# band

v1.0.0-dev

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# Chapter 1

# README

`band` is a c++ media-library.

The library tries to allow allow cross-platform applications to be created in the simplest way possible while maintaining flexibility.

The focus of the UI-component is on controls. The controls are meant to be building blocks that can be composed into more complicated controls.

Assets are compiled into the program itself. This prevents having to be concerned about bundling assets differently for different platforms.

### Dependencies

- `libtool`: Combining static libraries when building.
- `doxygen`: Documentation generation.

### Building

- `make` in the root-directory builds documentation.
- `make` in the 'band'-dierctory builds `band` into a static-library.
- `make` in the 'example'-directory builds all the examples. A `make clean` should be run before if the library itself was actually modified.

### Running

- `cmd/file-to-code/file-to-code` runs a tool which generates a header and source file from a normal file.
- `example/bin/simple` runs the simple-example.
- `example/bin/control` runs an example using controls.

## Linking

- Provide the path to the combiled 'band'-directory as an include-path and the compiled static-library as a linked-library. Additionally, `dl`, `X11`, and `pthread` should be linked. These aren't a dependency for all platforms so they are left to the consumer to link. An example can be seen in the 'Makefile' in the 'example' folder.

## Feature-Requests

- Create a issue with the label 'enchancement'. It will be groomed then sorted into a release to be worked on.

## Contributing

- Any task or feature-request can be worked on before being groomed on its own branch. If the feature is desired, it will be merged until a release.

# Chapter 2

# Namespace Index

## 2.1 Namespace List

Here is a list of all namespaces with brief descriptions:

band . . . . . 11
band::asset . . . . . 19
band::asset::font . . . . . 20
band::control . . . . . 20
band::interface . . . . . 20

# Chapter 3

# Hierarchical Index

## 3.1 Class Hierarchy

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


band::Area . . . 24
band::Circle . . . 45
band::Color . . . 46
band::Control . . . 47
band::BaseControl . . . 25
band::control::Anchor< T > . . . 21
band::control::Border . . . 37
band::control::Button< T > . . . 39
band::control::FixedPanel< T > . . . 52
band::control::Fps . . . 55
band::control::Image . . . 56
band::control::Label . . . 66
band::control::PaddedPanel< T > . . . 70
band::control::Rectangle . . . 84
band::control::StackPanel< T > . . . 90
band::control::Texture . . . 93
band::Dimension . . . 51
band::File . . . 51
band::Interface . . . 58
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band::interface::DebugInterfaceDecorator< T > . . . 49
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band::interface::RaylibInterface . . . 74
band::Line . . . 69
band::Point . . . 73
band::Rectangle . . . 86
band::Scope . . . 87
band::Triangle . . . 95
band::WindowArea . . . 96

# Chapter 4

# Class Index

## 4.1 Class List

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


band::control::Anchor< T > . . . 21
band::Area . . . 24
band::BaseControl . . . 25
band::interface::BaseInterfaceDecorator< T > . . . 28
band::control::Border . . . 37
band::control::Button< T > . . . 39
band::Circle . . . 45
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# Chapter 5

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# Chapter 6

# Namespace Documentation

## 6.1 band Namespace Reference

### Namespaces

- asset
- control
- interface

### Classes

- struct Area
- class BaseControl
- struct Circle
- struct Color
- class Control
- struct Dimension
- struct File
- class Interface
- struct Line
- struct Point
- struct Rectangle
- class Scope
- struct Triangle
- struct WindowArea

### Typedefs

- using Text = std::string
- using Size = uint32_t
- using TextureId = size_t
- using ImageId = size_t
- using FontId = size_t
- using Real = double
- using Component = uint8_t

### Enumerations

- enum Alignment { Alignment::kTop, Alignment::kMiddle, Alignment::kBottom }
- enum Direction { Direction::kHorizontal, Direction::kVertical }
- enum Unit { Unit::kPixel, Unit::kRatio }
- enum Leg { Leg::kWidth, Leg::kHeight }

### Functions

- void Run (const Color &clear_color, const std::function< void()> &callback, Interface &interface, Control &control)
- void CleanUp (Interface &interface, Control &control)
- void Update (const Point &position, Interface &interface, Control &control)
- void DrawFrame (const Color &clear_color, const Point &position, Interface &interface, Control &control)
- bool operator== (const Dimension &a, const Dimension &b)
- bool operator!= (const Dimension &a, const Dimension &b)
- bool IsDimensionGreaterThanOrEqualTo (const Dimension &a, const Dimension &b, Real pixels)
- Dimension MaxDimension (const Dimension &a, const Dimension &b, Real pixels)
- Dimension MinDimension (const Dimension &a, const Dimension &b, Real pixels)
- Dimension AddDimensions (const Dimension &a, const Dimension &b, Real pixels)
- Dimension SubtractDimensions (const Dimension &a, const Dimension &b, Real pixels)
- Dimension MultiplyDimension (const Dimension &a, Real scalar)
- bool operator== (const Point &a, const Point &b)
- bool operator!= (const Point &a, const Point &b)
- bool operator== (const Line &a, const Line &b)
- bool operator!= (const Line &a, const Line &b)
- bool operator== (const Circle &a, const Circle &b)
- bool operator!= (const Circle &a, const Circle &b)
- bool operator== (const Triangle &a, const Triangle &b)
- bool operator!= (const Triangle &a, const Triangle &b)
- bool operator== (const Rectangle &a, const Rectangle &b)
- bool operator!= (const Rectangle &a, const Rectangle &b)
- bool operator== (const Area &a, const Area &b)
- bool operator!= (const Area &a, const Area &b)
- bool operator== (const WindowArea &a, const WindowArea &b)
- bool operator!= (const WindowArea &a, const WindowArea &b)
- bool operator== (const Color &a, const Color &b)
- bool operator!= (const Color &a, const Color &b)
- std::unique_ptr< Interface > DefaultInterface ()

## 6.1.1 Typedef Documentation

#### 6.1.1.1 Component

```
using band::Component = typedef uint8_t
```

#### 6.1.1.2 FontId

```
using band::FontId = typedef size_t
```

#### 6.1.1.3 ImageId

```
using band::ImageId = typedef size_t
```

#### 6.1.1.4 Real

```
using band::Real = typedef double
```

#### 6.1.1.5 Size

```
using band::Size = typedef uint32_t
```

#### 6.1.1.6 Text

```
using band::Text = typedef std::string
```

#### 6.1.1.7 TextureId

```
using band::TextureId = typedef size_t
```

### 6.1.2 Enumeration Type Documentation

#### 6.1.2.1 Alignment

```
enum band::Alignment  [strong]
```

**Enumerator**

| | |
|---|---|
| kTop | |
| kMiddle | |
| kBottom | |

#### 6.1.2.2 Direction

```
enum band::Direction  [strong]
```

**Enumerator**

| | |
|---|---|
| kHorizontal | |
| kVertical | |

#### 6.1.2.3 Leg

```
enum band::Leg  [strong]
```

**Enumerator**

| | |
|---|---|
| kWidth | |
| kHeight | |

#### 6.1.2.4 Unit

```
enum band::Unit  [strong]
```

**Enumerator**

| | |
|---|---|
| kPixel | |
| kRatio | |

### 6.1.3 Function Documentation

#### 6.1.3.1 AddDimensions()

```
Dimension band::AddDimensions (
            const Dimension & a,
            const Dimension & b,
            Real pixels )
```

#### 6.1.3.2 CleanUp()

```
void band::CleanUp (
            Interface & interface,
            Control & control )
```

#### 6.1.3.3 DefaultInterface()

```
std::unique_ptr<Interface> band::DefaultInterface ( )
```

#### 6.1.3.4 DrawFrame()

```
void band::DrawFrame (
            const Color & clear_color,
            const Point & position,
            Interface & interface,
            Control & control )
```

#### 6.1.3.5 IsDimensionGreaterThanOrEqualTo()

```
bool band::IsDimensionGreaterThanOrEqualTo (
            const Dimension & a,
            const Dimension & b,
            Real pixels )
```

#### 6.1.3.6 MaxDimension()

```
Dimension band::MaxDimension (
            const Dimension & a,
            const Dimension & b,
            Real pixels )
```

#### 6.1.3.7 MinDimension()

```
Dimension band::MinDimension (
            const Dimension & a,
            const Dimension & b,
            Real pixels )
```

#### 6.1.3.8 MultiplyDimension()

```
Dimension band::MultiplyDimension (
            const Dimension & a,
            Real scalar )
```

#### 6.1.3.9 operator"!=() [1/9]

```
bool band::operator!= (
            const Dimension & a,
            const Dimension & b )
```

#### 6.1.3.10 operator"!=() [2/9]

```
bool band::operator!= (
            const Point & a,
            const Point & b )
```

#### 6.1.3.11 operator"!=() [3/9]

```
bool band::operator!= (
            const Line & a,
            const Line & b )
```

#### 6.1.3.12 operator"!=() [4/9]

```
bool band::operator!= (
            const Circle & a,
            const Circle & b )
```

#### 6.1.3.13 operator"!=() [5/9]

```
bool band::operator!= (
            const Triangle & a,
            const Triangle & b )
```

#### 6.1.3.14 operator"!=() [6/9]

```
bool band::operator!= (
            const Rectangle & a,
            const Rectangle & b )
```

#### 6.1.3.15 operator"!=() [7/9]

```
bool band::operator!= (
            const Area & a,
            const Area & b )
```

#### 6.1.3.16 operator"!=() [8/9]

```
bool band::operator!= (
            const WindowArea & a,
            const WindowArea & b )
```

#### 6.1.3.17 operator"!=() [9/9]

```
bool band::operator!= (
            const Color & a,
            const Color & b )
```

#### 6.1.3.18 operator==() [1/9]

```
bool band::operator== (
            const Dimension & a,
            const Dimension & b )
```

#### 6.1.3.19 operator==() [2/9]

```
bool band::operator== (
            const Point & a,
            const Point & b )
```

#### 6.1.3.20 operator==() [3/9]

```
bool band::operator== (
            const Line & a,
            const Line & b )
```

#### 6.1.3.21 operator==() [4/9]

```
bool band::operator== (
            const Circle & a,
            const Circle & b )
```

#### 6.1.3.22 operator==() [5/9]

```
bool band::operator== (
            const Triangle & a,
            const Triangle & b )
```

#### 6.1.3.23 operator==() [6/9]

```
bool band::operator== (
            const Rectangle & a,
            const Rectangle & b )
```

#### 6.1.3.24 operator==() [7/9]

```
bool band::operator== (
            const Area & a,
            const Area & b )
```

#### 6.1.3.25 operator==() [8/9]

```
bool band::operator== (
            const WindowArea & a,
            const WindowArea & b )
```

#### 6.1.3.26 operator==() [9/9]

```
bool band::operator== (
            const Color & a,
            const Color & b )
```

#### 6.1.3.27 Run()

```
void band::Run (
            const Color & clear_color,
            const std::function< void()> & callback,
            Interface & interface,
            Control & control )
```

#### 6.1.3.28 SubtractDimensions()

```
Dimension band::SubtractDimensions (
            const Dimension & a,
            const Dimension & b,
            Real pixels )
```

#### 6.1.3.29 Update()

```
void band::Update (
            const Point & position,
            Interface & interface,
            Control & control )
```

## 6.2 band::asset Namespace Reference

### Namespaces

- font

## 6.3 band::asset::font Namespace Reference

### Functions

- band::File Helvetica ()

### 6.3.1 Function Documentation

#### 6.3.1.1 Helvetica()

```
band::File band::asset::font::Helvetica ( )
```

## 6.4 band::control Namespace Reference

### Classes

- class Anchor
- class Border
- class Button
- class FixedPanel
- class Fps
- class Image
- class Label
- class PaddedPanel
- class Rectangle
- class StackPanel
- class Texture

### Typedefs

- using Separator = ::band::control::Rectangle

### 6.4.1 Typedef Documentation

#### 6.4.1.1 Separator

```
using band::control::Separator = typedef ::band::control::Rectangle
```

## 6.5 band::interface Namespace Reference

### Classes

- class BaseInterfaceDecorator
- class DebugInterfaceDecorator
- class RaylibInterface
- class SectionInterfaceDecorator

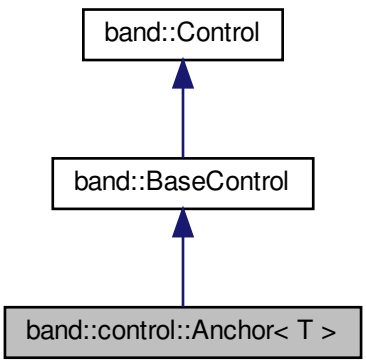
# Chapter 7

# Class Documentation

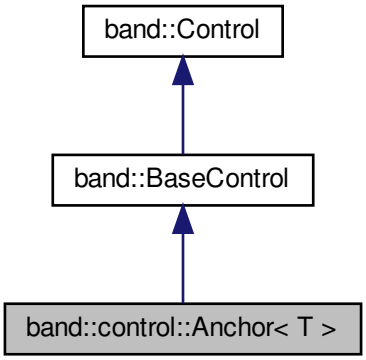
## 7.1 band::control::Anchor< T > Class Template Reference

`#include <anchor.h>`

Inheritance diagram for band::control::Anchor< T >:



Collaboration diagram for band::control::Anchor< T >:




### Public Member Functions

- Alignment HorizontalAlignment () const
- void SetHorizontalAlignment (const Alignment &alignment)
- Alignment VerticalAlignment () const
- void SetVerticalAlignment (const Alignment &alignment)
- ::band::Area ReferenceArea () const
- void SetReferenceArea (const ::band::Area &area)
- void SetControl (T control)
- ::band::Area Area (const Interface &interface) const override
- void CleanUp (Interface &interface) override
- void Update (const Point &position, Interface &interface) override
- void Draw (const Point &position, Interface &interface) override

## 7.1.1 Member Function Documentation

#### 7.1.1.1 Area()

```
template<typename T >
band::Area band::control::Anchor< T >::Area (
            const Interface & interface ) const  [override], [virtual]
```

Implements band::Control.

