copy radius dimensions

```
19.18.5.98 createOrigin() static void createOrigin (
    void ) [static]
```

**Todo** Make Origin Customizable

```
19.18.5.99 crosshair_color_action() static void crosshair_color_action (
    void ) [static]
```

**Todo** document this.

```
19.18.5.100 current_color_changed() static void current_color_changed ( unsigned int color ) [static]
```

```
19.18.5.101 current_layer_changed() static void current_layer_changed ( const char * layer ) [static]
```

```
19.18.5.102 current_linetype_changed() static void current_linetype_changed ( const char * type ) [static]
```

```
19.18.5.103 current_lineweight_changed() static void current_lineweight_changed ( const char * weight ) [static]
```

```
19.18.5.104 cut() static void cut ( void ) [static]
```

**Todo** document this.

```
19.18.5.105 cut_action() static void cut_action ( void ) [static]
```

Cut what is currently in active\_view->selected.

**Todo** finish cut\_action

```
19.18.5.106 cut_selected() static void cut_selected ( void ) [static]
```

**Todo** Get mouse point/move

```
19.18.5.107 delete_object() static void delete_object (
    EmbGeometry * obj ) [static]
```

We really just remove the objects from the scene. Deletion actually occurs in the destructor.

```
19.18.5.108 delete_pressed() static void delete_pressed (
    void ) [static]
```

**Todo** document this.

```
19.18.5.109 delete_selected() static void delete_selected (
    void ) [static]
```

**Todo** document this.

```
19.18.5.110 details_dialog() static void details_dialog (
    void ) [static]
```

**Todo** Move majority of the calculation code into libembroidery

**Todo** Color Histogram

**Todo** Stitch Distribution Histogram

Switch to grid layout.

```
19.18.5.111 dictionary_from_index() Dictionary * dictionary_from_index (
    Index * index,
    const char * label )
```

```
19.18.5.112 dim_leader_action() static void dim_leader_action (
    void ) [static]
```

Add a EmbDimLeader to the current view.

**Todo** Finish dim\_leader\_action.

```
19.18.5.113 disable_move_rapid_fire() static void disable_move_rapid_fire (
    void ) [static]
```

**Todo** document this.

```
19.18.5.114 disablePromptRapidFire() static void disablePromptRapidFire (
    void ) [static]
```

**Todo** document this.

```
19.18.5.115 dolphin_main() UiObject dolphin_main (
    void )
```

Initialise a Dolphin design element.

```
19.18.5.116 draw_grid() static void draw_grid (
    void ) [static]
```

**Todo** document this.

```
19.18.5.117 draw_rulers() static void draw_rulers (
    void ) [static]
```

**Todo** labels for measurements.

```
19.18.5.118 drawBackground() static void drawBackground (
    int * painter,
    const EmbRect rect ) [static]
```

```
19.18.5.119 drawForeground() static void drawForeground (
    int * painter,
    EmbRect rect ) [static]
```

Draw grip points for all selected objects

```
19.18.5.120 ellipse_action() static void ellipse_action (
    void ) [static]
```

odo document this.

```
19.18.5.121 emb_clamp() EmbReal emb_clamp (
    EmbReal lower,
    EmbReal x,
    EmbReal upper )
```

Ensure that *x* lies in the range [*lower*, *upper*] by rounding up or down if *x* is outside of that range.

*lower* The minimum permissible value *x* can take. *x* The value to be processed. *upper* The maximum permissible value *x* can take. Returns EmbReal The clamped value.

**Todo** Move to libembroidery.

```
19.18.5.122 embArc_endAngle() float embArc_endAngle (
    EmbArc arc )
```

```
19.18.5.123 embArc_setCenter() static void embArc_setCenter (
    EmbArc * arc,
    EmbVector point ) [static]
```

```
19.18.5.124 embArc_setEndAngle() static void embArc_setEndAngle (
    EmbArc * arc,
    float angle ) [static]
```

```
19.18.5.125 embArc_setRadius() static void embArc_setRadius (
    EmbArc * arc,
    float radius ) [static]
```

```
19.18.5.126 embArc_setStartAngle() static void embArc_setStartAngle (
    EmbArc * arc,
    float angle ) [static]
```

**19.18.5.127 embArc\_startAngle()** float embArc\_startAngle (   
   EmbArc arc )

**19.18.5.128 embCircle\_click()** static void embCircle\_click (   
   UiObject \* global,   
   EmbVector position ) [static]

*position*

**19.18.5.129 embCircle\_prompt()** static void embCircle\_prompt (   
   UiObject \* global,   
   const char \* str ) [static]

*str*

**19.18.5.130 embCircle\_setArea()** static void embCircle\_setArea (   
   EmbCircle \* circle,   
   float area ) [static]

**19.18.5.131 embCircle\_setCircumference()** static void embCircle\_setCircumference (   
   EmbCircle \* circle,   
   float circumference ) [static]

**19.18.5.132 embPolyline\_click()** static void embPolyline\_click (   
   UiObject \* global,   
   float x,   
   float y ) [static]

**19.18.5.133 embPolyline\_main()** static void embPolyline\_main (   
   void ) [static]

Command: Polyline.

float global = {};//Required global.firstRun; global.firstX; global.firstY; global.prevX; global.prevY; global.num;

**19.18.5.134 embPolyline\_prompt()** static void embPolyline\_prompt (   
   UiObject global,   
   const char \* str ) [static]

**19.18.5.135 embVector\_perpendicularDistance()** `EmbReal` `embVector_perpendicularDistance (`  
`EmbVector p,`  
`EmbLine line )`

*p /line* Returns `EmbReal`

**19.18.5.136 enableMoveRapidFire()** `static void enableMoveRapidFire (`  
`void ) [static]`

**Todo** document this.

**19.18.5.137 enablePromptRapidFire()** `static void enablePromptRapidFire (`  
`void ) [static]`

**Todo** document this.

**19.18.5.138 end\_command()** `static void end_command (`  
`void ) [static]`

**Todo** document this.

**19.18.5.139 enter\_event()** `static void enter_event (`  
`int * event ) [static]`

**Todo** document this.

**19.18.5.140 error\_action()** `static void error_action (`  
`const char * msg ) [static]`

*msg*

```
19.18.5.141 escape_pressed() static void escape_pressed (
    void ) [static]
```

**Todo** document this.

In the actuator, this could be just "escape" which we emit when the escape key is pressed or any remapping of it.

```
19.18.5.142 exit_action() static void exit_action (
    void ) [static]
```

**Todo** document this.

```
19.18.5.143 export_action() static void export_action (
    const char * filename ) [static]
```

*filename*

```
19.18.5.144 file_extension() const char * file_extension (
    const char * fileName )
```

```
19.18.5.145 find_view() int find_view (
    const char * fileName )
```

*fileName* Returns int

```
19.18.5.146 floating_changed_toolbar_action() static void floating_changed_toolbar_action (
    bool isFloating ) [static]
```

*isFloating*

```
19.18.5.147 gen_gl_texture() GLuint gen_gl_texture (
    uint8_t * data,
    int w,
    int h,
    int wrap )
```

**19.18.5.148 generic\_design\_init()** `UiObject` generic\_design\_init (   
  `void` )

**19.18.5.149 get\_short\_current\_file()** `const char *` get\_short\_current\_file (   
  `void` )

Returns `const char*`.

**19.18.5.150 getCurrentColor()** `unsigned int` getCurrentColor (   
  `void` )

Get the Current Color object.

Returns `unsigned int`

**Todo** return color ByLayer

**19.18.5.151 getCurrentLayer()** `char *` getCurrentLayer (   
  `void` )

Get the Current Layer object.

Returns `char*`

**19.18.5.152 getCurrentLineType()** `char *` getCurrentLineType (   
  `void` )

Get the Current Line Type object.

Returns `char*`

**19.18.5.153 getCurrentLineWeight()** `char *` getCurrentLineWeight (   
  `void` )

Get the Current Line Weight object.

Returns `char*`

**19.18.5.154 grid\_color\_action()** `static void` grid\_color\_action (   
  `void` ) [static]

**Todo** document this.

```
19.18.5.155 heart_init() static UiObject heart_init (
    void ) [static]
```

**Todo** document this.

```
19.18.5.156 Help() static void Help (
    void ) [static]
```

**Todo** document this.

```
19.18.5.157 help_dialog() static void help_dialog (
    void ) [static]
```

Renderer for the help dialog. Called by the main widget.

```
19.18.5.158 horizontal_dimension_action() static void horizontal_dimension_action (
    void ) [static]
```

**Todo** document this.

```
19.18.5.159 icon_action() static void icon_action (
    int new_size ) [static]
```

*new\_size*

```
19.18.5.160 image_action() static void image_action (
    void ) [static]
```

Add an EmblImage to the current view.

**Todo** finish image\_action.

**19.18.5.161 `image_widget_init()`** static void image\_widget\_init ( const char \* *filename* ) [static]

**19.18.5.162 `image_widget_load()`** bool image\_widget\_load ( const char \* *fileName* )

**19.18.5.163 `image_widget_paint_event()`** static void image\_widget\_paint\_event ( void ) [static]

**19.18.5.164 `image_widget_save()`** bool image\_widget\_save ( const char \* *fileName* )

**19.18.5.165 `index_free()`** static void index\_free ( Index \* *index* ) [static]

**19.18.5.166 `index_init()`** Index \* index\_init ( void )

Returns Index\*.

**19.18.5.167 `infinite_line_action()`** static void infinite\_line\_action ( void ) [static]

**Todo** document this.

**19.18.5.168 `init_command()`** static void init\_command ( void ) [static]

**Todo** document this.

```
19.18.5.169 init_view() View init_view (
    void )
```

Create a new view to represent the file being edited.

Returns [View](#) A properly initialised view.

On creation, view claims the active\_view and therefore captures key presses and mouse actions.

**Todo** Originally, EM2 allowed for multiple views of the same file, we can allow for this, but currently means we have multiple pattern pointers. So we'd need to set the memory locations to be the same place.

**Todo** Dropping files onto dock on Mac to open them?

**Todo** automatically maximises, but it could allow for multiple views, panes and windows.

```
19.18.5.170 layer_manager() static void layer_manager (
    View * view ) [static]
```

**Todo** document this.

```
19.18.5.171 Layer_manager_add_layer() static void Layer_manager_add_layer (
    const char * name,
    bool visible,
    bool frozen,
    EmbReal zValue,
    unsigned int color,
    const char * lineType,
    const char * lineWeight,
    bool print ) [static]
```

```
19.18.5.172 layerManager() static void layerManager (
    void ) [static]
```

**Todo** document this.

```
19.18.5.173 layerPrevious() static void layerPrevious (
    void ) [static]
```

**Todo** document this.

```
19.18.5.174 layerSelectorIndexChanged() static void layerSelectorIndexChanged (
    int index ) [static]
```

*index*

```
19.18.5.175 line_action() static void line_action (
    void ) [static]
```

**Todo** document this.

```
19.18.5.176 linetypeSelectorIndexChanged() static void linetypeSelectorIndexChanged (
    int index ) [static]
```

*index*

```
19.18.5.177 lineweightSelectorIndexChanged() static void lineweightSelectorIndexChanged (
    int index ) [static]
```

*index*

```
19.18.5.178 load_configuration() static void load_configuration (
    void ) [static]
```

```
19.18.5.179 load_formats() static void load_formats (
    void ) [static]
```

**Todo** document this.

```
19.18.5.180 load_menu() static void load_menu (
    const char * menu_label ) [static]
```

```
19.18.5.181 load_texture() GLuint load_texture (
    char fname[200] )
```

```
19.18.5.182 load_toolbar() static void load_toolbar (
    const char * toolbar_label ) [static]
```

```
19.18.5.183 locate_point_click() static void locate_point_click (
    UiObject * global,
    EmbVector v ) [static]
```

Process a left-click in the locate point context.

```
19.18.5.184 locate_point_main() UiObject locate_point_main (
    void )
```

Initialise command: Locate Point.

```
19.18.5.185 located_point_prompt() static void located_point_prompt (
    UiObject * global,
    const char * str ) [static]
```

```
19.18.5.186 log_debug() void log_debug (
    const char * msg )
```

Rather than outputting debug information to the command line it is sent to a file called "debug.txt" which is in the current directory.

*msg* The message to be written to the end of the debug file.

The benefits of always logging to file are: they are easily requested from users who need help and we can search the debug log using grep and other tool.

**Todo** log current time and process id alongside all debug information.

**19.18.5.187 logPromptInput()** static void logPromptInput (

```
const char * txt ) [static]
```

*txt*

**19.18.5.188 main()** int main (

```
int argc,  
char * argv[ ] )
```

The program entry point on all platforms.

*argc* The number of command line arguments sent (including the program executable). *argv* An array of char arrays for each of the command line arguments. Returns 0 If the program closed without fault. Returns 1 Otherwise

**Todo** detail all possible error return values here.

Load all menus in the main window.

**Todo** add icons and shortcut prompts to menus.

Load all toolbars in main window.

Build statusbar.

Possible inputs: Snap "Snap" Grid "Grid/Ruler" Ruler "Grid/Ruler" Ortho "Ortho/Polar" Polar "Ortho/Polar" QSnap "QuickSnap" QTrack "QuickTrack" Lwt "LineWeight"

```
static void statusbar_button(const char *key) { settings_dialog(key); }
```

**19.18.5.189 MainWindow()** static void MainWindow (

```
void ) [static]
```

**Todo** Prevent memory leaks by deleting any unpasted objects.

**19.18.5.190 makeLayerActive()** static void makeLayerActive (

```
void ) [static]
```

Layer Toolbar.

**19.18.5.191 merge\_with()** bool merge\_with (

```
void )
```

Returns Boolean value representing the success or failure of the function.

```
19.18.5.192 messagebox() static void messagebox (
    int type,
    char title[200],
    char text[200] ) [static]
```

*type title text*

```
19.18.5.193 messagebox_action() static void messagebox_action (
    void ) [static]
```

**Todo** document this.

```
19.18.5.194 mirror_selected_action() static void mirror_selected_action (
    EmbLine line ) [static]
```

**Todo** document this.

```
19.18.5.195 mirrorSelected() static void mirrorSelected (
    EmbReal x1,
    EmbReal y1,
    EmbReal x2,
    EmbReal y2 ) [static]
```

```
19.18.5.196 mouse_double_click_event() static void mouse_double_click_event (
    int * event ) [static]
```

```
19.18.5.197 mouse_press_event() static void mouse_press_event (
    int * event ) [static]
```

```
19.18.5.198 mouseMoveEvent() static void mouseMoveEvent (
    int * event ) [static]
```

```
19.18.5.199 mouseReleaseEvent() static void mouseReleaseEvent (
    int * event ) [static]
```

```
19.18.5.200 move() static void move (
    UiObject * obj,
    EmbVector delta ) [static]
```

```
19.18.5.201 move_click() static void move_click (
    UiObject * global,
    EmbVector v ) [static]
```

```
19.18.5.202 move_main() UiObject move_main (
    void )
```

Initialise move UI event.

**Todo** Prompt to select objects if nothing is preselected

```
19.18.5.203 move_prompt() static void move_prompt (
    UiObject * global,
    const char * str ) [static]
```

```
19.18.5.204 move_selected_action() static void move_selected_action (
    void ) [static]
```

**Todo** Get mouse point/move

```
19.18.5.205 moveAction() static void moveAction (
    void ) [static]
```

**19.18.5.206 moveSelected()** static void moveSelected ( EmbReal dx, EmbReal dy ) [static]

**19.18.5.207 new\_file\_action()** static void new\_file\_action ( void ) [static]

**Todo** document this.

**19.18.5.208 on\_window\_activated()** static void on\_window\_activated ( void ) [static]

**Todo** document this.

**19.18.5.209 open\_file\_action()** static void open\_file\_action ( int argc, char argv[10][200] ) [static]

*argc argv*

**Todo** warn user of too many open tabs.

**19.18.5.210 open\_file\_dialog()** static void open\_file\_dialog ( void ) [static]

**19.18.5.211 open\_recent\_file()** static void open\_recent\_file ( void ) [static]

**Todo** document this.

**19.18.5.212 pan\_action()** static void pan\_action ( const char \* mode ) [static]

*mode*

**Todo** Undo records for pan action.

**19.18.5.213 panStart()** static void panStart ( EmbVector point ) [static]

**19.18.5.214 parse\_command()** static void parse\_command ( int argc, char \* argv[], char command[200] ) [static]

**19.18.5.215 paste()** static void paste ( void ) [static]

**Todo** document this.

**19.18.5.216 paste\_action()** static void paste\_action ( void ) [static]

**Todo** document this.

**19.18.5.217 paste\_selected()** static void paste\_selected ( void ) [static]

**Todo** Get mouse point/move

```
19.18.5.218 path_action() static void path_action (
    EmbReal startX,
    EmbReal startY,
    EmbPath * p,
    int rubberMode ) [static]
```

*startX* *startY* *p* *rubberMode*

```
19.18.5.219 path_click() static void path_click (
    UiObject * global,
    EmbVector position ) [static]
```

Alter *global* using the supplied *position*, depending on the mode.

```
19.18.5.220 path_init() static UiObject path_init (
    void ) [static]
```

Returns *UiObject*.

```
19.18.5.221 path_prompt() static void path_prompt (
    const char * str ) [static]
```

*str*

```
19.18.5.222 pattern_view() static void pattern_view (
    void ) [static]
```

**Todo** document this.

```
19.18.5.223 perpendicular_distance() EmbReal perpendicular_distance (
    EmbVector p,
    EmbLine line )
```

*p* *line* Returns *EmbReal*

```
19.18.5.224 pickAddModeToggled() static void pickAddModeToggled (
    void ) [static]
```

**Todo** document this.

```
19.18.5.225 platform_string() static void platform_string (
    char s[200] ) [static]
```

Report the platform, usually as part of a debugging effort accross platforms. *str* A character array pointer of where to store the result.

```
19.18.5.226 point_click() static void point_click (
    UiObject global,
    EmbVector position ) [static]
```

test

```
19.18.5.227 point_init() static UiObject point_init (
    void ) [static]
```

```
19.18.5.228 point_prompt() static void point_prompt (
    const char * str ) [static]
```

```
19.18.5.229 polygon_action() static void polygon_action (
    void ) [static]
```

**Todo** finish polygon\_action.

```
19.18.5.230 polygon_click() static void polygon_click (
    float x,
    float y ) [static]
```

```
19.18.5.231 polygon_main() static void polygon_main (
    void ) [static]
```

Command: Polygon.

```
float global = {}; //Required global.centerX; global.centerY; global.sideX1; global.sideY1; global.sideX2; global.sideY2; global.pointIX; global.pointIY; global.pointCX; global.pointCY; global.polyType = "Inscribed"; //Default
global.numSides = 4; //Default global->mode;

enums MODE_NUM_SIDES = 0; MODE_CENTER_PT = 1; MODE_POLYTYPE = 2; MODE_INSCRIBE = 3;
MODE_CIRCUMSCRIBE = 4; MODE_DISTANCE = 5; MODE_SIDE_LEN = 6;
```

```
19.18.5.232 polygon_prompt() static void polygon_prompt (
    const char * str ) [static]
```

```
19.18.5.233 polyline_action() static void polyline_action (
    EmbVector start,
    EmbPath * p,
    int rubberMode ) [static]
```

NOTE: This is different than the rest in that the Y+ is down (scripters need not worry about this)

*start p rubberMode*

**Todo** finish polyline\_action.

```
19.18.5.234 preview_dialog() static void preview_dialog (
    void ) [static]
```

**Todo** get actual thumbnail image from file, lets also use a size of 128x128 for now...

**Todo** make thumbnail size adjustable thru settings dialog

**Todo** connect the currentChanged signal to update the preview imgWidget.

```
19.18.5.235 preview_off() static void preview_off (
    void ) [static]
```

**Todo** document this.

```
19.18.5.236 preview_on() static void preview_on (
    int clone,
    int mode,
    EmbReal x,
    EmbReal y,
    EmbReal data ) [static]
```

```
19.18.5.237 preview_on_action() static void preview_on_action (
    void ) [static]
```

**Todo** document this.

```
19.18.5.238 print_action() static void print_action (
    void ) [static]
```

**Todo** document this.

```
19.18.5.239 print_area_action() static void print_area_action (
    void ) [static]
```

**Todo** document this.

```
19.18.5.240 PrintArea() static void PrintArea (
    EmbReal x,
    EmbReal y,
    EmbReal w,
    EmbReal h ) [static]
```

*x y w h*

**Todo** Print Setup Stuff

```
19.18.5.241 prompt_input_prev_next() static void prompt_input_prev_next (
    bool prev ) [static]
```

```
19.18.5.242 promptHistoryAppended() static void promptHistoryAppended (
    const char * txt ) [static]
```

*txt*

```
19.18.5.243 promptInputNext() static void promptInputNext (
    void ) [static]
```

**Todo** document this.

```
19.18.5.244 promptInputPrevious() static void promptInputPrevious (
    void ) [static]
```

**Todo** document this.

```
19.18.5.245 property_editor() static void property_editor (
    void ) [static]
```

**Todo** Load precisionAngle from settings and provide function for updating from settings  
Load precisionLength from settings and provide function for updating from settings

```
19.18.5.246 property_editor_create_tool_buttonPickAdd() int * property_editor_create_tool_←
buttonPickAdd (
    void )
```

Returns int\*.

```
19.18.5.247 property_editor_create_tool_buttonQSelect() int * property_editor_create_tool_←
buttonQSelect (
    void )
```

Returns int\*.

```
19.18.5.248 property_editor_createComboBoxSelected() int * property_editor_createComboBoxSelected ( void )
```

Returns int\*.

```
19.18.5.249 property_editor_eventFilter() bool property_editor_eventFilter ( void )
```

Returns true Returns false.

```
19.18.5.250 property_editor_hideAllGroups() static void property_editor_hideAllGroups ( void ) [static]
```

**Todo** document this.

```
19.18.5.251 property_editor_set_selectedItems() static void property_editor_set_selectedItems ( int * item_list, int length ) [static]
```

```
19.18.5.252 property_editor_showGroups() static void property_editor_showGroups ( int objType ) [static]
```

```
19.18.5.253 property_editor_showOneType() static void property_editor_showOneType ( int id ) [static]
```

```
19.18.5.254 property_editor_togglePickAddMode() static void property_editor_togglePickAddMode ( void ) [static]
```

**Todo** document this.

**19.18.5.255 `property_editor_updateComboBoxBoolIfVaries()`** static void property\_editor\_updateComboBoxBoolIfVaries ( int \* comboBox, bool val, bool yesOrNoText ) [static]

**19.18.5.256 `property_editor_updateComboBoxStrIfVaries()`** static void property\_editor\_updateComboBoxStrIfVaries ( int \* comboBox, const char \* str, const char \*\* strList ) [static]

**19.18.5.257 `property_editor_updateFontComboBoxStrIfVaries()`** static void property\_editor\_updateFontComboBoxStrIfVaries ( int \* fontComboBox, const char \* str ) [static]

**19.18.5.258 `property_editor_updateLineEditNumIfVaries()`** static void property\_editor\_updateLineEditNumIfVaries ( int \* lineEdit, EmbReal num, bool useAnglePrecision ) [static]

**19.18.5.259 `property_editor_updateLineEditStrIfVaries()`** static void property\_editor\_updateLineEditStrIfVaries ( int \* lineEdit, const char \* str ) [static]

**19.18.5.260 `property_editor_updatePickAddModeButton()`** static void property\_editor\_updatePickAddModeButton ( bool pickAddMode ) [static]

**19.18.5.261 `quicleader_click()`** static void quicleader\_click ( UiObject \* global, EmbVector v ) [static]

**19.18.5.262 quickleader\_main()** `UiObject` quickleader\_main (   
   void )

**Todo** Adding the text is not complete yet.

**19.18.5.263 quickleader\_prompt()** static void quickleader\_prompt (   
   `UiObject` \* global,   
   const char \* str ) [static]

**19.18.5.264 random\_uniform()** `EmbReal` random\_uniform (   
   void )

Generate a random number in the range (0.0, 1.0).

**Todo** move to libembroidery.

Returns `EmbReal` A randomly generated real number.

**19.18.5.265 ray\_action()** static void ray\_action (   
   void ) [static]

**Todo** document this.

**19.18.5.266 read\_bool\_setting()** bool read\_bool\_setting (   
   `toml_table_t` \* table,   
   const char \* key )

**19.18.5.267 read\_dictionary\_setting()** `Dictionary` \* read\_dictionary\_setting (   
   `toml_table_t` \* table,   
   const char \* key )

**19.18.5.268 read\_int\_setting()** int read\_int\_setting (   
   `toml_table_t` \* table,   
   const char \* key )

```
19.18.5.269 read_settings() static void read_settings (
    const char * fname ) [static]
```

```
19.18.5.270 read_str_setting() static void read_str_setting (
    toml_table_t * table,
    const char * key,
    char s[200] ) [static]
```

```
19.18.5.271 real_render_pattern() static void real_render_pattern (
    EmbPattern * p ) [static]
```

```
19.18.5.272 recalculateLimits() static void recalculateLimits (
    void ) [static]
```

NOTE: Increase the sceneRect limits if the point we want to go to lies outside of sceneRect's limits If the sceneRect limits aren't increased, you cannot pan past its limits.

```
19.18.5.273 recentMenuAboutToShow() static void recentMenuAboutToShow (
    void ) [static]
```

**Todo** document this.

```
19.18.5.274 rectangle_action() static void rectangle_action (
    void ) [static]
```

**Todo** rect fill for rectangle\_action

```
19.18.5.275 rectangle_click() static void rectangle_click (
    UiObject * global,
    EmbVector position ) [static]
```

```
19.18.5.276 rectangle_main() UiObject rectangle_main (
    void )
```

Create a rectangle object on the current pattern.

```
19.18.5.277 rectangle_prompt() static void rectangle_prompt (
    UiObject * global,
    const char * str ) [static]
```

```
19.18.5.278 redo_action() static void redo_action (
    void ) [static]
```

**Todo** document this.

```
19.18.5.279 redo_navigation() static void redo_navigation (
    void ) [static]
```

**Todo** document this.

```
19.18.5.280 render_pattern() int render_pattern (
    EmbPattern * p )
```

```
19.18.5.281 render_shine() static void render_shine (
    EmbVector start,
    EmbVector end,
    EmbVector normal,
    float start_frac,
    float end_frac ) [static]
```

Add a rectangular shine in the direction indicated by *normal*.

*start* The start point in the middle of one short side of the rectangle. *end* The start point in the middle of one short side of the rectangle.

```
19.18.5.282 repeat_action() static void repeat_action (
    void ) [static]
```

**Todo** document this.

```
19.18.5.283 resize_event() static void resize_event (
    void ) [static]
```

**Todo** document this.

```
19.18.5.284 rgb_main() UiObject rgb_main (
    void )
```

Command: RGB (prompt only command).

```
19.18.5.285 rgb_prompt() static void rgb_prompt (
    const char * str ) [static]
```

```
19.18.5.286 rotate() static void rotate (
    EmbVector point,
    EmbReal rot ) [static]
```

Actions that were Qt internals were here. addStack, canUndo, canRedo, undoText, redoText, undo, redo.

*point rot*

```
19.18.5.287 rotate_click() static void rotate_click (
    UiObject * global,
    EmbVector pos ) [static]
```

```
19.18.5.288 rotate_main() UiObject rotate_main (
    void )
```

**Todo** Prompt to select objects if nothing is preselected

```
19.18.5.289 rotate_prompt() static void rotate_prompt (
    UiObject * global,
    const char * str ) [static]
```

```
19.18.5.290 rotate_selected_action() static void rotate_selected_action (
    void ) [static]
```

**Todo** document this.

```
19.18.5.291 rotateAction() static void rotateAction (
    void ) [static]
```

**Todo** document this.

```
19.18.5.292 rotateSelected() static void rotateSelected (
    EmbReal x,
    EmbReal y,
    EmbReal rot ) [static]
```

```
19.18.5.293 rounded_rectangle_action() static void rounded_rectangle_action (
    void ) [static]
```

**Todo** document this.

```
19.18.5.294 roundToMultiple() int roundToMultiple (
    int roundUp,
    int numToRound,
    int multiple )
```

Rounds integers to multiples of another given integer.

This is used by the rulers to scale appropriately.

*roundUp* Whether to round up or down: 1 if up, 0 if down. *numToRound* Input to be rounded. *multiple* The number which must be a factor of the result. Returns *int* The multiple which is the closest to numToRound.

```
19.18.5.295 rubber_point_action() static void rubber_point_action (
    void ) [static]
```

**Todo** document this.

```
19.18.5.296 rubber_text_action() static void rubber_text_action (
    void ) [static]
```

**Todo** document this.

```
19.18.5.297 run_script() int run_script (
    const char * filename )
```

A basic line-by-line script processor to allow for extensions to the program.

*filename* The path of the script to run. Returns int Whether the script was successful.

Since the actuator uses command line style parsing, a script is just a text file with each line a compatible command.

It should be stressed that this has no control flow on purpose. We don't want this to be hacked into a full scripting language that could cause havoc on the user's system.

However, it may be useful to set and get variables and define macros: neither of these will allow for endless loops, stack overflow or other problems that third-party scripts could introduce.

```
example.sh
-----
# Save characters by defining functions.
# The syntax features
# Semi-colon ';' separates out lines like in bash.
# The line ending is the end of the function, but the style
# is a shell function, so we need to write the end brace.

donut() { circle $1 $2 $3 $5 ; circle $1 $2 $4 $5 }

donut 10 20 20 black
donut 20 40 20 black
-----
```

```
19.18.5.298 sandbox_click() static void sandbox_click (
    UiObject * global,
    EmbVector pos ) [static]
```

```
19.18.5.299 sandbox_main() static UiObject sandbox_main (
    void ) [static]
```

```
float global = {};//Required global.test1; global.test2;
```

```
19.18.5.300 sandbox_prompt() static void sandbox_prompt (
    UiObject * global,
    const char * str ) [static]
```

```
19.18.5.301 save_as_file_action() static void save_as_file_action (
    char * filename ) [static]
```

*filename*

```
19.18.5.302 save_bmc() static void save_bmc (
    void ) [static]
```

**Todo** Save a Brother PEL image (An 8bpp, 130x113 pixel monochromatic? bitmap image) Why 8bpp when only 1bpp is needed?

**Todo** Should BMC be limited to ~32KB or is this a mix up with Bitmap Cache?

**Todo** Is there/should there be other embedded data in the bitmap besides the image itself?

NOTE: Can save a Singer BMC image (An 8bpp, 130x113 pixel colored bitmap image)

**Todo** Make BMC background into it's own setting?

**Todo** figure out how to center the image, right now it just plops it to the left side.

```
19.18.5.303 save_save() bool save_save (
    const char * fileName )
```

**Todo** Before saving to a stitch only format, Embroidermodder needs to calculate the optimal path to minimize jump stitches. Also based upon which layer needs to be stitched first, the path to the next object needs to be hidden beneath fills that will come later. When finding the optimal path, we need to take into account the color of the thread, as we do not want to try to hide dark colored stitches beneath light colored fills.

*fileName* Returns true Returns false

**Todo** handle EMBFORMAT\_STCHANDOBJ also

**Todo** handle all objects like this

**Todo** check the embLog for errors and if any exist, report them.

```
19.18.5.304 save_toPolyline() static void save_toPolyline (
    EmbPattern * pattern,
    EmbVector objPos,
    EmbPath objPath,
    const char * layer,
    EmbColor color,
    const char * lineType,
    const char * lineWeight ) [static]
```

Old conversion method for saving to non-design formats: move to libembroidery.

NOTE: This function should be used to interpret various object types and save them as polylines for stitchOnly formats.

*pattern* The pointer to the pattern to operate on. *objPos* The position of object in the scene. *objPath* The path to be converted. *layer* Which layer to place the result in. *color* *lineType* *lineWeight*

**Todo** proper lineType

```
19.18.5.305 scale_action() static void scale_action (
    EmbVector position,
    EmbReal scaleFactor,
    char * text,
    EmbGeometry * obj,
    View * v ) [static]
```

*position* *scaleFactor* *text* *obj* *v*

```
19.18.5.306 scale_click() static void scale_click (
    UiObject * global,
    EmbVector pos ) [static]
```

```
19.18.5.307 scale_main() static UiObject scale_main (
    void ) [static]
```

**Todo** document this.

```
19.18.5.308 scale_prompt() static void scale_prompt (
    UiObject * global,
    const char * str ) [static]
```

```
19.18.5.309 scale_redo() static void scale_redo (
    void ) [static]
```

**Todo** document this.

```
19.18.5.310 scale_selected_action() static void scale_selected_action (
    void ) [static]
```

**Todo** Get mouse point/move

```
19.18.5.311 scale_undo() static void scale_undo (
    void ) [static]
```

**Todo** document this.

```
19.18.5.312 scaleAction() static void scaleAction (
    void ) [static]
```

**Todo** document this.

```
19.18.5.313 scaleSelected() static void scaleSelected (
    EmbReal x,
    EmbReal y,
    EmbReal factor ) [static]
```

```
19.18.5.314 selectbox_paintEvent() static void selectbox_paintEvent (
    int * paint_event ) [static]
```

```
19.18.5.315 selectbox_SelectBox() static void selectbox_SelectBox (
    void ) [static]
```

**Todo** document this.

```
19.18.5.316 selectbox_set_colors() static void selectbox_set_colors (
    EmbColor colorL,
    EmbColor fillL,
    EmbColor colorR,
    EmbColor fillR,
    int newAlpha ) [static]
```

```
19.18.5.317 selectbox_setDirection() static void selectbox_setDirection (
    int dir ) [static]
```

```
19.18.5.318 selection_changed() static void selection_changed (
    void ) [static]
```

**Todo** document this.

```
19.18.5.319 set_crosshair_color() static void set_crosshair_color (
    int r,
    int g,
    int b ) [static]
```

Set the crosshair color object.

*rgb*

```
19.18.5.320 set_current_file() static void set_current_file (
    const char * fileName ) [static]
```

```
19.18.5.321 set_cursor_shape_action() static void set_cursor_shape_action (
    int shape ) [static]
```

Set the cursor shape action object.

*shape*

**Todo** Uses the CURSOR\_SHAPE defines.

```
19.18.5.322 set_grid_color() static void set_grid_color (
    int r,
    int g,
    int b ) [static]
```

Set the grid color object.

*r g b*

```
19.18.5.323 set_mouse_coord() static void set_mouse_coord (
    EmbVector pos ) [static]
```

Set the Mouse Coord object.

*pos*

**Todo** set format from settings (Architectural, Decimal, Engineering, Fractional, Scientific)

**Todo** use precision from unit settings

```
19.18.5.324 set_prompt_prefix() static void set_prompt_prefix (
    const char * msg ) [static]
```

**Todo** finish set\_prompt\_prefix

```
19.18.5.325 set_rubber_mode_action() static void set_rubber_mode_action (
    char * label,
    int mode ) [static]
```

Set the rubber mode action object.

*label mode*

```
19.18.5.326 set_rubber_point() static void set_rubber_point (
    const char * key,
    EmbVector position ) [static]
```

Set the rubber point object.

```
19.18.5.327 set_rubber_text() static void set_rubber_text (
    const char * key,
    const char * txt ) [static]
```

Set the rubber text object.

```
19.18.5.328 set_view_background_color() static void set_view_background_color (
    unsigned int color ) [static]
```

```
19.18.5.329 set_view_crosshair_color() static void set_view_crosshair_color (
    unsigned int color ) [static]
```

```
19.18.5.330 set_view_selectbox_colors() static void set_view_selectbox_colors (
    unsigned int colorL,
    unsigned int fillL,
    unsigned int colorR,
    unsigned int fillR,
    int alpha ) [static]
```

```
19.18.5.331 set_viewGridColor() static void set_viewGridColor (
    unsigned int color ) [static]
```

```
19.18.5.332 set_viewRulerColor() static void set_viewRulerColor (
    unsigned int color ) [static]
```

```
19.18.5.333 setBackgroundColor() static void setBackgroundColor (
    EmbColor color ) [static]
```

```
19.18.5.334 setBackgroundColor_() static void setBackgroundColor_ (
    int r,
    int g,
    int b ) [static]
```

Set the Background Color object.

*r g b*

**19.18.5.335 setCornerButton()** static void setCornerButton ( void ) [static]

**Todo** document this.

**19.18.5.336 setCrossHairColor()** static void setCrossHairColor ( unsigned int *color* ) [static]

**19.18.5.337 setCrossHairSize()** static void setCrossHairSize ( uint8\_t *percent* ) [static]

**19.18.5.338 setGridColor()** static void setGridColor ( unsigned int *color* ) [static]

**19.18.5.339 setRubberMode()** static void setRubberMode ( int *mode* ) [static]

**19.18.5.340 setRubberPoint()** static void setRubberPoint ( const char \* *key*, EmbVector *point* ) [static]

**19.18.5.341 setRubberText()** static void setRubberText ( const char \* *key*, const char \* *txt* ) [static]

**19.18.5.342 setRulerColor()** static void setRulerColor ( unsigned int *color* ) [static]

```
19.18.5.343 setSelectBoxColors() static void setSelectBoxColors (
    unsigned int colorL,
    unsigned int fillL,
    unsigned int colorR,
    unsigned int fillR,
    int alpha ) [static]
```

```
19.18.5.344 setTextFont() static void setTextFont (
    const char * str ) [static]
```

Set the Text Font object.

*str*

```
19.18.5.345 setTextSize() static void setTextSize (
    double num ) [static]
```

Set the Text Size object.

*num*

```
19.18.5.346 settings_dialog_acceptChanges() static void settings_dialog_acceptChanges (
    void ) [static]
```

**Todo** document this.

```
19.18.5.347 settings_dialog_addColorsToComboBox() static void settings_dialog_addColorsTo←
ComboBox (
    int * comboBox ) [static]
```

**Todo** Add Other... so the user can select custom colors

```
19.18.5.348 settings_dialog_buttonCustomFilterClearAllClicked() static void settings_dialog←
buttonCustomFilterClearAllClicked (
    void ) [static]
```

**Todo** document this.

```
19.18.5.349 settings_dialog_buttonCustomFilterSelectAllClicked() static void settings_dialog_←
buttonCustomFilterSelectAllClicked (
    void ) [static]
```

**Todo** document this.

```
19.18.5.350 settings_dialog_buttonQSnapClearAllClicked() static void settings_dialog_button←
QSnapClearAllClicked (
    void ) [static]
```

**Todo** document this.

```
19.18.5.351 settings_dialog_buttonQSnapSelectAllClicked() static void settings_dialog_button←
QSnapSelectAllClicked (
    void ) [static]
```

**Todo** document this.

```
19.18.5.352 settings_dialog_checkBoxCustomFilterStateChanged() static void settings_dialog_←
checkBoxCustomFilterStateChanged (
    int checked ) [static]
```

*checked*

```
19.18.5.353 settings_dialog_checkBoxGeneralMdiBGUseColorStateChanged() static void settings_←
_dialog_checkBoxGeneralMdiBGUseColorStateChanged (
    int checked ) [static]
```

*checked.*

```
19.18.5.354 settings_dialog_checkBoxGeneralMdiBGUseLogoStateChanged() static void settings_←
dialog_checkBoxGeneralMdiBGUseLogoStateChanged (
    int checked ) [static]
```

**19.18.5.355 settings\_dialog\_checkBoxGeneralMdiBGUseTextureStateChanged()** static void settings\_→  
\_dialog\_checkBoxGeneralMdiBGUseTextureStateChanged ( int checked ) [static]

**19.18.5.356 settings\_dialog\_checkBoxGridCenterOnOriginStateChanged()** static void settings\_→  
dialog\_checkBoxGridCenterOnOriginStateChanged ( int checked ) [static]

*checked*

**19.18.5.357 settings\_dialog\_checkBoxGridColorMatchCrossHairStateChanged()** static void settings\_→  
\_dialog\_checkBoxGridColorMatchCrossHairStateChanged ( int checked ) [static]

*checked*

**19.18.5.358 settings\_dialog\_checkBoxGridLoadFromFileStateChanged()** static void settings\_→  
dialog\_checkBoxGridLoadFromFileStateChanged ( int checked ) [static]

*checked*

**19.18.5.359 settings\_dialog\_checkBoxLwtRealRenderStateChanged()** static void settings\_dialog\_→  
checkBoxLwtRealRenderStateChanged ( int checked ) [static]

*checked.*

**19.18.5.360 settings\_dialog\_checkBoxLwtShowLwtStateChanged()** static void settings\_dialog\_→  
checkBoxLwtShowLwtStateChanged ( int checked ) [static]

*checked.*

**19.18.5.361 settings\_dialog\_checkBoxShowscrollbarsStateChanged()** static void settings\_dialog\_→  
checkBoxShowscrollbarsStateChanged ( int checked ) [static]

*checked.*

**19.18.5.362 settings\_dialog\_chooseDisplayBackgroundColor()** static void settings\_dialog\_chooseDisplayBackgroundColor ( void ) [static]

**19.18.5.363 settings\_dialog\_chooseDisplayCrossHairColor()** static void settings\_dialog\_chooseDisplayCrossHairColor ( void ) [static]

**19.18.5.364 settings\_dialog\_chooseDisplaySelectBoxLeftColor()** static void settings\_dialog\_chooseDisplaySelectBoxLeftColor ( void ) [static]

**19.18.5.365 settings\_dialog\_chooseDisplaySelectBoxLeftFill()** static void settings\_dialog\_chooseDisplaySelectBoxLeftFill ( void ) [static]

**19.18.5.366 settings\_dialog\_chooseDisplaySelectBoxRightColor()** static void settings\_dialog\_chooseDisplaySelectBoxRightColor ( void ) [static]

**19.18.5.367 settings\_dialog\_chooseDisplaySelectBoxRightFill()** static void settings\_dialog\_chooseDisplaySelectBoxRightFill ( void ) [static]

**19.18.5.368 settings\_dialog\_chooseGeneralMdiBackgroundColor()** static void settings\_dialog\_chooseGeneralMdiBackgroundColor ( void ) [static]

**19.18.5.369 settings\_dialog\_chooseGeneralMdiBackgroundLogo()** static void settings\_dialog\_chooseGeneralMdiBackgroundLogo ( void ) [static]

```
19.18.5.370 settings_dialog_chooseGeneralMdiBackgroundTexture() static void settings_dialog_←
chooseGeneralMdiBackgroundTexture (
    void ) [static]
```

**Todo** document this.

```
19.18.5.371 settings_dialog_chooseGridColor() static void settings_dialog_chooseGridColor (
    void ) [static]
```

**Todo** document this.

```
19.18.5.372 settings_dialog_choosePromptBackgroundColor() static void settings_dialog_choose←
PromptBackgroundColor (
    void ) [static]
```

```
19.18.5.373 settings_dialog_choosePromptTextColor() static void settings_dialog_choosePrompt←
TextColor (
    void ) [static]
```

```
19.18.5.374 settings_dialog_chooseRulerColor() static void settings_dialog_chooseRulerColor (
    void ) [static]
```

**Todo** document this.

```
19.18.5.375 settings_dialog_combobox_selectionCoolGripColorCurrentIndexChanged() static void
settings_dialog_combobox_selectionCoolGripColorCurrentIndexChanged (
    int index ) [static]
```

*index*.

**Todo** Alert user if color matched the display bg color

```
19.18.5.376 settings_dialog_combobox_selectionHotGripColorCurrentIndexChanged() static void
settings_dialog_combobox_selectionHotGripColorCurrentIndexChanged (
    int index ) [static]

index.
```

**Todo** Alert user if color matched the display bg color

```
19.18.5.377 settings_dialog_comboBoxGridTypeCurrentIndexChanged() static void settings_←
dialog_comboBoxGridTypeCurrentIndexChanged (
    const char * type ) [static]

type
```

```
19.18.5.378 settings_dialog_comboBoxIconSizeCurrentIndexChanged() static void settings_←
dialog_comboBoxIconSizeCurrentIndexChanged (
    int index ) [static]
```

```
19.18.5.379 settings_dialog_comboBoxIconThemeCurrentIndexChanged() static void settings_←
dialog_comboBoxIconThemeCurrentIndexChanged (
    const char * theme ) [static]
```

```
19.18.5.380 settings_dialog_comboBoxLanguageCurrentIndexChanged() static void settings_←
dialog_comboBoxLanguageCurrentIndexChanged (
    const char * lang ) [static]
```

```
19.18.5.381 settings_dialog_comboBoxPromptFontFamilyCurrentIndexChanged() static void settings_←
_dialog_comboBoxPromptFontFamilyCurrentIndexChanged (
    const char * family ) [static]

family
```

```
19.18.5.382 settings_dialog_comboBoxPromptFontStyleCurrentIndexChanged() static void settings_←
_dialog_comboBoxPromptFontStyleCurrentIndexChanged (
    const char * style ) [static]
```

*style*

```
19.18.5.383 settings_dialog_comboBoxQSnapLocatorColorCurrentIndexChanged() static void settings_←
(dialog_comboBoxQSnapLocatorColorCurrentIndexChanged (
    int index ) [static]

index .
```

**Todo** Figure out how to abstract the slot in a way that it can be used for comboBoxes in general Currently comboBoxQSnapLocatorColorCurrentIndexChanged(int index) comboBoxSelectionCoolGripColorCurrentIndexChanged(int index) comboBoxSelectionHotGripColorCurrentIndexChanged(int index) are all similar except the dialog. variable being worked on and the QVariant.

```
19.18.5.384 settings_dialog_comboBoxRulerMetricCurrentIndexChanged() static void settings_←
(dialog_comboBoxRulerMetricCurrentIndexChanged (
    int index ) [static]

index
```

```
19.18.5.385 settings_dialog_currentDisplayBackgroundColorChanged() static void settings_←
(dialog_currentDisplayBackgroundColorChanged (
    EmbColor color ) [static]

color .
```

```
19.18.5.386 settings_dialog_currentDisplayCrossHairColorChanged() static void settings_dialog_←
(currentDisplayCrossHairColorChanged (
    EmbColor color ) [static]

color .
```

```
19.18.5.387 settings_dialog_currentDisplaySelectBoxLeftColorChanged() static void settings_dialog_←
(dialog_currentDisplaySelectBoxLeftColorChanged (
    EmbColor color ) [static]

color .
```

```
19.18.5.388 settings_dialog_currentDisplaySelectBoxLeftFillChanged() static void settings_dialog_←
(_currentDisplaySelectBoxLeftFillChanged (
    EmbColor color ) [static]

color .
```

**19.18.5.389 settings\_dialog\_currentDisplaySelectBoxRightColorChanged()** static void settings\_↔  
dialog\_currentDisplaySelectBoxRightColorChanged ( EmbColor color ) [static]  
*color*.

**19.18.5.390 settings\_dialog\_currentDisplaySelectBoxRightFillChanged()** static void settings\_↔  
dialog\_currentDisplaySelectBoxRightFillChanged ( EmbColor color ) [static]  
*color*.

**19.18.5.391 settings\_dialog\_currentGeneralMdiBackgroundColorChanged()** static void settings\_↔  
dialog\_currentGeneralMdiBackgroundColorChanged ( EmbColor color ) [static]  
*color*.

**19.18.5.392 settings\_dialog\_currentGridColorChanged()** static void settings\_dialog\_currentGrid↔  
ColorChanged ( EmbColor color ) [static]  
*color*

**19.18.5.393 settings\_dialog\_currentPromptBackgroundColorChanged()** static void settings\_↔  
dialog\_currentPromptBackgroundColorChanged ( EmbColor color ) [static]  
*color*.

**19.18.5.394 settings\_dialog\_currentPromptTextColorChanged()** static void settings\_dialog\_↔  
currentPromptTextColorChanged ( EmbColor color ) [static]  
*color*.

**19.18.5.395 settings\_dialog\_currentRulerColorChanged()** static void settings\_dialog\_currentRulerColorChanged ( EmbColor color ) [static]

*color.*

**19.18.5.396 settings\_dialog\_rejectChanges()** static void settings\_dialog\_rejectChanges ( void ) [static]

**Todo** document this.

**Todo** inform the user if they have changed settings

Update the view since the user must accept the preview active\_view->useBackgroundLogo(dialog.general\_mdi\_bg\_use\_logo); active\_view->useBackgroundTexture(dialog.general\_mdi\_bg\_use\_texture); active\_view->useBackgroundColor(dialog.general\_mdi\_bg\_use\_color); active\_view->setBackgroundLogo(dialog.general\_mdi\_bg\_logo); active\_view->setBackgroundTexture(dialog.general\_mdi\_bg\_texture); active\_view->setBackgroundColor(dialog.general\_mdi\_bg\_color); updateAllViewscrollbars(dialog.display\_show\_scrollbars); updateAllViewCrossHairColors(dialog.display\_crosshair\_color); updateAllViewBackgroundColors(dialog.display\_bg\_color); updateAllViewSelectBoxColors(dialog.display\_selectbox\_left\_color, dialog.display\_selectbox\_left\_fill, dialog.display\_selectbox\_right\_color, dialog.display\_selectbox\_right\_fill, dialog.display\_selectbox\_alpha); prompt->setPromptTextColor(EmbColor(dialog.prompt\_text\_color)); prompt->setPromptBackgroundColor(EmbColor(dialog.prompt\_bg\_color)); prompt->setPromptFontFamily(dialog.prompt\_font\_family); prompt->setPromptFontStyle(dialog.prompt\_font\_style); prompt->setPromptFontSize(dialog.prompt\_font\_size); updateAllViewGridColors(dialog.grid\_color); updateAllViewRulerColors(dialog.ruler\_color); if (dialog.lwt\_show\_lwt) { statusbarLwtButton->enableLwt(); } else { statusbarLwtButton->disableLwt(); } if (dialog.lwt\_real\_render) { statusbarLwtButton->enableReal(); } else { statusbarLwtButton->disableReal(); }

reject();

**19.18.5.397 settings\_dialog\_spinBoxDisplaySelectBoxAlphaValueChanged()** static void settings\_dialog\_spinBoxDisplaySelectBoxAlphaValueChanged ( int value ) [static]

*value.*

**19.18.5.398 settings\_dialog\_spinBoxPromptFontSizeValueChanged()** static void settings\_dialog\_spinBoxPromptFontSizeValueChanged ( int value ) [static]

*value*

**19.18.5.399 settings\_editor()** static void settings\_editor ( void ) [static]

Renderer for the interface of the settings editor, called by main\_widget.

**19.18.5.400 setUndoCleanIcon()** static void setUndoCleanIcon ( void ) [static]

Set the Undo Clean Icon object.

**19.18.5.401 show\_view\_scrollbars()** static void show\_view\_scrollbars ( bool val ) [static]

**19.18.5.402 showscrollbars()** static void showscrollbars ( bool val ) [static]

**19.18.5.403 simplify\_path()** static void simplify\_path ( char \* path ) [static]

Simplifies a path by removing the .. and . symbols in place.

*path* The character array to operate on.

**19.18.5.404 simulate\_pattern()** static void simulate\_pattern ( EmbPattern \* p ) [static]

**19.18.5.405 single\_line\_text\_click()** static void single\_line\_text\_click ( UiObject \* global, EmbVector pos ) [static]

**19.18.5.406 single\_line\_text\_main()** static UiObject single\_line\_text\_main ( void ) [static]

**Todo** document this.

**19.18.5.407 single\_line\_text\_prompt()** static void single\_line\_text\_prompt ( UiObject \* global, const char \* str ) [static]

if (streq(str, "RAPID\_ENTER")) { if (global.text == "") { end\_command(); } else { vulcanize(); end\_command(); //

**Todo** Rather than ending the command, calculate where the next line would be and modify the x/y to the new point } } else { global.text = str; setRubberText("TEXT\_RAPID", global.text); }

```
19.18.5.408 size_hint() EmbVector size_hint (
    void )
```

Returns EmbVector.

```
19.18.5.409 snowflake_click() UiObject snowflake_click (
    UiObject global,
    EmbVector position )
```

```
19.18.5.410 snowflake_main() UiObject snowflake_main (
    void )
```

**Todo** document this.

```
19.18.5.411 snowflake_move() UiObject snowflake_move (
    UiObject global,
    EmbVector delta )
```

Move the snowflake design by a specified amount.

*global* The design specification (not including the path). *delta* The vector to display the design by.

```
19.18.5.412 spare_rubber() static void spare_rubber (
    size_t id ) [static]
```

*id*.

```
19.18.5.413 spare_rubber_action() static void spare_rubber_action (
    void ) [static]
```

**Todo** ClearRubber(); function

```
19.18.5.414 star_click() UiObject star_click (
    UiObject global,
    EmbVector pos )
```

```
19.18.5.415 star_main() UiObject star_main (
    void )
```

Returns **UiObject**.

```
19.18.5.416 star_move() UiObject star_move (
    UiObject global,
    EmbVector delta )
```

```
19.18.5.417 star_prompt() static void star_prompt (
    UiObject design,
    const char * str ) [static]
```

```
19.18.5.418 start_gripping() static void start_gripping (
    EmbGeometry * obj ) [static]
```

```
19.18.5.419 status_bar() static void status_bar (
    void ) [static]
```

```
19.18.5.420 status_bar_context_menu() static void status_bar_context_menu (
    void ) [static]
```

This appears not to be used any more.

```
19.18.5.421 stitch_line_to_scene() EmbLine stitch_line_to_scene (
    View view,
    EmbStitch prev,
    EmbStitch st )
```

```
19.18.5.422 stop_gripping() static void stop_gripping (
    bool accept ) [static]
```

```
19.18.5.423 streq() bool streq (  
    const char * s1,  
    const char * s2 )
```

Wrapper for the standard strncmp that is aware of our 200 character string limit.

*s1* The first string, usually the variable data. *s2* The second string, usually the contant to compare against. Returns true when the strings match for the first 200 characters, for longer strings that match this far this is the wrong tool.

```
19.18.5.424 stub_implement() static void stub_implement (  
    const char * msg ) [static]
```

*msg*

```
19.18.5.425 stub_testing_action() static void stub_testing_action (  
    void ) [static]
```

**Todo** document this.

```
19.18.5.426 test_translate() bool test_translate (  
    void )
```

Check that the translate call can return an entry from the table.

Returns true If the test has been passed. Returns false Otherwise.

```
19.18.5.427 text_angle_action() static void text_angle_action (  
    EmbReal angle ) [static]
```

*angle*

```
19.18.5.428 text_font_action() static void text_font_action (  
    const char * font ) [static]
```

*font*

```
19.18.5.429 text_multi_action() static void text_multi_action (  
    void ) [static]
```

**Todo** document this.

```
19.18.5.430 text_single_action() static void text_single_action (
    void ) [static]
```

**Todo** document this.

```
19.18.5.431 text_size_action() static void text_size_action (
    EmbReal size ) [static]
```

*size*

```
19.18.5.432 textFontSelectorCurrentFontChanged() static void textFontSelectorCurrentFontChanged (
( int font ) [static]
```

*font*

```
19.18.5.433 textSizeSelectorIndexChanged() static void textSizeSelectorIndexChanged (
    int index ) [static]
```

*index*

**Todo** check that the toReal() conversion is ok

```
19.18.5.434 tip_of_the_day_dialog() static void tip_of_the_day_dialog (
    void ) [static]
```

**Todo** Add icons to buttons by using wizardTipOfTheDay->setButton(CustomButton1, buttonPrevious)

**Todo** Add icons to buttons by using wizardTipOfTheDay->setButton(CustomButton1, buttonNext)

**Todo** Add icons to buttons by using wizardTipOfTheDay->setButton(CustomButton1, buttonClose)

```
19.18.5.435 TipOfTheDay() static void TipOfTheDay (
    void ) [static]
```

**Todo** document this.

**19.18.5.436 `toggleGrid()`** static void toggleGrid ( bool on ) [static]

**19.18.5.437 `translate()`** const char \* translate ( const char \* string )

Rather than using .po files we translate at runtime using this function.

*string* The string to be translated. Returns const char\* The translated string.

**Todo** check for translation\_table loaded and use it.

**19.18.5.438 `triangle_action()`** static void triangle\_action ( void ) [static]

**Todo** document this.

**19.18.5.439 `UiObject_free()`** static void UiObject\_free ( *UiObject* \* obj ) [static]

**19.18.5.440 `UiObject_init()`** *UiObject* \* UiObject\_init ( int pattern\_index, char type[200], int object\_index )

**19.18.5.441 `undo_action()`** static void undo\_action ( void ) [static]

**Todo** document this.

**19.18.5.442 `undo_editor_init()`** static void undo\_editor\_init ( char \* iconDirectory ) [static]

*iconDirectory*

**19.18.5.443 undo\_history\_free()** static void undo\_history\_free ( UndoHistory \* ) [static]

**19.18.5.444 undo\_history\_init()** UndoHistory undo\_history\_init ( void )

Returns UndoHistory.

**19.18.5.445 undo\_history\_viewer()** static void undo\_history\_viewer ( void ) [static]

**Todo** document this.

**19.18.5.446 undo\_navigation()** static void undo\_navigation ( void ) [static]

**Todo** document this.

**19.18.5.447 undoable\_navigation\_command()** static void undoable\_navigation\_command ( char \* type, View \* v ) [static]

*type v*

**19.18.5.448 update\_clean\_icon()** static void update\_clean\_icon ( bool opened ) [static]

*opened*

**19.18.5.449 update\_heart()** static void update\_heart ( EmbPath \* path, UiObject global ) [static]

*path global*

```
19.18.5.450 update_menu_toolbar_statusbar() static void update_menu_toolbar_statusbar ( void ) [static]
```

**Todo** document this.

```
19.18.5.451 update_mouse_coords() static void update_mouse_coords ( EmbVector position ) [static]
```

```
19.18.5.452 updateAllViewBackgroundColors() static void updateAllViewBackgroundColors ( unsigned int color ) [static]
```

*color*

```
19.18.5.453 updateAllViewCrossHairColors() static void updateAllViewCrossHairColors ( unsigned int color ) [static]
```

**Todo** document this.

```
19.18.5.454 updateAllViewGridColors() static void updateAllViewGridColors ( unsigned int color ) [static]
```

**Todo** document this.

```
19.18.5.455 updateAllViewRulerColors() static void updateAllViewRulerColors ( unsigned int color ) [static]
```

*color*

```
19.18.5.456 updateAllViewscrollbars() static void updateAllViewscrollbars ( bool val ) [static]
```

**Todo** document this.

```
19.18.5.457 updateAllViewSelectBoxColors() static void updateAllViewSelectBoxColors (
    unsigned int colorL,
    unsigned int fillL,
    unsigned int colorR,
    unsigned int fillR,
    int alpha ) [static]
```

**Todo** document this.

```
19.18.5.458 updateColorLinetypeLinewidth() static void updateColorLinetypeLinewidth (
    void ) [static]
```

```
19.18.5.459 updateDolphin() static void updateDolphin (
    EmbArray * path,
    UiObject global ) [static]
```

*path global*

```
19.18.5.460 updatePickAddMode() static void updatePickAddMode (
    bool val ) [static]
```

*val*

```
19.18.5.461 updateSnowflake() static void updateSnowflake (
    EmbPath * path,
    UiObject global ) [static]
```

```
19.18.5.462 updateStar() static void updateStar (
    EmbPath * path,
    UiObject global ) [static]
```

```
19.18.5.463 usage() static void usage (
    void ) [static]
```

Advice to users on how to use command line arguments.

```
19.18.5.464 valid_file_format() bool valid_file_format (
    char * fname )
```

Check if the filename is valid before we attempt to read or write it.

*fname* The file name to check (absolute or relative). Returns true If this file can be parsed by libembroidery. Returns false If it cannot be, or no file name appears to be present.

```
19.18.5.465 validRGB() bool validRGB (
    int r,
    int g,
    int b )
```

Check that *r*, *g* and *b* are in the range 0-255 inclusive.

```
19.18.5.466 vertical_dimension_action() static void vertical_dimension_action (
    void ) [static]
```

**Todo** document this.

```
19.18.5.467 View__() static void View__ (
    void ) [static]
```

**Todo** Review OpenGL direct calls (rather than via GLFW).

**Todo** panDistance needs a setting.

**Todo** load toggleReal from file, else settings with default being true.

```
19.18.5.468 view_empty_double_click() static void view_empty_double_click (
    void ) [static]
```

**Todo** document this.

```
19.18.5.469 view_empty_paint_event() static void view_empty_paint_event (
    View * view,
    int * event ) [static]
```

**Todo** document this.

```
19.18.5.470 view_free() static void view_free (
    void ) [static]
```

Prevent memory leaks by deleting any objects that were removed from the scene.

```
19.18.5.471 vulcanize() static void vulcanize (
    UiObject * obj ) [static]
```

```
19.18.5.472 vulcanize_action() static void vulcanize_action (
    void ) [static]
```

**Todo** document this.

```
19.18.5.473 vulcanize_rubber_room() static void vulcanize_rubber_room (
    void ) [static]
```

```
19.18.5.474 vulcanizeObject() static void vulcanizeObject (
    EmbGeometry * obj ) [static]
```

```
19.18.5.475 whats_this_context_help_action() static void whats_this_context_help_action (
    void ) [static]
```

**Todo** document this.

**19.18.5.476 `wheel_event()`** static void wheel\_event ( int \* event ) [static]

**19.18.5.477 `willOverflowInt32()`** bool willOverflowInt32 ( int32\_t a, int32\_t b )

Check whether an addition will cause overflow before we rely on the result.

*a* The first argument to the addition. *b* The second argument to the addition. Returns true If overflow should occur. Returns false If overflow won't occur.

**19.18.5.478 `willUnderflowInt32()`** bool willUnderflowInt32 ( int32\_t a, int32\_t b )

Check whether an subtraction will cause underflow before we rely on the result.

*a* The first argument to the subtraction. *b* The second argument to the subtraction. Returns true If underflow should occur. Returns false If underflow won't occur.

**19.18.5.479 `window_action()`** static void window\_action ( const char \* arg ) [static]

Alter the window layout based on the char array *arg*.

**19.18.5.480 `window_menu_about_to_show()`** static void window\_menu\_about\_to\_show ( void ) [static]

**Todo** document this.

**19.18.5.481 `window_menu_activated()`** static void window\_menu\_activated ( bool checked ) [static]

*checked*

**19.18.5.482 `write_bool_setting()`** static void write\_bool\_setting ( FILE \* file, const char \* key, bool value ) [static]

```
19.18.5.483 write_dictionary_setting() static void write_dictionary_setting (
    FILE * file,
    const char * key,
    Dictionary value ) [static]
```

```
19.18.5.484 write_float_setting() static void write_float_setting (
    FILE * file,
    const char * key,
    float value ) [static]
```

```
19.18.5.485 write_int_setting() static void write_int_setting (
    FILE * file,
    const char * key,
    int value ) [static]
```

```
19.18.5.486 write_settings() static void write_settings (
    const char * fname ) [static]
```

Write settings to file with file name *settings\_file*.

```
19.18.5.487 write_str_setting() static void write_str_setting (
    FILE * file,
    const char * key,
    const char value[200] ) [static]
```

```
19.18.5.488 write_uint_setting() static void write_uint_setting (
    FILE * file,
    const char * key,
    unsigned int value ) [static]
```

```
19.18.5.489 zoom_action() static void zoom_action (
    const char * arg ) [static]
```

*arg*

**Todo** Implement zoomCenter.

**Todo** Implement zoomDynamic.

**Todo** Implement zoomPrevious.

**Todo** Implement zoomRealtime.

**Todo** Implement zoomScale.

```
19.18.5.490 zoom_extents_all_subviews() static void zoom_extents_all_subviews (
    void ) [static]
```

**Todo** document this.

```
19.18.5.491 zoom_to_point() static void zoom_to_point (
    EmbVector mousePoint,
    int zoomDir ) [static]
```

## 19.18.6 Variable Documentation

```
19.18.6.1 active_view View* active_view = NULL
```

The view focussed (that is the last view to have a click or keypress sent): this has to be manually set whenever it changes including being set to NULL when all views are closed.

```
19.18.6.2 current_directory char current_directory[200] = "/"
```

```
19.18.6.3 dialog Settings dialog [static]
```

These copies of the settings struct are for restoring the state if the user doesn't want to accept their changes in the settings dialog.

```
19.18.6.4 from_ int from_ = 0 [static]
```

```
19.18.6.5 just_opened bool just_opened = true
```

**Todo** Move to the settings struct.

**19.18.6.6 languages** const char\* languages[20]**Initial value:**

```
= {  
    "default",  
    "spanish",  
    "french",  
    "END"  
}
```

The language strings for identifying where to look for translation tables.

**Todo** this should be loaded from configuration.

**19.18.6.7 menu\_action** char menu\_action[200]**19.18.6.8 menu\_layout** [Index\\*](#) menu\_layout**19.18.6.9 n\_views** int n\_views = 0**19.18.6.10 preview** [Settings](#) preview [static]**19.18.6.11 settings** [Settings](#) settings

The actuator changes the program state via these global variables.

**19.18.6.12 settings\_dir** char settings\_dir[200]

The directory on the user's system to keep our configuration in: this will be some variant of "~/embroidermodder2".

**19.18.6.13 settings\_file** char settings\_file[200]

This file needs to be read from the users home directory to ensure it is writable.

**19.18.6.14 stor** bool stor[10] [static]

**19.18.6.15 `to_`** int `to_` = 10 [static]

**19.18.6.16 `to_open`** char `to_open`[200] = ""

**19.18.6.17 `toolbar_layout`** [Index](#)\* `toolbar_layout`

**19.18.6.18 `translation_table`** [Dictionary](#)\* `translation_table`

**19.18.6.19 `views`** [View](#) `views`[50]

## 19.19 embroidermodder2/layer-manager.cpp File Reference

```
#include <QtGui>
#include "layer-manager.h"
#include "mainwindow.h"
```

## 19.20 embroidermodder2/layer-manager.h File Reference

```
#include <QDialog>
```

### Classes

- class [LayerManager](#)

## 19.21 layer-manager.h

[Go to the documentation of this file.](#)

```

00001 #ifndef LAYER_MANAGER_H
00002 #define LAYER_MANAGER_H
00003
00004 #include <QDialog>
00005
00006 class MainWindow;
00007
00008 QT_BEGIN_NAMESPACE
00009 class QAbstractItemModel;
00010 class QCheckBox;
00011 class QComboBox;
00012 class QGroupBox;
00013 class QLabel;
00014 class QLineEdit;
00015 class QSortFilterProxyModel;
00016 class QTreeView;
00017 class QStandardItemModel;
00018 QT_END_NAMESPACE
00019
00020 class LayerManager : public QDialog
00021 {
00022     Q_OBJECT
00023
00024 public:
00025     LayerManager(MainWindow* mw, QWidget *parent = 0);
00026     ~LayerManager();
00027
00028 void addLayer(const QString& name,
00029                 const bool visible,
00030                 const bool frozen,
00031                 const qreal zValue,
00032                 const QRgb color,
00033                 const QString& lineType,
00034                 const QString& lineWeight,
00035                 const bool print);
00036
00037 private slots:
00038
00039 private:
00040     QStandardItemModel*      layerModel;
00041     QSortFilterProxyModel*  layerModelSorted;
00042     QTreeView*              treeView;
00043 };
00044
00045 #endif
00046
00047 /* kate: bom off; indent-mode cstyle; indent-width 4; replace-trailing-space-save on; */

```

## 19.22 embroidermodder2/main.cpp File Reference

```
#include "application.h"
#include "mainwindow.h"
```

### Functions

- static void **usage** (void)  
*usage*
- static void **version** ()  
*version*
- int **main** (int argc, char \*argv[])
   
*qMain*

### Variables

- const char \* **\_appName\_** = "Embroidermodder"
- const char \* **\_appVer\_** = "v2.0 alpha"
- bool **exitApp** = false

### 19.22.1 Function Documentation

**19.22.1.1 main()** int main (  
    int argc,  
    char \* argv[ ] )

qMain

#### Parameters

<i>argc</i>	
<i>argv</i>	

#### Returns

**19.22.1.2 usage()** static void usage (  
    void ) [static]

usage

**19.22.1.3 version()** static void version ( ) [static]

version

### 19.22.2 Variable Documentation

**19.22.2.1 \_appName\_** const char\* \_appName\_ = "Embroidermodder"

**19.22.2.2 \_appVer\_** const char\* \_appVer\_ = "v2.0 alpha"

**19.22.2.3 exitApp** bool exitApp = false

## 19.23 embroidermodder2/mainwindow-actions.cpp File Reference

```
#include "mainwindow.h"
#include <QAction>
#include <QApplication>
#include <QMdiArea>
```

## 19.24 embroidermodder2/mainwindow-actions.h File Reference

### Enumerations

- enum **COMMAND\_ACTIONS** {
 ACTION\_donothing , ACTION\_new , ACTION\_open , ACTION\_save ,
 ACTION\_saveas , ACTION\_print , ACTION\_designdetails , ACTION\_exit ,
 ACTION\_cut , ACTION\_copy , ACTION\_paste , ACTION\_undo ,
 ACTION\_redo , ACTION\_windowclose , ACTION\_windowcloseall , ACTION\_windowcascade ,
 ACTION\_windowtile , ACTION\_windownext , ACTION\_windowprevious , ACTION\_help ,
 ACTION\_changelog , ACTION\_tipoftheday , ACTION\_about , ACTION\_whatsthis ,
 ACTION\_icon16 , ACTION\_icon24 , ACTION\_icon32 , ACTION\_icon48 ,
 ACTION\_icon64 , ACTION\_icon128 , ACTION\_settingsdialog , ACTION\_makelayercurrent ,
 ACTION\_layers , ACTION\_layerselector , ACTION\_layerprevious , ACTION\_colorselector ,
 ACTION\_linetypeselector , ACTION\_lineweightselector , ACTION\_hidealllayers , ACTION\_showalllayers ,
 ACTION\_freezealllayers , ACTION\_thawalllayers , ACTION\_lockalllayers , ACTION\_unlockalllayers ,
 ACTION\_textbold , ACTION\_textitalic , ACTION\_textunderline , ACTION\_textstrikeout ,
 ACTION\_textoverline , ACTION\_zoomrealtime , ACTION\_zoomprevious , ACTION\_zoomwindow ,
 ACTION\_zoomdynamic , ACTION\_zoomscale , ACTION\_zoomcenter , ACTION\_zoomin ,
 ACTION\_zoomout , ACTION\_zoomselected , ACTION\_zoomall , ACTION\_zoomextents ,
 ACTION\_panrealtime , ACTION\_panpoint , ACTION\_panleft , ACTION\_panright ,
 ACTION\_panup , ACTION\_pandown , ACTION\_day , ACTION\_night ,
 ACTION\_null }

### 19.24.1 Enumeration Type Documentation

#### 19.24.1.1 COMMAND\_ACTIONS enum COMMAND\_ACTIONS

##### Enumerator

ACTION_donothing	
ACTION_new	
ACTION_open	
ACTION_save	
ACTION_saveas	
ACTION_print	
ACTION_designdetails	
ACTION_exit	
ACTION_cut	
ACTION_copy	
ACTION_paste	

## Enumerator

ACTION_undo	
ACTION_redo	
ACTION_windowclose	
ACTION_windowcloseall	
ACTION_windowcascade	
ACTION_windowtile	
ACTION_windownext	
ACTION_windowprevious	
ACTION_help	
ACTION_changelog	
ACTION_tipoftheday	
ACTION_about	
ACTION_whatsthis	
ACTION_icon16	
ACTION_icon24	
ACTION_icon32	
ACTION_icon48	
ACTION_icon64	
ACTION_icon128	
ACTION_settingsdialog	
ACTION_makelayercurrent	
ACTION_layers	
ACTION_layerselector	
ACTION_layerprevious	
ACTION_colorselector	
ACTION_linetypeselector	
ACTION_lineweightselector	
ACTION_hidealllayers	
ACTION_showalllayers	
ACTION_freezealllayers	
ACTION_thawalllayers	
ACTION_lockalllayers	
ACTION_unlockalllayers	
ACTION_textbold	
ACTION_textitalic	
ACTION_textunderline	
ACTION_textstrikeout	
ACTION_textoverline	
ACTION_zoomrealtime	
ACTION_zoomprevious	
ACTION_zoomwindow	
ACTION_zoomdynamic	
ACTION_zoomscale	
ACTION_zoomcenter	
ACTION_zoomin	
ACTION_zoomout	
ACTION_zoomselected	
ACTION_zoomall	

## Enumerator

ACTION_zoomextents	
ACTION_panrealtime	
ACTION_panpoint	
ACTION_panleft	
ACTION_panright	
ACTION_panup	
ACTION_pardown	
ACTION_day	
ACTION_night	
ACTION_null	

**19.25 mainwindow-actions.h**

[Go to the documentation of this file.](#)

```
00001 #ifndef MAINWINDOW_ACTIONS_H
00002 #define MAINWINDOW_ACTIONS_H
00003
00004 enum COMMAND_ACTIONS
00005 {
00006
00007 ACTION_donothing,
00008
00009 ACTION_new,
00010 ACTION_open,
00011 ACTION_save,
00012 ACTION_saveas,
00013 ACTION_print,
00014 ACTION_designdetails,
00015 ACTION_exit,
00016 ACTION_cut,
00017 ACTION_copy,
00018 ACTION_paste,
00019
00020 ACTION_undo,
00021 ACTION_redo,
00022 // Window Menu
00023 ACTION_windowclose,
00024 ACTION_windowcloseall,
00025 ACTION_windowcascade,
00026 ACTION_windowtile,
00027 ACTION_windownext,
00028 ACTION_windowprevious,
00029 // Help Menu
00030 ACTION_help,
00031 ACTION_changelog,
00032 ACTION_tipoftheday,
00033 ACTION_about,
00034 ACTION_whatsthis,
00035 // Icons
00036 ACTION_icon16,
00037 ACTION_icon24,
00038 ACTION_icon32,
00039 ACTION_icon48,
00040 ACTION_icon64,
00041 ACTION_icon128,
00042
00043 ACTION_settingsdialog,
00044
00045 // LayerToolBar
00046 ACTION_makelayercurrent,
00047 ACTION_layers,
00048 ACTION_layerselector,
00049 ACTION_layerprevious,
00050 ACTION_colorselector,
00051 ACTION_linetypeselector,
00052 ACTION_linewidthselector,
00053 ACTION_hidealllayers,
00054 ACTION_showalllayers,
00055 ACTION_freezealllayers,
00056 ACTION_thawalllayers,
```

```

00057 ACTION_lockalllayers,
00058 ACTION_unlockalllayers,
00059 //TextToolBar
00060 ACTION_textbold,
00061 ACTION_textitalic,
00062 ACTION_textunderline,
00063 ACTION_textstrikeout,
00064 ACTION_textoverline,
00065 // ZoomToolBar
00066 ACTION_zoomrealtime,
00067 ACTION_zoomprevious,
00068 ACTION_zoomwindow,
00069 ACTION_zoomdynamic,
00070 ACTION_zoomscale,
00071 ACTION_zoomcenter,
00072 ACTION_zoomin,
00073 ACTION_zoomout,
00074 ACTION_zoomselected,
00075 ACTION_zoomall,
00076 ACTION_zoomextents,
00077 // PanSubMenu
00078 ACTION_panrealtime,
00079 ACTION_panpoint,
00080 ACTION_panleft,
00081 ACTION_panright,
00082 ACTION_panup,
00083 ACTION_pandown,
00084
00085 ACTION_day,
00086 ACTION_night,
00087
00088 //TODO: ACTION_spellcheck,
00089 //TODO: ACTION_quickselect,
00090
00091 ACTION_null
00092 };
00093
00094 #endif
00095
00096 /* kate: bom off; indent-mode cstyle; indent-width 4; replace-trailing-space-save on; */

```

## 19.26 embroidermodder2/mainwindow-commands.cpp File Reference

```

#include "mainwindow.h"
#include "view.h"
#include "statusbar.h"
#include "statusbar-button.h"
#include "imagewidget.h"
#include "layer-manager.h"
#include "object-data.h"
#include "object-arc.h"
#include "object-circle.h"
#include "object-dimleader.h"
#include "object-ellipse.h"
#include "object-image.h"
#include "object-line.h"
#include "object-path.h"
#include "object-point.h"
#include "object-polygon.h"
#include "object-polyline.h"
#include "object-rect.h"
#include "object-textsingle.h"
#include "embroidery.h"
#include "property-editor.h"
#include "undo-editor.h"
#include "undo-commands.h"
#include "embdetails-dialog.h"
#include <QLabel>
#include <QDesktopServices>

```

```
#include <QApplication>
#include <QUrl>
#include <QProcess>
#include <QMMessageBox>
#include <QDialogButtonBox>
#include <QPushButton>
#include <QMdiArea>
#include <QGraphicsScene>
#include <QComboBox>
#include <QWhatsThis>
```

## 19.27 embroidermodder2/mainwindow-menus.cpp File Reference

```
#include "mainwindow.h"
#include <QDebug>
#include <QMenu>
#include <QMenuBar>
#include <QAction>
```

## 19.28 embroidermodder2/mainwindow-settings.cpp File Reference

```
#include "mainwindow.h"
#include "settings-dialog.h"
#include <QDebug>
#include <QtGlobal>
#include <QSettings>
```

## 19.29 embroidermodder2/mainwindow-toolbars.cpp File Reference

```
#include "mainwindow.h"
#include <QAction>
#include <QToolBar>
```

## 19.30 embroidermodder2/mainwindow.cpp File Reference

```
#include "mainwindow.h"
#include "mainwindow-actions.h"
#include "statusbar.h"
#include "statusbar-button.h"
#include "view.h"
#include "cmdprompt.h"
#include "property-editor.h"
#include "undo-editor.h"
#include "preview-dialog.h"
#include "embroidery.h"
#include <stdlib.h>
#include <QDebug>
```

```
#include <QFrame>
#include <QVBoxLayout>
#include <QMenu>
#include <QMenuBar>
#include <QStatusBar>
#include <QMdiArea>
#include <QWidget>
#include <QMdiSubWindow>
#include <QMessageBox>
#include <QToolBar>
#include <QFileDialog>
#include <QApplication>
#include <QDate>
#include <QFileInfo>
#include <QLabel>
#include <QComboBox>
#include <QCcloseEvent>
#include <QMetaObject>
#include <QLocale>
```

### 19.31 **embroidermodder2/mainwindow.h** File Reference

```
#include <cinttypes>
#include <string>
#include "utility.h"
#include <QMainWindow>
#include <QList>
#include <QHash>
#include <QDir>
#include "mdiarea.h"
#include "mdiwindow.h"
#include "mainwindow-actions.h"
#include "cmdprompt.h"
```

#### Classes

- class [MainWindow](#)