#### 7.1.1.2 CleanUp()

```
template<typename T >
void band::control::Anchor< T >::CleanUp (
            Interface & interface )  [override], [virtual]
```

Implements band::Control.

#### 7.1.1.3 Draw()

```
template<typename T >
void band::control::Anchor< T >::Draw (
            const Point & position,
            Interface & interface )  [override], [virtual]
```

Implements band::Control.

#### 7.1.1.4 HorizontalAlignment()

```
template<typename T >
Alignment band::control::Anchor< T >::HorizontalAlignment ( ) const
```

#### 7.1.1.5 ReferenceArea()

```
template<typename T >
band::Area band::control::Anchor< T >::ReferenceArea ( ) const
```

#### 7.1.1.6 SetControl()

```
template<typename T >
void band::control::Anchor< T >::SetControl (
            T control )
```

#### 7.1.1.7 SetHorizontalAlignment()

```
template<typename T >
void band::control::Anchor< T >::SetHorizontalAlignment (
            const Alignment & alignment )
```

#### 7.1.1.8 SetReferenceArea()

```
template<typename T >
void band::control::Anchor< T >::SetReferenceArea (
            const ::band::Area & area )
```

#### 7.1.1.9 SetVerticalAlignment()

```
template<typename T >
void band::control::Anchor< T >::SetVerticalAlignment (
            const Alignment & alignment )
```

#### 7.1.1.10 Update()

```
template<typename T >
void band::control::Anchor< T >::Update (
            const Point & position,
            Interface & interface )  [override], [virtual]
```

Implements band::Control.

#### 7.1.1.11 VerticalAlignment()

```
template<typename T >
Alignment band::control::Anchor< T >::VerticalAlignment ( ) const
```

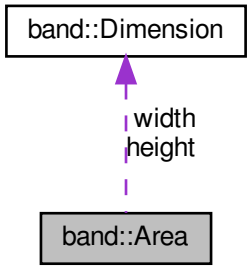
The documentation for this class was generated from the following file:

- band/control/anchor.h

## 7.2 band::Area Struct Reference

```
#include <interface.h>
```

Collaboration diagram for band::Area:



### Public Attributes

- Dimension width {}
- Dimension height {}

### 7.2.1 Member Data Documentation

#### 7.2.1.1 height

```
Dimension band::Area::height {}
```

#### 7.2.1.2 width

```
Dimension band::Area::width {}
```

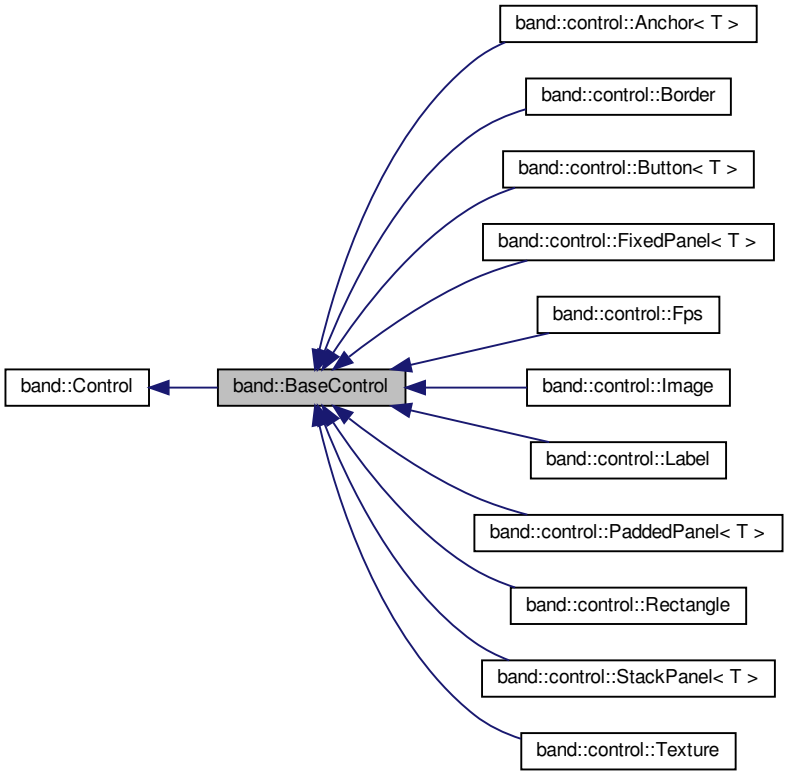
The documentation for this struct was generated from the following file:

- band/interface.h

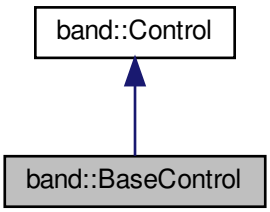
## 7.3 band::BaseControl Class Reference

```
#include <control.h>
```

Inheritance diagram for band::BaseControl:




Collaboration diagram for band::BaseControl:




## Public Member Functions

- ::band::Area Area (const Interface &interface) const override
- void CleanUp (Interface &interface) override
- void Update (const Point &position, Interface &interface) override
- void Draw (const Point &position, Interface &interface) override

### 7.3.1 Member Function Documentation

#### 7.3.1.1 Area()

```
::band::Area band::BaseControl::Area (
            const Interface & interface ) const  [override], [virtual]
```

Implements band::Control.

#### 7.3.1.2 CleanUp()

```
void band::BaseControl::CleanUp (
            Interface & interface )  [override], [virtual]
```

Implements band::Control.

#### 7.3.1.3 Draw()

```
void band::BaseControl::Draw (
            const Point & position,
            Interface & interface )  [override], [virtual]
```

Implements band::Control.

#### 7.3.1.4 Update()

```
void band::BaseControl::Update (
            const Point & position,
            Interface & interface )  [override], [virtual]
```

Implements band::Control.

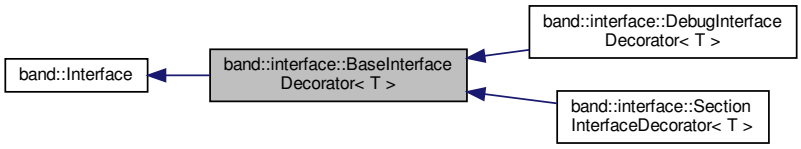
The documentation for this class was generated from the following file:

- band/control.h

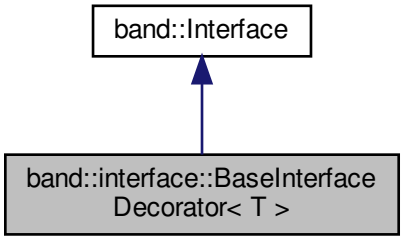
## 7.4 band::interface::BaseInterfaceDecorator< T > Class Template Reference

`#include <base_interface_decorator.h>`

Inheritance diagram for band::interface::BaseInterfaceDecorator< T >:




Collaboration diagram for band::interface::BaseInterfaceDecorator< T >:




### Public Member Functions

- BaseInterfaceDecorator (T interface)
- void SetTargetFps (Size fps) override
- void SetWindowArea (const ::band::WindowArea &area) override
- void SetIcon (ImageId id) override
- void SetTitle (const Text &text) override
- void ToggleFullscreen () override
- void StartDrawing () override
- void StopDrawing () override
- ImageId LoadImage (const File &file) override
- void DeleteImage (ImageId id) override
- void DeleteAllImages () override
- Area ImageArea (ImageId id) const override
- FontId LoadFont (const File &file) override
- void DeleteFont (FontId id) override
- void DeleteAllFonts () override
- TextureId CreateBlankTexture (const Area &area) override
- TextureId CreateImageTexture (ImageId id, const Area &area) override

- void DeleteTexture (TextureId id) override
- void DeleteAllTextures () override
- void SelectTexture (TextureId id) override
- void UnselectTexture () override
- void DrawTexture (TextureId id, const Point &position) override
- Area TextureArea (TextureId id) const override
- void Clear (const Color &color) override
- void DrawLine (const Line &line, const Dimension &thickness, const Leg &leg, const Color &color) override
- void DrawCircle (const Circle &circle, const Leg &leg, const Color &color) override
- void DrawRectangle (const Rectangle &rectangle, const Color &color) override
- void DrawTriangle (const Triangle &triangle, const Color &color) override
- void DrawText (const Text &text, const Point &position, const Dimension &dimension, const Color &color, FontId id) override
- void DrawFps (const Point &position) override
- band::Area MeasureText (const Text &text, const Dimension &dimension, FontId id) const override
- bool HasAction (const Action &action) const override
- std::optional< char > CharacterPressed () const override
- Point MousePosition () const override
- ::band::WindowArea WindowArea () const override

## Protected Attributes

- T interface_

## Additional Inherited Members

### 7.4.1 Constructor & Destructor Documentation

#### 7.4.1.1 BaseInterfaceDecorator()

```
template<typename T >
band::interface::BaseInterfaceDecorator< T >::BaseInterfaceDecorator (
            T interface )  [explicit]
```

### 7.4.2 Member Function Documentation

#### 7.4.2.1 CharacterPressed()

```
template<typename T >
std::optional< char > band::interface::BaseInterfaceDecorator< T >::CharacterPressed ( )
const  [override], [virtual]
```

Implements band::Interface.

#### 7.4.2.2 Clear()

```
template<typename T >
void band::interface::BaseInterfaceDecorator< T >::Clear (
            const Color & color )  [override], [virtual]
```

Implements band::Interface.

#### 7.4.2.3 CreateBlankTexture()

```
template<typename T >
TextureId band::interface::BaseInterfaceDecorator< T >::CreateBlankTexture (
            const Area & area )  [override], [virtual]
```

Implements band::Interface.

#### 7.4.2.4 CreateImageTexture()

```
template<typename T >
TextureId band::interface::BaseInterfaceDecorator< T >::CreateImageTexture (
            ImageId id,
            const Area & area )  [override], [virtual]
```

Implements band::Interface.

#### 7.4.2.5 DeleteAllFonts()

```
template<typename T >
void band::interface::BaseInterfaceDecorator< T >::DeleteAllFonts ( )  [override], [virtual]
```

Implements band::Interface.

#### 7.4.2.6 DeleteAllImages()

```
template<typename T >
void band::interface::BaseInterfaceDecorator< T >::DeleteAllImages ( )  [override], [virtual]
```

Implements band::Interface.

#### 7.4.2.7 DeleteAllTextures()

```
template<typename T >
void band::interface::BaseInterfaceDecorator< T >::DeleteAllTextures ( )  [override], [virtual]
```

Implements band::Interface.

#### 7.4.2.8 DeleteFont()

```
template<typename T >
void band::interface::BaseInterfaceDecorator< T >::DeleteFont (
            FontId id )  [override], [virtual]
```

Implements band::Interface.

#### 7.4.2.9 DeleteImage()

```
template<typename T >
void band::interface::BaseInterfaceDecorator< T >::DeleteImage (
            ImageId id )  [override], [virtual]
```

Implements band::Interface.

#### 7.4.2.10 DeleteTexture()

```
template<typename T >
void band::interface::BaseInterfaceDecorator< T >::DeleteTexture (
            TextureId id )  [override], [virtual]
```

Implements band::Interface.

#### 7.4.2.11 DrawCircle()

```
template<typename T >
void band::interface::BaseInterfaceDecorator< T >::DrawCircle (
            const Circle & circle,
            const Leg & leg,
            const Color & color )  [override], [virtual]
```

Implements band::Interface.

#### 7.4.2.12 DrawFps()

```
template<typename T >
void band::interface::BaseInterfaceDecorator< T >::DrawFps (
            const Point & position )  [override], [virtual]
```

Implements band::Interface.

Reimplemented in band::interface::DebugInterfaceDecorator< T >.

#### 7.4.2.13 DrawLine()

```
template<typename T >
void band::interface::BaseInterfaceDecorator< T >::DrawLine (
            const Line & line,
            const Dimension & thickness,
            const Leg & leg,
            const Color & color )  [override], [virtual]
```

Implements band::Interface.

#### 7.4.2.14 DrawRectangle()

```
template<typename T >
void band::interface::BaseInterfaceDecorator< T >::DrawRectangle (
            const Rectangle & rectangle,
            const Color & color )  [override], [virtual]
```

Implements band::Interface.