*The MainWindow class.*

### 19.32 **mainwindow.h**

[Go to the documentation of this file.](#)

```
00001
00005 #ifndef MAINWINDOW_H
00006 #define MAINWINDOW_H
00007
00008 #include <cinttypes>
00009 #include <string>
00010
00011 #include "utility.h"
00012
00013 #include <QMainWindow>
00014 #include <QList>
00015 #include <QHash>
00016 #include <QDir>
00017 //##include <QtScript>
```

```
00018 //#include <QtScriptTools>
00019
00020 #include "mdiarea.h"
00021 #include "mdiwindow.h"
00022 #include "mainwindow-actions.h"
00023 #include "cmdprompt.h"
00024
00025 class MdiArea;
00026 class MdiWindow;
00027 class View;
00028 class StatusBar;
00029 class StatusBarButton;
00030 class CmdPrompt;
00031 class PropertyEditor;
00032 class UndoEditor;
00033
00034 QT_BEGIN_NAMESPACE
00035 class QComboBox;
00036 class QAction;
00037 class QToolBar;
00038 class QCcloseEvent;
00039 class QMenu;
00040 class QScriptEngine;
00041 class QScriptEngineDebugger;
00042 class QScriptProgram;
00043 class QUndoStack;
00044 QT_END_NAMESPACE
00045
00049 class MainWindow: public QMainWindow
00050 {
00051     Q_OBJECT
00052
00053 public:
00054     MainWindow();
00055     ~MainWindow();
00056
00057     MdiArea*           getMdiArea();
00058     MainWindow*        getApplication();
00059     MdiWindow*         activeMdiWindow();
00060     View*              activeView();
00061     QGraphicsScene*    activeScene();
00062     QUndoStack*        activeUndoStack();
00063
00064     void setUndoCleanIcon(bool opened);
00065
00066     virtual void       updateMenuToolbarStatusbar();
00067
00068     MainWindow*        mainWin;
00069     MdiArea*           mdiArea;
00070     CmdPrompt*          prompt;
00071     PropertyEditor*    dockPropEdit;
00072     UndoEditor*        dockUndoEdit;
00073     StatusBar*         statusbar;
00074
00075     QList<QGraphicsItem*> cutCopyObjectList;
00076
00077     void actuator(std::string command);
00078
00079     QString getSettingsGeneralLanguage()           { return settings_general_language; }
00080     QString getSettingsGeneralIconTheme()          { return settings_general_icon_theme; }
00081     int    getSettingsGeneralIconSize()            { return settings_general_icon_size; }
00082     bool   getSettingsGeneralMdiBGUseLogo()        { return settings_general_mdi_bg_use_logo; }
00083     bool   getSettingsGeneralMdiBGUseTexture()      { return settings_general_mdi_bg_use_texture; }
00084     bool   getSettingsGeneralMdiBGUseColor()        { return settings_general_mdi_bg_use_color; }
00085     QString getSettingsGeneralMdiBGLogo()          { return settings_general_mdi_bg_logo; }
00086     QString getSettingsGeneralMdiBGTtexture()       { return settings_general_mdi_bg_texture; }
00087     QRgb   getSettingsGeneralMdiBGColor()          { return settings_general_mdi_bg_color; }
00088     bool   getSettingsGeneralTipOfTheDay()          { return settings_general_tip_of_the_day; }
00089     int    getSettingsGeneralCurrentTip()           { return settings_general_current_tip; }
00090     bool   getSettingsGeneralSystemHelpBrowser()     { return settings_general_system_help_browser; }
00091     bool   getSettingsGeneralCheckForUpdates()       { return settings_general_check_for_updates; }
00092     bool   getSettingsDisplayUseOpenGL()            { return settings_display_use_opengl; }
00093     bool   getSettingsDisplayRenderHintAA()          { return settings_display_renderhint_aa; }
```

```

00094     }                                bool    getSettingsDisplayRenderHintTextAA() { return settings_display_renderhint_text_aa;
00095     }                                bool    getSettingsDisplayRenderHintSmoothPix() { return settings_display_renderhint_smooth_pix;
00096     }                                bool    getSettingsDisplayRenderHintHighAA() { return settings_display_renderhint_high_aa;
00097     }                                bool    getSettingsDisplayRenderHintNonCosmetic() { return
00098         settings_display_renderhint_noncosmetic; }
00098     }                                bool    getSettingsDisplayShowScrollBars() { return settings_display_show_scrollbars;
00099     }                                int     getSettingsDisplayScrollBarWidgetNum() { return settings_display_scrollbar_widget_num;
00100     }                                QRgb   getSettingsDisplayCrossHairColor() { return settings_display_crosshair_color;
00101     }                                QRgb   getSettingsDisplayBGCOLOR() { return settings_display_bg_color;
00102     }                                QRgb   getSettingsDisplaySelectBoxLeftColor() { return settings_display_selectbox_left_color;
00103     }                                QRgb   getSettingsDisplaySelectBoxLeftFill() { return settings_display_selectbox_left_fill;
00104     }                                QRgb   getSettingsDisplaySelectBoxRightColor() { return settings_display_selectbox_right_color;
00105     }                                QRgb   getSettingsDisplaySelectBoxRightFill() { return settings_display_selectbox_right_fill;
00106     }                                uint8_t getSettingsDisplaySelectBoxAlpha() { return settings_display_selectbox_alpha;
00107     }                                EmbReal getSettingsDisplayZoomScaleIn() { return settings_display_zoomscale_in;
00108     }                                EmbReal getSettingsDisplayZoomScaleOut() { return settings_display_zoomscale_out;
00109     }                                uint8_t getSettingsDisplayCrossHairPercent() { return settings_display_crosshair_percent;
00110     }                                QString getSettingsDisplayUnits() { return settings_display_units;
00111     }                                QRgb   getSettingsPromptTextColor() { return settings_prompt_text_color;
00112     }                                QRgb   getSettingsPromptBGCOLOR() { return settings_prompt_bg_color;
00113     }                                QString getSettingsPromptFontFamily() { return settings_prompt_font_family;
00114     }                                QString getSettingsPromptFontStyle() { return settings_prompt_font_style;
00115     }                                uint8_t getSettingsPromptFontSize() { return settings_prompt_font_size;
00116     }                                bool   getSettingsPromptSaveHistory() { return settings_prompt_save_history;
00117     }                                bool   getSettingsPromptSaveHistoryAsHTML() { return settings_prompt_save_history_as_html;
00118     }                                QString getSettingsPromptSaveHistoryFilename() { return settings_prompt_save_history_filename;
00119     }                                QString getSettingsCustomFilter() { return settings_opensave_custom_filter;
00120     }                                QString getSettingsOpenFormat() { return settings_opensave_open_format;
00121     }                                bool   getSettingsOpenThumbnail() { return settings_opensave_open_thumbnail;
00122     }                                QString getSettingsSaveFormat() { return settings_opensave_save_format;
00123     }                                bool   getSettingsSaveThumbnail() { return settings_opensave_save_thumbnail;
00124     }                                uint8_t getSettingsRecentMaxFiles() { return settings_opensave_recent_max_files;
00125     }                                uint8_t getSettingsOpenSaveTrimDstNumJumps() { return settings_opensave_trim_dst_num_jumps;
00126     }                                QString getSettingsPrintingDefaultDevice() { return settings_printing_default_device;
00127     }                                bool   getSettingsPrintingUseLastDevice() { return settings_printing_use_last_device;
00128     }                                bool   getSettingsPrintingDisableBG() { return settings_printing_disable_bg;
00129     }                                bool   getSettingsGridShowOnLoad() { return settings_grid_show_on_load;
00130     }                                bool   getSettingsGridShowOrigin() { return settings_grid_show_origin;
00131     }                                bool   getSettingsGridColorMatchCrossHair() { return settings_grid_color_match_crosshair;
00132     }                                QRgb   getSettingsGridColor() { return settings_grid_color;
00133     }                                bool   getSettingsGridLoadFromFile() { return settings_grid_load_from_file;
00134     }                                QString getSettingsGridType() { return settings_grid_type;
00135     }                                bool   getSettingsGridCenterOnOrigin() { return settings_grid_center_on_origin;
00136     }                                EmbReal getSettingsGridCenterX() { return settings_grid_center_x;
}

```

```
00137     EmbReal    getSettingsGridCenterY()           { return settings_grid_center_y; }
00138 }      EmbReal    getSettingsGridSizeX()          { return settings_grid_size_x; }
00139 }      EmbReal    getSettingsGridSizeY()          { return settings_grid_size_y; }
00140 }      EmbReal    getSettingsGridSpacingX()        { return settings_grid_spacing_x; }
00141 }      EmbReal    getSettingsGridSpacingY()        { return settings_grid_spacing_y; }
00142 }      EmbReal    getSettingsGridSizeRadius()       { return settings_grid_size_radius; }
00143 }      EmbReal    getSettingsGridSpacingRadius()    { return settings_grid_spacing_radius; }
00144 }      EmbReal    getSettingsGridSpacingAngle()     { return settings_grid_spacing_angle; }
00145     bool     getSettingsRulerShowOnLoad()         { return settings_ruler_show_on_load; }
00146 }      bool     getSettingsRulerMetric()          { return settings_ruler_metric; }
00147 }      QRgb     getSettingsRulerColor()           { return settings_ruler_color; }
00148     uint8_t   getSettingsRulerPixelSize()         { return settings_ruler_pixel_size; }
00149 }      bool     getSettingsQSnapEnabled()          { return settings_qsnap_enabled; }
00150 }      QRgb     getSettingsQSnapLocatorColor()     { return settings_qsnap_locator_color; }
00151 }      uint8_t   getSettingsQSnapLocatorSize()      { return settings_qsnap_locator_size; }
00152 }      uint8_t   getSettingsQSnapApertureSize()     { return settings_qsnap_aperture_size; }
00153 }      bool     getSettingsQSnapEndPoint()        { return settings_qsnap_endpoint; }
00154 }      bool     getSettingsQSnapMidPoint()         { return settings_qsnap_midpoint; }
00155 }      bool     getSettingsQSnapCenter()          { return settings_qsnap_center; }
00156 }      bool     getSettingsQSnapNode()            { return settings_qsnap_node; }
00157 }      bool     getSettingsQSnapQuadrant()         { return settings_qsnap_quadrant; }
00158 }      bool     getSettingsQSnapIntersection()      { return settings_qsnap_intersection; }
00159 }      bool     getSettingsQSnapExtension()        { return settings_qsnap_extension; }
00160 }      bool     getSettingsQSnapInsertion()        { return settings_qsnap_insertion; }
00161 }      bool     getSettingsQSnapPerpendicular()     { return settings_qsnap_perpendicular; }
00162 }      bool     getSettingsQSnapTangent()          { return settings_qsnap_tangent; }
00163 }      bool     getSettingsQSnapNearest()          { return settings_qsnap_nearest; }
00164 }      bool     getSettingsQSnapApparent()         { return settings_qsnap_apparent; }
00165 }      bool     getSettingsQSnapParallel()         { return settings_qsnap_parallel; }
00166 }      bool     getSettingsLwtShowLwt()           { return settings_lwt_show_lwt; }
00167 }      bool     getSettingsLwtRealRender()        { return settings_lwt_real_render; }
00168 }      EmbReal   getSettingsLwtDefaultLwt()        { return settings_lwt_default_lwt; }
00169 }      bool     getSettingsSelectionModePickFirst() { return settings_selection_mode_pickfirst; }
00170 }      bool     getSettingsSelectionModePickAdd()   { return settings_selection_mode_pickadd; }
00171 }      bool     getSettingsSelectionModePickDrag()  { return settings_selection_mode_pickdrag; }
00172 }      QRgb     getSettingsSelectionCoolGripColor() { return settings_selection_coolgrip_color; }
00173 }      QRgb     getSettingsSelectionHotGripColor() { return settings_selection_hotgrip_color; }
00174 }      uint8_t   getSettingsSelectionGripSize()      { return settings_selection_grip_size; }
00175 }      uint8_t   getSettingsSelectionPickBoxSize()   { return settings_selection_pickbox_size; }
00176 }      QString  getSettingsTextFont()              { return settings_text_font; }
00177 }      EmbReal   getSettingsTextSize()             { return settings_text_size; }
00178 }      EmbReal   getSettingsTextAngle()            { return settings_text_angle; }
00179 }      bool     getSettingsTextStyleBold()         { return settings_text_style_bold; }
00180 }      bool     getSettingsTextStyleItalic()       { return settings_text_style_italic; }
```

```

    }
00181   bool     getSettingsTextStyleUnderline()           { return settings_text_style_underline; }
00182   bool     getSettingsTextStyleStrikeOut()          { return settings_text_style_strikeout; }
00183   bool     getSettingsTextStyleOverline()           { return settings_text_style_overline; }
00184
00185   void    setSettingsGeneralLanguage(const QString& newValue)      { settings_general_language
= newValue; }
00186   void    setSettingsGeneralIconTheme(const QString& newValue)       { settings_general_icon_theme
= newValue; }
00187   void    setSettingsGeneralIconSize(int newValue)        { settings_general_icon_size
= newValue; }
00188   void    setSettingsGeneralMdiBGUseLogo(bool newValue)      { settings_general_mdi_bg_use_logo
= newValue; }
00189   void    setSettingsGeneralMdiBGUseTexture(bool newValue)      { settings_general_mdi_bg_use_texture
= newValue; }
00190   void    setSettingsGeneralMdiBGUseColor(bool newValue)      { settings_general_mdi_bg_use_color
= newValue; }
00191   void    setSettingsGeneralMdiBGLogo(const QString& newValue)    { settings_general_mdi_bg_logo
= newValue; }
00192   void    setSettingsGeneralMdiBGTTexture(const QString& newValue) { settings_general_mdi_bg_texture
= newValue; }
00193   void    setSettingsGeneralMdiBGColor(QRgb newValue)          { settings_general_mdi_bg_color
= newValue; }
00194   void    setSettingsGeneralTipOfDay(bool newValue)            { settings_general_tip_of_the_day
= newValue; }
00195   void    setSettingsGeneralCurrentTip(int newValue)          { settings_general_current_tip
= newValue; }
00196   void    setSettingsGeneralSystemHelpBrowser(bool newValue)    { settings_general_system_help_browser
= newValue; }
00197   void    setSettingsGeneralCheckForUpdates(bool newValue)      { settings_general_check_for_updates
= newValue; }
00198   void    setSettingsDisplayUseOpenGL(bool newValue)          { settings_display_use_opengl
= newValue; }
00199   void    setSettingsDisplayRenderHintAA(bool newValue)        { settings_display_renderhint_aa
= newValue; }
00200   void    setSettingsDisplayRenderHintTextAA(bool newValue)    { settings_display_renderhint_text_aa
= newValue; }
00201   void    setSettingsDisplayRenderHintSmoothPix(bool newValue) { settings_display_renderhint_smooth_pix
= newValue; }
00202   void    setSettingsDisplayRenderHintHighAA(bool newValue)    { settings_display_renderhint_high_aa
= newValue; }
00203   void    setSettingsDisplayRenderHintNonCosmetic(bool newValue) { settings_display_renderhint_noncosmetic
= newValue; }
00204   void    setSettingsDisplayShowScrollBars(bool newValue)       { settings_display_show_scrollbars
= newValue; }
00205   void    setSettingsDisplayScrollBarWidgetNum(int newValue)    { settings_display_scrollbar_widget_num
= newValue; }
00206   void    setSettingsDisplayCrossHairColor(QRgb newValue)       { settings_display_crosshair_color
= newValue; }
00207   void    setSettingsDisplayBGColor(QRgb newValue)             { settings_display_bg_color
= newValue; }
00208   void    setSettingsDisplaySelectBoxLeftColor(QRgb newValue)   { settings_display_selectbox_left_color
= newValue; }
00209   void    setSettingsDisplaySelectBoxLeftFill(QRgb newValue)   { settings_display_selectbox_left_fill
= newValue; }
00210   void    setSettingsDisplaySelectBoxRightColor(QRgb newValue) { settings_display_selectbox_right_color
= newValue; }
00211   void    setSettingsDisplaySelectBoxRightFill(QRgb newValue)  { settings_display_selectbox_right_fill
= newValue; }
00212   void    setSettingsDisplaySelectBoxAlpha(uint8_t newValue)    { settings_display_selectbox_alpha
= newValue; }
00213   void    setSettingsDisplayZoomScaleIn(EmbReal newValue)       { settings_display_zoomscale_in
= newValue; }
00214   void    setSettingsDisplayZoomScaleOut(EmbReal newValue)      { settings_display_zoomscale_out
= newValue; }
00215   void    setSettingsDisplayCrossHairPercent(uint8_t newValue)  { settings_display_crosshair_percent
= newValue; }
00216   void    setSettingsDisplayUnits(const QString& newValue)     { settings_display_units
= newValue; }
00217   void    setSettingsPromptTextColor(QRgb newValue)             { settings_prompt_text_color
= newValue; }
00218   void    setSettingsPromptBGColor(QRgb newValue)              { settings_prompt_bg_color
= newValue; }
00219   void    setSettingsPromptFontFamily(const QString& newValue) { settings_prompt_font_family
= newValue; }
00220   void    setSettingsPromptFontStyle(const QString& newValue)  { settings_prompt_font_style
= newValue; }
00221   void    setSettingsPromptFontSize(uint8_t newValue)          { settings_prompt_font_size
= newValue; }
00222   void    setSettingsPromptSaveHistory(bool newValue)          { settings_prompt_save_history
= newValue; }
00223   void    setSettingsPromptSaveHistoryAsHtml(bool newValue)    { settings_prompt_save_history_as_html
= newValue; }
00224   void    setSettingsPromptSaveHistoryFilename(const QString& newValue) {

```

```
0025     settings_prompt_save_history_filename = newValue; }
0026 void setSettingsCustomFilter(const QString& newValue)
0027     settings_opensave_custom_filter = newValue;
0028 = newValue;
0029 void setSettingsOpenThumbnail(bool newValue)
0030     settings_opensave_open_thumbnail = newValue;
0031 = newValue;
0032 void setSettingsSaveFormat(const QString& newValue)
0033     settings_opensave_save_format = newValue;
0034 void setSettingsSaveThumbnail(bool newValue)
0035     settings_opensave_save_thumbnail = newValue;
0036 = newValue;
0037 void setSettingsRecentMaxFiles(uint8_t newValue)
0038     settings_opensave_recent_max_files = newValue;
0039 void setSettingsOpenSaveTrimDstNumJumps(uint8_t newValue)
0040     settings_opensave_trim_dst_num_jumps = newValue;
0041 void setSettingsPrintingDefaultDevice(const QString& newValue)
0042     settings_printing_default_device = newValue;
0043 void setSettingsPrintingUseLastDevice(bool newValue)
0044     settings_printing_use_last_device = newValue;
0045 void setSettingsPrintingDisableBG(bool newValue)
0046 = newValue;
0047 void setSettingsGridShowOnLoad(bool newValue)
0048 = newValue;
0049 void setSettingsGridShowOrigin(bool newValue)
0050 = newValue;
0051 void setSettingsGridColorMatchCrossHair(bool newValue)
0052     settings_grid_color_match_crosshair = newValue;
0053 void setSettingsGridColor(QRgb newValue)
0054 = newValue;
0055 void setSettingsGridLoadFromFile(bool newValue)
0056 = newValue;
0057 void setSettingsGridType(const QString& newValue)
0058 = newValue;
0059 void setSettingsGridCenterOnOrigin(bool newValue)
0060     settings_grid_center_on_origin = newValue;
0061 void setSettingsGridCenterX(EmbReal newValue)
0062 = newValue;
0063 void setSettingsGridCenterY(EmbReal newValue)
0064 = newValue;
0065 void setSettingsGridSizeX(EmbReal newValue)
0066 = newValue;
0067 void setSettingsGridSizeY(EmbReal newValue)
0068 = newValue;
0069 void setSettingsGridSpacingX(EmbReal newValue)
0070 = newValue;
0071 void setSettingsGridSpacingY(EmbReal newValue)
0072 = newValue;
0073 void setSettingsGridSizeRadius(EmbReal newValue)
0074 = newValue;
0075 void setSettingsGridSpacingRadius(EmbReal newValue)
0076     settings_grid_spacing_radius = newValue;
0077 void setSettingsGridSpacingAngle(EmbReal newValue)
0078 = newValue;
0079 void setSettingsRulerShowOnLoad(bool newValue)
0080 = newValue;
0081 void setSettingsRulerMetric(bool newValue)
0082 = newValue;
0083 void setSettingsRulerColor(QRgb newValue)
0084 = newValue;
0085 void setSettingsRulerPixelSize(uint8_t newValue)
0086 = newValue;
0087 void setSettingsQSnapEnabled(bool newValue)
0088 = newValue;
0089 void setSettingsQSnapLocatorColor(QRgb newValue)
0090 = newValue;
0091 void setSettingsQSnapLocatorSize(uint8_t newValue)
0092 = newValue;
0093 void setSettingsQSnapApertureSize(uint8_t newValue)
0094 = newValue;
0095 void setSettingsQSnapEndPoint(bool newValue)
0096 = newValue;
0097 void setSettingsQSnapMidPoint(bool newValue)
0098 = newValue;
0099 void setSettingsQSnapCenter(bool newValue)
0100 = newValue;
0101 void setSettingsQSnapNode(bool newValue)
0102 = newValue;
0103 void setSettingsQSnapQuadrant(bool newValue)
0104 = newValue;
0105 void setSettingsQSnapIntersection(bool newValue)
0106 = newValue;
0107 void setSettingsQSnapExtension(bool newValue)
0108 = newValue;
0109 void setSettingsQSnapInsertion(bool newValue)
0110 = newValue;
0111 void setSettingsQSnapPerpendicular(bool newValue)
0112 = newValue;
```

```

00268     void setSettingsQSnapTangent(bool newValue)
00269     = newValue; }
00270     void setSettingsQSnapNearest(bool newValue)
00271     = newValue; }
00272     void setSettingsQSnapParallel(bool newValue)
00273     = newValue; }
00274     void setSettingsLwtShowLwt(bool newValue)
00275     = newValue; }
00276     void setSettingsLwtRealRender(bool newValue)
00277     = newValue; }
00278     void setSettingsLwtDefaultLwt(EmbReal newValue)
00279     = newValue; }
00280     void setSettingsSelectionModePickFirst(bool newValue)
00281     settings_selection_mode_pickfirst = newValue; }
00282     void setSettingsSelectionModePickAdd(bool newValue)
00283     settings_selection_mode_pickadd = newValue; }
00284     void setSettingsSelectionModePickDrag(bool newValue)
00285     settings_selection_mode_pickdrag = newValue; }
00286     void setSettingsSelectionCoolGripColor(QRgb newValue)
00287     settings_selection_coolgrip_color = newValue; }
00288     void setSettingsSelectionHotGripColor(QRgb newValue)
00289     settings_selection_hotgrip_color = newValue; }
00290     void setSettingsSelectionGripSize(uint8_t newValue)
00291     = newValue; }
00292     void setSettingsSelectionPickBoxSize(uint8_t newValue)
00293     settings_selection_pickbox_size = newValue; }
00294     void setSettingsTextFont(const QString& newValue)
00295     = newValue; }
00296     void setSettingsTextSize(EmbReal newValue)
00297     = newValue; }
00298     void setSettingsTextAngle(EmbReal newValue)
00299     = newValue; }
00300     void setSettingsTextStyleBold(bool newValue)
00301     = newValue; }
00302     void setSettingsTextStyleItalic(bool newValue)
00303     = newValue; }
00304     void setSettingsTextStyleUnderline(bool newValue)
00305     = newValue; }
00306     void setSettingsTextStyleStrikeOut(bool newValue)
00307     = newValue; }
00308     void setSettingsTextStyleOverline(bool newValue)
00309     = newValue; }

00310     QHash<int, QAction*> actionHash;
00311     QHash<QString, QToolBar*> toolbarHash;
00312     QHash<QString, QMenu*> menuHash;

00313     QString formatFilterOpen;
00314     QString formatFilterSave;

00315     bool isCommandActive() { return prompt->isCommandActive(); }
00316     QString activeCommand() { return prompt->activeCommand(); }

00317     QString platformString();

00318     public slots:
00319     void enablePromptRapidFire();
00320     void disablePromptRapidFire();

00321     void enableMoveRapidFire();
00322     void disableMoveRapidFire();

00323     void onCloseWindow();
00324     virtual void onCloseMdiWin(MdiWindow*);

00325     void recentMenuAboutToShow();

00326     void onWindowActivated(QMdiSubWindow* w);
00327     void windowMenuAboutToShow();
00328     void windowMenuActivated( bool checked/*int id*/ );
00329     QAction* getAction(int actionEnum);

00330     void updateAllViewScrollBars(bool val);
00331     void updateAllViewCrossHairColors(QRgb color);
00332     void updateAllViewBackgroundColors(QRgb color);
00333     void updateAllViewSelectBoxColors(QRgb colorL, QRgb fillL, QRgb colorR, QRgb fillR, int alpha);
00334     void updateAllViewGridColors(QRgb color);
00335     void updateAllViewRulerColors(QRgb color);

00336     void updatePickAddMode(bool val);
00337     void pickAddModeToggled();

00338     void settingsPrompt();

```

```
00333     void settingsDialog(const QString& showTab = QString());
00334     void readSettings();
00335     void writeSettings();
00336
00337     static bool                               validFileFormat(const QString &fileName);
00338
00339 protected:
00340     virtual void                            resizeEvent(QResizeEvent* );
00341     void closeEvent(QCloseEvent *event);
00342     QAction*                                getFileSeparator();
00343     void loadFormats();
00344
00345 private:
00346
00347     QString settings_general_language;
00348     QString settings_general_icon_theme;
00349     int settings_general_icon_size;
00350     bool settings_general_mdi_bg_use_logo;
00351     bool settings_general_mdi_bg_use_texture;
00352     bool                               settings_general_mdi_bg_use_color;
00353     QString                           settings_general_mdi_bg_logo;
00354     QString                           settings_general_mdi_bg_texture;
00355     QRgb                                settings_general_mdi_bg_color;
00356     bool                                settings_general_tip_of_the_day;
00357     quint16                            settings_general_current_tip;
00358     bool                                settings_general_system_help_browser;
00359     bool                                settings_general_check_for_updates;
00360     bool                                settings_display_use_opengl;
00361     bool                                settings_display_renderhint_aa;
00362     bool                                settings_display_renderhint_text_aa;
00363     bool                                settings_display_renderhint_smooth_pix;
00364     bool                                settings_display_renderhint_high_aa;
00365     bool                                settings_display_renderhint_noncosmetic;
00366     bool                                settings_display_show_scrollbars;
00367     int                                 settings_display_scrollbar_widget_num;
00368     QRgb                                settings_display_crosshair_color;
00369     QRgb                                settings_display_bg_color;
00370     QRgb                                settings_display_selectbox_left_color;
00371     QRgb                                settings_display_selectbox_left_fill;
00372     QRgb                                settings_display_selectbox_right_color;
00373     QRgb                                settings_display_selectbox_right_fill;
00374     uint8_t                            settings_display_selectbox_alpha;
00375     EmbReal                            settings_display_zoomscale_in;
00376     EmbReal                            settings_display_zoomscale_out;
00377     uint8_t                            settings_display_crosshair_percent;
00378     QString                           settings_display_units;
00379     QRgb                                settings_prompt_text_color;
00380     QRgb                                settings_prompt_bg_color;
00381     QString                           settings_prompt_font_family;
00382     QString                           settings_prompt_font_style;
00383     uint8_t                            settings_prompt_font_size;
00384     bool                                settings_prompt_save_history;
00385     bool                                settings_prompt_save_history_as_html;
00386     QString                           settings_prompt_save_history_filename;
00387     QString                           settings_opensave_custom_filter;
00388     QString                           settings_opensave_open_format;
00389     bool                                settings_opensave_open_thumbnail;
00390     QString                           settings_opensave_save_format;
00391     bool                                settings_opensave_save_thumbnail;
00392     uint8_t                            settings_opensave_recent_max_files;
00393     QStringList                      settings_opensave_recent_list_of_files;
00394     QString                           settings_opensave_recent_directory;
00395     uint8_t                            settings_opensave_trim_dst_num_jumps;
00396     QString                           settings_printing_default_device;
00397     bool                                settings_printing_use_last_device;
00398     bool                                settings_printing_disable_bg;
00399     bool                                settings_grid_show_on_load;
00400     bool                                settings_grid_show_origin;
00401     bool                                settings_grid_color_match_crosshair;
00402     QRgb                                settings_grid_color;
00403     bool                                settings_grid_load_from_file;
00404     QString                           settings_grid_type;
00405     bool                                settings_grid_center_on_origin;
00406     EmbReal                            settings_grid_center_x;
00407     EmbReal                            settings_grid_center_y;
00408     EmbReal                            settings_grid_size_x;
00409     EmbReal                            settings_grid_size_y;
00410     EmbReal                            settings_grid_spacing_x;
00411     EmbReal                            settings_grid_spacing_y;
00412     EmbReal                            settings_grid_size_radius;
00413     EmbReal                            settings_grid_spacing_radius;
00414     EmbReal                            settings_grid_spacing_angle;
00415     bool                                settings_ruler_show_on_load;
00416     bool                                settings_ruler_metric;
00417     QRgb                                settings_ruler_color;
00418     uint8_t                            settings_ruler_pixel_size;
00419     bool                                settings_qsnap_enabled;
```

```

00420     QRgb           settings_qsnap_locator_color;
00421     uint8_t        settings_qsnap_locator_size;
00422     uint8_t        settings_qsnap_aperture_size;
00423     bool            settings_qsnap_endpoint;
00424     bool            settings_qsnap_midpoint;
00425     bool            settings_qsnap_center;
00426     bool            settings_qsnap_node;
00427     bool            settings_qsnap_quadrant;
00428     bool            settings_qsnap_intersection;
00429     bool            settings_qsnap_extension;
00430     bool            settings_qsnap_insertion;
00431     bool            settings_qsnap_perpendicular;
00432     bool            settings_qsnap_tangent;
00433     bool            settings_qsnap_nearest;
00434     bool            settings_qsnap_apparent;
00435     bool            settings_qsnap_parallel;
00436     bool            settings_lwt_show_lwt;
00437     bool            settings_lwt_real_render;
00438     EmbReal         settings_lwt_default_lwt;
00439     bool            settings_selection_mode_pickfirst;
00440     bool            settings_selection_mode_pickadd;
00441     bool            settings_selection_mode_pickdrag;
00442     QRgb            settings_selection_coolgrip_color;
00443     QRgb            settings_selection_hottgrip_color;
00444     uint8_t          settings_selection_grip_size;
00445     uint8_t          settings_selection_pickbox_size;
00446     QString          settings_text_font;
00447     EmbReal         settings_text_size;
00448     EmbReal         settings_text_angle;
00449     bool            settings_text_style_bold;
00450     bool            settings_text_style_italic;
00451     bool            settings_text_style_underline;
00452     bool            settings_text_style_overline;
00453     bool            settings_text_style_strikeout;
00454
00455     bool            shiftKeyPressedState;
00456
00457     QByteArray      layoutState;
00458
00459     int             numOfDocs;
00460     int             docIndex;
00461
00462     QList<MdiWindow*> listMdiWin;
00463     QMdiSubWindow*   findMdiWindow(const QString &fileName);
00464     QString          openFilePath;
00465
00466     QAction*         myFileSeparator;
00467
00468     QWizard*         wizardTipOfDay;
00469     QLabel*          labelTipOfDay;
00470     QCheckBox*       checkBoxTipOfDay;
00471     QStringList      listTipOfDay;
00472
00473     void createAllActions();
00474     QAction*         createAction(const QString icon, const QString tooltip, const
00475     QString statusTip, bool scripted = false);
00476     //=====
00477     //=====
00478     void createAllToolbars();
00479     void createFileToolbar();
00480     void createEditToolbar();
00481     void createViewToolbar();
00482     void createZoomToolbar();
00483     void createPanToolbar();
00484     void createIconToolbar();
00485     void createHelpToolbar();
00486     void createLayerToolbar();
00487     void createPropertiesToolbar();
00488     void createTextToolbar();
00489     void createPromptToolbar();
00490
00491     QToolBar*         toolbarFile;
00492     QToolBar*         toolbarEdit;
00493     QToolBar*         toolbarView;
00494     QToolBar*         toolbarZoom;
00495     QToolBar*         toolbarPan;
00496     QToolBar*         toolbarIcon;
00497     QToolBar*         toolbarHelp;
00498     QToolBar*         toolbarLayer;
00499     QToolBar*         toolbarText;
00500     QToolBar*         toolbarProperties;
00501     QToolBar*         toolbarPrompt;
00502     //=====
00503     //Selectors
00504     //=====
00505     QComboBox*        layerSelector;

```

```
00506     QComboBox*      colorSelector;
00507     QComboBox*      linetypeSelector;
00508     QComboBox*      linewidthSelector;
00509     QFontComboBox*  textFontSelector;
00510     QComboBox*      textSizeSelector;
00511 //=====
00512 //Menus
00513 //=====
00514 void createAllMenus();
00515 void createFileMenu();
00516 void createEditMenu();
00517 void createViewMenu();
00518 void createSettingsMenu();
00519 void createWindowMenu();
00520 void createHelpMenu();
00521
00522     QMenu* fileMenu;
00523     QMenu* editMenu;
00524     QMenu* viewMenu;
00525     QMenu* settingsMenu;
00526     QMenu* windowMenu;
00527     QMenu* helpMenu;
00528 //=====
00529 //SubMenus
00530 //=====
00531     QMenu* recentMenu;
00532     QMenu* zoomMenu;
00533     QMenu* panMenu;
00534
00535 private slots:
00536     void hideUnimplemented();
00537
00538 public slots:
00539
00540     void stub_implement(QString txt);
00541     void stub_testing();
00542
00543     void promptHistoryAppended(const QString& txt);
00544     void logPromptInput(const QString& txt);
00545     void promptInputPrevious();
00546     void promptInputNext();
00547
00548     void runCommand();
00549     void runCommandMain(const QString& cmd);
00550     void runCommandClick(const QString& cmd, EmbReal x, EmbReal y);
00551     void runCommandMove(const QString& cmd, EmbReal x, EmbReal y);
00552     void runCommandContext(const QString& cmd, const QString& str);
00553     void runCommandPrompt(const QString& cmd, const QString& str);
00554
00555     void newFile();
00556     void openFile(bool recent = false, const QString& recentFile = "");
00557     void openFilesSelected(const QStringList&);
00558     void openrecentfile();
00559     void savefile();
00560     void saveasfile();
00561     void print();
00562     void designDetails();
00563     void exit();
00564     void quit();
00565     void checkForUpdates();
00566 // Help Menu
00567     void tipOfTheDay();
00568     void buttonTipOfTheDayClicked(int);
00569     void checkBoxTipOfTheDayStateChanged(int);
00570     void help();
00571     void changelog();
00572     void about();
00573     void whatsThisContextHelp();
00574
00575     void cut();
00576     void copy();
00577     void paste();
00578     void selectAll();
00579
00580     void closeToolBar(QAction* );
00581     void floatingChangedToolBar(bool);
00582
00583     void toggleGrid();
00584     void toggleRuler();
00585     void toggleLwt();
00586
00587 // Icons
00588     void iconResize(int iconSize);
00589     void icon16();
00590     void icon24();
00591     void icon32();
00592     void icon48();
```

```

00593     void icon64();
00594     void icon128();
00595
00596     //Selectors
00597     void layerSelectorIndexChanged(int index);
00598     void colorSelectorIndexChanged(int index);
00599     void linetypeSelectorIndexChanged(int index);
00600     void linewidthSelectorIndexChanged(int index);
00601     void textFontSelectorCurrentFontChanged(const QFont& font);
00602     void textSizeSelectorIndexChanged(int index);
00603
00604     QString textFont();
00605     EmbReal textSize();
00606     EmbReal textAngle();
00607     bool textBold();
00608     bool textItalic();
00609     bool textUnderline();
00610     bool textStrikeOut();
00611     bool textOverline();
00612
00613     void setTextFont(const QString& str);
00614     void setTextSize(EmbReal num);
00615     void setTextAngle(EmbReal num);
00616     void setTextBold(bool val);
00617     void setTextItalic(bool val);
00618     void setTextUnderline(bool val);
00619     void setTextStrikeOut(bool val);
00620     void setTextOverline(bool val);
00621
00622     QString getCurrentLayer();
00623     QRgb getCurrentColor();
00624     QString getCurrentLineType();
00625     QString getCurrentLineWeight();
00626
00627     // Standard Slots
00628     void undo();
00629     void redo();
00630
00631     bool isShiftPressed();
00632     void setShiftPressed();
00633     void setShiftReleased();
00634
00635     void deletePressed();
00636     void escapePressed();
00637
00638     // Layer Toolbar
00639     void makeLayerActive();
00640     void layerManager();
00641     void layerPrevious();
00642
00643     // Zoom Toolbar
00644     void zoomRealtime();
00645     void zoomPrevious();
00646     void zoomWindow();
00647     void zoomDynamic();
00648     void zoomScale();
00649     void zoomCenter();
00650     void zoomIn();
00651     void zoomOut();
00652     void zoomSelected();
00653     void zoomAll();
00654
00655     // Pan SubMenu
00656     void panrealtime();
00657     void panpoint();
00658     void panLeft();
00659     void panRight();
00660     void panUp();
00661     void panDown();
00662
00663     void dayVision();
00664     void nightVision();
00665
00666     void doNothing();
00667
00668     private:
00669         QScriptEngine* engine;
00670         QScriptEngineDebugger* debugger;
00671     void javaInitNatives(QScriptEngine* engine);
00672     void javaLoadCommand(const QString& cmdName);
00673
00674     public:
00675     //Natives
00676     void nativeAlert(const QString& txt);
00677     void nativeBlinkPrompt();
00678     void nativeSetPromptPrefix(const QString& txt);
00679     void nativeAppendPromptHistory(const QString& txt);
00679     void nativeEnablePromptRapidFire();

```

```
00680     void nativeDisablePromptRapidFire();
00681     void nativeInitCommand();
00682     void nativeEndCommand();
00683
00684     void nativeEnableMoveRapidFire();
00685     void nativeDisableMoveRapidFire();
00686
00687     void nativeNewFile();
00688     void nativeOpenFile();
00689
00690     void nativeExit();
00691     void nativeHelp();
00692     void nativeAbout();
00693     void nativeTipOfTheDay();
00694     void nativeWindowCascade();
00695     void nativeWindowTile();
00696     void nativeWindowClose();
00697     void nativeWindowCloseAll();
00698     void nativeWindowNext();
00699     void nativeWindowPrevious();
00700
00701     QString nativePlatformString();
00702
00703     void nativeMessageBox(const QString& type, const QString& title, const QString& text);
00704
00705     void nativeUndo();
00706     void nativeRedo();
00707
00708     void nativeIcon16();
00709     void nativeIcon24();
00710     void nativeIcon32();
00711     void nativeIcon48();
00712     void nativeIcon64();
00713     void nativeIcon128();
00714
00715     void nativePanLeft();
00716     void nativePanRight();
00717     void nativePanUp();
00718     void nativePanDown();
00719
00720     void nativeZoomIn();
00721     void nativeZoomOut();
00722     void nativeZoomExtents();
00723
00724     void nativePrintArea(EmbReal x, EmbReal y, EmbReal w, EmbReal h);
00725
00726     void nativeDayVision();
00727     void nativeNightVision();
00728
00729     void nativeSetBackgroundColor(uint8_t r, uint8_t g, uint8_t b);
00730     void nativeSetCrossHairColor(uint8_t r, uint8_t g, uint8_t b);
00731     void nativeSetGridColor(uint8_t r, uint8_t g, uint8_t b);
00732
00733     QString nativeTextFont();
00734     EmbReal nativeTextSize();
00735     EmbReal nativeTextAngle();
00736     bool nativeTextBold();
00737     bool nativeTextItalic();
00738     bool nativeTextUnderline();
00739     bool nativeTextStrikeOut();
00740     bool nativeTextOverline();
00741
00742     void nativeSetFont(const QString& str);
00743     void nativeSetTextSize(EmbReal num);
00744     void nativeSetTextAngle(EmbReal num);
00745     void nativeSetTextBold(bool val);
00746     void nativeSetTextItalic(bool val);
00747     void nativeSetTextUnderline(bool val);
00748     void nativeSetTextStrikeOut(bool val);
00749     void nativeSetTextOverline(bool val);
00750
00751     void nativePreviewOn(int clone, int mode, EmbReal x, EmbReal y, EmbReal data);
00752     void nativePreviewOff();
00753
00754     void nativeVulcanize();
00755     void nativeClearRubber();
00756     bool nativeAllowRubber();
00757     void nativeSpareRubber(qint64 id);
00758     //TODO: void nativeSetRubberFilter(qint64 id); //TODO: This is so more than 1 rubber object can
00759     //exist at one time without updating all rubber objects at once
00760     void nativeSetRubberMode(int mode);
00761     void nativeSetRubberPoint(const QString& key, EmbReal x, EmbReal y);
00762     void nativeSetRubberText(const QString& key, const QString& txt);
00763
00764     void nativeAddTextMulti(const QString& str, EmbReal x, EmbReal y, EmbReal rot, bool fill, int
rubberMode);
00764     void nativeAddTextSingle(const QString& str, EmbReal x, EmbReal y, EmbReal rot, bool fill, int
```

```

        rubberMode);

00765 void nativeAddInfiniteLine(EmbReal x1, EmbReal y1, EmbReal x2, EmbReal y2, EmbReal rot);
00766 void nativeAddRay(EmbReal x1, EmbReal y1, EmbReal x2, EmbReal y2, EmbReal rot);
00767 void nativeAddLine(EmbReal x1, EmbReal y1, EmbReal x2, EmbReal y2, EmbReal rot, int rubberMode);
00768 void nativeAddTriangle(EmbReal x1, EmbReal y1, EmbReal x2, EmbReal y2, EmbReal x3, EmbReal y3,
    EmbReal rot, bool fill);
00769 void nativeAddRectangle(EmbReal x, EmbReal y, EmbReal w, EmbReal h, EmbReal rot, bool fill, int
    rubberMode);
00770 void nativeAddRoundedRectangle(EmbReal x, EmbReal y, EmbReal w, EmbReal h, EmbReal rad, EmbReal
    rot, bool fill);
00771 void nativeAddArc(EmbReal startX, EmbReal startY, EmbReal midX, EmbReal midY, EmbReal endX,
    EmbReal endY, int rubberMode);
00772 void nativeAddCircle(EmbReal centerX, EmbReal centerY, EmbReal radius, bool fill, int rubberMode);
00773 void nativeAddSlot(EmbReal centerX, EmbReal centerY, EmbReal diameter, EmbReal length, EmbReal
    rot, bool fill, int rubberMode);
00774 void nativeAddEllipse(EmbReal centerX, EmbReal centerY, EmbReal width, EmbReal height, EmbReal
    rot, bool fill, int rubberMode);
00775 void nativeAddPoint(EmbReal x, EmbReal y);
00776 void nativeAddRegularPolygon(EmbReal centerX, EmbReal centerY, quint16 sides, uint8_t mode,
    EmbReal rad, EmbReal rot, bool fill);
00777 void nativeAddPolygon(EmbReal startX, EmbReal startY, const QPainterPath& p, int rubberMode);
00778 void nativeAddPolyline(EmbReal startX, EmbReal startY, const QPainterPath& p, int rubberMode);
00779 void nativeAddPath(EmbReal startX, EmbReal startY, const QPainterPath& p, int rubberMode);
00780 void nativeAddHorizontalDimension(EmbReal x1, EmbReal y1, EmbReal x2, EmbReal y2, EmbReal
    legHeight);
00781 void nativeAddVerticalDimension(EmbReal x1, EmbReal y1, EmbReal x2, EmbReal y2, EmbReal
    legHeight);
00782 void nativeAddImage(const QString& img, EmbReal x, EmbReal y, EmbReal w, EmbReal h, EmbReal rot);
00783 void nativeAddDimLeader(EmbReal x1, EmbReal y1, EmbReal x2, EmbReal y2, EmbReal rot, int
    rubberMode);
00784 void nativeSetCursorShape(const QString& str);
00785 EmbReal nativeCalculateAngle(EmbReal x1, EmbReal y1, EmbReal x2, EmbReal y2);
00786 EmbReal nativeCalculateDistance(EmbReal x1, EmbReal y1, EmbReal x2, EmbReal y2);
00787 EmbReal nativePerpendicularDistance(EmbReal px, EmbReal py, EmbReal x1, EmbReal y1, EmbReal x2,
    EmbReal y2);
00788 int nativeNumSelected();
00789 void nativeSelectAll();
00790 void nativeAddToSelection(const QPainterPath path, Qt::ItemSelectionMode mode);
00791 void nativeClearSelection();
00792 void nativeDeleteSelected();
00793 void nativeCutSelected(EmbReal x, EmbReal y);
00794 void nativeCopySelected(EmbReal x, EmbReal y);
00795 void nativePasteSelected(EmbReal x, EmbReal y);
00796 void nativeMoveSelected(EmbReal dx, EmbReal dy);
00797 void nativeScaleSelected(EmbReal x, EmbReal y, EmbReal factor);
00798 void nativeRotateSelected(EmbReal x, EmbReal y, EmbReal rot);
00799 void nativeMirrorSelected(EmbReal x1, EmbReal y1, EmbReal x2, EmbReal y2);
00800 EmbReal nativeQSnapX();
00801 EmbReal nativeQSnapY();
00802 EmbReal nativeMouseX();
00803 EmbReal nativeMouseY();
00804
00805
00806
00807
00808
00809 };
00810
00811 #endif

```

### 19.33 embroidermodder2/mdiarea.cpp File Reference

```
#include "mdiarea.h"
#include "mainwindow.h"
#include "view.h"
```

### 19.34 embroidermodder2/mdiarea.h File Reference

```
#include <QMdiArea>
#include <QPixmap>
```

## Classes

- class [MdiArea](#)

## 19.35 mdiarea.h

[Go to the documentation of this file.](#)

```

00001 #ifndef MDIAREA_H
00002 #define MDIAREA_H
00003
00004 #include <QMdiArea>
00005 #include <QPixmap>
00006
00007 class MainWindow;
00008
00009 class MdiArea : public QMdiArea
00010 {
00011     Q_OBJECT
00012
00013 public:
00014     MdiArea(MainWindow* mw, QWidget* parent = 0);
00015     ~MdiArea();
00016
00017     void useBackgroundLogo(bool use);
00018     void useBackgroundTexture(bool use);
00019     void useBackgroundColor(bool use);
00020
00021     void setBackgroundLogo(const QString& fileName);
00022     void setBackgroundTexture(const QString& fileName);
00023     void setBackgroundColor(const QColor& color);
00024
00025 public slots:
00026     void cascade();
00027     void tile();
00028 protected:
00029     virtual void mouseDoubleClickEvent(QMouseEvent* e);
00030     virtual void paintEvent(QPaintEvent* e);
00031
00032 private:
00033     MainWindow* mainWin;
00034
00035     bool useLogo;
00036     bool useTexture;
00037     bool useColor;
00038
00039     QPixmap bgLogo;
00040     QPixmap bgTexture;
00041     QColor bgColor;
00042
00043     void zoomExtentsAllSubWindows();
00044     void forceRepaint();
00045 };
00046
00047 #endif

```

## 19.36 embroidermodder2/mdiwindow.cpp File Reference

```

#include "mdiwindow.h"
#include "view.h"
#include "statusbar.h"
#include "statusbar-button.h"
#include "object-save.h"
#include "object-data.h"
#include "object-path.h"
#include "object-polygon.h"
#include "object-polyline.h"
#include <QFileDialog>
#include <QMessageBox>
#include <QApplication>
#include <QDir>

```

```
#include <QFile>
#include <QFileInfo>
#include <QMainWindow>
#include <QMdiArea>
#include <QMdiSubWindow>
#include <QStatusBar>
#include <QColor>
#include <QUndoStack>
#include <QGraphicsScene>
#include <QGraphicsView>
#include <QGraphicsItem>
#include "embroidery.h"
```

## 19.37 embroidermodder2/mdiwindow.h File Reference

```
#include <QObject>
#include <QMainWindow>
#include <QMdiSubWindow>
#include <QScrollBar>
#include <QGridLayout>
#include <QPrinter>
#include "mainwindow.h"
```

### Classes

- class [MdiWindow](#)

## 19.38 mdiwindow.h

[Go to the documentation of this file.](#)

```
00001 #ifndef MDIWINDOW_H
00002 #define MDIWINDOW_H
00003 //Qt
00004 #include <QObject>
00005 #include <QMainWindow>
00006 #include <QMdiSubWindow>
00007 #include <QScrollBar>
00008 #include <QGridLayout>
00009
00010 #if QT_VERSION >= 0x050000
00011 //Qt5
00012 #include <QtPrintSupport>
00013 #else
00014 //Qt4
00015 #include <QPrinter>
00016 #endif
00017
00018
00019 #include "mainwindow.h"
00020
00021 class MainWindow;
00022 class View;
00023
00024 QT_BEGIN_NAMESPACE
00025 class QMdiArea;
00026 class QGraphicsScene;
00027 class QGraphicsView;
00028 QT_END_NAMESPACE
00029
00030 class MdiWindow: public QMdiSubWindow
00031 {
00032     Q_OBJECT
```

```

00033
00034 public:
00035     MdiWindow(const int theIndex, MainWindow* mw, QMdiArea* parent, Qt::WindowFlags wflags);
00036     ~MdiWindow();
00037
00038     virtual QSize           sizeHint() const;
00039     QString                getCurrentFile() { return curFile; }
00040     QString                getShortCurrentFile();
00041     View*                  getView() { return gview; }
00042     QGraphicsScene*        getScene() { return gscene; }
00043     QString                getCurLayer() { return curLayer; }
00044     QColor                 getCurrentColor() { return curColor; }
00045     QString                getCurrentLineType() { return curLineType; }
00046     qreal                  getCurrentLineWeight() { return curLineWeight; }
00047     void                   setCurrentLayer(const QString& layer) { curLayer = layer; }
00048     void                   setCurrentColor(const QRgb& color) { curColor = color; }
00049     void                   setCurrentLineType(const QString& lineType) { curLineType = lineType; }
00050     void                   setCurrentLineWeight(const QString& lineWeight) { curLineWeight =
00051         lineWeight; }
00052     void                   designDetails();
00053     bool                  loadFile(const QString &fileName);
00054     void                  saveFile(const QString &fileName);
00055 signals:
00056     void sendCloseMdiWin(MdiWindow* );
00057 public slots:
00058     void closeEvent(QCloseEvent* e);
00059     void onWindowActivated();
00060
00061     void currentLayerChanged(const QString& layer);
00062     void currentColorChanged(const QRgb& color);
00063     void currentLinetypeChanged(const QString& type);
00064     void currentLinewidthChanged(const QString& weight);
00065
00066     void updateColorLinetypeLinewidth();
00067     void deletePressed();
00068     void escapePressed();
00069
00070     void showViewScrollBars(bool val);
00071     void setViewCrossHairColor(QRgb color);
00072     void setViewBackgroundColor(QRgb color);
00073     void setViewSelectBoxColors(QRgb colorL, QRgb fillL, QRgb colorR, QRgb
00074         fillR, int alpha);
00075     void setViewGridColor(QRgb color);
00076     void setViewRulerColor(QRgb color);
00077
00078     void print();
00079     void saveBMC();
00080
00081     void promptHistoryAppended(const QString& txt);
00082     void logPromptInput(const QString& txt);
00083     void promptInputPrevious();
00084     void promptInputNext();
00085 protected:
00086
00087 private:
00088     MainWindow*            mainWin;
00089     QMdiArea*              mdiArea;
00090     QGraphicsScene*        gscene;
00091     View*                  gview;
00092
00093     bool                   fileWasLoaded;
00094
00095     QString                promptHistory;
00096     QList<QString>        promptInputList;
00097     int                     promptInputNum;
00098
00099     QPrinter               printer;
00100
00101     QString                curFile;
00102     void                   setCurrentFile(const QString& fileName);
00103     QString                fileExtension(const QString& fileName);
00104
00105     int                     myIndex;
00106
00107     QString                curLayer;
00108     QRgb                   curColor;
00109     QString                curLineType;
00110     QString                curLineWeight;
00111
00112     void                   promptInputPrevNext(bool prev);
00113 };
00114
00115 #endif
00116
00117 /* kate: bom off; indent-mode cststyle; indent-width 4; replace-trailing-space-save on; */

```

## 19.39 embroidermodder2/native-scripting.cpp File Reference

```
#include "native-scripting.h"
```

### Functions

- void `initMainWinPointer (MainWindow *mw)`
- `MainWindow * mainWin ()`

### Variables

- `MainWindow * _mainWin = 0`

#### 19.39.1 Function Documentation

**19.39.1.1 `initMainWinPointer()`** `void initMainWinPointer (`  
`MainWindow * mw )`

**19.39.1.2 `mainWin()`** `MainWindow * mainWin ( )`

#### 19.39.2 Variable Documentation

**19.39.2.1 `_mainWin`** `MainWindow* _mainWin = 0`

## 19.40 embroidermodder2/native-scripting.h File Reference

```
#include "mainwindow.h"
```

### Functions

- void `initMainWinPointer (MainWindow *mw)`
- `MainWindow * mainWin ()`

#### 19.40.1 Function Documentation

```
19.40.1.1 initMainWinPointer() void initMainWinPointer (
    MainWindow * mw )
```

```
19.40.1.2 mainWin() MainWindow * mainWin ( )
```

## 19.41 native-scripting.h

[Go to the documentation of this file.](#)

```
00001 #ifndef NATIVE_SCRIPTING_H
00002 #define NATIVE_SCRIPTING_H
00003
00004 #include "mainwindow.h"
00005
00006 void initMainWinPointer(MainWindow* mw);
00007 MainWindow* mainWin();
00008
00009 #endif
00010
00011 /* kate: bom off; indent-mode cstyle; indent-width 4; replace-trailing-space-save on; */
```

## 19.42 embroidermodder2/object-arc.cpp File Reference

```
#include "object-arc.h"
#include "object-data.h"
#include "embroidery.h"
#include <QPainter>
#include <QStyleOption>
#include <QGraphicsScene>
```

## 19.43 embroidermodder2/object-arc.h File Reference

```
#include "object-base.h"
```

### Classes

- class [ArcObject](#)

## 19.44 object-arc.h

[Go to the documentation of this file.](#)

```

00001 #ifndef OBJECT_ARC_H
00002 #define OBJECT_ARC_H
00003
00004 #include "object-base.h"
00005
00006 class ArcObject : public BaseObject
00007 {
00008 public:
00009     ArcObject(qreal startX, qreal startY, qreal midX, qreal midY, qreal endX, qreal endY, QRgb rgb,
00010     QGraphicsItem* parent = 0);
00011     ArcObject(ArcObject* obj, QGraphicsItem* parent = 0);
00012     ~ArcObject();
00013
00014     enum { Type = OBJ_TYPE_ARC };
00015     virtual int type() const { return Type; }
00016
00017     QPointF objectCenter() const { return scenePos(); }
00018     qreal objectCenterX() const { return scenePos().x(); }
00019     qreal objectCenterY() const { return scenePos().y(); }
00020     qreal objectRadius() const { return rect().width()/2.0*scale(); }
00021     qreal objectStartAngle() const;
00022     QPointF objectStartPoint() const;
00023     qreal objectStartX() const;
00024     qreal objectStartY() const;
00025     QPointF objectMidPoint() const;
00026     qreal objectMidX() const;
00027     qreal objectMidY() const;
00028     QPointF objectEndPoint() const;
00029     qreal objectEndX() const;
00030     qreal objectEndY() const;
00031     qreal objectArea() const;
00032     qreal objectArcLength() const;
00033     qreal objectChord() const;
00034     qreal objectIncludedAngle() const;
00035     bool objectClockwise() const;
00036
00037     void setObjectCenter(const QPointF& point);
00038     void setObjectCenter(qreal pointX, qreal pointY);
00039     void setObjectCenterX(qreal pointX);
00040     void setObjectCenterY(qreal pointY);
00041     void setObjectRadius(qreal radius);
00042     void setObjectStartAngle(qreal angle);
00043     void setObjectEndAngle(qreal angle);
00044     void setObjectStartPoint(const QPointF& point);
00045     void setObjectStartPoint(qreal pointX, qreal pointY);
00046     void setObjectMidPoint(const QPointF& point);
00047     void setObjectMidPoint(qreal pointX, qreal pointY);
00048     void setObjectEndPoint(const QPointF& point);
00049     void setObjectEndPoint(qreal pointX, qreal pointY);
00050
00051     void updateRubber(QPainter* painter = 0);
00052     virtual void vulcanize();
00053     virtual QPointF mouseSnapPoint(const QPointF& mousePoint);
00054     virtual QList<QPointF> allGripPoints();
00055     virtual void gripEdit(const QPointF& before, const QPointF& after);
00056 protected:
00057     void paint(QPainter*, const QStyleOptionGraphicsItem*, QWidget*);
00058 private:
00059     void init(qreal startX, qreal startY, qreal midX, qreal midY, qreal endX, qreal endY, QRgb rgb,
00060     Qt::PenStyle lineType);
00061     void updatePath();
00062     void calculateArcData(qreal startX, qreal startY, qreal midX, qreal midY, qreal endX, qreal endY, qreal endY);
00063     void updateArcRect(qreal radius);
00064
00065     QPointF arcStartPoint;
00066     QPointF arcMidPoint;
00067     QPointF arcEndPoint;
00068 };
00069
00070 #endif
00071
00072 /* kate: bom off; indent-mode cstyle; indent-width 4; replace-trailing-space-save on; */

```

## 19.45 embroidermodder2/object-base.cpp File Reference

```
#include "object-base.h"
#include <QDebug>
```

```
#include <QGraphicsScene>
#include <QMessageBox>
#include <QDateTime>
#include <QPainter>
```

## 19.46 embroidermodder2/object-base.h File Reference

```
#include "object-data.h"
#include <QHash>
#include <QPen>
#include <QGraphicsPathItem>
#include <QtCore/qmath.h>
```

### Classes

- class [BaseObject](#)

## 19.47 object-base.h

[Go to the documentation of this file.](#)

```
00001 #ifndef OBJECT_BASE_H
00002 #define OBJECT_BASE_H
00003
00004 #include "object-data.h"
00005
00006 #include <QHash>
00007 #include <QPen>
00008 #include <QGraphicsPathItem>
00009 #include <QtCore/qmath.h>
00010
00011 class BaseObject : public QGraphicsPathItem
00012 {
00013 public:
00014     BaseObject(QGraphicsItem* parent = 0);
00015     virtual ~BaseObject();
00016
00017     enum { Type = OBJ_TYPE_BASE };
00018     virtual int type() const { return Type; }
00019
00020     qint64      objectID() const { return objID; }
00021     QPen        objectPen() const { return objPen; }
00022     QColor      objectColor() const { return objPen.color(); }
00023     QRgb        objectColorRGB() const { return objPen.color().rgb(); }
00024     Qt::PenStyle objectLineType() const { return objPen.style(); }
00025     qreal       objectLineWidth() const { return lwtPen.widthF(); }
00026     QPainterPath objectPath() const { return path(); }
00027     int         objectRubberMode() const { return objRubberMode; }
00028     QPointF    objectRubberPoint(const QString& key) const;
00029     QString     objectRubberText(const QString& key) const;
00030
00031     QRectF rect() const { return path().boundingRect(); }
00032     void setRect(const QRectF& r) { QPainterPath p; p.addRect(r); setPath(p); }
00033     void setRect(qreal x, qreal y, qreal w, qreal h) { QPainterPath p; p.addRect(x,y,w,h); setPath(p); }
00034
00035     QLineF line() const { return objLine; }
00036     void setLine(const QLineF& li) { QPainterPath p; p.moveTo(li.p1()); p.lineTo(li.p2()); setPath(p);
00037     objLine = li; }
00038     void setObjectColor(const QColor& color);
00039     void setObjectColorRGB(QRgb rgb);
00040     void setObjectLineType(Qt::PenStyle lineType);
00041     void setObjectLineWidth(qreal lineWidth);
00042     void setObjectPath(const QPainterPath& p) { setPath(p); }
00043     void setObjectRubberMode(int mode) { objRubberMode = mode; }
```

```

00044     void setObjectRubberPoint(const QString& key, const QPointF& point) { objRubberPoints.insert(key, point); }
00045     void setObjectRubberText(const QString& key, const QString& txt) { objRubberTexts.insert(key, txt); }
00046
00047     virtual QRectF boundingRect() const;
00048     virtual QPainterPath shape() const { return path(); }
00049
00050     void drawRubberLine(const QLineF& rubLine, QPainter* painter = 0, const char* colorFromScene = 0);
00051
00052     virtual void vulcanize() = 0;
00053     virtual QPointF mouseSnapPoint(const QPointF& mousePoint) = 0;
00054     virtual QList<QPointF> allGripPoints() = 0;
00055     virtual void gripEdit(const QPointF& before, const QPointF& after) = 0;
00056 protected:
00057     QPen lineWeightPen() const { return lwtPen; }
00058     inline qreal pi() const { return (qAtan(1.0)*4.0); }
00059     inline qreal radians(qreal degree) const { return (degree*pi()/180.0); }
00060     inline qreal degrees(qreal radian) const { return (radian*180.0/pi()); }
00061     void realRender(QPainter* painter, const QPainterPath& renderPath);
00062 private:
00063     QPen objPen;
00064     QPen lwtPen;
00065     QLineF objLine;
00066     int objRubberMode;
00067     QHash<QString, QPointF> objRubberPoints;
00068     QHash<QString, QString> objRubberTexts;
00069     qint64 objID;
00070 };
00071
00072 #endif
00073
00074 /* kate: bom off; indent-mode cstyle; indent-width 4; replace-trailing-space-save on; */

```

## 19.48 embroidermodder2/object-circle.cpp File Reference

```

#include "object-circle.h"
#include "object-data.h"
#include "embroidery.h"
#include <QPainter>
#include <QStyleOption>
#include <QGraphicsScene>

```

## 19.49 embroidermodder2/object-circle.h File Reference

```
#include "object-base.h"
```

### Classes

- class [CircleObject](#)

## 19.50 object-circle.h

[Go to the documentation of this file.](#)

```

00001 #ifndef OBJECT_CIRCLE_H
00002 #define OBJECT_CIRCLE_H
00003
00004 #include "object-base.h"
00005
00006 class CircleObject : public BaseObject
00007 {
00008 public:
00009     CircleObject(qreal centerX, qreal centerY, qreal radius, QRgb rgb, QGraphicsItem* parent = 0);

```

```

00010     CircleObject(CircleObject* obj, QGraphicsItem* parent = 0);
00011     ~CircleObject();
00012
00013     enum { Type = OBJ_TYPE_CIRCLE };
00014     virtual int type() const { return Type; }
00015
00016     QPainterPath objectSavePath() const;
00017
00018     QPointF objectCenter() const { return scenePos(); }
00019     qreal objectCenterX() const { return scenePos().x(); }
00020     qreal objectCenterY() const { return scenePos().y(); }
00021     qreal objectRadius() const { return rect().width()/2.0*scale(); }
00022     qreal objectDiameter() const { return rect().width()*scale(); }
00023     qreal objectArea() const { return pi()*objectRadius()*objectRadius(); }
00024     qreal objectCircumference() const { return pi()*objectDiameter(); }
00025     QPointF objectQuadrant0() const { return objectCenter() + QPointF(objectRadius(), 0); }
00026     QPointF objectQuadrant90() const { return objectCenter() + QPointF(0,-objectRadius()); }
00027     QPointF objectQuadrant180() const { return objectCenter() + QPointF(-objectRadius(),0); }
00028     QPointF objectQuadrant270() const { return objectCenter() + QPointF(0, objectRadius()); }
00029
00030     void setObjectCenter(const QPointF& center);
00031     void setObjectCenter(qreal centerX, qreal centerY);
00032     void setObjectCenterX(qreal centerX);
00033     void setObjectCenterY(qreal centerY);
00034     void setObjectRadius(qreal radius);
00035     void setObjectDiameter(qreal diameter);
00036     void setObjectArea(qreal area);
00037     void setObjectCircumference(qreal circumference);
00038
00039     void updateRubber(QPainter* painter = 0);
00040     virtual void vulcanize();
00041     virtual QPointF mouseSnapPoint(const QPointF& mousePoint);
00042     virtual QList<QPointF> allGripPoints();
00043     virtual void gripEdit(const QPointF& before, const QPointF& after);
00044 protected:
00045     void paint(QPainter*, const QStyleOptionGraphicsItem*, QWidget* );
00046 private:
00047     void init(qreal centerX, qreal centerY, qreal radius, QRgb rgb, Qt::PenStyle lineType);
00048     void updatePath();
00049 };
00050
00051 #endif
00052
00053 /* kate: bom off; indent-mode cstyle; indent-width 4; replace-trailing-space-save on; */

```

## 19.51 embroidermodder2/object-data.h File Reference

### Enumerations

- enum **OBJ\_KEYS** {
   
OBJ\_TYPE = 0 , OBJ\_NAME = 1 , OBJ\_LAYER = 2 , OBJ\_COLOR = 3 ,
   
OBJ\_LTYPE = 4 , OBJ\_LWT = 5 , OBJ\_RUBBER = 6 , OBJ\_TYPE = 0 ,
   
OBJ\_NAME = 1 , OBJ\_LAYER = 2 , OBJ\_COLOR = 3 , OBJ\_LTYPE = 4 ,
   
OBJ\_LWT = 5 , OBJ\_RUBBER = 6 }
- enum **OBJ\_TYPE\_VALUES** {
   
OBJ\_TYPE\_NULL = 0 , OBJ\_TYPE\_BASE = 100000 , OBJ\_TYPE\_ARC = 100001 , OBJ\_TYPE\_BLOCK =
 100002 ,
   
OBJ\_TYPE\_CIRCLE = 100003 , OBJ\_TYPE\_DIMALIGNED = 100004 , OBJ\_TYPE\_DIMANGULAR =
 100005 , OBJ\_TYPE\_DIMARCLENGTH = 100006 ,
   
OBJ\_TYPE\_DIMDIAMETER = 100007 , OBJ\_TYPE\_DIMLEADER = 100008 , OBJ\_TYPE\_DIMLINEAR =
 100009 , OBJ\_TYPE\_DIMORDINATE = 100010 ,
   
OBJ\_TYPE\_DIMRADIUS = 100011 , OBJ\_TYPE\_ELLIPSE = 100012 , OBJ\_TYPE\_ELLIPSEARC = 100013
 , OBJ\_TYPE\_RUBBER = 100014 ,
   
OBJ\_TYPE\_GRID = 100015 , OBJ\_TYPE\_HATCH = 100016 , OBJ\_TYPE\_IMAGE = 100017 ,
   
OBJ\_TYPE\_INFINITELINE = 100018 ,
   
OBJ\_TYPE\_LINE = 100019 , OBJ\_TYPE\_PATH = 100020 , OBJ\_TYPE\_POINT = 100021 , OBJ\_TYPE\_POLYGON =
 100022 ,
   
OBJ\_TYPE\_POLYLINE = 100023 , OBJ\_TYPE\_RAY = 100024 , OBJ\_TYPE\_RECTANGLE = 100025 ,
   
OBJ\_TYPE\_SLOT = 100026 ,
   
OBJ\_TYPE\_SPLINE = 100027 , OBJ\_TYPE\_TEXTMULTI = 100028 , OBJ\_TYPE\_TEXTSINGLE = 100029 }

- enum `OBJ_LTYPE_VALUES` {
 `OBJ_LTYPE_CONT` = 0 , `OBJ_LTYPE_CENTER` = 1 , `OBJ_LTYPE_DOT` = 2 , `OBJ_LTYPE_HIDDEN` = 3 ,
 `OBJ_LTYPE_PHANTOM` = 4 , `OBJ_LTYPE_ZIGZAG` = 5 , `OBJ_LTYPE_RUNNING` = 6 , `OBJ_LTYPE_SATIN`
= 7 ,
 `OBJ_LTYPE_FISHBONE` = 8 }
- enum `OBJ_LWT_VALUES` {
 `OBJ_LWT_BYLAYER` = -2 , `OBJ_LWT_BYBLOCK` = -1 , `OBJ_LWT_DEFAULT` = 0 , `OBJ_LWT_01` = 1 ,
 `OBJ_LWT_02` = 2 , `OBJ_LWT_03` = 3 , `OBJ_LWT_04` = 4 , `OBJ_LWT_05` = 5 ,
 `OBJ_LWT_06` = 6 , `OBJ_LWT_07` = 7 , `OBJ_LWT_08` = 8 , `OBJ_LWT_09` = 9 ,
 `OBJ_LWT_10` = 10 , `OBJ_LWT_11` = 11 , `OBJ_LWT_12` = 12 , `OBJ_LWT_13` = 13 ,
 `OBJ_LWT_14` = 14 , `OBJ_LWT_15` = 15 , `OBJ_LWT_16` = 16 , `OBJ_LWT_17` = 17 ,
 `OBJ_LWT_18` = 18 , `OBJ_LWT_19` = 19 , `OBJ_LWT_20` = 20 , `OBJ_LWT_21` = 21 ,
 `OBJ_LWT_22` = 22 , `OBJ_LWT_23` = 23 , `OBJ_LWT_24` = 24 }
- enum `OBJ_SNAP_VALUES` {
 `OBJ_SNAP_NULL` = 0 , `OBJ_SNAP_ENDPOINT` = 1 , `OBJ_SNAP_MIDPOINT` = 2 , `OBJ_SNAP_CENTER`
= 3 ,
 `OBJ_SNAP_NODE` = 4 , `OBJ_SNAP_QUADRANT` = 5 , `OBJ_SNAP_INTERSECTION` = 6 , `OBJ_SNAP_EXTENSION`
= 7 ,
 `OBJ_SNAP_INSERTION` = 8 , `OBJ_SNAP_PERPENDICULAR` = 9 , `OBJ_SNAP_TANGENT` = 10 ,
 `OBJ_SNAP_NEAREST` = 11 ,
 `OBJ_SNAP_APPINTERSECTION` = 12 , `OBJ_SNAP_PARALLEL` = 13 }
- enum `OBJ_RUBBER_VALUES` {
 `OBJ_RUBBER_OFF` = 0 , `OBJ_RUBBER_ON` = 1 , `OBJ_RUBBER_CIRCLE_1P_RAD` , `OBJ_RUBBER_CIRCLE_1P_DIA`
,
 `OBJ_RUBBER_CIRCLE_2P` , `OBJ_RUBBER_CIRCLE_3P` , `OBJ_RUBBER_CIRCLE_TTR` , `OBJ_RUBBER_CIRCLE_TTT`
,
 `OBJ_RUBBER_DIMLEADER_LINE` , `OBJ_RUBBER_ELLIPSE_LINE` , `OBJ_RUBBER_ELLIPSE_MAJORDIAMETER_MINOR` ,
 `OBJ_RUBBER_ELLIPSE_MAJORRADIUS_MINORRADIUS` ,
 `OBJ_RUBBER_ELLIPSE_ROTATION` , `OBJ_RUBBER_GRIP` , `OBJ_RUBBER_LINE` , `OBJ_RUBBER_POLYGON`
,
 `OBJ_RUBBER_POLYGON_INSCRIBE` , `OBJ_RUBBER_POLYGON_CIRCUMSCRIBE` , `OBJ_RUBBER_POLYLINE`
,
 `OBJ_RUBBER_IMAGE` ,
 `OBJ_RUBBER_RECTANGLE` , `OBJ_RUBBER_TEXTSINGLE` }
- enum `SPARE_RUBBER_VALUES` { `SPARE_RUBBER_OFF` = 0 , `SPARE_RUBBER_PATH` , `SPARE_RUBBER_POLYGON`
, `SPARE_RUBBER_POLYLINE` }
- enum `PREVIEW_CLONE_VALUES` { `PREVIEW_CLONE_NULL` = 0 , `PREVIEW_CLONE_SELECTED` ,
`PREVIEW_CLONE_RUBBER` }
- enum `PREVIEW_MODE_VALUES` { `PREVIEW_MODE_NULL` = 0 , `PREVIEW_MODE_MOVE` ,
`PREVIEW_MODE_ROTATE` , `PREVIEW_MODE_SCALE` }

## Variables

- const char \*const `OBJ_NAME_NULL` = "Unknown"
- const char \*const `OBJ_NAME_BASE` = "Base"
- const char \*const `OBJ_NAME_ARC` = "Arc"
- const char \*const `OBJ_NAME_BLOCK` = "Block"
- const char \*const `OBJ_NAME_CIRCLE` = "Circle"
- const char \*const `OBJ_NAME_DIMALIGNED` = "Aligned Dimension"
- const char \*const `OBJ_NAME_DIMANGULAR` = "Angular Dimension"
- const char \*const `OBJ_NAME_DIMARCLENGTH` = "Arc Length Dimension"
- const char \*const `OBJ_NAME_DIMDIAMETER` = "Diameter Dimension"
- const char \*const `OBJ_NAME_DIMLEADER` = "Leader Dimension"
- const char \*const `OBJ_NAME_DIMLINEAR` = "Linear Dimension"
- const char \*const `OBJ_NAME_DIMORDINATE` = "Ordinate Dimension"
- const char \*const `OBJ_NAME_DIMRADIUS` = "Radius Dimension"
- const char \*const `OBJ_NAME_ELLIPSE` = "Ellipse"

- const char \*const OBJ\_NAME\_ELLIPSEARC = "Elliptical Arc"
- const char \*const OBJ\_NAME\_RUBBER = "Rubber"
- const char \*const OBJ\_NAME\_GRID = "Grid"
- const char \*const OBJ\_NAME\_HATCH = "Hatch"
- const char \*const OBJ\_NAME\_IMAGE = "Image"
- const char \*const OBJ\_NAME\_INFINITELINE = "Infinite Line"
- const char \*const OBJ\_NAME\_LINE = "Line"
- const char \*const OBJ\_NAME\_PATH = "Path"
- const char \*const OBJ\_NAME\_POINT = "Point"
- const char \*const OBJ\_NAME\_POLYGON = "Polygon"
- const char \*const OBJ\_NAME\_POLYLINE = "Polyline"
- const char \*const OBJ\_NAME\_RAY = "Ray"
- const char \*const OBJ\_NAME\_RECTANGLE = "Rectangle"
- const char \*const OBJ\_NAME\_SLOT = "Slot"
- const char \*const OBJ\_NAME\_SPLINE = "Spline"
- const char \*const OBJ\_NAME\_TEXTMULTI = "Multi Line Text"
- const char \*const OBJ\_NAME\_TEXTSINGLE = "Single Line Text"
- const char \*const ENABLE\_SNAP = "ENABLE\_SNAP"
- const char \*const ENABLE\_GRID = "ENABLE\_GRID"
- const char \*const ENABLE\_RULER = "ENABLE\_RULER"
- const char \*const ENABLE\_ORTHO = "ENABLE\_ORTHO"
- const char \*const ENABLE\_POLAR = "ENABLE\_POLAR"
- const char \*const ENABLE\_QSNAP = "ENABLE\_QSNAP"
- const char \*const ENABLE\_QTRACK = "ENABLE\_QTRACK"
- const char \*const ENABLE\_LWT = "ENABLE\_LWT"
- const char \*const ENABLE\_REAL = "ENABLE\_REAL"
- const char \*const SCENE\_QSNAP\_POINT = "SCENE\_QSNAP\_POINT"
- const char \*const SCENE\_MOUSE\_POINT = "SCENE\_MOUSE\_POINT"
- const char \*const VIEW\_MOUSE\_POINT = "VIEW\_MOUSE\_POINT"
- const char \*const RUBBER\_ROOM = "RUBBER\_ROOM"
- const char \*const VIEW\_COLOR\_BACKGROUND = "VIEW\_COLOR\_BACKGROUND"
- const char \*const VIEW\_COLOR\_CROSSHAIR = "VIEW\_COLOR\_CROSSHAIR"
- const char \*const VIEW\_COLOR\_GRID = "VIEW\_COLOR\_GRID"

### 19.51.1 Enumeration Type Documentation

#### 19.51.1.1 OBJ\_KEYS enum OBJ\_KEYS

Enumerator

OBJ_TYPE	
OBJ_NAME	
OBJ_LAYER	
OBJ_COLOR	
OBJ_LTYPE	
OBJ_LWT	
OBJ_RUBBER	
OBJ_TYPE	
OBJ_NAME	
OBJ_LAYER	
OBJ_COLOR	
OBJ_LTYPE	Generated by Doxygen
OBJ_LWT	
OBJ_RUBBER	

**19.51.1.2 OBJ\_LTYPE\_VALUES** enum [OBJ\\_LTYPE\\_VALUES](#)

Enumerator

OBJ_LTYPE_CONT	
OBJ_LTYPE_CENTER	
OBJ_LTYPE_DOT	
OBJ_LTYPE_HIDDEN	
OBJ_LTYPE_PHANTOM	
OBJ_LTYPE_ZIGZAG	
OBJ_LTYPE_RUNNING	
OBJ_LTYPE_SATIN	
OBJ_LTYPE_FISHBONE	

**19.51.1.3 OBJ\_LWT\_VALUES** enum [OBJ\\_LWT\\_VALUES](#)

Enumerator

OBJ_LWT_BYLAYER	
OBJ_LWT_BYBLOCK	
OBJ_LWT_DEFAULT	
OBJ_LWT_01	
OBJ_LWT_02	
OBJ_LWT_03	
OBJ_LWT_04	
OBJ_LWT_05	
OBJ_LWT_06	
OBJ_LWT_07	
OBJ_LWT_08	
OBJ_LWT_09	
OBJ_LWT_10	
OBJ_LWT_11	
OBJ_LWT_12	
OBJ_LWT_13	
OBJ_LWT_14	
OBJ_LWT_15	
OBJ_LWT_16	
OBJ_LWT_17	
OBJ_LWT_18	
OBJ_LWT_19	
OBJ_LWT_20	
OBJ_LWT_21	
OBJ_LWT_22	
OBJ_LWT_23	
OBJ_LWT_24	

**19.51.1.4 OBJ\_RUBBER\_VALUES** enum [OBJ\\_RUBBER\\_VALUES](#)

Enumerator

OBJ_RUBBER_OFF	
OBJ_RUBBER_ON	
OBJ_RUBBER_CIRCLE_1P_RAD	
OBJ_RUBBER_CIRCLE_1P_DIA	
OBJ_RUBBER_CIRCLE_2P	
OBJ_RUBBER_CIRCLE_3P	
OBJ_RUBBER_CIRCLE_TTR	
OBJ_RUBBER_CIRCLE_TTT	
OBJ_RUBBER_DIMLEADER_LINE	
OBJ_RUBBER_ELLIPSE_LINE	
OBJ_RUBBER_ELLIPSE_MAJORDIAMETER_MINORRADIUS	
OBJ_RUBBER_ELLIPSE_MAJORRADIUS_MINORRADIUS	
OBJ_RUBBER_ELLIPSE_ROTATION	
OBJ_RUBBER_GRIP	
OBJ_RUBBER_LINE	
OBJ_RUBBER_POLYGON	
OBJ_RUBBER_POLYGON_INSCRIBE	
OBJ_RUBBER_POLYGON_CIRCUMSCRIBE	
OBJ_RUBBER_POLYLINE	
OBJ_RUBBER_IMAGE	
OBJ_RUBBER_RECTANGLE	
OBJ_RUBBER_TEXTSINGLE	

**19.51.1.5 OBJ\_SNAP\_VALUES** enum [OBJ\\_SNAP\\_VALUES](#)

Enumerator

OBJ_SNAP_NULL	
OBJ_SNAP_ENDPOINT	
OBJ_SNAP_MIDPOINT	
OBJ_SNAP_CENTER	
OBJ_SNAP_NODE	
OBJ_SNAP_QUADRANT	
OBJ_SNAP_INTERSECTION	
OBJ_SNAP_EXTENSION	
OBJ_SNAP_INSERTION	
OBJ_SNAP_PERPENDICULAR	
OBJ_SNAP_TANGENT	
OBJ_SNAP_NEAREST	
OBJ_SNAP_APPINTERSECTION	
OBJ_SNAP_PARALLEL	

**19.51.1.6 OBJ\_TYPE\_VALUES** enum [OBJ\\_TYPE\\_VALUES](#)

Enumerator

OBJ_TYPE_NULL
OBJ_TYPE_BASE
OBJ_TYPE_ARC
OBJ_TYPE_BLOCK
OBJ_TYPE_CIRCLE
OBJ_TYPE_DIMALIGNED
OBJ_TYPE_DIMANGULAR
OBJ_TYPE_DIMARCLENGTH
OBJ_TYPE_DIMDIAMETER
OBJ_TYPE_DIMLEADER
OBJ_TYPE_DIMLINEAR
OBJ_TYPE_DIMORDINATE
OBJ_TYPE_DIMRADIUS
OBJ_TYPE_ELLIPSE
OBJ_TYPE_ELLIPSEARC
OBJ_TYPE_RUBBER
OBJ_TYPE_GRID
OBJ_TYPE_HATCH
OBJ_TYPE_IMAGE
OBJ_TYPE_INFINITELINE
OBJ_TYPE_LINE
OBJ_TYPE_PATH
OBJ_TYPE_POINT
OBJ_TYPE_POLYGON
OBJ_TYPE_POLYLINE
OBJ_TYPE_RAY
OBJ_TYPE_RECTANGLE
OBJ_TYPE_SLOT
OBJ_TYPE_SPLINE
OBJ_TYPE_TEXTMULTI
OBJ_TYPE_TEXTSINGLE

**19.51.1.7 PREVIEW\_CLONE\_VALUES** enum [PREVIEW\\_CLONE\\_VALUES](#)

Enumerator

PREVIEW_CLONE_NULL
PREVIEW_CLONE_SELECTED
PREVIEW_CLONE_RUBBER

**19.51.1.8 PREVIEW\_MODE\_VALUES** enum [PREVIEW\\_MODE\\_VALUES](#)

Enumerator

PREVIEW_MODE_NULL	
PREVIEW_MODE_MOVE	
PREVIEW_MODE_ROTATE	
PREVIEW_MODE_SCALE	

**19.51.1.9 SPARE\_RUBBER\_VALUES** enum [SPARE\\_RUBBER\\_VALUES](#)

Enumerator

SPARE_RUBBER_OFF	
SPARE_RUBBER_PATH	
SPARE_RUBBER_POLYGON	
SPARE_RUBBER_POLYLINE	

**19.51.2 Variable Documentation****19.51.2.1 ENABLE\_GRID** const char\* const ENABLE\_GRID = "ENABLE\_GRID"**19.51.2.2 ENABLE\_LWT** const char\* const ENABLE\_LWT = "ENABLE\_LWT"**19.51.2.3 ENABLE\_ORTHO** const char\* const ENABLE\_ORTHO = "ENABLE\_ORTHO"**19.51.2.4 ENABLE\_POLAR** const char\* const ENABLE\_POLAR = "ENABLE\_POLAR"**19.51.2.5 ENABLE\_QSNAP** const char\* const ENABLE\_QSNAP = "ENABLE\_QSNAP"

**19.51.2.6 ENABLE\_QTRACK** const char\* const ENABLE\_QTRACK = "ENABLE\_QTRACK"

**19.51.2.7 ENABLE\_REAL** const char\* const ENABLE\_REAL = "ENABLE\_REAL"

**19.51.2.8 ENABLE\_RULER** const char\* const ENABLE\_RULER = "ENABLE\_RULER"

**19.51.2.9 ENABLE\_SNAP** const char\* const ENABLE\_SNAP = "ENABLE\_SNAP"

**19.51.2.10 OBJ\_NAME\_ARC** const char\* const OBJ\_NAME\_ARC = "Arc"

**19.51.2.11 OBJ\_NAME\_BASE** const char\* const OBJ\_NAME\_BASE = "Base"

**19.51.2.12 OBJ\_NAME\_BLOCK** const char\* const OBJ\_NAME\_BLOCK = "Block"

**19.51.2.13 OBJ\_NAME\_CIRCLE** const char\* const OBJ\_NAME\_CIRCLE = "Circle"

**19.51.2.14 OBJ\_NAME\_DIMALIGNED** const char\* const OBJ\_NAME\_DIMALIGNED = "Aligned Dimension"

**19.51.2.15 OBJ\_NAME\_DIMANGULAR** const char\* const OBJ\_NAME\_DIMANGULAR = "Angular Dimension"

**19.51.2.16 OBJ\_NAME\_DIMARCLENGTH** const char\* const OBJ\_NAME\_DIMARCLENGTH = "Arc Length Dimension"

**19.51.2.17 OBJ\_NAME\_DIMDIAMETER** const char\* const OBJ\_NAME\_DIMDIAMETER = "Diameter Dimension"

**19.51.2.18 OBJ\_NAME\_DIMLEADER** const char\* const OBJ\_NAME\_DIMLEADER = "Leader Dimension"

**19.51.2.19 OBJ\_NAME\_DIMLINEAR** const char\* const OBJ\_NAME\_DIMLINEAR = "Linear Dimension"

**19.51.2.20 OBJ\_NAME\_DIMORDINATE** const char\* const OBJ\_NAME\_DIMORDINATE = "Ordinate Dimension"

**19.51.2.21 OBJ\_NAME\_DIMRADIUS** const char\* const OBJ\_NAME\_DIMRADIUS = "Radius Dimension"

**19.51.2.22 OBJ\_NAME\_ELLIPSE** const char\* const OBJ\_NAME\_ELLIPSE = "Ellipse"

**19.51.2.23 OBJ\_NAME\_ELLIPSEARC** const char\* const OBJ\_NAME\_ELLIPSEARC = "Elliptical Arc"

**19.51.2.24 OBJ\_NAME\_GRID** const char\* const OBJ\_NAME\_GRID = "Grid"

**19.51.2.25 OBJ\_NAME\_HATCH** const char\* const OBJ\_NAME\_HATCH = "Hatch"

**19.51.2.26 OBJ\_NAME\_IMAGE** const char\* const OBJ\_NAME\_IMAGE = "Image"

**19.51.2.27 OBJ\_NAME\_INFINITELINE** const char\* const OBJ\_NAME\_INFINITELINE = "Infinite Line"

**19.51.2.28 OBJ\_NAME\_LINE** const char\* const OBJ\_NAME\_LINE = "Line"

**19.51.2.29 OBJ\_NAME\_NULL** const char\* const OBJ\_NAME\_NULL = "Unknown"

**19.51.2.30 OBJ\_NAME\_PATH** const char\* const OBJ\_NAME\_PATH = "Path"

**19.51.2.31 OBJ\_NAME\_POINT** const char\* const OBJ\_NAME\_POINT = "Point"

**19.51.2.32 OBJ\_NAME\_POLYGON** const char\* const OBJ\_NAME\_POLYGON = "Polygon"

**19.51.2.33 OBJ\_NAME\_POLYLINE** const char\* const OBJ\_NAME\_POLYLINE = "Polyline"

**19.51.2.34 OBJ\_NAME\_RAY** const char\* const OBJ\_NAME\_RAY = "Ray"

**19.51.2.35 OBJ\_NAME\_RECTANGLE** const char\* const OBJ\_NAME\_RECTANGLE = "Rectangle"

**19.51.2.36 OBJ\_NAME\_RUBBER** const char\* const OBJ\_NAME\_RUBBER = "Rubber"

**19.51.2.37 OBJ\_NAME\_SLOT** const char\* const OBJ\_NAME\_SLOT = "Slot"

**19.51.2.38 OBJ\_NAME\_SPLINE** const char\* const OBJ\_NAME\_SPLINE = "Spline"

**19.51.2.39 OBJ\_NAME\_TEXTMULTI** const char\* const OBJ\_NAME\_TEXTMULTI = "Multi Line Text"

**19.51.2.40 OBJ\_NAME\_TEXTSINGLE** const char\* const OBJ\_NAME\_TEXTSINGLE = "Single Line Text"

**19.51.2.41 RUBBER\_ROOM** const char\* const RUBBER\_ROOM = "RUBBER\_ROOM"

**19.51.2.42 SCENE\_MOUSE\_POINT** const char\* const SCENE\_MOUSE\_POINT = "SCENE\_MOUSE\_POINT"

**19.51.2.43 SCENE\_QSNAP\_POINT** const char\* const SCENE\_QSNAP\_POINT = "SCENE\_QSNAP\_POINT"

**19.51.2.44 VIEW\_COLOR\_BACKGROUND** const char\* const VIEW\_COLOR\_BACKGROUND = "VIEW\_COLOR←  
\_BACKGROUND"

**19.51.2.45 VIEW\_COLOR\_CROSSHAIR** const char\* const VIEW\_COLOR\_CROSSHAIR = "VIEW\_COLOR←  
CROSSHAIR"

**19.51.2.46 VIEW\_COLOR\_GRID** const char\* const VIEW\_COLOR\_GRID = "VIEW\_COLOR\_GRID"

**19.51.2.47 VIEW\_MOUSE\_POINT** const char\* const VIEW\_MOUSE\_POINT = "VIEW\_MOUSE\_POINT"

## 19.52 object-data.h

[Go to the documentation of this file.](#)

```

00001 #ifndef OBJECT_DATA_H
00002 #define OBJECT_DATA_H
00003
00004 //Custom Data used in QGraphicsItems
00005
00006 // ( int, const QVariant)
00007 //I.E. object.setData(OBJ_TYPE, OBJ_TYPE_LINE);
00008 //I.E. object.setData(OBJ_LAYER, "OUTLINE");
00009 //I.E. object.setData(OBJ_COLOR, 123);
00010 //I.E. object.setData(OBJ_LTYPE, OBJ_LTYPE_CONT);
00011
00012 //Keys
00013 enum OBJ_KEYS {
00014     OBJ_TYPE = 0, //value type - int: See OBJ_TYPE_VALUES
00015     OBJ_NAME = 1, //value type - str: See OBJ_NAME_VALUES
00016     OBJ_LAYER = 2, //value type - str: "USER", "DEFINED", "STRINGS", etc...
00017     OBJ_COLOR = 3, //value type - int: 0-255 //TODO: Use color chart in formats/format-dxf.h for this
00018     OBJ_LTYPE = 4, //value type - int: See OBJ_LTYPE_VALUES
00019     OBJ_LWT = 5, //value type - int: 0-27
00020     OBJ_RUBBER = 6 //value type - int: See OBJ_RUBBER_VALUES
00021 };
00022
00023 //Values
00024 enum OBJ_TYPE_VALUES {
00025     OBJ_TYPE_NULL = 0, //NOTE: Allow this enum to evaluate false
00026     OBJ_TYPE_BASE = 100000, //NOTE: Values >= 65536 ensure compatibility with qgraphicsitem_cast()
00027     OBJ_TYPE_ARC = 100001,
00028     OBJ_TYPE_BLOCK = 100002,
00029     OBJ_TYPE_CIRCLE = 100003,
00030     OBJ_TYPE_DIMALIGNED = 100004,
00031     OBJ_TYPE_DIMANGULAR = 100005,
00032     OBJ_TYPE_DIMARCLENGTH = 100006,
00033     OBJ_TYPE_DIMDIAMETER = 100007,
00034     OBJ_TYPE_DIMLEADER = 100008,
00035     OBJ_TYPE_DIMLINEAR = 100009,
00036     OBJ_TYPE_DIMORDINATE = 100010,
00037     OBJ_TYPE_DIMRADIUS = 100011,
00038     OBJ_TYPE_ELLIPSE = 100012,
00039     OBJ_TYPE_ELLIPSEARC = 100013,
00040     OBJ_TYPE_RUBBER = 100014,
00041     OBJ_TYPE_GRID = 100015,
00042     OBJ_TYPE_HATCH = 100016,
00043     OBJ_TYPE_IMAGE = 100017,
00044     OBJ_TYPE_INFINITELINE = 100018,
00045     OBJ_TYPE_LINE = 100019,
00046     OBJ_TYPE_PATH = 100020,
00047     OBJ_TYPE_POINT = 100021,
00048     OBJ_TYPE_POLYGON = 100022,
00049     OBJ_TYPE_POLYLINE = 100023,
00050     OBJ_TYPE_RAY = 100024,
00051     OBJ_TYPE_RECTANGLE = 100025,
00052     OBJ_TYPE_SLOT = 100026,
00053     OBJ_TYPE_SPLINE = 100027,
00054     OBJ_TYPE_TEXTMULTI = 100028,
00055     OBJ_TYPE_TEXTSINGLE = 100029
00056 };
00057
00058 //OBJ_NAME_VALUES
00059 const char* const OBJ_NAME_NULL = "Unknown";
00060 const char* const OBJ_NAME_BASE = "Base";
00061 const char* const OBJ_NAME_ARC = "Arc";
00062 const char* const OBJ_NAME_BLOCK = "Block";
00063 const char* const OBJ_NAME_CIRCLE = "Circle";
00064 const char* const OBJ_NAME_DIMALIGNED = "Aligned Dimension";
00065 const char* const OBJ_NAME_DIMANGULAR = "Angular Dimension";
00066 const char* const OBJ_NAME_DIMARCLENGTH = "Arc Length Dimension";
00067 const char* const OBJ_NAME_DIMDIAMETER = "Diameter Dimension";
00068 const char* const OBJ_NAME_DIMLEADER = "Leader Dimension";
00069 const char* const OBJ_NAME_DIMLINEAR = "Linear Dimension";
00070 const char* const OBJ_NAME_DIMORDINATE = "Ordinate Dimension";
00071 const char* const OBJ_NAME_DIMRADIUS = "Radius Dimension";
00072 const char* const OBJ_NAME_ELLIPSE = "Ellipse";
00073 const char* const OBJ_NAME_ELLIPSEARC = "Elliptical Arc";
00074 const char* const OBJ_NAME_RUBBER = "Rubber";
00075 const char* const OBJ_NAME_GRID = "Grid";
00076 const char* const OBJ_NAME_HATCH = "Hatch";
00077 const char* const OBJ_NAME_IMAGE = "Image";
00078 const char* const OBJ_NAME_INFINITELINE = "Infinite Line";
00079 const char* const OBJ_NAME_LINE = "Line";
00080 const char* const OBJ_NAME_PATH = "Path";
00081 const char* const OBJ_NAME_POINT = "Point";
00082 const char* const OBJ_NAME_POLYGON = "Polygon";
00083 const char* const OBJ_NAME_POLYLINE = "Polyline";

```

```
00084 const char* const OBJ_NAME_RAY = "Ray";
00085 const char* const OBJ_NAME_RECTANGLE = "Rectangle";
00086 const char* const OBJ_NAME_SLOT = "Slot";
00087 const char* const OBJ_NAME_SPLINE = "Spline";
00088 const char* const OBJ_NAME_TEXTMULTI = "Multi Line Text";
00089 const char* const OBJ_NAME_TEXTSINGLE = "Single Line Text";
00090
00091 enum OBJ_LTYPE_VALUES {
00092 //CAD Linetypes
00093 OBJ_LTYPE_CONT = 0,
00094 OBJ_LTYPE_CENTER = 1,
00095 OBJ_LTYPE_DOT = 2,
00096 OBJ_LTYPE_HIDDEN = 3,
00097 OBJ_LTYPE_PHANTOM = 4,
00098 OBJ_LTYPE_ZIGZAG = 5,
00099 //Embroidery Stitchtypes
00100 OBJ_LTYPE_RUNNING = 6, // _____
00101 OBJ_LTYPE_SATIN = 7, // vvvvvvvvvvvv
00102 OBJ_LTYPE_FISHBONE = 8, // >>>>>
00103 };
00104
00105 enum OBJ_LWT_VALUES {
00106 OBJ_LWT_BYLAYER = -2,
00107 OBJ_LWT_BYBLOCK = -1,
00108 OBJ_LWT_DEFAULT = 0,
00109 OBJ_LWT_01 = 1,
00110 OBJ_LWT_02 = 2,
00111 OBJ_LWT_03 = 3,
00112 OBJ_LWT_04 = 4,
00113 OBJ_LWT_05 = 5,
00114 OBJ_LWT_06 = 6,
00115 OBJ_LWT_07 = 7,
00116 OBJ_LWT_08 = 8,
00117 OBJ_LWT_09 = 9,
00118 OBJ_LWT_10 = 10,
00119 OBJ_LWT_11 = 11,
00120 OBJ_LWT_12 = 12,
00121 OBJ_LWT_13 = 13,
00122 OBJ_LWT_14 = 14,
00123 OBJ_LWT_15 = 15,
00124 OBJ_LWT_16 = 16,
00125 OBJ_LWT_17 = 17,
00126 OBJ_LWT_18 = 18,
00127 OBJ_LWT_19 = 19,
00128 OBJ_LWT_20 = 20,
00129 OBJ_LWT_21 = 21,
00130 OBJ_LWT_22 = 22,
00131 OBJ_LWT_23 = 23,
00132 OBJ_LWT_24 = 24
00133 };
00134
00135 enum OBJ_SNAP_VALUES {
00136 OBJ_SNAP_NULL = 0, //NOTE: Allow this enum to evaluate false
00137 OBJ_SNAP_ENDPOINT = 1,
00138 OBJ_SNAP_MIDPOINT = 2,
00139 OBJ_SNAP_CENTER = 3,
00140 OBJ_SNAP_NODE = 4,
00141 OBJ_SNAP_QUADRANT = 5,
00142 OBJ_SNAP_INTERSECTION = 6,
00143 OBJ_SNAP_EXTENSION = 7,
00144 OBJ_SNAP_INSERTION = 8,
00145 OBJ_SNAP_PERPENDICULAR = 9,
00146 OBJ_SNAP_TANGENT = 10,
00147 OBJ_SNAP_NEAREST = 11,
00148 OBJ_SNAP_APPINTERSECTION = 12,
00149 OBJ_SNAP_PARALLEL = 13
00150 };
00151
00152 enum OBJ_RUBBER_VALUES {
00153 OBJ_RUBBER_OFF = 0, //NOTE: Allow this enum to evaluate false
00154 OBJ_RUBBER_ON = 1, //NOTE: Allow this enum to evaluate true
00155
00156 OBJ_RUBBER_CIRCLE_1P_RAD,
00157 OBJ_RUBBER_CIRCLE_1P_DIA,
00158 OBJ_RUBBER_CIRCLE_2P,
00159 OBJ_RUBBER_CIRCLE_3P,
00160 OBJ_RUBBER_CIRCLE_TTR,
00161 OBJ_RUBBER_CIRCLE_TTT,
00162
00163 OBJ_RUBBER_DIMLEADER_LINE,
00164
00165 OBJ_RUBBER_ELLIPSE_LINE,
00166 OBJ_RUBBER_ELLIPSE_MAJORDIAMETER_MINORRADIUS,
00167 OBJ_RUBBER_ELLIPSE_MAJORRADIIUS_MINORRADIUS,
00168 OBJ_RUBBER_ELLIPSE_ROTATION,
00169
00170 OBJ_RUBBER_GRIP,
```

```

00171
00172     OBJ_RUBBER_LINE,
00173
00174     OBJ_RUBBER_POLYGON,
00175     OBJ_RUBBER_POLYGON_INSCRIBE,
00176     OBJ_RUBBER_POLYGON_CIRCUMSCRIBE,
00177
00178     OBJ_RUBBER_POLYLINE,
00179
00180     OBJ_RUBBER_IMAGE,
00181
00182     OBJ_RUBBER_RECTANGLE,
00183
00184     OBJ_RUBBER_TEXTSINGLE
00185 };
00186
00187 enum SPARE_RUBBER_VALUES {
00188     SPARE_RUBBER_OFF = 0, //NOTE: Allow this enum to evaluate false
00189     SPARE_RUBBER_PATH,
00190     SPARE_RUBBER_POLYGON,
00191     SPARE_RUBBER_POLYLINE
00192 };
00193
00194 enum PREVIEW_CLONE_VALUES {
00195     PREVIEW_CLONE_NULL = 0, //NOTE: Allow this enum to evaluate false
00196     PREVIEW_CLONE_SELECTED,
00197     PREVIEW_CLONE_RUBBER
00198 };
00199
00200 enum PREVIEW_MODE_VALUES {
00201     PREVIEW_MODE_NULL = 0, //NOTE: Allow this enum to evaluate false
00202     PREVIEW_MODE_MOVE,
00203     PREVIEW_MODE_ROTATE,
00204     PREVIEW_MODE_SCALE
00205 };
00206
00207 const char* const ENABLE_SNAP      = "ENABLE_SNAP";
00208 const char* const ENABLE_GRID     = "ENABLE_GRID";
00209 const char* const ENABLE_RULER    = "ENABLE_RULER";
00210 const char* const ENABLE_ORTHO    = "ENABLE_ORTHO";
00211 const char* const ENABLE_POLAR    = "ENABLE_POLAR";
00212 const char* const ENABLE_QSNAP    = "ENABLE_QSNAP";
00213 const char* const ENABLE_QTRACK   = "ENABLE_QTRACK";
00214 const char* const ENABLE_LWT     = "ENABLE_LWT";
00215 const char* const ENABLE_REAL    = "ENABLE_REAL";
00216
00217 const char* const SCENE_QSNAP_POINT = "SCENE_QSNAP_POINT";
00218 const char* const SCENE_MOUSE_POINT = "SCENE_MOUSE_POINT";
00219 const char* const VIEW_MOUSE_POINT = "VIEW_MOUSE_POINT";
00220 const char* const RUBBER_ROOM     = "RUBBER_ROOM";
00221
00222 const char* const VIEW_COLOR_BACKGROUND = "VIEW_COLOR_BACKGROUND";
00223 const char* const VIEW_COLOR_CROSSHAIR = "VIEW_COLOR_CROSSHAIR";
00224 const char* const VIEW_COLOR_GRID    = "VIEW_COLOR_GRID";
00225
00226 #endif
00227
00228 /* kate: bom off; indent-mode cstyle; indent-width 4; replace-trailing-space-save on; */

```

## 19.53 embroidermodder2/object-dimleader.cpp File Reference

```

#include "object-dimleader.h"
#include "object-data.h"
#include <QPainter>
#include <QStyleOption>
#include <QGraphicsScene>

```

## 19.54 embroidermodder2/object-dimleader.h File Reference

```
#include "object-base.h"
```

## Classes

- class DimLeaderObject

## 19.55 object-dimleader.h

[Go to the documentation of this file.](#)

```

00001 #ifndef OBJECT_DIMLEADER_H
00002 #define OBJECT_DIMLEADER_H
00003
00004 #include "object-base.h"
00005
00006 class DimLeaderObject : public BaseObject
00007 {
00008     public:
00009         DimLeaderObject(qreal x1, qreal y1, qreal x2, qreal y2, QRgb rgb, QGraphicsItem* parent = 0);
00010         DimLeaderObject(DimLeaderObject* obj, QGraphicsItem* parent = 0);
00011         ~DimLeaderObject();
00012
00013     enum ArrowStyle
00014     {
00015         NoArrow, //NOTE: Allow this enum to evaluate false
00016         Open,
00017         Closed,
00018         Dot,
00019         Box,
00020         Tick
00021     };
00022
00023     enum lineStyle
00024     {
00025         NoLine, //NOTE: Allow this enum to evaluate false
00026         Flared,
00027         Fletching
00028     };
00029
00030     enum { Type = OBJ_TYPE_DIMLEADER };
00031     virtual int type() const { return Type; }
00032
00033     QPointF objectEndPoint1() const;
00034     QPointF objectEndPoint2() const;
00035     QPointF objectMidPoint() const;
00036     qreal objectX1() const { return objectEndPoint1().x(); }
00037     qreal objectY1() const { return objectEndPoint1().y(); }
00038     qreal objectX2() const { return objectEndPoint2().x(); }
00039     qreal objectY2() const { return objectEndPoint2().y(); }
00040     qreal objectDeltaX() const { return (objectX2() - objectX1()); }
00041     qreal objectDeltaY() const { return (objectY2() - objectY1()); }
00042     qreal objectAngle() const;
00043     qreal objectLength() const { return line().length(); }
00044
00045     void setObjectEndPoint1(const QPointF& endPt1);
00046     void setObjectEndPoint1(qreal x1, qreal y1);
00047     void setObjectEndPoint2(const QPointF& endPt2);
00048     void setObjectEndPoint2(qreal x2, qreal y2);
00049     void setObjectX1(qreal x) { setObjectEndPoint1(x, objectY1()); }
00050     void setObjectY1(qreal y) { setObjectEndPoint1(objectX1(), y); }
00051     void setObjectX2(qreal x) { setObjectEndPoint2(x, objectY2()); }
00052     void setObjectY2(qreal y) { setObjectEndPoint2(objectX2(), y); }
00053
00054     void updateRubber(QPainter* painter = 0);
00055     virtual void vulcanize();
00056     virtual QPointF mouseSnapPoint(const QPointF& mousePoint);
00057     virtual QList<QPointF> allGripPoints();
00058     virtual void gripEdit(const QPointF& before, const QPointF& after);
00059     protected:
00060     void paint(QPainter*, const QStyleOptionGraphicsItem*, QWidget* );
00061     private:
00062     void init(qreal x1, qreal y1, qreal x2, qreal y2, QRgb rgb, Qt::PenStyle lineType);
00063
00064     bool curved;
00065     bool filled;
00066     void updateLeader();
00067     QPainterPath lineStylePath;
00068     QPainterPath arrowStylePath;
00069     qreal arrowStyleAngle;
00070     qreal arrowStyleLength;
00071     qreal lineStyleAngle;
00072     qreal lineStyleLength;
00073 };
00074
00075 #endif
00076
00077 /* kate: bom off; indent-mode cstyle; indent-width 4; replace-trailing-space-save on; */

```

## 19.56 embroidermodder2/object-ellipse.cpp File Reference

```
#include "object-ellipse.h"
#include "object-data.h"
#include <QPainter>
#include <QStyleOption>
#include <QGraphicsScene>
```

## 19.57 embroidermodder2/object-ellipse.h File Reference

```
#include "object-base.h"
```

### Classes

- class [EllipseObject](#)

## 19.58 object-ellipse.h

[Go to the documentation of this file.](#)

```
00001 #ifndef OBJECT_ELLIPSE_H
00002 #define OBJECT_ELLIPSE_H
00003
00004 #include "object-base.h"
00005
00006 class EllipseObject : public BaseObject
00007 {
00008 public:
00009     EllipseObject(qreal centerX, qreal centerY, qreal width, qreal height, QRgb rgb, QGraphicsItem*
00010     parent = 0);
00010     EllipseObject(EllipseObject* obj, QGraphicsItem* parent = 0);
00011     ~EllipseObject();
00012
00013     enum { Type = OBJ_TYPE_ELLIPSE };
00014     virtual int type() const { return Type; }
00015
00016     QPainterPath objectSavePath() const;
00017
00018     QPointF objectCenter() const { return scenePos(); }
00019     qreal objectCenterX() const { return scenePos().x(); }
00020     qreal objectCenterY() const { return scenePos().y(); }
00021     qreal objectRadiusMajor() const { return qMax(rect().width(), rect().height())/2.0*scale(); }
00022     qreal objectRadiusMinor() const { return qMin(rect().width(), rect().height())/2.0*scale(); }
00023     qreal objectDiameterMajor() const { return qMax(rect().width(), rect().height())*scale(); }
00024     qreal objectDiameterMinor() const { return qMin(rect().width(), rect().height())*scale(); }
00025     qreal objectWidth() const { return rect().width()*scale(); }
00026     qreal objectHeight() const { return rect().height()*scale(); }
00027     QPointF objectQuadrant0() const;
00028     QPointF objectQuadrant90() const;
00029     QPointF objectQuadrant180() const;
00030     QPointF objectQuadrant270() const;
00031
00032     void setObjectSize(qreal width, qreal height);
00033     void setObjectCenter(const QPointF& center);
00034     void setObjectCenter(qreal centerX, qreal centerY);
00035     void setObjectCenterX(qreal centerX);
00036     void setObjectCenterY(qreal centerY);
00037     void setObjectRadiusMajor(qreal radius);
00038     void setObjectRadiusMinor(qreal radius);
00039     void setObjectDiameterMajor(qreal diameter);
00040     void setObjectDiameterMinor(qreal diameter);
00041
00042     void updateRubber(QPainter* painter = 0);
00043     virtual void vulcanize();
00044     virtual QPointF mouseSnapPoint(const QPointF& mousePoint);
00045     virtual QList<QPointF> allGripPoints();
00046     virtual void gripEdit(const QPointF& before, const QPointF& after);
00047 protected:
```

```

00048     void paint(QPainter*, const QStyleOptionGraphicsItem*, QWidget*);
00049 private:
00050     void init(qreal centerX, qreal centerY, qreal width, qreal height, QRgb rgb, Qt::PenStyle
00051     lineType);
00052 };
00053
00054 #endif
00055
00056 /* kate: bom off; indent-mode cstyle; indent-width 4; replace-trailing-space-save on; */

```

## 19.59 embroidermodder2/object-image.cpp File Reference

```

#include "object-image.h"
#include "object-data.h"
#include <QPainter>
#include <QStyleOption>
#include <QGraphicsScene>

```

## 19.60 embroidermodder2/object-image.h File Reference

```
#include "object-base.h"
```

### Classes

- class [ImageObject](#)

## 19.61 object-image.h

[Go to the documentation of this file.](#)

```

00001 #ifndef OBJECT_IMAGE_H
00002 #define OBJECT_IMAGE_H
00003
00004 #include "object-base.h"
00005
00006 class ImageObject : public BaseObject
00007 {
00008 public:
00009     ImageObject(qreal x, qreal y, qreal w, qreal h, QRgb rgb, QGraphicsItem* parent = 0);
00010     ImageObject(ImageObject* obj, QGraphicsItem* parent = 0);
00011     ~ImageObject();
00012
00013     enum { Type = OBJ_TYPE_IMAGE };
00014     virtual int type() const { return Type; }
00015
00016     QPointF objectTopLeft() const;
00017     QPointF objectTopRight() const;
00018     QPointF objectBottomLeft() const;
00019     QPointF objectBottomRight() const;
00020     qreal objectWidth() const { return rect().width()*scale(); }
00021     qreal objectHeight() const { return rect().height()*scale(); }
00022     qreal objectArea() const { return qAbs(objectWidth()*objectHeight()); }
00023
00024     void setObjectRect(qreal x, qreal y, qreal w, qreal h);
00025
00026     void updateRubber(QPainter* painter = 0);
00027     virtual void vulcanize();
00028     virtual QPointF mouseSnapPoint(const QPointF& mousePoint);
00029     virtual QList<QPointF> allGripPoints();
00030     virtual void gripEdit(const QPointF& before, const QPointF& after);
00031 protected:
00032     void paint(QPainter*, const QStyleOptionGraphicsItem*, QWidget*);
00033 private:
00034     void init(qreal x, qreal y, qreal w, qreal h, QRgb rgb, Qt::PenStyle lineType);
00035     void updatePath();
00036 };
00037
00038 #endif
00039
00040 /* kate: bom off; indent-mode cstyle; indent-width 4; replace-trailing-space-save on; */

```

## 19.62 **embroidermodder2/object-line.cpp** File Reference

```
#include "object-line.h"
#include "object-data.h"
#include <QPainter>
#include <QStyleOption>
#include <QGraphicsScene>
```

## 19.63 **embroidermodder2/object-line.h** File Reference

```
#include "object-base.h"
```

### Classes

- class [LineObject](#)

## 19.64 **object-line.h**

[Go to the documentation of this file.](#)

```
00001 #ifndef OBJECT_LINE_H
00002 #define OBJECT_LINE_H
00003
00004 #include "object-base.h"
00005
00006 class LineObject : public BaseObject
00007 {
00008 public:
00009     LineObject(qreal x1, qreal y1, qreal x2, qreal y2, QRgb rgb, QGraphicsItem* parent = 0);
00010     LineObject(LineObject* obj, QGraphicsItem* parent = 0);
00011     ~LineObject();
00012
00013     enum { Type = OBJ_TYPE_LINE };
00014     virtual int type() const { return Type; }
00015
00016     QPainterPath objectSavePath() const;
00017
00018     QPointF objectEndPoint1() const { return scenePos(); }
00019     QPointF objectEndPoint2() const;
00020     QPointF objectMidPoint() const;
00021     qreal objectX1() const { return objectEndPoint1().x(); }
00022     qreal objectY1() const { return objectEndPoint1().y(); }
00023     qreal objectX2() const { return objectEndPoint2().x(); }
00024     qreal objectY2() const { return objectEndPoint2().y(); }
00025     qreal objectDeltaX() const { return (objectX2() - objectX1()); }
00026     qreal objectDeltaY() const { return (objectY2() - objectY1()); }
00027     qreal objectAngle() const;
00028     qreal objectLength() const { return line().length()*scale(); }
00029
00030     void setObjectEndPoint1(const QPointF& endPt1);
00031     void setObjectEndPoint1(qreal x1, qreal y1);
00032     void setObjectEndPoint2(const QPointF& endPt2);
00033     void setObjectEndPoint2(qreal x2, qreal y2);
00034     void setObjectX1(qreal x) { setObjectEndPoint1(x, objectY1()); }
00035     void setObjectY1(qreal y) { setObjectEndPoint1(objectX1(), y); }
00036     void setObjectX2(qreal x) { setObjectEndPoint2(x, objectY2()); }
00037     void setObjectY2(qreal y) { setObjectEndPoint2(objectX2(), y); }
00038
00039     void updateRubber(QPainter* painter = 0);
00040     virtual void vulcanize();
00041     virtual QPointF mouseSnapPoint(const QPointF& mousePoint);
00042     virtual QList<QPointF> allGripPoints();
00043     virtual void gripEdit(const QPointF& before, const QPointF& after);
00044 protected:
00045     void paint(QPainter*, const QStyleOptionGraphicsItem*, QWidget*);
00046 private:
00047     void init(qreal x1, qreal y1, qreal x2, qreal y2, QRgb rgb, Qt::PenStyle lineType);
00048 };
00049
00050 #endif
00051 /* kate: bom off; indent-mode cstyle; indent-width 4; replace-trailing-space-save on; */
```

## 19.65 embroidermodder2/object-path.cpp File Reference

```
#include "object-path.h"
#include "object-data.h"
#include <QPainter>
#include <QStyleOption>
#include <QGraphicsScene>
#include <QMessageBox>
```

## 19.66 embroidermodder2/object-path.h File Reference

```
#include "object-base.h"
```

### Classes

- class [PathObject](#)

## 19.67 object-path.h

[Go to the documentation of this file.](#)

```
00001 #ifndef OBJECT_PATH_H
00002 #define OBJECT_PATH_H
00003
00004 #include "object-base.h"
00005
00006 class PathObject : public BaseObject
00007 {
00008 public:
00009     PathObject(qreal x, qreal y, const QPainterPath p, QRgb rgb, QGraphicsItem* parent = 0);
00010     PathObject(PathObject* obj, QGraphicsItem* parent = 0);
00011     ~PathObject();
00012
00013     enum { Type = OBJ_TYPE_PATH };
00014     virtual int type() const { return Type; }
00015
00016     QPainterPath objectCopyPath() const;
00017     QPainterPath objectSavePath() const;
00018
00019     QPointF objectPos() const { return scenePos(); }
00020     qreal objectX() const { return scenePos().x(); }
00021     qreal objectY() const { return scenePos().y(); }
00022
00023     void setObjectPos(const QPointF& point) { setPos(point.x(), point.y()); }
00024     void setObjectPos(qreal x, qreal y) { setPos(x, y); }
00025     void setObjectX(qreal x) { setObjectPos(x, objectY()); }
00026     void setObjectY(qreal y) { setObjectPos(objectX(), y); }
00027
00028     void updateRubber(QPainter* painter = 0);
00029     virtual void vulcanize();
00030     virtual QPointF mouseSnapPoint(const QPointF& mousePoint);
00031     virtual QList<QPointF> allGripPoints();
00032     virtual void gripEdit(const QPointF& before, const QPointF& after);
00033 protected:
00034     void paint(QPainter*, const QStyleOptionGraphicsItem*, QWidget* );
00035 private:
00036     void init(qreal x, qreal y, const QPainterPath& p, QRgb rgb, Qt::PenStyle lineType);
00037     void updatePath(const QPainterPath& p);
00038     QPainterPath normalPath;
00039     //TODO: make paths similar to polylines. Review and implement any missing functions/members.
00040 };
00041
00042 #endif
00043
00044 /* kate: bom off; indent-mode cstyle; indent-width 4; replace-trailing-space-save on; */
```

## 19.68 embroidermodder2/object-point.cpp File Reference

```
#include "object-point.h"
#include "object-data.h"
#include <QPainter>
#include <QStyleOption>
#include <QGraphicsScene>
```

## 19.69 embroidermodder2/object-point.h File Reference

```
#include "object-base.h"
```

### Classes

- class [PointObject](#)

## 19.70 object-point.h

[Go to the documentation of this file.](#)

```
00001 #ifndef OBJECT_POINT_H
00002 #define OBJECT_POINT_H
00003
00004 #include "object-base.h"
00005
00006 class PointObject : public BaseObject
00007 {
00008 public:
00009     PointObject(qreal x, qreal y, QRgb rgb, QGraphicsItem* parent = 0);
00010     PointObject(PointObject* obj, QGraphicsItem* parent = 0);
00011     ~PointObject();
00012
00013     enum { Type = OBJ_TYPE_POINT };
00014     virtual int type() const { return Type; }
00015
00016     QPainterPath objectSavePath() const;
00017
00018     QPointF objectPos() const { return scenePos(); }
00019     qreal objectX() const { return scenePos().x(); }
00020     qreal objectY() const { return scenePos().y(); }
00021
00022     void setObjectPos(const QPointF& point) { setPos(point.x(), point.y()); }
00023     void setObjectPos(qreal x, qreal y) { setPos(x, y); }
00024     void setObjectX(qreal x) { setObjectPos(x, objectY()); }
00025     void setObjectY(qreal y) { setObjectPos(objectX(), y); }
00026
00027     void updateRubber(QPainter* painter = 0);
00028     virtual void vulcanize();
00029     virtual QPointF mouseSnapPoint(const QPointF& mousePoint);
00030     virtual QList<QPointF> allGripPoints();
00031     virtual void gripEdit(const QPointF& before, const QPointF& after);
00032 protected:
00033     void paint(QPainter*, const QStyleOptionGraphicsItem*, QWidget*);
00034 private:
00035     void init(qreal x, qreal y, QRgb rgb, Qt::PenStyle lineType);
00036 };
00037
00038 #endif
00039
00040 /* kate: bom off; indent-mode cstyle; indent-width 4; replace-trailing-space-save on; */
```

## 19.71 embroidermodder2/object-polygon.cpp File Reference

```
#include "object-polygon.h"
#include "object-data.h"
#include <QPainter>
#include <QStyleOption>
#include <QGraphicsScene>
#include <QMessageBox>
```

## 19.72 embroidermodder2/object-polygon.h File Reference

```
#include "object-base.h"
```

### Classes

- class [PolygonObject](#)

## 19.73 object-polygon.h

[Go to the documentation of this file.](#)

```
00001 #ifndef OBJECT_POLYGON_H
00002 #define OBJECT_POLYGON_H
00003
00004 #include "object-base.h"
00005
00006 class PolygonObject : public BaseObject
00007 {
00008 public:
00009     PolygonObject(qreal x, qreal y, const QPainterPath& p, QRgb rgb, QGraphicsItem* parent = 0);
00010     PolygonObject(PolygonObject* obj, QGraphicsItem* parent = 0);
00011     ~PolygonObject();
00012
00013     enum { Type = OBJ_TYPE_POLYGON };
00014     virtual int type() const { return Type; }
00015
00016     QPainterPath objectCopyPath() const;
00017     QPainterPath objectSavePath() const;
00018
00019     QPointF objectPos() const { return scenePos(); }
00020     qreal objectX() const { return scenePos().x(); }
00021     qreal objectY() const { return scenePos().y(); }
00022
00023     void setObjectPos(const QPointF& point) { setPos(point.x(), point.y()); }
00024     void setObjectPos(qreal x, qreal y) { setPos(x, y); }
00025     void setObjectX(qreal x) { setObjectPos(x, objectY()); }
00026     void setObjectY(qreal y) { setObjectPos(objectX(), y); }
00027
00028     void updateRubber(QPainter* painter = 0);
00029     virtual void vulcanize();
00030     virtual QPointF mouseSnapPoint(const QPointF& mousePoint);
00031     virtual QList<QPointF> allGripPoints();
00032     virtual void gripEdit(const QPointF& before, const QPointF& after);
00033 protected:
00034     void paint(QPainter*, const QStyleOptionGraphicsItem*, QWidget* );
00035 private:
00036     void init(qreal x, qreal y, const QPainterPath& p, QRgb rgb, Qt::PenStyle lineType);
00037     void updatePath(const QPainterPath& p);
00038     QPainterPath normalPath;
00039     int findIndex(const QPointF& point);
00040     int gripIndex;
00041 };
00042
00043 #endif
00044
00045 /* kate: bom off; indent-mode cstyle; indent-width 4; replace-trailing-space-save on; */
```

## 19.74 embroidermodder2/object-polyline.cpp File Reference

```
#include "object-polyline.h"
#include "object-data.h"
#include <QPainter>
#include <QStyleOption>
#include <QGraphicsScene>
#include <QMessageBox>
```

## 19.75 embroidermodder2/object-polyline.h File Reference

```
#include "object-base.h"
```

### Classes

- class [PolylineObject](#)

## 19.76 object-polyline.h

[Go to the documentation of this file.](#)

```
00001 #ifndef OBJECT_POLYLINE_H
00002 #define OBJECT_POLYLINE_H
00003
00004 #include "object-base.h"
00005
00006 class PolylineObject : public BaseObject
00007 {
00008 public:
00009     PolylineObject(qreal x, qreal y, const QPainterPath& p, QRgb rgb, QGraphicsItem* parent = 0);
00010     PolylineObject(PolylineObject* obj, QGraphicsItem* parent = 0);
00011     ~PolylineObject();
00012
00013     enum { Type = OBJ_TYPE_POLYLINE };
00014     virtual int type() const { return Type; }
00015
00016     QPainterPath objectCopyPath() const;
00017     QPainterPath objectSavePath() const;
00018
00019     QPointF objectPos() const { return scenePos(); }
00020     qreal objectX() const { return scenePos().x(); }
00021     qreal objectY() const { return scenePos().y(); }
00022
00023     void setObjectPos(const QPointF& point) { setPos(point.x(), point.y()); }
00024     void setObjectPos(qreal x, qreal y) { setPos(x, y); }
00025     void setObjectX(qreal x) { setObjectPos(x, objectY()); }
00026     void setObjectY(qreal y) { setObjectPos(objectX(), y); }
00027
00028     void updateRubber(QPainter* painter = 0);
00029     virtual void vulcanize();
00030     virtual QPointF mouseSnapPoint(const QPointF& mousePoint);
00031     virtual QList<QPointF> allGripPoints();
00032     virtual void gripEdit(const QPointF& before, const QPointF& after);
00033 protected:
00034     void paint(QPainter*, const QStyleOptionGraphicsItem*, QWidget* );
00035 private:
00036     void init(qreal x, qreal y, const QPainterPath& p, QRgb rgb, Qt::PenStyle lineType);
00037     void updatePath(const QPainterPath& p);
00038     QPainterPath normalPath;
00039     int findIndex(const QPointF& point);
00040     int gripIndex;
00041 };
00042
00043 #endif
00044
00045 /* kate: bom off; indent-mode cstyle; indent-width 4; replace-trailing-space-save on; */
```

## 19.77 embroidermodder2/object-rect.cpp File Reference

```
#include "object-rect.h"
#include "object-data.h"
#include <QPainter>
#include <QStyleOption>
#include <QGraphicsScene>
```

## 19.78 embroidermodder2/object-rect.h File Reference

```
#include "object-base.h"
```

### Classes

- class [RectObject](#)

## 19.79 object-rect.h

[Go to the documentation of this file.](#)

```
00001 #ifndef OBJECT_RECT_H
00002 #define OBJECT_RECT_H
00003
00004 #include "object-base.h"
00005
00006 class RectObject : public BaseObject
00007 {
00008 public:
00009     RectObject(qreal x, qreal y, qreal w, qreal h, QRgb rgb, QGraphicsItem* parent = 0);
00010     RectObject(RectObject* obj, QGraphicsItem* parent = 0);
00011     ~RectObject();
00012
00013     enum { Type = OBJ_TYPE_RECTANGLE };
00014     virtual int type() const { return Type; }
00015
00016     QPainterPath objectSavePath() const;
00017
00018     QPointF objectPos() const { return scenePos(); }
00019
00020     QPointF objectTopLeft() const;
00021     QPointF objectTopRight() const;
00022     QPointF objectBottomLeft() const;
00023     QPointF objectBottomRight() const;
00024     qreal objectWidth() const { return rect().width()*scale(); }
00025     qreal objectHeight() const { return rect().height()*scale(); }
00026     qreal objectArea() const { return qAbs(objectWidth()*objectHeight()); }
00027
00028     void setObjectRect(qreal x, qreal y, qreal w, qreal h);
00029
00030     void updateRubber(QPainter* painter = 0);
00031     virtual void vulcanize();
00032     virtual QPointF mouseSnapPoint(const QPointF& mousePoint);
00033     virtual QList<QPointF> allGripPoints();
00034     virtual void gripEdit(const QPointF& before, const QPointF& after);
00035 protected:
00036     void paint(QPainter*, const QStyleOptionGraphicsItem*, QWidget* );
00037 private:
00038     void init(qreal x, qreal y, qreal w, qreal h, QRgb rgb, Qt::PenStyle lineType);
00039     void updatePath();
00040 };
00041
00042 #endif
00043
00044 /* kate: bom off; indent-mode cstyle; indent-width 4; replace-trailing-space-save on; */
```

## 19.80 embroidermodder2/object-save.cpp File Reference

```
#include "object-save.h"
#include "object-data.h"
#include "object-arc.h"
#include "object-circle.h"
#include "object-dimleader.h"
#include "object-ellipse.h"
#include "object-line.h"
#include "object-point.h"
#include "object-polygon.h"
#include "object-polyline.h"
#include "object-rect.h"
#include "object-textsingle.h"
#include "embroidery.h"
#include <QGraphicsScene>
#include <QGraphicsItem>
```

## 19.81 embroidermodder2/object-save.h File Reference

```
#include "embroidery.h"
#include <QObject>
#include <QPainterPath>
```

### Classes

- class [SaveObject](#)

## 19.82 object-save.h

[Go to the documentation of this file.](#)

```
00001 #ifndef OBJECT_SAVE_H
00002 #define OBJECT_SAVE_H
00003
00004 #include "embroidery.h"
00005
00006 #include <QObject>
00007 #include <QPainterPath>
00008
00009 QT_BEGIN_NAMESPACE
00010 class QGraphicsItem;
00011 class QGraphicsScene;
00012 QT_END_NAMESPACE
00013
00014 class SaveObject : public QObject
00015 {
00016     Q_OBJECT
00017
00018 public:
00019     SaveObject(QGraphicsScene* theScene, QObject* parent = 0);
00020     ~SaveObject();
00021
00022     bool save(const QString &fileName);
00023
00024     void addArc      (EmbPattern* pattern, QGraphicsItem* item);
00025     void addBlock    (EmbPattern* pattern, QGraphicsItem* item);
00026     void addCircle   (EmbPattern* pattern, QGraphicsItem* item);
00027     void addDimAligned(EmbPattern* pattern, QGraphicsItem* item);
00028     void addDimAngular(EmbPattern* pattern, QGraphicsItem* item);
00029     void addDimArcLength(EmbPattern* pattern, QGraphicsItem* item);
00030     void addDimDiameter(EmbPattern* pattern, QGraphicsItem* item);
```

```

00031     void addDimLeader    (EmbPattern* pattern, QGraphicsItem* item);
00032     void addDimLinear   (EmbPattern* pattern, QGraphicsItem* item);
00033     void addDimOrdinate (EmbPattern* pattern, QGraphicsItem* item);
00034     void addDimRadius   (EmbPattern* pattern, QGraphicsItem* item);
00035     void addEllipse      (EmbPattern* pattern, QGraphicsItem* item);
00036     void addEllipseArc  (EmbPattern* pattern, QGraphicsItem* item);
00037     void addGrid         (EmbPattern* pattern, QGraphicsItem* item);
00038     void addHatch        (EmbPattern* pattern, QGraphicsItem* item);
00039     void addImage        (EmbPattern* pattern, QGraphicsItem* item);
00040     void addInfiniteLine (EmbPattern* pattern, QGraphicsItem* item);
00041     void addLine         (EmbPattern* pattern, QGraphicsItem* item);
00042     void addPath         (EmbPattern* pattern, QGraphicsItem* item);
00043     void addPoint        (EmbPattern* pattern, QGraphicsItem* item);
00044     void addPolygon      (EmbPattern* pattern, QGraphicsItem* item);
00045     void addPolyline     (EmbPattern* pattern, QGraphicsItem* item);
00046     void addRay          (EmbPattern* pattern, QGraphicsItem* item);
00047     void addRectangle    (EmbPattern* pattern, QGraphicsItem* item);
00048     void addSlot         (EmbPattern* pattern, QGraphicsItem* item);
00049     void addSpline        (EmbPattern* pattern, QGraphicsItem* item);
00050     void addTextMulti   (EmbPattern* pattern, QGraphicsItem* item);
00051     void addTextSingle  (EmbPattern* pattern, QGraphicsItem* item);
00052
00053 private:
00054     QGraphicsScene* gscene;
00055     int formatType;
00056
00057     void toPolyline(EmbPattern* pattern, const QPointF& objPos, const QPainterPath& objPath, const
00058                     QString& layer, const QColor& color, const QString& lineType, const QString& lineWeight);
00058 };
00059
00060 #endif
00061
00062 /* kate: bom off; indent-mode cstyle; indent-width 4; replace-trailing-space-save on; */

```

## 19.83 embroidermodder2/object-textsingle.cpp File Reference

```

#include "object-textsingle.h"
#include "object-data.h"
#include <QPainter>
#include <QStyleOption>
#include <QGraphicsScene>

```

## 19.84 embroidermodder2/object-textsingle.h File Reference

```
#include "object-base.h"
```

### Classes

- class [TextSingleObject](#)

## 19.85 object-textsingle.h

[Go to the documentation of this file.](#)

```

00001 #ifndef OBJECT_TEXTSINGLE_H
00002 #define OBJECT_TEXTSINGLE_H
00003
00004 #include "object-base.h"
00005
00006 class TextSingleObject : public BaseObject
00007 {
00008     public:
00009         TextSingleObject(const QString& str, qreal x, qreal y, QRgb rgb, QGraphicsItem* parent = 0);
00010         TextSingleObject(TextSingleObject* obj, QGraphicsItem* parent = 0);
00011         ~TextSingleObject();

```

```

00012     enum { Type = OBJ_TYPE_TEXTSINGLE };
00013     virtual int type() const { return Type; }
00014
00015     QList<QPainterPath> objectSavePathList() const { return subPathList(); }
00016     QList<QPainterPath> subPathList() const;
00017
00018     QString objectText() const { return objText; }
00019     QString objectTextFont() const { return objTextFont; }
00020     QString objectTextJustify() const { return objTextJustify; }
00021     qreal objectTextSize() const { return objTextSize; }
00022     bool objectTextBold() const { return objTextBold; }
00023     bool objectTextItalic() const { return objTextItalic; }
00024     bool objectTextUnderline() const { return objTextUnderline; }
00025     bool objectTextStrikeOut() const { return objTextStrikeOut; }
00026     bool objectTextOverline() const { return objTextOverline; }
00027     bool objectTextBackward() const { return objTextBackward; }
00028     bool objectTextUpsideDown() const { return objTextUpsideDown; }
00029     QPointF objectPos() const { return scenePos(); }
00030     qreal objectX() const { return scenePos().x(); }
00031     qreal objectY() const { return scenePos().y(); }
00032
00033     QStringList objectTextJustifyList() const;
00034
00035     void setObjectText(const QString& str);
00036     void setObjectTextFont(const QString& font);
00037     void setObjectTextJustify(const QString& justify);
00038     void setObjectTextSize(qreal size);
00039     void setObjectTextStyle(bool bold, bool italic, bool under, bool strike, bool over);
00040     void setObjectTextBold(bool val);
00041     void setObjectTextItalic(bool val);
00042     void setObjectTextUnderline(bool val);
00043     void setObjectTextStrikeOut(bool val);
00044     void setObjectTextOverline(bool val);
00045     void setObjectTextBackward(bool val);
00046     void setObjectTextUpsideDown(bool val);
00047     void setObjectPos(const QPointF& point) { setPos(point.x(), point.y()); }
00048     void setObjectPos(qreal x, qreal y) { setPos(x, y); }
00049     void setObjectX(qreal x) { setObjectPos(x, objectY()); }
00050     void setObjectY(qreal y) { setObjectPos(objectX(), y); }
00051
00052     void updateRubber(QPainter* painter = 0);
00053     virtual void vulcanize();
00054     virtual QPointF mouseSnapPoint(const QPointF& mousePoint);
00055     virtual QList<QPointF> allGripPoints();
00056     virtual void gripEdit(const QPointF& before, const QPointF& after);
00057
00058 protected:
00059     void paint(QPainter*, const QStyleOptionGraphicsItem*, QWidget* );
00060 private:
00061     void init(const QString& str, qreal x, qreal y, QRgb rgb, Qt::PenStyle lineType);
00062
00063     QString objText;
00064     QString objTextFont;
00065     QString objTextJustify;
00066     qreal objTextSize;
00067     bool objTextBold;
00068     bool objTextItalic;
00069     bool objTextUnderline;
00070     bool objTextStrikeOut;
00071     bool objTextOverline;
00072     bool objTextBackward;
00073     bool objTextUpsideDown;
00074     QPainterPath objTextPath;
00075 };
00076
00077 #endif
00078 /* kate: bom off; indent-mode cstyle; indent-width 4; replace-trailing-space-save on; */

```

## 19.86 embroidermodder2/preview-dialog.cpp File Reference

```

#include "preview-dialog.h"
#include "imagewidget.h"
#include <QDebug>
#include <QGridLayout>

```

## 19.87 embroidermodder2/preview-dialog.h File Reference

```
#include <QFileDialog>
```

### Classes

- class [PreviewDialog](#)

## 19.88 preview-dialog.h

[Go to the documentation of this file.](#)

```
00001 #ifndef PREVIEW_DIALOG_H
00002 #define PREVIEW_DIALOG_H
00003
00004 #include <QFileDialog>
00005
00006 class ImageWidget;
00007
00008 class PreviewDialog : public QFileDialog
00009 {
00010     Q_OBJECT
00011
00012 public:
00013     PreviewDialog(QWidget* parent = 0,
00014                 const QString& caption = QString(),
00015                 const QString& directory = QString(),
00016                 const QString& filter = QString());
00017     ~PreviewDialog();
00018
00019 private:
00020     ImageWidget* imgWidget;
00021 };
00022
00023 #endif
00024
00025 /* kate: bom off; indent-mode cstyle; indent-width 4; replace-trailing-space-save on; */
```

## 19.89 embroidermodder2/property-editor.cpp File Reference

```
#include <QApplication>
#include <QComboBox>
#include <QFontComboBox>
#include <QFormLayout>
#include <QGroupBox>
#include <QKeyEvent>
#include <QLineEdit>
#include <QScrollArea>
#include <QSignalMapper>
#include <QToolButton>
#include <QWidget>
#include "property-editor.h"
#include "object-data.h"
#include "object-arc.h"
#include "object-circle.h"
#include "object-dimleader.h"
#include "object-ellipse.h"
#include "object-image.h"
#include "object-line.h"
#include "object-path.h"
#include "object-point.h"
```

```
#include "object-polygon.h"
#include "object-polyline.h"
#include "object-rect.h"
#include "object-textsingle.h"
```

## 19.90 embroidermodder2/property-editor.h File Reference

```
#include <QDockWidget>
```

### Classes

- class [PropertyEditor](#)

## 19.91 property-editor.h

[Go to the documentation of this file.](#)

```
00001 #ifndef PROPERTY_EDITOR_H
00002 #define PROPERTY_EDITOR_H
00003
00004 #include <QDockWidget>
00005
00006 class ArcObject;
00007 class BlockObject;
00008 class CircleObject;
00009 class DimAlignedObject;
00010 class DimAngularObject;
00011 class DimArcLengthObject;
00012 class DimDiameterObject;
00013 class DimLeaderObject;
00014 class DimLinearObject;
00015 class DimOrdinateObject;
00016 class DimRadiusObject;
00017 class EllipseObject;
00018 class EllipseArcObject;
00019 class HatchObject;
00020 class ImageObject;
00021 class InfiniteLineObject;
00022 class LineObject;
00023 class PathObject;
00024 class PointObject;
00025 class PolygonObject;
00026 class PolylineObject;
00027 class RayObject;
00028 class RectObject;
00029 class SplineObject;
00030 class TextMultiObject;
00031 class TextSingleObject;
00032
00033 QT_BEGIN_NAMESPACE
00034 class QGroupBox;
00035 class QComboBox;
00036 class QFontComboBox;
00037 class QLineEdit;
00038 class QToolButton;
00039 class QGraphicsItem;
00040 class QSignalMapper;
00041 QT_END_NAMESPACE
00042
00043 class PropertyEditor : public QDockWidget
00044 {
00045     Q_OBJECT
00046
00047 public:
00048     PropertyEditor(const QString& iconDirectory = QString(), bool pickAddMode = true, QWidget*
00049         widgetToFocus = 0, QWidget* parent = 0); //, Qt::WindowFlags flags = 0);
00050     ~PropertyEditor();
00051 protected:
00052     bool eventFilter(QObject *obj, QEvent *event);
```

```
00053
00054 signals:
00055     void pickAddModeToggled();
00056
00057 public slots:
00058     void setSelectedItems (QList<QGraphicsItem*> itemList);
00059     void updatePickAddModeButton(bool pickAddMode);
00060
00061 private slots:
00062     void fieldEdited(QObject* fieldObj);
00063     void showGroups(int objType);
00064     void showOneType(int index);
00065     void hideAllGroups();
00066     void clearAllFields();
00067     void togglePickAddMode();
00068
00069 private:
00070     QWidget* focusWidget;
00071
00072     QString iconDir;
00073     int iconSize;
00074     Qt::ToolButtonStyle propertyEditorButtonStyle;
00075
00076     bool pickAdd;
00077
00078     QList<QGraphicsItem*> selectedItemList;
00079
00080     ArcObject* tempArcObj;
00081     BlockObject* tempBlockObj;
00082     CircleObject* tempCircleObj;
00083     DimAlignedObject* tempDimAlignedObj;
00084     DimAngularObject* tempDimAngularObj;
00085     DimArcLengthObject* tempDimArcLenObj;
00086     DimDiameterObject* tempDimDiamObj;
00087     DimLeaderObject* tempDimLeaderObj;
00088     DimLinearObject* tempDimLinearObj;
00089     DimOrdinateObject* tempDimOrdObj;
00090     DimRadiusObject* tempDimRadiusObj;
00091     EllipseObject* tempEllipseObj;
00092     EllipseArcObject* tempEllipseArcObj;
00093     HatchObject* tempHatchObj;
00094     ImageObject* tempImageObj;
00095     InfiniteLineObject* tempInLineObj;
00096     LineObject* tempLineObj;
00097     PathObject* tempPathObj;
00098     PointObject* tempPointObj;
00099     PolygonObject* tempPolygonObj;
00100    PolylineObject* tempPolylineObj;
00101    RayObject* tempRayObj;
00102    RectObject* tempRectObj;
00103    SplineObject* tempSplineObj;
00104    TextMultiObject* tempTextMultiObj;
00105    TextSingleObject* tempTextSingleObj;
00106
00107 //Helper functions
00108 QToolBar* createToolBar(const QString& iconName, const QString& txt);
00109 QLineEdit* createLineEdit(const QString& validatorType = QString(), bool readOnly = false);
00110 QComboBox* createComboBox(bool disable = false);
00111 QFontComboBox* createFontComboBox(bool disable = false);
00112
00113     int precisionAngle;
00114     int precisionLength;
00115
00116 //Used when checking if fields vary
00117     QString fieldOldText;
00118     QString fieldNewText;
00119     QString fieldVariesText;
00120     QString fieldYesText;
00121     QString fieldNoText;
00122     QString fieldOnText;
00123     QString fieldOffText;
00124
00125     void updateLineEditStrIfVaries(QLineEdit* lineEdit, const QString& str);
00126     void updateLineEditNumIfVaries(QLineEdit* lineEdit, qreal num, bool useAnglePrecision);
00127     void updateFontComboBoxStrIfVaries(QFontComboBox* fontComboBox, const QString& str);
00128     void updateComboBoxStrIfVaries(QComboBox* comboBox, const QString& str, const QStringList& strList);
00129     void updateComboBoxBoolIfVaries(QComboBox* comboBox, bool val, bool yesOrNoText);
00130
00131     QSignalMapper* signalMapper;
00132     void mapSignal(QObject* fieldObj, const QString& name, QVariant value);
00133
00134 //=====
00135 //Selection
00136 //=====
00137     QComboBox* createComboBoxSelected();
00138     QToolBar* createToolBarQSelect();
```

```

00139     QToolButton* createToolButtonPickAdd();
00140
00141     QComboBox* comboBoxSelected;
00142     QToolButton* toolButtonQSelect;
00143     QToolButton* toolButtonPickAdd;
00144
00145     //TODO: Alphabetic/Categorized TabWidget
00146
00147     //=====
00148     //General
00149     //=====
00150     QGroupBox* createGroupBoxGeneral();
00151     QGroupBox* groupBoxGeneral;
00152
00153     QToolButton* toolButtonGeneralLayer;
00154     QToolButton* toolButtonGeneralColor;
00155     QToolButton* toolButtonGeneralLineType;
00156     QToolButton* toolButtonGeneralLineWeight;
00157
00158     QComboBox* comboBoxGeneralLayer;
00159     QComboBox* comboBoxGeneralColor;
00160     QComboBox* comboBoxGeneralLineType;
00161     QComboBox* comboBoxGeneralLineWeight;
00162
00163     //=====
00164     //Geometry
00165     //=====
00166
00167     //Arc
00168     QGroupBox* createGroupBoxGeometryArc();
00169     QGroupBox* groupBoxGeometryArc;
00170
00171     QToolButton* toolButtonArcCenterX;
00172     QToolButton* toolButtonArcCenterY;
00173     QToolButton* toolButtonArcRadius;
00174     QToolButton* toolButtonArcStartAngle;
00175     QToolButton* toolButtonArcEndAngle;
00176     QToolButton* toolButtonArcStartX;
00177     QToolButton* toolButtonArcStartY;
00178     QToolButton* toolButtonArcEndX;
00179     QToolButton* toolButtonArcEndY;
00180     QToolButton* toolButtonArcArea;
00181     QToolButton* toolButtonArcLength;
00182     QToolButton* toolButtonArcChord;
00183     QToolButton* toolButtonArcIncAngle;
00184
00185     QLineEdit* lineEditArcCenterX;
00186     QLineEdit* lineEditArcCenterY;
00187     QLineEdit* lineEditArcRadius;
00188     QLineEdit* lineEditArcStartAngle;
00189     QLineEdit* lineEditArcEndAngle;
00190     QLineEdit* lineEditArcStartX;
00191     QLineEdit* lineEditArcStartY;
00192     QLineEdit* lineEditArcEndX;
00193     QLineEdit* lineEditArcEndY;
00194     QLineEdit* lineEditArcArea;
00195     QLineEdit* lineEditArcLength;
00196     QLineEdit* lineEditArcChord;
00197     QLineEdit* lineEditArcIncAngle;
00198
00199     QGroupBox* createGroupBoxMiscArc();
00200     QGroupBox* groupBoxMiscArc;
00201
00202     QToolButton* toolButtonArcClockwise;
00203
00204     QComboBox* comboBoxArcClockwise;
00205
00206     //Block
00207     QGroupBox* createGroupBoxGeometryBlock();
00208     QGroupBox* groupBoxGeometryBlock;
00209
00210     QToolButton* toolButtonBlockX;
00211     QToolButton* toolButtonBlockY;
00212
00213     QLineEdit* lineEditBlockX;
00214     QLineEdit* lineEditBlockY;
00215
00216     //Circle
00217     QGroupBox* createGroupBoxGeometryCircle();
00218     QGroupBox* groupBoxGeometryCircle;
00219
00220     QToolButton* toolButtonCircleCenterX;
00221     QToolButton* toolButtonCircleCenterY;
00222     QToolButton* toolButtonCircleRadius;
00223     QToolButton* toolButtonCircleDiameter;
00224     QToolButton* toolButtonCircleArea;
00225     QToolButton* toolButtonCircleCircumference;

```

```
00226
00227     QLineEdit*    lineEditCircleCenterX;
00228     QLineEdit*    lineEditCircleCenterY;
00229     QLineEdit*    lineEditCircleRadius;
00230     QLineEdit*    lineEditCircleDiameter;
00231     QLineEdit*    lineEditCircleArea;
00232     QLineEdit*    lineEditCircleCircumference;
00233
00234     //DimAligned
00235     QGroupBox*    createGroupBoxGeometryDimAligned();
00236     QGroupBox*    groupBoxGeometryDimAligned;
00237
00238     //TODO: toolButtons and lineEdits for DimAligned
00239
00240     //DimAngular
00241     QGroupBox*    createGroupBoxGeometryDimAngular();
00242     QGroupBox*    groupBoxGeometryDimAngular;
00243
00244     //TODO: toolButtons and lineEdits for DimAngular
00245
00246     //DimArcLength
00247     QGroupBox*    createGroupBoxGeometryDimArcLength();
00248     QGroupBox*    groupBoxGeometryDimArcLength;
00249
00250     //TODO: toolButtons and lineEdits for DimArcLength
00251
00252     //DimDiameter
00253     QGroupBox*    createGroupBoxGeometryDimDiameter();
00254     QGroupBox*    groupBoxGeometryDimDiameter;
00255
00256     //TODO: toolButtons and lineEdits for DimDiameter
00257
00258     //DimLeader
00259     QGroupBox*    createGroupBoxGeometryDimLeader();
00260     QGroupBox*    groupBoxGeometryDimLeader;
00261
00262     //TODO: toolButtons and lineEdits for DimLeader
00263
00264     //DimLinear
00265     QGroupBox*    createGroupBoxGeometryDimLinear();
00266     QGroupBox*    groupBoxGeometryDimLinear;
00267
00268     //TODO: toolButtons and lineEdits for DimLinear
00269
00270     //DimOrdinate
00271     QGroupBox*    createGroupBoxGeometryDimOrdinate();
00272     QGroupBox*    groupBoxGeometryDimOrdinate;
00273
00274     //TODO: toolButtons and lineEdits for DimOrdinate
00275
00276     //DimRadius
00277     QGroupBox*    createGroupBoxGeometryDimRadius();
00278     QGroupBox*    groupBoxGeometryDimRadius;
00279
00280     //TODO: toolButtons and lineEdits for DimRadius
00281
00282     //Ellipse
00283     QGroupBox*    createGroupBoxGeometryEllipse();
00284     QGroupBox*    groupBoxGeometryEllipse;
00285
00286     QToolButton*   toolButtonEllipseCenterX;
00287     QToolButton*   toolButtonEllipseCenterY;
00288     QToolButton*   toolButtonEllipseRadiusMajor;
00289     QToolButton*   toolButtonEllipseRadiusMinor;
00290     QToolButton*   toolButtonEllipseDiameterMajor;
00291     QToolButton*   toolButtonEllipseDiameterMinor;
00292
00293     QLineEdit*    lineEditEllipseCenterX;
00294     QLineEdit*    lineEditEllipseCenterY;
00295     QLineEdit*    lineEditEllipseRadiusMajor;
00296     QLineEdit*    lineEditEllipseRadiusMinor;
00297     QLineEdit*    lineEditEllipseDiameterMajor;
00298     QLineEdit*    lineEditEllipseDiameterMinor;
00299
00300     //Image
00301     QGroupBox*    createGroupBoxGeometryImage();
00302     QGroupBox*    groupBoxGeometryImage;
00303
00304     QToolButton*   toolButtonImageX;
00305     QToolButton*   toolButtonImageY;
00306     QToolButton*   toolButtonImageWidth;
00307     QToolButton*   toolButtonImageHeight;
00308
00309     QLineEdit*    lineEditImageX;
00310     QLineEdit*    lineEditImageY;
00311     QLineEdit*    lineEditImageWidth;
00312     QLineEdit*    lineEditImageHeight;
```

```

00313
00314     QGroupBox*    createGroupBoxMiscImage();
00315     QGroupBox*    groupBoxMiscImage;
00316
00317     QToolButton*   toolButtonImageName;
00318     QToolButton*   toolButtonImagePath;
00319
00320     QLineEdit*    lineEditImageName;
00321     QLineEdit*    lineEditImagePath;
00322
00323     //Infinite Line
00324     QGroupBox*    createGroupBoxGeometryInfiniteLine();
00325     QGroupBox*    groupBoxGeometryInfiniteLine;
00326
00327     QToolButton*   toolButtonInfiniteLineX1;
00328     QToolButton*   toolButtonInfiniteLineY1;
00329     QToolButton*   toolButtonInfiniteLineX2;
00330     QToolButton*   toolButtonInfiniteLineY2;
00331     QToolButton*   toolButtonInfiniteLineVectorX;
00332     QToolButton*   toolButtonInfiniteLineVectorY;
00333
00334     QLineEdit*    lineEditInfiniteLineX1;
00335     QLineEdit*    lineEditInfiniteLineY1;
00336     QLineEdit*    lineEditInfiniteLineX2;
00337     QLineEdit*    lineEditInfiniteLineY2;
00338     QLineEdit*    lineEditInfiniteLineVectorX;
00339     QLineEdit*    lineEditInfiniteLineVectorY;
00340
00341     //Line
00342     QGroupBox*    createGroupBoxGeometryLine();
00343     QGroupBox*    groupBoxGeometryLine;
00344
00345     QToolButton*   toolButtonLineStartX;
00346     QToolButton*   toolButtonLineStartY;
00347     QToolButton*   toolButtonLineEndX;
00348     QToolButton*   toolButtonLineEndY;
00349     QToolButton*   toolButtonLineDeltaX;
00350     QToolButton*   toolButtonLineDeltaY;
00351     QToolButton*   toolButtonLineAngle;
00352     QToolButton*   toolButtonLineLength;
00353
00354     QLineEdit*    lineEditLineStartX;
00355     QLineEdit*    lineEditLineStartY;
00356     QLineEdit*    lineEditLineEndX;
00357     QLineEdit*    lineEditLineEndY;
00358     QLineEdit*    lineEditLineDeltaX;
00359     QLineEdit*    lineEditLineDeltaY;
00360     QLineEdit*    lineEditLineAngle;
00361     QLineEdit*    lineEditLineLength;
00362
00363     //Path
00364     QGroupBox*    createGroupBoxGeometryPath();
00365     QGroupBox*    groupBoxGeometryPath;
00366
00367     QToolButton*   toolButtonPathVertexNum;
00368     QToolButton*   toolButtonPathVertexX;
00369     QToolButton*   toolButtonPathVertexY;
00370     QToolButton*   toolButtonPathArea;
00371     QToolButton*   toolButtonPathLength;
00372
00373     QComboBox*    comboBoxPathVertexNum;
00374     QLineEdit*    lineEditPathVertexX;
00375     QLineEdit*    lineEditPathVertexY;
00376     QLineEdit*    lineEditPathArea;
00377     QLineEdit*    lineEditPathLength;
00378
00379     QGroupBox*    createGroupBoxMiscPath();
00380     QGroupBox*    groupBoxMiscPath;
00381
00382     QToolButton*   toolButtonPathClosed;
00383
00384     QComboBox*    comboBoxPathClosed;
00385
00386     //Point
00387     QGroupBox*    createGroupBoxGeometryPoint();
00388     QGroupBox*    groupBoxGeometryPoint;
00389
00390     QToolButton*   toolButtonPointX;
00391     QToolButton*   toolButtonPointY;
00392
00393     QLineEdit*    lineEditPointX;
00394     QLineEdit*    lineEditPointY;
00395
00396     //Polygon
00397     QGroupBox*    createGroupBoxGeometryPolygon();
00398     QGroupBox*    groupBoxGeometryPolygon;
00399

```

```
00400     QToolButton* toolButtonPolygonCenterX;
00401     QToolButton* toolButtonPolygonCenterY;
00402     QToolButton* toolButtonPolygonRadiusVertex;
00403     QToolButton* toolButtonPolygonRadiusSide;
00404     QToolButton* toolButtonPolygonDiameterVertex;
00405     QToolButton* toolButtonPolygonDiameterSide;
00406     QToolButton* toolButtonPolygonInteriorAngle;
00407
00408     QLineEdit*    lineEditPolygonCenterX;
00409     QLineEdit*    lineEditPolygonCenterY;
00410     QLineEdit*    lineEditPolygonRadiusVertex;
00411     QLineEdit*    lineEditPolygonRadiusSide;
00412     QLineEdit*    lineEditPolygonDiameterVertex;
00413     QLineEdit*    lineEditPolygonDiameterSide;
00414     QLineEdit*    lineEditPolygonInteriorAngle;
00415
00416     //Polyline
00417     QGroupBox*    createGroupBoxGeometryPolyline();
00418     QGroupBox*    groupBoxGeometryPolyline;
00419
00420     QToolButton*  toolButtonPolylineVertexNum;
00421     QToolButton*  toolButtonPolylineVertexX;
00422     QToolButton*  toolButtonPolylineVertexY;
00423     QToolButton*  toolButtonPolylineArea;
00424     QToolButton*  toolButtonPolylineLength;
00425
00426     QComboBox*   comboBoxPolylineVertexNum;
00427     QLineEdit*   lineEditPolylineVertexX;
00428     QLineEdit*   lineEditPolylineVertexY;
00429     QLineEdit*   lineEditPolylineArea;
00430     QLineEdit*   lineEditPolylineLength;
00431
00432     QGroupBox*   createGroupBoxMiscPolyline();
00433     QGroupBox*   groupBoxMiscPolyline;
00434
00435     QToolButton*  toolButtonPolylineClosed;
00436
00437     QComboBox*   comboBoxPolylineClosed;
00438
00439     //Ray
00440     QGroupBox*   createGroupBoxGeometryRay();
00441     QGroupBox*   groupBoxGeometryRay;
00442
00443     QToolButton*  toolButtonRayX1;
00444     QToolButton*  toolButtonRayY1;
00445     QToolButton*  toolButtonRayX2;
00446     QToolButton*  toolButtonRayY2;
00447     QToolButton*  toolButtonRayVectorX;
00448     QToolButton*  toolButtonRayVectorY;
00449
00450     QLineEdit*   lineEditRayX1;
00451     QLineEdit*   lineEditRayY1;
00452     QLineEdit*   lineEditRayX2;
00453     QLineEdit*   lineEditRayY2;
00454     QLineEdit*   lineEditRayVectorX;
00455     QLineEdit*   lineEditRayVectorY;
00456
00457     //Rectangle
00458     QGroupBox*   createGroupBoxGeometryRectangle();
00459     QGroupBox*   groupBoxGeometryRectangle;
00460
00461     QToolButton*  toolButtonRectangleCorner1X;
00462     QToolButton*  toolButtonRectangleCorner1Y;
00463     QToolButton*  toolButtonRectangleCorner2X;
00464     QToolButton*  toolButtonRectangleCorner2Y;
00465     QToolButton*  toolButtonRectangleCorner3X;
00466     QToolButton*  toolButtonRectangleCorner3Y;
00467     QToolButton*  toolButtonRectangleCorner4X;
00468     QToolButton*  toolButtonRectangleCorner4Y;
00469     QToolButton*  toolButtonRectangleWidth;
00470     QToolButton*  toolButtonRectangleHeight;
00471     QToolButton*  toolButtonRectangleArea;
00472
00473     QLineEdit*   lineEditRectangleCorner1X;
00474     QLineEdit*   lineEditRectangleCorner1Y;
00475     QLineEdit*   lineEditRectangleCorner2X;
00476     QLineEdit*   lineEditRectangleCorner2Y;
00477     QLineEdit*   lineEditRectangleCorner3X;
00478     QLineEdit*   lineEditRectangleCorner3Y;
00479     QLineEdit*   lineEditRectangleCorner4X;
00480     QLineEdit*   lineEditRectangleCorner4Y;
00481     QLineEdit*   lineEditRectangleWidth;
00482     QLineEdit*   lineEditRectangleHeight;
00483     QLineEdit*   lineEditRectangleArea;
00484
00485     //Text Multi
00486     QGroupBox*   createGroupBoxGeometryTextMulti();
```

```
00487     QGroupBox*    groupBoxGeometryTextMulti;
00488
00489     QToolButton*   toolButtonTextMultiX;
00490     QToolButton*   toolButtonTextMultiY;
00491
00492     QLineEdit*    lineEditTextMultiX;
00493     QLineEdit*    lineEditTextMultiY;
00494
00495     //Text Single
00496     QGroupBox*    createGroupBoxTextTextSingle();
00497     QGroupBox*    groupBoxTextTextSingle;
00498
00499     QToolButton*   toolButtonTextSingleContents;
00500     QToolButton*   toolButtonTextSingleFont;
00501     QToolButton*   toolButtonTextSingleJustify;
00502     QToolButton*   toolButtonTextSingleHeight;
00503     QToolButton*   toolButtonTextSingleRotation;
00504
00505     QLineEdit*    lineEditTextSingleContents;
00506     QFontComboBox* comboBoxTextSingleFont;
00507     QComboBox*    comboBoxTextSingleJustify;
00508     QLineEdit*    lineEditTextSingleHeight;
00509     QLineEdit*    lineEditTextSingleRotation;
00510
00511     QGroupBox*    createGroupBoxGeometryTextSingle();
00512     QGroupBox*    groupBoxGeometryTextSingle;
00513
00514     QToolButton*   toolButtonTextSingleX;
00515     QToolButton*   toolButtonTextSingleY;
00516
00517     QLineEdit*    lineEditTextSingleX;
00518     QLineEdit*    lineEditTextSingleY;
00519
00520     QGroupBox*    createGroupBoxMiscTextSingle();
00521     QGroupBox*    groupBoxMiscTextSingle;
00522
00523     QToolButton*   toolButtonTextSingleBackward;
00524     QToolButton*   toolButtonTextSingleUpsideDown;
00525
00526     QComboBox*    comboBoxTextSingleBackward;
00527     QComboBox*    comboBoxTextSingleUpsideDown;
00528 };
00529
00530 #endif
00531
00532 /* kate: bom off; indent-mode cstyle; indent-width 4; replace-trailing-space-save on; */
```

## 19.92 embroidermodder2/docs/README.md File Reference

## 19.93 embroidermodder2/README.md File Reference

## 19.94 embroidermodder2/selectbox.cpp File Reference

```
#include "selectbox.h"
#include <QPainter>
```

## 19.95 embroidermodder2/selectbox.h File Reference

```
#include <QRubberBand>
#include <QBrush>
#include <QPen>
```

### Classes

- class [SelectBox](#)

## 19.96 selectbox.h

[Go to the documentation of this file.](#)

```

00001 #ifndef SELECTBOX_H
00002 #define SELECTBOX_H
00003
00004 #include <QRubberBand>
00005 #include <QBrush>
00006 #include <QPen>
00007
00008 class SelectBox : public QRubberBand
00009 {
0010     public:
0011         SelectBox(Shape s, QWidget* parent = 0);
0012
0013     public slots:
0014         void setDirection(int dir);
0015         void setColors(const QColor& colorL, const QColor& fillL, const QColor& colorR, const QColor&
0016                         fillR, int newAlpha);
0017     protected:
0018         void paintEvent(QPaintEvent* );
0019
0020     private:
0021         QColor leftBrushColor;
0022         QColor rightBrushColor;
0023         QColor leftPenColor;
0024         QColor rightPenColor;
0025         quint8 alpha;
0026
0027         QBrush dirBrush;
0028         QBrush leftBrush;
0029         QBrush rightBrush;
0030
0031         QPen dirPen;
0032         QPen leftPen;
0033         QPen rightPen;
0034
0035     bool boxDir;
0036
0037     void forceRepaint();
0038 };
0039
0040 #endif
0041
0042 /* kate: bom off; indent-mode cstyle; indent-width 4; replace-trailing-space-save on; */

```

## 19.97 embroidermodder2/settings-dialog.cpp File Reference

```

#include <QtGui>
#include "settings-dialog.h"
#include "object-data.h"
#include "statusbar.h"
#include "statusbar-button.h"

```

## 19.98 embroidermodder2/settings-dialog.h File Reference

```

#include <QDialog>
#include "mainwindow.h"

```

### Classes

- class [Settings\\_Dialog](#)