#### 7.4.2.15 DrawText()

```
template<typename T >
void band::interface::BaseInterfaceDecorator< T >::DrawText (
            const Text & text,
            const Point & position,
            const Dimension & dimension,
            const Color & color,
            FontId id )  [override], [virtual]
```

Implements band::Interface.

#### 7.4.2.16 DrawTexture()

```
template<typename T >
void band::interface::BaseInterfaceDecorator< T >::DrawTexture (
            TextureId id,
            const Point & position )  [override], [virtual]
```

Implements band::Interface.

#### 7.4.2.17 DrawTriangle()

```
template<typename T >
void band::interface::BaseInterfaceDecorator< T >::DrawTriangle (
            const Triangle & triangle,
            const Color & color )  [override], [virtual]
```

Implements band::Interface.

#### 7.4.2.18 HasAction()

```
template<typename T >
bool band::interface::BaseInterfaceDecorator< T >::HasAction (
            const Action & action ) const  [override], [virtual]
```

Implements band::Interface.

#### 7.4.2.19 ImageArea()

```
template<typename T >
Area band::interface::BaseInterfaceDecorator< T >::ImageArea (
            ImageId id ) const  [override], [virtual]
```

Implements band::Interface.

#### 7.4.2.20 LoadFont()

```
template<typename T >
FontId band::interface::BaseInterfaceDecorator< T >::LoadFont (
            const File & file )  [override], [virtual]
```

Implements band::Interface.

#### 7.4.2.21 LoadImage()

```
template<typename T >
ImageId band::interface::BaseInterfaceDecorator< T >::LoadImage (
            const File & file )  [override], [virtual]
```

Implements band::Interface.

#### 7.4.2.22 MeasureText()

```
template<typename T >
band::Area band::interface::BaseInterfaceDecorator< T >::MeasureText (
            const Text & text,
            const Dimension & dimension,
            FontId id ) const  [override], [virtual]
```

Implements band::Interface.

#### 7.4.2.23 MousePosition()

```
template<typename T >
band::Point band::interface::BaseInterfaceDecorator< T >::MousePosition ( ) const  [override],
[virtual]
```

Implements band::Interface.

#### 7.4.2.24 SelectTexture()

```
template<typename T >
void band::interface::BaseInterfaceDecorator< T >::SelectTexture (
            TextureId id )  [override], [virtual]
```

Implements band::Interface.

#### 7.4.2.25 SetIcon()

```
template<typename T >
void band::interface::BaseInterfaceDecorator< T >::SetIcon (
            ImageId id )  [override], [virtual]
```

Implements band::Interface.

#### 7.4.2.26 SetTargetFps()

```
template<typename T >
void band::interface::BaseInterfaceDecorator< T >::SetTargetFps (
            Size fps )  [override], [virtual]
```

Implements band::Interface.

#### 7.4.2.27 SetTitle()

```
template<typename T >
void band::interface::BaseInterfaceDecorator< T >::SetTitle (
            const Text & text )  [override], [virtual]
```

Implements band::Interface.

#### 7.4.2.28 SetWindowArea()

```
template<typename T >
void band::interface::BaseInterfaceDecorator< T >::SetWindowArea (
            const ::band::WindowArea & area )  [override], [virtual]
```

Implements band::Interface.

#### 7.4.2.29 StartDrawing()

```
template<typename T >
void band::interface::BaseInterfaceDecorator< T >::StartDrawing ( )  [override], [virtual]
```

Implements band::Interface.

#### 7.4.2.30 StopDrawing()

```
template<typename T >
void band::interface::BaseInterfaceDecorator< T >::StopDrawing ( )  [override], [virtual]
```

Implements band::Interface.

Reimplemented in band::interface::DebugInterfaceDecorator< T >.

#### 7.4.2.31 TextureArea()

```
template<typename T >
Area band::interface::BaseInterfaceDecorator< T >::TextureArea (
            TextureId id ) const  [override], [virtual]
```

Implements band::Interface.

#### 7.4.2.32 ToggleFullscreen()

```
template<typename T >
void band::interface::BaseInterfaceDecorator< T >::ToggleFullscreen ( )  [override], [virtual]
```

Implements band::Interface.

#### 7.4.2.33 UnselectTexture()

```
template<typename T >
void band::interface::BaseInterfaceDecorator< T >::UnselectTexture ( )  [override], [virtual]
```

Implements band::Interface.

#### 7.4.2.34 WindowArea()

```
template<typename T >
band::WindowArea band::interface::BaseInterfaceDecorator< T >::WindowArea ( ) const  [override],
[virtual]
```

Implements band::Interface.

Reimplemented in band::interface::SectionInterfaceDecorator< T >.

### 7.4.3 Member Data Documentation

#### 7.4.3.1 interface_

```
template<typename T >
T band::interface::BaseInterfaceDecorator< T >::interface_  [protected]
```

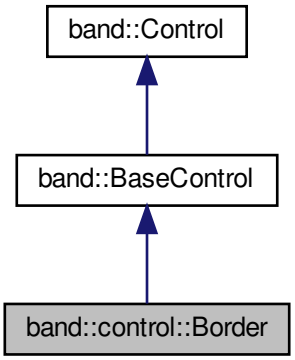
The documentation for this class was generated from the following file:

- band/interface/base_interface_decorator.h

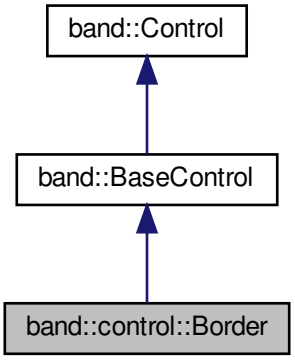
## 7.5 band::control::Border Class Reference

`#include <border.h>`

Inheritance diagram for band::control::Border:




Collaboration diagram for band::control::Border:




### Public Member Functions

- Dimension Thickness () const
- void SetThickness (const Dimension &thickness)
- ::band::Color Color () const
- void SetColor (const ::band::Color &color)
- Real RealBorderThickness (const Interface &interface) const
- void SetArea (const ::band::Area &area)
- ::band::Area Area (const Interface &interface) const override
- void Draw (const Point &position, Interface &interface) override

### 7.5.1 Member Function Documentation

#### 7.5.1.1 Area()

```
::band::Area band::control::Border::Area (
            const Interface & interface ) const  [override], [virtual]
```

Implements band::Control.

#### 7.5.1.2 Color()

```
::band::Color band::control::Border::Color ( ) const
```

#### 7.5.1.3 Draw()

```
void band::control::Border::Draw (
            const Point & position,
            Interface & interface )  [override], [virtual]
```

Implements band::Control.

#### 7.5.1.4 RealBorderThickness()

```
Real band::control::Border::RealBorderThickness (
            const Interface & interface ) const
```

#### 7.5.1.5 SetArea()

```
void band::control::Border::SetArea (
            const ::band::Area & area )
```

#### 7.5.1.6 SetColor()

```
void band::control::Border::SetColor (
            const ::band::Color & color )
```

#### 7.5.1.7 SetThickness()

```
void band::control::Border::SetThickness (
            const Dimension & thickness )
```

#### 7.5.1.8 Thickness()

```
Dimension band::control::Border::Thickness ( ) const
```

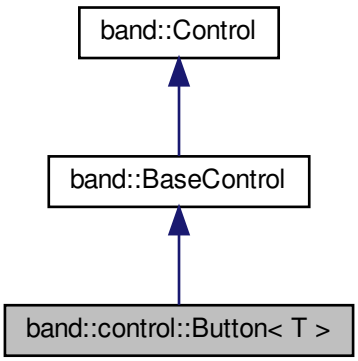
The documentation for this class was generated from the following file:

- band/control/border.h

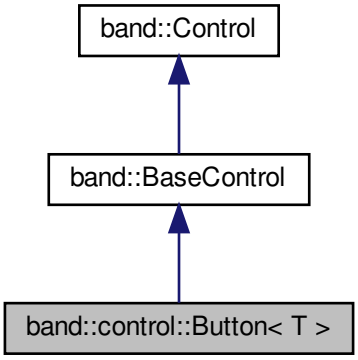
## 7.6 band::control::Button< T > Class Template Reference

```
#include <button.h>
```

Inheritance diagram for band::control::Button< T >:



Collaboration diagram for band::control::Button< T >:




## Public Types

- enum Action { Action::kNone, Action::kPress, Action::kHover }

## Public Member Functions

- Color FillColor () const
- void SetFillColor (const Color &color)
- Color HoverColor () const
- void SetHoverColor (const Color &color)
- Color DisabledColor () const
- void SetDisabledColor (const Color &color)
- Color BorderColor () const
- void SetBorderColor (const Color &color)
- Alignment HorizontalAlignment () const
- void SetHorizontalAlignment (const Alignment &alignment)
- Alignment VerticalAlignment () const
- void SetVerticalAlignment (const Alignment &alignment)
- Dimension BorderThickness () const
- void SetBorderThickness (const Dimension &border_thickness)
- void Disable ()
- void Enable ()
- bool IsEnabled () const
- void SetArea (const std::optional<::band::Area > &area)
- void SetControl (T control)
- Action LastAction () const
- ::band::Area Area (const Interface &interface) const override
- void CleanUp (Interface &interface) override
- void Update (const Point &position, Interface &interface) override
- void Draw (const Point &position, Interface &interface) override

## 7.6.1 Member Enumeration Documentation

### 7.6.1.1 Action

```
template<typename T >
enum band::control::Button::Action  [strong]
```

**Enumerator**

| | |
|---|---|
| kNone | |
| kPress | |
| kHover | |

## 7.6.2 Member Function Documentation

### 7.6.2.1 Area()

```
template<typename T >
band::Area band::control::Button< T >::Area (
            const Interface & interface ) const  [override], [virtual]
```

Implements band::Control.

### 7.6.2.2 BorderColor()

```
template<typename T >
Color band::control::Button< T >::BorderColor ( ) const
```

### 7.6.2.3 BorderThickness()

```
template<typename T >
Dimension band::control::Button< T >::BorderThickness ( ) const
```

#### 7.6.2.4 CleanUp()

```
template<typename T >
void band::control::Button< T >::CleanUp (
            Interface & interface )  [override], [virtual]
```

Implements band::Control.

#### 7.6.2.5 Disable()

```
template<typename T >
void band::control::Button< T >::Disable ( )
```

#### 7.6.2.6 DisabledColor()

```
template<typename T >
Color band::control::Button< T >::DisabledColor ( ) const
```

#### 7.6.2.7 Draw()

```
template<typename T >
void band::control::Button< T >::Draw (
            const Point & position,
            Interface & interface )  [override], [virtual]
```

Implements band::Control.

#### 7.6.2.8 Enable()

```
template<typename T >
void band::control::Button< T >::Enable ( )
```

#### 7.6.2.9 FillColor()

```
template<typename T >
Color band::control::Button< T >::FillColor ( ) const
```

#### 7.6.2.10 HorizontalAlignment()

```
template<typename T >
Alignment band::control::Button< T >::HorizontalAlignment ( ) const
```

#### 7.6.2.11 HoverColor()

```
template<typename T >
Color band::control::Button< T >::HoverColor ( ) const
```

#### 7.6.2.12 IsEnabled()

```
template<typename T >
bool band::control::Button< T >::IsEnabled ( ) const
```

#### 7.6.2.13 LastAction()

```
template<typename T >
band::control::Button< T >::Action band::control::Button< T >::LastAction ( ) const
```

#### 7.6.2.14 SetArea()

```
template<typename T >
void band::control::Button< T >::SetArea (
            const std::optional<::band::Area > & area )
```

#### 7.6.2.15 SetBorderColor()

```
template<typename T >
void band::control::Button< T >::SetBorderColor (
            const Color & color )
```

#### 7.6.2.16 SetBorderThickness()

```
template<typename T >
void band::control::Button< T >::SetBorderThickness (
            const Dimension & border_thickness )
```

#### 7.6.2.17 SetControl()

```
template<typename T >
void band::control::Button< T >::SetControl (
            T control )
```

#### 7.6.2.18 SetDisabledColor()

```
template<typename T >
void band::control::Button< T >::SetDisabledColor (
            const Color & color )
```

#### 7.6.2.19 SetFillColor()

```
template<typename T >
void band::control::Button< T >::SetFillColor (
            const Color & color )
```

#### 7.6.2.20 SetHorizontalAlignment()

```
template<typename T >
void band::control::Button< T >::SetHorizontalAlignment (
            const Alignment & alignment )
```

#### 7.6.2.21 SetHoverColor()

```
template<typename T >
void band::control::Button< T >::SetHoverColor (
            const Color & color )
```

#### 7.6.2.22 SetVerticalAlignment()

```
template<typename T >
void band::control::Button< T >::SetVerticalAlignment (
            const Alignment & alignment )
```

#### 7.6.2.23 Update()

```
template<typename T >
void band::control::Button< T >::Update (
            const Point & position,
            Interface & interface )  [override], [virtual]
```

Implements band::Control.