## 19.99 settings-dialog.h

[Go to the documentation of this file.](#)

```

00001 #ifndef SETTINGS_DIALOG_H
00002 #define SETTINGS_DIALOG_H
00003
00004 #include <QDialog>
00005 #include "mainwindow.h"
00006
00007 class MainWindow;
00008
00009 QT_BEGIN_NAMESPACE
00010 class QDialogButtonBox;
00011 class QFileInfo;
00012 class QTabWidget;
00013 QT_END_NAMESPACE
00014
00015 class Settings_Dialog : public QDialog
00016 {
00017     Q_OBJECT
00018
00019 public:
00020     Settings_Dialog(MainWindow* mw, const QString& showTab = QString(), QWidget *parent = 0);
00021     ~Settings_Dialog();
00022
00023 private:
00024     MainWindow*      mainWin;
00025
00026     QTabWidget*       tabWidget;
00027
00028     QWidget*         createTabGeneral();
00029     QWidget*         createTabFilePaths();
00030     QWidget*         createTabDisplay();
00031     QWidget*         createTabPrompt();
00032     QWidget*         createTabOpenSave();
00033     QWidget*         createTabPrinting();
00034     QWidget*         createTabSnap();
00035     QWidget*         createTabGridRuler();
00036     QWidget*         createTabOrthoPolar();
00037     QWidget*         createTabQuickSnap();
00038     QWidget*         createTabQuickTrack();
00039     QWidget*         createTabLineWeight();
00040     QWidget*         createTabSelection();
00041
00042     QDialogButtonBox* buttonBox;
00043
00044     void addColorsToComboBox(QComboBox* comboBox);
00045
00046 //Temporary for instant preview
00047     bool   preview_general_mdi_bg_use_logo;
00048     bool   preview_general_mdi_bg_use_texture;
00049     bool   preview_general_mdi_bg_use_color;
00050
00051     QString accept_general_mdi_bg_logo;
00052     QString accept_general_mdi_bg_texture;
00053     QRgb   preview_general_mdi_bg_color;
00054     QRgb   accept_general_mdi_bg_color;
00055
00056     bool   preview_display_show_scrollbars;
00057
00058     QRgb   preview_display_crosshair_color;
00059     QRgb   accept_display_crosshair_color;
00060     QRgb   preview_display_bg_color;
00061     QRgb   accept_display_bg_color;
00062
00063     QRgb   preview_display_selectbox_left_color;
00064     QRgb   accept_display_selectbox_left_color;
00065     QRgb   preview_display_selectbox_left_fill;
00066     QRgb   accept_display_selectbox_left_fill;
00067     QRgb   preview_display_selectbox_right_color;
00068     QRgb   accept_display_selectbox_right_color;
00069     QRgb   preview_display_selectbox_right_fill;
00070     QRgb   accept_display_selectbox_right_fill;
00071     quint8 preview_display_selectbox_alpha;
00072
00073     QRgb   preview_prompt_text_color;
00074     QRgb   accept_prompt_text_color;
00075
00076     QRgb   preview_prompt_bg_color;
00077     QRgb   accept_prompt_bg_color;
00078
00079     QString preview_prompt_font_family;
00080     QString preview_prompt_font_style;
00081     quint8  preview_prompt_font_size;
00082
00083     QRgb   preview_grid_color;

```

```
00084     QRgb    accept_grid_color;
00085
00086     QRgb    preview_ruler_color;
00087     QRgb    accept_ruler_color;
00088
00089     bool    preview_lwt_show_lwt;
00090     bool    preview_lwt_real_render;
00091
00092     //Temporary until changes are accepted
00093     QString dialog_general_language;
00094     QString dialog_general_icon_theme;
00095     int      dialog_general_icon_size;
00096     bool    dialog_general_mdi_bg_use_logo;
00097     bool    dialog_general_mdi_bg_use_texture;
00098     bool    dialog_general_mdi_bg_use_color;
00099     QString dialog_general_mdi_bg_logo;
00100    QString dialog_general_mdi_bg_texture;
00101    QRgb    dialog_general_mdi_bg_color;
00102    bool    dialog_general_tip_of_the_day;
00103    bool    dialog_general_system_help_browser;
00104    bool    dialog_display_use_opengl;
00105    bool    dialog_display_renderhint_aa;
00106    bool    dialog_display_renderhint_text_aa;
00107    bool    dialog_display_renderhint_smooth_pix;
00108    bool    dialog_display_renderhint_high_aa;
00109    bool    dialog_display_renderhint_noncosmetic;
00110    bool    dialog_display_show_scrollbars;
00111    int     dialog_display_scrollbar_widget_num;
00112    QRgb    dialog_display_crosshair_color;
00113    QRgb    dialog_display_bg_color;
00114    QRgb    dialog_display_selectbox_left_color;
00115    QRgb    dialog_display_selectbox_left_fill;
00116    QRgb    dialog_display_selectbox_right_color;
00117    QRgb    dialog_display_selectbox_right_fill;
00118    quint8  dialog_display_selectbox_alpha;
00119    qreal   dialog_display_zoomscale_in;
00120    qreal   dialog_display_zoomscale_out;
00121    quint8  dialog_display_crosshair_percent;
00122    QString dialog_display_units;
00123    QRgb    dialog_prompt_text_color;
00124    QRgb    dialog_prompt_bg_color;
00125    QString dialog_prompt_font_family;
00126    QString dialog_prompt_font_style;
00127    quint8  dialog_prompt_font_size;
00128    bool    dialog_prompt_save_history;
00129    bool    dialog_prompt_save_history_as_html;
00130    QString dialog_prompt_save_history_filename;
00131    QString dialog_opensave_custom_filter;
00132    QString dialog_opensave_open_format;
00133    bool    dialog_opensave_open_thumbnail;
00134    QString dialog_opensave_save_format;
00135    bool    dialog_opensave_save_thumbnail;
00136    quint8  dialog_opensave_recent_max_files;
00137    quint8  dialog_opensave_trim_dst_num_jumps;
00138    QString dialog_printing_default_device;
00139    bool    dialog_printing_use_last_device;
00140    bool    dialog_printing_disable_bg;
00141    bool    dialog_grid_show_on_load;
00142    bool    dialog_grid_show_origin;
00143    bool    dialog_grid_color_match_crosshair;
00144    QRgb    dialog_grid_color;
00145    bool    dialog_grid_load_from_file;
00146    QString dialog_grid_type;
00147    bool    dialog_grid_center_on_origin;
00148    qreal   dialog_grid_center_x;
00149    qreal   dialog_grid_center_y;
00150    qreal   dialog_grid_size_x;
00151    qreal   dialog_grid_size_y;
00152    qreal   dialog_grid_spacing_x;
00153    qreal   dialog_grid_spacing_y;
00154    qreal   dialog_grid_size_radius;
00155    qreal   dialog_grid_spacing_radius;
00156    qreal   dialog_grid_spacing_angle;
00157    bool    dialog_ruler_show_on_load;
00158    bool    dialog_ruler_metric;
00159    QRgb    dialog_ruler_color;
00160    quint8  dialog_ruler_pixel_size;
00161    bool    dialog_qsnap_enabled;
00162    QRgb    dialog_qsnap_locator_color;
00163    quint8  dialog_qsnap_locator_size;
00164    quint8  dialog_qsnap_aperture_size;
00165    bool    dialog_qsnap_endpoint;
00166    bool    dialog_qsnap_midpoint;
00167    bool    dialog_qsnap_center;
00168    bool    dialog_qsnap_node;
00169    bool    dialog_qsnap_quadrant;
00170    bool    dialog_qsnap_intersection;
```

```

00171     bool    dialog_qsnap_extension;
00172     bool    dialog_qsnap_insertion;
00173     bool    dialog_qsnap_perpendicular;
00174     bool    dialog_qsnap_tangent;
00175     bool    dialog_qsnap_nearest;
00176     bool    dialog_qsnap_apparent;
00177     bool    dialog_qsnap_parallel;
00178     bool    dialog_lwt_show_lwt;
00179     bool    dialog_lwt_real_render;
00180     qreal   dialog_lwt_default_lwt;
00181     bool    dialog_selection_mode_pickfirst;
00182     bool    dialog_selection_mode_pickadd;
00183     bool    dialog_selection_mode_pickdrag;
00184     QRgb   dialog_selection_coolgrip_color;
00185     QRgb   dialog_selection_hotgrip_color;
00186     quint8  dialog_selection_grip_size;
00187     quint8  dialog_selection_pickbox_size;
00188
00189 private slots:
00190     void comboBoxLanguageCurrentIndexChanged(const QString&);
00191     void comboBoxIconThemeCurrentIndexChanged(const QString&);
00192     void comboBoxIconSizeCurrentIndexChanged(int);
00193     void checkBoxGeneralMdiBGUseLogoStateChanged(int);
00194     void chooseGeneralMdiBackgroundLogo();
00195     void checkBoxGeneralMdiBGUseTextureStateChanged(int);
00196     void chooseGeneralMdiBackgroundTexture();
00197     void checkBoxGeneralMdiBGUseColorStateChanged(int);
00198     void chooseGeneralMdiBackgroundColor();
00199     void currentGeneralMdiBackgroundColorChanged(const QColor&);
00200     void checkBoxTipOfTheDayStateChanged(int);
00201     void checkBoxUseOpenGLStateChanged(int);
00202     void checkBoxRenderHintAAStateChanged(int);
00203     void checkBoxRenderHintTextAAStateChanged(int);
00204     void checkBoxRenderHintSmoothPixStateChanged(int);
00205     void checkBoxRenderHintHighAAStateChanged(int);
00206     void checkBoxRenderHintNonCosmeticStateChanged(int);
00207     void checkBoxShowScrollBarsStateChanged(int);
00208     void comboBoxScrollBarWidgetCurrentIndexChanged(int);
00209     void spinBoxZoomScaleInValueChanged(double);
00210     void spinBoxZoomScaleOutValueChanged(double);
00211     void checkBoxDisableBGStateChanged(int);
00212     void chooseDisplayCrossHairColor();
00213     void currentDisplayCrossHairColorChanged(const QColor&);
00214     void chooseDisplayBackgroundColor();
00215     void currentDisplayBackgroundColorChanged(const QColor&);
00216     void chooseDisplaySelectBoxLeftColor();
00217     void currentDisplaySelectBoxLeftColorChanged(const QColor&);
00218     void chooseDisplaySelectBoxLeftFill();
00219     void currentDisplaySelectBoxLeftFillChanged(const QColor&);
00220     void chooseDisplaySelectBoxRightColor();
00221     void currentDisplaySelectBoxRightColorChanged(const QColor&);
00222     void chooseDisplaySelectBoxRightFill();
00223     void currentDisplaySelectBoxRightFillChanged(const QColor&);
00224     void spinBoxDisplaySelectBoxAlphaValueChanged(int);
00225     void choosePromptTextColor();
00226     void currentPromptTextColorChanged(const QColor&);
00227     void choosePromptBackgroundColor();
00228     void currentPromptBackgroundColorChanged(const QColor&);
00229     void comboBoxPromptFontFamilyCurrentIndexChanged(const QString&);
00230     void comboBoxPromptFontSizeCurrentIndexChanged(const QString&);
00231     void spinBoxPromptFontSizeValueChanged(int);
00232     void checkBoxPromptSaveHistoryStateChanged(int);
00233     void checkBoxPromptSaveHistoryAsHtmlStateChanged(int);
00234     void checkBoxCustomFilterStateChanged(int);
00235     void buttonCustomFilterSelectAllClicked();
00236     void buttonCustomFilterClearAllClicked();
00237     void spinBoxRecentMaxFilesValueChanged(int);
00238     void spinBoxTrimDstNumJumpsValueChanged(int);
00239     void checkBoxGridShowOnLoadStateChanged(int);
00240     void checkBoxGridShowOriginStateChanged(int);
00241     void checkBoxGridColorMatchCrossHairStateChanged(int);
00242     void chooseGridColor();
00243     void currentGridColorChanged(const QColor&);
00244     void checkBoxGridLoadFromFileStateChanged(int);
00245     void comboBoxGridTypeCurrentIndexChanged(const QString&);
00246     void checkBoxGridCenterOnOriginStateChanged(int);
00247     void spinBoxGridCenterXValueChanged(double);
00248     void spinBoxGridCenterYValueChanged(double);
00249     void spinBoxGridSizeXValueChanged(double);
00250     void spinBoxGridSizeYValueChanged(double);
00251     void spinBoxGridSpacingXValueChanged(double);
00252     void spinBoxGridSpacingYValueChanged(double);
00253     void spinBoxGridSizeRadiusValueChanged(double);
00254     void spinBoxGridSpacingRadiusValueChanged(double);
00255     void spinBoxGridSpacingAngleValueChanged(double);
00256     void checkBoxRulerShowOnLoadStateChanged(int);
00257     void comboBoxRulerMetriccurrentIndexChanged(int);

```

```

00258     void chooseRulerColor();
00259     void currentRulerColorChanged(const QColor&);
00260     void spinBoxRulerPixelSizeValueChanged(double);
00261     void checkBoxQSnapEndPointStateChanged(int);
00262     void checkBoxQSnapMidPointStateChanged(int);
00263     void checkBoxQSnapCenterStateChanged(int);
00264     void checkBoxQSnapNodeStateChanged(int);
00265     void checkBoxQSnapQuadrantStateChanged(int);
00266     void checkBoxQSnapIntersectionStateChanged(int);
00267     void checkBoxQSnapExtensionStateChanged(int);
00268     void checkBoxQSnapInsertionStateChanged(int);
00269     void checkBoxQSnapPerpendicularStateChanged(int);
00270     void checkBoxQSnapTangentStateChanged(int);
00271     void checkBoxQSnapNearestStateChanged(int);
00272     void checkBoxQSnapApparentStateChanged(int);
00273     void checkBoxQSnapParallelStateChanged(int);
00274     void buttonQSnapSelectAllClicked();
00275     void buttonQSnapClearAllClicked();
00276     void comboBoxQSnapLocatorColorCurrentIndexChanged(int);
00277     void sliderQSnapLocatorSizeValueChanged(int);
00278     void sliderQSnapApertureSizeValueChanged(int);
00279     void checkBoxLwtShowLwtStateChanged(int);
00280     void checkBoxLwtRealRenderStateChanged(int);
00281     void checkBoxSelectionModePickFirstStateChanged(int);
00282     void checkBoxSelectionModePickAddStateChanged(int);
00283     void checkBoxSelectionModePickDragStateChanged(int);
00284     void comboBoxSelectionCoolGripColorCurrentIndexChanged(int);
00285     void comboBoxSelectionHotGripColorCurrentIndexChanged(int);
00286     void sliderSelectionGripSizeValueChanged(int);
00287     void sliderSelectionPickBoxSizeValueChanged(int);
00288
00289     void acceptChanges();
00290     void rejectChanges();
00291
00292 signals:
00293     void buttonCustomFilterSelectAll(bool);
00294     void buttonCustomFilterClearAll(bool);
00295     void buttonQSnapSelectAll(bool);
00296     void buttonQSnapClearAll(bool);
00297 };
00298
00299 #endif
00300
00301 /* kate: bom off; indent-mode cstyle; indent-width 4; replace-trailing-space-save on; */

```

## 19.100 embroidermodder2/statusbar-button.cpp File Reference

```

#include "mainwindow.h"
#include "mdiwindow.h"
#include "view.h"
#include "statusbar.h"
#include "statusbar-button.h"
#include <QMenu>
#include <QMdiArea>
#include <QApplication>
#include <QContextMenuEvent>

```

## 19.101 embroidermodder2/statusbar-button.h File Reference

```
#include <QToolButton>
```

### Classes

- class [StatusBarButton](#)

## 19.102 statusbar-button.h

[Go to the documentation of this file.](#)

```
00001 #ifndef STATUSBARBUTTON_H
00002 #define STATUSBARBUTTON_H
00003
00004 #include <QToolButton>
00005
00006 class MainWindow;
00007 class StatusBar;
00008
00009 class StatusBarButton : public QToolButton
00010 {
00011     Q_OBJECT
00012
00013 public:
00014     StatusBarButton(QString buttonText, MainWindow* mw, StatusBar* statbar, QWidget *parent = 0);
00015
00016 protected:
00017     void contextMenuEvent(QContextMenuEvent *event = 0);
00018
00019 private slots:
00020     void settingsSnap();
00021     void settingsGrid();
00022     void settingsRuler();
00023     void settingsOrtho();
00024     void settingsPolar();
00025     void settingsQSnap();
00026     void settingsQTrack();
00027     void settingsLwt();
00028     void toggleSnap(bool on);
00029     void toggleGrid(bool on);
00030     void toggleRuler(bool on);
00031     void toggleOrtho(bool on);
00032     void togglePolar(bool on);
00033     void toggleQSnap(bool on);
00034     void toggleQTrack(bool on);
00035     void toggleLwt(bool on);
00036 public slots:
00037     void enableLwt();
00038     void disableLwt();
00039     void enableReal();
00040     void disableReal();
00041
00042 private:
00043     MainWindow* mainWin;
00044     StatusBar* statusbar;
00045 };
00046
00047 #endif
00048
00049 /* kate: bom off; indent-mode cstyle; indent-width 4; replace-trailing-space-save on; */
```

## 19.103 embroidermodder2/statusbar.cpp File Reference

```
#include "mainwindow.h"
#include "statusbar.h"
#include "statusbar-button.h"
#include <QLabel>
```

## 19.104 embroidermodder2/statusbar.h File Reference

```
#include <QStatusBar>
#include <QToolButton>
```

### Classes

- class [StatusBar](#)

## 19.105 statusbar.h

[Go to the documentation of this file.](#)

```

00001 #ifndef STATUSBAR_H
00002 #define STATUSBAR_H
00003
00004 #include <QStatusBar>
00005 #include <QToolButton>
00006
00007 class StatusBarButton;
00008 class MainWindow;
00009
00010 QT_BEGIN_NAMESPACE
00011 class QLabel;
00012 QT_END_NAMESPACE
00013
00014 class StatusBar : public QStatusBar
00015 {
00016     Q_OBJECT
00017
00018 public:
00019     StatusBar(MainWindow* mw, QWidget* parent = 0);
00020
00021     StatusBarButton* statusBarSnapButton;
00022     StatusBarButton* statusBarGridButton;
00023     StatusBarButton* statusBarRulerButton;
00024     StatusBarButton* statusBarOrthoButton;
00025     StatusBarButton* statusBarPolarButton;
00026     StatusBarButton* statusBarQSnapButton;
00027     StatusBarButton* statusBarQTrackButton;
00028     StatusBarButton* statusBarIwtButton;
00029     QLabel* statusBarMouseCoord;
00030
00031     void setMouseCoord(qreal x, qreal y);
00032
00033 protected:
00034
00035 private slots:
00036
00037 private:
00038
00039 };
00040
00041 #endif
00042
00043 /* kate: bom off; indent-mode cstyle; indent-width 4; replace-trailing-space-save on; */

```

## 19.106 embroidermodder2/undo-commands.cpp File Reference

```

#include "undo-commands.h"
#include "object-base.h"
#include "view.h"

```

## 19.107 embroidermodder2/undo-commands.h File Reference

```

#include <QUndoCommand>
#include <QPointF>
#include <QTransform>
#include <QtCore/qmath.h>

```

### Classes

- class [UndoableAddCommand](#)
- class [UndoableDeleteCommand](#)
- class [UndoableMoveCommand](#)

- class UndoableRotateCommand
- class UndoableScaleCommand
- class UndoableNavCommand
- class UndoableGripEditCommand
- class UndoableMirrorCommand

## 19.108 undo-commands.h

[Go to the documentation of this file.](#)

```
00001 #ifndef UNDO_COMMANDS_H
00002 #define UNDO_COMMANDS_H
00003
00004 #include <QUndoCommand>
00005 #include <QPointF>
00006 #include <QTransform>
00007 #include <QtCore/qmath.h>
00008
00009 class BaseObject;
00010 class View;
00011
00012 class UndoableAddCommand : public QUndoCommand
00013 {
00014 public:
00015     UndoableAddCommand(const QString& text, BaseObject* obj, View* v, QUndoCommand* parent = 0);
00016
00017     void undo();
00018     void redo();
00019
00020 private:
00021     BaseObject* object;
00022     View* gview;
00023 };
00024
00025 class UndoableDeleteCommand : public QUndoCommand
00026 {
00027 public:
00028     UndoableDeleteCommand(const QString& text, BaseObject* obj, View* v, QUndoCommand* parent = 0);
00029
00030     void undo();
00031     void redo();
00032
00033 private:
00034     BaseObject* object;
00035     View* gview;
00036 };
00037
00038 class UndoableMoveCommand : public QUndoCommand
00039 {
00040 public:
00041     UndoableMoveCommand(qreal deltaX, qreal deltaY, const QString& text, BaseObject* obj, View* v,
00042                          QUndoCommand* parent = 0);
00043
00044     void undo();
00045     void redo();
00046
00047 private:
00048     BaseObject* object;
00049     View* gview;
00050     qreal dx;
00051     qreal dy;
00052
00053 class UndoableRotateCommand : public QUndoCommand
00054 {
00055 public:
00056     UndoableRotateCommand(qreal pivotPointX, qreal pivotPointY, qreal rotAngle, const QString& text,
00057                           BaseObject* obj, View* v, QUndoCommand* parent = 0);
00058
00059     void undo();
00060     void redo();
00061
00062 private:
00063     void rotate(qreal x, qreal y, qreal rot);
00064
00065     inline qreal pi() { return (qAtan(1.0)*4.0); }
00066     inline qreal radians(qreal degrees) { return (degrees*pi()/180.0); }
00067
00068     BaseObject* object;
00069     View* gview;
00070     qreal pivotX;
```

```

00070     qreal      pivotY;
00071     qreal      angle;
00072 };
00073
00074 class UndoableScaleCommand : public QUndoCommand
00075 {
00076 public:
00077     UndoableScaleCommand(qreal x, qreal y, qreal scaleFactor, const QString& text, BaseObject* obj,
00078                           View* v, QUndoCommand* parent = 0);
00079     void undo();
00080     void redo();
00081
00082 private:
00083     BaseObject* object;
00084     View*       gview;
00085     qreal       dx;
00086     qreal       dy;
00087     qreal       factor;
00088 };
00089
00090 class UndoableNavCommand : public QUndoCommand
00091 {
00092 public:
00093     UndoableNavCommand(const QString& type, View* v, QUndoCommand* parent = 0);
00094
00095     int id() const { return 1234; }
00096     bool mergeWith(const QUndoCommand* command);
00097     void undo();
00098     void redo();
00099
00100 private:
00101     QString navType;
00102     QTransform fromTransform;
00103     QTransform toTransform;
00104     QPointF fromCenter;
00105     QPointF toCenter;
00106     bool done;
00107     View*   gview;
00108 };
00109
00110 class UndoableGripEditCommand : public QUndoCommand
00111 {
00112 public:
00113     UndoableGripEditCommand(const QPointF beforePoint, const QPointF afterPoint, const QString& text,
00114                             BaseObject* obj, View* v, QUndoCommand* parent = 0);
00115     void undo();
00116     void redo();
00117
00118 private:
00119     BaseObject* object;
00120     View*       gview;
00121     QPointF    before;
00122     QPointF    after;
00123 };
00124
00125
00126 class UndoableMirrorCommand : public QUndoCommand
00127 {
00128 public:
00129     UndoableMirrorCommand(qreal x1, qreal y1, qreal x2, qreal y2, const QString& text, BaseObject*
00130                           obj, View* v, QUndoCommand* parent = 0);
00131     void undo();
00132     void redo();
00133
00134 private:
00135     void mirror();
00136
00137     BaseObject* object;
00138     View*       gview;
00139     QLineF     mirrorLine;
00140
00141 };
00142
00143 #endif
00144
00145 /* kate: bom off; indent-mode cststyle; indent-width 4; replace-trailing-space-save on; */

```

## 19.109 embroidermodder2/undo-editor.cpp File Reference

```
#include <QUndoGroup>
#include <QUndoStack>
```

```
#include <QUndoView>
#include <QKeyEvent>
#include "undo-editor.h"
#include "undo-commands.h"
```

## 19.110 embroidermodder2/undo-editor.h File Reference

```
#include <QDockWidget>
```

### Classes

- class [UndoEditor](#)

## 19.111 undo-editor.h

[Go to the documentation of this file.](#)

```
00001 #ifndef UNDO_EDITOR_H
00002 #define UNDO_EDITOR_H
00003
00004 #include <QDockWidget>
00005
00006 QT_BEGIN_NAMESPACE
00007 class QUndoGroup;
00008 class QUndoStack;
00009 class QUndoView;
00010 QT_END_NAMESPACE
00011
00012 class UndoEditor : public QDockWidget
00013 {
00014     Q_OBJECT
00015
00016 public:
00017     UndoEditor(const QString& iconDirectory = QString(), QWidget* widgetToFocus = 0, QWidget* parent =
00018     0); //, Qt::WindowFlags flags = 0);
00019     ~UndoEditor();
00020
00021     void addStack(QUndoStack* stack);
00022
00023     bool canUndo() const;
00024     bool canRedo() const;
00025
00026     QString undoText() const;
00027     QString redoText() const;
00028
00029 protected:
00030
00031     void slots();
00032
00033     void updateCleanIcon(bool opened);
00034
00035 private:
00036     QWidget* focusWidget;
00037
00038     QString iconDir;
00039     int iconSize;
00040
00041     QUndoGroup* undoGroup;
00042     QUndoView* undoView;
00043 };
00044
00045 #endif
00046
00047 /* kate: bom off; indent-mode cstyle; indent-width 4; replace-trailing-space-save on; */
```

## 19.112 **embroidermodder2/utility.h** File Reference

```
#include <QMainWindow>
```

### TypeDefs

- `typedef qreal EmbReal`
- `typedef QString EmbString`

#### 19.112.1 Detailed Description

For functions, typedefs etc. that are not part of a class or libembroidery.

#### 19.112.2 TypeDef Documentation

##### 19.112.2.1 **EmbReal** `typedef qreal EmbReal`

##### 19.112.2.2 **EmbString** `typedef QString EmbString`

## 19.113 utility.h

[Go to the documentation of this file.](#)

```
00001
00007 #ifndef __EMBROIDERMODDER_UTILITY_H__
00008 #define __EMBROIDERMODDER_UTILITY_H__
00009
00010 #include <QMainWindow>
00011
00012 typedef qreal EmbReal;
00013 typedef QString EmbString;
00014
00015 #endif
```

### 19.114 embroidermodder2/view.cpp File Reference

```
#include "view.h"
#include "property-editor.h"
#include "statusbar.h"
#include "object-data.h"
#include "object-base.h"
#include "undo-editor.h"
#include "undo-commands.h"
#include "selectbox.h"
#include "object-arc.h"
#include "object-circle.h"
#include "object-dimleader.h"
#include "object-ellipse.h"
#include "object-image.h"
#include "object-line.h"
#include "object-path.h"
#include "object-point.h"
#include "object-polygon.h"
#include "object-polyline.h"
#include "object-rect.h"
#include "object-textsingle.h"
#include <QtGui>
#include <QGraphicsScene>
```

### 19.115 embroidermodder2/view.h File Reference

```
#include <QGraphicsView>
#include <QGraphicsScene>
#include "mainwindow.h"
```

#### Classes

- class [View](#)

### 19.116 view.h

[Go to the documentation of this file.](#)

```
00001 #ifndef VIEW_H
00002 #define VIEW_H
00003
00004 #include <QGraphicsView>
00005 #include <QGraphicsScene>
00006 #include "mainwindow.h"
00007
00008 class MainWindow;
00009 class BaseObject;
00010 class SelectBox;
00011
00012 QT_BEGIN_NAMESPACE
00013 class QGraphicsScene;
00014 class QUndoStack;
00015 QT_END_NAMESPACE
00016
00017 class View : public QGraphicsView
00018 {
00019     Q_OBJECT
```

```
00020
00021 public:
00022     View(MainWindow* mw, QGraphicsScene* theScene, QWidget* parent);
00023     ~View();
00024
00025     bool allowZoomIn();
00026     bool allowZoomOut();
00027
00028     void recalculateLimits();
00029     void zoomToPoint(const QPoint& mousePoint, int zoomDir);
00030     void centerAt(const QPointF& centerPoint);
00031     QPointF center() { return mapToScene(rect().center()); }
00032
00033     QUndoStack* getUndoStack() { return undoStack; }
00034     void addObject(BaseObject* obj);
00035     void deleteObject(BaseObject* obj);
00036     void vulcanizeObject(BaseObject* obj);
00037
00038 public slots:
00039     void zoomIn();
00040     void zoomOut();
00041     void zoomWindow();
00042     void zoomSelected();
00043     void zoomExtents();
00044     void panRealTime();
00045     void panPoint();
00046     void panLeft();
00047     void panRight();
00048     void panUp();
00049     void panDown();
00050     void selectAll();
00051     void selectionChanged();
00052     void clearSelection();
00053     void deleteSelected();
00054     void moveSelected(qreal dx, qreal dy);
00055     void cut();
00056     void copy();
00057     void paste();
00058     void repeatAction();
00059     void moveAction();
00060     void scaleAction();
00061     void scaleSelected(qreal x, qreal y, qreal factor);
00062     void rotateAction();
00063     void rotateSelected(qreal x, qreal y, qreal rot);
00064     void mirrorSelected(qreal xl, qreal yl, qreal x2, qreal y2);
00065     int numSelected();
00066
00067     void deletePressed();
00068     void escapePressed();
00069
00070     void cornerButtonClicked();
00071
00072     void showScrollBars(bool val);
00073     void setCornerButton();
00074     void setCrossHairColor(QRgb color);
00075     void setCrossHairSize(quint8 percent);
00076     void setBackgroundColor(QRgb color);
00077     void setSelectBoxColors(QRgb colorL, QRgb fillL, QRgb colorR, QRgb fillR, int alpha);
00078     void toggleSnap(bool on);
00079     void toggleGrid(bool on);
00080     void toggleRuler(bool on);
00081     void toggleOrtho(bool on);
00082     void togglePolar(bool on);
00083     void toggleQSnap(bool on);
00084     void toggleQTrack(bool on);
00085     void toggleLwt(bool on);
00086     void toggleReal(bool on);
00087     bool isLwtEnabled();
00088     bool isRealEnabled();
00089
00090     void setGridColor(QRgb color);
00091     void createGrid(const QString& gridType);
00092     void setRulerColor(QRgb color);
00093
00094     void previewOn(int clone, int mode, qreal x, qreal y, qreal data);
00095     void previewOff();
00096
00097     void enableMoveRapidFire();
00098     void disableMoveRapidFire();
00099
00100    bool allowRubber();
00101    void addToRubberRoom(QGraphicsItem* item);
00102    void vulcanizeRubberRoom();
00103    void clearRubberRoom();
00104    void spareRubber(qint64 id);
00105    void setRubberMode(int mode);
00106    void setRubberPoint(const QString& key, const QPointF& point);
```

```

00107     void setRubberText(const QString& key, const QString& txt);
00108
00109 protected:
00110     void mouseDoubleClickEvent(QMouseEvent* event);
00111     void mousePressEvent(QMouseEvent* event);
00112     void mouseMoveEvent(QMouseEvent* event);
00113     void mouseReleaseEvent(QMouseEvent* event);
00114     void wheelEvent(QWheelEvent* event);
00115     void contextMenuEvent(QContextMenuEvent* event);
00116     void drawBackground(QPainter* painter, const QRectF& rect);
00117     void drawForeground(QPainter* painter, const QRectF& rect);
00118     void enterEvent(QEvent* event);
00119
00120 private:
00121     QHash<qint64, QGraphicsItem*> hashDeletedObjects;
00122
00123     QList<qint64> spareRubberList;
00124
00125     QColor gridColor;
00126     QPainterPath gridPath;
00127     void createGridRect();
00128     void createGridPolar();
00129     void createGridIso();
00130     QPainterPath originPath;
00131     void createOrigin();
00132
00133     bool rulerMetric;
00134     QColor rulerColor;
00135     quint8 rulerPixelSize;
00136     void loadRulerSettings();
00137
00138     bool willUnderflowInt32(qint64 a, qint64 b);
00139     bool willOverflowInt32(qint64 a, qint64 b);
00140     int roundToMultiple(bool roundUp, int numToRound, int multiple);
00141     QPainterPath createRulerTextPath(float x, float y, QString str, float height);
00142
00143     QList<QGraphicsItem*> previewObjectList;
00144     QGraphicsItemGroup* previewObjectItemGroup;
00145     QPointF previewPoint;
00146     qreal previewData;
00147     int previewMode;
00148
00149     QList<QGraphicsItem*> createObjectList(QList<QGraphicsItem*> list);
00150     QPointF cutCopyMousePoint;
00151     QGraphicsItemGroup* pasteObjectItemGroup;
00152     QPointF pasteDelta;
00153
00154     QList<QGraphicsItem*> rubberRoomList;
00155
00156     void copySelected();
00157
00158     bool grippingActive;
00159     bool rapidMoveActive;
00160     bool previewActive;
00161     bool pastingActive;
00162     bool movingActive;
00163     bool selectingActive;
00164     bool zoomWindowActive;
00165     bool panningRealTimeActive;
00166     bool panningPointActive;
00167     bool panningActive;
00168     bool qSnapActive;
00169     bool qSnapToggle;
00170
00171     void startGripping(BaseObject* obj);
00172     void stopGripping(bool accept = false);
00173
00174     BaseObject* gripBaseObj;
00175     BaseObject* tempBaseObj;
00176
00177     MainWindow* mainWin;
00178     QGraphicsScene* gscene;
00179     QUndoStack* undoStack;
00180
00181     SelectBox* selectBox;
00182     QPointF scenePressPoint;
00183     QPoint pressPoint;
00184     QPointF sceneMovePoint;
00185     QPoint movePoint;
00186     QPointF scenerReleasePoint;
00187     QPoint releasePoint;
00188     QPointF sceneGripPoint;
00189
00190     void updateMouseCoords(int x, int y);
00191     QPoint viewMousePoint;
00192     QPointF sceneMousePoint;
00193     QRgb qsnapLocatorColor;

```

```

00194     quint8 qsnapLocatorSize;
00195     quint8 qsnapApertureSize;
00196     QRgb gripColorCool;
00197     QRgb gripColorHot;
00198     quint8 gripSize;
00199     quint8 pickBoxSize;
00200     QRgb crosshairColor;
00201     quint32 crosshairSize;
00202
00203     void panStart(const QPoint& point);
00204     int panDistance;
00205     int panStartX;
00206     int panStartY;
00207
00208     void alignScenePointWithViewPoint(const QPointF& scenePoint, const QPoint& viewPoint);
00209
00210     inline qreal pi() { return (qAtan(1.0)*4.0); };
00211     inline qreal radians(qreal degrees) { return (degrees*pi()/180.0); };
00212 };
00213
00214 #endif
00215
00216 /* kate: bom off; indent-mode cstyle; indent-width 4; replace-trailing-space-save on; */

```

## 19.117 extern/libembroidery/src/array.c File Reference

```

#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include "embroidery_internal.h"

```

### Functions

- `EmbArray * embArray_create (int type)`
- `int embArray_resize (EmbArray *a)`
- `void embArray_copy (EmbArray *dst, EmbArray *src)`
- `int embArray_addArc (EmbArray *a, EmbArc b)`
- `int embArray_addCircle (EmbArray *a, EmbCircle b)`
- `int embArray_addEllipse (EmbArray *a, EmbEllipse b)`
- `int embArray_addFlag (EmbArray *a, EmbFlag b)`
- `int embArray_addLine (EmbArray *a, EmbLine b)`
- `int embArray_addPath (EmbArray *a, EmbPath b)`
- `int embArray_addPoint (EmbArray *a, EmbPoint b)`
- `int embArray_addPolyline (EmbArray *a, EmbPolyline b)`
- `int embArray_addPolygon (EmbArray *a, EmbPolygon b)`
- `int embArray_addRect (EmbArray *a, EmbRect b)`
- `int embArray_addStitch (EmbArray *a, EmbStitch b)`
- `int embArray_addVector (EmbArray *a, EmbVector b)`
- `void embArray_free (EmbArray *a)`

### 19.117.1 Function Documentation

**19.117.1.1 `embArray_addArc()`** `int embArray_addArc (`

```

    EmbArray * a,
    EmbArc b )

```

**Parameters**

a	
b	

**Returns**

int

**19.117.1.2 embArray\_addCircle()** int embArray\_addCircle (`EmbArray * a,  
EmbCircle b )`**Parameters**

a	
b	

**Returns**

int

**19.117.1.3 embArray\_addEllipse()** int embArray\_addEllipse (`EmbArray * a,  
EmbEllipse b )`**Parameters**

a	
b	

**Returns**

int

**19.117.1.4 embArray\_addFlag()** int embArray\_addFlag (`EmbArray * a,  
EmbFlag b )`**Parameters**

a	
b	

Returns

int

**19.117.1.5 embArray\_addLine()** int embArray\_addLine (

```
EmbArray * a,
EmbLine b )
```

Parameters

a	
b	

Returns

int

**19.117.1.6 embArray\_addPath()** int embArray\_addPath (

```
EmbArray * a,
EmbPath b )
```

Parameters

a	
b	

Returns

int

**19.117.1.7 embArray\_addPoint()** int embArray\_addPoint (

```
EmbArray * a,
EmbPoint b )
```

Parameters

a	
b	

Returns

int

**19.117.1.8 embArray\_addPolygon()** int embArray\_addPolygon (

```
EmbArray * a,  
EmbPolygon b )
```

**Parameters**

a	
b	

**Returns**

int

**19.117.1.9 embArray\_addPolyline()** int embArray\_addPolyline (

```
EmbArray * a,  
EmbPolyline b )
```

**Parameters**

a	
b	

**Returns**

int

**19.117.1.10 embArray\_addRect()** int embArray\_addRect (

```
EmbArray * a,  
EmbRect b )
```

**Parameters**

a	
b	

**Returns**

int

**19.117.1.11 embArray\_addStitch()** int embArray\_addStitch (

```
EmbArray * a,  
EmbStitch b )
```

**Parameters**

a	
b	

**Returns**

int

**19.117.1.12 embArray\_addVector()** int embArray\_addVector (`EmbArray * a,  
EmbVector b )`**Parameters**

a	
b	

**Returns**

int

**19.117.1.13 embArray\_copy()** void embArray\_copy (`EmbArray * dst,  
EmbArray * src )`**Parameters**

dst	
src	

**19.117.1.14 embArray\_create()** EmbArray \* embArray\_create (`int type )`**Parameters**

type	
------	--

**Returns**

EmbArray\*

**19.117.1.15 embArray\_free()** void embArray\_free ( EmbArray \* a )

Parameters

a	
---	--

**19.117.1.16 embArray\_resize()** int embArray\_resize ( EmbArray \* a )

Parameters

a	
---	--

Returns

int

## 19.118 extern/libembroidery/src/compress.c File Reference

```
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include "embroidery_internal.h"
```

### Functions

- int [hus\\_compress](#) (char \*data, int length, char \*output, int \*output\_length)
- void [huffman\\_build\\_table](#) (huffman \*h)  
*These next 2 functions represent the [Huffman](#) class in tartarize's code.*
- int \* [huffman\\_lookup](#) (huffman h, int byte\_lookup)
- void [compress\\_init](#) ()
- int [compress\\_get\\_bits](#) (compress \*c, int length)
- int [compress\\_pop](#) (compress \*c, int bit\_count)
- int [compress\\_peek](#) (compress \*c, int bit\_count)
- int [compress\\_read\\_variable\\_length](#) (compress \*c)
- void [compress\\_load\\_character\\_length\\_huffman](#) (compress \*c)
- void [compress\\_load\\_character\\_huffman](#) (compress \*c)
- void [compress\\_load\\_distance\\_huffman](#) (compress \*c)
- void [compress\\_load\\_block](#) (compress \*c)
- int [compress\\_get\\_token](#) (compress \*c)
- int [compress\\_get\\_position](#) (compress \*c)
- int [hus\\_decompress](#) (char \*data, int length, char \*output, int \*output\_length)

### Variables

- int [huffman\\_lookup\\_data](#) [2]

**19.118.1 Function Documentation****19.118.1.1 compress\_get\_bits()** `int compress_get_bits (`  
`compress * c,`  
`int length )`**Parameters**

<code>c</code>	
<code>length</code>	

**Returns**`int`**19.118.1.2 compress\_get\_position()** `int compress_get_position (`  
`compress * c )`**Parameters**

<code>c</code>	
----------------	--

**Returns**`int`**19.118.1.3 compress\_get\_token()** `int compress_get_token (`  
`compress * c )`**Parameters**

<code>c</code>	
----------------	--

**Returns**`int`**19.118.1.4 compress\_init()** `void compress_init ( )`

**19.118.1.5 compress\_load\_block()** void compress\_load\_block (   
   compress \* c )

Parameters

c	
---	--

**19.118.1.6 compress\_load\_character\_huffman()** void compress\_load\_character\_huffman (   
   compress \* c )

Parameters

c	
---	--

**19.118.1.7 compress\_load\_character\_length\_huffman()** void compress\_load\_character\_length\_←  
huffman (   
   compress \* c )

Parameters

c	
---	--

**19.118.1.8 compress\_load\_distance\_huffman()** void compress\_load\_distance\_huffman (   
   compress \* c )

Parameters

c	
---	--

**19.118.1.9 compress\_peek()** int compress\_peek (   
   compress \* c,   
   int bit\_count )

Parameters

c	
bit_count	

Returns

int

**19.118.1.10 compress\_pop()** int compress\_pop (   
   compress \* c,   
   int bit\_count )

Parameters

c	
bit_count	

Returns

int

**19.118.1.11 compress\_read\_variable\_length()** int compress\_read\_variable\_length (   
   compress \* c )

Parameters

c	
---	--

Returns

int

**19.118.1.12 huffman\_build\_table()** void huffman\_build\_table (   
   huffman \* h )

These next 2 functions represent the [Huffman](#) class in tartarize's code.

Parameters

h	
---	--

**19.118.1.13 huffman\_lookup()** int \* huffman\_lookup (   
   huffman h,   
   int byte\_lookup )

**Parameters**

<i>h</i>	
<i>byte_lookup</i>	

**Returns**

int\*

```
19.118.1.14 hus_compress() int hus_compress (
    char * data,
    int length,
    char * output,
    int * output_length )
```

This file is part of libembroidery.

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This file contains all the read and write functions for the library.

Thanks to Jason Weiler for describing the binary formats of the HUS and VIP formats at:

<http://www.jasonweiler.com/HUSandVIPFileInfo.html>

Further thanks to github user tatarize for solving the mystery of the compression in:

<https://github.com/EmbroidePy/pyembroidery>

with a description of that work here:

<https://stackoverflow.com/questions/7852670/greenleaf-archive-library>

This is based on their work.

**Parameters**

<i>data</i>	
<i>length</i>	
<i>output</i>	
<i>output_length</i>	

**Returns**

int

This avoids the now unnecessary compression by placing a minimal header of 6 bytes and using only literals in the huffman compressed part (see the sources above).

```
19.118.1.15 hus_decompress() int hus_decompress (
    char * data,
    int length,
    char * output,
    int * output_length )
```

**Parameters**

<i>data</i>	
<i>length</i>	
<i>output</i>	
<i>output_length</i>	

**Returns**

int

**19.118.2 Variable Documentation****19.118.2.1 huffman\_lookup\_data** int huffman\_lookup\_data[2]**19.119 `extern/libembroidery/src/embedded.md` File Reference****19.120 `extern/libembroidery/src/embroider_cli.md` File Reference****19.121 `extern/libembroidery/src/embroidery.h` File Reference****Classes**

- struct [EmbColor\\_](#)
- struct [EmbVector\\_](#)
- struct [EmblImage\\_](#)
- struct [EmbBlock\\_](#)
- struct [EmbAlignedDim\\_](#)
- struct [EmbAngularDim\\_](#)
- struct [EmbArcLengthDim\\_](#)
- struct [EmbDiameterDim\\_](#)
- struct [EmbLeaderDim\\_](#)
- struct [EmbLinearDim\\_](#)
- struct [EmbOrdinateDim\\_](#)
- struct [EmbRadiusDim\\_](#)
- struct [EmbInfiniteLine\\_](#)
- struct [EmbRay\\_](#)
- struct [EmbTextMulti\\_](#)
- struct [EmbTextSingle\\_](#)
- struct [EmbTime\\_](#)
- struct [EmbPoint\\_](#)

- struct `EmbLine_`
- struct `EmbPath_`
- struct `EmbStitch_`
- struct `EmbThread_`
- struct `thread_color_`
- struct `EmbArc_`  
*absolute position (not relative)*
- struct `EmbRect_`
- struct `EmbCircle_`
- struct `EmbSatinOutline_`
- struct `EmbEllipse_`
- struct `EmbBezier_`
- struct `EmbSpline_`
- struct `LSYSTEM`
- struct `EmbGeometry_`
- struct `EmbArray_`
- struct `EmbLayer_`
- struct `EmbPattern_`
- struct `EmbFormatList_`

## Macros

- `#define LIBEMBROIDERY_EMBEDDED_VERSION 0`
- `#define NORMAL 0 /*! stitch to (x, y) */`
- `#define JUMP 1 /*! move to (x, y) */`
- `#define TRIM 2 /*! trim + move to (x, y) */`
- `#define STOP 4 /*! pause machine for thread change */`
- `#define SEQUIN 8 /*! sequin */`
- `#define END 16 /*! end of program */`
- `#define EMB_FORMAT_100 0`
- `#define EMB_FORMAT_10O 1`
- `#define EMB_FORMAT_ART 2`
- `#define EMB_FORMAT_BMC 3`
- `#define EMB_FORMAT_BRO 4`
- `#define EMB_FORMAT_CND 5`
- `#define EMB_FORMAT_COL 6`
- `#define EMB_FORMAT_CSD 7`
- `#define EMB_FORMAT_CSV 8`
- `#define EMB_FORMAT_DAT 9`
- `#define EMB_FORMAT_DEM 10`
- `#define EMB_FORMAT_DSB 11`
- `#define EMB_FORMAT_DST 12`
- `#define EMB_FORMAT_DSZ 13`
- `#define EMB_FORMAT_DXF 14`
- `#define EMB_FORMAT_EDR 15`
- `#define EMB_FORMAT_EMD 16`
- `#define EMB_FORMAT_EXP 17`
- `#define EMB_FORMAT_EXY 18`
- `#define EMB_FORMAT_EYS 19`
- `#define EMB_FORMAT_FXY 20`
- `#define EMB_FORMAT_GC 21`
- `#define EMB_FORMAT_GNC 22`
- `#define EMB_FORMAT_GT 23`
- `#define EMB_FORMAT_HUS 24`

- #define EMB\_FORMAT\_INB 25
- #define EMB\_FORMAT\_INF 26
- #define EMB\_FORMAT\_JEF 27
- #define EMB\_FORMAT\_KSM 28
- #define EMB\_FORMAT\_MAX 29
- #define EMB\_FORMAT\_MIT 30
- #define EMB\_FORMAT\_NEW 31
- #define EMB\_FORMAT\_OFM 32
- #define EMB\_FORMAT\_PCD 33
- #define EMB\_FORMAT\_PCM 34
- #define EMB\_FORMAT\_PCQ 35
- #define EMB\_FORMAT\_PCS 36
- #define EMB\_FORMAT\_PEC 37
- #define EMB\_FORMAT\_PEL 38
- #define EMB\_FORMAT\_PEM 39
- #define EMB\_FORMAT\_PES 40
- #define EMB\_FORMAT\_PHB 41
- #define EMB\_FORMAT\_PHC 42
- #define EMB\_FORMAT\_PLT 43
- #define EMB\_FORMAT\_RGB 44
- #define EMB\_FORMAT\_SEW 45
- #define EMB\_FORMAT\_SHV 46
- #define EMB\_FORMAT\_SST 47
- #define EMB\_FORMAT\_STX 48
- #define EMB\_FORMAT\_SVG 49
- #define EMB\_FORMAT\_T01 50
- #define EMB\_FORMAT\_T09 51
- #define EMB\_FORMAT\_TAP 52
- #define EMB\_FORMAT\_THR 53
- #define EMB\_FORMAT\_TXT 54
- #define EMB\_FORMAT\_U00 55
- #define EMB\_FORMAT\_U01 56
- #define EMB\_FORMAT\_VIP 57
- #define EMB\_FORMAT\_VP3 58
- #define EMB\_FORMAT\_XXX 59
- #define EMB\_FORMAT\_ZSK 60
- #define Arc\_Polyester 0
- #define Arc\_Rayon 1
- #define CoatsAndClark\_Rayon 2
- #define Exquisite\_Polyester 3
- #define Fufu\_Polyester 4
- #define Fufu\_Rayon 5
- #define Hemingworth\_Polyester 6
- #define Isacord\_Polyester 7
- #define Isafil\_Rayon 8
- #define Marathon\_Polyester 9
- #define Marathon\_Rayon 10
- #define Madeira\_Polyester 11
- #define Madeira\_Rayon 12
- #define Metro\_Polyester 13
- #define Pantone 14
- #define RobisonAnton\_Polyester 15
- #define RobisonAnton\_Rayon 16
- #define Sigma\_Polyester 17
- #define Sulky\_Rayon 18

- #define ThreadArt\_Rayon 19
- #define ThreadArt\_Polyester 20
- #define ThreaDelight\_Polyester 21
- #define Z102\_Isacord\_Polyester 22
- #define SVG\_Colors 23
- #define hus\_thread 24
- #define jef\_thread 25
- #define pcm\_thread 26
- #define pec\_thread 27
- #define shv\_thread 28
- #define dxf\_color 29
- #define EMB\_ARRAY 0
- #define EMB\_ARC 1
- #define EMB\_CIRCLE 2
- #define EMB\_DIM\_DIAMETER 3
- #define EMB\_DIM\_LEADER 4
- #define EMB\_ELLIPSE 5
- #define EMB\_FLAG 6
- #define EMB\_LINE 7
- #define EMB\_IMAGE 8
- #define EMB\_PATH 9
- #define EMB\_POINT 10
- #define EMB\_POLYGON 11
- #define EMB\_POLYLINE 12
- #define EMB\_RECT 13
- #define EMB\_SPLINE 14
- #define EMB\_STITCH 15
- #define EMB\_TEXT\_SINGLE 16
- #define EMB\_TEXT\_MULTI 17
- #define EMB\_VECTOR 18
- #define EMB\_THREAD 19
- #define EMBFORMAT\_UNSUPPORTED 0
- #define EMBFORMAT\_STITCHONLY 1
- #define EMBFORMAT\_OBJECTONLY 2
- #define EMBFORMAT\_STCHANDOBJ 3 /\* binary operation: 1+2=3 \*/
- #define numberFormats 61
- #define CHUNK\_SIZE 128
- #define EMB\_MAX\_LAYERS 10
- #define MAX\_THREADS 256
- #define EMBFORMAT\_MAXEXT 3
- #define EMBFORMAT\_MAXDESC 50
- #define MAX\_STITCHES 1000000
- #define EMB\_PUBLIC

## Typedefs

- typedef float EmbReal
- typedef struct EmbColor\_ EmbColor
- typedef struct EmbVector\_ EmbVector
- typedef struct EmbArray\_ EmbArray
- typedef struct EmbImage\_ EmbImage
- typedef struct EmbBlock\_ EmbBlock
- typedef struct EmbAlignedDim\_ EmbAlignedDim
- typedef struct EmbAngularDim\_ EmbAngularDim

- `typedef struct EmbArcLengthDim_ EmbArcLengthDim`
- `typedef struct EmbDiameterDim_ EmbDiameterDim`
- `typedef struct EmbLeaderDim_ EmbLeaderDim`
- `typedef struct EmbLinearDim_ EmbLinearDim`
- `typedef struct EmbOrdinateDim_ EmbOrdinateDim`
- `typedef struct EmbRadiusDim_ EmbRadiusDim`
- `typedef struct EmbInfiniteLine_ EmbInfiniteLine`
- `typedef struct EmbRay_ EmbRay`
- `typedef struct EmbTextMulti_ EmbTextMulti`
- `typedef struct EmbTextSingle_ EmbTextSingle`
- `typedef struct EmbTime_ EmbTime`
- `typedef struct EmbPoint_ EmbPoint`
- `typedef struct EmbLine_ EmbLine`
- `typedef struct EmbPath_ EmbPath`
- `typedef struct EmbStitch_ EmbStitch`
- `typedef struct EmbThread_ EmbThread`
- `typedef struct thread_color_ thread_color`
- `typedef struct EmbArc_ EmbArc`  
*absolute position (not relative)*
- `typedef struct EmbRect_ EmbRect`
- `typedef struct EmbCircle_ EmbCircle`
- `typedef EmbPath EmbPolygon`
- `typedef EmbPath EmbPolyline`
- `typedef int EmbFlag`
- `typedef struct EmbSatinOutline_ EmbSatinOutline`
- `typedef struct EmbEllipse_ EmbEllipse`
- `typedef struct EmbBezier_ EmbBezier`
- `typedef struct EmbSpline_ EmbSpline`
- `typedef struct LSYSTEM L_system`
- `typedef struct EmbGeometry_ EmbGeometry`
- `typedef struct EmbLayer_ EmbLayer`
- `typedef struct EmbPattern_ EmbPattern`
- `typedef struct EmbFormatList_ EmbFormatList`

## Functions

- `EMB_PUBLIC int lindenmayer_system (L_system L, char *state, int iteration, int complete)`
- `EMB_PUBLIC int hilbert_curve (EmbPattern *pattern, int iterations)`
- `EMB_PUBLIC int emb_identify_format (const char *ending)`
- `EMB_PUBLIC void testMain (int level)`
- `EMB_PUBLIC int convert (const char *inf, const char *outf)`
- `EMB_PUBLIC EmbColor embColor_make (unsigned char r, unsigned char g, unsigned char b)`
- `EMB_PUBLIC EmbColor * embColor_create (unsigned char r, unsigned char g, unsigned char b)`
- `EMB_PUBLIC EmbColor embColor_fromHexStr (char *val)`  
*Converts a 6 digit hex string (I.E. "00FF00") into an EmbColor and returns it.*
- `EMB_PUBLIC int embColor_distance (EmbColor a, EmbColor b)`
- `EMB_PUBLIC EmbArray * embArray_create (int type)`
- `EMB_PUBLIC int embArray_resize (EmbArray *g)`
- `EMB_PUBLIC void embArray_copy (EmbArray *dst, EmbArray *src)`
- `EMB_PUBLIC int embArray_addArc (EmbArray *g, EmbArc arc)`
- `EMB_PUBLIC int embArray_addCircle (EmbArray *g, EmbCircle circle)`
- `EMB_PUBLIC int embArray_addEllipse (EmbArray *g, EmbEllipse ellipse)`
- `EMB_PUBLIC int embArray_addFlag (EmbArray *g, int flag)`

- EMB\_PUBLIC int embArray\_addLine (EmbArray \*g, EmbLine line)
- EMB\_PUBLIC int embArray\_addRect (EmbArray \*g, EmbRect rect)
- EMB\_PUBLIC int embArray\_addPath (EmbArray \*g, EmbPath p)
- EMB\_PUBLIC int embArray\_addPoint (EmbArray \*g, EmbPoint p)
- EMB\_PUBLIC int embArray\_addPolygon (EmbArray \*g, EmbPolygon p)
- EMB\_PUBLIC int embArray\_addPolyline (EmbArray \*g, EmbPolyline p)
- EMB\_PUBLIC int embArray\_addStitch (EmbArray \*g, EmbStitch st)
- EMB\_PUBLIC int embArray\_addThread (EmbArray \*g, EmbThread p)
- EMB\_PUBLIC int embArray\_addVector (EmbArray \*g, EmbVector)
- EMB\_PUBLIC void embArray\_free (EmbArray \*p)
- EMB\_PUBLIC EmbLine embLine\_make (EmbReal x1, EmbReal y1, EmbReal x2, EmbReal y2)
- EMB\_PUBLIC void embLine\_normalVector (EmbLine line, EmbVector \*result, int clockwise)
- EMB\_PUBLIC EmbVector embLine\_intersectionPoint (EmbLine line1, EmbLine line2)
- EMB\_PUBLIC int embThread\_findNearestColor (EmbColor color, EmbColor \*colors, int n\_colors)
- EMB\_PUBLIC int embThread\_findNearestThread (EmbColor color, EmbThread \*threads, int n\_threads)
- EMB\_PUBLIC EmbThread embThread\_getRandom (void)
- EMB\_PUBLIC void embVector\_normalize (EmbVector vector, EmbVector \*result)
- EMB\_PUBLIC void embVector\_multiply (EmbVector vector, EmbReal magnitude, EmbVector \*result)
- EMB\_PUBLIC EmbVector embVector\_add (EmbVector v1, EmbVector v2)
- EMB\_PUBLIC EmbVector embVector\_average (EmbVector v1, EmbVector v2)
- EMB\_PUBLIC EmbVector embVector\_subtract (EmbVector v1, EmbVector v2)
- EMB\_PUBLIC EmbReal embVector\_dot (EmbVector v1, EmbVector v2)
- EMB\_PUBLIC EmbReal embVector\_cross (EmbVector v1, EmbVector v2)

The "cross product" as vectors *a* and *b* returned as a real value.

- EMB\_PUBLIC void embVector\_transpose\_product (EmbVector v1, EmbVector v2, EmbVector \*result)
- EMB\_PUBLIC EmbReal embVector\_length (EmbVector vector)
- EMB\_PUBLIC EmbReal embVector\_relativeX (EmbVector a1, EmbVector a2, EmbVector a3)
- EMB\_PUBLIC EmbReal embVector\_relativeY (EmbVector a1, EmbVector a2, EmbVector a3)
- EMB\_PUBLIC EmbReal embVector\_angle (EmbVector v)
- EMB\_PUBLIC EmbReal embVector\_distance (EmbVector a, EmbVector b)
- EMB\_PUBLIC EmbVector embVector\_unit (EmbReal angle)
- EMB\_PUBLIC EmbArc embArc\_init (void)
- EMB\_PUBLIC char embArc\_clockwise (EmbArc arc)
- EMB\_PUBLIC void getArcCenter (EmbArc arc, EmbVector \*arcCenter)
- EMB\_PUBLIC char getArcDataFromBulge (EmbReal bulge, EmbArc \*arc, EmbReal \*arcCenterX, EmbReal \*arcCenterY, EmbReal \*radius, EmbReal \*diameter, EmbReal \*chord, EmbReal \*chordMidX, EmbReal \*chordMidY, EmbReal \*sagitta, EmbReal \*apothem, EmbReal \*incAngleInDegrees, char \*clockwise)
- EMB\_PUBLIC EmbCircle embCircle\_init (void)
- EMB\_PUBLIC int getCircleCircleIntersections (EmbCircle c0, EmbCircle c1, EmbVector \*v0, EmbVector \*v1)
- EMB\_PUBLIC int getCircleTangentPoints (EmbCircle c, EmbVector p, EmbVector \*v0, EmbVector \*v1)
- EMB\_PUBLIC EmbEllipse embEllipse\_init (void)
- EMB\_PUBLIC EmbEllipse embEllipse\_make (EmbReal cx, EmbReal cy, EmbReal rx, EmbReal ry)
- EMB\_PUBLIC EmbReal embEllipse\_diameterX (EmbEllipse ellipse)
- EMB\_PUBLIC EmbReal embEllipse\_diameterY (EmbEllipse ellipse)
- EMB\_PUBLIC EmbReal embEllipse\_width (EmbEllipse ellipse)
- EMB\_PUBLIC EmbReal embEllipse\_height (EmbEllipse ellipse)
- EMB\_PUBLIC EmbReal embEllipse\_area (EmbEllipse ellipse)
- EMB\_PUBLIC EmbReal embEllipse\_perimeter (EmbEllipse ellipse)
- EMB\_PUBLIC EmbImage embImage\_create (int, int)
- EMB\_PUBLIC void embImage\_read (EmblImage \*image, char \*fname)
- EMB\_PUBLIC int embImage\_write (EmblImage \*image, char \*fname)
- EMB\_PUBLIC void embImage\_free (EmblImage \*image)
- EMB\_PUBLIC EmbRect embRect\_init (void)
- EMB\_PUBLIC EmbReal embRect\_area (EmbRect)

- EMB\_PUBLIC int `threadColor` (const char \*, int brand)
- EMB\_PUBLIC int `threadColorNum` (unsigned int color, int brand)
- EMB\_PUBLIC const char \* `threadColorName` (unsigned int color, int brand)
- EMB\_PUBLIC void `embTime_initNow` (EmbTime \*t)
- EMB\_PUBLIC EmbTime `embTime_time` (EmbTime \*t)
- EMB\_PUBLIC void `embSatinOutline_generateSatinOutline` (EmbArray \*lines, EmbReal thickness, EmbSatinOutline \*result)
- EMB\_PUBLIC EmbArray \* `embSatinOutline_renderStitches` (EmbSatinOutline \*result, EmbReal density)
- EMB\_PUBLIC EmbGeometry \* `embGeometry_init` (int type\_in)
 

*Our generic object interface backends to each individual type.*
- EMB\_PUBLIC void `embGeometry_free` (EmbGeometry \*obj)
 

*Free the memory occupied by a non-stitch geometry object.*
- EMB\_PUBLIC void `embGeometry_move` (EmbGeometry \*obj, EmbVector delta)
 

*Translate obj by the vector delta.*
- EMB\_PUBLIC EmbRect `embGeometry_boundingRect` (EmbGeometry \*obj)
 

*Calculate the bounding box of geometry obj based on what kind of geometric object it is.*
- EMB\_PUBLIC void `embGeometry_vulcanize` (EmbGeometry \*obj)
 

*Toggle the rubber mode of the object.*
- EMB\_PUBLIC EmbPattern \* `embPattern_create` (void)
 

*Returns a pointer to an EmbPattern. It is created on the heap. The caller is responsible for freeing the allocated memory with `embPattern_free()`.*
- EMB\_PUBLIC void `embPattern_hideStitchesOverLength` (EmbPattern \*p, int length)
- EMB\_PUBLIC void `embPattern_fixColorCount` (EmbPattern \*p)
- EMB\_PUBLIC int `embPattern_addThread` (EmbPattern \*p, EmbThread thread)
- EMB\_PUBLIC void `embPattern_addStitchAbs` (EmbPattern \*p, EmbReal x, EmbReal y, int flags, int isAuto←ColorIndex)
- EMB\_PUBLIC void `embPattern_addStitchRel` (EmbPattern \*p, EmbReal dx, EmbReal dy, int flags, int is←AutoColorIndex)
- EMB\_PUBLIC void `embPattern_changeColor` (EmbPattern \*p, int index)
- EMB\_PUBLIC void `embPattern_free` (EmbPattern \*p)
- EMB\_PUBLIC void `embPattern_scale` (EmbPattern \*p, EmbReal scale)
- EMB\_PUBLIC EmbReal `embPattern_totalStitchLength` (EmbPattern \*pattern)
- EMB\_PUBLIC EmbReal `embPattern_minimumStitchLength` (EmbPattern \*pattern)
- EMB\_PUBLIC EmbReal `embPattern_maximumStitchLength` (EmbPattern \*pattern)
- EMB\_PUBLIC void `embPattern_lengthHistogram` (EmbPattern \*pattern, int \*bin, int NUMBINS)
- EMB\_PUBLIC int `embPattern_realStitches` (EmbPattern \*pattern)
- EMB\_PUBLIC int `embPattern_jumpStitches` (EmbPattern \*pattern)
- EMB\_PUBLIC int `embPattern_trimStitches` (EmbPattern \*pattern)
- EMB\_PUBLIC EmbRect `embPattern_calcBoundingBox` (EmbPattern \*p)
- EMB\_PUBLIC void `embPattern_flipHorizontal` (EmbPattern \*p)
- EMB\_PUBLIC void `embPattern_flipVertical` (EmbPattern \*p)
- EMB\_PUBLIC void `embPattern_flip` (EmbPattern \*p, int horz, int vert)
- EMB\_PUBLIC void `embPattern_combineJumpStitches` (EmbPattern \*p)
- EMB\_PUBLIC void `embPattern_correctForMaxStitchLength` (EmbPattern \*p, EmbReal maxStitchLength, EmbReal maxJumpLength)
- EMB\_PUBLIC void `embPattern_center` (EmbPattern \*p)
- EMB\_PUBLIC void `embPattern_loadExternalColorFile` (EmbPattern \*p, const char \*fileName)
- EMB\_PUBLIC void `embPattern_convertGeometry` (EmbPattern \*p)
- EMB\_PUBLIC void `embPattern_designDetails` (EmbPattern \*p)
- EMB\_PUBLIC EmbPattern \* `embPattern_combine` (EmbPattern \*p1, EmbPattern \*p2)
- EMB\_PUBLIC int `embPattern_color_count` (EmbPattern \*pattern, EmbColor startColor)
- EMB\_PUBLIC void `embPattern_end` (EmbPattern \*p)
- EMB\_PUBLIC void `embPattern_crossstitch` (EmbPattern \*pattern, EmblImage \*, int threshhold)
- EMB\_PUBLIC void `embPattern_horizontal_fill` (EmbPattern \*pattern, EmblImage \*, int threshhold)

- EMB\_PUBLIC int embPattern\_render (EmbPattern \*pattern, char \*fname)
- EMB\_PUBLIC int embPattern\_simulate (EmbPattern \*pattern, char \*fname)
- EMB\_PUBLIC void embPattern\_addCircleAbs (EmbPattern \*p, EmbCircle obj)
- EMB\_PUBLIC void embPattern\_addEllipseAbs (EmbPattern \*p, EmbEllipse obj)
- EMB\_PUBLIC void embPattern\_addLineAbs (EmbPattern \*p, EmbLine obj)
- EMB\_PUBLIC void embPattern\_addPathAbs (EmbPattern \*p, EmbPath obj)
- EMB\_PUBLIC void embPattern\_addPointAbs (EmbPattern \*p, EmbPoint obj)
- EMB\_PUBLIC void embPattern\_addPolygonAbs (EmbPattern \*p, EmbPolygon obj)
- EMB\_PUBLIC void embPattern\_addPolylineAbs (EmbPattern \*p, EmbPolyline obj)
- EMB\_PUBLIC void embPattern\_addRectAbs (EmbPattern \*p, EmbRect obj)
- EMB\_PUBLIC void embPattern\_copyStitchListToPolylines (EmbPattern \*pattern)
- EMB\_PUBLIC void embPattern\_copyPolylinesToStitchList (EmbPattern \*pattern)
- EMB\_PUBLIC void embPattern\_moveStitchListToPolylines (EmbPattern \*pattern)
- EMB\_PUBLIC void embPattern\_movePolylinesToStitchList (EmbPattern \*pattern)
- EMB\_PUBLIC char embPattern\_read (EmbPattern \*pattern, const char \*fileName, int format)
- EMB\_PUBLIC char embPattern\_write (EmbPattern \*pattern, const char \*fileName, int format)
- EMB\_PUBLIC char embPattern\_readAuto (EmbPattern \*pattern, const char \*fileName)
- EMB\_PUBLIC char embPattern\_writeAuto (EmbPattern \*pattern, const char \*fileName)
- EMB\_PUBLIC void report (int result, char \*label)
- EMB\_PUBLIC int full\_test\_matrix (char \*fname)
- EMB\_PUBLIC int emb\_round (EmbReal x)
- EMB\_PUBLIC EmbReal radians (EmbReal degree)
- EMB\_PUBLIC EmbReal degrees (EmbReal radian)

## Variables

- EmbFormatList formatTable [numberOfFormats]
- const int pecThreadCount
- const int shvThreadCount
- const EmbReal embConstantPi
- const EmbThread husThreads []
- const EmbThread jefThreads []
- const EmbThread shvThreads []
- const EmbThread pcmThreads []
- const EmbThread pecThreads []
- const unsigned char \_dxfColorTable [ ][3]
- EmbThread black\_thread
- const unsigned char vipDecodingTable []
- int emb\_error

*Error code storage for optional control flow blocking.*
- int emb\_verbose

*Verbosity level.*

### 19.121.1 Macro Definition Documentation

#### 19.121.1.1 Arc\_Polyester #define Arc\_Polyester 0

**19.121.1.2 Arc\_Rayon** #define Arc\_Rayon 1

**19.121.1.3 CHUNK\_SIZE** #define CHUNK\_SIZE 128

**19.121.1.4 CoatsAndClark\_Rayon** #define CoatsAndClark\_Rayon 2

**19.121.1.5 dxf\_color** #define dxf\_color 29

**19.121.1.6 EMB\_ARC** #define EMB\_ARC 1

**19.121.1.7 EMB\_ARRAY** #define EMB\_ARRAY 0

**19.121.1.8 EMB\_CIRCLE** #define EMB\_CIRCLE 2

**19.121.1.9 EMB\_DIM\_DIAMETER** #define EMB\_DIM\_DIAMETER 3

**19.121.1.10 EMB\_DIM\_LEADER** #define EMB\_DIM\_LEADER 4

**19.121.1.11 EMB\_ELLIPSE** #define EMB\_ELLIPSE 5

**19.121.1.12 EMB\_FLAG** #define EMB\_FLAG 6

**19.121.1.13 EMB\_FORMAT\_100** #define EMB\_FORMAT\_100 0

Format identifiers

**19.121.1.14 EMB\_FORMAT\_10O** #define EMB\_FORMAT\_10O 1

**19.121.1.15 EMB\_FORMAT\_ART** #define EMB\_FORMAT\_ART 2

**19.121.1.16 EMB\_FORMAT\_BMC** #define EMB\_FORMAT\_BMC 3

**19.121.1.17 EMB\_FORMAT\_BRO** #define EMB\_FORMAT\_BRO 4

**19.121.1.18 EMB\_FORMAT\_CND** #define EMB\_FORMAT\_CND 5

**19.121.1.19 EMB\_FORMAT\_COL** #define EMB\_FORMAT\_COL 6

**19.121.1.20 EMB\_FORMAT\_CSD** #define EMB\_FORMAT\_CSD 7

**19.121.1.21 EMB\_FORMAT\_CSV** #define EMB\_FORMAT\_CSV 8

**19.121.1.22 EMB\_FORMAT\_DAT** #define EMB\_FORMAT\_DAT 9

**19.121.1.23 EMB\_FORMATDEM** #define EMB\_FORMATDEM 10

**19.121.1.24 EMB\_FORMAT\_DSB** #define EMB\_FORMAT\_DSB 11

**19.121.1.25 EMB\_FORMAT\_DST** #define EMB\_FORMAT\_DST 12

**19.121.1.26 EMB\_FORMAT\_DSZ** #define EMB\_FORMAT\_DSZ 13

**19.121.1.27 EMB\_FORMAT\_DXF** #define EMB\_FORMAT\_DXF 14

**19.121.1.28 EMB\_FORMAT\_EDR** #define EMB\_FORMAT\_EDR 15

**19.121.1.29 EMB\_FORMAT\_EMD** #define EMB\_FORMAT\_EMD 16

**19.121.1.30 EMB\_FORMAT\_EXP** #define EMB\_FORMAT\_EXP 17

**19.121.1.31 EMB\_FORMAT\_EXY** #define EMB\_FORMAT\_EXY 18

**19.121.1.32 EMB\_FORMAT\_EYS** #define EMB\_FORMAT\_EYS 19

**19.121.1.33 EMB\_FORMAT\_FXY** #define EMB\_FORMAT\_FXY 20

**19.121.1.34 EMB\_FORMAT\_GC** #define EMB\_FORMAT\_GC 21

**19.121.1.35 EMB\_FORMAT\_GNC** #define EMB\_FORMAT\_GNC 22

**19.121.1.36 EMB\_FORMAT\_GT** #define EMB\_FORMAT\_GT 23

**19.121.1.37 EMB\_FORMAT\_HUS** #define EMB\_FORMAT\_HUS 24

**19.121.1.38 EMB\_FORMAT\_INB** #define EMB\_FORMAT\_INB 25

**19.121.1.39 EMB\_FORMAT\_INF** #define EMB\_FORMAT\_INF 26

**19.121.1.40 EMB\_FORMAT\_JEF** #define EMB\_FORMAT\_JEF 27

**19.121.1.41 EMB\_FORMAT\_KSM** #define EMB\_FORMAT\_KSM 28

**19.121.1.42 EMB\_FORMAT\_MAX** #define EMB\_FORMAT\_MAX 29

**19.121.1.43 EMB\_FORMAT\_MIT** #define EMB\_FORMAT\_MIT 30

**19.121.1.44 EMB\_FORMAT\_NEW** #define EMB\_FORMAT\_NEW 31

**19.121.1.45 EMB\_FORMAT\_OFM** #define EMB\_FORMAT\_OFM 32

**19.121.1.46 EMB\_FORMAT\_PCD** #define EMB\_FORMAT\_PCD 33

**19.121.1.47 EMB\_FORMAT\_PCM** #define EMB\_FORMAT\_PCM 34

**19.121.1.48 EMB\_FORMAT\_PCQ** #define EMB\_FORMAT\_PCQ 35

**19.121.1.49 EMB\_FORMAT\_PCS** #define EMB\_FORMAT\_PCS 36

**19.121.1.50 EMB\_FORMAT\_PEC** #define EMB\_FORMAT\_PEC 37

**19.121.1.51 EMB\_FORMAT\_PEL** #define EMB\_FORMAT\_PEL 38

**19.121.1.52 EMB\_FORMAT\_PEM** #define EMB\_FORMAT\_PEM 39

**19.121.1.53 EMB\_FORMAT\_PES** #define EMB\_FORMAT\_PES 40

**19.121.1.54 EMB\_FORMAT\_PHB** #define EMB\_FORMAT\_PHB 41

**19.121.1.55 EMB\_FORMAT\_PHC** #define EMB\_FORMAT\_PHC 42

**19.121.1.56 EMB\_FORMAT\_PLT** #define EMB\_FORMAT\_PLT 43

**19.121.1.57 EMB\_FORMAT\_RGB** #define EMB\_FORMAT\_RGB 44

**19.121.1.58 EMB\_FORMAT\_SEW** #define EMB\_FORMAT\_SEW 45

**19.121.1.59 EMB\_FORMAT\_SHV** #define EMB\_FORMAT\_SHV 46

**19.121.1.60 EMB\_FORMAT\_SST** #define EMB\_FORMAT\_SST 47

**19.121.1.61 EMB\_FORMAT\_STX** #define EMB\_FORMAT\_STX 48

**19.121.1.62 EMB\_FORMAT\_SVG** #define EMB\_FORMAT\_SVG 49

**19.121.1.63 EMB\_FORMAT\_T01** #define EMB\_FORMAT\_T01 50

**19.121.1.64 EMB\_FORMAT\_T09** #define EMB\_FORMAT\_T09 51

**19.121.1.65 EMB\_FORMAT\_TAP** #define EMB\_FORMAT\_TAP 52

**19.121.1.66 EMB\_FORMAT\_THR** #define EMB\_FORMAT\_THR 53

**19.121.1.67 EMB\_FORMAT\_TXT** #define EMB\_FORMAT\_TXT 54

**19.121.1.68 EMB\_FORMAT\_U00** #define EMB\_FORMAT\_U00 55

**19.121.1.69 EMB\_FORMAT\_U01** #define EMB\_FORMAT\_U01 56

**19.121.1.70 EMB\_FORMAT\_VIP** #define EMB\_FORMAT\_VIP 57

**19.121.1.71 EMB\_FORMAT\_VP3** #define EMB\_FORMAT\_VP3 58

**19.121.1.72 EMB\_FORMAT\_XXX** #define EMB\_FORMAT\_XXX 59

**19.121.1.73 EMB\_FORMAT\_ZSK** #define EMB\_FORMAT\_ZSK 60

**19.121.1.74 EMB\_IMAGE** #define EMB\_IMAGE 8

**19.121.1.75 EMB\_LINE** #define EMB\_LINE 7

**19.121.1.76 EMB\_MAX\_LAYERS** #define EMB\_MAX\_LAYERS 10

**19.121.1.77 EMB\_PATH** #define EMB\_PATH 9

**19.121.1.78 EMB\_POINT** #define EMB\_POINT 10

**19.121.1.79 EMB\_POLYGON** #define EMB\_POLYGON 11

**19.121.1.80 EMB\_POLYLINE** #define EMB\_POLYLINE 12

**19.121.1.81 EMB\_PUBLIC** #define EMB\_PUBLIC

**19.121.1.82 EMB\_RECT** #define EMB\_RECT 13

**19.121.1.83 EMB\_SPLINE** #define EMB\_SPLINE 14

**19.121.1.84 EMB\_STITCH** #define EMB\_STITCH 15

**19.121.1.85 EMB\_TEXT\_MULTI** #define EMB\_TEXT\_MULTI 17

**19.121.1.86 EMB\_TEXT\_SINGLE** #define EMB\_TEXT\_SINGLE 16

**19.121.1.87 EMB\_THREAD** #define EMB\_THREAD 19

**19.121.1.88 EMB\_VECTOR** #define EMB\_VECTOR 18

**19.121.1.89 EMBFORMAT\_MAXDESC** #define EMBFORMAT\_MAXDESC 50

**19.121.1.90 EMBFORMAT\_MAXEXT** #define EMBFORMAT\_MAXEXT 3

**19.121.1.91 EMBFORMAT\_OBJECTONLY** #define EMBFORMAT\_OBJECTONLY 2

**19.121.1.92 EMBFORMAT\_STCHANDOBJ** #define EMBFORMAT\_STCHANDOBJ 3 /\* binary operation←  
: 1+2=3 \*/

**19.121.1.93 EMBFORMAT\_STITCHONLY** #define EMBFORMAT\_STITCHONLY 1

**19.121.1.94 EMBFORMAT\_UNSUPPORTED** #define EMBFORMAT\_UNSUPPORTED 0

**19.121.1.95 END** #define END 16 /\*! end of program \*/

**19.121.1.96 Exquisite\_Polyester** #define Exquisite\_Polyester 3

**19.121.1.97 Fufu\_Polyester** #define Fufu\_Polyester 4

**19.121.1.98 Fufu\_Rayon** #define Fufu\_Rayon 5

**19.121.1.99 Hemingworth\_Polyester** #define Hemingworth\_Polyester 6

**19.121.1.100 hus\_thread** #define hus\_thread 24

**19.121.1.101 Isacord\_Polyester** #define Isacord\_Polyester 7

**19.121.1.102 Isafil\_Rayon** #define Isafil\_Rayon 8

**19.121.1.103 jef\_thread** #define jef\_thread 25

**19.121.1.104 JUMP** #define JUMP 1 /\*! move to (x, y) \*/

**19.121.1.105 LIBEMBROIDERY\_EMBEDDED\_VERSION** #define LIBEMBROIDERY\_EMBEDDED\_VERSION 0

**19.121.1.106 Madeira\_Polyester** #define Madeira\_Polyester 11

**19.121.1.107 Madeira\_Rayon** #define Madeira\_Rayon 12

**19.121.1.108 Marathon\_Polyester** #define Marathon\_Polyester 9

**19.121.1.109 Marathon\_Rayon** #define Marathon\_Rayon 10

**19.121.1.110 MAX\_STITCHES** #define MAX\_STITCHES 1000000

**19.121.1.111 MAX\_THREADS** #define MAX\_THREADS 256

**19.121.1.112 Metro\_Polyester** #define Metro\_Polyester 13

**19.121.1.113 NORMAL** #define NORMAL 0 /\*! stitch to (x, y) \*/

Machine codes for stitch flags

**19.121.1.114 numberOfFormats** #define numberOfFormats 61

**19.121.1.115 Pantone** #define Pantone 14

**19.121.1.116 pcm\_thread** #define pcm\_thread 26

**19.121.1.117 pec\_thread** #define pec\_thread 27

**19.121.1.118 RobisonAnton\_Polyester** #define RobisonAnton\_Polyester 15

**19.121.1.119 RobisonAnton\_Rayon** #define RobisonAnton\_Rayon 16

**19.121.1.120 SEQUIN** #define SEQUIN 8 /\*! sequin \*/

**19.121.1.121 shv\_thread** #define shv\_thread 28

**19.121.1.122 Sigma\_Polyester** #define Sigma\_Polyester 17

**19.121.1.123 STOP** #define STOP 4 /\*! pause machine for thread change \*/

**19.121.1.124 Sulky\_Rayon** #define Sulky\_Rayon 18

**19.121.1.125 SVG\_Colors** #define SVG\_Colors 23

**19.121.1.126 ThreadArt\_Polyester** #define ThreadArt\_Polyester 20

**19.121.1.127 ThreadArt\_Rayon** #define ThreadArt\_Rayon 19

**19.121.1.128 ThreaDelight\_Polyester** #define ThreaDelight\_Polyester 21

**19.121.1.129 TRIM** #define TRIM 2 /\*! trim + move to (x, y) \*/

**19.121.1.130 Z102\_Isacord\_Polyester** #define Z102\_Isacord\_Polyester 22

## 19.121.2 Typedef Documentation

**19.121.2.1 EmbAlignedDim** typedef struct [EmbAlignedDim\\_](#) EmbAlignedDim

**19.121.2.2 EmbAngularDim** typedef struct [EmbAngularDim\\_](#) EmbAngularDim

**19.121.2.3 EmbArc** `typedef struct EmbArc_ EmbArc`

absolute position (not relative)

**19.121.2.4 EmbArcLengthDim** `typedef struct EmbArcLengthDim_ EmbArcLengthDim`**19.121.2.5 EmbArray** `typedef struct EmbArray_ EmbArray`

The basic array type.

**19.121.2.6 EmbBezier** `typedef struct EmbBezier_ EmbBezier`**19.121.2.7 EmbBlock** `typedef struct EmbBlock_ EmbBlock`**19.121.2.8 EmbCircle** `typedef struct EmbCircle_ EmbCircle`**19.121.2.9 EmbColor** `typedef struct EmbColor_ EmbColor`

EmbColor uses the light primaries: red, green, blue in that order.

**19.121.2.10 EmbDiameterDim** `typedef struct EmbDiameterDim_ EmbDiameterDim`**19.121.2.11 EmbEllipse** `typedef struct EmbEllipse_ EmbEllipse`**19.121.2.12 EmbFlag** `typedef int EmbFlag`**19.121.2.13 EmbFormatList** `typedef struct EmbFormatList_ EmbFormatList`

**19.121.2.14 EmbGeometry** `typedef struct EmbGeometry_ EmbGeometry`

**19.121.2.15 EmbImage** `typedef struct EmbImage_ EmbImage`

**19.121.2.16 EmbInfiniteLine** `typedef struct EmbInfiniteLine_ EmbInfiniteLine`

**19.121.2.17 EmbLayer** `typedef struct EmbLayer_ EmbLayer`

**19.121.2.18 EmbLeaderDim** `typedef struct EmbLeaderDim_ EmbLeaderDim`

**19.121.2.19 EmbLine** `typedef struct EmbLine_ EmbLine`

**19.121.2.20 EmbLinearDim** `typedef struct EmbLinearDim_ EmbLinearDim`

**19.121.2.21 EmbOrdinateDim** `typedef struct EmbOrdinateDim_ EmbOrdinateDim`

**19.121.2.22 EmbPath** `typedef struct EmbPath_ EmbPath`

**19.121.2.23 EmbPattern** `typedef struct EmbPattern_ EmbPattern`

**19.121.2.24 EmbPoint** `typedef struct EmbPoint_ EmbPoint`

**19.121.2.25 EmbPolygon** `typedef EmbPath EmbPolygon`

**19.121.2.26 EmbPolyline** `typedef EmbPath EmbPolyline`

**19.121.2.27 EmbRadiusDim** `typedef struct EmbRadiusDim_ EmbRadiusDim`

**19.121.2.28 EmbRay** `typedef struct EmbRay_ EmbRay`

**19.121.2.29 EmbReal** `typedef float EmbReal`

**19.121.2.30 EmbRect** `typedef struct EmbRect_ EmbRect`

**19.121.2.31 EmbSatinOutline** `typedef struct EmbSatinOutline_ EmbSatinOutline`

**19.121.2.32 EmbSpline** `typedef struct EmbSpline_ EmbSpline`

**19.121.2.33 EmbStitch** `typedef struct EmbStitch_ EmbStitch`

**19.121.2.34 EmbTextMulti** `typedef struct EmbTextMulti_ EmbTextMulti`

**19.121.2.35 EmbTextSingle** `typedef struct EmbTextSingle_ EmbTextSingle`

**19.121.2.36 EmbThread** `typedef struct EmbThread_ EmbThread`

**19.121.2.37 EmbTime** `typedef struct EmbTime_ EmbTime`

**19.121.2.38 EmbVector** `typedef struct EmbVector_ EmbVector`

The basic type to represent points absolutely or represent directions.

Positive y is up, units are in mm.

**19.121.2.39 L\_system** `typedef struct LSYSTEM L_system`

**19.121.2.40 thread\_color** `typedef struct thread_color_ thread_color`

### 19.121.3 Function Documentation

**19.121.3.1 convert()** `EMB_PUBLIC int convert (`  
    `const char * inf,`  
    `const char * outf )`

**19.121.3.2 degrees()** `EMB_PUBLIC EmbReal degrees (`  
    `EmbReal radian )`

**19.121.3.3 emb\_identify\_format()** `EMB_PUBLIC int emb_identify_format (`  
    `const char * fileName )`

#### Parameters

<code>fileName</code>	<input type="text"/>
-----------------------	----------------------

#### Returns

`int`

**19.121.3.4 emb\_round()** `EMB_PUBLIC int emb_round ( EmbReal x )`

**19.121.3.5 embArc\_clockwise()** `EMB_PUBLIC char embArc_clockwise ( EmbArc arc )`

**19.121.3.6 embArc\_init()** `EMB_PUBLIC EmbArc embArc_init ( void )`

**19.121.3.7 embArray\_addArc()** `EMB_PUBLIC int embArray_addArc ( EmbArray * a, EmbArc b )`

#### Parameters

<code>a</code>	
<code>b</code>	

#### Returns

`int`

**19.121.3.8 embArray\_addCircle()** `EMB_PUBLIC int embArray_addCircle ( EmbArray * a, EmbCircle b )`

#### Parameters

<code>a</code>	
<code>b</code>	

#### Returns

`int`

**19.121.3.9 embArray\_addEllipse()** `EMB_PUBLIC int embArray_addEllipse ( EmbArray * a, EmbEllipse b )`

**Parameters**

a	
b	

**Returns**

int

**19.121.3.10 embArray\_addFlag()** `EMB_PUBLIC int embArray_addFlag (``EmbArray * a,`  
`EmbFlag b )`**Parameters**

a	
b	

**Returns**

int

**19.121.3.11 embArray\_addLine()** `EMB_PUBLIC int embArray_addLine (``EmbArray * a,`  
`EmbLine b )`**Parameters**

a	
b	

**Returns**

int

**19.121.3.12 embArray\_addPath()** `EMB_PUBLIC int embArray_addPath (``EmbArray * a,`  
`EmbPath b )`**Parameters**

a	
b	

**Returns**

int

**19.121.3.13 embArray\_addPoint()** `EMB_PUBLIC int embArray_addPoint (``EmbArray * a,`  
`EmbPoint b )`**Parameters**

<code>a</code>	
<code>b</code>	

**Returns**

int

**19.121.3.14 embArray\_addPolygon()** `EMB_PUBLIC int embArray_addPolygon (``EmbArray * a,`  
`EmbPolygon b )`**Parameters**

<code>a</code>	
<code>b</code>	

**Returns**

int

**19.121.3.15 embArray\_addPolyline()** `EMB_PUBLIC int embArray_addPolyline (``EmbArray * a,`  
`EmbPolyline b )`**Parameters**

<code>a</code>	
<code>b</code>	

**Returns**

int

**19.121.3.16 embArray\_addRect()** `EMB_PUBLIC int embArray_addRect (`  
`EmbArray * a,`  
`EmbRect b )`

**Parameters**

<code>a</code>	
<code>b</code>	

**Returns**

`int`

**19.121.3.17 embArray\_addStitch()** `EMB_PUBLIC int embArray_addStitch (`  
`EmbArray * a,`  
`EmbStitch b )`

**Parameters**

<code>a</code>	
<code>b</code>	

**Returns**

`int`

**19.121.3.18 embArray\_addThread()** `EMB_PUBLIC int embArray_addThread (`  
`EmbArray * g,`  
`EmbThread p )`

**19.121.3.19 embArray\_addVector()** `EMB_PUBLIC int embArray_addVector (`  
`EmbArray * a,`  
`EmbVector b )`

**Parameters**

<code>a</code>	
<code>b</code>	

**Returns**

`int`

**19.121.3.20 embArray\_copy()** `EMB_PUBLIC void embArray_copy ( EmbArray * dst, EmbArray * src )`

Parameters

<code>dst</code>	<input type="text"/>
<code>src</code>	<input type="text"/>

**19.121.3.21 embArray\_create()** `EMB_PUBLIC EmbArray * embArray_create ( int type )`

Parameters

<code>type</code>	<input type="text"/>
-------------------	----------------------

Returns

`EmbArray*`

**19.121.3.22 embArray\_free()** `EMB_PUBLIC void embArray_free ( EmbArray * a )`

Parameters

<code>a</code>	<input type="text"/>
----------------	----------------------

**19.121.3.23 embArray\_resize()** `EMB_PUBLIC int embArray_resize ( EmbArray * a )`

Parameters

<code>a</code>	<input type="text"/>
----------------	----------------------

Returns

`int`

**19.121.3.24 embCircle\_init()** `EMB_PUBLIC EmbCircle embCircle_init ( void )`

**19.121.3.25 embColor\_create()** `EMB_PUBLIC EmbColor * embColor_create (`  
    `unsigned char r,`  
    `unsigned char g,`  
    `unsigned char b )`

**19.121.3.26 embColor\_distance()** `EMB_PUBLIC int embColor_distance (`  
    `EmbColor a,`  
    `EmbColor b )`

**Parameters**

<code>a</code>	
<code>b</code>	

**Returns**

`int`

**19.121.3.27 embColor\_fromHexStr()** `EMB_PUBLIC EmbColor embColor_fromHexStr (`  
    `char * val )`

Converts a 6 digit hex string (I.E. "00FF00") into an EmbColor and returns it.

**Parameters**

<code>val</code>	6 byte code describing the color as a hex string, doesn't require null termination.
------------------	---

**Returns**

`EmbColor` the same color as our internal type.

**19.121.3.28 embColor\_make()** `EMB_PUBLIC EmbColor embColor_make (`  
    `unsigned char r,`  
    `unsigned char g,`  
    `unsigned char b )`

**19.121.3.29 embEllipse\_area()** `EMB_PUBLIC EmbReal embEllipse_area (`  
    `EmbEllipse ellipse )`

**19.121.3.30 embEllipse\_diameterX()** `EMB_PUBLIC EmbReal embEllipse_diameterX (`  
`EmbEllipse ellipse )`

**19.121.3.31 embEllipse\_diameterY()** `EMB_PUBLIC EmbReal embEllipse_diameterY (`  
`EmbEllipse ellipse )`

**19.121.3.32 embEllipse\_height()** `EMB_PUBLIC EmbReal embEllipse_height (`  
`EmbEllipse ellipse )`

**19.121.3.33 embEllipse\_init()** `EMB_PUBLIC EmbEllipse embEllipse_init (`  
`void )`

**19.121.3.34 embEllipse\_make()** `EMB_PUBLIC EmbEllipse embEllipse_make (`  
`EmbReal cx,`  
`EmbReal cy,`  
`EmbReal rx,`  
`EmbReal ry )`

**19.121.3.35 embEllipse\_perimeter()** `EMB_PUBLIC EmbReal embEllipse_perimeter (`  
`EmbEllipse ellipse )`

**19.121.3.36 embEllipse\_width()** `EMB_PUBLIC EmbReal embEllipse_width (`  
`EmbEllipse ellipse )`

**19.121.3.37 embGeometry\_boundingRect()** `EMB_PUBLIC EmbRect embGeometry_boundingRect (`  
`EmbGeometry * obj )`

Calculate the bounding box of geometry *obj* based on what kind of geometric object it is.

#### Parameters

<code>obj</code>	A pointer to the geometry memory.
------------------	-----------------------------------

**Returns**

EmbRect The bounding box in the same scale as the input geometry.

In the case of a failure the bounding box returned is always the unit square with top left corner at (0, 0).

**19.121.3.38 embGeometry\_free()** `EMB_PUBLIC void embGeometry_free ( EmbGeometry * obj )`

Free the memory occupied by a non-stitch geometry object.

**Parameters**

<i>obj</i>	Pointer to geometry memory.
------------	-----------------------------

**19.121.3.39 embGeometry\_init()** `EMB_PUBLIC EmbGeometry * embGeometry_init ( int type_in )`

Our generic object interface backends to each individual type.

**Parameters**

<i>type</i> <i>_in</i>	
---------------------------	--

**Returns**

EmbGeometry\*

**19.121.3.40 embGeometry\_move()** `EMB_PUBLIC void embGeometry_move ( EmbGeometry * obj, EmbVector delta )`

Translate *obj* by the vector *delta*.

**Parameters**

<i>obj</i>	A pointer to the geometry memory.
<i>delta</i>	A vector in the 0.1mm scale to offset the geometry by.

**19.121.3.41 embGeometry\_vulcanize()** `EMB_PUBLIC void embGeometry_vulcanize ( EmbGeometry * obj )`

Toggle the rubber mode of the object.

**Parameters**

<i>obj</i>	<input type="text"/>
------------	----------------------

**Todo** Review. This could be controlled by a simple flag.

**19.121.3.42 `embImage_create()`** `EMB_PUBLIC EmbImage embImage_create (`  
`int ,`  
`int )`

**19.121.3.43 `embImage_free()`** `EMB_PUBLIC void embImage_free (`  
`EmbImage * image )`

**19.121.3.44 `embImage_read()`** `EMB_PUBLIC void embImage_read (`  
`EmbImage * image,`  
`char * fname )`

**19.121.3.45 `embImage_write()`** `EMB_PUBLIC int embImage_write (`  
`EmbImage * image,`  
`char * fname )`

**19.121.3.46 `embLine_intersectionPoint()`** `EMB_PUBLIC EmbVector embLine_intersectionPoint (`  
`EmbLine line1,`  
`EmbLine line2 )`

**19.121.3.47 `embLine_make()`** `EMB_PUBLIC EmbLine embLine_make (`  
`EmbReal x1,`  
`EmbReal y1,`  
`EmbReal x2,`  
`EmbReal y2 )`

```
19.121.3.48 embLine_normalVector() EMB_PUBLIC void embLine_normalVector (
    EmbLine line,
    EmbVector * result,
    int clockwise )
```

Finds the normalized vector perpendicular (clockwise) to the line given by v1->v2 (normal to the line)

```
19.121.3.49 embPattern_addCircleAbs() EMB_PUBLIC void embPattern_addCircleAbs (
    EmbPattern * p,
    EmbCircle circle )
```

Adds a circle object to pattern (*p*) with its center at the absolute position (*cx,cy*) with a radius of (*r*). Positive y is up. Units are in millimeters.

```
19.121.3.50 embPattern_addEllipseAbs() EMB_PUBLIC void embPattern_addEllipseAbs (
    EmbPattern * p,
    EmbEllipse ellipse )
```

Adds an ellipse object to pattern (*p*) with its center at the absolute position (*cx,cy*) with radii of (*rx,ry*). Positive y is up. Units are in millimeters.

```
19.121.3.51 embPattern_addLineAbs() EMB_PUBLIC void embPattern_addLineAbs (
    EmbPattern * p,
    EmbLine line )
```

Adds a line object to pattern (*p*) starting at the absolute position (*x1,y1*) and ending at the absolute position (*x2,y2*). Positive y is up. Units are in millimeters.

```
19.121.3.52 embPattern_addPathAbs() EMB_PUBLIC void embPattern_addPathAbs (
    EmbPattern * p,
    EmbPath obj )
```

```
19.121.3.53 embPattern_addPointAbs() EMB_PUBLIC void embPattern_addPointAbs (
    EmbPattern * p,
    EmbPoint obj )
```

Adds a point object to pattern (*p*) at the absolute position (*x,y*). Positive y is up. Units are in millimeters.

```
19.121.3.54 embPattern_addPolygonAbs() EMB_PUBLIC void embPattern_addPolygonAbs (
    EmbPattern * p,
    EmbPolygon obj )
```

```
19.121.3.55 embPattern_addPolylineAbs() EMB_PUBLIC void embPattern_addPolylineAbs (
    EmbPattern * p,
    EmbPolyline obj )
```

**19.121.3.56 embPattern\_addRectAbs()** `EMB_PUBLIC void embPattern_addRectAbs (`  
`EmbPattern * p,`  
`EmbRect rect )`

Adds a rectangle object to pattern (*p*) at the absolute position (*x,y*) with a width of (*w*) and a height of (*h*). Positive y is up. Units are in millimeters.

**19.121.3.57 embPattern\_addStitchAbs()** `EMB_PUBLIC void embPattern_addStitchAbs (`  
`EmbPattern * p,`  
`EmbReal x,`  
`EmbReal y,`  
`int flags,`  
`int isAutoColorIndex )`

Adds a stitch to the pattern (*p*) at the absolute position (*x,y*). Positive y is up. Units are in millimeters.

**19.121.3.58 embPattern\_addStitchRel()** `EMB_PUBLIC void embPattern_addStitchRel (`  
`EmbPattern * p,`  
`EmbReal dx,`  
`EmbReal dy,`  
`int flags,`  
`int isAutoColorIndex )`

Adds a stitch to the pattern (*p*) at the relative position (*dx,dy*) to the previous stitch. Positive y is up. Units are in millimeters.

**19.121.3.59 embPattern\_addThread()** `EMB_PUBLIC int embPattern_addThread (`  
`EmbPattern * pattern,`  
`EmbThread thread )`

#### Parameters

<i>pattern</i>	<input type="text"/>
<i>thread</i>	<input type="text"/>

#### Returns

`int`

**19.121.3.60 embPattern\_calcBoundingBox()** `EMB_PUBLIC EmbRect embPattern_calcBoundingBox (`  
`EmbPattern * p )`

Returns an EmbRect that encapsulates all stitches and objects in the pattern (*p*).

**19.121.3.61 embPattern\_center()** `EMB_PUBLIC void embPattern_center (`  
`EmbPattern * p )`

**19.121.3.62 embPattern\_changeColor()** `EMB_PUBLIC void embPattern_changeColor (`  
`EmbPattern * p,`  
`int index )`

**Parameters**

<i>p</i>	
<i>index</i>	

**19.121.3.63 embPattern\_color\_count()** `EMB_PUBLIC int embPattern_color_count (`  
`EmbPattern * pattern,`  
`EmbColor startColor )`

**19.121.3.64 embPattern\_combine()** `EMB_PUBLIC EmbPattern * embPattern_combine (`  
`EmbPattern * p1,`  
`EmbPattern * p2 )`

**Parameters**

<i>p1</i>	
<i>p2</i>	

**Returns**

`EmbPattern*`

**19.121.3.65 embPattern\_combineJumpStitches()** `EMB_PUBLIC void embPattern_combineJumpStitches (`  
`EmbPattern * p )`

**19.121.3.66 embPattern\_convertGeometry()** `EMB_PUBLIC void embPattern_convertGeometry (`  
`EmbPattern * p )`

**Parameters**

<i>p</i>	
----------	--

**19.121.3.67 embPattern\_copyPolylinesToStitchList()** `EMB_PUBLIC void embPattern_copyPolylinesTo←`  
`StitchList (`  
`EmbPattern * pattern )`

---

**19.121.3.68 embPattern\_copyStitchListToPolylines()** `EMB_PUBLIC void embPattern_copyStitchListToPolylines ( EmbPattern * pattern )`

**19.121.3.69 embPattern\_correctForMaxStitchLength()** `EMB_PUBLIC void embPattern_correctForMaxStitchLength ( EmbPattern * p, EmbReal maxStitchLength, EmbReal maxJumpLength )`

**19.121.3.70 embPattern\_create()** `EMB_PUBLIC EmbPattern * embPattern_create ( void )`

Returns a pointer to an EmbPattern. It is created on the heap. The caller is responsible for freeing the allocated memory with `embPattern_free()`.

#### Returns

`EmbPattern*`

**19.121.3.71 embPattern\_crossstitch()** `EMB_PUBLIC void embPattern_crossstitch ( EmbPattern * pattern, EmbImage * image, int threshold )`

#### Parameters

<code>pattern</code>	
<code>image</code>	
<code>threshold</code>	

Uses a threshhold method to determine where to put crosses in the fill.

To improve this, we can remove the vertical stitches when two crosses neighbour. Currently the simple way to do this is to chain crosses that are neighbours exactly one ahead.

**19.121.3.72 embPattern\_designDetails()** `EMB_PUBLIC void embPattern_designDetails ( EmbPattern * p )`

**19.121.3.73 embPattern\_end()** `EMB_PUBLIC void embPattern_end ( EmbPattern * p )`

**19.121.3.74 `embPattern_fixColorCount()`** `EMB_PUBLIC void embPattern_fixColorCount (`  
`EmbPattern * p )`

Parameters

<code>p</code>	
----------------	--

**19.121.3.75 `embPattern_flip()`** `EMB_PUBLIC void embPattern_flip (`  
`EmbPattern * p,`  
`int horz,`  
`int vert )`

Flips the entire pattern (*p*) horizontally about the x-axis if (*horz*) is true. Flips the entire pattern (*p*) vertically about the y-axis if (*vert*) is true.

**19.121.3.76 `embPattern_flipHorizontal()`** `EMB_PUBLIC void embPattern_flipHorizontal (`  
`EmbPattern * p )`

Flips the entire pattern (*p*) horizontally about the y-axis.

**19.121.3.77 `embPattern_flipVertical()`** `EMB_PUBLIC void embPattern_flipVertical (`  
`EmbPattern * p )`

Flips the entire pattern (*p*) vertically about the x-axis.

**19.121.3.78 `embPattern_free()`** `EMB_PUBLIC void embPattern_free (`  
`EmbPattern * p )`

Frees all memory allocated in the pattern (*p*).

**19.121.3.79 `embPattern_hideStitchesOverLength()`** `EMB_PUBLIC void embPattern_hideStitchesOver←`  
`Length (`  
`EmbPattern * p,`  
`int length )`

Parameters

<code>p</code>	
<code>length</code>	

**19.121.3.80 `embPattern_horizontal_fill()`** `EMB_PUBLIC void embPattern_horizontal_fill (`  
`EmbPattern * pattern,`  
`EmbImage * image,`  
`int threshold )`

**Parameters**

<i>pattern</i>	
<i>image</i>	
<i>threshold</i>	

Uses a threshold method to determine where to put lines in the fill.

Needs to pass a "donut test", i.e. an image with black pixels where:  $10 < x*x + y*y < 20$  over the area (-30, 30) x (-30, 30).

Use render then image difference to see how well it passes.

**19.121.3.81 embPattern\_jumpStitches()** `EMB_PUBLIC int embPattern_jumpStitches ( EmbPattern * pattern )`

**19.121.3.82 embPattern\_lengthHistogram()** `EMB_PUBLIC void embPattern_lengthHistogram ( EmbPattern * pattern, int * bin, int NUMBINS )`

**19.121.3.83 embPattern\_loadExternalColorFile()** `EMB_PUBLIC void embPattern_loadExternalColorFile ( EmbPattern * p, const char * fileName )`

**19.121.3.84 embPattern\_maximumStitchLength()** `EMB_PUBLIC EmbReal embPattern_maximumStitchLength ( EmbPattern * pattern )`

**19.121.3.85 embPattern\_minimumStitchLength()** `EMB_PUBLIC EmbReal embPattern_minimumStitchLength ( EmbPattern * pattern )`

**19.121.3.86 embPattern\_movePolylinesToStitchList()** `EMB_PUBLIC void embPattern_movePolylinesToStitchList ( EmbPattern * pattern )`

**19.121.3.87 embPattern\_moveStitchListToPolylines()** `EMB_PUBLIC void embPattern_moveStitchListToPolylines ( EmbPattern * pattern )`

**19.121.3.88 embPattern\_read()** `EMB_PUBLIC char embPattern_read ( EmbPattern * pattern, const char * fileName, int format )`

**Parameters**

<i>pattern</i>	
<i>fileName</i>	
<i>format</i>	

**Returns**

`char`

**19.121.3.89 embPattern\_readAuto()** `EMB_PUBLIC char embPattern_readAuto ( EmbPattern * pattern, const char * fileName )`

**Parameters**

<i>pattern</i>	
<i>fileName</i>	

**Returns**

`char`

**19.121.3.90 embPattern\_realStitches()** `EMB_PUBLIC int embPattern_realStitches ( EmbPattern * pattern )`

**19.121.3.91 embPattern\_render()** `EMB_PUBLIC int embPattern_render ( EmbPattern * pattern, char * fname )`

**19.121.3.92 embPattern\_scale()** `EMB_PUBLIC void embPattern_scale (`  
`EmbPattern * p,`  
`EmbReal scale )`

**19.121.3.93 embPattern\_simulate()** `EMB_PUBLIC int embPattern_simulate (`  
`EmbPattern * pattern,`  
`char * fname )`

**19.121.3.94 embPattern\_totalStitchLength()** `EMB_PUBLIC EmbReal embPattern_totalStitchLength (`  
`EmbPattern * pattern )`

**Parameters**

<code>pattern</code>	<input type="button" value=""/>
----------------------	---------------------------------

**Returns**

`float`

**19.121.3.95 embPattern\_trimStitches()** `EMB_PUBLIC int embPattern_trimStitches (`  
`EmbPattern * pattern )`

**19.121.3.96 embPattern\_write()** `EMB_PUBLIC char embPattern_write (`  
`EmbPattern * pattern,`  
`const char * fileName,`  
`int format )`

**Parameters**

<code>pattern</code>	<input type="button" value=""/>
<code>fileName</code>	<input type="button" value=""/>
<code>format</code>	<input type="button" value=""/>

**Returns**

`char`

```
19.121.3.97 embPattern_writeAuto() EMB_PUBLIC char embPattern_writeAuto (
    EmbPattern * pattern,
    const char * fileName )
```

**Parameters**

<i>pattern</i>	
<i>fileName</i>	

**Returns**

char

**19.121.3.98 embRect\_area()** `EMB_PUBLIC EmbReal embRect_area ( EmbRect rect )`

**19.121.3.99 embRect\_init()** `EMB_PUBLIC EmbRect embRect_init ( void )`

**19.121.3.100 embSatinOutline\_generateSatinOutline()** `EMB_PUBLIC void embSatinOutline_generate←SatinOutline ( EmbArray * lines, EmbReal thickness, EmbSatinOutline * result )`

**Parameters**

<i>lines</i>	
<i>thickness</i>	
<i>result</i>	

**19.121.3.101 embSatinOutline\_renderStitches()** `EMB_PUBLIC EmbArray * embSatinOutline_render←Stitches ( EmbSatinOutline * result, EmbReal density )`

**Parameters**

<i>result</i>	
<i>density</i>	

**Returns**`EmbArray*`

```
19.121.3.102 embThread_findNearestColor() EMB_PUBLIC int embThread_findNearestColor (
    EmbColor color,
    EmbColor * color_list,
    int n_colors )
```

Returns the closest color to the required color based on a list of available threads. The algorithm is a simple least squares search against the list. If the (square of) Euclidean 3-dimensional distance between the points in (red, green, blue) space is smaller then the index is saved and the remaining index is returned to the caller.

#### Parameters

<i>color</i>	The EmbColor color to match.
<i>colors</i>	The EmbThreadList pointer to start the search at.
<i>mode</i>	Is the argument an array of threads (0) or colors (1)?

#### Returns

*closestIndex* The entry in the ThreadList that matches.

```
19.121.3.103 embThread_findNearestThread() EMB_PUBLIC int embThread_findNearestThread (
    EmbColor color,
    EmbThread * thread_list,
    int n_threads )
```

#### Parameters

<i>color</i>	
<i>thread_list</i>	
<i>n_threads</i>	

#### Returns

*int*

```
19.121.3.104 embThread_getRandom() EMB_PUBLIC EmbThread embThread_getRandom (
    void )
```

Returns a random thread color, useful in filling in cases where the actual color of the thread doesn't matter but one needs to be declared to test or render a pattern.

#### Returns

*c* The resulting color.

**19.121.3.105 embTime\_initNow()** **EMB\_PUBLIC** void embTime\_initNow ( EmbTime \* *t* )

**Parameters**

$t$	<input type="text"/>
-----	----------------------

**19.121.3.106 embTime\_time()** EMB\_PUBLIC EmbTime embTime\_time ( EmbTime \* t )

**Parameters**

$t$	<input type="text"/>
-----	----------------------

**Returns**

EmbTime

**19.121.3.107 embVector\_add()** EMB\_PUBLIC EmbVector embVector\_add ( EmbVector a, EmbVector b )

The sum of vectors  $a$  and  $b$  returned as a vector.

Equivalent to:

$$\mathbf{c} = \mathbf{a} + \mathbf{b} = \begin{pmatrix} a_x + b_x \\ a_y + b_y \end{pmatrix}$$

**19.121.3.108 embVector\_angle()** EMB\_PUBLIC EmbReal embVector\_angle ( EmbVector v )

The angle, measured anti-clockwise from the x-axis, of a vector  $v$ .

**19.121.3.109 embVector\_average()** EMB\_PUBLIC EmbVector embVector\_average ( EmbVector a, EmbVector b )

The average of vectors  $v1$  and  $v2$  returned as a vector.

Equivalent to:

$$\mathbf{c} = \frac{\mathbf{a} + \mathbf{b}}{2} = \begin{pmatrix} \frac{a_x + b_x}{2} \\ \frac{a_y + b_y}{2} \end{pmatrix}$$

```
19.121.3.110 embVector_cross() EMB_PUBLIC EmbReal embVector_cross (
    EmbVector a,
    EmbVector b )
```

The "cross product" as vectors *a* and *b* returned as a real value.

Technically, this is the magnitude of the cross product when the embroidery is placed in the z=0 plane (since the cross product is defined for 3-dimensional vectors). That is:

$$|c| = \left| \begin{pmatrix} a_x \\ a_y \\ 0 \end{pmatrix} \times \begin{pmatrix} b_x \\ b_y \\ 0 \end{pmatrix} \right| = \left| \begin{pmatrix} 0 \\ 0 \\ a_x b_y - a_y b_x \end{pmatrix} \right| = a_x b_y - a_y b_x$$

```
19.121.3.111 embVector_distance() EMB_PUBLIC EmbReal embVector_distance (
    EmbVector a,
    EmbVector b )
```

The distance between *a* and *b* returned as a real value.

$$d = |\mathbf{a} - \mathbf{b}| = \sqrt{(a_x - b_x)^2 + (a_y - b_y)^2}$$

```
19.121.3.112 embVector_dot() EMB_PUBLIC EmbReal embVector_dot (
    EmbVector a,
    EmbVector b )
```

The dot product as vectors *v1* and *v2* returned as a EmbReal.

Equivalent to:

$$c = \mathbf{a} \cdot \mathbf{b} = a_x b_x + a_y b_y$$

```
19.121.3.113 embVector_length() EMB_PUBLIC EmbReal embVector_length (
    EmbVector vector )
```

The length or absolute value of the vector *vector*.

Equivalent to:

$$|v| = \sqrt{v_x^2 + v_y^2}$$

```
19.121.3.114 embVector_multiply() EMB_PUBLIC void embVector_multiply (
    EmbVector vector,
    EmbReal magnitude,
    EmbVector * result )
```

The scalar multiple *magnitude* of a vector *vector*. Returned as *result*.

**Todo** make result return argument.

```
19.121.3.115 embVector_normalize() EMB_PUBLIC void embVector_normalize (
    EmbVector vector,
    EmbVector * result )
```

Finds the unit length vector *result* in the same direction as *vector*.

Equivalent to:

$$\mathbf{u} = \frac{\mathbf{v}}{|\mathbf{v}|}$$

**Todo** make result return argument.

```
19.121.3.116 embVector_relativeX() EMB_PUBLIC EmbReal embVector_relativeX (
    EmbVector a1,
    EmbVector a2,
    EmbVector a3 )
```

The x-component of the vector

```
19.121.3.117 embVector_relativeY() EMB_PUBLIC EmbReal embVector_relativeY (
    EmbVector a1,
    EmbVector a2,
    EmbVector a3 )
```

The y-component of the vector

```
19.121.3.118 embVector_subtract() EMB_PUBLIC EmbVector embVector_subtract (
    EmbVector v1,
    EmbVector v2 )
```

The difference between vectors *v1* and *v2* returned as *result*.

Equivalent to:

$$\mathbf{c} = \mathbf{a} - \mathbf{b} = \begin{pmatrix} a_x - b_x \\ a_y - b_y \end{pmatrix}$$

```
19.121.3.119 embVector_transpose_product() EMB_PUBLIC void embVector_transpose_product (
    EmbVector v1,
    EmbVector v2,
    EmbVector * result )
```

Since we aren't using full vector algebra here, all vectors are "vertical". so this is like the product  $v1^T \cdot v2$  for our vectors *v1* and *v2* so a "component-wise product". The result is stored at the pointer *result*.

That is  $(1 \ 0) \cdot (a) = (xa) \ (x \ y) \cdot (0 \ 1) \cdot (b) = (yb)$

```
19.121.3.120 embVector_unit() EMB_PUBLIC EmbVector embVector_unit (
    EmbReal alpha )
```

The unit vector in the direction *angle*.

$$\mathbf{a}_\alpha = \begin{pmatrix} \cos(\alpha) \\ \sin(\alpha) \end{pmatrix}$$

```
19.121.3.121 full_test_matrix() EMB_PUBLIC int full_test_matrix (
    char * fname )
```

```
19.121.3.122 getArcCenter() EMB_PUBLIC void getArcCenter (
    EmbArc arc,
    EmbVector * arcCenter )
```

```
19.121.3.123 getArcDataFromBulge() EMB_PUBLIC char getArcDataFromBulge (
    EmbReal bulge,
    EmbArc * arc,
    EmbReal * arcCenterX,
    EmbReal * arcCenterY,
    EmbReal * radius,
    EmbReal * diameter,
    EmbReal * chord,
    EmbReal * chordMidX,
    EmbReal * chordMidY,
    EmbReal * sagitta,
    EmbReal * apothem,
    EmbReal * incAngleInDegrees,
    char * clockwise )
```

```
19.121.3.124 getCircleCircleIntersections() EMB_PUBLIC int getCircleCircleIntersections (
    EmbCircle c0,
    EmbCircle c1,
    EmbVector * v0,
    EmbVector * v1 )
```

```
19.121.3.125 getCircleTangentPoints() EMB_PUBLIC int getCircleTangentPoints (
    EmbCircle c,
    EmbVector p,
    EmbVector * v0,
    EmbVector * v1 )
```

```
19.121.3.126 hilbert_curve() EMB_PUBLIC int hilbert_curve (
    EmbPattern * pattern,
    int iterations )
```

**Parameters**

<i>pattern</i>	
<i>iterations</i>	

**Returns**

int

[https://en.wikipedia.org/wiki/Hilbert\\_curve](https://en.wikipedia.org/wiki/Hilbert_curve)

Using the Lindenmayer System, so we can save work across different functions.

```
19.121.3.127 lindenmayer_system() EMB_PUBLIC int lindenmayer_system (
    L_system L,
    char * state,
    int iterations,
    int complete )
```

**Parameters**

<i>L</i>	
<i>state</i>	
<i>iterations</i>	
<i>complete</i>	

**Returns**

int

This is a slow generation algorithm.

```
19.121.3.128 radians() EMB_PUBLIC EmbReal radians (
    EmbReal degree )
```

**19.121.3.129 report()** `EMB_PUBLIC void report (`  
    `int result,`  
    `char * label )`

**19.121.3.130 testMain()** `EMB_PUBLIC void testMain (`  
    `int level )`

**19.121.3.131 threadColor()** `EMB_PUBLIC int threadColor (`  
    `const char * name,`  
    `int brand )`

**19.121.3.132 threadColorName()** `EMB_PUBLIC const char * threadColorName (`  
    `unsigned int color,`  
    `int brand )`

**19.121.3.133 threadColorNum()** `EMB_PUBLIC int threadColorNum (`  
    `unsigned int color,`  
    `int brand )`

#### 19.121.4 Variable Documentation

**19.121.4.1 \_dxfColorTable** `const unsigned char _dxfColorTable[ ][3] [extern]`

**19.121.4.2 black\_thread** `EmbThread black_thread [extern]`

**19.121.4.3 emb\_error** `int emb_error [extern]`

Error code storage for optional control flow blocking.

**19.121.4.4 emb\_verbose** int emb\_verbose [extern]

Verbosity level.

**19.121.4.5 embConstantPi** const EmbReal embConstantPi [extern]**19.121.4.6 formatTable** EmbFormatList formatTable[numberOfFormats] [extern]

This file is part of libembroidery.

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This file contains all the read and write functions for the library.

**Todo** This list needs reviewed in case some stitch formats also can contain object data (EMBFORMAT\_← STCHANDOBJ). \*

**19.121.4.7 husThreads** const EmbThread husThreads[] [extern]**19.121.4.8 jefThreads** const EmbThread jefThreads[] [extern]**19.121.4.9 pcmThreads** const EmbThread pcmThreads[] [extern]**19.121.4.10 pecThreadCount** const int pecThreadCount [extern]**19.121.4.11 pecThreads** const EmbThread pecThreads[] [extern]**19.121.4.12 shvThreadCount** const int shvThreadCount [extern]

**19.121.4.13 shvThreads** const EmbThread shvThreads[ ] [extern]**19.121.4.14 vipDecodingTable** const unsigned char vipDecodingTable[ ] [extern]

## 19.122 embroidery.h

[Go to the documentation of this file.](#)

```
00001 #ifndef LIBEMBROIDERY_HEADER_
00002 #define LIBEMBROIDERY_HEADER_
00003
00004 #ifdef __cplusplus
00005 extern "C" {
00006 #endif
00007
00012 #ifndef LIBEMBROIDERY_EMBEDDED_VERSION
00013 #define LIBEMBROIDERY_EMBEDDED_VERSION 0
00014 #endif
00015
00016 /* MACROS
00017 *****/
00018
00022 #define NORMAL 0
00023 #define JUMP 1
00024 #define TRIM 2
00025 #define STOP 4
00026 #define SEQUIN 8
00027 #define END 16
00032 #define EMB_FORMAT_100 0
00033 #define EMB_FORMAT_100 1
00034 #define EMB_FORMAT_ART 2
00035 #define EMB_FORMAT_BMC 3
00036 #define EMB_FORMAT_BRO 4
00037 #define EMB_FORMAT_CND 5
00038 #define EMB_FORMAT_COL 6
00039 #define EMB_FORMAT_CSD 7
00040 #define EMB_FORMAT_CSV 8
00041 #define EMB_FORMAT_DAT 9
00042 #define EMB_FORMAT_DEM 10
00043 #define EMB_FORMAT_DSB 11
00044 #define EMB_FORMAT_DST 12
00045 #define EMB_FORMAT_DSZ 13
00046 #define EMB_FORMAT_DXF 14
00047 #define EMB_FORMAT_EDR 15
00048 #define EMB_FORMAT_EMD 16
00049 #define EMB_FORMAT_EXP 17
00050 #define EMB_FORMAT_EXY 18
00051 #define EMB_FORMAT_EYS 19
00052 #define EMB_FORMAT_FXY 20
00053 #define EMB_FORMAT_GC 21
00054 #define EMB_FORMAT_GNC 22
00055 #define EMB_FORMAT_GT 23
00056 #define EMB_FORMAT_HUS 24
00057 #define EMB_FORMAT_INB 25
00058 #define EMB_FORMAT_INF 26
00059 #define EMB_FORMAT_JEF 27
00060 #define EMB_FORMAT_KSM 28
00061 #define EMB_FORMAT_MAX 29
00062 #define EMB_FORMAT_MIT 30
00063 #define EMB_FORMAT_NEW 31
00064 #define EMB_FORMAT_OFM 32
00065 #define EMB_FORMAT_PCD 33
00066 #define EMB_FORMAT_PCM 34
00067 #define EMB_FORMAT_PCQ 35
00068 #define EMB_FORMAT_PCS 36
00069 #define EMB_FORMAT_PEC 37
00070 #define EMB_FORMAT_PEL 38
00071 #define EMB_FORMAT_PEM 39
00072 #define EMB_FORMAT_PES 40
00073 #define EMB_FORMAT_PHB 41
00074 #define EMB_FORMAT_PHC 42
00075 #define EMB_FORMAT_PLT 43
00076 #define EMB_FORMAT_RGB 44
00077 #define EMB_FORMAT_SEW 45
00078 #define EMB_FORMAT_SHV 46
00079 #define EMB_FORMAT_SST 47
00080 #define EMB_FORMAT_STX 48
```

```

00081 #define EMB_FORMAT_SVG           49
00082 #define EMB_FORMAT_T01          50
00083 #define EMB_FORMAT_T09          51
00084 #define EMB_FORMAT_TAP           52
00085 #define EMB_FORMAT_THR           53
00086 #define EMB_FORMAT_TXT           54
00087 #define EMB_FORMAT_U00           55
00088 #define EMB_FORMAT_U01           56
00089 #define EMB_FORMAT_VIP           57
00090 #define EMB_FORMAT_VP3           58
00091 #define EMB_FORMAT_XXX           59
00092 #define EMB_FORMAT_ZSK           60
00093
00094 /* Thread color */
00095 #define Arc_Polyester          0
00096 #define Arc_Rayon              1
00097 #define CoatsAndClark_Rayon      2
00098 #define Exquisite_Polyester     3
00099 #define Fufu_Polyester          4
00100 #define Fufu_Rayon              5
00101 #define Hemingworth_Polyester    6
00102 #define Isacord_Polyester       7
00103 #define Isafil_Rayon           8
00104 #define Marathon_Polyester      9
00105 #define Marathon_Rayon          10
00106 #define Madeira_Polyester        11
00107 #define Madeira_Rayon           12
00108 #define Metro_Polyester         13
00109 #define Pantone                14
00110 #define RobisonAnton_Polyester   15
00111 #define RobisonAnton_Rayon        16
00112 #define Sigma_Polyester          17
00113 #define Sulky_Rayon             18
00114 #define ThreadArt_Rayon          19
00115 #define ThreadArt_Polyester      20
00116 #define ThreaDelight_Polyester   21
00117 #define Z102_Isacord_Polyester   22
00118 #define SVG_Colors              23
00119 #define hus_thread              24
00120 #define jef_thread              25
00121 #define pcm_thread              26
00122 #define pec_thread              27
00123 #define shv_thread              28
00124 #define dxf_color               29
00125
00126 #define EMB_ARRAY               0
00127 #define EMB_ARC                 1
00128 #define EMB_CIRCLE               2
00129 #define EMB_DIM_DIAMETER         3
00130 #define EMB_DIM_LEADER           4
00131 #define EMB_ELLIPSE              5
00132 #define EMB_FLAG                 6
00133 #define EMB_LINE                 7
00134 #define EMB_IMAGE                8
00135 #define EMB_PATH                 9
00136 #define EMB_POINT                10
00137 #define EMB_POLYGON              11
00138 #define EMB_POLYLINE             12
00139 #define EMB_RECT                 13
00140 #define EMB_SPLINE                14
00141 #define EMB_STITCH               15
00142 #define EMB_TEXT_SINGLE           16
00143 #define EMB_TEXT_MULTI            17
00144 #define EMB_VECTOR               18
00145 #define EMB_THREAD                19
00146
00147 #define EMBFORMAT_UNSUPPORTED      0
00148 #define EMBFORMAT_STITCHONLY       1
00149 #define EMBFORMAT_OBJECTONLY        2
00150 #define EMBFORMAT_STCHANDOBJ      3 /* binary operation: 1+2=3 */
00151
00152 #define numberOfformats          61
00153
00154 #define CHUNK_SIZE                128
00155
00156 #define EMB_MAX_LAYERS             10
00157 #define MAX_THREADS                256
00158 #define EMBFORMAT_MAXEXT            3
00159 /* maximum length of extension without dot */
00160 #define EMBFORMAT_MAXDESC            50
00161 /* the longest possible description string length */
00162 #define MAX_STITCHES              1000000
00163
00164
00165
00166 #if defined(_WIN32) && !defined(WIN32)
00167 #define WIN32

```

```
00168 #endif
00169
00170 /* When building a shared library,
00171 * use the proper export keyword depending on the compiler */
00172 #define EMB_PUBLIC
00173 #if defined(LIBEMBROIDERY_SHARED)
00174     #undef EMB_PUBLIC
00175     #if defined(__WIN32__)
00176         #define EMB_PUBLIC __declspec(dllexport)
00177     #else
00178         #define EMB_PUBLIC __attribute__ ((visibility("default")))
00179     #endif
00180 #endif
00181
00182 /* TYPEDEFS AND STRUCTS
00183 *****/
00184
00185 typedef float EmbReal;
00186
00187 typedef struct EmbColor_
00188 {
00189     unsigned char r;
00190     unsigned char g;
00191     unsigned char b;
00192 } EmbColor;
00193
00194 typedef struct EmbVector_
00195 {
00196     EmbReal x;
00197     EmbReal y;
00198 } EmbVector;
00199
00200 typedef struct EmbArray_ EmbArray;
00201
00202 typedef struct EmbImage_ {
00203     EmbVector position;
00204     EmbVector dimensions;
00205     unsigned char* data;
00206     int width;
00207     int height;
00208     char path[200];
00209     char name[200];
00210 } EmbImage;
00211
00212 typedef struct EmbBlock_ {
00213     EmbVector position;
00214 } EmbBlock;
00215
00216 typedef struct EmbAlignedDim_ {
00217     EmbVector position;
00218 } EmbAlignedDim;
00219
00220 typedef struct EmbAngularDim_ {
00221     EmbVector position;
00222 } EmbAngularDim;
00223
00224 typedef struct EmbArcLengthDim_ {
00225     EmbVector position;
00226 } EmbArcLengthDim;
00227
00228 typedef struct EmbDiameterDim_ {
00229     EmbVector position;
00230 } EmbDiameterDim;
00231
00232 typedef struct EmbLeaderDim_ {
00233     EmbVector position;
00234 } EmbLeaderDim;
00235
00236 typedef struct EmbLinearDim_ {
00237     EmbVector position;
00238 } EmbLinearDim;
00239
00240 typedef struct EmbOrdinateDim_ {
00241     EmbVector position;
00242 } EmbOrdinateDim;
00243
00244 typedef struct EmbRadiusDim_ {
00245     EmbVector position;
00246 } EmbRadiusDim;
00247
00248 typedef struct EmbInfiniteLine_ {
00249     EmbVector position;
00250 } EmbInfiniteLine;
00251
00252 typedef struct EmbRay_ {
00253     EmbVector position;
00254 } EmbRay;
```

```

00310
00315 typedef struct EmbTextMulti_ {
00316     EmbVector position;
00317     char text[200];
00318 } EmbTextMulti;
00319
00324 typedef struct EmbTextSingle_ {
00325     EmbVector position;
00326     char text[200];
00327 } EmbTextSingle;
00328
00333 typedef struct EmbTime_
00334 {
00335     unsigned int year;
00336     unsigned int month;
00337     unsigned int day;
00338     unsigned int hour;
00339     unsigned int minute;
00340     unsigned int second;
00341 } EmbTime;
00342
00347 typedef struct EmbPoint_
00348 {
00349     EmbVector position;
00350     int lineType;
00351     EmbColor color;
00352 } EmbPoint;
00353
00358 typedef struct EmbLine_
00359 {
00360     EmbVector start;
00361     EmbVector end;
00362     int lineType;
00363     EmbColor color;
00364 } EmbLine;
00365
00370 typedef struct EmbPath_
00371 {
00372     EmbArray* pointList;
00373     EmbArray* flagList;
00374     int lineType;
00375     EmbColor color;
00376 } EmbPath;
00377
00382 typedef struct EmbStitch_
00383 {
00384     int flags;
00385     EmbReal x;
00386     EmbReal y;
00387     int color;
00388 } EmbStitch;
00390
00395 typedef struct EmbThread_
00396 {
00397     EmbColor color;
00398     char description[50];
00399     char catalogNumber[30];
00400 } EmbThread;
00401
00406 typedef struct thread_color_ {
00407     char name[22];
00408     unsigned int hex_code;
00409     int manufacturer_code;
00410 } thread_color;
00411
00416 typedef struct EmbArc_
00417 {
00418     EmbVector start;
00419     EmbVector mid;
00420     EmbVector end;
00421 } EmbArc;
00422
00427 typedef struct EmbRect_
00428 {
00429     EmbReal top;
00430     EmbReal left;
00431     EmbReal bottom;
00432     EmbReal right;
00433     EmbReal rotation;
00434     EmbReal radius;
00435 } EmbRect;
00436
00441 typedef struct EmbCircle_
00442 {
00443     EmbVector center;
00444     EmbReal radius;
00445 } EmbCircle;

```

```
00446
00451 typedef EmbPath EmbPolygon;
00452
00457 typedef EmbPath EmbPolyline;
00458
00463 typedef int EmbFlag;
00464
00469 typedef struct EmbSatinOutline_
00470 {
00471     int length;
00472     EmbArray* side1;
00473     EmbArray* side2;
00474 } EmbSatinOutline;
00475
00480 typedef struct EmbEllipse_
00481 {
00482     EmbVector center;
00483     EmbVector radius;
00484     EmbReal rotation;
00485 } EmbEllipse;
00486
00491 typedef struct EmbBezier_
00492 {
00493     EmbVector start;
00494     EmbVector control1;
00495     EmbVector control2;
00496     EmbVector end;
00497 } EmbBezier;
00498
00502 typedef struct EmbSpline_
00503 {
00504     EmbArray *beziers;
00505 } EmbSpline;
00506
00510 typedef struct LSYSTEM {
00511     char axiom;
00512     char *alphabet;
00513     char *constants;
00514     char **rules;
00515 } L_system;
00516
00521 typedef struct EmbGeometry_
00522 {
00523     union {
00524         EmbArc arc;
00525         EmbCircle circle;
00526         EmbColor color;
00527         EmbEllipse ellipse;
00528         EmbLine line;
00529         EmbPath path;
00530         EmbPoint point;
00531         EmbPolygon polygon;
00532         EmbPolyline polyline;
00533         EmbRect rect;
00534         EmbSpline spline;
00535         EmbVector vector;
00536     } object;
00537     EmbStitch stitch;
00538     int flag;
00539     int type;
00540     int lineType;
00541     EmbColor color;
00542 } EmbGeometry;
00543
00548 struct EmbArray_
00549 {
00550     EmbGeometry *geometry;
00551     EmbStitch *stitch;
00552     EmbThread *thread;
00553     int count;
00554     int length;
00555     int type;
00556 };
00561 typedef struct EmbLayer_
00562 {
00563     char name[100];
00564     EmbArray *geometry;
00565 } EmbLayer;
00566
00571 typedef struct EmbPattern_
00572 {
00573     unsigned int dstJumpsPerTrim;
00574     EmbVector home;
00575     EmbReal hoop_width;
00576     EmbReal hoop_height;
00577     EmbArray *thread_list;
00578     EmbArray *stitch_list;
00579     EmbArray *geometry;
00580     EmbLayer layer[EMB_MAX_LAYERS];
```

```

00581     int currentColorIndex;
00582 } EmbPattern;
00583
00588 typedef struct EmbFormatList_
00589 {
00590     char extension[2 + EMBFORMAT_MAXEXT];
00591     char description[EMBFORMAT_MAXDESC];
00592     char reader_state;
00593     char writer_state;
00594     int type;
00595     int color_only;
00596     int check_for_color_file;
00597     int write_external_color_file;
00598 } EmbFormatList;
00599
00600 /* Function Declarations
00601 ****
00602 EMB_PUBLIC int lindenmayer_system(L_system L, char* state, int iteration, int complete);
00603 EMB_PUBLIC int hilbert_curve(EmbPattern *pattern, int iterations);
00604
00605 EMB_PUBLIC int emb_identify_format(const char *ending);
00606 EMB_PUBLIC void testMain(int level);
00607 EMB_PUBLIC int convert(const char *inf, const char *outf);
00608
00609 EMB_PUBLIC EmbColor embColor_make(unsigned char r, unsigned char g, unsigned char b);
00610 EMB_PUBLIC EmbColor* embColor_create(unsigned char r, unsigned char g, unsigned char b);
00611 EMB_PUBLIC EmbColor embColor_fromHexStr(char* val);
00612 EMB_PUBLIC int embColor_distance(EmbColor a, EmbColor b);
00613
00614 EMB_PUBLIC EmbArray* embArray_create(int type);
00615 EMB_PUBLIC int embArray_resize(EmbArray *g);
00616 EMB_PUBLIC void embArray_copy(EmbArray *dst, EmbArray *src);
00617 EMB_PUBLIC int embArray_addArc(EmbArray* g, EmbArc arc);
00618 EMB_PUBLIC int embArray_addCircle(EmbArray* g, EmbCircle circle);
00619 EMB_PUBLIC int embArray_addEllipse(EmbArray* g, EmbEllipse ellipse);
00620 EMB_PUBLIC int embArray_addFlag(EmbArray* g, int flag);
00621 EMB_PUBLIC int embArray_addLine(EmbArray* g, EmbLine line);
00622 EMB_PUBLIC int embArray_addRect(EmbArray* g, EmbRect rect);
00623 EMB_PUBLIC int embArray_addPath(EmbArray* g, EmbPath p);
00624 EMB_PUBLIC int embArray_addPoint(EmbArray* g, EmbPoint p);
00625 EMB_PUBLIC int embArray_addPolygon(EmbArray* g, EmbPolygon p);
00626 EMB_PUBLIC int embArray_addPolyline(EmbArray* g, EmbPolyline p);
00627 /* EMB_PUBLIC int embArray_addSpline(EmbArray* g, EmbSpline p); */
00628 EMB_PUBLIC int embArray_addStitch(EmbArray* g, EmbStitch st);
00629 EMB_PUBLIC int embArray_addThread(EmbArray* g, EmbThread p);
00630 EMB_PUBLIC int embArray_addVector(EmbArray* g, EmbVector);
00631 EMB_PUBLIC void embArray_free(EmbArray* p);
00632
00633 EMB_PUBLIC EmbLine embLine_make(EmbReal x1, EmbReal y1, EmbReal x2, EmbReal y2);
00634
00635 EMB_PUBLIC void embLine_normalVector(EmbLine line, EmbVector* result, int clockwise);
00636 EMB_PUBLIC EmbVector embLine_intersectionPoint(EmbLine line1, EmbLine line2);
00637
00638 EMB_PUBLIC int embThread_findNearestColor(EmbColor color, EmbColor* colors, int n_colors);
00639 EMB_PUBLIC int embThread_findNearestThread(EmbColor color, EmbThread* threads, int n_threads);
00640 EMB_PUBLIC EmbThread embThread_getRandom(void);
00641
00642 EMB_PUBLIC void embVector_normalize(EmbVector vector, EmbVector* result);
00643 EMB_PUBLIC void embVector_multiply(EmbVector vector, EmbReal magnitude, EmbVector* result);
00644 EMB_PUBLIC EmbVector embVector_add(EmbVector v1, EmbVector v2);
00645 EMB_PUBLIC EmbVector embVector_average(EmbVector v1, EmbVector v2);
00646 EMB_PUBLIC EmbVector embVector_subtract(EmbVector v1, EmbVector v2);
00647 EMB_PUBLIC EmbReal embVector_dot(EmbVector v1, EmbVector v2);
00648 EMB_PUBLIC EmbReal embVector_cross(EmbVector v1, EmbVector v2);
00649 EMB_PUBLIC void embVector_transpose_product(EmbVector v1, EmbVector v2, EmbVector* result);
00650 EMB_PUBLIC EmbReal embVector_length(EmbVector vector);
00651 EMB_PUBLIC EmbReal embVector_relativeX(EmbVector a1, EmbVector a2, EmbVector a3);
00652 EMB_PUBLIC EmbReal embVector_relativeY(EmbVector a1, EmbVector a2, EmbVector a3);
00653 EMB_PUBLIC EmbReal embVector_angle(EmbVector v);
00654 EMB_PUBLIC EmbReal embVector_distance(EmbVector a, EmbVector b);
00655 EMB_PUBLIC EmbVector embVector_unit(EmbReal angle);
00656
00657 EMB_PUBLIC EmbArc embArc_init(void);
00658 EMB_PUBLIC char embArc_clockwise(EmbArc arc);
00659
00660 EMB_PUBLIC void getArcCenter(EmbArc arc, EmbVector *arcCenter);
00661 EMB_PUBLIC char getArcDataFromBulge(EmbReal bulge,
00662                                         EmbArc *arc,
00663                                         EmbReal* arcCenterX,           EmbReal* arcCenterY,
00664                                         EmbReal* radius,              EmbReal* diameter,
00665                                         EmbReal* chord,
00666                                         EmbReal* chordMidX,           EmbReal* chordMidY,
00667                                         EmbReal* sagitta,             EmbReal* apothem,
00668                                         EmbReal* incAngleInDegrees,   char*    clockwise);
00669
00670 EMB_PUBLIC EmbCircle embCircle_init(void);
00671 EMB_PUBLIC int getCircleCircleIntersections(

```

```
00672     EmbCircle c0, EmbCircle c1, EmbVector *v0, EmbVector *v1);  
00673 EMB_PUBLIC int getCircleTangentPoints(  
00674     EmbCircle c, EmbVector p, EmbVector *v0, EmbVector *v1);  
00675  
00676 EMB_PUBLIC EmbEllipse embEllipse_init(void);  
00677 EMB_PUBLIC EmbEllipse embEllipse_make(EmbReal cx, EmbReal cy, EmbReal rx, EmbReal ry);  
00678 EMB_PUBLIC EmbReal embEllipse_diameterX(EmbEllipse ellipse);  
00679 EMB_PUBLIC EmbReal embEllipse_diameterY(EmbEllipse ellipse);  
00680 EMB_PUBLIC EmbReal embEllipse_width(EmbEllipse ellipse);  
00681 EMB_PUBLIC EmbReal embEllipse_height(EmbEllipse ellipse);  
00682 EMB_PUBLIC EmbReal embEllipse_area(EmbEllipse ellipse);  
00683 EMB_PUBLIC EmbReal embEllipse_perimeter(EmbEllipse ellipse);  
00684  
00685 EMB_PUBLIC EmbImage embImage_create(int, int);  
00686 EMB_PUBLIC void embImage_read(EmbImage *image, char *fname);  
00687 EMB_PUBLIC int embImage_write(EmbImage *image, char *fname);  
00688 EMB_PUBLIC void embImage_free(EmbImage *image);  
00689  
00690 EMB_PUBLIC EmbRect embRect_init(void);  
00691 EMB_PUBLIC EmbReal embRect_area(EmbRect);  
00692  
00693 EMB_PUBLIC int threadColor(const char*, int brand);  
00694 EMB_PUBLIC int threadColorNum(unsigned int color, int brand);  
00695 EMB_PUBLIC const char* threadColorName(unsigned int color, int brand);  
00696  
00697 EMB_PUBLIC void embTime_initNow(EmbTime* t);  
00698 EMB_PUBLIC EmbTime embTime_time(EmbTime* t);  
00699  
00700 EMB_PUBLIC void embSatinOutline_generateSatinOutline(EmbArray* lines, EmbReal thickness,  
    EmbSatinOutline* result);  
00701 EMB_PUBLIC EmbArray* embSatinOutline_renderStitches(EmbSatinOutline* result, EmbReal density);  
00702  
00703 EMB_PUBLIC EmbGeometry *embGeometry_init(int type_in);  
00704 EMB_PUBLIC void embGeometry_free(EmbGeometry *obj);  
00705 EMB_PUBLIC void embGeometry_move(EmbGeometry *obj, EmbVector delta);  
00706 EMB_PUBLIC EmbRect embGeometry_boundingRect(EmbGeometry *obj);  
00707 EMB_PUBLIC void embGeometry_vulcanize(EmbGeometry *obj);  
00708  
00709 EMB_PUBLIC EmbPattern* embPattern_create(void);  
00710 EMB_PUBLIC void embPattern_hideStitchesOverLength(EmbPattern* p, int length);  
00711 EMB_PUBLIC void embPattern_fixColorCount(EmbPattern* p);  
00712 EMB_PUBLIC int embPattern_addThread(EmbPattern* p, EmbThread thread);  
00713 EMB_PUBLIC void embPattern_addStitchAbs(EmbPattern* p, EmbReal x, EmbReal y, int flags, int  
    isAutoColorIndex);  
00714 EMB_PUBLIC void embPattern_addStitchRel(EmbPattern* p, EmbReal dx, EmbReal dy, int flags, int  
    isAutoColorIndex);  
00715 EMB_PUBLIC void embPattern_changeColor(EmbPattern* p, int index);  
00716 EMB_PUBLIC void embPattern_free(EmbPattern* p);  
00717 EMB_PUBLIC void embPattern_scale(EmbPattern* p, EmbReal scale);  
00718 EMB_PUBLIC EmbReal embPattern_totalStitchLength(EmbPattern *pattern);  
00719 EMB_PUBLIC EmbReal embPattern_minimumStitchLength(EmbPattern *pattern);  
00720 EMB_PUBLIC EmbReal embPattern_maximumStitchLength(EmbPattern *pattern);  
00721 EMB_PUBLIC void embPattern_lengthHistogram(EmbPattern *pattern, int *bin, int NUMBINS);  
00722 EMB_PUBLIC int embPattern_realStitches(EmbPattern *pattern);  
00723 EMB_PUBLIC int embPattern_jumpStitches(EmbPattern *pattern);  
00724 EMB_PUBLIC int embPattern_trimStitches(EmbPattern *pattern);  
00725 EMB_PUBLIC EmbRect embPattern_calcBoundingBox(EmbPattern* p);  
00726 EMB_PUBLIC void embPattern_flipHorizontal(EmbPattern* p);  
00727 EMB_PUBLIC void embPattern_flipVertical(EmbPattern* p);  
00728 EMB_PUBLIC void embPattern_flip(EmbPattern* p, int horz, int vert);  
00729 EMB_PUBLIC void embPattern_combineJumpStitches(EmbPattern* p);  
00730 EMB_PUBLIC void embPattern_correctForMaxStitchLength(EmbPattern* p, EmbReal maxStitchLength, EmbReal  
    maxJumpLength);  
00731 EMB_PUBLIC void embPattern_center(EmbPattern* p);  
00732 EMB_PUBLIC void embPattern_loadExternalColorFile(EmbPattern* p, const char* fileName);  
00733 EMB_PUBLIC void embPattern_convertGeometry(EmbPattern* p);  
00734 EMB_PUBLIC void embPattern_designDetails(EmbPattern *p);  
00735 EMB_PUBLIC EmbPattern *embPattern_combine(EmbPattern *p1, EmbPattern *p2);  
00736 EMB_PUBLIC int embPattern_color_count(EmbPattern *pattern, EmbColor startColor);  
00737 EMB_PUBLIC void embPattern_end(EmbPattern* p);  
00738 EMB_PUBLIC void embPattern_crossstitch(EmbPattern *pattern, EmbImage *, int threshhold);  
00739 EMB_PUBLIC void embPattern_horizontal_fill(EmbPattern *pattern, EmbImage *, int threshold);  
00740 EMB_PUBLIC int embPattern_render(EmbPattern *pattern, char *fname);  
00741 EMB_PUBLIC int embPattern_simulate(EmbPattern *pattern, char *fname);  
00742  
00743 EMB_PUBLIC void embPattern_addCircleAbs(EmbPattern* p, EmbCircle obj);  
00744 EMB_PUBLIC void embPattern_addEllipseAbs(EmbPattern* p, EmbEllipse obj);  
00745 EMB_PUBLIC void embPattern_addLineAbs(EmbPattern* p, EmbLine obj);  
00746 EMB_PUBLIC void embPattern_addPathAbs(EmbPattern* p, EmbPath obj);  
00747 EMB_PUBLIC void embPattern_addPointAbs(EmbPattern* p, EmbPoint obj);  
00748 EMB_PUBLIC void embPattern_addPolygonAbs(EmbPattern* p, EmbPolygon obj);  
00749 EMB_PUBLIC void embPattern_addPolylineAbs(EmbPattern* p, EmbPolyline obj);  
00750 EMB_PUBLIC void embPattern_addRectAbs(EmbPattern* p, EmbRect obj);  
00751  
00752 EMB_PUBLIC void embPattern_copyStitchListToPolylines(EmbPattern* pattern);  
00753 EMB_PUBLIC void embPattern_copyPolylinesToStitchList(EmbPattern* pattern);  
00754 EMB_PUBLIC void embPattern_moveStitchListToPolylines(EmbPattern* pattern);
```

```

00755 EMB_PUBLIC void embPattern_movePolylinesToStitchList(EmbPattern* pattern);
00756
00757 EMB_PUBLIC char embPattern_read(EmbPattern *pattern, const char* fileName, int format);
00758 EMB_PUBLIC char embPattern_write(EmbPattern *pattern, const char* fileName, int format);
00759
00760 EMB_PUBLIC char embPattern_readAuto(EmbPattern *pattern, const char* fileName);
00761 EMB_PUBLIC char embPattern_writeAuto(EmbPattern *pattern, const char* fileName);
00762
00763 EMB_PUBLIC void report(int result, char *label);
00764 EMB_PUBLIC int full_test_matrix(char *fname);
00765
00766 EMB_PUBLIC int emb_round(EmbReal x);
00767 EMB_PUBLIC EmbReal radians(EmbReal degree);
00768 EMB_PUBLIC EmbReal degrees(EmbReal radian);
00769
00770 /* NON-MACRO CONSTANTS
00771 *****/
00772
00773 extern EmbFormatList formatTable[numberFormats];
00774 extern const int pecThreadCount;
00775 extern const int shvThreadCount;
00776 extern const EmbReal embConstantPi;
00777 extern const EmbThread husThreads[];
00778 extern const EmbThread jefThreads[];
00779 extern const EmbThread shvThreads[];
00780 extern const EmbThread pcmThreads[];
00781 extern const EmbThread pecThreads[];
00782 extern const unsigned char _dxfColorTable[][][3];
00783 extern EmbThread black_thread;
00784 extern const unsigned char vipDecodingTable[];
00785
00786 /* VARIABLES
00787 *****/
00788
00792 extern int emb_error;
00793
00797 extern int emb_verbose;
00798
00799 #ifdef __cplusplus
00800 }
00801 #endif /* __cplusplus */
00802
00803 #endif /* LIBEMBROIDERY_HEADER */
00804

```

## 19.123 [extern/libembroidery/src/embroidery\\_internal.h](#) File Reference

```
#include "embroidery.h"
#include <stdio.h>
```

### Classes

- struct [\\_bcf\\_file\\_difat](#)
- struct [\\_bcf\\_file\\_fat](#)
- struct [\\_bcf\\_directory\\_entry](#)
- struct [\\_bcf\\_directory](#)
- struct [\\_bcf\\_file\\_header](#)
- struct [\\_bcf\\_file](#)
- struct [\\_vp3Hoop](#)
- struct [ThredHeader\\_](#)
- struct [ThredExtension\\_](#)
- struct [SubDescriptor\\_](#)
- struct [StxThread\\_](#)
- struct [VipHeader\\_](#)
- struct [SvgAttribute\\_](#)
- struct [Huffman](#)
- struct [Compress](#)

## Macros

- #define CompoundFileSector\_MaxRegSector 0xFFFFFFFFFA
- #define CompoundFileSector\_DIFAT\_Sector 0xFFFFFFFFFC
- #define CompoundFileSector\_FAT\_Sector 0xFFFFFFFFFD
- #define CompoundFileSector\_EndOfChain 0xFFFFFFFFFE
- #define CompoundFileSector\_FreeSector 0xFFFFFFFFFF
- #define ObjectTypeUnknown 0x00
- #define ObjectTypeStorage 0x01
- #define ObjectTypeStream 0x02
- #define ObjectTypeRootEntry 0x05
- #define CompoundFileStreamId\_MaxRegularStreamId 0xFFFFFFFFFA
- #define CompoundFileStreamId\_NoStream 0xFFFFFFFFFF
- #define ELEMENT\_XML 0
- #define ELEMENT\_A 1
- #define ELEMENT\_ANIMATE 2
- #define ELEMENT\_ANIMATECOLOR 3
- #define ELEMENT\_ANIMATEMOTION 4
- #define ELEMENT\_ANIMATETRANSFORM 5
- #define ELEMENT\_ANIMATION 6
- #define ELEMENT\_AUDIO 7
- #define ELEMENT\_CIRCLE 8
- #define ELEMENT\_DEFS 9
- #define ELEMENT\_DESC 10
- #define ELEMENT\_DISCARD 11
- #define ELEMENT\_ELLIPSE 12
- #define ELEMENT\_FONT 13
- #define ELEMENT\_FONT\_FACE 14
- #define ELEMENT\_FONT\_FACE\_SRC 15
- #define ELEMENT\_FONT\_FACE\_URI 16
- #define ELEMENT\_FOREIGN\_OBJECT 17
- #define ELEMENT\_G 18
- #define ELEMENT\_GLYPH 19
- #define ELEMENT\_HANDLER 20
- #define ELEMENT\_HKERN 21
- #define ELEMENT\_IMAGE 22
- #define ELEMENT\_LINE 23
- #define ELEMENT\_LINEAR\_GRADIENT 24
- #define ELEMENT\_LISTENER 25
- #define ELEMENT\_METADATA 26
- #define ELEMENT\_MISSING\_GLYPH 27
- #define ELEMENT\_MPATH 28
- #define ELEMENT\_PATH 29
- #define ELEMENT\_POLYGON 30
- #define ELEMENT\_POLYLINE 31
- #define ELEMENT\_PREFETCH 32
- #define ELEMENT\_RADIAL\_GRADIENT 33
- #define ELEMENT\_RECT 34
- #define ELEMENT\_SCRIPT 35
- #define ELEMENT\_SET 36
- #define ELEMENT\_SOLID\_COLOR 37
- #define ELEMENT\_STOP 38
- #define ELEMENT\_SVG 39
- #define ELEMENT\_SWITCH 40
- #define ELEMENT\_TBREAK 41

- #define ELEMENT\_TEXT 42
- #define ELEMENT\_TEXT\_AREA 43
- #define ELEMENT\_TITLE 44
- #define ELEMENT\_TSPAN 45
- #define ELEMENT\_USE 46
- #define ELEMENT\_VIDEO 47
- #define RED\_TERM\_COLOR "\x1B[0;31m"
- #define GREEN\_TERM\_COLOR "\x1B[0;32m"
- #define YELLOW\_TERM\_COLOR "\x1B[1;33m"
- #define RESET\_TERM\_COLOR "\033[0m"
- #define HOOP\_126X110 0
- #define HOOP\_110X110 1
- #define HOOP\_50X50 2
- #define HOOP\_140X200 3
- #define HOOP\_230X200 4
- #define EMB\_MIN(A, B) (((A) < (B)) ? (A) : (B))
- #define EMB\_MAX(A, B) (((A) > (B)) ? (A) : (B))
- #define EMB\_BIG\_ENDIAN 0
- #define EMB\_LITTLE\_ENDIAN 1
- #define ENDIAN\_HOST EMB\_LITTLE\_ENDIAN
- #define EMB\_INT16\_BIG 2
- #define EMB\_INT16\_LITTLE 3
- #define EMB\_INT32\_BIG 4
- #define EMB\_INT32\_LITTLE 5
- #define PES0001 0
- #define PES0020 1
- #define PES0022 2
- #define PES0030 3
- #define PES0040 4
- #define PES0050 5
- #define PES0055 6
- #define PES0056 7
- #define PES0060 8
- #define PES0070 9
- #define PES0080 10
- #define PES0090 11
- #define PES0100 12
- #define N\_PES VERSIONS 13
- #define DXF\_VERSION\_R10 "AC1006"
- #define DXF\_VERSION\_R11 "AC1009"
- #define DXF\_VERSION\_R12 "AC1009"
- #define DXF\_VERSION\_R13 "AC1012"
- #define DXF\_VERSION\_R14 "AC1014"
- #define DXF\_VERSION\_R15 "AC1015"
- #define DXF\_VERSION\_R18 "AC1018"
- #define DXF\_VERSION\_R21 "AC1021"
- #define DXF\_VERSION\_R24 "AC1024"
- #define DXF\_VERSION\_R27 "AC1027"
- #define DXF\_VERSION\_2000 "AC1015"
- #define DXF\_VERSION\_2002 "AC1015"
- #define DXF\_VERSION\_2004 "AC1018"
- #define DXF\_VERSION\_2006 "AC1018"
- #define DXF\_VERSION\_2007 "AC1021"
- #define DXF\_VERSION\_2009 "AC1021"
- #define DXF\_VERSION\_2010 "AC1024"

- `#define DXF_VERSION_2013 "AC1027"`
- `#define SVG_CREATOR_NULL 0`
- `#define SVG_CREATOR_EMBROIDERMODDER 1`
- `#define SVG_CREATOR_ILLUSTRATOR 2`
- `#define SVG_CREATOR_INKSCAPE 3`
- `#define SVG_EXPECT_NULL 0`
- `#define SVG_EXPECT_ELEMENT 1`
- `#define SVG_EXPECT_ATTRIBUTE 2`
- `#define SVG_EXPECT_VALUE 3`
- `#define SVG_NULL 0`
- `#define SVG_ELEMENT 1`
- `#define SVG_PROPERTY 2`
- `#define SVG_MEDIA_PROPERTY 3`
- `#define SVG_ATTRIBUTE 4`
- `#define SVG_CATCH_ALL 5`
- `#define LINETO 0`
- `#define MOVETO 1`
- `#define BULGETOCONTROL 2`
- `#define BULGETOEND 4`
- `#define ELLIPSETORAD 8`
- `#define ELLIPSETOEND 16`
- `#define CUBICTOCONTROL1 32`
- `#define CUBICTOCONTROL2 64`
- `#define CUBICTOEND 128`
- `#define QUADTOCONTROL 256`
- `#define QUADTOEND 512`

## Typedefs

- `typedef struct _bcf_file_difat bcf_file_difat`
- `typedef struct _bcf_file_fat bcf_file_fat`
- `typedef struct _bcf_directory_entry bcf_directory_entry`
- `typedef struct _bcf_directory bcf_directory`
- `typedef struct _bcf_file_header bcf_file_header`
- `typedef struct _bcf_file bcf_file`
- `typedef struct _vp3Hoop vp3Hoop`
- `typedef struct ThredHeader_ ThredHeader`
- `typedef struct ThredExtension_ ThredExtension`
- `typedef struct SubDescriptor_ SubDescriptor`
- `typedef struct StxThread_ StxThread`
- `typedef struct VipHeader_ VipHeader`
- `typedef struct SvgAttribute_ SvgAttribute`
- `typedef struct Huffman huffman`
- `typedef struct Compress compress`

## Enumerations

- `enum CSV_EXPECT { CSV_EXPECT_NULL , CSV_EXPECT_QUOTE1 , CSV_EXPECT_QUOTE2 , CSV_EXPECT_COMMA }`
- `enum CSV_MODE { CSV_MODE_NULL , CSV_MODE_COMMENT , CSV_MODE_VARIABLE , CSV_MODE_THREAD , CSV_MODE_STITCH }`

## Functions

- void `huffman_build_table (huffman *h)`  
*These next 2 functions represent the `Huffman` class in tartarize's code.*
- int \* `huffman_table_lookup (huffman *h, int byte_lookup, int *lengths)`
- int `compress_get_bits (compress *c, int length)`
- int `compress_pop (compress *c, int bit_count)`
- int `compress_read_variable_length (compress *c)`
- void `compress_load_character_length_huffman (compress *c)`
- void `compress_load_character_huffman (compress *c)`
- void `compress_load_distance_huffman (compress *c)`
- void `compress_load_block (compress *c)`
- int `compress_get_token (compress *c)`
- int `compress_get_position (compress *c)`
- void `readPecStitches (EmbPattern *pattern, FILE *file)`
- void `writePecStitches (EmbPattern *pattern, FILE *file, const char *filename)`
- int `decodeNewStitch (unsigned char value)`
- void `pfaffEncode (FILE *file, int x, int y, int flags)`
- `EmbReal pfaffDecode (unsigned char a1, unsigned char a2, unsigned char a3)`
- unsigned char `mitEncodeStitch (EmbReal value)`
- int `mitDecodeStitch (unsigned char value)`
- int `encode_tajima_ternary (unsigned char b[3], int x, int y)`
- void `decode_tajima_ternary (unsigned char b[3], int *x, int *y)`
- void `encode_t01_record (unsigned char b[3], int x, int y, int flags)`
- int `decode_t01_record (unsigned char b[3], int *x, int *y, int *flags)`
- void `readPESHeaderV5 (FILE *file, EmbPattern *pattern)`
- void `readPESHeaderV6 (FILE *file, EmbPattern *pattern)`
- void `readPESHeaderV7 (FILE *file, EmbPattern *pattern)`
- void `readPESHeaderV8 (FILE *file, EmbPattern *pattern)`
- void `readPESHeaderV9 (FILE *file, EmbPattern *pattern)`
- void `readPESHeaderV10 (FILE *file, EmbPattern *pattern)`
- void `readDescriptions (FILE *file, EmbPattern *pattern)`
- void `readHoopName (FILE *file, EmbPattern *pattern)`
- void `readImageString (FILE *file, EmbPattern *pattern)`
- void `readProgrammableFills (FILE *file, EmbPattern *pattern)`
- void `readMotifPatterns (FILE *file, EmbPattern *pattern)`
- void `readFeatherPatterns (FILE *file, EmbPattern *pattern)`
- void `readThreads (FILE *file, EmbPattern *pattern)`
- void `emblnt_read (FILE *f, char *label, void *b, int mode)`
- void `emblnt_write (FILE *f, char *label, void *b, int mode)`
- int `emb_readline (FILE *file, char *line, int maxLength)`
- int `bcfFile_read (FILE *file, bcf_file *bcfFile)`
- FILE \* `GetFile (bcf_file *bcfFile, FILE *file, char *fileToFind)`

*Get the File object.*

- void `bcf_file_free (bcf_file *bcfFile)`
- void `binaryReadString (FILE *file, char *buffer, int maxLength)`
- void `binaryReadUnicodeString (FILE *file, char *buffer, const int stringLength)`
- int `stringInArray (const char *s, const char **array)`
- void `fpad (FILE *f, char c, int n)`
- char \* `copy_trim (char const *s)`
- char \* `emb_optOut (EmbReal num, char *str)`

*Optimizes the number (num) for output to a text file and returns it as a string (str).*

- void `write_24bit (FILE *file, int)`
- int `check_header_present (FILE *file, int minimum_header_length)`