#### 7.6.2.24 VerticalAlignment()

```
template<typename T >
Alignment band::control::Button< T >::VerticalAlignment ( ) const
```

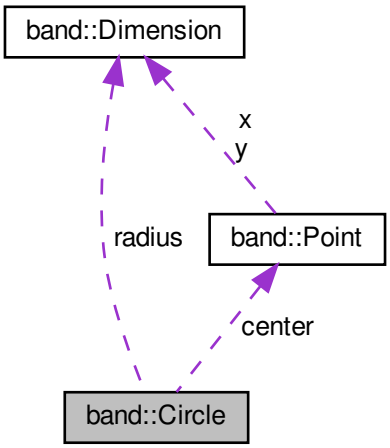
The documentation for this class was generated from the following file:

- band/control/button.h

## 7.7 band::Circle Struct Reference

```
#include <interface.h>
```

Collaboration diagram for band::Circle:



### Public Attributes

- Point center {}
- Dimension radius {}

### 7.7.1 Member Data Documentation

#### 7.7.1.1 center

```
Point band::Circle::center {}
```

#### 7.7.1.2 radius

```
Dimension band::Circle::radius {}
```

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

- band/interface.h

## 7.8 band::Color Struct Reference

```
#include <interface.h>
```

### Public Attributes

- Component r {}
- Component g {}
- Component b {}
- Component a {}

### 7.8.1 Member Data Documentation

#### 7.8.1.1 a

```
Component band::Color::a {}
```

#### 7.8.1.2 b

```
Component band::Color::b {}
```

#### 7.8.1.3 g

```
Component band::Color::g {}
```

#### 7.8.1.4 r

```
Component band::Color::r {}
```

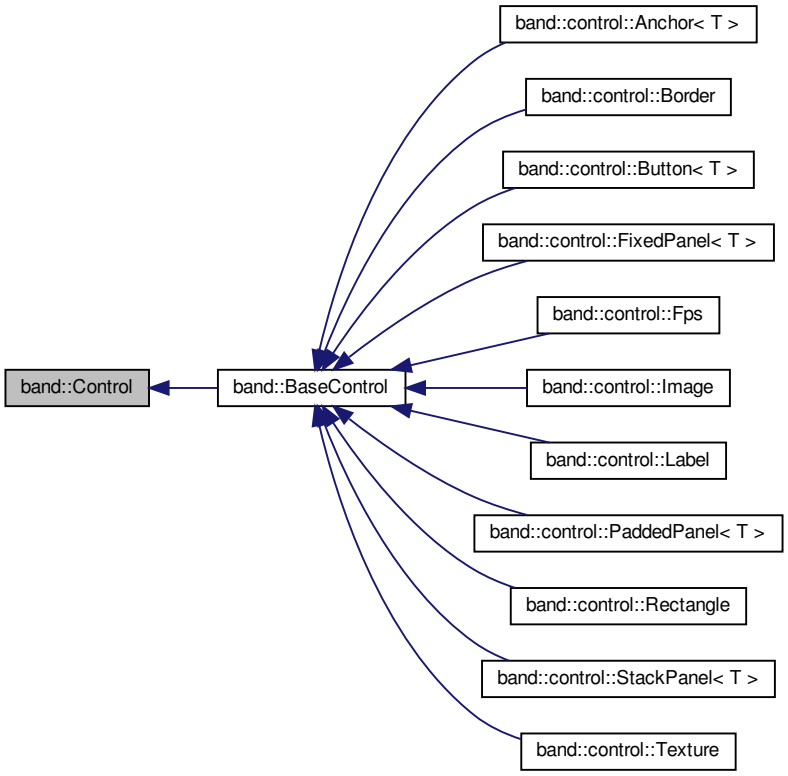
The documentation for this struct was generated from the following file:

- band/interface.h

## 7.9 band::Control Class Reference

```
#include <control.h>
```

Inheritance diagram for band::Control:



### Public Member Functions

- virtual ~Control ()=default
- virtual ::band::Area Area (const Interface &interface) const =0
- virtual void CleanUp (Interface &interface)=0
- virtual void Update (const Point &position, Interface &interface)=0
- virtual void Draw (const Point &position, Interface &interface)=0

## 7.9.1 Constructor & Destructor Documentation

#### 7.9.1.1 ~Control()

```
virtual band::Control::~Control ( )  [virtual], [default]
```

## 7.9.2 Member Function Documentation

#### 7.9.2.1 Area()

```
virtual ::band::Area band::Control::Area (
            const Interface & interface ) const  [pure virtual]
```

Implemented in band::control::Button< T >, band::BaseControl, band::control::Border, band::control::StackPanel< T >, band::control::PaddedPanel< T >, band::control::Anchor< T >, band::control::Image, band::control::Label, band::control::FixedPanel< T >, band::control::Rectangle, and band::control::Texture.

#### 7.9.2.2 CleanUp()

```
virtual void band::Control::CleanUp (
            Interface & interface )  [pure virtual]
```

Implemented in band::control::Button< T >, band::BaseControl, band::control::StackPanel< T >, band::control::Anchor< T >, band::control::Image, band::control::FixedPanel< T >, and band::control::Texture.

#### 7.9.2.3 Draw()

```
virtual void band::Control::Draw (
            const Point & position,
            Interface & interface )  [pure virtual]
```

Implemented in band::control::Button< T >, band::BaseControl, band::control::StackPanel< T >, band::control::PaddedPanel< T >, band::control::Anchor< T >, band::control::Border, band::control::Image, band::control::FixedPanel< T >, band::control::Label, band::control::Texture, band::control::Rectangle, and band::control::Fps.

#### 7.9.2.4 Update()

```
virtual void band::Control::Update (
            const Point & position,
            Interface & interface )  [pure virtual]
```

Implemented in band::control::Button< T >, band::BaseControl, band::control::StackPanel< T >, band::control::PaddedPanel< T >, band::control::Anchor< T >, band::control::FixedPanel< T >, and band::control::Texture.

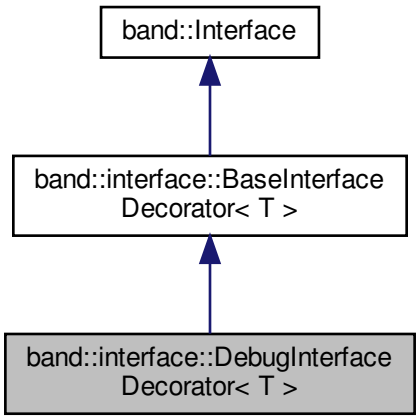
The documentation for this class was generated from the following file:

- band/control.h

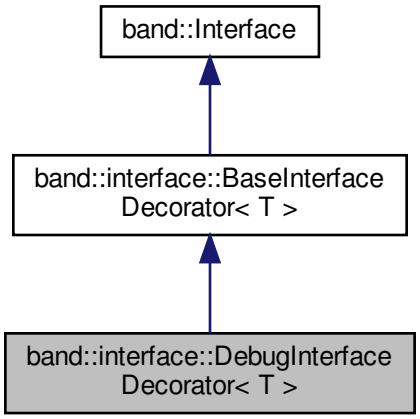
## 7.10 band::interface::DebugInterfaceDecorator< T > Class Template Reference

```
#include <debug_interface_decorator.h>
```

Inheritance diagram for band::interface::DebugInterfaceDecorator< T >:



Collaboration diagram for band::interface::DebugInterfaceDecorator< T >:




### Public Member Functions

- void StopDrawing () override
- void DrawFps (const Point &position) override

### Additional Inherited Members

## 7.10.1 Member Function Documentation

#### 7.10.1.1 DrawFps()

```
template<typename T >
void band::interface::DebugInterfaceDecorator< T >::DrawFps (
            const Point & position )  [override], [virtual]
```

Reimplemented from band::interface::BaseInterfaceDecorator< T >.

#### 7.10.1.2 StopDrawing()

```
template<typename T >
void band::interface::DebugInterfaceDecorator< T >::StopDrawing ( )  [override], [virtual]
```

Reimplemented from band::interface::BaseInterfaceDecorator< T >.

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

- band/interface/debug_interface_decorator.h

## 7.11 band::Dimension Struct Reference

`#include <interface.h>`

### Public Attributes

- Real scalar = 0.0
- Unit unit {}

### 7.11.1 Member Data Documentation

#### 7.11.1.1 scalar

```
Real band::Dimension::scalar = 0.0
```

#### 7.11.1.2 unit

```
Unit band::Dimension::unit {}
```

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

- band/interface.h

## 7.12 band::File Struct Reference

`#include <interface.h>`

### Public Attributes

- const uint8_t * bytes
- const size_t n

### 7.12.1 Member Data Documentation

#### 7.12.1.1 bytes

```
const uint8_t* band::File::bytes
```

#### 7.12.1.2 n

```
const size_t band::File::n
```

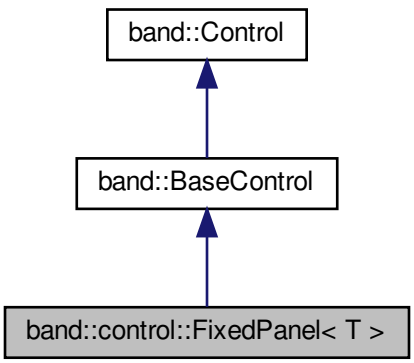
The documentation for this struct was generated from the following file:

- band/interface.h

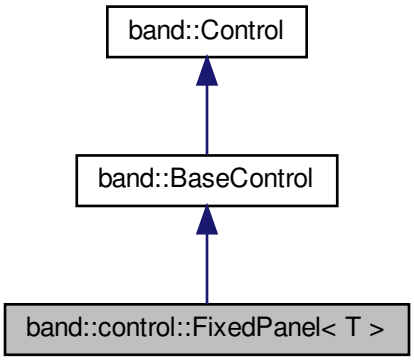
## 7.13 band::control::FixedPanel< T > Class Template Reference

```
#include <fixed_panel.h>
```

Inheritance diagram for band::control::FixedPanel< T >:



Collaboration diagram for band::control::FixedPanel< T >:




## Public Member Functions

- template<typename Iter >
  void SetControls (const Iter &begin, const Iter &end)
- void SetControls (const std::initializer_list< std::pair< T, Point >> &controls)
- ::band::Area Area (const Interface &interface) const override
- void CleanUp (Interface &interface) override
- void Update (const Point &position, Interface &interface) override
- void Draw (const Point &position, Interface &interface) override

### 7.13.1 Member Function Documentation

#### 7.13.1.1 Area()

```
template<typename T >
band::Area band::control::FixedPanel< T >::Area (
            const Interface & interface ) const  [override], [virtual]
```

Implements band::Control.

#### 7.13.1.2 CleanUp()

```
template<typename T >
void band::control::FixedPanel< T >::CleanUp (
            Interface & interface )  [override], [virtual]
```

Implements band::Control.

#### 7.13.1.3 Draw()

```
template<typename T >
void band::control::FixedPanel< T >::Draw (
            const Point & position,
            Interface & interface )  [override], [virtual]
```

Implements band::Control.

#### 7.13.1.4 SetControls() [1/2]

```
template<typename T >
template<typename Iter >
void band::control::FixedPanel< T >::SetControls (
            const Iter & begin,
            const Iter & end )
```

#### 7.13.1.5 SetControls() [2/2]

```
template<typename T >
void band::control::FixedPanel< T >::SetControls (
            const std::initializer_list< std::pair< T, Point >> & controls )
```

#### 7.13.1.6 Update()

```
template<typename T >
void band::control::FixedPanel< T >::Update (
            const Point & position,
            Interface & interface )  [override], [virtual]
```

Implements band::Control.

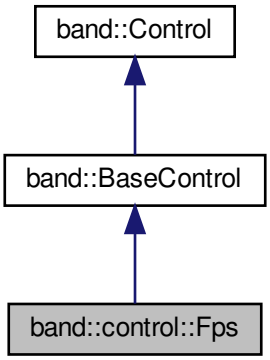
The documentation for this class was generated from the following file:

- band/control/fixed_panel.h

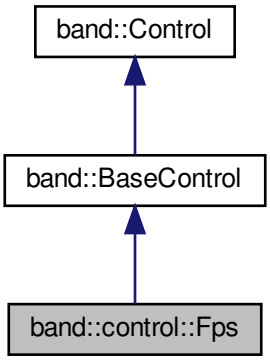
## 7.14 band::control::Fps Class Reference

`#include <fps.h>`

Inheritance diagram for band::control::Fps:




Collaboration diagram for band::control::Fps:




### Public Member Functions

- void Draw (const Point &position, Interface &interface) override

### 7.14.1 Member Function Documentation

#### 7.14.1.1 Draw()

```
void band::control::Fps::Draw (
            const Point & position,
            Interface & interface )  [override], [virtual]
```

Implements band::Control.