- unsigned short `fread_uint16` (FILE \*file)
- short `fread_int16` (FILE \*f)
- int `fread_int32_be` (FILE \*f)
- void `safe_free` (void \*data)
- void `binaryWriteUIntBE` (FILE \*f, unsigned int data)
- void `binaryWriteUInt` (FILE \*f, unsigned int data)
- void `binaryWriteIntBE` (FILE \*f, int data)
- void `binaryWriteInt` (FILE \*f, int data)
- void `binaryWriteUShort` (FILE \*f, unsigned short data)
- void `binaryWriteUShortBE` (FILE \*f, unsigned short data)
- void `binaryWriteShort` (FILE \*f, short data)
- `bcf_file_difat * bcf_difat_create` (FILE \*file, unsigned int fatSectors, const unsigned int `sectorSize`)
- unsigned int `readFullSector` (FILE \*file, `bcf_file_difat` \*bcfFile, unsigned int \*numberOfDifatEntriesStillToRead)
- unsigned int `numberOfEntriesInDifatSector` (`bcf_file_difat` \*fat)
- void `bcf_file_difat_free` (`bcf_file_difat` \*difat)
- unsigned int `entriesInDifatSector` (`bcf_file_difat` \*fat)
- `bcf_file_fat * bcfFileFat_create` (const unsigned int `sectorSize`)
- void `loadFatFromSector` (`bcf_file_fat` \*fat, FILE \*file)
- void `bcf_file_fat_free` (`bcf_file_fat` \*\*fat)
- `bcf_directory_entry * CompoundFileDirectoryEntry` (FILE \*file)
- `bcf_directory * CompoundFileDirectory` (const unsigned int maxNumberOfDirectoryEntries)
- void `readNextSector` (FILE \*file, `bcf_directory` \*dir)
- void `bcf_directory_free` (`bcf_directory` \*\*dir)
- `bcf_file_header bcfFileHeader_read` (FILE \*file)
- int `bcfFileHeader_isValid` (`bcf_file_header` header)
- int `hus_compress` (char \*input, int size, char \*output, int \*out\_size)
- int `hus_decompress` (char \*input, int size, char \*output, int \*out\_size)
- void `testTangentPoints` (`EmbCircle` c, `EmbVector` p, `EmbVector` \*t0, `EmbVector` \*t1)
- void `printArcResults` (`EmbReal` bulge, `EmbArc` arc, `EmbReal` centerX, `EmbReal` centerY, `EmbReal` radius, `EmbReal` diameter, `EmbReal` chord, `EmbReal` chordMidX, `EmbReal` chordMidY, `EmbReal` sagitta, `EmbReal` apothem, `EmbReal` incAngle, char `clockwise`)
- int `create_test_file_1` (const char \*outf)
- int `create_test_file_2` (const char \*outf)
- int `create_test_file_3` (const char \*outf)
- int `testEmbCircle` (void)
- int `testEmbCircle_2` (void)
- int `testGeomArc` (void)
- int `testThreadColor` (void)
- int `testEmbFormat` (void)
- void `embColor_read` (FILE \*f, `EmbColor` \*c, int toRead)
- void `embColor_write` (FILE \*f, `EmbColor` c, int toWrite)
- char `read100` (`EmbPattern` \*pattern, FILE \*file)
- char `write100` (`EmbPattern` \*pattern, FILE \*file)
- char `read10o` (`EmbPattern` \*pattern, FILE \*file)
- char `write10o` (`EmbPattern` \*pattern, FILE \*file)
- char `readArt` (`EmbPattern` \*pattern, FILE \*file)
- char `writeArt` (`EmbPattern` \*pattern, FILE \*file)
- char `readBmc` (`EmbPattern` \*pattern, FILE \*file)
- char `writeBmc` (`EmbPattern` \*pattern, FILE \*file)
- char `readBro` (`EmbPattern` \*pattern, FILE \*file)
- char `writeBro` (`EmbPattern` \*pattern, FILE \*file)
- char `readCnd` (`EmbPattern` \*pattern, FILE \*file)
- char `writeCnd` (`EmbPattern` \*pattern, FILE \*file)
- char `readCol` (`EmbPattern` \*pattern, FILE \*file)

- char `writeCol` (`EmbPattern` \*pattern, `FILE` \*file)
- char `readCsd` (`EmbPattern` \*pattern, `FILE` \*file)
- char `writeCsd` (`EmbPattern` \*pattern, `FILE` \*file)
- char `readCsv` (`EmbPattern` \*pattern, `FILE` \*file)
- char `writeCsv` (`EmbPattern` \*pattern, `FILE` \*file)
- char `readDat` (`EmbPattern` \*pattern, `FILE` \*file)
- char `writeDat` (`EmbPattern` \*pattern, `FILE` \*file)
- char `readDem` (`EmbPattern` \*pattern, `FILE` \*file)
- char `writeDem` (`EmbPattern` \*pattern, `FILE` \*file)
- char `readDsb` (`EmbPattern` \*pattern, `FILE` \*file)
- char `writeDsb` (`EmbPattern` \*pattern, `FILE` \*file)
- char `readDst` (`EmbPattern` \*pattern, `FILE` \*file)
- char `writeDst` (`EmbPattern` \*pattern, `FILE` \*file)
- char `readDsz` (`EmbPattern` \*pattern, `FILE` \*file)
- char `writeDsz` (`EmbPattern` \*pattern, `FILE` \*file)
- char `readDxf` (`EmbPattern` \*pattern, `FILE` \*file)
- char `writeDxf` (`EmbPattern` \*pattern, `FILE` \*file)
- char `readEdr` (`EmbPattern` \*pattern, `FILE` \*file)
- char `writeEdr` (`EmbPattern` \*pattern, `FILE` \*file)
- char `readEmd` (`EmbPattern` \*pattern, `FILE` \*file)
- char `writeEmd` (`EmbPattern` \*pattern, `FILE` \*file)
- char `readExp` (`EmbPattern` \*pattern, `FILE` \*file)
- char `writeExp` (`EmbPattern` \*pattern, `FILE` \*file)
- char `readExy` (`EmbPattern` \*pattern, `FILE` \*file)
- char `writeExy` (`EmbPattern` \*pattern, `FILE` \*file)
- char `readEys` (`EmbPattern` \*pattern, `FILE` \*file)
- char `writeEys` (`EmbPattern` \*pattern, `FILE` \*file)
- char `readFxy` (`EmbPattern` \*pattern, `FILE` \*file)
- char `writeFxy` (`EmbPattern` \*pattern, `FILE` \*file)
- char `readGc` (`EmbPattern` \*pattern, `FILE` \*file)
- char `writeGc` (`EmbPattern` \*pattern, `FILE` \*file)
- char `readGnc` (`EmbPattern` \*pattern, `FILE` \*file)
- char `writeGnc` (`EmbPattern` \*pattern, `FILE` \*file)
- char `readGt` (`EmbPattern` \*pattern, `FILE` \*file)
- char `writeGt` (`EmbPattern` \*pattern, `FILE` \*file)
- char `readHus` (`EmbPattern` \*pattern, `FILE` \*file)
- char `writeHus` (`EmbPattern` \*pattern, `FILE` \*file)
- char `readInb` (`EmbPattern` \*pattern, `FILE` \*file)
- char `writelnb` (`EmbPattern` \*pattern, `FILE` \*file)
- char `readInf` (`EmbPattern` \*pattern, `FILE` \*file)
- char `writelnf` (`EmbPattern` \*pattern, `FILE` \*file)
- char `readJef` (`EmbPattern` \*pattern, `FILE` \*file)
- char `writeJef` (`EmbPattern` \*pattern, `FILE` \*file)
- char `readKsm` (`EmbPattern` \*pattern, `FILE` \*file)
- char `writeKsm` (`EmbPattern` \*pattern, `FILE` \*file)
- char `readMax` (`EmbPattern` \*pattern, `FILE` \*file)
- char `writeMax` (`EmbPattern` \*pattern, `FILE` \*file)
- char `readMit` (`EmbPattern` \*pattern, `FILE` \*file)
- char `writeMit` (`EmbPattern` \*pattern, `FILE` \*file)
- char `readNew` (`EmbPattern` \*pattern, `FILE` \*file)
- char `writeNew` (`EmbPattern` \*pattern, `FILE` \*file)
- char `readOfm` (`EmbPattern` \*pattern, `FILE` \*file)
- char `writeOfm` (`EmbPattern` \*pattern, `FILE` \*file)
- char `readPcd` (`EmbPattern` \*pattern, const char \*fileName, `FILE` \*file)
- char `writePcd` (`EmbPattern` \*pattern, `FILE` \*file)

- char `readPcm` (`EmbPattern` \*pattern, `FILE` \*file)
- char `writePcm` (`EmbPattern` \*pattern, `FILE` \*file)
- char `readPcq` (`EmbPattern` \*pattern, const `char` \*fileName, `FILE` \*file)
- char `writePcq` (`EmbPattern` \*pattern, `FILE` \*file)
- char `readPcs` (`EmbPattern` \*pattern, const `char` \*fileName, `FILE` \*file)
- char `writePcs` (`EmbPattern` \*pattern, `FILE` \*file)
- char `readPec` (`EmbPattern` \*pattern, const `char` \*fileName, `FILE` \*file)
- char `writePec` (`EmbPattern` \*pattern, const `char` \*fileName, `FILE` \*file)
- char `readPel` (`EmbPattern` \*pattern, `FILE` \*file)
- char `writePel` (`EmbPattern` \*pattern, `FILE` \*file)
- char `readPem` (`EmbPattern` \*pattern, `FILE` \*file)
- char `writePem` (`EmbPattern` \*pattern, `FILE` \*file)
- char `readPes` (`EmbPattern` \*pattern, const `char` \*fileName, `FILE` \*file)
- char `writePes` (`EmbPattern` \*pattern, const `char` \*fileName, `FILE` \*file)
- char `readPhb` (`EmbPattern` \*pattern, `FILE` \*file)
- char `writePhb` (`EmbPattern` \*pattern, `FILE` \*file)
- char `readPhc` (`EmbPattern` \*pattern, `FILE` \*file)
- char `writePhc` (`EmbPattern` \*pattern, `FILE` \*file)
- char `readPlt` (`EmbPattern` \*pattern, `FILE` \*file)
- char `writePlt` (`EmbPattern` \*pattern, `FILE` \*file)
- char `readRgb` (`EmbPattern` \*pattern, `FILE` \*file)
- char `writeRgb` (`EmbPattern` \*pattern, `FILE` \*file)
- char `readSew` (`EmbPattern` \*pattern, `FILE` \*file)
- char `writeSew` (`EmbPattern` \*pattern, `FILE` \*file)
- char `readShv` (`EmbPattern` \*pattern, `FILE` \*file)
- char `writeShv` (`EmbPattern` \*pattern, `FILE` \*file)
- char `readSst` (`EmbPattern` \*pattern, `FILE` \*file)
- char `writeSst` (`EmbPattern` \*pattern, `FILE` \*file)
- char `readStx` (`EmbPattern` \*pattern, `FILE` \*file)
- char `writeStx` (`EmbPattern` \*pattern, `FILE` \*file)
- char `readSvg` (`EmbPattern` \*pattern, `FILE` \*file)
- char `writeSvg` (`EmbPattern` \*pattern, `FILE` \*file)
- char `readT01` (`EmbPattern` \*pattern, `FILE` \*file)
- char `writeT01` (`EmbPattern` \*pattern, `FILE` \*file)
- char `readT09` (`EmbPattern` \*pattern, `FILE` \*file)
- char `writeT09` (`EmbPattern` \*pattern, `FILE` \*file)
- char `readTap` (`EmbPattern` \*pattern, `FILE` \*file)
- char `writeTap` (`EmbPattern` \*pattern, `FILE` \*file)
- char `readThr` (`EmbPattern` \*pattern, `FILE` \*file)
- char `writeThr` (`EmbPattern` \*pattern, `FILE` \*file)
- char `readTxt` (`EmbPattern` \*pattern, `FILE` \*file)
- char `writeTxt` (`EmbPattern` \*pattern, `FILE` \*file)
- char `readU00` (`EmbPattern` \*pattern, `FILE` \*file)
- char `writeU00` (`EmbPattern` \*pattern, `FILE` \*file)
- char `readU01` (`EmbPattern` \*pattern, `FILE` \*file)
- char `writeU01` (`EmbPattern` \*pattern, `FILE` \*file)
- char `readVip` (`EmbPattern` \*pattern, `FILE` \*file)
- char `writeVip` (`EmbPattern` \*pattern, `FILE` \*file)
- char `readVp3` (`EmbPattern` \*pattern, `FILE` \*file)
- char `writeVp3` (`EmbPattern` \*pattern, `FILE` \*file)
- char `readXxx` (`EmbPattern` \*pattern, `FILE` \*file)
- char `writeXxx` (`EmbPattern` \*pattern, `FILE` \*file)
- char `readZsk` (`EmbPattern` \*pattern, `FILE` \*file)
- char `writeZsk` (`EmbPattern` \*pattern, `FILE` \*file)

**Variables**

- const char [imageWithFrame](#) [38][48]

**19.123.1 Macro Definition Documentation****19.123.1.1 BULGETOCONTROL** #define BULGETOCONTROL 2**19.123.1.2 BULGETOEND** #define BULGETOEND 4**19.123.1.3 CompoundFileSector\_DIFAT\_Sector** #define CompoundFileSector\_DIFAT\_Sector 0xFFFFFFFFFC**19.123.1.4 CompoundFileSector\_EndOfChain** #define CompoundFileSector\_EndOfChain 0xFFFFFFFFFE**19.123.1.5 CompoundFileSector\_FAT\_Sector** #define CompoundFileSector\_FAT\_Sector 0xFFFFFFFFFD**19.123.1.6 CompoundFileSector\_FreeSector** #define CompoundFileSector\_FreeSector 0xFFFFFFFFFF**19.123.1.7 CompoundFileSector\_MaxRegSector** #define CompoundFileSector\_MaxRegSector 0x←  
FFFFFFFA

Type of sector

**19.123.1.8 CompoundFileStreamId\_MaxRegularStreamId** #define CompoundFileStreamId\_MaxRegular←  
StreamId 0xFFFFFFFFFA

Special values for Stream Identifiers All real stream Ids are less than this

**19.123.1.9 CompoundFileStreamId\_NoStream** #define CompoundFileStreamId\_NoStream 0xFFFFFFFFFF

There is no valid stream Id

**19.123.1.10 CUBICTOCONTROL1** `#define CUBICTOCONTROL1 32`

**19.123.1.11 CUBICTOCONTROL2** `#define CUBICTOCONTROL2 64`

**19.123.1.12 CUBICTOEND** `#define CUBICTOEND 128`

**19.123.1.13 DXF\_VERSION\_2000** `#define DXF_VERSION_2000 "AC1015"`

**19.123.1.14 DXF\_VERSION\_2002** `#define DXF_VERSION_2002 "AC1015"`

**19.123.1.15 DXF\_VERSION\_2004** `#define DXF_VERSION_2004 "AC1018"`

**19.123.1.16 DXF\_VERSION\_2006** `#define DXF_VERSION_2006 "AC1018"`

**19.123.1.17 DXF\_VERSION\_2007** `#define DXF_VERSION_2007 "AC1021"`

**19.123.1.18 DXF\_VERSION\_2009** `#define DXF_VERSION_2009 "AC1021"`

**19.123.1.19 DXF\_VERSION\_2010** `#define DXF_VERSION_2010 "AC1024"`

**19.123.1.20 DXF\_VERSION\_2013** `#define DXF_VERSION_2013 "AC1027"`

**19.123.1.21 DXF\_VERSION\_R10** #define DXF\_VERSION\_R10 "AC1006"

**19.123.1.22 DXF\_VERSION\_R11** #define DXF\_VERSION\_R11 "AC1009"

**19.123.1.23 DXF\_VERSION\_R12** #define DXF\_VERSION\_R12 "AC1009"

**19.123.1.24 DXF\_VERSION\_R13** #define DXF\_VERSION\_R13 "AC1012"

**19.123.1.25 DXF\_VERSION\_R14** #define DXF\_VERSION\_R14 "AC1014"

**19.123.1.26 DXF\_VERSION\_R15** #define DXF\_VERSION\_R15 "AC1015"

**19.123.1.27 DXF\_VERSION\_R18** #define DXF\_VERSION\_R18 "AC1018"

**19.123.1.28 DXF\_VERSION\_R21** #define DXF\_VERSION\_R21 "AC1021"

**19.123.1.29 DXF\_VERSION\_R24** #define DXF\_VERSION\_R24 "AC1024"

**19.123.1.30 DXF\_VERSION\_R27** #define DXF\_VERSION\_R27 "AC1027"

**19.123.1.31 ELEMENT\_A** #define ELEMENT\_A 1

**19.123.1.32 ELEMENT\_ANIMATE** `#define ELEMENT_ANIMATE 2`

**19.123.1.33 ELEMENT\_ANIMATECOLOR** `#define ELEMENT_ANIMATECOLOR 3`

**19.123.1.34 ELEMENT\_ANIMATEMOTION** `#define ELEMENT_ANIMATEMOTION 4`

**19.123.1.35 ELEMENT\_ANIMATETRANSFORM** `#define ELEMENT_ANIMATETRANSFORM 5`

**19.123.1.36 ELEMENT\_ANIMATION** `#define ELEMENT_ANIMATION 6`

**19.123.1.37 ELEMENT\_AUDIO** `#define ELEMENT_AUDIO 7`

**19.123.1.38 ELEMENT\_CIRCLE** `#define ELEMENT_CIRCLE 8`

**19.123.1.39 ELEMENT\_DEFS** `#define ELEMENT_DEFS 9`

**19.123.1.40 ELEMENT\_DESC** `#define ELEMENT_DESC 10`

**19.123.1.41 ELEMENT\_DISCARD** `#define ELEMENT_DISCARD 11`

**19.123.1.42 ELEMENT\_ELLIPSE** `#define ELEMENT_ELLIPSE 12`

**19.123.1.43 ELEMENT\_FONT** #define ELEMENT\_FONT 13

**19.123.1.44 ELEMENT\_FONT\_FACE** #define ELEMENT\_FONT\_FACE 14

**19.123.1.45 ELEMENT\_FONT\_FACE\_SRC** #define ELEMENT\_FONT\_FACE\_SRC 15

**19.123.1.46 ELEMENT\_FONT\_FACE\_URI** #define ELEMENT\_FONT\_FACE\_URI 16

**19.123.1.47 ELEMENT\_FOREIGN\_OBJECT** #define ELEMENT\_FOREIGN\_OBJECT 17

**19.123.1.48 ELEMENT\_G** #define ELEMENT\_G 18

**19.123.1.49 ELEMENT\_GLYPH** #define ELEMENT\_GLYPH 19

**19.123.1.50 ELEMENT\_HANDLER** #define ELEMENT\_HANDLER 20

**19.123.1.51 ELEMENT\_HKERN** #define ELEMENT\_HKERN 21

**19.123.1.52 ELEMENT\_IMAGE** #define ELEMENT\_IMAGE 22

**19.123.1.53 ELEMENT\_LINE** #define ELEMENT\_LINE 23

**19.123.1.54 ELEMENT\_LINEAR\_GRADIENT** `#define ELEMENT_LINEAR_GRADIENT 24`

**19.123.1.55 ELEMENT\_LISTENER** `#define ELEMENT_LISTENER 25`

**19.123.1.56 ELEMENT\_METADATA** `#define ELEMENT_METADATA 26`

**19.123.1.57 ELEMENT\_MISSING\_GLYPH** `#define ELEMENT_MISSING_GLYPH 27`

**19.123.1.58 ELEMENT\_MPATH** `#define ELEMENT_MPATH 28`

**19.123.1.59 ELEMENT\_PATH** `#define ELEMENT_PATH 29`

**19.123.1.60 ELEMENT\_POLYGON** `#define ELEMENT_POLYGON 30`

**19.123.1.61 ELEMENT\_POLYLINE** `#define ELEMENT_POLYLINE 31`

**19.123.1.62 ELEMENT\_PREFETCH** `#define ELEMENT_PREFETCH 32`

**19.123.1.63 ELEMENT\_RADIAL\_GRADIENT** `#define ELEMENT_RADIAL_GRADIENT 33`

**19.123.1.64 ELEMENT\_RECT** `#define ELEMENT_RECT 34`

**19.123.1.65 ELEMENT\_SCRIPT** #define ELEMENT\_SCRIPT 35

**19.123.1.66 ELEMENT\_SET** #define ELEMENT\_SET 36

**19.123.1.67 ELEMENT\_SOLID\_COLOR** #define ELEMENT\_SOLID\_COLOR 37

**19.123.1.68 ELEMENT\_STOP** #define ELEMENT\_STOP 38

**19.123.1.69 ELEMENT\_SVG** #define ELEMENT\_SVG 39

**19.123.1.70 ELEMENT\_SWITCH** #define ELEMENT\_SWITCH 40

**19.123.1.71 ELEMENT\_TBREAK** #define ELEMENT\_TBREAK 41

**19.123.1.72 ELEMENT\_TEXT** #define ELEMENT\_TEXT 42

**19.123.1.73 ELEMENT\_TEXT\_AREA** #define ELEMENT\_TEXT\_AREA 43

**19.123.1.74 ELEMENT\_TITLE** #define ELEMENT\_TITLE 44

**19.123.1.75 ELEMENT\_TSPAN** #define ELEMENT\_TSPAN 45

**19.123.1.76 ELEMENT\_USE** `#define ELEMENT_USE 46`

**19.123.1.77 ELEMENT\_VIDEO** `#define ELEMENT_VIDEO 47`

**19.123.1.78 ELEMENT\_XML** `#define ELEMENT_XML 0`

**19.123.1.79 ELLIPSETOEND** `#define ELLIPSETOEND 16`

**19.123.1.80 ELLIPSETORAD** `#define ELLIPSETORAD 8`

**19.123.1.81 EMB\_BIG\_ENDIAN** `#define EMB_BIG_ENDIAN 0`

**19.123.1.82 EMB\_INT16\_BIG** `#define EMB_INT16_BIG 2`

**19.123.1.83 EMB\_INT16\_LITTLE** `#define EMB_INT16_LITTLE 3`

**19.123.1.84 EMB\_INT32\_BIG** `#define EMB_INT32_BIG 4`

**19.123.1.85 EMB\_INT32\_LITTLE** `#define EMB_INT32_LITTLE 5`

**19.123.1.86 EMB\_LITTLE\_ENDIAN** `#define EMB_LITTLE_ENDIAN 1`

**19.123.1.87 EMB\_MAX** #define EMB\_MAX(  
    A,  
    B ) (( (A) > (B)) ? (A) : (B))

**19.123.1.88 EMB\_MIN** #define EMB\_MIN(  
    A,  
    B ) (( (A) < (B)) ? (A) : (B))

**19.123.1.89 ENDIAN\_HOST** #define ENDIAN\_HOST EMB\_LITTLE\_ENDIAN

**19.123.1.90 GREEN\_TERM\_COLOR** #define GREEN\_TERM\_COLOR "\x1B[0;32m"

**19.123.1.91 HOOP\_110X110** #define HOOP\_110X110 1

**19.123.1.92 HOOP\_126X110** #define HOOP\_126X110 0

**19.123.1.93 HOOP\_140X200** #define HOOP\_140X200 3

**19.123.1.94 HOOP\_230X200** #define HOOP\_230X200 4

**19.123.1.95 HOOP\_50X50** #define HOOP\_50X50 2

**19.123.1.96 LINETO** #define LINETO 0

**19.123.1.97 MOVETO** #define MOVETO 1

**19.123.1.98 N\_PES\_VERSIONS** `#define N_PES_VERSIONS 13`

**19.123.1.99 ObjectTypeRootEntry** `#define ObjectTypeRootEntry 0x05`

the root entry

**19.123.1.100 ObjectTypeStorage** `#define ObjectTypeStorage 0x01`

a directory type object

**19.123.1.101 ObjectTypeStream** `#define ObjectTypeStream 0x02`

a file type object

**19.123.1.102 ObjectTypeUnknown** `#define ObjectTypeUnknown 0x00`

Type of directory object Probably unallocated

**19.123.1.103 PES0001** `#define PES0001 0`

**19.123.1.104 PES0020** `#define PES0020 1`

**19.123.1.105 PES0022** `#define PES0022 2`

**19.123.1.106 PES0030** `#define PES0030 3`

**19.123.1.107 PES0040** `#define PES0040 4`

**19.123.1.108 PES0050** `#define PES0050 5`

**19.123.1.109 PES0055** #define PES0055 6

**19.123.1.110 PES0056** #define PES0056 7

**19.123.1.111 PES0060** #define PES0060 8

**19.123.1.112 PES0070** #define PES0070 9

**19.123.1.113 PES0080** #define PES0080 10

**19.123.1.114 PES0090** #define PES0090 11

**19.123.1.115 PES0100** #define PES0100 12

**19.123.1.116 QUADTOCONTROL** #define QUADTOCONTROL 256

**19.123.1.117 QUADTOEND** #define QUADTOEND 512

**19.123.1.118 RED\_TERM\_COLOR** #define RED\_TERM\_COLOR "\x1B[0;31m"

**19.123.1.119 RESET\_TERM\_COLOR** #define RESET\_TERM\_COLOR "\033[0m"

**19.123.1.120 SVG\_ATTRIBUTE** #define SVG\_ATTRIBUTE 4

**19.123.1.121 SVG\_CATCH\_ALL** #define SVG\_CATCH\_ALL 5

**19.123.1.122 SVG\_CREATOR\_EMBROIDERMODDER** #define SVG\_CREATOR\_EMBROIDERMODDER 1

**19.123.1.123 SVG\_CREATOR\_ILLUSTRATOR** #define SVG\_CREATOR\_ILLUSTRATOR 2

**19.123.1.124 SVG\_CREATOR\_INKSCAPE** #define SVG\_CREATOR\_INKSCAPE 3

**19.123.1.125 SVG\_CREATOR\_NULL** #define SVG\_CREATOR\_NULL 0

**19.123.1.126 SVG\_ELEMENT** #define SVG\_ELEMENT 1

**19.123.1.127 SVG\_EXPECT\_ATTRIBUTE** #define SVG\_EXPECT\_ATTRIBUTE 2

**19.123.1.128 SVG\_EXPECT\_ELEMENT** #define SVG\_EXPECT\_ELEMENT 1

**19.123.1.129 SVG\_EXPECT\_NULL** #define SVG\_EXPECT\_NULL 0

**19.123.1.130 SVG\_EXPECT\_VALUE** #define SVG\_EXPECT\_VALUE 3

**19.123.1.131 SVG\_MEDIA\_PROPERTY** `#define SVG_MEDIA_PROPERTY 3`

**19.123.1.132 SVG\_NULL** `#define SVG_NULL 0`

**19.123.1.133 SVG\_PROPERTY** `#define SVG_PROPERTY 2`

**19.123.1.134 YELLOW\_TERM\_COLOR** `#define YELLOW_TERM_COLOR "\x1B[1;33m"`

## 19.123.2 Typedef Documentation

**19.123.2.1 bcf\_directory** `typedef struct _bcf_directory bcf_directory`

**Todo** possibly add a directory tree in the future.

**19.123.2.2 bcf\_directory\_entry** `typedef struct _bcf_directory_entry bcf_directory_entry`

**19.123.2.3 bcf\_file** `typedef struct _bcf_file bcf_file`

**19.123.2.4 bcf\_file\_difat** `typedef struct _bcf_file_difat bcf_file_difat`

**19.123.2.5 bcf\_file\_fat** `typedef struct _bcf_file_fat bcf_file_fat`

**19.123.2.6 bcf\_file\_header** `typedef struct _bcf_file_header bcf_file_header`

**Todo** CLSID should be a separate type.

**19.123.2.7 compress** `typedef struct Compress compress`

**19.123.2.8 huffman** `typedef struct Huffman huffman`

**19.123.2.9 StxThread** `typedef struct StxThread_ StxThread`

**19.123.2.10 SubDescriptor** `typedef struct SubDescriptor_ SubDescriptor`

**19.123.2.11 SvgAttribute** `typedef struct SvgAttribute_ SvgAttribute`

**19.123.2.12 ThredExtension** `typedef struct ThredExtension_ ThredExtension`

**19.123.2.13 ThredHeader** `typedef struct ThredHeader_ ThredHeader`

**19.123.2.14 VipHeader** `typedef struct VipHeader_ VipHeader`

**19.123.2.15 vp3Hoop** `typedef struct _vp3Hoop vp3Hoop`

### 19.123.3 Enumeration Type Documentation

**19.123.3.1 CSV\_EXPECT** `enum CSV_EXPECT`

Enumerator

<code>CSV_EXPECT_NULL</code>	
<code>CSV_EXPECT_QUOTE1</code>	
<code>CSV_EXPECT_QUOTE2</code>	
<code>CSV_EXPECT_COMMA</code>	

**19.123.3.2 CSV\_MODE** enum `CSV_MODE`

Enumerator

CSV_MODE_NULL	
CSV_MODE_COMMENT	
CSV_MODE_VARIABLE	
CSV_MODE_THREAD	
CSV_MODE_STITCH	

**19.123.4 Function Documentation**

**19.123.4.1 bcf\_difat\_create()** `bcf_file_difat * bcf_difat_create (`  
    `FILE * file,`  
    `unsigned int fatSectors,`  
    `const unsigned int sectorSize )`

Parameters

<code>file</code>	
<code>fatSectors</code>	
<code>sectorSize</code>	

Returns

`bcf_file_difat*`

**19.123.4.2 bcf\_directory\_free()** `void bcf_directory_free (`  
    `bcf_directory ** dir )`

Parameters

<code>dir</code>	
------------------	--

**19.123.4.3 bcf\_file\_difat\_free()** `void bcf_file_difat_free (`  
    `bcf_file_difat * difat )`

**19.123.4.4 bcf\_file\_fat\_free()** void bcf\_file\_fat\_free (   
     `bcf_file_fat` \*\* *fat* )

**19.123.4.5 bcf\_file\_free()** void bcf\_file\_free (   
     `bcf_file` \* *bcfFile* )

Parameters

<code>bcfFile</code>	
----------------------	--

**19.123.4.6 bcfFile\_read()** int bcfFile\_read (   
     FILE \* *file*,   
     `bcf_file` \* *bcfFile* )

Parameters

<code>file</code>	
<code>bcfFile</code>	

Returns

int

**19.123.4.7 bcfFileFat\_create()** `bcf_file_fat` \* bcfFileFat\_create (   
     const unsigned int *sectorSize* )

Parameters

<code>sectorSize</code>	
-------------------------	--

Returns

`bcf_file_fat*`

**19.123.4.8 bcfFileHeader\_isValid()** int bcfFileHeader\_isValid (   
     `bcf_file_header` *header* )

**19.123.4.9 bcfFileHeader\_read()** `bcf_file_header` bcfFileHeader\_read (   
     FILE \* *file* )

**Parameters**

<i>file</i>	<input type="text"/>
-------------	----------------------

**Returns**`bcf_file_header`**19.123.4.10 `binaryReadString()`** `void binaryReadString (`

```
FILE * file,  
char * buffer,  
int maxLength )
```

**Parameters**

<i>file</i>	<input type="text"/>
<i>buffer</i>	<input type="text"/>
<i>maxLength</i>	<input type="text"/>

**19.123.4.11 `binaryReadUnicodeString()`** `void binaryReadUnicodeString (`

```
FILE * file,  
char * buffer,  
const int stringLength )
```

**Parameters**

<i>file</i>	<input type="text"/>
<i>buffer</i>	<input type="text"/>
<i>stringLength</i>	<input type="text"/>

**19.123.4.12 `binaryWriteInt()`** `void binaryWriteInt (`

```
FILE * f,  
int data )
```

**Parameters**

<i>f</i>	<input type="text"/>
<i>data</i>	<input type="text"/>

**Todo** replace with emblnt\_read

**19.123.4.13 binaryWriteIntBE()** void binaryWriteIntBE ( FILE \* *f*, int *data* )

Parameters

<i>f</i>	
<i>data</i>	

**Todo** replace with emblnt\_read

**19.123.4.14 binaryWriteShort()** void binaryWriteShort ( FILE \* *f*, short *data* )

Parameters

<i>f</i>	
<i>data</i>	

**Todo** replace with emblnt\_read

**19.123.4.15 binaryWriteUInt()** void binaryWriteUInt ( FILE \* *f*, unsigned int *data* )

Parameters

<i>f</i>	
<i>data</i>	

**Todo** replace with emblnt\_read

**19.123.4.16 binaryWriteUIntBE()** void binaryWriteUIntBE ( FILE \* *f*, unsigned int *data* )

Parameters

<i>f</i>	
<i>data</i>	

**Todo** replace with emblnt\_read

#### 19.123.4.17 **binaryWriteUShort()** void binaryWriteUShort (

```
FILE * f,  
unsigned short data )
```

Parameters

f	
data	

**Todo** replace with emblnt\_read

#### 19.123.4.18 **binaryWriteUShortBE()** void binaryWriteUShortBE (

```
FILE * f,  
unsigned short data )
```

Parameters

f	
data	

**Todo** replace with emblnt\_read

#### 19.123.4.19 **check\_header\_present()** int check\_header\_present (

```
FILE * file,  
int minimum_header_length )
```

Parameters

file	
minimum_header_length	

Returns

int

Checks that there are enough bytes to interpret the header, stops possible segfaults when reading in the header bytes.

Returns 0 if there aren't enough, or the length of the file if there are.

**19.123.4.20 CompoundFileDirectory()** `bcf_directory * CompoundFileDirectory ( const unsigned int maxNumberOfDirectoryEntries )`

Parameters

<code>maxNumberOfDirectoryEntries</code>	
--	--

Returns

`bcf_directory*`

**19.123.4.21 CompoundFileDirectoryEntry()** `bcf_directory_entry * CompoundFileDirectoryEntry ( FILE * file )`

Parameters

<code>file</code>	
-------------------	--

Returns

`bcf_directory_entry*`

**19.123.4.22 compress\_get\_bits()** `int compress_get_bits ( compress * c, int length )`

Parameters

<code>c</code>	
<code>length</code>	

Returns

`int`

**19.123.4.23 compress\_get\_position()** `int compress_get_position ( compress * c )`

Parameters

<code>c</code>	
----------------	--

Returns

int

**19.123.4.24 compress\_get\_token()** int compress\_get\_token (   
   compress \* c )

Parameters

c	
---	--

Returns

int

**19.123.4.25 compress\_load\_block()** void compress\_load\_block (   
   compress \* c )

Parameters

c	
---	--

**19.123.4.26 compress\_load\_character\_huffman()** void compress\_load\_character\_huffman (   
   compress \* c )

Parameters

c	
---	--

**19.123.4.27 compress\_load\_character\_length\_huffman()** void compress\_load\_character\_length\_huffman (   
   compress \* c )

Parameters

c	
---	--

**19.123.4.28 compress\_load\_distance\_huffman()** void compress\_load\_distance\_huffman ( compress \* c )

Parameters

c	
---	--

**19.123.4.29 compress\_pop()** int compress\_pop ( compress \* c, int bit\_count )

Parameters

c	
bit_count	

Returns

int

**19.123.4.30 compress\_read\_variable\_length()** int compress\_read\_variable\_length ( compress \* c )

Parameters

c	
---	--

Returns

int

**19.123.4.31 copy\_trim()** char \* copy\_trim ( char const \* s )

Parameters

s	
---	--

Returns

char\*

**Todo** description

**19.123.4.32 `create_test_file_1()`** int create\_test\_file\_1 ( const char \* outf )

**19.123.4.33 `create_test_file_2()`** int create\_test\_file\_2 ( const char \* outf )

**19.123.4.34 `create_test_file_3()`** int create\_test\_file\_3 ( const char \* outf )

**19.123.4.35 `decode_t01_record()`** int decode\_t01\_record ( unsigned char b[3], int \* x, int \* y, int \* flags )

#### Parameters

<i>b</i>	
<i>x</i>	
<i>y</i>	
<i>flags</i>	

#### Returns

int

**19.123.4.36 `decode_tajima_ternary()`** void decode\_tajima\_ternary ( unsigned char b[3], int \* x, int \* y )

#### Parameters

<i>b</i>	
<i>x</i>	
<i>y</i>	

**19.123.4.37 decodeNewStitch()** int decodeNewStitch ( unsigned char value )

Parameters

value	
-------	--

Returns

int

**19.123.4.38 emb\_optOut()** char \* emb\_optOut ( EmbReal num, char \* str )

Optimizes the number (*num*) for output to a text file and returns it as a string (*str*).

Parameters

num	
str	

Returns

char\*

**19.123.4.39 emb\_readline()** int emb\_readline ( FILE \* file, char \* line, int maxLength )

Parameters

file	
line	
maxLength	

Returns

int

```
19.123.4.40 embColor_read() void embColor_read (
    FILE * f,
    EmbColor * c,
    int toRead )
```

**Parameters**

<i>f</i>	
<i>c</i>	
<i>toRead</i>	

```
19.123.4.41 embColor_write() void embColor_write (
    FILE * f,
    EmbColor c,
    int toWrite )
```

**Parameters**

<i>f</i>	
<i>c</i>	
<i>toWrite</i>	

```
19.123.4.42 embInt_read() void embInt_read (
    FILE * f,
    char * label,
    void * b,
    int mode )
```

**Parameters**

<i>f</i>	
<i>label</i>	
<i>b</i>	
<i>mode</i>	

Read and write system for multiple byte types.

The caller passes the function to read/write from, the memory location as a void pointer and a mode identifier that describes the type. This way we can abstract out the endianness of the system running the library and don't have to maintain many functions, just two.

```
19.123.4.43 embInt_write() void embInt_write (
    FILE * f,
    char * label,
    void * b,
    int mode )
```

**Parameters**

<i>f</i>	
<i>label</i>	
<i>b</i>	
<i>mode</i>	

```
19.123.4.44 encode_t01_record() void encode_t01_record (
    unsigned char b[3],
    int x,
    int y,
    int flags )
```

**Parameters**

<i>b</i>	
<i>x</i>	
<i>y</i>	
<i>flags</i>	

```
19.123.4.45 encode_tajima_ternary() int encode_tajima_ternary (
    unsigned char b[3],
    int x,
    int y )
```

**Parameters**

<i>b</i>	
<i>x</i>	
<i>y</i>	

**Returns**

int

```
19.123.4.46 entriesInDifatSector() unsigned int entriesInDifatSector (
    bcf_file_difat * fat )
```

**Parameters**

<i>fat</i>	
------------	--

**Returns**

unsigned int

**19.123.4.47 `fpad()`** `void fpad (`  
    `FILE * file,`  
    `char c,`  
    `int n )`

**Parameters**

<code>f</code>	<input type="text"/>
----------------	----------------------

**Returns**

`int`

**19.123.4.48 `fread_int16()`** `short fread_int16 (`  
    `FILE * f )`

**Parameters**

<code>f</code>	<input type="text"/>
----------------	----------------------

**Returns**

`short`

**19.123.4.49 `fread_int32_be()`** `int fread_int32_be (`  
    `FILE * f )`

**Parameters**

<code>f</code>	<input type="text"/>
----------------	----------------------

**Returns**

`int`

**Todo** replace with emblnt\_read

**19.123.4.50 `fread_uint16()`** `unsigned short fread_uint16 (`  
    `FILE * f )`

**Parameters**

f	
---	--

**Returns**

unsigned short

**Todo** replace with emblnt\_read**19.123.4.51** **GetFile()** FILE \* GetFile (   
     bcf\_file \* bcfFile,  
     FILE \* file,  
     char \* fileToFind )

Get the File object.

**Parameters**

bcfFile	
file	
fileToFind	

**Returns**

FILE\*

**19.123.4.52** **huffman\_build\_table()** void huffman\_build\_table (   
     huffman \* h )These next 2 functions represent the [Huffman](#) class in tartarize's code.**Parameters**

h	
---	--

**19.123.4.53** **huffman\_table\_lookup()** int \* huffman\_table\_lookup (   
     huffman \* h,  
     int byte\_lookup,  
     int \* lengths )

```
19.123.4.54 hus_compress() int hus_compress (
    char * data,
    int length,
    char * output,
    int * output_length )
```

This file is part of libembroidery.

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This file contains all the read and write functions for the library.

Thanks to Jason Weiler for describing the binary formats of the HUS and VIP formats at:

<http://www.jasonweiler.com/HUSandVIPFileInfo.html>

Further thanks to github user tatarize for solving the mystery of the compression in:

<https://github.com/EmbroidePy/pyembroidery>

with a description of that work here:

<https://stackoverflow.com/questions/7852670/greenleaf-archive-library>

This is based on their work.

#### Parameters

<i>data</i>	
<i>length</i>	
<i>output</i>	
<i>output_length</i>	

#### Returns

int

This avoids the now unnecessary compression by placing a minimal header of 6 bytes and using only literals in the huffman compressed part (see the sources above).

```
19.123.4.55 hus_decompress() int hus_decompress (
    char * data,
    int length,
    char * output,
    int * output_length )
```

#### Parameters

<i>data</i>	
<i>length</i>	
<i>output</i>	
<i>output_length</i>	

Returns

int

**19.123.4.56 `loadFatFromSector()`** void loadFatFromSector (   
     `bcf_file_fat` \* *fat*,   
     FILE \* *file* )

Parameters

<i>fat</i>	<input type="text"/>
<i>file</i>	<input type="text"/>

**19.123.4.57 `mitDecodeStitch()`** int mitDecodeStitch (   
     unsigned char *value* )

Parameters

<i>value</i>	<input type="text"/>
--------------	----------------------

Returns

int

**19.123.4.58 `mitEncodeStitch()`** unsigned char mitEncodeStitch (   
     `EmbReal` *value* )

Parameters

<i>value</i>	<input type="text"/>
--------------	----------------------

Returns

unsigned char

**19.123.4.59 `numberOfEntriesInDifatSector()`** unsigned int numberOfEntriesInDifatSector (   
     `bcf_file_difat` \* *fat* )

**19.123.4.60 pfaffDecode()** `EmbReal pfaffDecode (`  
    `unsigned char a1,`  
    `unsigned char a2,`  
    `unsigned char a3 )`

**Parameters**

<code>a1</code>	
<code>a2</code>	
<code>a3</code>	

**Returns**

`EmbReal`

**19.123.4.61 pfaffEncode()** `void pfaffEncode (`  
    `FILE * file,`  
    `int dx,`  
    `int dy,`  
    `int flags )`

**Parameters**

<code>file</code>	
<code>dx</code>	
<code>dy</code>	
<code>flags</code>	

**19.123.4.62 printArcResults()** `void printArcResults (`  
    `EmbReal bulge,`  
    `EmbArc arc,`  
    `EmbReal centerX,`  
    `EmbReal centerY,`  
    `EmbReal radius,`  
    `EmbReal diameter,`  
    `EmbReal chord,`  
    `EmbReal chordMidX,`  
    `EmbReal chordMidY,`  
    `EmbReal sagitta,`  
    `EmbReal apothem,`  
    `EmbReal incAngle,`  
    `char clockwise )`

**19.123.4.63 read100()** `char read100 (`  
    `EmbPattern * pattern,`  
    `FILE * file )`

**19.123.4.64** `read10o()` `char read10o (`  
`EmbPattern * pattern,`  
`FILE * file )`

**19.123.4.65** `readArt()` `char readArt (`  
`EmbPattern * pattern,`  
`FILE * file )`

**19.123.4.66** `readBmc()` `char readBmc (`  
`EmbPattern * pattern,`  
`FILE * file )`

**19.123.4.67** `readBro()` `char readBro (`  
`EmbPattern * pattern,`  
`FILE * file )`

**19.123.4.68** `readCnd()` `char readCnd (`  
`EmbPattern * pattern,`  
`FILE * file )`

**19.123.4.69** `readCol()` `char readCol (`  
`EmbPattern * pattern,`  
`FILE * file )`

**19.123.4.70** `readCsd()` `char readCsd (`  
`EmbPattern * pattern,`  
`FILE * file )`

**19.123.4.71** `readCsv()` `char readCsv (`  
`EmbPattern * pattern,`  
`FILE * file )`

**19.123.4.72 `readDat()`** `char readDat (`  
`EmbPattern * pattern,`  
`FILE * file )`

**19.123.4.73 `readDem()`** `char readDem (`  
`EmbPattern * pattern,`  
`FILE * file )`

**19.123.4.74 `readDescriptions()`** `void readDescriptions (`  
`FILE * file,`  
`EmbPattern * pattern )`

**19.123.4.75 `readDsb()`** `char readDsb (`  
`EmbPattern * pattern,`  
`FILE * file )`

**19.123.4.76 `readDst()`** `char readDst (`  
`EmbPattern * pattern,`  
`FILE * file )`

**19.123.4.77 `readDsz()`** `char readDsz (`  
`EmbPattern * pattern,`  
`FILE * file )`

**19.123.4.78 `readDxf()`** `char readDxf (`  
`EmbPattern * pattern,`  
`FILE * file )`

**19.123.4.79 `readEdr()`** `char readEdr (`  
`EmbPattern * pattern,`  
`FILE * file )`

```
19.123.4.80 readEmd() char readEmd (
    EmbPattern * pattern,
    FILE * file )
```

```
19.123.4.81 readExp() char readExp (
    EmbPattern * pattern,
    FILE * file )
```

```
19.123.4.82 readExy() char readExy (
    EmbPattern * pattern,
    FILE * file )
```

```
19.123.4.83 readEys() char readEys (
    EmbPattern * pattern,
    FILE * file )
```

```
19.123.4.84 readFeatherPatterns() void readFeatherPatterns (
    FILE * file,
    EmbPattern * pattern )
```

```
19.123.4.85 readFullSector() unsigned int readFullSector (
    FILE * file,
    bcf_file_difat * bcfFile,
    unsigned int * difatEntriesToRead )
```

#### Parameters

<i>file</i>	
<i>bcfFile</i>	
<i>difatEntriesToRead</i>	

#### Returns

unsigned int

**19.123.4.86 `readFxy()`** `char readFxy (`  
`EmbPattern * pattern,`  
`FILE * file )`

**19.123.4.87 `readGc()`** `char readGc (`  
`EmbPattern * pattern,`  
`FILE * file )`

**19.123.4.88 `readGnc()`** `char readGnc (`  
`EmbPattern * pattern,`  
`FILE * file )`

**19.123.4.89 `readGt()`** `char readGt (`  
`EmbPattern * pattern,`  
`FILE * file )`

**19.123.4.90 `readHoopName()`** `void readHoopName (`  
`FILE * file,`  
`EmbPattern * pattern )`

**19.123.4.91 `readHus()`** `char readHus (`  
`EmbPattern * pattern,`  
`FILE * file )`

**19.123.4.92 `readImageString()`** `void readImageString (`  
`FILE * file,`  
`EmbPattern * pattern )`

**19.123.4.93 `readInb()`** `char readInb (`  
`EmbPattern * pattern,`  
`FILE * file )`

**19.123.4.94 `readInf()`** char readInf (

```
EmbPattern * pattern,
FILE * file )
```

**19.123.4.95 `readJef()`** char readJef (

```
EmbPattern * pattern,
FILE * file )
```

**19.123.4.96 `readKsm()`** char readKsm (

```
EmbPattern * pattern,
FILE * file )
```

**19.123.4.97 `readMax()`** char readMax (

```
EmbPattern * pattern,
FILE * file )
```

**19.123.4.98 `readMit()`** char readMit (

```
EmbPattern * pattern,
FILE * file )
```

**19.123.4.99 `readMotifPatterns()`** void readMotifPatterns (

```
FILE * file,
EmbPattern * pattern )
```

**19.123.4.100 `readNew()`** char readNew (

```
EmbPattern * pattern,
FILE * file )
```

**19.123.4.101 `readNextSector()`** void readNextSector (

```
FILE * file,
bcf_directory * dir )
```

#### Parameters

<code>file</code>	
<code>dir</code>	

```
19.123.4.102 readOfm() char readOfm (
    EmbPattern * pattern,
    FILE * file )
```

```
19.123.4.103 readPcd() char readPcd (
    EmbPattern * pattern,
    const char * fileName,
    FILE * file )
```

```
19.123.4.104 readPcm() char readPcm (
    EmbPattern * pattern,
    FILE * file )
```

```
19.123.4.105 readPcq() char readPcq (
    EmbPattern * pattern,
    const char * fileName,
    FILE * file )
```

```
19.123.4.106 readPcs() char readPcs (
    EmbPattern * pattern,
    const char * fileName,
    FILE * file )
```

```
19.123.4.107 readPec() char readPec (
    EmbPattern * pattern,
    const char * fileName,
    FILE * file )
```

```
19.123.4.108 readPecStitches() void readPecStitches (
    EmbPattern * pattern,
    FILE * file )
```

**19.123.4.109** `readPel()` `char readPel (`  
`EmbPattern * pattern,`  
`FILE * file )`

**19.123.4.110** `readPem()` `char readPem (`  
`EmbPattern * pattern,`  
`FILE * file )`

**19.123.4.111** `readPes()` `char readPes (`  
`EmbPattern * pattern,`  
`const char * fileName,`  
`FILE * file )`

**19.123.4.112** `readPESHeaderV10()` `void readPESHeaderV10 (`  
`FILE * file,`  
`EmbPattern * pattern )`

**19.123.4.113** `readPESHeaderV5()` `void readPESHeaderV5 (`  
`FILE * file,`  
`EmbPattern * pattern )`

**19.123.4.114** `readPESHeaderV6()` `void readPESHeaderV6 (`  
`FILE * file,`  
`EmbPattern * pattern )`

**19.123.4.115** `readPESHeaderV7()` `void readPESHeaderV7 (`  
`FILE * file,`  
`EmbPattern * pattern )`

**19.123.4.116** `readPESHeaderV8()` `void readPESHeaderV8 (`  
`FILE * file,`  
`EmbPattern * pattern )`

**19.123.4.117 `readPESHeaderV9()`** `void readPESHeaderV9 (`  
`FILE * file,`  
`EmbPattern * pattern )`

**19.123.4.118 `readPhb()`** `char readPhb (`  
`EmbPattern * pattern,`  
`FILE * file )`

**19.123.4.119 `readPhc()`** `char readPhc (`  
`EmbPattern * pattern,`  
`FILE * file )`

**19.123.4.120 `readPlt()`** `char readPlt (`  
`EmbPattern * pattern,`  
`FILE * file )`

**19.123.4.121 `readProgrammableFills()`** `void readProgrammableFills (`  
`FILE * file,`  
`EmbPattern * pattern )`

**19.123.4.122 `readRgb()`** `char readRgb (`  
`EmbPattern * pattern,`  
`FILE * file )`

**19.123.4.123 `readSew()`** `char readSew (`  
`EmbPattern * pattern,`  
`FILE * file )`

**19.123.4.124 `readShv()`** `char readShv (`  
`EmbPattern * pattern,`  
`FILE * file )`

**19.123.4.125** **readSst()** char readSst (

```
EmbPattern * pattern,
FILE * file )
```

**19.123.4.126** **readStx()** char readStx (

```
EmbPattern * pattern,
FILE * file )
```

**19.123.4.127** **readSvg()** char readSvg (

```
EmbPattern * pattern,
FILE * file )
```

**19.123.4.128** **readT01()** char readT01 (

```
EmbPattern * pattern,
FILE * file )
```

**19.123.4.129** **readT09()** char readT09 (

```
EmbPattern * pattern,
FILE * file )
```

**19.123.4.130** **readTap()** char readTap (

```
EmbPattern * pattern,
FILE * file )
```

**19.123.4.131** **readThr()** char readThr (

```
EmbPattern * pattern,
FILE * file )
```

**19.123.4.132** **readThreads()** void readThreads (

```
FILE * file,
EmbPattern * pattern )
```

**19.123.4.133** **readTxt()** char readTxt (

```
EmbPattern * pattern,
FILE * file )
```

**19.123.4.134** **readU00()** char readU00 (

```
EmbPattern * pattern,
FILE * file )
```

**19.123.4.135** **readU01()** char readU01 (

```
EmbPattern * pattern,
FILE * file )
```

**19.123.4.136** **readVip()** char readVip (

```
EmbPattern * pattern,
FILE * file )
```

**19.123.4.137** **readVp3()** char readVp3 (

```
EmbPattern * pattern,
FILE * file )
```

**19.123.4.138** **readXxx()** char readXxx (

```
EmbPattern * pattern,
FILE * file )
```

**19.123.4.139** **readZsk()** char readZsk (

```
EmbPattern * pattern,
FILE * file )
```

**19.123.4.140** **safe\_free()** void safe\_free (

```
void * data )
```

#### Parameters

<i>data</i>	<input type="text"/>
-------------	----------------------

```
19.123.4.141 stringInArray() int stringInArray (
    const char * s,
    const char ** array )
```

Tests for the presence of a string *s* in the supplied *array*.

The end of the array is marked by an empty string.

#### Returns

0 if not present 1 if present.

```
19.123.4.142 testEmbCircle() int testEmbCircle (
    void )
```

```
19.123.4.143 testEmbCircle_2() int testEmbCircle_2 (
    void )
```

```
19.123.4.144 testEmbFormat() int testEmbFormat (
    void )
```

```
19.123.4.145 testGeomArc() int testGeomArc (
    void )
```

```
19.123.4.146 testTangentPoints() void testTangentPoints (
    EmbCircle c,
    EmbVector p,
    EmbVector * t0,
    EmbVector * t1 )
```

```
19.123.4.147 testThreadColor() int testThreadColor (
    void )
```

**19.123.4.148 write100()** char write100 (

```
EmbPattern * pattern,
FILE * file )
```

**19.123.4.149 write10o()** char write10o (

```
EmbPattern * pattern,
FILE * file )
```

**19.123.4.150 write\_24bit()** void write\_24bit (

```
FILE * file,
int x )
```

#### Parameters

<i>file</i>	
<i>x</i>	

**19.123.4.151 writeArt()** char writeArt (

```
EmbPattern * pattern,
FILE * file )
```

**19.123.4.152 writeBmc()** char writeBmc (

```
EmbPattern * pattern,
FILE * file )
```

**19.123.4.153 writeBro()** char writeBro (

```
EmbPattern * pattern,
FILE * file )
```

**19.123.4.154 writeCnd()** char writeCnd (

```
EmbPattern * pattern,
FILE * file )
```

**19.123.4.155** **writeCol()** char writeCol (

```
EmbPattern * pattern,
FILE * file )
```

**19.123.4.156** **writeCsd()** char writeCsd (

```
EmbPattern * pattern,
FILE * file )
```

**19.123.4.157** **writeCsv()** char writeCsv (

```
EmbPattern * pattern,
FILE * file )
```

**19.123.4.158** **writeDat()** char writeDat (

```
EmbPattern * pattern,
FILE * file )
```

**19.123.4.159** **writeDem()** char writeDem (

```
EmbPattern * pattern,
FILE * file )
```

**19.123.4.160** **writeDsb()** char writeDsb (

```
EmbPattern * pattern,
FILE * file )
```

**19.123.4.161** **writeDst()** char writeDst (

```
EmbPattern * pattern,
FILE * file )
```

**19.123.4.162** **writeDsz()** char writeDsz (

```
EmbPattern * pattern,
FILE * file )
```

**19.123.4.163** **writeDxf()** char writeDxf (

```
EmbPattern * pattern,
FILE * file )
```

**19.123.4.164** **writeEdr()** char writeEdr (

```
EmbPattern * pattern,
FILE * file )
```

**19.123.4.165** **writeEmd()** char writeEmd (

```
EmbPattern * pattern,
FILE * file )
```

**19.123.4.166** **writeExp()** char writeExp (

```
EmbPattern * pattern,
FILE * file )
```

**19.123.4.167** **writeExy()** char writeExy (

```
EmbPattern * pattern,
FILE * file )
```

**19.123.4.168** **writeEys()** char writeEys (

```
EmbPattern * pattern,
FILE * file )
```

**19.123.4.169** **writeFxy()** char writeFxy (

```
EmbPattern * pattern,
FILE * file )
```

**19.123.4.170** **writeGc()** char writeGc (

```
EmbPattern * pattern,
FILE * file )
```

**19.123.4.171** **writeGnc()** char writeGnc (

```
EmbPattern * pattern,
FILE * file )
```

**19.123.4.172** **writeGt()** char writeGt (

```
EmbPattern * pattern,
FILE * file )
```

**19.123.4.173** **writeHus()** char writeHus (

```
EmbPattern * pattern,
FILE * file )
```

**19.123.4.174** **writeInb()** char writeInb (

```
EmbPattern * pattern,
FILE * file )
```

**19.123.4.175** **writeInf()** char writeInf (

```
EmbPattern * pattern,
FILE * file )
```

**19.123.4.176** **writeJef()** char writeJef (

```
EmbPattern * pattern,
FILE * file )
```

**19.123.4.177** **writeKsm()** char writeKsm (

```
EmbPattern * pattern,
FILE * file )
```

**19.123.4.178** **writeMax()** char writeMax (

```
EmbPattern * pattern,
FILE * file )
```

**19.123.4.179 writeMit()** char writeMit (

```
EmbPattern * pattern,
FILE * file )
```

**19.123.4.180 writeNew()** char writeNew (

```
EmbPattern * pattern,
FILE * file )
```

**19.123.4.181 writeOfm()** char writeOfm (

```
EmbPattern * pattern,
FILE * file )
```

**19.123.4.182 writePcd()** char writePcd (

```
EmbPattern * pattern,
FILE * file )
```

**19.123.4.183 writePcm()** char writePcm (

```
EmbPattern * pattern,
FILE * file )
```

**19.123.4.184 writePcq()** char writePcq (

```
EmbPattern * pattern,
FILE * file )
```

**19.123.4.185 writePcs()** char writePcs (

```
EmbPattern * pattern,
FILE * file )
```

**19.123.4.186 writePec()** char writePec (

```
EmbPattern * pattern,
const char * fileName,
FILE * file )
```

**19.123.4.187** **writePecStitches()** void writePecStitches (

```
EmbPattern * pattern,
FILE * file,
const char * filename )
```

**19.123.4.188** **writePel()** char writePel (

```
EmbPattern * pattern,
FILE * file )
```

**19.123.4.189** **writePem()** char writePem (

```
EmbPattern * pattern,
FILE * file )
```

**19.123.4.190** **writePes()** char writePes (

```
EmbPattern * pattern,
const char * fileName,
FILE * file )
```

**19.123.4.191** **writePhb()** char writePhb (

```
EmbPattern * pattern,
FILE * file )
```

**19.123.4.192** **writePhc()** char writePhc (

```
EmbPattern * pattern,
FILE * file )
```

**19.123.4.193** **writePlt()** char writePlt (

```
EmbPattern * pattern,
FILE * file )
```

**19.123.4.194** **writeRgb()** char writeRgb (

```
EmbPattern * pattern,
FILE * file )
```

**19.123.4.195 `writeSew()`** `char writeSew (`  
`EmbPattern * pattern,`  
`FILE * file )`

**19.123.4.196 `writeShv()`** `char writeShv (`  
`EmbPattern * pattern,`  
`FILE * file )`

**19.123.4.197 `writeSst()`** `char writeSst (`  
`EmbPattern * pattern,`  
`FILE * file )`

**19.123.4.198 `writeStx()`** `char writeStx (`  
`EmbPattern * pattern,`  
`FILE * file )`

**19.123.4.199 `writeSvg()`** `char writeSvg (`  
`EmbPattern * pattern,`  
`FILE * file )`

Writes the data from *pattern* to a file with the given *fileName*. Returns `true` if successful, otherwise returns `false`.

**19.123.4.200 `writeT01()`** `char writeT01 (`  
`EmbPattern * pattern,`  
`FILE * file )`

**19.123.4.201 `writeT09()`** `char writeT09 (`  
`EmbPattern * pattern,`  
`FILE * file )`

**19.123.4.202 `writeTap()`** `char writeTap (`  
`EmbPattern * pattern,`  
`FILE * file )`

**19.123.4.203** `writeThr()` `char writeThr (`  
`EmbPattern * pattern,`  
`FILE * file )`

**19.123.4.204** `writeTxt()` `char writeTxt (`  
`EmbPattern * pattern,`  
`FILE * file )`

**19.123.4.205** `writeU00()` `char writeU00 (`  
`EmbPattern * pattern,`  
`FILE * file )`

**19.123.4.206** `writeU01()` `char writeU01 (`  
`EmbPattern * pattern,`  
`FILE * file )`

**19.123.4.207** `writeVip()` `char writeVip (`  
`EmbPattern * pattern,`  
`FILE * file )`

**19.123.4.208** `writeVp3()` `char writeVp3 (`  
`EmbPattern * pattern,`  
`FILE * file )`

**19.123.4.209** `writeXxx()` `char writeXxx (`  
`EmbPattern * pattern,`  
`FILE * file )`

**19.123.4.210** `writeZsk()` `char writeZsk (`  
`EmbPattern * pattern,`  
`FILE * file )`

## 19.123.5 Variable Documentation

19.123.5.1 **imageWithFrame** const char imageWithFrame[38][48] [extern]

## 19.124 embroidery\_internal.h

[Go to the documentation of this file.](#)

```
00001 #ifndef LIBEMBROIDERY_INTERNAL_HEADER_
00002 #define LIBEMBROIDERY_INTERNAL_HEADER_
00003
00004 #include "embroidery.h"
00005
00006 /* For FILE */
00007 #include <stdio.h>
00008
00012 #define CompoundFileSector_MaxRegSector 0xFFFFFFF
00013 #define CompoundFileSector_DIFAT_Sector 0xFFFFFFF
00014 #define CompoundFileSector_FAT_Sector 0xFFFFFFF
00015 #define CompoundFileSector_EndOfChain 0xFFFFFFF
00016 #define CompoundFileSector_FreeSector 0xFFFFFFF
00017
00021 #define ObjectTypeUnknown 0x0
00022 #define ObjectTypeStorage 0x1
00023 #define ObjectTypeStream 0x2
00024 #define ObjectTypeRootEntry 0x5
00029 #define CompoundFileStreamId_MaxRegularStreamId 0xFFFFFFF
00030 #define CompoundFileStreamId_NoStream 0xFFFFFFF
00032 #define ELEMENT_XML 0
00033 #define ELEMENT_A 1
00034 #define ELEMENT_ANIMATE 2
00035 #define ELEMENT_ANIMATECOLOR 3
00036 #define ELEMENT_ANIMATEMOTION 4
00037 #define ELEMENT_ANIMATEGRAF 5
00038 #define ELEMENT_ANIMATION 6
00039 #define ELEMENT_AUDIO 7
00040 #define ELEMENT_CIRCLE 8
00041 #define ELEMENT_DEFS 9
00042 #define ELEMENT_DESC 10
00043 #define ELEMENT_DISCARD 11
00044 #define ELEMENT_ELLIPSE 12
00045 #define ELEMENT_FONT 13
00046 #define ELEMENT_FONT_FACE 14
00047 #define ELEMENT_FONT_FACE_SRC 15
00048 #define ELEMENT_FONT_FACE_URI 16
00049 #define ELEMENT_FOREIGN_OBJECT 17
00050 #define ELEMENT_G 18
00051 #define ELEMENT_GLYPH 19
00052 #define ELEMENT_HANDLER 20
00053 #define ELEMENT_HKERN 21
00054 #define ELEMENT_IMAGE 22
00055 #define ELEMENT_LINE 23
00056 #define ELEMENT_LINEAR_GRADIENT 24
00057 #define ELEMENT_LISTENER 25
00058 #define ELEMENT_METADATA 26
00059 #define ELEMENT_MISSING_GLYPH 27
00060 #define ELEMENT_MPATH 28
00061 #define ELEMENT_PATH 29
00062 #define ELEMENT_POLYGON 30
00063 #define ELEMENT_POLYLINE 31
00064 #define ELEMENT_PREFETCH 32
00065 #define ELEMENT_RADIAL_GRADIENT 33
00066 #define ELEMENT_RECT 34
00067 #define ELEMENT_SCRIPT 35
00068 #define ELEMENT_SET 36
00069 #define ELEMENT_SOLID_COLOR 37
00070 #define ELEMENT_STOP 38
00071 #define ELEMENT_SVG 39
00072 #define ELEMENT_SWITCH 40
00073 #define ELEMENT_TBREAK 41
00074 #define ELEMENT_TEXT 42
00075 #define ELEMENT_TEXT_AREA 43
00076 #define ELEMENT_TITLE 44
00077 #define ELEMENT_TSPAN 45
00078 #define ELEMENT_USE 46
00079 #define ELEMENT_VIDEO 47
00080
00081 /* INTERNAL DEFINES */
00082 #define RED_TERM_COLOR "\x1B[0;31m"
00083 #define GREEN_TERM_COLOR "\x1B[0;32m"
00084 #define YELLOW_TERM_COLOR "\x1B[1;33m"
00085 #define RESET_TERM_COLOR "\033[0m"
00086
00087 #define HOOP_126X110 0
00088 #define HOOP_110X110 1
```

```

00089 #define HOOP_50X50 2
00090 #define HOOP_140X200 3
00091 #define HOOP_230X200 4
00092
00093 #define EMB_MIN(A, B) (((A) < (B)) ? (A) : (B))
00094 #define EMB_MAX(A, B) (((A) > (B)) ? (A) : (B))
00095
00096 /* Libembroidery's handling of integer types.
00097 */
00098 #define EMB_BIG_ENDIAN 0
00099 #define EMB_LITTLE_ENDIAN 1
00100
00101 #define ENDIAN_HOST EMB_LITTLE_ENDIAN
00102
00103 #define EMB_INT16_BIG 2
00104 #define EMB_INT16_LITTLE 3
00105 #define EMB_INT32_BIG 4
00106 #define EMB_INT32_LITTLE 5
00107
00108 #define PES0001 0
00109 #define PES0020 1
00110 #define PES0022 2
00111 #define PES0030 3
00112 #define PES0040 4
00113 #define PES0050 5
00114 #define PES0055 6
00115 #define PES0056 7
00116 #define PES0060 8
00117 #define PES0070 9
00118 #define PES0080 10
00119 #define PES0090 11
00120 #define PES0100 12
00121 #define N_PES_VERSIONS 13
00122
00123 /* DXF Version Identifiers */
00124 #define DXF_VERSION_R10 "AC1006"
00125 #define DXF_VERSION_R11 "AC1009"
00126 #define DXF_VERSION_R12 "AC1009"
00127 #define DXF_VERSION_R13 "AC1012"
00128 #define DXF_VERSION_R14 "AC1014"
00129 #define DXF_VERSION_R15 "AC1015"
00130 #define DXF_VERSION_R18 "AC1018"
00131 #define DXF_VERSION_R21 "AC1021"
00132 #define DXF_VERSION_R24 "AC1024"
00133 #define DXF_VERSION_R27 "AC1027"
00134
00135 #define DXF_VERSION_2000 "AC1015"
00136 #define DXF_VERSION_2002 "AC1015"
00137 #define DXF_VERSION_2004 "AC1018"
00138 #define DXF_VERSION_2006 "AC1018"
00139 #define DXF_VERSION_2007 "AC1021"
00140 #define DXF_VERSION_2009 "AC1021"
00141 #define DXF_VERSION_2010 "AC1024"
00142 #define DXF_VERSION_2013 "AC1027"
00143
00144 #define SVG_CREATOR_NULL 0
00145 #define SVG_CREATOR_EMBROIDERMODDER 1
00146 #define SVG_CREATOR_ILLUSTRATOR 2
00147 #define SVG_CREATOR_INKSCAPE 3
00148
00149 #define SVG_EXPECT_NULL 0
00150 #define SVG_EXPECT_ELEMENT 1
00151 #define SVG_EXPECT_ATTRIBUTE 2
00152 #define SVG_EXPECT_VALUE 3
00153
00154 /* SVG_TYPES
00155 * -----
00156 */
00157 #define SVG_NULL 0
00158 #define SVG_ELEMENT 1
00159 #define SVG_PROPERTY 2
00160 #define SVG_MEDIA_PROPERTY 3
00161 #define SVG_ATTRIBUTE 4
00162 #define SVG_CATCH_ALL 5
00163
00164 /* path flag codes */
00165 #define LINETO 0
00166 #define MOVETO 1
00167 #define BULGETOCONTROL 2
00168 #define BULGETOEND 4
00169 #define ELLIPSETORAD 8
00170 #define ELLIPSETOEND 16
00171 #define CUBICTOCONTROL1 32
00172 #define CUBICTOCONTROL2 64
00173 #define CUBICTOEND 128
00174 #define QUADTOCONTROL 256
00175 #define QUADTOEND 512

```

```
00176 /* STRUCTS
00177 ****
00178 */
00179 /* double-indirection file allocation table references */
00180
00186 typedef struct _bcf_file_difat
00187 {
00188     unsigned int fatSectorCount;
00189     unsigned int fatSectorEntries[109];
00190     unsigned int sectorSize;
00191 } bcf_file_difat;
00192
00197 typedef struct _bcf_file_fat
00198 {
00199     int fatEntryCount;
00200     unsigned int fatEntries[255]; /* maybe make this dynamic */
00201     unsigned int numberofEntriesInFatSector;
00202 } bcf_file_fat;
00203
00208 typedef struct _bcf_directory_entry
00209 {
00210     char directoryEntryName[32];
00211     unsigned short directoryEntryNameLength;
00212     unsigned char objectType;
00213     unsigned char colorFlag;
00214     unsigned int leftSiblingId;
00215     unsigned int rightSiblingId;
00216     unsigned int childId;
00217     unsigned char CLSID[16];
00218     unsigned int stateBits;
00219     EmtTime creationTime;
00220     EmtTime modifiedTime;
00221     unsigned int startingSectorLocation;
00222     unsigned long streamSize; /* should be long long but in our case we shouldn't need
00223     it, and hard to support on c89 cross platform */
00224     unsigned int streamSizeHigh; /* store the high int of streamsize */
00225     struct _bcf_directory_entry* next;
00226 } bcf_directory_entry;
00227
00232 typedef struct _bcf_directory
00233 {
00234     bcf_directory_entry* dirEntries;
00235     unsigned int maxNumberofDirectoryEntries;
00236 } bcf_directory;
00237
00242 typedef struct _bcf_file_header
00243 {
00244     unsigned char signature[8];
00245     unsigned char CLSID[16];
00246     unsigned short minorVersion;
00247     unsigned short majorVersion;
00248     unsigned short byteOrder;
00249     unsigned short sectorShift;
00250     unsigned short miniSectorShift;
00251     unsigned short reserved1;
00252     unsigned int reserved2;
00253     unsigned int numberofDirectorySectors;
00254     unsigned int numberofFATSectors;
00255     unsigned int firstDirectorySectorLocation;
00256     unsigned int transactionSignatureNumber;
00257     unsigned int miniStreamCutoffsize;
00258     unsigned int firstMiniFATSectorLocation;
00259     unsigned int numberofMiniFatSectors;
00260     unsigned int firstDifatSectorLocation;
00261     unsigned int numberofDifatSectors;
00262 } bcf_file_header;
00263
00268 typedef struct _bcf_file
00269 {
00270     bcf_file_header header;
00271     bcf_file_difat* difat;
00272     bcf_file_fat* fat;
00273     bcf_directory* directory;
00274 } bcf_file;
00275
00280 typedef struct _vp3Hoop
00281 {
00282     int right;
00283     int bottom;
00284     int left;
00285     int top;
00286     int threadLength;
00287     char unknown2;
00288     unsigned char numberofColors;
00289     unsigned short unknown3;
00290     int unknown4;
```

```

00291     int numberOfBytesRemaining;
00292
00293     int xOffset;
00294     int yOffset;
00295
00296     unsigned char byte1;
00297     unsigned char byte2;
00298     unsigned char byte3;
00299
00300     /* Centered hoop dimensions */
00301     int right2;
00302     int left2;
00303     int bottom2;
00304     int top2;
00305
00306     int width;
00307     int height;
00308 } vp3Hoop;
00309
00314 typedef struct ThredHeader_ /* thred file header */
00315 {
00316     unsigned int sigVersion; /* signature and version */
00317     unsigned int length; /* length of ThredHeader + length of stitch data */
00318     unsigned short numStitches; /* number of stitches */
00319     unsigned short hoopSize; /* size of hoop */
00320     unsigned short reserved[7]; /* reserved for expansion */
00321 } ThredHeader;
00322
00327 typedef struct ThredExtension_ /* thred v1.0 file header extension */
00328 {
00329     float hoopX; /* hoop size x dimension in 1/6 mm units */
00330     float hoopY; /* hoop size y dimension in 1/6 mm units */
00331     float stitchGranularity; /* stitches per millimeter--not implemented */
00332     char creatorName[50]; /* name of the file creator */
00333     char modifierName[50]; /* name of last file modifier */
00334     char auxFormat; /* auxiliary file format, 0=PCS,1=DST,2=PES */
00335     char reserved[31]; /* reserved for expansion */
00336 } ThredExtension;
00337
00342 typedef struct SubDescriptor_
00343 {
00344     int someNum;
00345     int someInt;
00346     int someOtherInt;
00347     char* colorCode;
00348     char* colorName;
00349 } SubDescriptor;
00350
00355 typedef struct StxThread_
00356 {
00357     char* colorCode;
00358     char* colorName;
00359     char* sectionName;
00360     SubDescriptor* subDescriptors;
00361     EmbColor stxColor;
00362 } StxThread;
00363
00368 typedef struct VipHeader_ {
00369     int magicCode;
00370     int numberOfStitches;
00371     int numberOfColors;
00372     short positiveXHoopSize;
00373     short positiveYHoopSize;
00374     short negativeXHoopSize;
00375     short negativeYHoopSize;
00376     int attributeOffset;
00377     int xOffset;
00378     int yOffset;
00379     unsigned char stringVal[8];
00380     short unknown;
00381     int colorLength;
00382 } VipHeader;
00383
00388 typedef enum
00389 {
00390     CSV_EXPECT_NULL,
00391     CSV_EXPECT_QUOTE1,
00392     CSV_EXPECT_QUOTE2,
00393     CSV_EXPECT_COMMA
00394 } CSV_EXPECT;
00395
00400 typedef enum
00401 {
00402     CSV_MODE_NULL,
00403     CSV_MODE_COMMENT,
00404     CSV_MODE_VARIABLE,
00405     CSV_MODE_THREAD,

```

```
00406     CSV_MODE_STITCH
00407 } CSV_MODE;
00408
00413 typedef struct SvgAttribute_
00414 {
00415     char* name;
00416     char* value;
00417 } SvgAttribute;
00418
00423 typedef struct Huffman {
00424     int default_value;
00425     int lengths[1000];
00426     int nlengths;
00427     int table[1000];
00428     int table_width;
00429     int ntable;
00430 } huffman;
00431
00436 typedef struct Compress {
00437     int bit_position;
00438     char *input_data;
00439     int input_length;
00440     int bits_total;
00441     int block_elements;
00442     huffman character_length_huffman;
00443     huffman character_huffman;
00444     huffman distance_huffman;
00445 } compress;
00446
00447 /* Function Declarations
00448 ****
00449 void huffman_build_table(huffman *h);
00450 int *huffman_table_lookup(huffman *h, int byte_lookup, int *lengths);
00451
00452 int compress_get_bits(compress *c, int length);
00453 int compress_pop(compress *c, int bit_count);
00454 int compress_read_variable_length(compress *c);
00455 void compress_load_character_length_huffman(compress *c);
00456 void compress_load_character_huffman(compress *c);
00457 void compress_load_distance_huffman(compress *c);
00458 void compress_load_block(compress *c);
00459 int compress_get_token(compress *c);
00460 int compress_get_position(compress *c);
00461
00462 void readPecStitches(EmbPattern* pattern, FILE* file);
00463 void writePecStitches(EmbPattern* pattern, FILE* file, const char* filename);
00464
00465 int decodeNewStitch(unsigned char value);
00466
00467 void pfaffEncode(FILE* file, int x, int y, int flags);
00468 EmbReal pfaffDecode(unsigned char a1, unsigned char a2, unsigned char a3);
00469
00470 unsigned char mitEncodeStitch(EmbReal value);
00471 int mitDecodeStitch(unsigned char value);
00472
00473 int encode_tajima_ternary(unsigned char b[3], int x, int y);
00474 void decode_tajima_ternary(unsigned char b[3], int *x, int *y);
00475
00476 void encode_t01_record(unsigned char b[3], int x, int y, int flags);
00477 int decode_t01_record(unsigned char b[3], int *x, int *y, int *flags);
00478 void readPESHeaderV5(FILE* file, EmbPattern* pattern);
00479 void readPESHeaderV6(FILE* file, EmbPattern* pattern);
00480 void readPESHeaderV7(FILE* file, EmbPattern* pattern);
00481 void readPESHeaderV8(FILE* file, EmbPattern* pattern);
00482 void readPESHeaderV9(FILE* file, EmbPattern* pattern);
00483 void readPESHeaderV10(FILE* file, EmbPattern* pattern);
00484
00485 void readDescriptions(FILE* file, EmbPattern* pattern);
00486 void readHoopName(FILE* file, EmbPattern* pattern);
00487 void readImageString(FILE* file, EmbPattern* pattern);
00488 void readProgrammableFills(FILE* file, EmbPattern* pattern);
00489 void readMotifPatterns(FILE* file, EmbPattern* pattern);
00490 void readFeatherPatterns(FILE* file, EmbPattern* pattern);
00491 void readThreads(FILE* file, EmbPattern* pattern);
00492
00493 void embInt_read(FILE* f, char *label, void *b, int mode);
00494 void embInt_write(FILE* f, char *label, void *b, int mode);
00495 int emb_readline(FILE* file, char *line, int maxLength);
00496
00497 int bcfFile_read(FILE* file, bcf_file* bcfFile);
00498 FILE* GetFile(bcf_file* bcfFile, FILE* file, char* fileToFind);
00499 void bcf_file_free(bcf_file* bcfFile);
00500
00501 void binaryReadString(FILE* file, char *buffer, int maxLength);
00502 void binaryReadUnicodeString(FILE* file, char *buffer, const int stringLength);
00503
00504 int stringInArray(const char *s, const char **array);
```

```

00505 void fpad(FILE *f, char c, int n);
00506 char *copy_trim(char const *s);
00507 char* emb_optOut(EmbReal num, char* str);
00508
00509 void write_24bit(FILE* file, int);
00510 int check_header_present(FILE* file, int minimum_header_length);
00511
00512 unsigned short fread_uint16(FILE *file);
00513 short fread_int16(FILE* f);
00514 int fread_int32_be(FILE* f);
00515 void safe_free(void *data);
00516 void embInt_read(FILE* f, char *label, void *b, int mode);
00517
00518 void binaryWriteUIntBE(FILE* f, unsigned int data);
00519 void binaryWriteUInt(FILE* f, unsigned int data);
00520 void binaryWriteIntBE(FILE* f, int data);
00521 void binaryWriteInt(FILE* f, int data);
00522 void binaryWriteUShort(FILE* f, unsigned short data);
00523 void binaryWriteUShortBE(FILE* f, unsigned short data);
00524 void binaryWriteShort(FILE* f, short data);
00525
00526 bcf_file_difat* bcf_difat_create(FILE* file, unsigned int fatSectors, const unsigned int sectorSize);
00527 unsigned int readFullSector(FILE* file, bcf_file_difat* bcfFile, unsigned int* numberOfDifatEntriesStillToRead);
00528 unsigned int numberOfEntriesInDifatSector(bcf_file_difat* fat);
00529 void bcf_file_difat_free(bcf_file_difat* difat);
00530
00531 unsigned int entriesInDifatSector(bcf_file_difat* fat);
00532 bcf_file_fat* bcfFileFat_create(const unsigned int sectorSize);
00533 void loadFatFromSector(bcf_file_fat* fat, FILE* file);
00534 void bcf_file_fat_free(bcf_file_fat** fat);
00535
00536 bcf_directory_entry* CompoundFileDirectoryEntry(FILE* file);
00537 bcf_directory* CompoundFileDirectory(const unsigned int maxNumberOfDirectoryEntries);
00538 void readNextSector(FILE* file, bcf_directory* dir);
00539 void bcf_directory_free(bcf_directory** dir);
00540
00541 bcf_file_header bcfFileHeader_read(FILE* file);
00542 int bcfFileHeader_isValid(bcf_file_header header);
00543
00544 int hus_compress(char* input, int size, char* output, int *out_size);
00545 int hus_decompress(char* input, int size, char* output, int *out_size);
00546
00547 int encode_tajima_ternary(unsigned char b[3], int x, int y);
00548 void decode_tajima_ternary(unsigned char b[3], int *x, int *y);
00549 void testTangentPoints(EmbCircle c, EmbVector p, EmbVector *t0, EmbVector *t1);
00550 void printArcResults(EmbReal bulge, EmbArc arc,
00551             EmbReal centerX, EmbReal centerY,
00552             EmbReal radius, EmbReal diameter,
00553             EmbReal chord,
00554             EmbReal chordMidX, EmbReal chordMidY,
00555             EmbReal sagitta, EmbReal apothem,
00556             EmbReal incAngle, char clockwise);
00557 int create_test_file_1(const char* outf);
00558 int create_test_file_2(const char* outf);
00559 int create_test_file_3(const char* outf);
00560 int testEmbCircle(void);
00561 int testEmbCircle_2(void);
00562 int testGeomArc(void);
00563 int testThreadColor(void);
00564 int testEmbFormat(void);
00565
00566 void embColor_read(FILE *f, EmbColor *c, int toRead);
00567 void embColor_write(FILE *f, EmbColor c, int toWrite);
00568
00569 char read100(EmbPattern *pattern, FILE* file);
00570 char write100(EmbPattern *pattern, FILE* file);
00571 char read10o(EmbPattern *pattern, FILE* file);
00572 char write10o(EmbPattern *pattern, FILE* file);
00573 char readArt(EmbPattern *pattern, FILE* file);
00574 char writeArt(EmbPattern *pattern, FILE* file);
00575 char readBmc(EmbPattern *pattern, FILE* file);
00576 char writeBmc(EmbPattern *pattern, FILE* file);
00577 char readBro(EmbPattern *pattern, FILE* file);
00578 char writeBro(EmbPattern *pattern, FILE* file);
00579 char readCnd(EmbPattern *pattern, FILE* file);
00580 char writeCnd(EmbPattern *pattern, FILE* file);
00581 char readCol(EmbPattern *pattern, FILE* file);
00582 char writeCol(EmbPattern *pattern, FILE* file);
00583 char readCsd(EmbPattern *pattern, FILE* file);
00584 char writeCsd(EmbPattern *pattern, FILE* file);
00585 char readCsv(EmbPattern *pattern, FILE* file);
00586 char writeCsv(EmbPattern *pattern, FILE* file);
00587 char readDat(EmbPattern *pattern, FILE* file);
00588 char writeDat(EmbPattern *pattern, FILE* file);
00589 char readDem(EmbPattern *pattern, FILE* file);
00590 char writeDem(EmbPattern *pattern, FILE* file);

```

```
00591 char readDsb(EmbPattern *pattern, FILE* file);
00592 char writeDsb(EmbPattern *pattern, FILE* file);
00593 char readDst(EmbPattern *pattern, FILE* file);
00594 char writeDst(EmbPattern *pattern, FILE* file);
00595 char readDsz(EmbPattern *pattern, FILE* file);
00596 char writeDsz(EmbPattern *pattern, FILE* file);
00597 char readDxf(EmbPattern *pattern, FILE* file);
00598 char writeDxf(EmbPattern *pattern, FILE* file);
00599 char readEdr(EmbPattern *pattern, FILE* file);
00600 char writeEdr(EmbPattern *pattern, FILE* file);
00601 char readEmd(EmbPattern *pattern, FILE* file);
00602 char writeEmd(EmbPattern *pattern, FILE* file);
00603 char readExp(EmbPattern *pattern, FILE* file);
00604 char writeExp(EmbPattern *pattern, FILE* file);
00605 char readExy(EmbPattern *pattern, FILE* file);
00606 char writeExy(EmbPattern *pattern, FILE* file);
00607 char readEys(EmbPattern *pattern, FILE* file);
00608 char writeEys(EmbPattern *pattern, FILE* file);
00609 char readFxy(EmbPattern *pattern, FILE* file);
00610 char writeFxy(EmbPattern *pattern, FILE* file);
00611 char readGc(EmbPattern *pattern, FILE* file);
00612 char writeGc(EmbPattern *pattern, FILE* file);
00613 char readGnc(EmbPattern *pattern, FILE* file);
00614 char writeGnc(EmbPattern *pattern, FILE* file);
00615 char readGt(EmbPattern *pattern, FILE* file);
00616 char writeGt(EmbPattern *pattern, FILE* file);
00617 char readHus(EmbPattern *pattern, FILE* file);
00618 char writeHus(EmbPattern *pattern, FILE* file);
00619 char readInb(EmbPattern *pattern, FILE* file);
00620 char writeInb(EmbPattern *pattern, FILE* file);
00621 char readInf(EmbPattern *pattern, FILE* file);
00622 char writeInf(EmbPattern *pattern, FILE* file);
00623 char readJef(EmbPattern *pattern, FILE* file);
00624 char writeJef(EmbPattern *pattern, FILE* file);
00625 char readKsm(EmbPattern *pattern, FILE* file);
00626 char writeKsm(EmbPattern *pattern, FILE* file);
00627 char readMax(EmbPattern *pattern, FILE* file);
00628 char writeMax(EmbPattern *pattern, FILE* file);
00629 char readMit(EmbPattern *pattern, FILE* file);
00630 char writeMit(EmbPattern *pattern, FILE* file);
00631 char readNew(EmbPattern *pattern, FILE* file);
00632 char writeNew(EmbPattern *pattern, FILE* file);
00633 char readOfm(EmbPattern *pattern, FILE* file);
00634 char writeOfm(EmbPattern *pattern, FILE* file);
00635 char readPcd(EmbPattern *pattern, const char *fileName, FILE* file);
00636 char writePcd(EmbPattern *pattern, FILE* file);
00637 char readPcm(EmbPattern *pattern, FILE* file);
00638 char writePcm(EmbPattern *pattern, FILE* file);
00639 char readPcq(EmbPattern *pattern, const char *fileName, FILE* file);
00640 char writePcq(EmbPattern *pattern, FILE* file);
00641 char readPcs(EmbPattern *pattern, const char *fileName, FILE* file);
00642 char writePcs(EmbPattern *pattern, FILE* file);
00643 char readPec(EmbPattern *pattern, const char *fileName, FILE* file);
00644 char writePec(EmbPattern *pattern, const char *fileName, FILE* file);
00645 char readPel(EmbPattern *pattern, FILE *file);
00646 char writePel(EmbPattern *pattern, FILE *file);
00647 char readPem(EmbPattern *pattern, FILE *file);
00648 char writePem(EmbPattern *pattern, FILE *file);
00649 char readPes(EmbPattern *pattern, const char *fileName, FILE* file);
00650 char writePes(EmbPattern *pattern, const char *fileName, FILE* file);
00651 char readPhb(EmbPattern *pattern, FILE* file);
00652 char writePhb(EmbPattern *pattern, FILE *file);
00653 char readPhc(EmbPattern *pattern, FILE* file);
00654 char writePhc(EmbPattern *pattern, FILE *file);
00655 char readPlt(EmbPattern *pattern, FILE* file);
00656 char writePlt(EmbPattern *pattern, FILE* file);
00657 char readRgb(EmbPattern *pattern, FILE* file);
00658 char writeRgb(EmbPattern *pattern, FILE* file);
00659 char readSew(EmbPattern *pattern, FILE* file);
00660 char writeSew(EmbPattern *pattern, FILE* file);
00661 char readShv(EmbPattern *pattern, FILE* file);
00662 char writeShv(EmbPattern *pattern, FILE *file);
00663 char readSst(EmbPattern *pattern, FILE* file);
00664 char writeSst(EmbPattern *pattern, FILE *file);
00665 char readStx(EmbPattern *pattern, FILE* file);
00666 char writeStx(EmbPattern *pattern, FILE *file);
00667 char readSvg(EmbPattern *pattern, FILE* file);
00668 char writeSvg(EmbPattern *pattern, FILE* file);
00669 char readT01(EmbPattern *pattern, FILE* file);
00670 char writeT01(EmbPattern *pattern, FILE* file);
00671 char readT09(EmbPattern *pattern, FILE* file);
00672 char writeT09(EmbPattern *pattern, FILE* file);
00673 char readTap(EmbPattern *pattern, FILE* file);
00674 char writeTap(EmbPattern *pattern, FILE* file);
00675 char readThr(EmbPattern *pattern, FILE* file);
00676 char writeThr(EmbPattern *pattern, FILE* file);
00677 char readTxt(EmbPattern *pattern, FILE* file);
```

```

00678 char writeTxt(EmbPattern *pattern, FILE* file);
00679 char readU00(EmbPattern *pattern, FILE* file);
00680 char writeU00(EmbPattern *pattern, FILE *file);
00681 char readU01(EmbPattern *pattern, FILE* file);
00682 char writeU01(EmbPattern *pattern, FILE *file);
00683 char readVip(EmbPattern *pattern, FILE* file);
00684 char writeVip(EmbPattern *pattern, FILE* file);
00685 char readVp3(EmbPattern *pattern, FILE* file);
00686 char writeVp3(EmbPattern *pattern, FILE* file);
00687 char readXxx(EmbPattern *pattern, FILE* file);
00688 char writeXxx(EmbPattern *pattern, FILE* file);
00689 char readZsk(EmbPattern *pattern, FILE* file);
00690 char writeZsk(EmbPattern *pattern, FILE* file);
00691
00692 extern const char imageWithFrame[38][48];
00693
00694 #endif

```

## 19.125 extern/libembroidery/src/encoding.c File Reference

```

#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <math.h>
#include "embroidery_internal.h"

```

### Functions

- void [write\\_24bit](#) (FILE \*file, int)
- [EmbColor embColor\\_fromHexStr](#) (char \*val)
 

*Converts a 6 digit hex string (I.E. "00FF00") into an EmbColor and returns it.*
- void [reverse\\_byte\\_order](#) (void \*b, int bytes)
 

*Reverses the byte order for 2 or 4 byte arrays.*
- int [decode\\_t01\\_record](#) (unsigned char b[3], int \*x, int \*y, int \*flags)
- void [encode\\_t01\\_record](#) (unsigned char b[3], int x, int y, int flags)
- int [encode\\_tajima\\_ternary](#) (unsigned char b[3], int x, int y)
- void [decode\\_tajima\\_ternary](#) (unsigned char b[3], int \*x, int \*y)
- void [pfaffEncode](#) (FILE \*file, int dx, int dy, int flags)
- [EmbReal pfaffDecode](#) (unsigned char a1, unsigned char a2, unsigned char a3)
- unsigned char [mitEncodeStitch](#) ([EmbReal](#) value)
- int [mitDecodeStitch](#) (unsigned char value)
- int [decodeNewStitch](#) (unsigned char value)
- void [emblnt\\_read](#) (FILE \*f, char \*label, void \*b, int mode)
- void [emblnt\\_write](#) (FILE \*f, char \*label, void \*b, int mode)

### 19.125.1 Function Documentation

```

19.125.1.1 decode_t01_record() int decode_t01_record (
    unsigned char b[3],
    int * x,
    int * y,
    int * flags )

```

**Parameters**

<i>b</i>	
<i>x</i>	
<i>y</i>	
<i>flags</i>	

**Returns**

int

**19.125.1.2 decode\_tajima\_ternary()** void decode\_tajima\_ternary (

```
    unsigned char b[3],  
    int * x,  
    int * y )
```

**Parameters**

<i>b</i>	
<i>x</i>	
<i>y</i>	

**19.125.1.3 decodeNewStitch()** int decodeNewStitch (

```
    unsigned char value )
```

**Parameters**

<i>value</i>	
--------------	--

**Returns**

int

**19.125.1.4 embColor\_fromHexStr()** [EmbColor](#) embColor\_fromHexStr (

```
    char * val )
```

Converts a 6 digit hex string (I.E. "00FF00") into an EmbColor and returns it.

**Parameters**

<i>val</i>	6 byte code describing the color as a hex string, doesn't require null termination.
------------	---

**Returns**

EmbColor the same color as our internal type.

**19.125.1.5 `embInt_read()`** void embInt\_read (

```
FILE * f,  
char * label,  
void * b,  
int mode )
```

**Parameters**

<i>f</i>	
<i>label</i>	
<i>b</i>	
<i>mode</i>	

Read and write system for multiple byte types.

The caller passes the function to read/write from, the memory location as a void pointer and a mode identifier that describes the type. This way we can abstract out the endianness of the system running the library and don't have to maintain many functions, just two.

**19.125.1.6 `embInt_write()`** void embInt\_write (

```
FILE * f,  
char * label,  
void * b,  
int mode )
```

**Parameters**

<i>f</i>	
<i>label</i>	
<i>b</i>	
<i>mode</i>	

**19.125.1.7 `encode_t01_record()`** void encode\_t01\_record (

```
unsigned char b[3],  
int x,  
int y,  
int flags )
```

**Parameters**

<i>b</i>	
<i>x</i>	
<i>y</i>	
<i>flags</i>	

```
19.125.1.8 encode_tajima_ternary() int encode_tajima_ternary (
    unsigned char b[3],
    int x,
    int y )
```

**Parameters**

b	
x	
y	

**Returns**

int

```
19.125.1.9 mitDecodeStitch() int mitDecodeStitch (
    unsigned char value )
```

**Parameters**

value	
-------	--

**Returns**

int

```
19.125.1.10 mitEncodeStitch() unsigned char mitEncodeStitch (
    EmbReal value )
```

**Parameters**

value	
-------	--

**Returns**

unsigned char

```
19.125.1.11 pfaffDecode() EmbReal pfaffDecode (
    unsigned char a1,
    unsigned char a2,
    unsigned char a3 )
```

**Parameters**

<i>a1</i>	
<i>a2</i>	
<i>a3</i>	

**Returns**

EmbReal

**19.125.1.12 `pfaaffEncode()`** void pfaaffEncode ( FILE \* *file*, int *dx*, int *dy*, int *flags* )**Parameters**

<i>file</i>	
<i>dx</i>	
<i>dy</i>	
<i>flags</i>	

**19.125.1.13 `reverse_byte_order()`** void reverse\_byte\_order ( void \* *b*, int *bytes* )

Reverses the byte order for 2 or 4 byte arrays.

**Parameters**

<i>b</i>	The pointer to the data to be processed.
<i>bytes</i>	The number of bytes to reverse.

**19.125.1.14 `write_24bit()`** void write\_24bit ( FILE \* *file*, int *x* )**Parameters**

<i>file</i>	
<i>x</i>	

## 19.126 extern/libembroidery/src/fill.c File Reference

```
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <math.h>
#include "embroidery_internal.h"
```

### Functions

- int [lindenmayer\\_system](#) ([L\\_system](#) L, char \*state, int iterations, int complete)
- static void [join\\_short\\_stitches](#) (int \*points, int \*n\_points, int width, int tolerance)
- static int \* [threshold\\_method](#) ([EmblImage](#) \*image, int \*n\_points, int subsample\_width, int subsample\_height, int threshold)
- static void [greedy\\_algorithm](#) (int \*points, int n\_points, int width, [EmbReal](#) bias)
- static void [save\\_points\\_to\\_pattern](#) ([EmbPattern](#) \*pattern, int \*points, int n\_points, [EmbReal](#) scale, int width, int height)
- void [embPattern\\_horizontal\\_fill](#) ([EmbPattern](#) \*pattern, [EmblImage](#) \*image, int threshold)
- void [embPattern\\_crossstitch](#) ([EmbPattern](#) \*pattern, [EmblImage](#) \*image, int threshold)
- int [hilbert\\_curve](#) ([EmbPattern](#) \*pattern, int iterations)
- void [generate\\_dragon\\_curve](#) (char \*state, int iterations)
- int [dragon\\_curve](#) (int iterations)
- void [embPolygon\\_reduceByDistance](#) ([EmbArray](#) \*vertices, [EmbArray](#) \*simplified, float distance)
- void [embPolygon\\_reduceByNth](#) ([EmbArray](#) \*vertices, [EmbArray](#) \*out, int nth)
- [EmbPattern](#) \* [embPattern\\_combine](#) ([EmbPattern](#) \*p1, [EmbPattern](#) \*p2)
- void [embPattern\\_stitchArc](#) ([EmbPattern](#) \*p, [EmbArc](#) arc, int thread\_index, int style)
 p arc thread\_index style
- void [embPattern\\_stitchCircle](#) ([EmbPattern](#) \*p, [EmbCircle](#) circle, int thread\_index, int style)
- void [embPattern\\_stitchEllipse](#) ([EmbPattern](#) \*p, [EmbEllipse](#) ellipse, int thread\_index, int style)
- void [embPattern\\_stitchPath](#) ([EmbPattern](#) \*p, [EmbPath](#) path, int thread\_index, int style)
- void [embPattern\\_stitchPolygon](#) ([EmbPattern](#) \*p, [EmbPolygon](#) polygon, int thread\_index, int style)
- void [embPattern\\_stitchPolyline](#) ([EmbPattern](#) \*p, [EmbPolyline](#) polyline, int thread\_index, int style)
- void [embPattern\\_stitchRect](#) ([EmbPattern](#) \*p, [EmbRect](#) rect, int thread\_index, int style)
- void [embPattern\\_stitchText](#) ([EmbPattern](#) \*p, [EmbRect](#) rect, int thread\_index, int style)
- void [embPattern\\_convertGeometry](#) ([EmbPattern](#) \*p)

### Variables

- const char \* [rules](#) [] = {"+BF-AFA-FB+", "-AF+BFB+FA-"}  
 • [L\\_system hilbert\\_curve\\_l\\_system](#)

#### 19.126.1 Function Documentation

**19.126.1.1 dragon\_curve()** [int dragon\\_curve](#) (  
     [int iterations](#) )

**Parameters**

<i>iterations</i>	<input type="text"/>
-------------------	----------------------

**Returns**

int

**19.126.1.2 embPattern\_combine()** `EmbPattern * embPattern_combine (``EmbPattern * p1,  
    EmbPattern * p2 )`**Parameters**

<i>p1</i>	<input type="text"/>
<i>p2</i>	<input type="text"/>

**Returns**

EmbPattern\*

**19.126.1.3 embPattern\_convertGeometry()** `void embPattern_convertGeometry (``EmbPattern * p )`**Parameters**

<i>p</i>	<input type="text"/>
----------	----------------------

**19.126.1.4 embPattern\_crossstitch()** `void embPattern_crossstitch (``EmbPattern * pattern,  
    EmbImage * image,  
    int threshold )`**Parameters**

<i>pattern</i>	<input type="text"/>
<i>image</i>	<input type="text"/>
<i>threshold</i>	<input type="text"/>

Uses a threshhold method to determine where to put crosses in the fill.

To improve this, we can remove the vertical stitches when two crosses neighbour. Currently the simple way to do this is to chain crosses that are neighbours exactly one ahead.

#### 19.126.1.5 embPattern\_horizontal\_fill() `void embPattern_horizontal_fill (`

```
    EmbPattern * pattern,
    EmbImage * image,
    int threshold )
```

##### Parameters

<i>pattern</i>	
<i>image</i>	
<i>threshold</i>	

Uses a threshhold method to determine where to put lines in the fill.

Needs to pass a "donut test", i.e. an image with black pixels where:  $10 < x*x + y*y < 20$  over the area  $(-30, 30) \times (-30, 30)$ .

Use render then image difference to see how well it passes.

#### 19.126.1.6 embPattern\_stitchArc() `void embPattern_stitchArc (`

```
    EmbPattern * p,
    EmbArc arc,
    int thread_index,
    int style )
```

*p arc thread\_index style*

#### 19.126.1.7 embPattern\_stitchCircle() `void embPattern_stitchCircle (`

```
    EmbPattern * p,
    EmbCircle circle,
    int thread_index,
    int style )
```

##### Parameters

<i>p</i>	
<i>circle</i>	<i>thread_index style</i>

style determines: stitch density fill pattern outline or fill

For now it's a straight fill of 1000 stitches of the whole object by default.

Consider the intersection of a line in direction "d" that passes through the disc with center "c", radius "r". The start and end points are:

$$(c - r(d/|d|), c + r(d/|d|))$$

Lines that are above and below this with an even separation  $s$  can be found by taking the point on the line to be  $c + sn$  where the  $n$  is the unit normal vector to  $d$  and the vector to be  $d$  again. The intersection points are therefore a right angled triangle, with one side  $r$ , another  $s$  and the third the length to be solved, by Pythagoras we have:

$$(c + sn - \sqrt{r^2 - s^2}(d/|d|), c + sn + \sqrt{r^2 - s^2}(d/|d|))$$

repeating this process gives us all the end points and the fill only alters these lines by splitting the ones longer than some tolerance.

#### 19.126.1.8 **embPattern\_stitchEllipse()** void embPattern\_stitchEllipse (

```
EmbPattern * p,  
EmbEllipse ellipse,  
int thread_index,  
int style )
```

##### Parameters

<i>p</i>	
<i>ellipse</i>	
<i>thread_index</i>	
<i>style</i>	

**Todo** finish stitchEllipse

#### 19.126.1.9 **embPattern\_stitchPath()** void embPattern\_stitchPath (

```
EmbPattern * p,  
EmbPath path,  
int thread_index,  
int style )
```

##### Parameters

<i>p</i>	
<i>rect</i>	
<i>thread_index</i>	
<i>style</i>	

**Todo** finish stitch path

#### 19.126.1.10 **embPattern\_stitchPolygon()** void embPattern\_stitchPolygon (

```
EmbPattern * p,  
EmbPolygon polygon,  
int thread_index,  
int style )
```

## Parameters

<i>p</i>	
<i>rect</i>	
<i>thread_index</i>	
<i>style</i>	

**Todo** finish stitch polygon

**19.126.1.11 embPattern\_stitchPolyline()** void embPattern\_stitchPolyline (

```
EmbPattern * p,
EmbPolyline polyline,
int thread_index,
int style )
```

## Parameters

<i>p</i>	
<i>rect</i>	
<i>thread_index</i>	
<i>style</i>	

**Todo** finish stitch polyline

**19.126.1.12 embPattern\_stitchRect()** void embPattern\_stitchRect (

```
EmbPattern * p,
EmbRect rect,
int thread_index,
int style )
```

## Parameters

<i>p</i>	
<i>rect</i>	
<i>thread_index</i>	
<i>style</i>	

Here we just stitch the rectangle in the direction of it's longer side.

**19.126.1.13 embPattern\_stitchText()** void embPattern\_stitchText (

```
EmbPattern * p,
EmbRect rect,
```

```
    int thread_index,
    int style )
```

**Parameters**

<i>p</i>	
<i>rect</i>	
<i>thread_index</i>	
<i>style</i>	

**19.126.1.14 embPolygon\_reduceByDistance()** void embPolygon\_reduceByDistance (

```
    EmbArray * vertices,
    EmbArray * simplified,
    float distance )
```

**Parameters**

<i>vertices</i>	
<i>simplified</i>	
<i>distance</i>	

Reduces the polygon by distance.

This is a non-destructive function, so the caller is responsible for freeing "vertices" if they choose to keep "simplified".

**19.126.1.15 embPolygon\_reduceByNth()** void embPolygon\_reduceByNth (

```
    EmbArray * vertices,
    EmbArray * out,
    int nth )
```

**Parameters**

<i>vertices</i>	
<i>out</i>	
<i>nth</i>	

Reduces the polygon by removing the Nth vertex in the vertices list. This is a non-destructive function, so the caller is responsible for freeing vertices if they choose to keep out.

**19.126.1.16 generate\_dragon\_curve()** void generate\_dragon\_curve (

```
    char * state,
    int iterations )
```

**Parameters**

<i>state</i>	
<i>iterations</i>	

using the "paper folding" method

**Todo** find citation for paper folding method

```
19.126.1.17 greedy_algorithm() static void greedy_algorithm (
    int * points,
    int n_points,
    int width,
    EmbReal bias ) [static]
```

#### Parameters

<i>points</i>	
<i>n_points</i>	
<i>width</i>	
<i>bias</i>	

**19.126.1.18 Greedy Algorithm** For each point in the list find the shortest distance to any possible neighbour, then perform a swap to make that neighbour the next item in the list.

To make the stitches lie more on one axis than the other bias the distance operator to prefer horizontal direction.

```
19.126.1.19 hilbert_curve() int hilbert_curve (
    EmbPattern * pattern,
    int iterations )
```

#### Parameters

<i>pattern</i>	
<i>iterations</i>	

#### Returns

int

[https://en.wikipedia.org/wiki/Hilbert\\_curve](https://en.wikipedia.org/wiki/Hilbert_curve)

Using the Lindenmayer System, so we can save work across different functions.

```
19.126.1.20 join_short_stitches() static void join_short_stitches (
    int * points,
    int * n_points,
    int width,
    int tolerence ) [static]
```

**Parameters**

<i>points</i>	
<i>n_points</i>	
<i>width</i>	
<i>tolerence</i>	

Remove points that lie in the middle of two short stitches that could be one longer stitch. Repeat until none are found.

**19.126.1.21 lindenmayer\_system()** `int lindenmayer_system (`  
`L_system L,`  
`char * state,`  
`int iterations,`  
`int complete )`

**Parameters**

<i>L</i>	
<i>state</i>	
<i>iterations</i>	
<i>complete</i>	

**Returns**

`int`

This is a slow generation algorithm.

**19.126.1.22 save\_points\_to\_pattern()** `static void save_points_to_pattern (`  
`EmbPattern * pattern,`  
`int * points,`  
`int n_points,`  
`EmbReal scale,`  
`int width,`  
`int height ) [static]`

**Parameters**

<i>pattern</i>	
<i>points</i>	
<i>n_points</i>	
<i>scale</i>	
<i>width</i>	
<i>height</i>	

**19.126.1.23 threshold\_method()** `static int * threshold_method (`

```
EmbImage * image,
int * n_points,
int subsample_width,
int subsample_height,
int threshold ) [static]
```

**Parameters**

<i>image</i>	
<i>n_points</i>	
<i>subsample_width</i>	
<i>subsample_height</i>	
<i>threshold</i>	

**Returns**

```
int*
```

Identify darker pixels to put stitches in.

**19.126.2 Variable Documentation****19.126.2.1 hilbert\_curve\_l\_system L\_system hilbert\_curve\_l\_system****Initial value:**

```
= {
    'A', "AB", "F+-", (char**)rules
}
```

**19.126.2.2 rules const char\* rules[ ] = {"+BF-AFA-FB+", "-AF+BFB+FA-"}** **19.127 extern/libembroidery/src/formats.c File Reference**

```
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <math.h>
#include <ctype.h>
#include "embroidery_internal.h"
```

## Functions

- void `safe_free` (void \*data)
- int `embFormat_getExtension` (const char \*fileName, char \*ending)
- int `emb_identify_format` (const char \*fileName)
- short `fread_int16` (FILE \*f)
- unsigned short `fread_uint16` (FILE \*f)
- int `fread_int32_be` (FILE \*f)
- void `fpad` (FILE \*file, char c, int n)
- void `binaryWriteShort` (FILE \*f, short data)
- void `binaryWriteUShort` (FILE \*f, unsigned short data)
- void `binaryWriteUShortBE` (FILE \*f, unsigned short data)
- void `binaryWriteInt` (FILE \*f, int data)
- void `binaryWriteIntBE` (FILE \*f, int data)
- void `binaryWriteUInt` (FILE \*f, unsigned int data)
- void `binaryWriteUIntBE` (FILE \*f, unsigned int data)
- char `embPattern_read` (EmbPattern \*pattern, const char \*fileName, int format)
- char `embPattern_write` (EmbPattern \*pattern, const char \*fileName, int format)
- char `embPattern_readAuto` (EmbPattern \*pattern, const char \*fileName)
- char `embPattern_writeAuto` (EmbPattern \*pattern, const char \*fileName)

## Variables

- EmbFormatList `formatTable` [numberOfFormats]
- const char `imageWithFrame` [38][48]

### 19.127.1 Function Documentation

```
19.127.1.1 binaryWriteInt() void binaryWriteInt (
    FILE * f,
    int data )
```

#### Parameters

<i>f</i>	
<i>data</i>	

**Todo** replace with emblnt\_read

```
19.127.1.2 binaryWriteIntBE() void binaryWriteIntBE (
    FILE * f,
    int data )
```

**Parameters**

<i>f</i>	
<i>data</i>	

**Todo** replace with emblnt\_read

**19.127.1.3 binaryWriteShort()** void binaryWriteShort (

```
FILE * f,  
      short data )
```

**Parameters**

<i>f</i>	
<i>data</i>	

**Todo** replace with emblnt\_read

**19.127.1.4 binaryWriteUInt()** void binaryWriteUInt (

```
FILE * f,  
      unsigned int data )
```

**Parameters**

<i>f</i>	
<i>data</i>	

**Todo** replace with emblnt\_read

**19.127.1.5 binaryWriteUIntBE()** void binaryWriteUIntBE (

```
FILE * f,  
      unsigned int data )
```

**Parameters**

<i>f</i>	
<i>data</i>	

**Todo** replace with emblnt\_read

#### 19.127.1.6 **binaryWriteUShort()** void binaryWriteUShort (

```
FILE * f,  
unsigned short data )
```

Parameters

f	
data	

**Todo** replace with emblnt\_read

#### 19.127.1.7 **binaryWriteUShortBE()** void binaryWriteUShortBE (

```
FILE * f,  
unsigned short data )
```

Parameters

f	
data	

**Todo** replace with emblnt\_read

#### 19.127.1.8 **emb\_identify\_format()** int emb\_identify\_format (

```
const char * fileName )
```

Parameters

fileName	
----------	--

Returns

int

#### 19.127.1.9 **embFormat\_getExtension()** int embFormat\_getExtension (

```
const char * fileName,  
char * ending )
```

**Parameters**

<i>fileName</i>	
<i>ending</i>	

**Returns**

int

**19.127.1.10 embPattern\_read()** char embPattern\_read (

```
EmbPattern * pattern,  
const char * fileName,  
int format )
```

**Parameters**

<i>pattern</i>	
<i>fileName</i>	
<i>format</i>	

**Returns**

char

**19.127.1.11 embPattern\_readAuto()** char embPattern\_readAuto (

```
EmbPattern * pattern,  
const char * fileName )
```

**Parameters**

<i>pattern</i>	
<i>fileName</i>	

**Returns**

char

**19.127.1.12 embPattern\_write()** char embPattern\_write (

```
EmbPattern * pattern,  
const char * fileName,  
int format )
```

**Parameters**

<i>pattern</i>	
<i>fileName</i>	
<i>format</i>	

**Returns**

char

**19.127.1.13 embPattern\_writeAuto()** char embPattern\_writeAuto (   
     **EmbPattern** \* *pattern*,  
     const char \* *fileName* )**Parameters**

<i>pattern</i>	
<i>fileName</i>	

**Returns**

char

**19.127.1.14 fpad()** void fpad (   
     FILE \* *file*,  
     char *c*,  
     int *n* )**Parameters**

<i>f</i>	
----------	--

**Returns**

int

**19.127.1.15 fread\_int16()** short fread\_int16 (   
     FILE \* *f* )**Parameters**

<i>f</i>	
----------	--

**Returns**

short

**19.127.1.16 fread\_int32\_be()** int fread\_int32\_be ( FILE \* *f* )

**Parameters**

<i>f</i>	<input type="text"/>
----------	----------------------

**Returns**

int

**Todo** replace with emblnt\_read

**19.127.1.17 fread\_uint16()** unsigned short fread\_uint16 ( FILE \* *f* )

**Parameters**

<i>f</i>	<input type="text"/>
----------	----------------------

**Returns**

unsigned short

**Todo** replace with emblnt\_read

**19.127.1.18 safe\_free()** void safe\_free ( void \* *data* )

**Parameters**

<i>data</i>	<input type="text"/>
-------------	----------------------

**19.127.2 Variable Documentation**

**19.127.2.1 formatTable** `EmbFormatList formatTable[numberOfFormats]`

This file is part of libembroidery.

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This file contains all the read and write functions for the library.

**Todo** This list needs reviewed in case some stitch formats also can contain object data (EMBFORMAT\_← STCHANDOBJ). \*

**19.127.2.2 imageWithFrame** `const char imageWithFrame[38][48]`**19.128 extern/libembroidery/src/formats/format\_100.c File Reference**

```
#include <stdio.h>
#include <math.h>
#include "../embroidery_internal.h"
```

**Functions**

- char `read100` (`EmbPattern *pattern, FILE *file`)
- char `write100` (`EmbPattern *pattern, FILE *file`)

**19.128.1 Function Documentation****19.128.1.1 read100()** `char read100 (`  
`EmbPattern * pattern,`  
`FILE * file )`**19.128.1.2 write100()** `char write100 (`  
`EmbPattern * pattern,`  
`FILE * file )`**19.129 extern/libembroidery/src/formats/format\_10o.c File Reference**

```
#include <stdio.h>
#include <math.h>
#include "../embroidery_internal.h"
```

## Functions

- char `read10o` (`EmbPattern` \**pattern*, `FILE` \**file*)
- char `write10o` (`EmbPattern` \**pattern*, `FILE` \**file*)

### 19.129.1 Function Documentation

**19.129.1.1 `read10o()`** char `read10o` (  
    `EmbPattern` \* *pattern*,  
    `FILE` \* *file* )

**19.129.1.2 `write10o()`** char `write10o` (  
    `EmbPattern` \* *pattern*,  
    `FILE` \* *file* )

## 19.130 extern/libembroidery/src/formats/format\_art.c File Reference

```
#include <stdio.h>
#include <math.h>
#include "../embroidery_internal.h"
```

## Functions

- char `readArt` (`EmbPattern` \**pattern*, `FILE` \**file*)
- char `writeArt` (`EmbPattern` \**pattern*, `FILE` \**file*)

### 19.130.1 Function Documentation

**19.130.1.1 `readArt()`** char `readArt` (  
    `EmbPattern` \* *pattern*,  
    `FILE` \* *file* )

**19.130.1.2 `writeArt()`** char `writeArt` (  
    `EmbPattern` \* *pattern*,  
    `FILE` \* *file* )

## 19.131 extern/libembroidery/src/formats/format\_bmc.c File Reference

```
#include <stdio.h>
#include <math.h>
#include "../embroidery_internal.h"
```

### Functions

- char [readBmc](#) ([EmbPattern](#) \*pattern, FILE \*file)
- char [writeBmc](#) ([EmbPattern](#) \*pattern, FILE \*file)

#### 19.131.1 Function Documentation

**19.131.1.1 [readBmc\(\)](#)** char [readBmc](#) (  
    [EmbPattern](#) \* *pattern*,  
    FILE \* *file* )

**19.131.1.2 [writeBmc\(\)](#)** char [writeBmc](#) (  
    [EmbPattern](#) \* *pattern*,  
    FILE \* *file* )

## 19.132 extern/libembroidery/src/formats/format\_bro.c File Reference

```
#include <stdio.h>
#include <math.h>
#include "../embroidery_internal.h"
```

### Functions

- char [readBro](#) ([EmbPattern](#) \*pattern, FILE \*file)
- char [writeBro](#) ([EmbPattern](#) \*pattern, FILE \*file)

#### 19.132.1 Function Documentation

**19.132.1.1 [readBro\(\)](#)** char [readBro](#) (  
    [EmbPattern](#) \* *pattern*,  
    FILE \* *file* )

```
19.132.1.2 writeBro() char writeBro (
    EmbPattern * pattern,
    FILE * file )
```

## 19.133 extern/libembroidery/src/formats/format\_cnd.c File Reference

```
#include <stdio.h>
#include <math.h>
#include "../embroidery_internal.h"
```

### Functions

- char [readCnd](#) (EmbPattern \*pattern, FILE \*file)
- char [writeCnd](#) (EmbPattern \*pattern, FILE \*file)

#### 19.133.1 Function Documentation

```
19.133.1.1 readCnd() char readCnd (
    EmbPattern * pattern,
    FILE * file )
```

```
19.133.1.2 writeCnd() char writeCnd (
    EmbPattern * pattern,
    FILE * file )
```

## 19.134 extern/libembroidery/src/formats/format\_col.c File Reference

```
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <math.h>
#include "../embroidery_internal.h"
```

### Functions

- char [readCol](#) (EmbPattern \*pattern, FILE \*file)
- char [writeCol](#) (EmbPattern \*pattern, FILE \*file)

#### 19.134.1 Function Documentation

```
19.134.1.1 readCol() char readCol (
    EmbPattern * pattern,
    FILE * file )
```

```
19.134.1.2 writeCol() char writeCol (
    EmbPattern * pattern,
    FILE * file )
```

## 19.135 extern/libembroidery/src/formats/format\_csd.c File Reference

```
#include <stdio.h>
#include <string.h>
#include <math.h>
#include "../embroidery_internal.h"
```

### Macros

- #define CsdSubMaskSize 479
- #define CsdXorMaskSize 501

### Functions

- void BuildDecryptionTable (int seed)
- unsigned char DecodeCsdByte (long fileOffset, unsigned char val, int type)
- char readCsd (EmbPattern \*pattern, FILE \*file)
- char writeCsd (EmbPattern \*pattern, FILE \*file)

### Variables

- char \_subMask [CsdSubMaskSize]
- char \_xorMask [CsdXorMaskSize]
- const unsigned char csd\_decryptArray []

## 19.135.1 Macro Definition Documentation

```
19.135.1.1 CsdSubMaskSize #define CsdSubMaskSize 479
```

```
19.135.1.2 CsdXorMaskSize #define CsdXorMaskSize 501
```

## 19.135.2 Function Documentation

**19.135.2.1 BuildDecryptionTable()** void BuildDecryptionTable ( int seed )

**19.135.2.2 DecodeCsdByte()** unsigned char DecodeCsdByte ( long fileOffset, unsigned char val, int type )

**19.135.2.3 readCsd()** char readCsd ( EmbPattern \* pattern, FILE \* file )

**19.135.2.4 writeCsd()** char writeCsd ( EmbPattern \* pattern, FILE \* file )

## 19.135.3 Variable Documentation

**19.135.3.1 \_subMask** char \_subMask[CsdSubMaskSize]

**19.135.3.2 \_xorMask** char \_xorMask[CsdXorMaskSize]

**19.135.3.3 csd\_decryptArray** const unsigned char csd\_decryptArray[ ]

**Initial value:**

```
= {
    0x43, 0x6E, 0x72, 0x7A, 0x76, 0x6C, 0x61, 0x6F, 0x7C, 0x29, 0x5D, 0x62, 0x60, 0x6E, 0x61, 0x62,
    0x20, 0x41, 0x66, 0x6A, 0x3A, 0x35, 0x5A, 0x63, 0x7C, 0x37, 0x3A, 0x2A, 0x25, 0x24, 0x2A, 0x33,
    0x00, 0x10, 0x14, 0x03, 0x72, 0x4C, 0x48, 0x42, 0x08, 0x7A, 0x5E, 0x0B, 0x6F, 0x45, 0x47, 0x5F,
    0x40, 0x54, 0x5C, 0x57, 0x55, 0x59, 0x53, 0x3A, 0x32, 0x6F, 0x53, 0x54, 0x50, 0x5C, 0x4A, 0x56,
    0x2F, 0x2F, 0x62, 0x2C, 0x22, 0x65, 0x25, 0x28, 0x38, 0x30, 0x38, 0x22, 0x2B, 0x25, 0x3A, 0x6F,
    0x27, 0x38, 0x3E, 0x3F, 0x74, 0x37, 0x33, 0x77, 0x2E, 0x30, 0x3D, 0x34, 0x2E, 0x32, 0x2B, 0x2C,
    0x0C, 0x18, 0x42, 0x13, 0x16, 0x0A, 0x15, 0x02, 0x0B, 0x1C, 0x1E, 0x0E, 0x08, 0x60, 0x64, 0x0D,
    0x09, 0x51, 0x25, 0x1A, 0x18, 0x16, 0x19, 0x1A, 0x58, 0x10, 0x14, 0x5B, 0x08, 0x15, 0x1B, 0x5F,
    0xD5, 0xD2, 0xAE, 0xA3, 0xC1, 0xF0, 0xF4, 0xE8, 0xF8, 0xEC, 0xA6, 0xAB, 0xCD, 0xF8, 0xFD, 0xFB,
    0xE2, 0xF0, 0xFE, 0xFA, 0xF5, 0xB5, 0xF7, 0xF9, 0xFC, 0xB9, 0xF5, 0xEF, 0xF4, 0xF8, 0xEC, 0xBF,
    0xC3, 0xCE, 0xD7, 0xCD, 0xD0, 0xD7, 0xCF, 0xC2, 0xDB, 0xA4, 0xA0, 0xB0, 0xAF, 0xBE, 0x98, 0xE2,
    0xC2, 0x91, 0xE5, 0xDC, 0xDA, 0xD2, 0x96, 0xC4, 0x98, 0xF8, 0xC9, 0xD2, 0xDD, 0xD3, 0x9E, 0xDE,
    0xAE, 0xA5, 0xE2, 0x8C, 0xB6, 0xAC, 0xA3, 0xA9, 0xBC, 0xA8, 0xA6, 0xEB, 0x8B, 0xBF, 0xA1, 0xAC,
    0xB5, 0xA3, 0xBB, 0xB6, 0xA7, 0xD8, 0xDC, 0x9A, 0xAA, 0xF9, 0x82, 0xFB, 0x9D, 0xB9, 0xAB, 0xB3,
    0x94, 0xC1, 0xA0, 0x8C, 0x8B, 0x8E, 0x95, 0x8F, 0x87, 0x99, 0xE7, 0xE1, 0xA3, 0x83, 0x8B, 0xCF,
    0xA3, 0x85, 0x9D, 0x83, 0xD4, 0xB7, 0x83, 0x84, 0x91, 0x97, 0x9F, 0x88, 0x8F, 0xDD, 0xAD, 0x90
}
```

## 19.136 extern/libembroidery/src/formats/format\_csv.c File Reference

```
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <math.h>
#include "../embroidery_internal.h"
```

### Functions

- `char * csvStitchFlagToStr (int flags)`
- `int csvStrToStitchFlag (const char *str)`
- `char readCsv (EmbPattern *pattern, FILE *file)`
- `char writeCsv (EmbPattern *pattern, FILE *file)`

### 19.136.1 Function Documentation

**19.136.1.1 csvStitchFlagToStr()** `char * csvStitchFlagToStr (`  
`int flags )`

**19.136.1.2 csvStrToStitchFlag()** `int csvStrToStitchFlag (`  
`const char * str )`

**19.136.1.3 readCsv()** `char readCsv (`  
`EmbPattern * pattern,`  
`FILE * file )`

**19.136.1.4 writeCsv()** `char writeCsv (`  
`EmbPattern * pattern,`  
`FILE * file )`

## 19.137 extern/libembroidery/src/formats/format\_dat.c File Reference

```
#include <stdio.h>
#include <math.h>
#include "../embroidery_internal.h"
```

## Functions

- char `readDat (EmbPattern *pattern, FILE *file)`
- char `writeDat (EmbPattern *pattern, FILE *file)`

### 19.137.1 Function Documentation

**19.137.1.1 `readDat()`** char `readDat (`  
    `EmbPattern * pattern,`  
    `FILE * file )`

**19.137.1.2 `writeDat()`** char `writeDat (`  
    `EmbPattern * pattern,`  
    `FILE * file )`

## 19.138 extern/libembroidery/src/formats/format\_dem.c File Reference

```
#include <stdio.h>
#include <math.h>
#include "../embroidery_internal.h"
```

## Functions

- char `readDem (EmbPattern *pattern, FILE *file)`
- char `writeDem (EmbPattern *pattern, FILE *file)`

### 19.138.1 Function Documentation

**19.138.1.1 `readDem()`** char `readDem (`  
    `EmbPattern * pattern,`  
    `FILE * file )`

**19.138.1.2 `writeDem()`** char `writeDem (`  
    `EmbPattern * pattern,`  
    `FILE * file )`

## 19.139 extern/libembroidery/src/formats/format\_dsb.c File Reference

```
#include <stdio.h>
#include <math.h>
#include "../embroidery_internal.h"
```

### Functions

- char `readDsb` (`EmbPattern` \*pattern, `FILE` \*file)
- char `writeDsb` (`EmbPattern` \*pattern, `FILE` \*file)

#### 19.139.1 Function Documentation

```
19.139.1.1 readDsb() char readDsb (
    EmbPattern * pattern,
    FILE * file )
```

```
19.139.1.2 writeDsb() char writeDsb (
    EmbPattern * pattern,
    FILE * file )
```

## 19.140 extern/libembroidery/src/formats/format\_dst.c File Reference

```
#include <stdio.h>
#include <string.h>
#include <math.h>
#include "../embroidery_internal.h"
```

### Macros

- `#define cci(c1, c2) (c1*256+c2)`

### Functions

- int `decode_record_flags` (unsigned char b2)
- void `encode_record` (FILE \*file, int x, int y, int flags)
- void `set_dst_variable` (`EmbPattern` \*pattern, char \*var, char \*val)
- char `readDst` (`EmbPattern` \*pattern, `FILE` \*file)
- char `writeDst` (`EmbPattern` \*pattern, `FILE` \*file)

**19.140.1 Macro Definition Documentation****19.140.1.1 cci** `#define cci(`  
`c1,`  
`c2  )  (c1*256+c2)`**19.140.2 Function Documentation****19.140.2.1 decode\_record\_flags()** `int decode_record_flags (`  
`unsigned char b2 )`**19.140.2.2 encode\_record()** `void encode_record (`  
`FILE * file,`  
`int x,`  
`int y,`  
`int flags )`**19.140.2.3 readDst()** `char readDst (`  
`EmbPattern * pattern,`  
`FILE * file )`**19.140.2.4 set\_dst\_variable()** `void set_dst_variable (`  
`EmbPattern * pattern,`  
`char * var,`  
`char * val )`**19.140.2.5 writeDst()** `char writeDst (`  
`EmbPattern * pattern,`  
`FILE * file )`**19.141 extern/libembroidery/src/formats/format\_dsz.c File Reference**

```
#include <stdio.h>
#include <math.h>
#include "../embroidery_internal.h"
```

## Functions

- char `readDsz` (`EmbPattern` \*pattern, `FILE` \*file)
- char `writeDsz` (`EmbPattern` \*pattern, `FILE` \*file)

### 19.141.1 Function Documentation

**19.141.1.1 `readDsz()`** char `readDsz` (  
    `EmbPattern` \* pattern,  
    `FILE` \* file )

**19.141.1.2 `writeDsz()`** char `writeDsz` (  
    `EmbPattern` \* pattern,  
    `FILE` \* file )

## 19.142 `extern/libembroidery/src/formats/format_dxf.c` File Reference

```
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <math.h>
#include "../embroidery_internal.h"
```

## Functions

- void `readLine` (`FILE` \*file, `char` \*str)
- char `readDxf` (`EmbPattern` \*pattern, `FILE` \*file)
- char `writeDxf` (`EmbPattern` \*pattern, `FILE` \*file)

### 19.142.1 Function Documentation

**19.142.1.1 `readDxf()`** char `readDxf` (  
    `EmbPattern` \* pattern,  
    `FILE` \* file )

```
19.142.1.2 readLine() void readLine (
    FILE * file,
    char * str )
```

```
19.142.1.3 writeDxf() char writeDxf (
    EmbPattern * pattern,
    FILE * file )
```

## 19.143 extern/libembroidery/src/formats/format\_edr.c File Reference

```
#include <stdio.h>
#include <math.h>
#include "../embroidery_internal.h"
```

### Functions

- char [readEdr](#) (EmbPattern \*pattern, FILE \*file)
- char [writeEdr](#) (EmbPattern \*pattern, FILE \*file)

#### 19.143.1 Function Documentation

```
19.143.1.1 readEdr() char readEdr (
    EmbPattern * pattern,
    FILE * file )
```

```
19.143.1.2 writeEdr() char writeEdr (
    EmbPattern * pattern,
    FILE * file )
```

## 19.144 extern/libembroidery/src/formats/format\_emd.c File Reference

```
#include <stdio.h>
#include <math.h>
#include "../embroidery_internal.h"
```

### Functions

- char [emdDecode](#) (unsigned char inputByte)
- char [readEmd](#) (EmbPattern \*pattern, FILE \*file)
- char [writeEmd](#) (EmbPattern \*pattern, FILE \*file)

### 19.144.1 Function Documentation

**19.144.1.1 emdDecode()** char emdDecode ( unsigned char *inputByte* )

**19.144.1.2 readEmd()** char readEmd ( *EmbPattern* \* *pattern*, FILE \* *file* )

**19.144.1.3 writeEmd()** char writeEmd ( *EmbPattern* \* *pattern*, FILE \* *file* )

## 19.145 extern/libembroidery/src/formats/format\_exp.c File Reference

```
#include <stdio.h>
#include <math.h>
#include "../embroidery_internal.h"
```

### Functions

- char *expDecode* (unsigned char *a1*)
- char *readExp* (*EmbPattern* \**pattern*, FILE \**file*)
- char *writeExp* (*EmbPattern* \**pattern*, FILE \**file*)

### 19.145.1 Function Documentation

**19.145.1.1 expDecode()** char expDecode ( unsigned char *a1* )

**19.145.1.2 readExp()** char readExp ( *EmbPattern* \* *pattern*, FILE \* *file* )

```
19.145.1.3 writeExp() char writeExp (
    EmbPattern * pattern,
    FILE * file )
```

## 19.146 extern/libembroidery/src/formats/format\_exy.c File Reference

```
#include <stdio.h>
#include <math.h>
#include "../embroidery_internal.h"
```

### Functions

- int `decode_exy_flags` (unsigned char b2)
- char `readExy` (EmbPattern \*pattern, FILE \*file)
- char `writeExy` (EmbPattern \*pattern, FILE \*file)

#### 19.146.1 Function Documentation

```
19.146.1.1 decode_exy_flags() int decode_exy_flags (
    unsigned char b2 )
```

```
19.146.1.2 readExy() char readExy (
    EmbPattern * pattern,
    FILE * file )
```

```
19.146.1.3 writeExy() char writeExy (
    EmbPattern * pattern,
    FILE * file )
```

## 19.147 extern/libembroidery/src/formats/format\_eyc.c File Reference

```
#include <stdio.h>
#include <math.h>
#include "../embroidery_internal.h"
```

### Functions

- char `readEys` (EmbPattern \*pattern, FILE \*file)
- char `writeEys` (EmbPattern \*pattern, FILE \*file)

**19.147.1 Function Documentation****19.147.1.1 `readEys()`** char `readEys (`

```
    EmbPattern * pattern,  
    FILE * file )
```

**19.147.1.2 `writeEys()`** char `writeEys (`

```
    EmbPattern * pattern,  
    FILE * file )
```

**19.148 `extern/libembroidery/src/formats/format_fxy.c` File Reference**

```
#include <stdio.h>  
#include <math.h>  
#include "../embroidery_internal.h"
```

**Functions**

- char `readFxy (EmbPattern *pattern, FILE *file)`
- char `writeFxy (EmbPattern *pattern, FILE *file)`

**19.148.1 Function Documentation****19.148.1.1 `readFxy()`** char `readFxy (`

```
    EmbPattern * pattern,  
    FILE * file )
```

**19.148.1.2 `writeFxy()`** char `writeFxy (`

```
    EmbPattern * pattern,  
    FILE * file )
```

**19.149 `extern/libembroidery/src/formats/format_gc.c` File Reference**

```
#include <stdio.h>  
#include <math.h>  
#include "../embroidery_internal.h"
```

## Functions

- char `readGc (EmbPattern *pattern, FILE *file)`
- char `writeGc (EmbPattern *pattern, FILE *file)`

### 19.149.1 Function Documentation

**19.149.1.1 `readGc()`** char `readGc (`  
    `EmbPattern * pattern,`  
    `FILE * file )`

**19.149.1.2 `writeGc()`** char `writeGc (`  
    `EmbPattern * pattern,`  
    `FILE * file )`

## 19.150 extern/libembroidery/src/formats/format\_gnc.c File Reference

```
#include <stdio.h>
#include <math.h>
#include "../embroidery_internal.h"
```

## Functions

- char `readGnc (EmbPattern *pattern, FILE *file)`
- char `writeGnc (EmbPattern *pattern, FILE *file)`

### 19.150.1 Function Documentation

**19.150.1.1 `readGnc()`** char `readGnc (`  
    `EmbPattern * pattern,`  
    `FILE * file )`

**19.150.1.2 `writeGnc()`** char `writeGnc (`  
    `EmbPattern * pattern,`  
    `FILE * file )`

## 19.151 extern/libembroidery/src/formats/format\_gt.c File Reference

```
#include <stdio.h>
#include <math.h>
#include "../embroidery_internal.h"
```

### Functions

- char [readGt](#) ([EmbPattern](#) \*pattern, FILE \*file)
- char [writeGt](#) ([EmbPattern](#) \*pattern, FILE \*file)

#### 19.151.1 Function Documentation

**19.151.1.1 [readGt\(\)](#)** char [readGt](#) (  
    [EmbPattern](#) \* *pattern*,  
    FILE \* *file* )

**19.151.1.2 [writeGt\(\)](#)** char [writeGt](#) (  
    [EmbPattern](#) \* *pattern*,  
    FILE \* *file* )

## 19.152 extern/libembroidery/src/formats/format\_hus.c File Reference

```
#include <stdio.h>
#include <stdlib.h>
#include <math.h>
#include "../embroidery_internal.h"
```

### Functions

- int [husDecodeStitchType](#) (unsigned char b)
- unsigned char \* [husDecompressData](#) (unsigned char \*input, int compressedInputLength, int decompressedContentLength)
- unsigned char \* [husCompressData](#) (unsigned char \*input, int decompressedInputSize, int \*compressedSize)
- int [husDecodeByte](#) (unsigned char b)
- unsigned char [husEncodeByte](#) ([EmbReal](#) f)
- unsigned char [husEncodeStitchType](#) (int st)
- char [readHus](#) ([EmbPattern](#) \*pattern, FILE \*file)
- char [writeHus](#) ([EmbPattern](#) \*pattern, FILE \*file)

### 19.152.1 Function Documentation

**19.152.1.1 husCompressData()** `unsigned char * husCompressData (`  
    `unsigned char * input,`  
    `int decompressedInputSize,`  
    `int * compressedSize )`

**19.152.1.2 husDecodeByte()** `int husDecodeByte (`  
    `unsigned char b )`

**19.152.1.3 husDecodeStitchType()** `int husDecodeStitchType (`  
    `unsigned char b )`

**19.152.1.4 husDecompressData()** `unsigned char * husDecompressData (`  
    `unsigned char * input,`  
    `int compressedInputLength,`  
    `int decompressedContentLength )`

**19.152.1.5 husEncodeByte()** `unsigned char husEncodeByte (`  
    `EmbReal f )`

**19.152.1.6 husEncodeStitchType()** `unsigned char husEncodeStitchType (`  
    `int st )`

**19.152.1.7 readHus()** `char readHus (`  
    `EmbPattern * pattern,`  
    `FILE * file )`

**19.152.1.8 writeHus()** `char writeHus (`  
    `EmbPattern * pattern,`  
    `FILE * file )`

## 19.153 extern/libembroidery/src/formats/format\_inb.c File Reference

```
#include <stdio.h>
#include <math.h>
#include "../embroidery_internal.h"
```

### Functions

- char [readInb](#) ([EmbPattern](#) \*pattern, FILE \*file)
- char [writeInb](#) ([EmbPattern](#) \*pattern, FILE \*file)

#### 19.153.1 Function Documentation

**19.153.1.1 [readInb\(\)](#)** char [readInb](#) (  
    [EmbPattern](#) \* *pattern*,  
    FILE \* *file* )

**19.153.1.2 [writeInb\(\)](#)** char [writeInb](#) (  
    [EmbPattern](#) \* *pattern*,  
    FILE \* *file* )

## 19.154 extern/libembroidery/src/formats/format\_inf.c File Reference

```
#include <stdio.h>
#include <string.h>
#include <math.h>
#include "../embroidery_internal.h"
```

### Functions

- char [readInf](#) ([EmbPattern](#) \*pattern, FILE \*file)
- char [writeInf](#) ([EmbPattern](#) \*pattern, FILE \*file)

#### 19.154.1 Function Documentation

**19.154.1.1 [readInf\(\)](#)** char [readInf](#) (  
    [EmbPattern](#) \* *pattern*,  
    FILE \* *file* )

**19.154.1.2 writelnf()** char writeInf (

```
    EmbPattern * pattern,
    FILE * file )
```

## 19.155 extern/libembroidery/src/formats/format\_jef.c File Reference

```
#include <stdio.h>
#include <math.h>
#include "../embroidery_internal.h"
```

### Classes

- struct [hoop\\_padding](#)

### Functions

- int [jefGetHoopSize](#) (int width, int height)
- char [jefDecode](#) (unsigned char inputByte)
- void [jefSetHoopFromId](#) (EmbPattern \*pattern, int hoopCode)
- void [read\\_hoop](#) (FILE \*file, struct [hoop\\_padding](#) \*hoop, char \*label)
- char [readJef](#) (EmbPattern \*pattern, FILE \*file)
- void [jefEncode](#) (unsigned char \*b, char dx, char dy, int flags)
- char [writeJef](#) (EmbPattern \*pattern, FILE \*file)

#### 19.155.1 Function Documentation

**19.155.1.1 jefDecode()** char jefDecode (

```
    unsigned char inputByte )
```

**19.155.1.2 jefEncode()** void jefEncode (

```
    unsigned char * b,
    char dx,
    char dy,
    int flags )
```

**19.155.1.3 jefGetHoopSize()** int jefGetHoopSize (

```
    int width,
    int height )
```

**19.155.1.4 jefSetHoopFromId()** void jefSetHoopFromId (

```
EmbPattern * pattern,
int hoopCode )
```

**19.155.1.5 read\_hoop()** void read\_hoop (

```
FILE * file,
struct hoop_padding * hoop,
char * label )
```

**19.155.1.6 readJef()** char readJef (

```
EmbPattern * pattern,
FILE * file )
```

**19.155.1.7 writeJef()** char writeJef (

```
EmbPattern * pattern,
FILE * file )
```

## 19.156 extern/libembroidery/src/formats/format\_ksm.c File Reference

```
#include <stdio.h>
#include <math.h>
#include "../embroidery_internal.h"
```

### Functions

- void **ksmEncode** (unsigned char \*b, char dx, char dy, int flags)
- char **readKsm** (EmbPattern \*pattern, FILE \*file)
- char **writeKsm** (EmbPattern \*pattern, FILE \*file)

### 19.156.1 Function Documentation

**19.156.1.1 ksmEncode()** void ksmEncode (

```
unsigned char * b,
char dx,
char dy,
int flags )
```

**19.156.1.2 readKsm()** char readKsm (

```
EmbPattern * pattern,
FILE * file )
```

**19.156.1.3 writeKsm()** char writeKsm (

```
EmbPattern * pattern,
FILE * file )
```

## 19.157 extern/libembroidery/src/formats/format\_max.c File Reference

```
#include <stdio.h>
#include <math.h>
#include "../embroidery_internal.h"
```

### Functions

- char **readMax** (EmbPattern \*pattern, FILE \*file)
- char **writeMax** (EmbPattern \*pattern, FILE \*file)

### Variables

- const unsigned char **max\_header** []

## 19.157.1 Function Documentation

**19.157.1.1 readMax()** char readMax (

```
EmbPattern * pattern,
FILE * file )
```

**19.157.1.2 writeMax()** char writeMax (

```
EmbPattern * pattern,
FILE * file )
```

## 19.157.2 Variable Documentation

**19.157.2.1 max\_header** const unsigned char max\_header[ ]

### Initial value:

19.158 [extern/libembroidery/src/formats/format\\_mit.c](#) File Reference

```
#include <stdio.h>
#include <math.h>
#include "../embroidery_internal.h"
```

## Functions

- char `readMit` (`EmbPattern` \*`pattern`, `FILE` \*`file`)
  - char `writeMit` (`EmbPattern` \*`pattern`, `FILE` \*`file`)

## 19.158.1 Function Documentation

**19.158.1.1 readMit()** char readMit (

```
EmbPattern * pattern,  
FILE * file )
```

**19.158.1.2 writeMit()** char writeMit (

```
EmbPattern * pattern,  
FILE * file )
```

19.159 [extern/libembroidery/src/formats/format\\_new.c](#) File Reference

```
#include <stdio.h>
#include <math.h>
#include "../embroidery/internal.h"
```

## Functions

- char `readNew` (`EmbPattern` \*pattern, `FILE` \*file)
- char `writeNew` (`EmbPattern` \*pattern, `FILE` \*file)

### 19.159.1 Function Documentation

#### 19.159.1.1 `readNew()`

```
char readNew (
    EmbPattern * pattern,
    FILE * file )
```

#### 19.159.1.2 `writeNew()`

```
char writeNew (
    EmbPattern * pattern,
    FILE * file )
```

## 19.160 extern/libembroidery/src/formats/format\_ofm.c File Reference

```
#include <stdio.h>
#include <string.h>
#include <stdlib.h>
#include <math.h>
#include "../embroidery_internal.h"
```

## Functions

- char \* `ofmReadLibrary` (`FILE` \*file)
- static int `ofmReadClass` (`FILE` \*file)
- void `ofmReadBlockHeader` (`FILE` \*file)
- void `ofmReadColorChange` (`FILE` \*file, `EmbPattern` \*pattern)
- void `ofmReadThreads` (`FILE` \*file, `EmbPattern` \*p)
- `EmbReal` `ofmDecode` (unsigned char b1, unsigned char b2)
- void `ofmReadExpanded` (`FILE` \*file, `EmbPattern` \*p)
- char `readOfm` (`EmbPattern` \*pattern, `FILE` \*fileCompound)
- char `writeOfm` (`EmbPattern` \*pattern, `FILE` \*file)

### 19.160.1 Function Documentation

#### 19.160.1.1 `ofmDecode()`

```
EmbReal ofmDecode (
    unsigned char b1,
    unsigned char b2 )
```

**19.160.1.2 ofmReadBlockHeader()** void ofmReadBlockHeader ( FILE \* file )

**19.160.1.3 ofmReadClass()** static int ofmReadClass ( FILE \* file ) [static]

**19.160.1.4 ofmReadColorChange()** void ofmReadColorChange ( FILE \* file, EmbPattern \* pattern )

**19.160.1.5 ofmReadExpanded()** void ofmReadExpanded ( FILE \* file, EmbPattern \* p )

**19.160.1.6 ofmReadLibrary()** char \* ofmReadLibrary ( FILE \* file )

**19.160.1.7 ofmReadThreads()** void ofmReadThreads ( FILE \* file, EmbPattern \* p )

**19.160.1.8 readOfm()** char readOfm ( EmbPattern \* pattern, FILE \* fileCompound )

**19.160.1.9 writeOfm()** char writeOfm ( EmbPattern \* pattern, FILE \* file )

## 19.161 extern/libembroidery/src/formats/format\_pcd.c File Reference

```
#include <stdio.h>
#include <string.h>
#include <math.h>
#include "../embroidery_internal.h"
```

## Functions

- char `readPcd` (`EmbPattern` \*pattern, const char \*fileName, FILE \*file)
- char `writePcd` (`EmbPattern` \*pattern, FILE \*file)

### 19.161.1 Function Documentation

#### 19.161.1.1 `readPcd()` char `readPcd` (

```
    EmbPattern * pattern,
    const char * fileName,
    FILE * file )
```

#### 19.161.1.2 `writePcd()` char `writePcd` (

```
    EmbPattern * pattern,
    FILE * file )
```

## 19.162 extern/libembroidery/src/formats/format\_pcm.c File Reference

```
#include <stdio.h>
#include <math.h>
#include "../embroidery_internal.h"
```

## Functions

- char `readPcm` (`EmbPattern` \*pattern, FILE \*file)
- char `writePcm` (`EmbPattern` \*pattern, FILE \*file)

### 19.162.1 Function Documentation

#### 19.162.1.1 `readPcm()` char `readPcm` (

```
    EmbPattern * pattern,
    FILE * file )
```

#### 19.162.1.2 `writePcm()` char `writePcm` (

```
    EmbPattern * pattern,
    FILE * file )
```

## 19.163 extern/libembroidery/src/formats/format\_pcq.c File Reference

```
#include <stdio.h>
#include <string.h>
#include <math.h>
#include "../embroidery_internal.h"
```

### Functions

- char `readPcq` (`EmbPattern` \*pattern, const char \*fileName, FILE \*file)
- char `writePcq` (`EmbPattern` \*pattern, FILE \*file)

#### 19.163.1 Function Documentation

**19.163.1.1 `readPcq()`** char `readPcq` (  
    `EmbPattern` \* *pattern*,  
    const char \* *fileName*,  
    FILE \* *file* )

**19.163.1.2 `writePcq()`** char `writePcq` (  
    `EmbPattern` \* *pattern*,  
    FILE \* *file* )

## 19.164 extern/libembroidery/src/formats/format\_pcs.c File Reference

```
#include <stdio.h>
#include <string.h>
#include <math.h>
#include "../embroidery_internal.h"
```

### Functions

- char `readPcs` (`EmbPattern` \*pattern, const char \*fileName, FILE \*file)
- char `writePcs` (`EmbPattern` \*pattern, FILE \*file)

#### 19.164.1 Function Documentation

```
19.164.1.1 readPcs() char readPcs (
    EmbPattern * pattern,
    const char * fileName,
    FILE * file )
```

```
19.164.1.2 writePcs() char writePcs (
    EmbPattern * pattern,
    FILE * file )
```

## 19.165 extern/libembroidery/src/formats/format\_pec.c File Reference

```
#include <stdio.h>
#include <string.h>
#include <math.h>
#include "../embroidery_internal.h"
```

### Functions

- void **readPecStitches** (EmbPattern \*pattern, FILE \*file)
- void **pecEncodeJump** (FILE \*file, int x, int types)
- void **pecEncodeStop** (FILE \*file, unsigned char val)
- char **readPec** (EmbPattern \*pattern, const char \*fileName, FILE \*file)
- void **pecEncode** (FILE \*file, EmbPattern \*p)
- void **writelImage** (FILE \*file, unsigned char image[][48])
- void **writePecStitches** (EmbPattern \*pattern, FILE \*file, const char \*fileName)
- char **writePec** (EmbPattern \*pattern, const char \*fileName, FILE \*file)

### 19.165.1 Function Documentation

```
19.165.1.1 pecEncode() void pecEncode (
    FILE * file,
    EmbPattern * p )
```

```
19.165.1.2 pecEncodeJump() void pecEncodeJump (
    FILE * file,
    int x,
    int types )
```

**19.165.1.3 pecEncodeStop()** void pecEncodeStop (

```
FILE * file,
unsigned char val )
```

**19.165.1.4 readPec()** char readPec (

```
EmbPattern * pattern,
const char * fileName,
FILE * file )
```

**19.165.1.5 readPecStitches()** void readPecStitches (

```
EmbPattern * pattern,
FILE * file )
```

**19.165.1.6 writeImage()** void writeImage (

```
FILE * file,
unsigned char image[][][48] )
```

**Parameters**

<i>file</i>	
<i>image</i>	

for the PES embedded

**19.165.1.7 writePec()** char writePec (

```
EmbPattern * pattern,
const char * fileName,
FILE * file )
```

**19.165.1.8 writePecStitches()** void writePecStitches (

```
EmbPattern * pattern,
FILE * file,
const char * fileName )
```

## **19.166 extern/libembroidery/src/formats/format\_pel.c File Reference**

```
#include <stdio.h>
#include <math.h>
#include "../embroidery_internal.h"
```

## Functions

- char `readPel` (`EmbPattern` \*pattern, `FILE` \*file)
- char `writePel` (`EmbPattern` \*pattern, `FILE` \*file)

### 19.166.1 Function Documentation

#### 19.166.1.1 `readPel()` char readPel (

```
    EmbPattern * pattern,
    FILE * file )
```

#### 19.166.1.2 `writePel()` char writePel (

```
    EmbPattern * pattern,
    FILE * file )
```

## 19.167 `extern/libembroidery/src/formats/format_pem.c` File Reference

```
#include <stdio.h>
#include <math.h>
#include "../embroidery_internal.h"
```

## Functions

- char `readPem` (`EmbPattern` \*pattern, `FILE` \*file)
- char `writePem` (`EmbPattern` \*pattern, `FILE` \*file)

### 19.167.1 Function Documentation

#### 19.167.1.1 `readPem()` char readPem (

```
    EmbPattern * pattern,
    FILE * file )
```

#### 19.167.1.2 `writePem()` char writePem (

```
    EmbPattern * pattern,
    FILE * file )
```

## 19.168 extern/libembroidery/src/formats/format\_pes.c File Reference

```
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <math.h>
#include "../embroidery_internal.h"
```

### Functions

- char `readPes` (`EmbPattern` \*pattern, const char \*fileName, `FILE` \*file)
- void `readDescriptions` (`FILE` \*file, `EmbPattern` \*pattern)
- void `readPESHeaderV5` (`FILE` \*file, `EmbPattern` \*pattern)
- void `readPESHeaderV6` (`FILE` \*file, `EmbPattern` \*pattern)
- void `readPESHeaderV7` (`FILE` \*file, `EmbPattern` \*pattern)
- void `readPESHeaderV8` (`FILE` \*file, `EmbPattern` \*pattern)
- void `readPESHeaderV9` (`FILE` \*file, `EmbPattern` \*pattern)
- void `readPESHeaderV10` (`FILE` \*file, `EmbPattern` \*pattern)
- void `readHoopName` (`FILE` \*file, `EmbPattern` \*pattern)
- void `readImageString` (`FILE` \*file, `EmbPattern` \*pattern)
- void `readProgrammableFills` (`FILE` \*file, `EmbPattern` \*pattern)
- void `readMotifPatterns` (`FILE` \*file, `EmbPattern` \*pattern)
- void `readFeatherPatterns` (`FILE` \*file, `EmbPattern` \*pattern)
- void `readThreads` (`FILE` \*file, `EmbPattern` \*pattern)
- void `pesWriteSewSegSection` (`EmbPattern` \*pattern, `FILE` \*file)
- void `pesWriteEmbOneSection` (`EmbPattern` \*pattern, `FILE` \*file)
- char `writePes` (`EmbPattern` \*pattern, const char \*fileName, `FILE` \*file)

### Variables

- const char \* `pes_version_strings` []
- int `pes_version` = PES0001

#### 19.168.1 Function Documentation

**19.168.1.1 pesWriteEmbOneSection()** `void pesWriteEmbOneSection (`  
`EmbPattern * pattern,`  
`FILE * file )`

**19.168.1.2 pesWriteSewSegSection()** `void pesWriteSewSegSection (`  
`EmbPattern * pattern,`  
`FILE * file )`

**19.168.1.3 readDescriptions()** void readDescriptions (

```
FILE * file,
EmbPattern * pattern )
```

**19.168.1.4 readFeatherPatterns()** void readFeatherPatterns (

```
FILE * file,
EmbPattern * pattern )
```

**19.168.1.5 readHoopName()** void readHoopName (

```
FILE * file,
EmbPattern * pattern )
```

**19.168.1.6 readImageString()** void readImageString (

```
FILE * file,
EmbPattern * pattern )
```

**19.168.1.7 readMotifPatterns()** void readMotifPatterns (

```
FILE * file,
EmbPattern * pattern )
```

**19.168.1.8 readPes()** char readPes (

```
EmbPattern * pattern,
const char * fileName,
FILE * file )
```

**19.168.1.9 readPESHeaderV10()** void readPESHeaderV10 (

```
FILE * file,
EmbPattern * pattern )
```

**19.168.1.10 readPESHeaderV5()** void readPESHeaderV5 (

```
FILE * file,
EmbPattern * pattern )
```

```
19.168.1.11 readPESHeaderV6() void readPESHeaderV6 (
    FILE * file,
    EmbPattern * pattern )
```

```
19.168.1.12 readPESHeaderV7() void readPESHeaderV7 (
    FILE * file,
    EmbPattern * pattern )
```

```
19.168.1.13 readPESHeaderV8() void readPESHeaderV8 (
    FILE * file,
    EmbPattern * pattern )
```

```
19.168.1.14 readPESHeaderV9() void readPESHeaderV9 (
    FILE * file,
    EmbPattern * pattern )
```

```
19.168.1.15 readProgrammableFills() void readProgrammableFills (
    FILE * file,
    EmbPattern * pattern )
```

```
19.168.1.16 readThreads() void readThreads (
    FILE * file,
    EmbPattern * pattern )
```

```
19.168.1.17 writePes() char writePes (
    EmbPattern * pattern,
    const char * fileName,
    FILE * file )
```

## 19.168.2 Variable Documentation

```
19.168.2.1 pes_version int pes_version = PES0001
```

### 19.168.2.2 pes\_version\_strings const char\* pes\_version\_strings[]

#### Initial value:

```
= {
    "#PES0001",
    "#PES0020",
    "#PES0022",
    "#PES0030",
    "#PES0040",
    "#PES0050",
    "#PES0055",
    "#PES0056",
    "#PES0060",
    "#PES0070",
    "#PES0080",
    "#PES0090",
    "#PES0100",
}
```

## 19.169 extern/libembroidery/src/formats/format\_phb.c File Reference

```
#include <stdio.h>
#include <math.h>
#include "../embroidery_internal.h"
```

### Functions

- char [readPhb](#) ([EmbPattern](#) \*pattern, FILE \*file)
- char [writePhb](#) ([EmbPattern](#) \*pattern, FILE \*file)

### 19.169.1 Function Documentation

**19.169.1.1 [readPhb\(\)](#)** char [readPhb](#) (

```
    EmbPattern * pattern,
    FILE * file )
```

**19.169.1.2 [writePhb\(\)](#)** char [writePhb](#) (

```
    EmbPattern * pattern,
    FILE * file )
```

## 19.170 extern/libembroidery/src/formats/format\_phc.c File Reference

```
#include <stdio.h>
#include <math.h>
#include "../embroidery_internal.h"
```

**Functions**

- char `readPhc` (`EmbPattern` \**pattern*, `FILE` \**file*)
- char `writePhc` (`EmbPattern` \**pattern*, `FILE` \**file*)

**19.170.1 Function Documentation****19.170.1.1 `readPhc()`** char `readPhc` (

```
    EmbPattern * pattern,  
    FILE * file )
```

**19.170.1.2 `writePhc()`** char `writePhc` (

```
    EmbPattern * pattern,  
    FILE * file )
```

**19.171 `extern/libembroidery/src/formats/format_plt.c` File Reference**

```
#include <stdio.h>  
#include <math.h>  
#include "../embroidery_internal.h"
```

**Functions**

- char `readPlt` (`EmbPattern` \**pattern*, `FILE` \**file*)
- char `writePlt` (`EmbPattern` \**pattern*, `FILE` \**file*)

**19.171.1 Function Documentation****19.171.1.1 `readPlt()`** char `readPlt` (

```
    EmbPattern * pattern,  
    FILE * file )
```

**19.171.1.2 `writePlt()`** char `writePlt` (

```
    EmbPattern * pattern,  
    FILE * file )
```

## 19.172 extern/libembroidery/src/formats/format\_rgb.c File Reference

```
#include <stdio.h>
#include <string.h>
#include <math.h>
#include "../embroidery_internal.h"
```

### Functions

- char `readRgb` (`EmbPattern` \*pattern, `FILE` \*file)
- char `writeRgb` (`EmbPattern` \*pattern, `FILE` \*file)

#### 19.172.1 Function Documentation

```
19.172.1.1 readRgb() char readRgb (
    EmbPattern * pattern,
    FILE * file )
```

```
19.172.1.2 writeRgb() char writeRgb (
    EmbPattern * pattern,
    FILE * file )
```

## 19.173 extern/libembroidery/src/formats/format\_sew.c File Reference

```
#include <stdio.h>
#include <math.h>
#include "../embroidery_internal.h"
```

### Functions

- char `sewDecode` (unsigned char inputByte)
- char `readSew` (`EmbPattern` \*pattern, `FILE` \*file)
- char `writeSew` (`EmbPattern` \*pattern, `FILE` \*file)

#### 19.173.1 Function Documentation

```
19.173.1.1 readSew() char readSew (
    EmbPattern * pattern,
    FILE * file )
```

```
19.173.1.2 sewDecode() char sewDecode (
    unsigned char inputByte )
```

```
19.173.1.3 writeSew() char writeSew (
    EmbPattern * pattern,
    FILE * file )
```

## 19.174 **extern/libembroidery/src/formats/format\_shv.c** File Reference

```
#include <stdio.h>
#include <string.h>
#include <math.h>
#include "../embroidery_internal.h"
```

### Functions

- char **shvDecode** (unsigned char inputByte)
- short **shvDecodeShort** (unsigned short inputByte)
- char **readShv** (EmbPattern \*pattern, FILE \*file)
- char **writeShv** (EmbPattern \*pattern, FILE \*file)

### 19.174.1 Function Documentation

```
19.174.1.1 readShv() char readShv (
    EmbPattern * pattern,
    FILE * file )
```

```
19.174.1.2 shvDecode() char shvDecode (
    unsigned char inputByte )
```

**19.174.1.3 shvDecodeShort()** short shvDecodeShort ( unsigned short *inputByte* )

**19.174.1.4 writeShv()** char writeShv ( EmbPattern \* *pattern*, FILE \* *file* )

## 19.175 extern/libembroidery/src/formats/format\_sst.c File Reference

```
#include <stdio.h>
#include <math.h>
#include "../embroidery_internal.h"
```

### Functions

- char **readSst** (EmbPattern \**pattern*, FILE \**file*)
- char **writeSst** (EmbPattern \**pattern*, FILE \**file*)

#### 19.175.1 Function Documentation

**19.175.1.1 readSst()** char readSst ( EmbPattern \* *pattern*, FILE \* *file* )

**19.175.1.2 writeSst()** char writeSst ( EmbPattern \* *pattern*, FILE \* *file* )

## 19.176 extern/libembroidery/src/formats/format\_stx.c File Reference

```
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <math.h>
#include "../embroidery_internal.h"
```

## Functions

- int `stxReadThread` (`StxThread` \*`thread`, `FILE` \*`file`)
- char `readStx` (`EmbPattern` \*`pattern`, `FILE` \*`file`)
- char `writeStx` (`EmbPattern` \*`pattern`, `FILE` \*`file`)

### 19.176.1 Function Documentation

#### 19.176.1.1 `readStx()` char `readStx` (

```
    EmbPattern * pattern,
    FILE * file )
```

#### 19.176.1.2 `stxReadThread()` int `stxReadThread` (

```
    StxThread * thread,
    FILE * file )
```

#### 19.176.1.3 `writeStx()` char `writeStx` (

```
    EmbPattern * pattern,
    FILE * file )
```

## 19.177 `extern/libembroidery/src/formats/format_svg.c` File Reference

```
#include <stdio.h>
#include <math.h>
#include "../embroidery_internal.h"
```

## Functions

- char `readSvg` (`EmbPattern` \*`pattern`, `FILE` \*`file`)
- char `writeSvg` (`EmbPattern` \*`pattern`, `FILE` \*`file`)

## Variables

- int `svgCreator`
- int `svgExpect`
- int `svgMultiValue`
- int `current_element_id`
- `SvgAttribute` `attributeList` [1000]
- int `n_attributes` = 0
- char `currentAttribute` [1000]
- char `currentValue` [1000]

### 19.177.1 Function Documentation

**19.177.1.1 `readSvg()`** `char readSvg (`  
`EmbPattern * pattern,`  
`FILE * file )`

**19.177.1.2 `writeSvg()`** `char writeSvg (`  
`EmbPattern * pattern,`  
`FILE * file )`

Writes the data from `pattern` to a file with the given `fileName`. Returns `true` if successful, otherwise returns `false`.