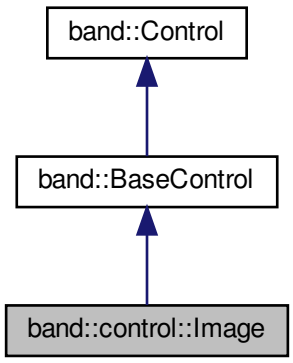
The documentation for this class was generated from the following file:

- band/control/fps.h

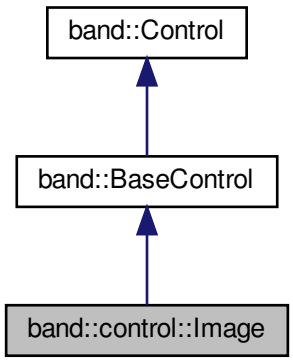
## 7.15 band::control::Image Class Reference

```
#include <image.h>
```

Inheritance diagram for band::control::Image:




Collaboration diagram for band::control::Image:



### Public Member Functions

- ::band::ImageId ImageId () const
- void SetImageId (::band::ImageId id)
- void SetWidth (const std::optional< Dimension > &width)
- void SetHeight (const std::optional< Dimension > &height)
- ::band::Area Area (const Interface &interface) const override
- void CleanUp (Interface &interface) override
- void Draw (const Point &position, Interface &interface) override

## 7.15.1 Member Function Documentation

#### 7.15.1.1 Area()

```
::band::Area band::control::Image::Area (
            const Interface & interface ) const  [override], [virtual]
```

Implements band::Control.

#### 7.15.1.2 CleanUp()

```
void band::control::Image::CleanUp (
            Interface & interface )  [override], [virtual]
```

Implements band::Control.

#### 7.15.1.3 Draw()

```
void band::control::Image::Draw (
            const Point & position,
            Interface & interface )  [override], [virtual]
```

Implements band::Control.

#### 7.15.1.4 ImageId()

```
::band::ImageId band::control::Image::ImageId ( ) const
```

#### 7.15.1.5 SetHeight()

```
void band::control::Image::SetHeight (
            const std::optional< Dimension > & height )
```

#### 7.15.1.6 SetImageId()

```
void band::control::Image::SetImageId (
            ::band::ImageId id )
```

#### 7.15.1.7 SetWidth()

```
void band::control::Image::SetWidth (
            const std::optional< Dimension > & width )
```

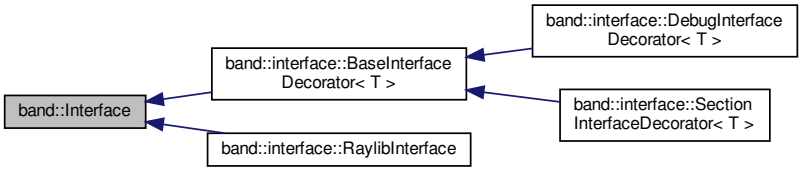
The documentation for this class was generated from the following file:

- band/control/image.h

## 7.16 band::Interface Class Reference

`#include <interface.h>`

Inheritance diagram for band::Interface:




### Public Types

- enum Action { Action::kLeftClick, Action::kRightClick, Action::kClose, Action::kBackspace }

### Public Member Functions

- virtual ~Interface ()=default
- virtual void SetTargetFps (Size fps)=0
- virtual void SetWindowArea (const ::band::WindowArea &area)=0
- virtual void SetIcon (ImageId id)=0
- virtual void SetTitle (const Text &text)=0
- virtual void ToggleFullscreen ()=0
- virtual void StartDrawing ()=0
- virtual void StopDrawing ()=0
- virtual ImageId LoadImage (const File &file)=0
- virtual void DeleteImage (ImageId id)=0
- virtual void DeleteAllImages ()=0
- virtual Area ImageArea (ImageId id) const =0
- virtual FontId LoadFont (const File &file)=0
- virtual void DeleteFont (FontId id)=0
- virtual void DeleteAllFonts ()=0
- virtual TextureId CreateBlankTexture (const Area &area)=0
- virtual TextureId CreateImageTexture (ImageId id, const Area &area)=0
- virtual void DeleteTexture (TextureId id)=0
- virtual void DeleteAllTextures ()=0
- virtual void SelectTexture (TextureId id)=0
- virtual void UnselectTexture ()=0
- virtual void DrawTexture (TextureId id, const Point &position)=0
- virtual Area TextureArea (TextureId id) const =0
- virtual void Clear (const Color &color)=0
- virtual void DrawLine (const Line &line, const Dimension &thickness, const Leg &leg, const Color &color)=0
- virtual void DrawCircle (const Circle &circle, const Leg &leg, const Color &color)=0
- virtual void DrawRectangle (const Rectangle &rectangle, const Color &color)=0
- virtual void DrawTriangle (const Triangle &triangle, const Color &color)=0
- virtual void DrawText (const Text &text, const Point &position, const Dimension &dimension, const Color &color, FontId id)=0
- virtual void DrawFps (const Point &position)=0
- virtual Area MeasureText (const Text &text, const Dimension &dimension, FontId id) const =0
- virtual bool HasAction (const Action &action) const =0
- virtual std::optional< char > CharacterPressed () const =0
- virtual Point MousePosition () const =0
- virtual ::band::WindowArea WindowArea () const =0

## 7.16.1 Member Enumeration Documentation

### 7.16.1.1 Action

```
enum band::Interface::Action  [strong]
```

**Enumerator**

| | |
|---|---|
| kLeftClick | |
| kRightClick | |
| kClose | |
| kBackspace | |

### 7.16.2 Constructor & Destructor Documentation

#### 7.16.2.1 ~Interface()

```
virtual band::Interface::~Interface ( )  [virtual], [default]
```

### 7.16.3 Member Function Documentation

#### 7.16.3.1 CharacterPressed()

```
virtual std::optional<char> band::Interface::CharacterPressed ( ) const  [pure virtual]
```

Implemented in band::interface::RaylibInterface, and band::interface::BaseInterfaceDecorator< T >.

#### 7.16.3.2 Clear()

```
virtual void band::Interface::Clear (
            const Color & color )  [pure virtual]
```

Implemented in band::interface::RaylibInterface, and band::interface::BaseInterfaceDecorator< T >.

#### 7.16.3.3 CreateBlankTexture()

```
virtual TextureId band::Interface::CreateBlankTexture (
            const Area & area )  [pure virtual]
```

Implemented in band::interface::RaylibInterface, and band::interface::BaseInterfaceDecorator< T >.

#### 7.16.3.4 CreateImageTexture()

```
virtual TextureId band::Interface::CreateImageTexture (
            ImageId id,
            const Area & area )  [pure virtual]
```

Implemented in band::interface::RaylibInterface, and band::interface::BaseInterfaceDecorator< T >.

#### 7.16.3.5 DeleteAllFonts()

```
virtual void band::Interface::DeleteAllFonts ( )  [pure virtual]
```

Implemented in band::interface::RaylibInterface, and band::interface::BaseInterfaceDecorator< T >.

#### 7.16.3.6 DeleteAllImages()

```
virtual void band::Interface::DeleteAllImages ( )  [pure virtual]
```

Implemented in band::interface::RaylibInterface, and band::interface::BaseInterfaceDecorator< T >.

#### 7.16.3.7 DeleteAllTextures()

```
virtual void band::Interface::DeleteAllTextures ( )  [pure virtual]
```

Implemented in band::interface::RaylibInterface, and band::interface::BaseInterfaceDecorator< T >.

#### 7.16.3.8 DeleteFont()

```
virtual void band::Interface::DeleteFont (
            FontId id )  [pure virtual]
```

Implemented in band::interface::RaylibInterface, and band::interface::BaseInterfaceDecorator< T >.

#### 7.16.3.9 DeleteImage()

```
virtual void band::Interface::DeleteImage (
            ImageId id )  [pure virtual]
```

Implemented in band::interface::RaylibInterface, and band::interface::BaseInterfaceDecorator< T >.

#### 7.16.3.10 DeleteTexture()

```
virtual void band::Interface::DeleteTexture (
            TextureId id )  [pure virtual]
```

Implemented in band::interface::RaylibInterface, and band::interface::BaseInterfaceDecorator< T >.

#### 7.16.3.11 DrawCircle()

```
virtual void band::Interface::DrawCircle (
            const Circle & circle,
            const Leg & leg,
            const Color & color )  [pure virtual]
```

Implemented in band::interface::RaylibInterface, and band::interface::BaseInterfaceDecorator< T >.

#### 7.16.3.12 DrawFps()

```
virtual void band::Interface::DrawFps (
            const Point & position )  [pure virtual]
```

Implemented in band::interface::RaylibInterface, band::interface::BaseInterfaceDecorator< T >, and band::interface::DebugInterfaceDecorator< T >.

#### 7.16.3.13 DrawLine()

```
virtual void band::Interface::DrawLine (
            const Line & line,
            const Dimension & thickness,
            const Leg & leg,
            const Color & color )  [pure virtual]
```

Implemented in band::interface::RaylibInterface, and band::interface::BaseInterfaceDecorator< T >.

#### 7.16.3.14 DrawRectangle()

```
virtual void band::Interface::DrawRectangle (
            const Rectangle & rectangle,
            const Color & color )  [pure virtual]
```

Implemented in band::interface::RaylibInterface, and band::interface::BaseInterfaceDecorator< T >.

#### 7.16.3.15 DrawText()

```
virtual void band::Interface::DrawText (
            const Text & text,
            const Point & position,
            const Dimension & dimension,
            const Color & color,
            FontId id )  [pure virtual]
```

Implemented in band::interface::RaylibInterface, and band::interface::BaseInterfaceDecorator< T >.

#### 7.16.3.16 DrawTexture()

```
virtual void band::Interface::DrawTexture (
            TextureId id,
            const Point & position )  [pure virtual]
```

Implemented in band::interface::RaylibInterface, and band::interface::BaseInterfaceDecorator< T >.

#### 7.16.3.17 DrawTriangle()

```
virtual void band::Interface::DrawTriangle (
            const Triangle & triangle,
            const Color & color )  [pure virtual]
```

Implemented in band::interface::RaylibInterface, and band::interface::BaseInterfaceDecorator< T >.

#### 7.16.3.18 HasAction()

```
virtual bool band::Interface::HasAction (
            const Action & action ) const  [pure virtual]
```

Implemented in band::interface::RaylibInterface, and band::interface::BaseInterfaceDecorator< T >.

#### 7.16.3.19 ImageArea()

```
virtual Area band::Interface::ImageArea (
            ImageId id ) const  [pure virtual]
```

Implemented in band::interface::RaylibInterface, and band::interface::BaseInterfaceDecorator< T >.

#### 7.16.3.20 LoadFont()

```
virtual FontId band::Interface::LoadFont (
            const File & file )  [pure virtual]
```

Implemented in band::interface::RaylibInterface, and band::interface::BaseInterfaceDecorator< T >.

#### 7.16.3.21 LoadImage()

```
virtual ImageId band::Interface::LoadImage (
            const File & file )  [pure virtual]
```

Implemented in band::interface::RaylibInterface, and band::interface::BaseInterfaceDecorator< T >.

#### 7.16.3.22 MeasureText()

```
virtual Area band::Interface::MeasureText (
            const Text & text,
            const Dimension & dimension,
            FontId id ) const  [pure virtual]
```

Implemented in band::interface::RaylibInterface, and band::interface::BaseInterfaceDecorator< T >.

#### 7.16.3.23 MousePosition()

```
virtual Point band::Interface::MousePosition ( ) const  [pure virtual]
```

Implemented in band::interface::RaylibInterface, and band::interface::BaseInterfaceDecorator< T >.

#### 7.16.3.24 SelectTexture()

```
virtual void band::Interface::SelectTexture (
            TextureId id )  [pure virtual]
```

Implemented in band::interface::RaylibInterface, and band::interface::BaseInterfaceDecorator< T >.

#### 7.16.3.25 SetIcon()

```
virtual void band::Interface::SetIcon (
            ImageId id )  [pure virtual]
```

Implemented in band::interface::RaylibInterface, and band::interface::BaseInterfaceDecorator< T >.

#### 7.16.3.26 SetTargetFps()

```
virtual void band::Interface::SetTargetFps (
            Size fps )  [pure virtual]
```

Implemented in band::interface::RaylibInterface, and band::interface::BaseInterfaceDecorator< T >.

#### 7.16.3.27 SetTitle()

```
virtual void band::Interface::SetTitle (
            const Text & text )  [pure virtual]
```

Implemented in band::interface::RaylibInterface, and band::interface::BaseInterfaceDecorator< T >.

#### 7.16.3.28 SetWindowArea()

```
virtual void band::Interface::SetWindowArea (
            const ::band::WindowArea & area )  [pure virtual]
```

Implemented in band::interface::RaylibInterface, and band::interface::BaseInterfaceDecorator< T >.

#### 7.16.3.29 StartDrawing()

```
virtual void band::Interface::StartDrawing ( )  [pure virtual]
```

Implemented in band::interface::RaylibInterface, and band::interface::BaseInterfaceDecorator< T >.

#### 7.16.3.30 StopDrawing()

```
virtual void band::Interface::StopDrawing ( )  [pure virtual]
```

Implemented in band::interface::RaylibInterface, band::interface::BaseInterfaceDecorator< T >, and band::interface::DebugInterfaceDecorator< T >.

#### 7.16.3.31 TextureArea()

```
virtual Area band::Interface::TextureArea (
            TextureId id ) const  [pure virtual]
```

Implemented in band::interface::RaylibInterface, and band::interface::BaseInterfaceDecorator< T >.

#### 7.16.3.32 ToggleFullscreen()

```
virtual void band::Interface::ToggleFullscreen ( )  [pure virtual]
```

Implemented in band::interface::RaylibInterface, and band::interface::BaseInterfaceDecorator< T >.

#### 7.16.3.33 UnselectTexture()

```
virtual void band::Interface::UnselectTexture ( )  [pure virtual]
```

Implemented in band::interface::RaylibInterface, and band::interface::BaseInterfaceDecorator< T >.

#### 7.16.3.34 WindowArea()

```
virtual ::band::WindowArea band::Interface::WindowArea ( ) const  [pure virtual]
```

Implemented in band::interface::RaylibInterface, band::interface::BaseInterfaceDecorator< T >, and band::interface::SectionInterfaceDecorator< T >.

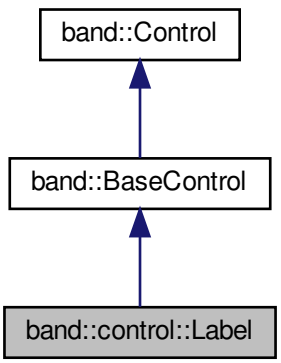
The documentation for this class was generated from the following file:

- band/interface.h

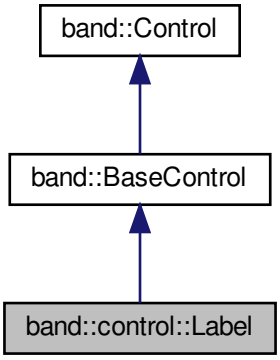
## 7.17 band::control::Label Class Reference

```
#include <label.h>
```

Inheritance diagram for band::control::Label:



Collaboration diagram for band::control::Label:




## Public Member Functions

- ::band::Text Text () const
- void SetText (const ::band::Text &text)
- Dimension FontSize () const
- void SetFontSize (const Dimension &font_size)
- Color FontColor () const
- void SetFontColor (const Color &font_color)
- ::band::FontId FontId () const
- void SetFontId (::band::FontId font_id)
- ::band::Area Area (const Interface &interface) const override
- void Draw (const Point &position, Interface &interface) override

## 7.17.1 Member Function Documentation

### 7.17.1.1 Area()

```
::band::Area band::control::Label::Area (
            const Interface & interface ) const  [override], [virtual]
```

Implements band::Control.

#### 7.17.1.2 Draw()

```
void band::control::Label::Draw (
            const Point & position,
            Interface & interface )  [override], [virtual]
```

Implements band::Control.

#### 7.17.1.3 FontColor()

```
Color band::control::Label::FontColor ( ) const
```

#### 7.17.1.4 FontId()

```
::band::FontId band::control::Label::FontId ( ) const
```

#### 7.17.1.5 FontSize()

```
Dimension band::control::Label::FontSize ( ) const
```

#### 7.17.1.6 SetFontColor()

```
void band::control::Label::SetFontColor (
            const Color & font_color )
```

#### 7.17.1.7 SetFontId()

```
void band::control::Label::SetFontId (
            ::band::FontId font_id )
```

#### 7.17.1.8 SetFontSize()

```
void band::control::Label::SetFontSize (
            const Dimension & font_size )
```

#### 7.17.1.9 SetText()

```
void band::control::Label::SetText (
            const ::band::Text & text )
```

#### 7.17.1.10 Text()

```
::band::Text band::control::Label::Text ( ) const
```

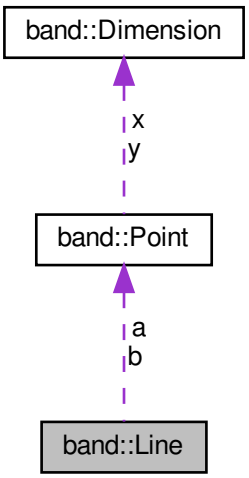
The documentation for this class was generated from the following file:

- band/control/label.h

## 7.18 band::Line Struct Reference

```
#include <interface.h>
```

Collaboration diagram for band::Line:




### Public Attributes

- Point a {}
- Point b {}

### 7.18.1 Member Data Documentation

#### 7.18.1.1 a

```
Point band::Line::a {}
```

#### 7.18.1.2 b

```
Point band::Line::b {}
```

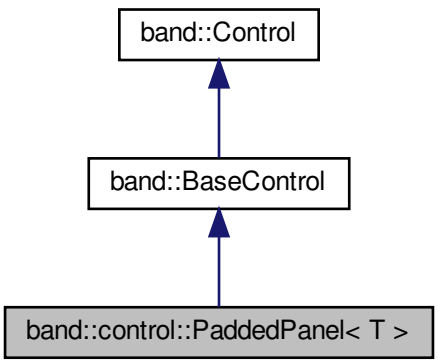
The documentation for this struct was generated from the following file:

- band/interface.h

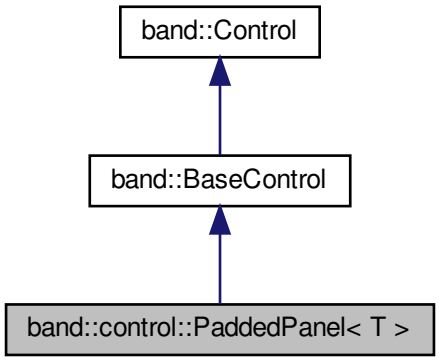
## 7.19 band::control::PaddedPanel< T > Class Template Reference

```
#include <padded_panel.h>
```

Inheritance diagram for band::control::PaddedPanel< T >:



Collaboration diagram for band::control::PaddedPanel< T >:




## Public Member Functions

- Dimension HorizontalPadding () const
- void SetHorizontalPadding (const Dimension &padding)
- Dimension VerticalPadding () const
- void SetVerticalPadding (const Dimension &padding)
- ::band::Area ReferenceArea () const
- void SetReferenceArea (const ::band::Area &area)
- void SetControl (T control)
- ::band::Area Area (const Interface &interface) const override
- void Update (const Point &position, Interface &interface) override
- void Draw (const Point &position, Interface &interface) override

### 7.19.1 Member Function Documentation

#### 7.19.1.1 Area()

```
template<typename T >
band::Area band::control::PaddedPanel< T >::Area (
            const Interface & interface ) const  [override], [virtual]
```

Implements band::Control.

#### 7.19.1.2 Draw()

```
template<typename T >
void band::control::PaddedPanel< T >::Draw (
            const Point & position,
            Interface & interface )  [override], [virtual]
```

Implements band::Control.

#### 7.19.1.3 HorizontalPadding()

```
template<typename T >
Dimension band::control::PaddedPanel< T >::HorizontalPadding ( ) const
```

#### 7.19.1.4 ReferenceArea()

```
template<typename T >
band::Area band::control::PaddedPanel< T >::ReferenceArea ( ) const
```

#### 7.19.1.5 SetControl()

```
template<typename T >
void band::control::PaddedPanel< T >::SetControl (
            T control )
```

#### 7.19.1.6 SetHorizontalPadding()

```
template<typename T >
void band::control::PaddedPanel< T >::SetHorizontalPadding (
            const Dimension & padding )
```

#### 7.19.1.7 SetReferenceArea()

```
template<typename T >
void band::control::PaddedPanel< T >::SetReferenceArea (
            const ::band::Area & area )
```

#### 7.19.1.8 SetVerticalPadding()

```
template<typename T >
void band::control::PaddedPanel< T >::SetVerticalPadding (
            const Dimension & padding )
```

#### 7.19.1.9 Update()

```
template<typename T >
void band::control::PaddedPanel< T >::Update (
            const Point & position,
            Interface & interface )  [override], [virtual]
```

Implements band::Control.

#### 7.19.1.10 VerticalPadding()

```
template<typename T >
Dimension band::control::PaddedPanel< T >::VerticalPadding ( ) const
```

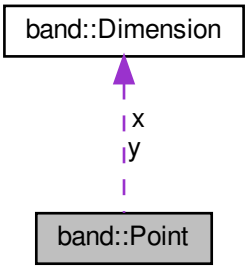
The documentation for this class was generated from the following file:

- band/control/padded_panel.h

## 7.20 band::Point Struct Reference

```
#include <interface.h>
```

Collaboration diagram for band::Point:



### Public Attributes

- Dimension x {}
- Dimension y {}

### 7.20.1 Member Data Documentation

#### 7.20.1.1 x

```
Dimension band::Point::x {}
```

#### 7.20.1.2 y

```
Dimension band::Point::y {}
```

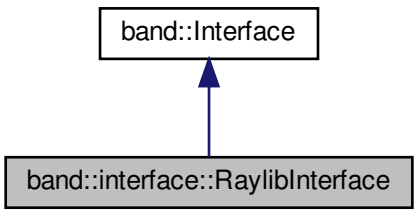
The documentation for this struct was generated from the following file:

- band/interface.h

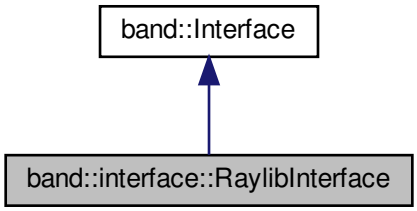
## 7.21 band::interface::RaylibInterface Class Reference

```
#include <raylib_interface.h>
```

Inheritance diagram for band::interface::RaylibInterface:



Collaboration diagram for band::interface::RaylibInterface:




## Public Member Functions

- RaylibInterface ()
- ~RaylibInterface () override
- RaylibInterface (const RaylibInterface &)=delete
- RaylibInterface & operator= (const RaylibInterface &)=delete
- RaylibInterface (const RaylibInterface &&)=delete
- RaylibInterface & operator= (const RaylibInterface &&)=delete
- void Open ()
- void Close ()
- void SetTargetFps (Size fps) override
- void SetWindowArea (const ::band::WindowArea &area) override
- void SetIcon (ImageId id) override
- void SetTitle (const Text &text) override
- void ToggleFullscreen () override
- void StartDrawing () override
- void StopDrawing () override
- ImageId LoadImage (const File &) override
- void DeleteImage (ImageId id) override
- void DeleteAllImages () override
- Area ImageArea (ImageId id) const override
- FontId LoadFont (const File &) override
- void DeleteFont (FontId id) override
- void DeleteAllFonts () override
- TextureId CreateBlankTexture (const Area &area) override
- TextureId CreateImageTexture (ImageId id, const Area &area) override
- void DeleteTexture (TextureId id) override
- void DeleteAllTextures () override
- void SelectTexture (TextureId id) override
- void UnselectTexture () override
- void DrawTexture (TextureId id, const Point &position) override
- Area TextureArea (TextureId id) const override
- void Clear (const Color &color) override
- void DrawLine (const Line &line, const Dimension &thickness, const Leg &leg, const Color &color) override
- void DrawCircle (const Circle &circle, const Leg &leg, const Color &color) override
- void DrawRectangle (const Rectangle &rectangle, const Color &color) override
- void DrawTriangle (const Triangle &triangle, const Color &color) override

- void DrawText (const Text &text, const Point &position, const Dimension &dimension, const Color &color, FontId id) override
- void DrawFps (const Point &position) override
- Area MeasureText (const Text &text, const Dimension &dimension, FontId id) const override
- bool HasAction (const Action &action) const override
- std::optional< char > CharacterPressed () const override
- Point MousePosition () const override
- ::band::WindowArea WindowArea () const override

### Additional Inherited Members

## 7.21.1 Constructor & Destructor Documentation

#### 7.21.1.1 RaylibInterface() [1/3]

```
band::interface::RaylibInterface::RaylibInterface ( )
```

#### 7.21.1.2 ~RaylibInterface()

```
band::interface::RaylibInterface::~RaylibInterface ( )  [override]
```

#### 7.21.1.3 RaylibInterface() [2/3]

```
band::interface::RaylibInterface::RaylibInterface (
            const RaylibInterface &  )  [delete]
```

#### 7.21.1.4 RaylibInterface() [3/3]

```
band::interface::RaylibInterface::RaylibInterface (
            const RaylibInterface &&  )  [delete]
```

## 7.21.2 Member Function Documentation

#### 7.21.2.1 CharacterPressed()

```
std::optional<char> band::interface::RaylibInterface::CharacterPressed ( ) const  [override],
[virtual]
```

Implements band::Interface.

#### 7.21.2.2 Clear()

```
void band::interface::RaylibInterface::Clear (
            const Color & color )  [override], [virtual]
```

Implements band::Interface.

#### 7.21.2.3 Close()

```
void band::interface::RaylibInterface::Close ( )
```

#### 7.21.2.4 CreateBlankTexture()

```
TextureId band::interface::RaylibInterface::CreateBlankTexture (
            const Area & area )  [override], [virtual]
```

Implements band::Interface.

#### 7.21.2.5 CreateImageTexture()

```
TextureId band::interface::RaylibInterface::CreateImageTexture (
            ImageId id,
            const Area & area )  [override], [virtual]
```

Implements band::Interface.

#### 7.21.2.6 DeleteAllFonts()

```
void band::interface::RaylibInterface::DeleteAllFonts ( )  [override], [virtual]
```

Implements band::Interface.