### 19.177.2 Variable Documentation

**19.177.2.1 `attributeList`** `SvgAttribute attributeList[1000]`

**19.177.2.2 `current_element_id`** `int current_element_id`

**19.177.2.3 `currentAttribute`** `char currentAttribute[1000]`

**19.177.2.4 `currentValue`** `char currentValue[1000]`

**19.177.2.5 `n_attributes`** `int n_attributes = 0`

**19.177.2.6 `svgCreator`** `int svgCreator`

**19.177.2.7** `svgExpect` int `svgExpect`

**19.177.2.8** `svgMultiValue` int `svgMultiValue`

## 19.178 `extern/libembroidery/src/formats/format_t01.c` File Reference

```
#include <stdio.h>
#include <math.h>
#include "../embroidery_internal.h"
```

### Functions

- char `readT01` (`EmbPattern` \**pattern*, `FILE` \**file*)
- char `writeT01` (`EmbPattern` \**pattern*, `FILE` \**file*)

### 19.178.1 Function Documentation

**19.178.1.1** `readT01()` char `readT01` (  
    `EmbPattern` \* *pattern*,  
    `FILE` \* *file* )

**19.178.1.2** `writeT01()` char `writeT01` (  
    `EmbPattern` \* *pattern*,  
    `FILE` \* *file* )

## 19.179 `extern/libembroidery/src/formats/format_t09.c` File Reference

```
#include <stdio.h>
#include <math.h>
#include "../embroidery_internal.h"
```

### Functions

- char `readT09` (`EmbPattern` \**pattern*, `FILE` \**file*)
- char `writeT09` (`EmbPattern` \**pattern*, `FILE` \**file*)

### 19.179.1 Function Documentation

```
19.179.1.1 readT09() char readT09 (
    EmbPattern * pattern,
    FILE * file )
```

```
19.179.1.2 writeT09() char writeT09 (
    EmbPattern * pattern,
    FILE * file )
```

## 19.180 extern/libembroidery/src/formats/format\_tap.c File Reference

```
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include "../embroidery_internal.h"
```

### Functions

- void [encode\\_tap\\_record](#) (FILE \*file, int x, int y, int flags)
- int [decode\\_tap\\_record\\_flags](#) (unsigned char b2)
- char [readTap](#) (EmbPattern \*pattern, FILE \*file)
- char [writeTap](#) (EmbPattern \*pattern, FILE \*file)

### 19.180.1 Function Documentation

```
19.180.1.1 decode_tap_record_flags() int decode_tap_record_flags (
    unsigned char b2 )
```

```
19.180.1.2 encode_tap_record() void encode_tap_record (
    FILE * file,
    int x,
    int y,
    int flags )
```

```
19.180.1.3 readTap() char readTap (
    EmbPattern * pattern,
    FILE * file )
```

```
19.180.1.4 writeTap() char writeTap (
    EmbPattern * pattern,
    FILE * file )
```

## 19.181 extern/libembroidery/src/formats/format\_thr.c File Reference

```
#include <stdio.h>
#include <string.h>
#include <math.h>
#include "../embroidery_internal.h"
```

### Functions

- char **readThr** (EmbPattern \*pattern, FILE \*file)
- char **writeThr** (EmbPattern \*pattern, FILE \*file)

### 19.181.1 Function Documentation

```
19.181.1.1 readThr() char readThr (
    EmbPattern * pattern,
    FILE * file )
```

```
19.181.1.2 writeThr() char writeThr (
    EmbPattern * pattern,
    FILE * file )
```

## 19.182 extern/libembroidery/src/formats/format\_txt.c File Reference

```
#include <stdio.h>
#include <stdlib.h>
#include <math.h>
#include "../embroidery_internal.h"
```

## Functions

- char `readTxt` (`EmbPattern` \*pattern, `FILE` \*file)
- char `writeTxt` (`EmbPattern` \*pattern, `FILE` \*file)

### 19.182.1 Function Documentation

**19.182.1.1 `readTxt()`** char `readTxt` (  
    `EmbPattern` \* pattern,  
    `FILE` \* file )

**19.182.1.2 `writeTxt()`** char `writeTxt` (  
    `EmbPattern` \* pattern,  
    `FILE` \* file )

## 19.183 extern/libembroidery/src/formats/format\_u00.c File Reference

```
#include <stdio.h>
#include <string.h>
#include <math.h>
#include "../embroidery_internal.h"
```

## Functions

- char `readU00` (`EmbPattern` \*pattern, `FILE` \*file)
- char `writeU00` (`EmbPattern` \*pattern, `FILE` \*file)

### 19.183.1 Function Documentation

**19.183.1.1 `readU00()`** char `readU00` (  
    `EmbPattern` \* pattern,  
    `FILE` \* file )

**19.183.1.2 `writeU00()`** char `writeU00` (  
    `EmbPattern` \* pattern,  
    `FILE` \* file )

## 19.184 extern/libembroidery/src/formats/format\_u01.c File Reference

```
#include <stdio.h>
#include <math.h>
#include "../embroidery_internal.h"
```

### Functions

- char `readU01` (`EmbPattern` \*pattern, `FILE` \*file)
- char `writeU01` (`EmbPattern` \*pattern, `FILE` \*file)

#### 19.184.1 Function Documentation

```
19.184.1.1 readU01() char readU01 (
    EmbPattern * pattern,
    FILE * file )
```

```
19.184.1.2 writeU01() char writeU01 (
    EmbPattern * pattern,
    FILE * file )
```

## 19.185 extern/libembroidery/src/formats/format\_vip.c File Reference

```
#include <stdio.h>
#include <stdlib.h>
#include <math.h>
#include "../embroidery_internal.h"
```

### Functions

- int `vipDecodeByte` (unsigned char b)
- int `vipDecodeStitchType` (unsigned char b)
- unsigned char \* `vipDecompressData` (unsigned char \*input, int compressedInputLength, int decompressedContentLength)
- char `readVip` (`EmbPattern` \*pattern, `FILE` \*file)
- unsigned char \* `vipCompressData` (unsigned char \*input, int decompressedInputSize, int \*compressedSize)
- unsigned char `vipEncodeByte` (`EmbReal` f)
- unsigned char `vipEncodeStitchType` (int st)
- char `writeVip` (`EmbPattern` \*pattern, `FILE` \*file)

## Variables

- const unsigned char [vipDecodingTable](#) []

### 19.185.1 Function Documentation

#### 19.185.1.1 [readVip\(\)](#) char readVip (

```
    EmbPattern * pattern,
    FILE * file )
```

#### 19.185.1.2 [vipCompressData\(\)](#) unsigned char \* vipCompressData (

```
    unsigned char * input,
    int decompressedInputSize,
    int * compressedSize )
```

#### 19.185.1.3 [vipDecodeByte\(\)](#) int vipDecodeByte (

```
    unsigned char b )
```

#### 19.185.1.4 [vipDecodeStitchType\(\)](#) int vipDecodeStitchType (

```
    unsigned char b )
```

#### 19.185.1.5 [vipDecompressData\(\)](#) unsigned char \* vipDecompressData (

```
    unsigned char * input,
    int compressedInputLength,
    int decompressedContentLength )
```

#### 19.185.1.6 [vipEncodeByte\(\)](#) unsigned char vipEncodeByte (

```
    EmbReal f )
```

#### 19.185.1.7 [vipEncodeStitchType\(\)](#) unsigned char vipEncodeStitchType (

```
    int st )
```

---

```
19.185.1.8 writeVip() char writeVip (
    EmbPattern * pattern,
    FILE * file )
```

## 19.185.2 Variable Documentation

### 19.185.2.1 vipDecodingTable const unsigned char vipDecodingTable[ ]

#### Initial value:

```
= {
    0x2E, 0x82, 0xE4, 0x6F, 0x38, 0xA9, 0xDC, 0xC6, 0x7B, 0xB6, 0x28, 0xAC, 0xFD, 0xAA, 0x8A, 0x4E,
    0x76, 0x2E, 0xF0, 0xE4, 0x25, 0x1B, 0x8A, 0x68, 0x4E, 0x92, 0xB9, 0xB4, 0x95, 0xF0, 0x3E, 0xEF,
    0xF7, 0x40, 0x24, 0x18, 0x39, 0x31, 0xBB, 0xE1, 0x53, 0x8A, 0x1F, 0xB1, 0x3A, 0x07, 0xFB, 0xCB,
    0xE6, 0x00, 0x81, 0x50, 0x0E, 0x40, 0xE1, 0x2C, 0x73, 0x50, 0x0D, 0x91, 0xD6, 0x0A, 0x5D, 0xD6,
    0x8B, 0xB8, 0x62, 0xAE, 0x47, 0x00, 0x53, 0x5A, 0xB7, 0x80, 0xAA, 0x28, 0xF7, 0x5D, 0x70, 0x5E,
    0x2C, 0x0B, 0x98, 0xE3, 0xA0, 0x98, 0x60, 0x47, 0x89, 0x9B, 0x82, 0xFB, 0x40, 0xC9, 0xB4, 0x00,
    0x0E, 0x68, 0x6A, 0x1E, 0x09, 0x85, 0xC0, 0x53, 0x81, 0xD1, 0x98, 0x89, 0xAF, 0xE8, 0x85, 0x4F,
    0xE3, 0x69, 0x89, 0x03, 0xA1, 0x2E, 0x8F, 0xCF, 0xED, 0x91, 0x9F, 0x58, 0x1E, 0xD6, 0x84, 0x3C,
    0x09, 0x27, 0xBD, 0xF4, 0xC3, 0x90, 0xC0, 0x51, 0x1B, 0x2B, 0x63, 0xBC, 0xB9, 0x3D, 0x40, 0x4D,
    0x62, 0x6F, 0xE0, 0x8C, 0xF5, 0x5D, 0x08, 0xFD, 0x3D, 0x50, 0x36, 0xD7, 0xC9, 0x43, 0xE4,
    0x2D, 0xCB, 0x95, 0xB6, 0xF4, 0xD, 0xEA, 0xC2, 0xFD, 0x66, 0x3F, 0x5E, 0xBD, 0x69, 0x06, 0x2A,
    0x03, 0x19, 0x47, 0x2B, 0xDF, 0x38, 0xEA, 0x4F, 0x80, 0x49, 0x95, 0xB2, 0xD6, 0xF9, 0x9A, 0x75,
    0xF4, 0xD8, 0x9B, 0x1D, 0xB0, 0x44, 0x69, 0xDB, 0xA9, 0x21, 0x79, 0x6F, 0xD8, 0xDE, 0x33, 0xFE,
    0x9F, 0x04, 0xE5, 0x9A, 0x6B, 0x9B, 0x73, 0x83, 0x62, 0x7C, 0xB9, 0x66, 0x76, 0xF2, 0x5B, 0xC9,
    0x5E, 0xFC, 0x74, 0xAA, 0x6C, 0xF1, 0xCD, 0x93, 0xCE, 0xE9, 0x80, 0x53, 0x03, 0x3B, 0x97, 0x4B,
    0x39, 0x76, 0xC2, 0xC1, 0x56, 0xCB, 0x70, 0xFD, 0x3B, 0x3E, 0x52, 0x57, 0x81, 0x5D, 0x56, 0x8D,
    0x51, 0x90, 0xD4, 0x76, 0xD7, 0x55, 0x16, 0x02, 0x6D, 0xF2, 0x4D, 0xE1, 0x0E, 0x96, 0x4F, 0xA1,
    0x3A, 0xA0, 0x60, 0x59, 0x64, 0x04, 0x1A, 0xE4, 0x67, 0xB6, 0xED, 0x3F, 0x74, 0x20, 0x55, 0x1F,
    0xFB, 0x23, 0x92, 0x91, 0x53, 0xC8, 0x65, 0xAB, 0x9D, 0x51, 0xD6, 0x73, 0xDE, 0x01, 0xB1, 0x80,
    0xB7, 0xC0, 0xD6, 0x80, 0x1C, 0x2E, 0x3C, 0x83, 0x63, 0xEE, 0xBC, 0x33, 0x25, 0xE2, 0x0E, 0x7A,
    0x67, 0xDE, 0x3F, 0x71, 0x14, 0x49, 0x9C, 0x92, 0x93, 0x0D, 0x26, 0x9A, 0x0E, 0xDA, 0xED, 0x6F,
    0xA4, 0x89, 0x0C, 0x1B, 0xF0, 0xA1, 0xDF, 0xE1, 0x9E, 0x3C, 0x04, 0x78, 0xE4, 0xAB, 0x6D, 0xFF,
    0x9C, 0xAF, 0xCA, 0xC7, 0x88, 0x17, 0x9C, 0xE5, 0xB7, 0x33, 0x6D, 0xDC, 0xED, 0x8F, 0x6C, 0x18,
    0x1D, 0x71, 0x06, 0xB1, 0xC5, 0xE2, 0xCF, 0x13, 0x77, 0x81, 0xC5, 0xB7, 0x0A, 0x14, 0x0A, 0x6B,
    0x40, 0x26, 0xA0, 0x88, 0xD1, 0x62, 0x6A, 0xB3, 0x50, 0x12, 0xB9, 0x9B, 0xB5, 0x83, 0x9B, 0x37
}
```

## 19.186 extern/libembroidery/src/formats/format\_vp3.c File Reference

```
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <math.h>
#include "../embroidery_internal.h"
```

## Functions

- unsigned char \* **vp3ReadString** (FILE \*file)
- int **vp3Decode** (unsigned char inputByte)
- short **vp3DecodeInt16** (unsigned short inputByte)
- **vp3Hoop vp3ReadHoopSection** (FILE \*file)
- char **readVp3** (EmbPattern \*pattern, FILE \*file)
- void **vp3WriteStringLen** (FILE \*file, const char \*str, int len)
- void **vp3WriteString** (FILE \*file, const char \*str)
- void **vp3PatchByteCount** (FILE \*file, int offset, int adjustment)
- char **writeVp3** (EmbPattern \*pattern, FILE \*file)

### 19.186.1 Function Documentation

**19.186.1.1 `readVp3()`** `char readVp3 (`  
    `EmbPattern * pattern,`  
    `FILE * file )`

**19.186.1.2 `vp3Decode()`** `int vp3Decode (`  
    `unsigned char inputByte )`

**19.186.1.3 `vp3DecodeInt16()`** `short vp3DecodeInt16 (`  
    `unsigned short inputByte )`

**19.186.1.4 `vp3PatchByteCount()`** `void vp3PatchByteCount (`  
    `FILE * file,`  
    `int offset,`  
    `int adjustment )`

**19.186.1.5 `vp3ReadHoopSection()`** `vp3Hoop vp3ReadHoopSection (`  
    `FILE * file )`

**19.186.1.6 `vp3ReadString()`** `unsigned char * vp3ReadString (`  
    `FILE * file )`

**19.186.1.7 `vp3WriteString()`** `void vp3WriteString (`  
    `FILE * file,`  
    `const char * str )`

**19.186.1.8 `vp3WriteStringLen()`** `void vp3WriteStringLen (`  
    `FILE * file,`  
    `const char * str,`  
    `int len )`

```
19.186.1.9 writeVp3() char writeVp3 (
    EmbPattern * pattern,
    FILE * file )
```

## 19.187 extern/libembroidery/src/formats/format\_xxx.c File Reference

```
#include <stdio.h>
#include <string.h>
#include <math.h>
#include "../embroidery_internal.h"
```

### Functions

- char [xxxDecodeByte](#) (unsigned char inputByte)
- char [readXxx](#) (EmbPattern \*pattern, FILE \*file)
- void [xxxEncodeStop](#) (FILE \*file, EmbStitch s)
- void [xxxEncodeStitch](#) (FILE \*file, EmbReal deltaX, EmbReal deltaY, int flags)
- void [xxxEncodeDesign](#) (FILE \*file, EmbPattern \*p)
- char [writeXxx](#) (EmbPattern \*pattern, FILE \*file)

### 19.187.1 Function Documentation

```
19.187.1.1 readXxx() char readXxx (
    EmbPattern * pattern,
    FILE * file )
```

```
19.187.1.2 writeXxx() char writeXxx (
    EmbPattern * pattern,
    FILE * file )
```

```
19.187.1.3 xxxDecodeByte() char xxxDecodeByte (
    unsigned char inputByte )
```

```
19.187.1.4 xxxEncodeDesign() void xxxEncodeDesign (
    FILE * file,
    EmbPattern * p )
```

```
19.187.1.5 xxxEncodeStitch() void xxxEncodeStitch (
    FILE * file,
    EmbReal deltaX,
    EmbReal deltaY,
    int flags )
```

```
19.187.1.6 xxxEncodeStop() void xxxEncodeStop (
    FILE * file,
    EmbStitch s )
```

## 19.188 extern/libembroidery/src/formats/format\_zsk.c File Reference

```
#include <stdio.h>
#include <string.h>
#include "../embroidery_internal.h"
```

### Functions

- char `readZsk` (`EmbPattern` \*`pattern`, `FILE` \*`file`)
- char `writeZsk` (`EmbPattern` \*`pattern`, `FILE` \*`file`)

### 19.188.1 Function Documentation

```
19.188.1.1 readZsk() char readZsk (
    EmbPattern * pattern,
    FILE * file )
```

```
19.188.1.2 writeZsk() char writeZsk (
    EmbPattern * pattern,
    FILE * file )
```

## 19.189 extern/libembroidery/src/formats/format.md File Reference

## 19.190 extern/libembroidery/src/geometry.c File Reference

```
#include <stdio.h>
#include <stdlib.h>
#include <math.h>
#include "embroidery.h"
```

## Functions

- `EmbGeometry * embGeometry_init (int type_in)`  
*Our generic object interface backends to each individual type.*
- `void embGeometry_free (EmbGeometry *obj)`  
*Free the memory occupied by a non-stitch geometry object.*
- `void embGeometry_move (EmbGeometry *obj, EmbVector delta)`  
*Translate obj by the vector delta.*
- `EmbRect embGeometry_boundingRect (EmbGeometry *obj)`  
*Calculate the bounding box of geometry obj based on what kind of geometric object it is.*
- `void embGeometry_vulcanize (EmbGeometry *obj)`  
*Toggle the rubber mode of the object.*

### 19.190.1 Function Documentation

**19.190.1.1 embGeometry\_boundingRect()** `EmbRect embGeometry_boundingRect (`  
`EmbGeometry * obj )`

Calculate the bounding box of geometry *obj* based on what kind of geometric object it is.

#### Parameters

<code>obj</code>	A pointer to the geometry memory.
------------------	-----------------------------------

#### Returns

`EmbRect` The bounding box in the same scale as the input geometry.

In the case of a failure the bounding box returned is always the unit square with top left corner at (0, 0).

**19.190.1.2 embGeometry\_free()** `void embGeometry_free (`  
`EmbGeometry * obj )`

Free the memory occupied by a non-stitch geometry object.

#### Parameters

<code>obj</code>	Pointer to geometry memory.
------------------	-----------------------------

**19.190.1.3 embGeometry\_init()** `EmbGeometry * embGeometry_init (`  
`int type_in )`

Our generic object interface backends to each individual type.

**Parameters**

<i>type</i> <i>_in</i>	
---------------------------	--

**Returns**

EmbGeometry\*

**19.190.1.4 embGeometry\_move()** void embGeometry\_move (

<code>EmbGeometry * obj,</code>
<code>EmbVector delta )</code>

Translate *obj* by the vector *delta*.

**Parameters**

<i>obj</i>	A pointer to the geometry memory.
<i>delta</i>	A vector in the 0.1mm scale to offset the geometry by.

**19.190.1.5 embGeometry\_vulcanize()** void embGeometry\_vulcanize (

<code>EmbGeometry * obj )</code>
----------------------------------

Toggle the rubber mode of the object.

**Parameters**

<i>obj</i>	
------------	--

**Todo** Review. This could be controlled by a simple flag.

## 19.191 extern/libembroidery/src/geometry/arc.c File Reference

```
#include <stdio.h>
#include <stdlib.h>
#include <math.h>
#include "../embroidery.h"
```

### Functions

- [EmbArc embArc\\_init](#) (void)

- char `embArc_clockwise` (`EmbArc arc`)
- void `getArcCenter` (`EmbArc arc, EmbVector *arcCenter`)
- char `getArcDataFromBulge` (`EmbReal bulge, EmbArc *arc, EmbReal *arcCenterX, EmbReal *arcCenterY, EmbReal *radius, EmbReal *diameter, EmbReal *chord, EmbReal *chordMidX, EmbReal *chordMidY, EmbReal *sagitta, EmbReal *apothem, EmbReal *incAngleInDegrees, char *clockwise`)
- char `clockwise` (`EmbGeometry *obj`)
- void `embArc_setCenter` (`EmbArc *arc, EmbVector point`)
- void `embArc_setRadius` (`EmbArc *arc, float radius`)
- void `embArc_setStartAngle` (`EmbArc *arc, float angle`)
- void `embArc_setEndAngle` (`EmbArc *arc, float angle`)
- float `embArc_startAngle` (`EmbArc arc`)
- float `embArc_endAngle` (`EmbArc arc`)
- float `embArc_area` (`EmbArc arc`)
- float `embArc_arcLength` (`EmbArc arc`)
- float `embArc_chord` (`EmbArc arc`)
- float `embArc_includedAngle` (`EmbArc arc`)
- char `Arc_clockwise` ()
- void `embArc_updatePath` (`EmbArc arc`)
- void `embArc_paint` (`void`)
- void `embArc_updateRubber` (`EmbArc arc, int pattern, int layer, int index`)
- `EmbVector embArc_mouseSnapPoint` (`EmbArc arc, EmbVector mousePoint`)
- void `embArc_gripEdit` (`EmbArc *arc, EmbVector before, EmbVector after`)
- void `set_object_color` (`EmbGeometry *obj, EmbColor color`)
- void `embBaseSetColorRGB` (`EmbGeometry *obj, unsigned int rgb`)
- void `Base_setLineType` (`EmbGeometry *obj, int lineType`)
- void `Base_setLineWidth` (`EmbGeometry *obj, float lineWidth`)
- `EmbVector Base_objectRubberPoint` (`EmbGeometry *obj, const char *key`)
- const char \* `Base_objectRubberText` (`EmbGeometry *obj, const char *key`)
- void `embCircle_prompt` (`const char *str`)
- void `embCircle_setArea` (`EmbCircle *circle, float area`)
- void `embCircle_setCircumference` (`EmbCircle *circle, float circumference`)
- void `embEllipse_main` ()
- void `embEllipse_click` (`float x, float y`)
- `EmbVector embRect_bottomLeft` (`EmbRect rect`)
- `EmbVector embRect_bottomRight` (`EmbRect rect`)

### 19.191.1 Function Documentation

#### 19.191.1.1 Arc\_clockwise() char Arc\_clockwise ( )

#### 19.191.1.2 Base\_objectRubberPoint() `EmbVector Base_objectRubberPoint (` `EmbGeometry * obj,` `const char * key )`

**19.191.1.3 Base\_objectRubberText()** const char \* Base\_objectRubberText ( EmbGeometry \* obj,  
const char \* key )

**19.191.1.4 Base\_setLineType()** void Base\_setLineType ( EmbGeometry \* obj,  
int lineType )

**19.191.1.5 Base\_setLineWeight()** void Base\_setLineWeight ( EmbGeometry \* obj,  
float lineWeight )

**19.191.1.6 clockwise()** char clockwise ( EmbGeometry \* obj )

**19.191.1.7 embArc\_arcLength()** float embArc\_arcLength ( EmbArc arc )

**19.191.1.8 embArc\_area()** float embArc\_area ( EmbArc arc )

**19.191.1.9 embArc\_chord()** float embArc\_chord ( EmbArc arc )

**19.191.1.10 embArc\_clockwise()** char embArc\_clockwise ( EmbArc arc )

**19.191.1.11 embArc\_endAngle()** float embArc\_endAngle ( EmbArc arc )

**19.191.1.12** `embArc_gripEdit()` `void embArc_gripEdit (`  
`EmbArc * arc,`  
`EmbVector before,`  
`EmbVector after )`

**19.191.1.13** `embArc_includedAngle()` `float embArc_includedAngle (`  
`EmbArc arc )`

**19.191.1.14** `embArc_init()` `EmbArc embArc_init (`  
`void )`

**19.191.1.15** `embArc_mouseSnapPoint()` `EmbVector embArc_mouseSnapPoint (`  
`EmbArc arc,`  
`EmbVector mousePoint )`

**19.191.1.16** `embArc_paint()` `void embArc_paint (`  
`void )`

**19.191.1.17** `embArc_setCenter()` `void embArc_setCenter (`  
`EmbArc * arc,`  
`EmbVector point )`

**19.191.1.18** `embArc_setEndAngle()` `void embArc_setEndAngle (`  
`EmbArc * arc,`  
`float angle )`

**19.191.1.19** `embArc_setRadius()` `void embArc_setRadius (`  
`EmbArc * arc,`  
`float radius )`

**19.191.1.20 embArc\_setStartAngle()** void embArc\_setStartAngle ( EmbArc \* arc,  
float angle )

**19.191.1.21 embArc\_startAngle()** float embArc\_startAngle ( EmbArc arc )

**19.191.1.22 embArc\_updatePath()** void embArc\_updatePath ( EmbArc arc )

**19.191.1.23 embArc\_updateRubber()** void embArc\_updateRubber ( EmbArc arc,  
int pattern,  
int layer,  
int index )

**19.191.1.24 embBaseSetColorRGB()** void embBaseSetColorRGB ( EmbGeometry \* obj,  
unsigned int rgb )

**19.191.1.25 embCircle\_prompt()** void embCircle\_prompt ( const char \* str )

**19.191.1.26 embCircle\_setArea()** void embCircle\_setArea ( EmbCircle \* circle,  
float area )

**19.191.1.27 embCircle\_setCircumference()** void embCircle\_setCircumference ( EmbCircle \* circle,  
float circumference )

**19.191.1.28 embEllipse\_click()** void embEllipse\_click ( float x, float y )

**19.191.1.29 embEllipse\_main()** void embEllipse\_main ( )

**19.191.1.30 embRect\_bottomLeft()** EmbVector embRect\_bottomLeft ( EmbRect rect )

**19.191.1.31 embRect\_bottomRight()** EmbVector embRect\_bottomRight ( EmbRect rect )

**19.191.1.32 getArcCenter()** void getArcCenter ( EmbArc arc, EmbVector \* arcCenter )

**19.191.1.33 getArcDataFromBulge()** char getArcDataFromBulge ( EmbReal bulge, EmbArc \* arc, EmbReal \* arcCenterX, EmbReal \* arcCenterY, EmbReal \* radius, EmbReal \* diameter, EmbReal \* chord, EmbReal \* chordMidX, EmbReal \* chordMidY, EmbReal \* sagitta, EmbReal \* apothem, EmbReal \* incAngleInDegrees, char \* clockwise )

**19.191.1.34 set\_object\_color()** void set\_object\_color ( EmbGeometry \* obj, EmbColor color )

## 19.192 extern/libembroidery/src/geometry/circle.c File Reference

```
#include <stdio.h>
#include <stdlib.h>
#include <math.h>
#include "../embroidery.h"
```

### Functions

- EmbCircle embCircle\_init (void)
- EmbReal embCircle\_area (EmbCircle circle)
- EmbReal embCircle\_circumference (EmbCircle circle)
- int getCircleCircleIntersections (EmbCircle c0, EmbCircle c1, EmbVector \*p0, EmbVector \*p1)
- int getCircleTangentPoints (EmbCircle c, EmbVector point, EmbVector \*t0, EmbVector \*t1)

#### 19.192.1 Function Documentation

**19.192.1.1 embCircle\_area()** EmbReal embCircle\_area (

```
EmbCircle circle )
```

**19.192.1.2 embCircle\_circumference()** EmbReal embCircle\_circumference (

```
EmbCircle circle )
```

**19.192.1.3 embCircle\_init()** EmbCircle embCircle\_init (

```
void )
```

**19.192.1.4 getCircleCircleIntersections()** int getCircleCircleIntersections (

```
EmbCircle c0,
EmbCircle c1,
EmbVector * p0,
EmbVector * p1 )
```

**19.192.1.5 getCircleTangentPoints()** int getCircleTangentPoints (

```
EmbCircle c,
EmbVector point,
EmbVector * t0,
EmbVector * t1 )
```

## 19.193 extern/libembroidery/src/geometry/ellipse.c File Reference

```
#include <stdio.h>
#include <stdlib.h>
#include <math.h>
#include "../embroidery.h"
```

### Functions

- `EmbEllipse embEllipse_init (void)`
- `EmbReal embEllipse_area (EmbEllipse ellipse)`
- `EmbReal embEllipse_perimeter (EmbEllipse ellipse)`
- `EmbReal embEllipse_diameterX (EmbEllipse ellipse)`
- `EmbReal embEllipse_diameterY (EmbEllipse ellipse)`
- `EmbReal embEllipse_width (EmbEllipse ellipse)`
- `EmbReal embEllipse_height (EmbEllipse ellipse)`
- `void embEllipse_setSize (float width, float height)`
- `void embEllipse_setRadiusMajor (float radius)`
- `void embEllipse_setRadiusMinor (float radius)`
- `void embEllipse_setDiameterMajor (EmbEllipse *ellipse, float diameter)`
- `void embEllipse_setDiameterMinor (EmbEllipse *ellipse, float diameter)`
- `EmbVector ellipse_objectQuadrant0 (EmbEllipse *ellipse)`
- `EmbVector ellipse_objectQuadrant90 (EmbEllipse *ellipse)`
- `EmbVector ellipse_objectQuadrant180 (EmbEllipse *ellipse)`
- `EmbVector ellipse_objectQuadrant270 (EmbEllipse *ellipse)`
- `void embEllipse_updatePath ()`

#### 19.193.1 Function Documentation

**19.193.1.1 `ellipse_objectQuadrant0()`** `EmbVector ellipse_objectQuadrant0 (`  
`EmbEllipse * ellipse )`

**19.193.1.2 `ellipse_objectQuadrant180()`** `EmbVector ellipse_objectQuadrant180 (`  
`EmbEllipse * ellipse )`

**19.193.1.3 `ellipse_objectQuadrant270()`** `EmbVector ellipse_objectQuadrant270 (`  
`EmbEllipse * ellipse )`

**19.193.1.4 ellipse\_objectQuadrant90()** `EmbVector` `ellipse_objectQuadrant90 (`  
`EmbEllipse * ellipse )`

**19.193.1.5 embEllipse\_area()** `EmbReal` `embEllipse_area (`  
`EmbEllipse ellipse )`

**19.193.1.6 embEllipse\_diameterX()** `EmbReal` `embEllipse_diameterX (`  
`EmbEllipse ellipse )`

**19.193.1.7 embEllipse\_diameterY()** `EmbReal` `embEllipse_diameterY (`  
`EmbEllipse ellipse )`

**19.193.1.8 embEllipse\_height()** `EmbReal` `embEllipse_height (`  
`EmbEllipse ellipse )`

**19.193.1.9 embEllipse\_init()** `EmbEllipse` `embEllipse_init (`  
`void )`

**19.193.1.10 embEllipse\_perimeter()** `EmbReal` `embEllipse_perimeter (`  
`EmbEllipse ellipse )`

**19.193.1.11 embEllipse\_setDiameterMajor()** `void` `embEllipse_setDiameterMajor (`  
`EmbEllipse * ellipse,`  
`float diameter )`

**19.193.1.12 embEllipse\_setDiameterMinor()** `void` `embEllipse_setDiameterMinor (`  
`EmbEllipse * ellipse,`  
`float diameter )`

**19.193.1.13 `embEllipse_setRadiusMajor()`** void embEllipse\_setRadiusMajor ( float radius )

**19.193.1.14 `embEllipse_setRadiusMinor()`** void embEllipse\_setRadiusMinor ( float radius )

**19.193.1.15 `embEllipse_setSize()`** void embEllipse\_setSize ( float width, float height )

**19.193.1.16 `embEllipse_updatePath()`** void embEllipse\_updatePath ( )

**19.193.1.17 `embEllipse_width()`** EmbReal embEllipse\_width ( EmbEllipse ellipse )

## 19.194 extern/libembroidery/src/geometry/functions.c File Reference

```
#include <stdio.h>
#include <stdlib.h>
#include <math.h>
#include "../embroidery.h"
```

### Functions

- int `emb_round` (EmbReal x)
- EmbReal `radians` (EmbReal degree)
- EmbReal `degrees` (EmbReal radian)

#### 19.194.1 Function Documentation

**19.194.1.1 `degrees()`** EmbReal degrees ( EmbReal radian )

**19.194.1.2 `emb_round()`** `int emb_round (`  
`EmbReal x )`

**19.194.1.3 `radians()`** `EmbReal radians (`  
`EmbReal degree )`

## 19.195 `extern/libembroidery/src/geometry/geometry.md` File Reference

### 19.196 `extern/libembroidery/src/geometry/line.c` File Reference

```
#include <stdio.h>
#include <stdlib.h>
#include <math.h>
#include "../embroidery.h"
```

#### Functions

- `void embLine_normalVector (EmbLine line, EmbVector *result, int clockwise)`
- `EmbVector embLine_toVector (EmbLine line)`
- `EmbVector embLine_intersectionPoint (EmbLine line1, EmbLine line2)`

#### 19.196.1 Function Documentation

**19.196.1.1 `embLine_intersectionPoint()`** `EmbVector embLine_intersectionPoint (`  
`EmbLine line1,`  
`EmbLine line2 )`

**19.196.1.2 `embLine_normalVector()`** `void embLine_normalVector (`  
`EmbLine line,`  
`EmbVector * result,`  
`int clockwise )`

Finds the normalized vector perpendicular (*clockwise*) to the line given by v1->v2 (normal to the line)

**19.196.1.3 `embLine_toVector()`** `EmbVector embLine_toVector (`  
`EmbLine line )`

**19.197 extern/libembroidery/src/geometry/path.c File Reference**

```
#include <stdio.h>
#include <stdlib.h>
#include <math.h>
#include "../embroidery.h"
```

**19.198 extern/libembroidery/src/geometry/polygon.c File Reference**

```
#include <stdio.h>
#include <stdlib.h>
#include <math.h>
#include "../embroidery.h"
```

**19.199 extern/libembroidery/src/geometry/polyline.c File Reference**

```
#include <stdio.h>
#include <stdlib.h>
#include <math.h>
#include "../embroidery.h"
```

**19.200 extern/libembroidery/src/geometry/rect.c File Reference**

```
#include <stdio.h>
#include <stdlib.h>
#include <math.h>
#include "../embroidery.h"
```

**Functions**

- [EmbRect embRect\\_init \(void\)](#)
- [EmbReal embRect\\_area \(EmbRect rect\)](#)

**19.200.1 Function Documentation**

**19.200.1.1 embRect\_area()** [`EmbReal embRect\_area \(`](#)  
[`EmbRect rect \)`](#)

**19.200.1.2 embRect\_init()** `EmbRect` `embRect_init` (  
    `void` )

## 19.201 extern/libembroidery/src/geometry/text.c File Reference

```
#include <stdio.h>
#include <stdlib.h>
#include <math.h>
#include "../embroidery.h"
```

### Functions

- `void textSingle_setTextFont (const char *font)`
- `void textSingle_setJustify (const char *justify)`
- `void textSingle_setTextSize (float size)`
- `void textSingle_setTextStyle (char bold, char italic, char under, char strike, char over)`
- `void textSingle_setTextBold (char val)`
- `void textSingle_setTextItalic (char val)`
- `void textSingle_setTextUnderline (char val)`
- `void textSingle_setTextStrikeOut (char val)`
- `void textSingle_setTextOverline (char val)`
- `void textSingle_setTextBackward (char val)`
- `void textSingle_setTextUpsideDown (char val)`
- `void textSingle_paint ()`
- `void textSingle_updateRubber ()`
- `EmbVector textSingle_mouseSnapPoint (EmbVector mousePoint)`
- `void textSingle_gripEdit (EmbVector before, EmbVector after)`

### 19.201.1 Function Documentation

**19.201.1.1 textSingle\_gripEdit()** `void textSingle_gripEdit` (  
    `EmbVector` `before`,  
    `EmbVector` `after` )

**19.201.1.2 textSingle\_mouseSnapPoint()** `EmbVector` `textSingle_mouseSnapPoint` (  
    `EmbVector` `mousePoint` )

**19.201.1.3 textSingle\_paint()** `void textSingle_paint` ( )

**19.201.1.4 `textSingle_setJustify()`** void textSingle\_setJustify ( const char \* *justify* )

**19.201.1.5 `textSingle_setTextBackward()`** void textSingle\_setTextBackward ( char *val* )

**19.201.1.6 `textSingle_setTextBold()`** void textSingle\_setTextBold ( char *val* )

**19.201.1.7 `textSingle_setTextFont()`** void textSingle\_setTextFont ( const char \* *font* )

**19.201.1.8 `textSingle_setTextItalic()`** void textSingle\_setTextItalic ( char *val* )

**19.201.1.9 `textSingle_setTextOverline()`** void textSingle\_setTextOverline ( char *val* )

**19.201.1.10 `textSingle_setTextSize()`** void textSingle\_setTextSize ( float *size* )

**19.201.1.11 `textSingle_setTextStrikeOut()`** void textSingle\_setTextStrikeOut ( char *val* )

**19.201.1.12 `textSingle_setTextStyle()`** void textSingle\_setTextStyle ( char *bold*, char *italic*, char *under*, char *strike*, char *over* )

---

**19.201.1.13 textSingle\_setTextUnderline()** void textSingle\_setTextUnderline ( char val )

**19.201.1.14 textSingle\_setTextUpsideDown()** void textSingle\_setTextUpsideDown ( char val )

**19.201.1.15 textSingle\_updateRubber()** void textSingle\_updateRubber ( )

## 19.202 extern/libembroidery/src/geometry/vector.c File Reference

```
#include <stdio.h>
#include <stdlib.h>
#include <math.h>
#include "../embroidery.h"
```

### Functions

- void embVector\_normalize (EmbVector vector, EmbVector \*result)
- void embVector\_multiply (EmbVector vector, EmbReal magnitude, EmbVector \*result)
- EmbVector embVector\_add (EmbVector a, EmbVector b)
- EmbVector embVector\_average (EmbVector a, EmbVector b)
- EmbVector embVector\_subtract (EmbVector v1, EmbVector v2)
- EmbReal embVector\_dot (EmbVector a, EmbVector b)
- EmbReal embVector\_cross (EmbVector a, EmbVector b)
 

*The "cross product" as vectors a and b returned as a real value.*
- void embVector\_transpose\_product (EmbVector v1, EmbVector v2, EmbVector \*result)
- EmbReal embVector\_length (EmbVector vector)
- EmbReal embVector\_relativeX (EmbVector a1, EmbVector a2, EmbVector a3)
- EmbReal embVector\_relativeY (EmbVector a1, EmbVector a2, EmbVector a3)
- EmbReal embVector\_angle (EmbVector v)
- EmbVector embVector\_unit (EmbReal alpha)
- EmbReal embVector\_distance (EmbVector a, EmbVector b)

### 19.202.1 Function Documentation

---

**19.202.1.1 embVector\_add()** EmbVector embVector\_add ( EmbVector a, EmbVector b )

The sum of vectors *a* and *b* returned as a vector.

Equivalent to:

$$\mathbf{c} = \mathbf{a} + \mathbf{b} = \begin{pmatrix} a_x + b_x \\ a_y + b_y \end{pmatrix}$$

**19.202.1.2 embVector\_angle()** `EmbReal` `embVector_angle ( EmbVector v )`

The angle, measured anti-clockwise from the x-axis, of a vector *v*.

**19.202.1.3 embVector\_average()** `EmbVector` `embVector_average ( EmbVector a, EmbVector b )`

The average of vectors *v1* and *v2* returned as a vector.

Equivalent to:

$$\mathbf{c} = \frac{\mathbf{a} + \mathbf{b}}{2} = \begin{pmatrix} \frac{a_x+b_x}{2} \\ \frac{a_y+b_y}{2} \end{pmatrix}$$

**19.202.1.4 embVector\_cross()** `EmbReal` `embVector_cross ( EmbVector a, EmbVector b )`

The "cross product" as vectors *a* and *b* returned as a real value.

Technically, this is the magnitude of the cross product when the embroidery is placed in the z=0 plane (since the cross product is defined for 3-dimensional vectors). That is:

$$|c| = \left| \begin{pmatrix} a_x \\ a_y \\ 0 \end{pmatrix} \times \begin{pmatrix} b_x \\ b_y \\ 0 \end{pmatrix} \right| = \left| \begin{pmatrix} 0 \\ 0 \\ a_x b_y - a_y b_x \end{pmatrix} \right| = a_x b_y - a_y b_x$$

**19.202.1.5 embVector\_distance()** `EmbReal` `embVector_distance ( EmbVector a, EmbVector b )`

The distance between *a* and *b* returned as a real value.

$$d = |\mathbf{a} - \mathbf{b}| = \sqrt{(a_x - b_x)^2 + (a_y - b_y)^2}$$

**19.202.1.6 embVector\_dot()** `EmbReal` `embVector_dot ( EmbVector a, EmbVector b )`

The dot product as vectors *v1* and *v2* returned as a `EmbReal`.

Equivalent to:

$$c = \mathbf{a} \cdot \mathbf{b} = a_x b_x + a_y b_y$$

**19.202.1.7 embVector\_length()** `EmbReal embVector_length ( EmbVector vector )`

The length or absolute value of the vector *vector*.

Equivalent to:

$$|v| = \sqrt{v_x^2 + v_y^2}$$

**19.202.1.8 embVector\_multiply()** `void embVector_multiply ( EmbVector vector, EmbReal magnitude, EmbVector * result )`

The scalar multiple *magnitude* of a vector *vector*. Returned as *result*.

**Todo** make result return argument.

**19.202.1.9 embVector\_normalize()** `void embVector_normalize ( EmbVector vector, EmbVector * result )`

Finds the unit length vector *result* in the same direction as *vector*.

Equivalent to:

$$\mathbf{u} = \frac{\mathbf{v}}{|\mathbf{v}|}$$

**Todo** make result return argument.

**19.202.1.10 embVector\_relativeX()** `EmbReal embVector_relativeX ( EmbVector a1, EmbVector a2, EmbVector a3 )`

The x-component of the vector

**19.202.1.11 embVector\_relativeY()** `EmbReal embVector_relativeY ( EmbVector a1, EmbVector a2, EmbVector a3 )`

The y-component of the vector

```
19.202.1.12 embVector_subtract() EmbVector embVector_subtract (
    EmbVector v1,
    EmbVector v2 )
```

The difference between vectors *v1* and *v2* returned as *result*.

Equivalent to:

$$\mathbf{c} = \mathbf{a} - \mathbf{b} = \begin{pmatrix} a_x - b_x \\ a_y - b_y \end{pmatrix}$$

```
19.202.1.13 embVector_transpose_product() void embVector_transpose_product (
    EmbVector v1,
    EmbVector v2,
    EmbVector * result )
```

Since we aren't using full vector algebra here, all vectors are "vertical". so this is like the product  $\mathbf{v1}^T \mathbf{v2}$  for our vectors *v1* and *v2* so a "component-wise product". The result is stored at the pointer *result*.

That is  $(1 \ 0) \ (\mathbf{a}) = (x_a \ (x \ y)) (0 \ 1) \ (\mathbf{b}) = (y_b)$

```
19.202.1.14 embVector_unit() EmbVector embVector_unit (
    EmbReal alpha )
```

The unit vector in the direction *angle*.

$$\mathbf{a}_\alpha = \begin{pmatrix} \cos(\alpha) \\ \sin(\alpha) \end{pmatrix}$$

## 19.203 extern/libembroidery/src/image.c File Reference

```
#include <stdio.h>
#include <stdlib.h>
#include <math.h>
#include "embroidery_internal.h"
```

### Functions

- void `writelImage` (FILE \*file, unsigned char image[][48])
- float `image_diff` (unsigned char \*a, unsigned char \*b, int size)

#### 19.203.1 Function Documentation

```
19.203.1.1 image_diff() float image_diff (
    unsigned char * a,
    unsigned char * b,
    int size )
```

**Parameters**

<i>a</i>	
<i>b</i>	
<i>size</i>	

**Returns**

float

```
19.203.1.2 writelimage() void writeImage (
    FILE * file,
    unsigned char image[ ][48] )
```

**Parameters**

<i>file</i>	
<i>image</i>	

for the PES embedded

## 19.204 extern/libembroidery/src/main.c File Reference

As much of the code as possible, to keep the structure simple and in a procedural style.

```
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <math.h>
#include <time.h>
#include "embroidery_internal.h"
```

**Macros**

- #define FLAG\_TO 0
- #define FLAG\_TO\_SHORT 1
- #define FLAG\_HELP 2
- #define FLAG\_HELP\_SHORT 3
- #define FLAG\_FORMATS 4
- #define FLAG\_FORMATS\_SHORT 5
- #define FLAG QUIET 6
- #define FLAG QUIET\_SHORT 7
- #define FLAG\_VERBOSE 8
- #define FLAG\_VERBOSE\_SHORT 9
- #define FLAG\_VERSION 10
- #define FLAG\_VERSION\_SHORT 11

- #define FLAG\_CIRCLE 12
- #define FLAG\_CIRCLE\_SHORT 13
- #define FLAG\_ELLIPSE 14
- #define FLAG\_ELLIPSE\_SHORT 15
- #define FLAG\_LINE 16
- #define FLAG\_LINE\_SHORT 17
- #define FLAG\_POLYGON 18
- #define FLAG\_POLYGON\_SHORT 19
- #define FLAG\_POLYLINE 20
- #define FLAG\_POLYLINE\_SHORT 21
- #define FLAG\_RENDER 22
- #define FLAG\_RENDER\_SHORT 23
- #define FLAG\_SATIN 24
- #define FLAG\_SATIN\_SHORT 25
- #define FLAG\_STITCH 26
- #define FLAG\_STITCH\_SHORT 27
- #define FLAG\_TEST 28
- #define FLAG\_FULL\_TEST\_SUITE 29
- #define FLAG\_HILBERT\_CURVE 30
- #define FLAG\_SIerpinski\_TRIANGLE 31
- #define FLAG\_FILL 32
- #define FLAG\_FILL\_SHORT 33
- #define FLAG\_SIMULATE 34
- #define FLAG\_COMBINE 35
- #define FLAG\_CROSS\_STITCH 36
- #define NUM\_FLAGS 37

## Functions

- void `embVector_print` (`EmbVector` v, `char` \*label)
- void `embArc_print` (`EmbArc` arc)
- int `check_header_present` (`FILE` \*file, `int` minimum\_header\_length)
- `unsigned int sectorSize` (`bcf_file` \*bcfFile)
- `int haveExtraDIFATSectors` (`bcf_file` \*file)
- `int seekToSector` (`bcf_file` \*bcfFile, `FILE` \*file, `const unsigned int` sector)
- void `parseDIFATSectors` (`FILE` \*file, `bcf_file` \*bcfFile)
- `int bcfFile_read` (`FILE` \*file, `bcf_file` \*bcfFile)
- `FILE * GetFile` (`bcf_file` \*bcfFile, `FILE` \*file, `char` \*fileToFind)  
*Get the File object.*
- void `bcf_file_free` (`bcf_file` \*bcfFile)
- `bcf_file_difat * bcf_difat_create` (`FILE` \*file, `unsigned int` fatSectors, `const unsigned int` `sectorSize`)
- `unsigned int entriesInDifatSector` (`bcf_file_difat` \*fat)
- `unsigned int readFullSector` (`FILE` \*file, `bcf_file_difat` \*bcfFile, `unsigned int` \*difatEntriesToRead)
- void `parseDirectoryEntryName` (`FILE` \*file, `bcf_directory_entry` \*dir)
- `bcf_directory * CompoundFileDialog` (`const unsigned int` maxNumberOfDirectoryEntries)
- `EmbTime parseTime` (`FILE` \*file)
- `bcf_directory_entry * CompoundFileDialogEntry` (`FILE` \*file)
- void `readNextSector` (`FILE` \*file, `bcf_directory` \*dir)
- void `bcf_directory_free` (`bcf_directory` \*\*dir)
- `bcf_file_fat * bcfFileFat_create` (`const unsigned int` `sectorSize`)
- void `loadFatFromSector` (`bcf_file_fat` \*fat, `FILE` \*file)
- `bcf_file_header bcfFileHeader_read` (`FILE` \*file)
- void `embSatinOutline_generateSatinOutline` (`EmbArray` \*lines, `EmbReal` thickness, `EmbSatinOutline` \*result)
- `EmbArray * embSatinOutline_renderStitches` (`EmbSatinOutline` \*result, `EmbReal` density)

- void `write_24bit` (FILE \*file, int x)
- int `embColor_distance` (EmbColor a, EmbColor b)
- void `embColor_read` (FILE \*f, EmbColor \*c, int toRead)
- void `embColor_write` (FILE \*f, EmbColor c, int toWrite)
- int `embThread_findNearestColor` (EmbColor color, EmbColor \*color\_list, int n\_colors)
- int `embThread_findNearestThread` (EmbColor color, EmbThread \*thread\_list, int n\_threads)
- `EmbThread embThread_getRandom` (void)
- void `binaryReadString` (FILE \*file, char \*buffer, int maxLength)
- void `binaryReadUnicodeString` (FILE \*file, char \*buffer, const int stringLength)
- int `stringInArray` (const char \*s, const char \*\*array)
- int `emb_readline` (FILE \*file, char \*line, int maxLength)
- void `get_trim_bounds` (char const \*s, char const \*\*firstWord, char const \*\*trailingSpace)
 

*Get the trim bounds object.*
- char \* `copy_trim` (char const \*s)
- char \* `emb_optOut` (EmbReal num, char \*str)
 

*Optimizes the number (num) for output to a text file and returns it as a string (str).*
- void `embTime_initNow` (EmbTime \*t)
- `EmbTime embTime_time` (EmbTime \*t)

## Variables

- `EmbThread black_thread` = { { 0, 0, 0 }, "Black", "Black" }
- int `emb_verbose` = 0
 

*Verbosity level.*
- int `emb_error` = 0
 

*Error code storage for optional control flow blocking.*
- const `EmbReal embConstantPi` = 3.1415926535
- const unsigned int `difatEntriesInHeader` = 109
- const unsigned int `sizeOfFatEntry` = sizeof(unsigned int)
- const unsigned int `sizeOfDifatEntry` = 4
- const unsigned int `sizeOfChainingEntryAtEndOfDifatSector` = 4
- const unsigned int `sizeOfDirectoryEntry` = 128
- char const `WHITE SPACE` [] = "\t\n\r"

### 19.204.1 Detailed Description

As much of the code as possible, to keep the structure simple and in a procedural style.

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 Use Python's PEP7 style guide. <https://peps.python.org/pep-0007/>

### 19.204.2 Macro Definition Documentation

#### 19.204.2.1 FLAG\_CIRCLE #define FLAG\_CIRCLE 12

#### 19.204.2.2 FLAG\_CIRCLE\_SHORT #define FLAG\_CIRCLE\_SHORT 13

**19.204.2.3 FLAG\_COMBINE** #define FLAG\_COMBINE 35

**19.204.2.4 FLAG\_CROSS\_STITCH** #define FLAG\_CROSS\_STITCH 36

**19.204.2.5 FLAG\_ELLIPSE** #define FLAG\_ELLIPSE 14

**19.204.2.6 FLAG\_ELLIPSE\_SHORT** #define FLAG\_ELLIPSE\_SHORT 15

**19.204.2.7 FLAG\_FILL** #define FLAG\_FILL 32

**19.204.2.8 FLAG\_FILL\_SHORT** #define FLAG\_FILL\_SHORT 33

**19.204.2.9 FLAG\_FORMATS** #define FLAG\_FORMATS 4

**19.204.2.10 FLAG\_FORMATS\_SHORT** #define FLAG\_FORMATS\_SHORT 5

**19.204.2.11 FLAG\_FULL\_TEST\_SUITE** #define FLAG\_FULL\_TEST\_SUITE 29

**19.204.2.12 FLAG\_HELP** #define FLAG\_HELP 2

**19.204.2.13 FLAG\_HELP\_SHORT** #define FLAG\_HELP\_SHORT 3

**19.204.2.14 FLAG\_HILBERT\_CURVE** #define FLAG\_HILBERT\_CURVE 30

**19.204.2.15 FLAG\_LINE** #define FLAG\_LINE 16

**19.204.2.16 FLAG\_LINE\_SHORT** #define FLAG\_LINE\_SHORT 17

**19.204.2.17 FLAG\_POLYGON** #define FLAG\_POLYGON 18

**19.204.2.18 FLAG\_POLYGON\_SHORT** #define FLAG\_POLYGON\_SHORT 19

**19.204.2.19 FLAG\_POLYLINE** #define FLAG\_POLYLINE 20

**19.204.2.20 FLAG\_POLYLINE\_SHORT** #define FLAG\_POLYLINE\_SHORT 21

**19.204.2.21 FLAG\_QUIET** #define FLAG\_QUIET 6

**19.204.2.22 FLAG\_QUIET\_SHORT** #define FLAG\_QUIET\_SHORT 7

**19.204.2.23 FLAG\_RENDER** #define FLAG\_RENDER 22

**19.204.2.24 FLAG\_RENDER\_SHORT** #define FLAG\_RENDER\_SHORT 23

**19.204.2.25 FLAG\_SATIN** #define FLAG\_SATIN 24

**19.204.2.26 FLAG\_SATIN\_SHORT** #define FLAG\_SATIN\_SHORT 25

**19.204.2.27 FLAG\_SIERPINSKI\_TRIANGLE** #define FLAG\_SIERPINSKI\_TRIANGLE 31

**19.204.2.28 FLAG\_SIMULATE** #define FLAG\_SIMULATE 34

**19.204.2.29 FLAG\_STITCH** #define FLAG\_STITCH 26

**19.204.2.30 FLAG\_STITCH\_SHORT** #define FLAG\_STITCH\_SHORT 27

**19.204.2.31 FLAG\_TEST** #define FLAG\_TEST 28

**19.204.2.32 FLAG\_TO** #define FLAG\_TO 0

**19.204.2.33 FLAG\_TO\_SHORT** #define FLAG\_TO\_SHORT 1

**19.204.2.34 FLAG\_VERBOSE** #define FLAG\_VERBOSE 8

**19.204.2.35 FLAG\_VERBOSE\_SHORT** #define FLAG\_VERBOSE\_SHORT 9

**19.204.2.36 FLAG\_VERSION** #define FLAG\_VERSION 10

**19.204.2.37 FLAG\_VERSION\_SHORT** #define FLAG\_VERSION\_SHORT 11

**19.204.2.38 NUM\_FLAGS** #define NUM\_FLAGS 37

### 19.204.3 Function Documentation

**19.204.3.1 bcf\_difat\_create()** `bcf_file_difat * bcf_difat_create ( FILE * file, unsigned int fatSectors, const unsigned int sectorSize )`

#### Parameters

<i>file</i>	<input type="text"/>
<i>fatSectors</i>	<input type="text"/>
<i>sectorSize</i>	<input type="text"/>

#### Returns

`bcf_file_difat*`

**19.204.3.2 bcf\_directory\_free()** `void bcf_directory_free ( bcf_directory ** dir )`

#### Parameters

<i>dir</i>	<input type="text"/>
------------	----------------------

**19.204.3.3 bcf\_file\_free()** `void bcf_file_free ( bcf_file * bcfFile )`

#### Parameters

<i>bcfFile</i>	<input type="text"/>
----------------	----------------------

**19.204.3.4 bcfFile\_read()** `int bcfFile_read ( FILE * file, bcf_file * bcfFile )`

#### Parameters

<i>file</i>	<input type="text"/>
<i>bcfFile</i>	<input type="text"/>

#### Returns

`int`

**19.204.3.5 bcfFileFat\_create()** `bcf_file_fat * bcfFileFat_create ( const unsigned int sectorSize )`

**Parameters**

<i>sectorSize</i>	<input type="text"/>
-------------------	----------------------

**Returns**`bcf_file_fat*`

**19.204.3.6 bcfFileHeader\_read()** `bcf_file_header bcfFileHeader_read ( FILE * file )`

**Parameters**

<i>file</i>	<input type="text"/>
-------------	----------------------

**Returns**`bcf_file_header`

**19.204.3.7 binaryReadString()** `void binaryReadString ( FILE * file, char * buffer, int maxLength )`

**Parameters**

<i>file</i>	<input type="text"/>
<i>buffer</i>	<input type="text"/>
<i>maxLength</i>	<input type="text"/>

**19.204.3.8 binaryReadUnicodeString()** `void binaryReadUnicodeString ( FILE * file, char * buffer, const int stringLength )`

**Parameters**

<i>file</i>	<input type="text"/>
<i>buffer</i>	<input type="text"/>
<i>stringLength</i>	<input type="text"/>

**19.204.3.9 check\_header\_present()** `int check_header_present ( FILE * file, int minimum_header_length )`

**Parameters**

<i>file</i>	<input type="text"/>
<i>minimum_header_length</i>	<input type="text"/>

**Returns**

int

Checks that there are enough bytes to interpret the header, stops possible segfaults when reading in the header bytes.

Returns 0 if there aren't enough, or the length of the file if there are.

**19.204.3.10 CompoundFileDirectory()** `bcf_directory * CompoundFileDirectory ( const unsigned int maxNumberOfDirectoryEntries )`

**Parameters**

<code>maxNumberOfDirectoryEntries</code>	
--	--

**Returns**

`bcf_directory*`

**19.204.3.11 CompoundFileDirectoryEntry()** `bcf_directory_entry * CompoundFileDirectoryEntry ( FILE * file )`

**Parameters**

<code>file</code>	
-------------------	--

**Returns**

`bcf_directory_entry*`

**19.204.3.12 copy\_trim()** `char * copy_trim ( char const * s )`

**Parameters**

<code>s</code>	
----------------	--

**Returns**

`char*`

**Todo** description

**19.204.3.13 emb\_optOut()** `char * emb_optOut ( EmbReal num, char * str )`

Optimizes the number (`num`) for output to a text file and returns it as a string (`str`).

**Parameters**

<code>num</code>	
<code>str</code>	

**Returns**

char\*

**19.204.3.14 emb\_readline()** int emb\_readline ( FILE \* *file*, char \* *line*, int *maxLength* )

**Parameters**

<i>file</i>	
<i>line</i>	
<i>maxLength</i>	

**Returns**

int

**19.204.3.15 embArc\_print()** void embArc\_print ( EmbArc *arc* )

**Parameters**

<i>arc</i>	
------------	--

**Todo** move to [arc.c](#)

**19.204.3.16 embColor\_distance()** int embColor\_distance ( EmbColor *a*, EmbColor *b* )

**Parameters**

<i>a</i>	
<i>b</i>	

**Returns**

int

**19.204.3.17 embColor\_read()** void embColor\_read ( FILE \* *f*, EmbColor \* *c*, int *toRead* )

**Parameters**

<i>f</i>	
<i>c</i>	
<i>toRead</i>	

```
19.204.3.18 embColor_write() void embColor_write (
    FILE * f,
    EmbColor c,
    int toWrite )
```

**Parameters**

<i>f</i>	
<i>c</i>	
<i>toWrite</i>	

```
19.204.3.19 embSatinOutline_generateSatinOutline() void embSatinOutline_generateSatinOutline (
    EmbArray * lines,
    EmbReal thickness,
    EmbSatinOutline * result )
```

**Parameters**

<i>lines</i>	
<i>thickness</i>	
<i>result</i>	

```
19.204.3.20 embSatinOutline_renderStitches() EmbArray * embSatinOutline_renderStitches (
    EmbSatinOutline * result,
    EmbReal density )
```

**Parameters**

<i>result</i>	
<i>density</i>	

**Returns**

EmbArray\*

```
19.204.3.21 embThread_findNearestColor() int embThread_findNearestColor (
    EmbColor color,
    EmbColor * color_list,
    int n_colors )
```

Returns the closest color to the required color based on a list of available threads. The algorithm is a simple least squares search against the list. If the (square of) Euclidean 3-dimensional distance between the points in (red, green, blue) space is smaller then the index is saved and the remaining index is returned to the caller.

**Parameters**

<i>color</i>	The EmbColor color to match.
<i>colors</i>	The EmbThreadList pointer to start the search at.
<i>mode</i>	Is the argument an array of threads (0) or colors (1)?

**Returns**

closestIndex The entry in the ThreadList that matches.

**19.204.3.22 embThread\_findNearestThread()** `int embThread_findNearestThread (`  
`EmbColor color,`  
`EmbThread * thread_list,`  
`int n_threads )`

**Parameters**

<code>color</code>
<code>thread_list</code>
<code>n_threads</code>

**Returns**

`int`

**19.204.3.23 embThread\_getRandom()** `EmbThread embThread_getRandom (`  
`void )`

Returns a random thread color, useful in filling in cases where the actual color of the thread doesn't matter but one needs to be declared to test or render a pattern.

**Returns**

`c` The resulting color.

**19.204.3.24 embTime\_initNow()** `void embTime_initNow (`  
`EmbTime * t )`

**Parameters**

<code>t</code>	<input type="text"/>
----------------	----------------------

**19.204.3.25 embTime\_time()** `EmbTime embTime_time (`  
`EmbTime * t )`

**Parameters**

<code>t</code>	<input type="text"/>
----------------	----------------------

**Returns**

`EmbTime`

**19.204.3.26 embVector\_print()** `void embVector_print (`  
`EmbVector v,`  
`char * label )`

**Parameters**

<i>v</i>	
<i>label</i>	

move to [vector.c](#)

**19.204.3.27 entriesInDifatSector()** `unsigned int entriesInDifatSector ( bcf_file_difat * fat )`

**Parameters**

<i>fat</i>	
------------	--

**Returns**

`unsigned int`

**19.204.3.28 get\_trim\_bounds()** `void get_trim_bounds ( char const * s, char const ** firstWord, char const ** trailingSpace )`

Get the trim bounds object.

**Parameters**

<i>s</i>	
<i>firstWord</i>	
<i>trailingSpace</i>	

**19.204.3.29 GetFile()** `FILE * GetFile ( bcf_file * bcfFile, FILE * file, char * fileToFind )`

Get the File object.

**Parameters**

<i>bcfFile</i>	
<i>file</i>	
<i>fileToFind</i>	

**Returns**

`FILE*`

**19.204.3.30 haveExtraDIFATectors()** `int haveExtraDIFATectors ( bcf_file * file )`

**Parameters**

<i>file</i>	
-------------	--

**Returns**

int

**19.204.3.31 loadFatFromSector()** void loadFatFromSector (   
     **bcf\_file\_fat** \* *fat*,  
     FILE \* *file* )**Parameters**

<i>fat</i>	
<i>file</i>	

**19.204.3.32 parseDIFATSectors()** void parseDIFATSectors (   
     FILE \* *file*,  
     **bcf\_file** \* *bcfFile* )**Parameters**

<i>file</i>	
<i>bcfFile</i>	

**19.204.3.33 parseDirectoryEntryName()** void parseDirectoryEntryName (   
     FILE \* *file*,  
     **bcf\_directory\_entry** \* *dir* )**Parameters**

<i>file</i>	
<i>dir</i>	

**19.204.3.34 parseTime()** **EmbTime** parseTime (   
     FILE \* *file* )**Parameters**

<i>file</i>	
-------------	--

**Returns**

EmbTime

**19.204.3.35 readFullSector()** unsigned int readFullSector (

```
FILE * file,
bcf_file_difat * bcfFile,
unsigned int * difatEntriesToRead )
```

**Parameters**

<i>file</i>	
<i>bcfFile</i>	
<i>difatEntriesToRead</i>	

**Returns**

unsigned int

**19.204.3.36 `readNextSector()`** void readNextSector (

```
FILE * file,
bcf_directory * dir )
```

**Parameters**

<i>file</i>	
<i>dir</i>	

**19.204.3.37 `sectorSize()`** unsigned int sectorSize (

```
bcf_file * bcfFile )
```

**Parameters**

<i>bcfFile</i>	
----------------	--

**Returns**

unsigned int

**19.204.3.38 `seekToSector()`** int seekToSector (

```
bcf_file * bcfFile,
FILE * file,
const unsigned int sector )
```

**Parameters**

<i>bcfFile</i>	
<i>file</i>	
<i>sector</i>	

**Returns**

int

```
19.204.3.39 stringInArray() int stringInArray (
    const char * s,
    const char ** array )
```

Tests for the presence of a string *s* in the supplied *array*.  
The end of the array is marked by an empty string.

#### Returns

0 if not present 1 if present.

```
19.204.3.40 write_24bit() void write_24bit (
    FILE * file,
    int x )
```

#### Parameters

<i>file</i>	
<i>x</i>	

### 19.204.4 Variable Documentation

```
19.204.4.1 black_thread EmbThread black_thread = { { 0, 0, 0 }, "Black", "Black" }
```

```
19.204.4.2 difatEntriesInHeader const unsigned int difatEntriesInHeader = 109
```

```
19.204.4.3 emb_error int emb_error = 0
```

Error code storage for optional control flow blocking.

```
19.204.4.4 emb_verbose int emb_verbose = 0
```

Verbosity level.

```
19.204.4.5 embConstantPi const EmbReal embConstantPi = 3.1415926535
```

```
19.204.4.6 sizeOfChainingEntryAtEndOfDifatSector const unsigned int sizeOfChainingEntryAtEnd←
OfDifatSector = 4
```

```
19.204.4.7 sizeOfDifatEntry const unsigned int sizeOfDifatEntry = 4
```

```
19.204.4.8 sizeOfDirectoryEntry const unsigned int sizeOfDirectoryEntry = 128
```

```
19.204.4.9 sizeOfFatEntry const unsigned int sizeOfFatEntry = sizeof(unsigned int)
```

```
19.204.4.10 WHITESPACE char const WHITESPACE[ ] = " \t\n\r"
```

## 19.205 extern/libembroidery/src/pattern.c File Reference

```
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <math.h>
#include "embroidery_internal.h"
```

### Functions

- `EmbPattern * embPattern_create (void)`  
*Returns a pointer to an EmbPattern. It is created on the heap. The caller is responsible for freeing the allocated memory with `embPattern_free()`.*
- `void embPattern_hideStitchesOverLength (EmbPattern *p, int length)`
- `int embPattern_addThread (EmbPattern *pattern, EmbThread thread)`
- `void embPattern_fixColorCount (EmbPattern *p)`
- `void embPattern_copystitch_listToPolylines (EmbPattern *p)`  
*Copies all of the Embstitch\_list data to EmbPolylineObjectList data for pattern (p).*
- `void embPattern_copyPolylinesTostitch_list (EmbPattern *p)`
- `void embPattern_movestitch_listToPolylines (EmbPattern *p)`
- `void embPattern_movePolylinesTostitch_list (EmbPattern *p)`
- `void embPattern_addStitchAbs (EmbPattern *p, EmbReal x, EmbReal y, int flags, int isAutoColorIndex)`
- `void embPattern_addStitchRel (EmbPattern *p, EmbReal dx, EmbReal dy, int flags, int isAutoColorIndex)`
- `void embPattern_changeColor (EmbPattern *p, int index)`
- `void embPattern_scale (EmbPattern *p, EmbReal scale)`
- `EmbRect embPattern_calcBoundingBox (EmbPattern *p)`
- `void embPattern_flipHorizontal (EmbPattern *p)`
- `void embPattern_flipVertical (EmbPattern *p)`
- `void embPattern_flip (EmbPattern *p, int horz, int vert)`
- `void embPattern_combineJumpStitches (EmbPattern *p)`
- `void embPattern_correctForMaxStitchLength (EmbPattern *p, EmbReal maxStitchLength, EmbReal maxJumpLength)`
- `void embPattern_center (EmbPattern *p)`
- `void embPattern_loadExternalColorFile (EmbPattern *p, const char *fileName)`
- `void embPattern_free (EmbPattern *p)`
- `void embPattern_addCircleAbs (EmbPattern *p, EmbCircle circle)`
- `void embPattern_addEllipseAbs (EmbPattern *p, EmbEllipse ellipse)`
- `void embPattern_addLineAbs (EmbPattern *p, EmbLine line)`
- `void embPattern_addPathAbs (EmbPattern *p, EmbPath obj)`
- `void embPattern_addPointAbs (EmbPattern *p, EmbPoint obj)`
- `void embPattern_addPolygonAbs (EmbPattern *p, EmbPolygon obj)`
- `void embPattern_addPolylineObjectAbs (EmbPattern *p, EmbPolyline obj)`
- `void embPattern_addRectAbs (EmbPattern *p, EmbRect rect)`
- `void embPattern_end (EmbPattern *p)`
- `int embPattern_color_count (EmbPattern *pattern, EmbColor startColor)`
- `void embPattern_designDetails (EmbPattern *pattern)`
- `int convert (const char *inf, const char *outf)`
- `float embPattern_totalStitchLength (EmbPattern *pattern)`
- `float embPattern_minimumStitchLength (EmbPattern *pattern)`
- `float embPattern_maximumStitchLength (EmbPattern *pattern)`
- `void embPattern_lengthHistogram (EmbPattern *pattern, int *bin, int NUMBINS)`
- `int embPattern_realStitches (EmbPattern *pattern)`
- `int embPattern_jumpStitches (EmbPattern *pattern)`
- `int embPattern_trimStitches (EmbPattern *pattern)`

## 19.205.1 Function Documentation

**19.205.1.1 convert()** int convert (

```
    const char * inf,
    const char * outf )
```

**19.205.1.2 embPattern\_addCircleAbs()** void embPattern\_addCircleAbs (

```
    EmbPattern * p,
    EmbCircle circle )
```

Adds a circle object to pattern (*p*) with its center at the absolute position (*cx,cy*) with a radius of (*r*). Positive y is up. Units are in millimeters.

**19.205.1.3 embPattern\_addEllipseAbs()** void embPattern\_addEllipseAbs (

```
    EmbPattern * p,
    EmbEllipse ellipse )
```

Adds an ellipse object to pattern (*p*) with its center at the absolute position (*cx,cy*) with radii of (*rx,ry*). Positive y is up. Units are in millimeters.

**19.205.1.4 embPattern\_addLineAbs()** void embPattern\_addLineAbs (

```
    EmbPattern * p,
    EmbLine line )
```

Adds a line object to pattern (*p*) starting at the absolute position (*x1,y1*) and ending at the absolute position (*x2,y2*). Positive y is up. Units are in millimeters.

**19.205.1.5 embPattern\_addPathAbs()** void embPattern\_addPathAbs (

```
    EmbPattern * p,
    EmbPath obj )
```

**19.205.1.6 embPattern\_addPointAbs()** void embPattern\_addPointAbs (

```
    EmbPattern * p,
    EmbPoint obj )
```

Adds a point object to pattern (*p*) at the absolute position (*x,y*). Positive y is up. Units are in millimeters.

**19.205.1.7 embPattern\_addPolygonAbs()** void embPattern\_addPolygonAbs (

```
    EmbPattern * p,
    EmbPolygon obj )
```

**19.205.1.8 embPattern\_addPolylineObjectAbs()** void embPattern\_addPolylineObjectAbs (

```
    EmbPattern * p,
    EmbPolyline obj )
```

**19.205.1.9 embPattern\_addRectAbs()** void embPattern\_addRectAbs (

```
    EmbPattern * p,
    EmbRect rect )
```

Adds a rectangle object to pattern (*p*) at the absolute position (*x,y*) with a width of (*w*) and a height of (*h*). Positive y is up. Units are in millimeters.

```
19.205.1.10 embPattern_addStitchAbs() void embPattern_addStitchAbs (
    EmbPattern * p,
    EmbReal x,
    EmbReal y,
    int flags,
    int isAutoColorIndex )
```

Adds a stitch to the pattern (*p*) at the absolute position (*x,y*). Positive y is up. Units are in millimeters.

```
19.205.1.11 embPattern_addStitchRel() void embPattern_addStitchRel (
    EmbPattern * p,
    EmbReal dx,
    EmbReal dy,
    int flags,
    int isAutoColorIndex )
```

Adds a stitch to the pattern (*p*) at the relative position (*dx,dy*) to the previous stitch. Positive y is up. Units are in millimeters.

```
19.205.1.12 embPattern_addThread() int embPattern_addThread (
    EmbPattern * pattern,
    EmbThread thread )
```

#### Parameters

<i>pattern</i>	
<i>thread</i>	

#### Returns

int

```
19.205.1.13 embPattern_calcBoundingBox() EmbRect embPattern_calcBoundingBox (
    EmbPattern * p )
```

Returns an EmbRect that encapsulates all stitches and objects in the pattern (*p*).

```
19.205.1.14 embPattern_center() void embPattern_center (
    EmbPattern * p )
```

```
19.205.1.15 embPattern_changeColor() void embPattern_changeColor (
    EmbPattern * p,
    int index )
```

#### Parameters

<i>p</i>	
<i>index</i>	

```
19.205.1.16 embPattern_color_count() int embPattern_color_count (
    EmbPattern * pattern,
    EmbColor startColor )
```

**19.205.1.17 embPattern\_combineJumpStitches()** void embPattern\_combineJumpStitches ( EmbPattern \* p )

**19.205.1.18 embPattern\_copyPolylineObjectListToStitchList()** void embPattern\_copyPolylineObjectListToStitchList ( EmbPattern \* p )

Copies all of the EmbPolylineObjectList data to Embstitch\_list data for pattern (p).

**19.205.1.19 embPattern\_copyStitchListToPolylines()** void embPattern\_copyStitchListToPolylines ( EmbPattern \* p )

Copies all of the Embstitch\_list data to EmbPolylineObjectList data for pattern (p).

#### Parameters

<i>p</i>	<input type="text"/>
----------	----------------------

**19.205.1.20 embPattern\_correctForMaxStitchLength()** void embPattern\_correctForMaxStitchLength (

EmbPattern \* p,  
EmbReal maxStitchLength,  
EmbReal maxJumpLength )

**19.205.1.21 embPattern\_create()** EmbPattern \* embPattern\_create ( void )

Returns a pointer to an EmbPattern. It is created on the heap. The caller is responsible for freeing the allocated memory with embPattern\_free().

#### Returns

EmbPattern\*

**19.205.1.22 embPattern\_designDetails()** void embPattern\_designDetails ( EmbPattern \* pattern )

**19.205.1.23 embPattern\_end()** void embPattern\_end ( EmbPattern \* p )

**19.205.1.24 embPattern\_fixColorCount()** void embPattern\_fixColorCount ( EmbPattern \* p )

#### Parameters

<i>p</i>	<input type="text"/>
----------	----------------------

**19.205.1.25 embPattern\_flip()** void embPattern\_flip ( EmbPattern \* p,  
int horz,  
int vert )

Flips the entire pattern (p) horizontally about the x-axis if (horz) is true. Flips the entire pattern (p) vertically about

the y-axis if (*vert*) is true.

**19.205.1.26 `embPattern_flipHorizontal()`** `void embPattern_flipHorizontal ( EmbPattern * p )`

Flips the entire pattern (*p*) horizontally about the y-axis.

**19.205.1.27 `embPattern_flipVertical()`** `void embPattern_flipVertical ( EmbPattern * p )`

Flips the entire pattern (*p*) vertically about the x-axis.

**19.205.1.28 `embPattern_free()`** `void embPattern_free ( EmbPattern * p )`

Frees all memory allocated in the pattern (*p*).

**19.205.1.29 `embPattern_hideStitchesOverLength()`** `void embPattern_hideStitchesOverLength ( EmbPattern * p, int length )`

#### Parameters

<i>p</i>	
<i>length</i>	

**19.205.1.30 `embPattern_jumpStitches()`** `int embPattern_jumpStitches ( EmbPattern * pattern )`

**19.205.1.31 `embPattern_lengthHistogram()`** `void embPattern_lengthHistogram ( EmbPattern * pattern, int * bin, int NUMBINS )`

**19.205.1.32 `embPattern_loadExternalColorFile()`** `void embPattern_loadExternalColorFile ( EmbPattern * p, const char * fileName )`

**19.205.1.33 `embPattern_maximumStitchLength()`** `float embPattern_maximumStitchLength ( EmbPattern * pattern )`

**19.205.1.34 `embPattern_minimumStitchLength()`** `float embPattern_minimumStitchLength ( EmbPattern * pattern )`

**19.205.1.35 `embPattern_movePolylinesToStitch_list()`** `void embPattern_movePolylinesToStitch_list ( EmbPattern * p )`

Moves all of the EmbPolylineObjectList data to Embstitch\_list data for pattern (*p*).

**19.205.1.36 `embPattern_movestitch_listToPolylines()`** `void embPattern_movestitch_listToPolylines ( EmbPattern * p )`

Moves all of the Embstitch\_list data to EmbPolylineObjectList data for pattern (*p*).

**19.205.1.37 embPattern\_realStitches()** int embPattern\_realStitches (   
   EmbPattern \* pattern )

**19.205.1.38 embPattern\_scale()** void embPattern\_scale (   
   EmbPattern \* p,   
   EmbReal scale )

**19.205.1.39 embPattern\_totalStitchLength()** float embPattern\_totalStitchLength (   
   EmbPattern \* pattern )

#### Parameters

*pattern*

#### Returns

float

**19.205.1.40 embPattern\_trimStitches()** int embPattern\_trimStitches (   
   EmbPattern \* pattern )

## 19.206 extern/libembroidery/src/thread-color.c File Reference

```
#include <stdio.h>
#include <string.h>
#include "embroidery_internal.h"
```

### Functions

- int **threadColor** (const char \*name, int brand)
- int **threadColorNum** (unsigned int color, int brand)
- const char \* **threadColorName** (unsigned int color, int brand)

### Variables

- const unsigned char **\_dxfColorTable** [ ][3] = {{ 0, 0, 0 }}
- const **EmbThread** **husThreads** [] = {{{ 0, 0, 0 }, "END", "END"}}
- const **EmbThread** **jefThreads** [] = {{{ 0, 0, 0 }, "END", "END"}}
- const **EmbThread** **shvThreads** [] = {{{ 0, 0, 0 }, "END", "END"}}
- const **EmbThread** **pcmThreads** [] = {{{ 0, 0, 0 }, "END", "END"}}
- const **EmbThread** **pecThreads** [] = {{{ 0, 0, 0 }, "END", "END"}}
- const int **shvThreadCount** = 42
- const int **pecThreadCount** = 65
- **thread\_color** \* **brand\_codes** []
- const char \* **brand\_codes\_files** []

### 19.206.1 Function Documentation

**19.206.1.1** `threadColor()` `int threadColor (`  
    `const char * name,`  
    `int brand )`

**19.206.1.2** `threadColorName()` `const char * threadColorName (`  
    `unsigned int color,`  
    `int brand )`

**19.206.1.3** `threadColorNum()` `int threadColorNum (`  
    `unsigned int color,`  
    `int brand )`

## 19.206.2 Variable Documentation

**19.206.2.1** `_dxfColorTable` `const unsigned char _dxfColorTable[ ][3] = {{ 0, 0, 0 }}`

**19.206.2.2** `brand_codes` `thread_color* brand_codes[ ]`

**19.206.2.3** `brand_codes_files` `const char* brand_codes_files[ ]`

**Initial value:**

```
= {  
    "arc_polyester_colors.csv",  
    "arc_rayon_colors.csv",  
    "coats_and_clark_rayon_colors.csv",  
    "exquisite_polyester_colors.csv",  
    "fufu_Polyester_colors.csv",  
    "fufu_Rayon_colors.csv",  
    "Hemingworth_Polyester_colors.csv",  
    "Isacord_Polyester_colors.csv",  
    "Isafil_Rayon_colors.csv",  
    "Marathon_Polyester_colors.csv",  
    "Marathon_Rayon_colors.csv",  
    "Madeira_Polyester_colors.csv",  
    "Madeira_Rayon_colors.csv",  
    "Metro_Polyester_colors.csv",  
    "Pantone_colors.csv",  
    "RobisonAnton_Polyester_colors.csv",  
    "RobisonAnton_Rayon_colors.csv",  
    "Sigma_Polyester_colors.csv",  
    "Sulky_Rayon_colors.csv",  
    "ThreadArt_Rayon_colors.csv",  
    "ThreadArt_Polyester_colors.csv",  
    "ThreadDelight_Polyester_colors.csv",  
    "Z102_Isacord_Polyester_colors.csv",  
    "svg_color_colors.csv"  
}
```

**19.206.2.4** `husThreads` `const EmbThread husThreads[ ] = {{{ 0, 0, 0 }, "END", "END" }}`

**19.206.2.5** `jefThreads` `const EmbThread jefThreads[ ] = {{{ 0, 0, 0 }, "END", "END" }}`

**19.206.2.6** `pcmThreads` `const EmbThread pcmThreads[ ] = {{{ 0, 0, 0 }, "END", "END" }}`

**19.206.2.7** `pecThreadCount` `const int pecThreadCount = 65`

**19.206.2.8 pecThreads** const `EmbThread` pecThreads[ ] = {{{ 0, 0, 0 }, "END", "END"}}

**19.206.2.9 shvThreadCount** const int shvThreadCount = 42

**19.206.2.10 shvThreads** const `EmbThread` shvThreads[ ] = {{{ 0, 0, 0 }, "END", "END"}}

**19.207 privacy\_policy.md File Reference**

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