#### 7.21.2.7 DeleteAllImages()

```
void band::interface::RaylibInterface::DeleteAllImages ( )  [override], [virtual]
```

Implements band::Interface.

#### 7.21.2.8 DeleteAllTextures()

```
void band::interface::RaylibInterface::DeleteAllTextures ( )  [override], [virtual]
```

Implements band::Interface.

#### 7.21.2.9 DeleteFont()

```
void band::interface::RaylibInterface::DeleteFont (
            FontId id )  [override], [virtual]
```

Implements band::Interface.

#### 7.21.2.10 DeleteImage()

```
void band::interface::RaylibInterface::DeleteImage (
            ImageId id )  [override], [virtual]
```

Implements band::Interface.

#### 7.21.2.11 DeleteTexture()

```
void band::interface::RaylibInterface::DeleteTexture (
            TextureId id )  [override], [virtual]
```

Implements band::Interface.

#### 7.21.2.12 DrawCircle()

```
void band::interface::RaylibInterface::DrawCircle (
            const Circle & circle,
            const Leg & leg,
            const Color & color )  [override], [virtual]
```

Implements band::Interface.

#### 7.21.2.13 DrawFps()

```
void band::interface::RaylibInterface::DrawFps (
            const Point & position )  [override], [virtual]
```

Implements band::Interface.

#### 7.21.2.14 DrawLine()

```
void band::interface::RaylibInterface::DrawLine (
            const Line & line,
            const Dimension & thickness,
            const Leg & leg,
            const Color & color )  [override], [virtual]
```

Implements band::Interface.

#### 7.21.2.15 DrawRectangle()

```
void band::interface::RaylibInterface::DrawRectangle (
            const Rectangle & rectangle,
            const Color & color )  [override], [virtual]
```

Implements band::Interface.

#### 7.21.2.16 DrawText()

```
void band::interface::RaylibInterface::DrawText (
            const Text & text,
            const Point & position,
            const Dimension & dimension,
            const Color & color,
            FontId id )  [override], [virtual]
```

Implements band::Interface.

#### 7.21.2.17 DrawTexture()

```
void band::interface::RaylibInterface::DrawTexture (
            TextureId id,
            const Point & position )  [override], [virtual]
```

Implements band::Interface.

#### 7.21.2.18 DrawTriangle()

```
void band::interface::RaylibInterface::DrawTriangle (
            const Triangle & triangle,
            const Color & color )  [override], [virtual]
```

Implements band::Interface.

#### 7.21.2.19 HasAction()

```
bool band::interface::RaylibInterface::HasAction (
            const Action & action ) const  [override], [virtual]
```

Implements band::Interface.

#### 7.21.2.20 ImageArea()

```
Area band::interface::RaylibInterface::ImageArea (
            ImageId id ) const  [override], [virtual]
```

Implements band::Interface.

#### 7.21.2.21 LoadFont()

```
FontId band::interface::RaylibInterface::LoadFont (
            const File &  )  [override], [virtual]
```

Implements band::Interface.

#### 7.21.2.22 LoadImage()

```
ImageId band::interface::RaylibInterface::LoadImage (
            const File &  )  [override], [virtual]
```

Implements band::Interface.

#### 7.21.2.23 MeasureText()

```
Area band::interface::RaylibInterface::MeasureText (
            const Text & text,
            const Dimension & dimension,
            FontId id ) const  [override], [virtual]
```

Implements band::Interface.

#### 7.21.2.24 MousePosition()

```
Point band::interface::RaylibInterface::MousePosition ( ) const  [override], [virtual]
```

Implements band::Interface.

#### 7.21.2.25 Open()

```
void band::interface::RaylibInterface::Open ( )
```

#### 7.21.2.26 operator=() [1/2]

```
RaylibInterface& band::interface::RaylibInterface::operator= (
            const RaylibInterface &  )  [delete]
```

#### 7.21.2.27 operator=() [2/2]

```
RaylibInterface& band::interface::RaylibInterface::operator= (
            const RaylibInterface &&  )  [delete]
```

#### 7.21.2.28 SelectTexture()

```
void band::interface::RaylibInterface::SelectTexture (
            TextureId id )  [override], [virtual]
```

Implements band::Interface.

#### 7.21.2.29 SetIcon()

```
void band::interface::RaylibInterface::SetIcon (
            ImageId id )  [override], [virtual]
```

Implements band::Interface.

#### 7.21.2.30 SetTargetFps()

```
void band::interface::RaylibInterface::SetTargetFps (
            Size fps )  [override], [virtual]
```

Implements band::Interface.

#### 7.21.2.31 SetTitle()

```
void band::interface::RaylibInterface::SetTitle (
            const Text & text )  [override], [virtual]
```

Implements band::Interface.

#### 7.21.2.32 SetWindowArea()

```
void band::interface::RaylibInterface::SetWindowArea (
            const ::band::WindowArea & area )  [override], [virtual]
```

Implements band::Interface.

#### 7.21.2.33 StartDrawing()

```
void band::interface::RaylibInterface::StartDrawing ( )  [override], [virtual]
```

Implements band::Interface.

#### 7.21.2.34 StopDrawing()

```
void band::interface::RaylibInterface::StopDrawing ( )  [override], [virtual]
```

Implements band::Interface.

#### 7.21.2.35 TextureArea()

```
Area band::interface::RaylibInterface::TextureArea (
            TextureId id ) const  [override], [virtual]
```

Implements band::Interface.

#### 7.21.2.36 ToggleFullscreen()

```
void band::interface::RaylibInterface::ToggleFullscreen ( )  [override], [virtual]
```

Implements band::Interface.

#### 7.21.2.37 UnselectTexture()

```
void band::interface::RaylibInterface::UnselectTexture ( )  [override], [virtual]
```

Implements band::Interface.

#### 7.21.2.38 WindowArea()

```
::band::WindowArea band::interface::RaylibInterface::WindowArea ( ) const  [override], [virtual]
```

Implements band::Interface.

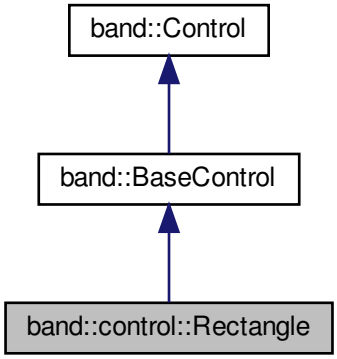
The documentation for this class was generated from the following file:

- band/interface/raylib_interface.h

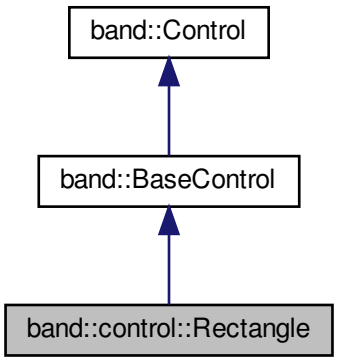
## 7.22 band::control::Rectangle Class Reference

`#include <rectangle.h>`

Inheritance diagram for band::control::Rectangle:




Collaboration diagram for band::control::Rectangle:




### Public Member Functions

- ::band::Color Color () const
- void SetColor (const ::band::Color &color)
- void SetArea (const ::band::Area &area)
- ::band::Area Area (const Interface &interface) const override
- void Draw (const Point &position, Interface &interface) override

### 7.22.1 Member Function Documentation

#### 7.22.1.1 Area()

```
::band::Area band::control::Rectangle::Area (
            const Interface & interface ) const  [override], [virtual]
```

Implements band::Control.

#### 7.22.1.2 Color()

```
::band::Color band::control::Rectangle::Color ( ) const
```

#### 7.22.1.3 Draw()

```
void band::control::Rectangle::Draw (
            const Point & position,
            Interface & interface )  [override], [virtual]
```

Implements band::Control.

#### 7.22.1.4 SetArea()

```
void band::control::Rectangle::SetArea (
            const ::band::Area & area )
```

#### 7.22.1.5 SetColor()

```
void band::control::Rectangle::SetColor (
            const ::band::Color & color )
```

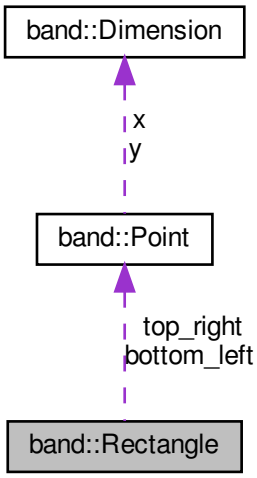
The documentation for this class was generated from the following file:

- band/control/rectangle.h

## 7.23 band::Rectangle Struct Reference

`#include <interface.h>`

Collaboration diagram for band::Rectangle:




### Public Attributes

- Point bottom_left {}
- Point top_right {}

### 7.23.1 Member Data Documentation

#### 7.23.1.1 bottom_left

`Point band::Rectangle::bottom_left {}`

#### 7.23.1.2 top_right

`Point band::Rectangle::top_right {}`

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

- band/interface.h

## 7.24 band::Scope Class Reference

`#include <scope.h>`

### Public Member Functions

- Scope (const std::function< void()> &f)
- ~Scope ()
- Scope (const Scope &)=delete
- Scope & operator= (const Scope &)=delete
- Scope (const Scope &&)=delete
- Scope & operator= (const Scope &&)=delete

### 7.24.1 Constructor & Destructor Documentation

#### 7.24.1.1 Scope() [1/3]

```
band::Scope::Scope (
            const std::function< void()> & f )  [explicit]
```

#### 7.24.1.2 ~Scope()

```
band::Scope::~Scope ( )
```

#### 7.24.1.3 Scope() [2/3]

```
band::Scope::Scope (
            const Scope &  )  [delete]
```

#### 7.24.1.4 Scope() [3/3]

```
band::Scope::Scope (
            const Scope &&  )  [delete]
```

### 7.24.2 Member Function Documentation

#### 7.24.2.1 operator=() [1/2]

```
Scope& band::Scope::operator= (
            const Scope &  )  [delete]
```

#### 7.24.2.2 operator=() [2/2]

```
Scope& band::Scope::operator= (
            const Scope &&  )  [delete]
```

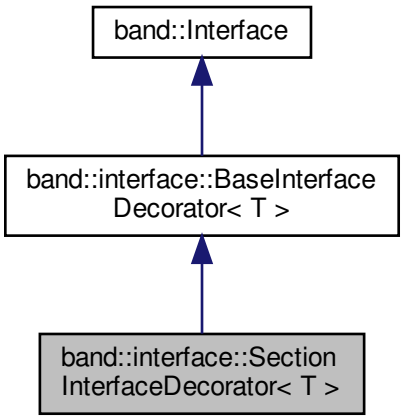
The documentation for this class was generated from the following file:

- band/scope.h

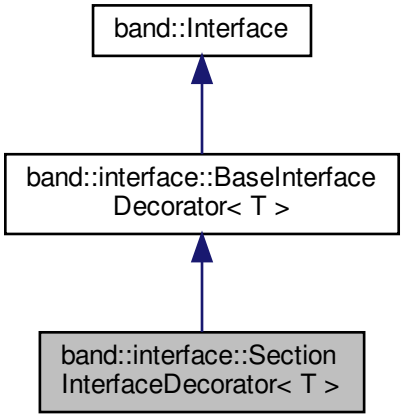
## 7.25 band::interface::SectionInterfaceDecorator< T > Class Template Reference

```
#include <section_interface_decorator.h>
```

Inheritance diagram for band::interface::SectionInterfaceDecorator< T >:



Collaboration diagram for band::interface::SectionInterfaceDecorator< T >:




## Public Member Functions

- SectionInterfaceDecorator (T interface, const Area &section)
- ::band::WindowArea WindowArea () const

## Additional Inherited Members

### 7.25.1 Constructor & Destructor Documentation

#### 7.25.1.1 SectionInterfaceDecorator()

```
template<typename T >
band::interface::SectionInterfaceDecorator< T >::SectionInterfaceDecorator (
            T interface,
            const Area & section )
```

### 7.25.2 Member Function Documentation

#### 7.25.2.1 WindowArea()

```
template<typename T >
::band::WindowArea band::interface::SectionInterfaceDecorator< T >::WindowArea ( ) const
[virtual]
```

Reimplemented from band::interface::BaseInterfaceDecorator< T >.

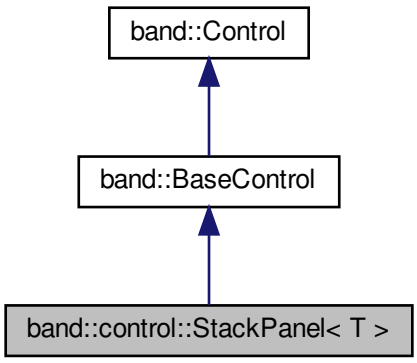
The documentation for this class was generated from the following file:

- band/interface/section_interface_decorator.h

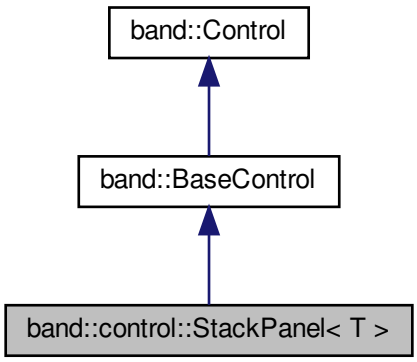
## 7.26 band::control::StackPanel< T > Class Template Reference

```
#include <stack_panel.h>
```

Inheritance diagram for band::control::StackPanel< T >:




Collaboration diagram for band::control::StackPanel< T >:



### Public Member Functions

- ::band::Alignment Alignment () const
- void SetAlignment (const ::band::Alignment &alignment)
- ::band::Direction Direction () const
- void SetDirection (const ::band::Direction &direction)
- template<typename Iter >
  void SetControls (const Iter &begin, const Iter &end)
- void SetControls (const std::initializer_list< T > &controls)
- ::band::Area Area (const Interface &interface) const override
- void CleanUp (Interface &interface) override
- void Update (const Point &position, Interface &interface) override
- void Draw (const Point &position, Interface &interface) override

## 7.26.1 Member Function Documentation

### 7.26.1.1 Alignment()

```
template<typename T >
band::Alignment band::control::StackPanel< T >::Alignment ( ) const
```

### 7.26.1.2 Area()

```
template<typename T >
band::Area band::control::StackPanel< T >::Area (
            const Interface & interface ) const  [override], [virtual]
```

Implements band::Control.

### 7.26.1.3 CleanUp()

```
template<typename T >
void band::control::StackPanel< T >::CleanUp (
            Interface & interface )  [override], [virtual]
```

Implements band::Control.

### 7.26.1.4 Direction()

```
template<typename T >
band::Direction band::control::StackPanel< T >::Direction ( ) const
```

#### 7.26.1.5 Draw()

```
template<typename T >
void band::control::StackPanel< T >::Draw (
            const Point & position,
            Interface & interface )  [override], [virtual]
```

Implements band::Control.

#### 7.26.1.6 SetAlignment()

```
template<typename T >
void band::control::StackPanel< T >::SetAlignment (
            const ::band::Alignment & alignment )
```

#### 7.26.1.7 SetControls() [1/2]

```
template<typename T >
template<typename Iter >
void band::control::StackPanel< T >::SetControls (
            const Iter & begin,
            const Iter & end )
```

#### 7.26.1.8 SetControls() [2/2]

```
template<typename T >
void band::control::StackPanel< T >::SetControls (
            const std::initializer_list< T > & controls )
```

#### 7.26.1.9 SetDirection()

```
template<typename T >
void band::control::StackPanel< T >::SetDirection (
            const ::band::Direction & direction )
```

#### 7.26.1.10 Update()

```
template<typename T >
void band::control::StackPanel< T >::Update (
            const Point & position,
            Interface & interface )  [override], [virtual]
```

Implements band::Control.

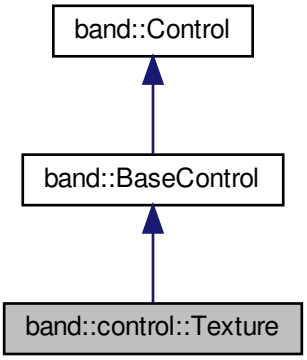
The documentation for this class was generated from the following file:

- band/control/stack_panel.h

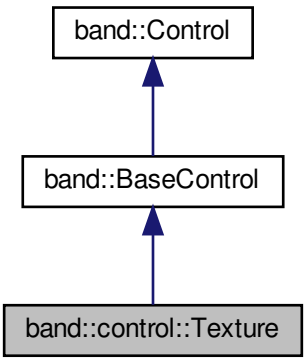
## 7.27 band::control::Texture Class Reference

`#include <texture.h>`

Inheritance diagram for band::control::Texture:




Collaboration diagram for band::control::Texture:



### Public Member Functions

- void CaptureControl (Interface &interface, Control &control)
- ::band::Area Area (const Interface &interface) const override
- void CleanUp (Interface &interface) override
- void Update (const Point &position, Interface &interface) override
- void Draw (const Point &position, Interface &interface) override

## 7.27.1 Member Function Documentation

#### 7.27.1.1 Area()

```
::band::Area band::control::Texture::Area (
            const Interface & interface ) const  [override], [virtual]
```

Implements band::Control.

#### 7.27.1.2 CaptureControl()

```
void band::control::Texture::CaptureControl (
            Interface & interface,
            Control & control )
```

#### 7.27.1.3 CleanUp()

```
void band::control::Texture::CleanUp (
            Interface & interface )  [override], [virtual]
```

Implements band::Control.

#### 7.27.1.4 Draw()

```
void band::control::Texture::Draw (
            const Point & position,
            Interface & interface )  [override], [virtual]
```

Implements band::Control.

#### 7.27.1.5 Update()

```
void band::control::Texture::Update (
            const Point & position,
            Interface & interface )  [override], [virtual]
```

Implements band::Control.

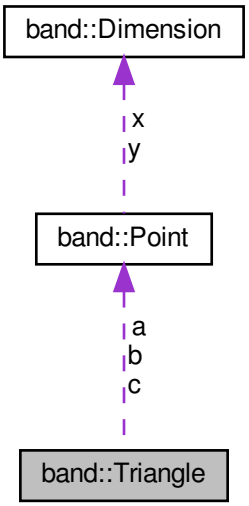
The documentation for this class was generated from the following file:

- band/control/texture.h

## 7.28 band::Triangle Struct Reference

```
#include <interface.h>
```

Collaboration diagram for band::Triangle:




### Public Attributes

- Point a {}
- Point b {}
- Point c {}

### 7.28.1 Member Data Documentation

#### 7.28.1.1 a

```
Point band::Triangle::a {}
```

#### 7.28.1.2 b

```
Point band::Triangle::b {}
```

#### 7.28.1.3 c

```
Point band::Triangle::c {}
```

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

- band/interface.h

## 7.29 band::WindowArea Struct Reference

```
#include <interface.h>
```

### Public Attributes

- Real width {}
- Real height {}

### 7.29.1 Member Data Documentation

#### 7.29.1.1 height

```
Real band::WindowArea::height {}
```

#### 7.29.1.2 width

```
Real band::WindowArea::width {}
```

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

- band/interface.h

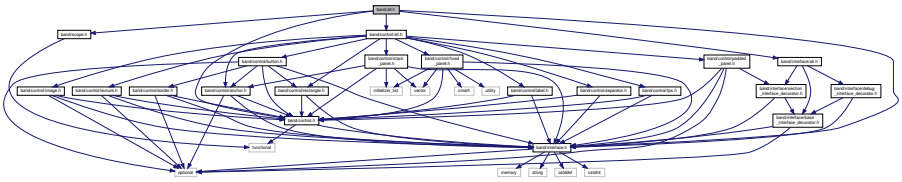
# Chapter 8

# File Documentation

## 8.1 band/all.h File Reference

```
#include "band/control.h"
#include "band/control/all.h"
#include "band/interface.h"
#include "band/interface/all.h"
#include "band/scope.h"
```

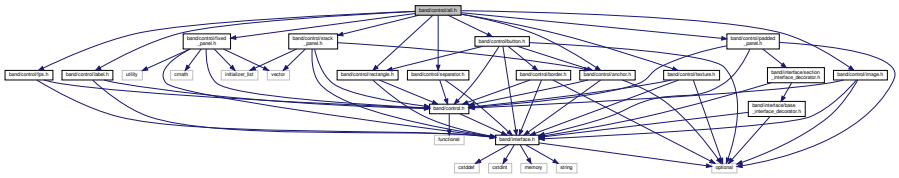
Include dependency graph for all.h:



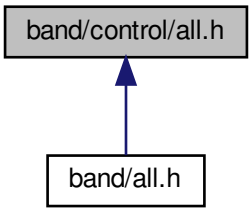
## 8.2 band/control/all.h File Reference

```
#include "band/control/anchor.h"
#include "band/control/button.h"
#include "band/control/fixed_panel.h"
#include "band/control/fps.h"
#include "band/control/image.h"
#include "band/control/label.h"
#include "band/control/padded_panel.h"
#include "band/control/rectangle.h"
#include "band/control/separator.h"
#include "band/control/stack_panel.h"
#include "band/control/texture.h"
```

Include dependency graph for all.h:



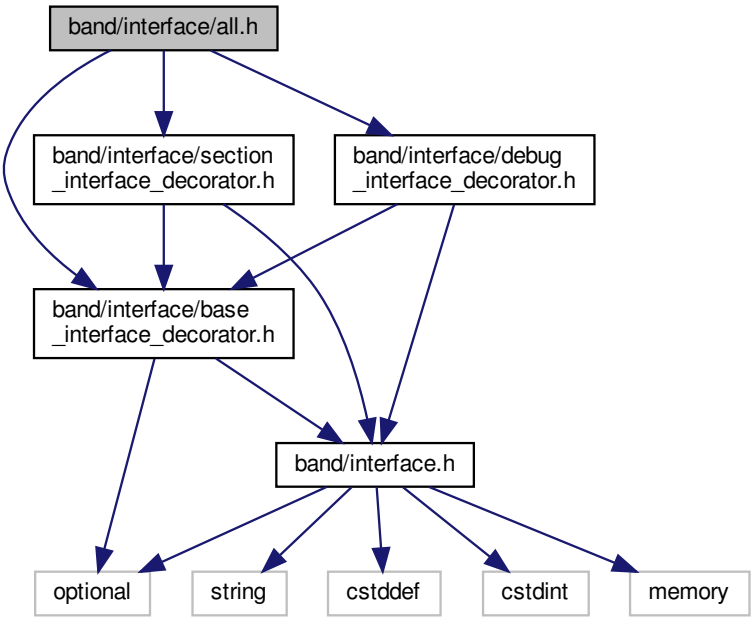
This graph shows which files directly or indirectly include this file:



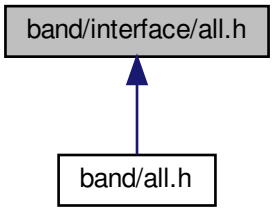

## 8.3 band/interface/all.h File Reference

```
#include "band/interface/base_interface_decorator.h"
#include "band/interface/debug_interface_decorator.h"
#include "band/interface/section_interface_decorator.h"
```

Include dependency graph for all.h:



This graph shows which files directly or indirectly include this file:

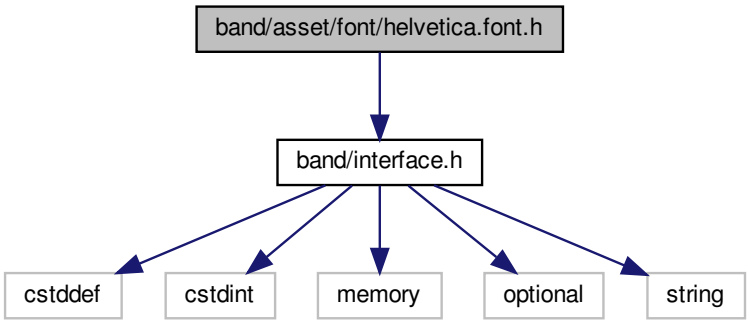



## 8.4 band/asset/font/helvetica.font.d File Reference

## 8.5 band/asset/font/helvetica.font.h File Reference

```
#include "band/interface.h"
```

Include dependency graph for helvetica.font.h:




### Namespaces

- band
- band::asset
- band::asset::font

### Functions

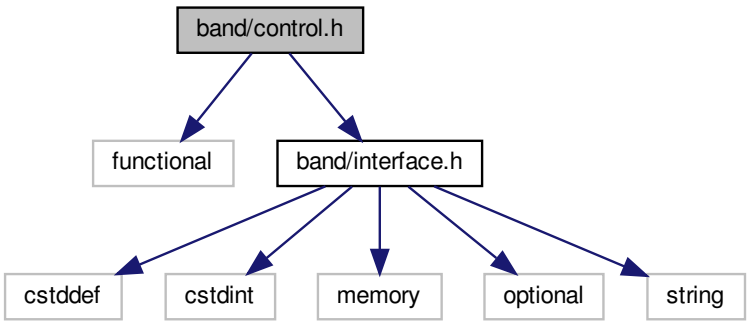
- band::File band::asset::font::Helvetica ()

## 8.6 band/control.d File Reference

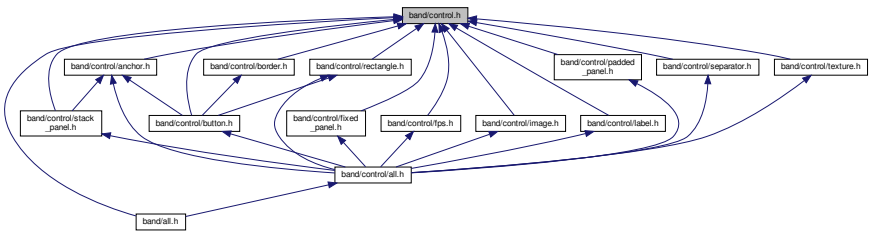
## 8.7 band/control.h File Reference

```
#include <functional>
#include "band/interface.h"
```

Include dependency graph for control.h:




This graph shows which files directly or indirectly include this file:




### Classes

- class band::Control
- class band::BaseControl

### Namespaces

- band

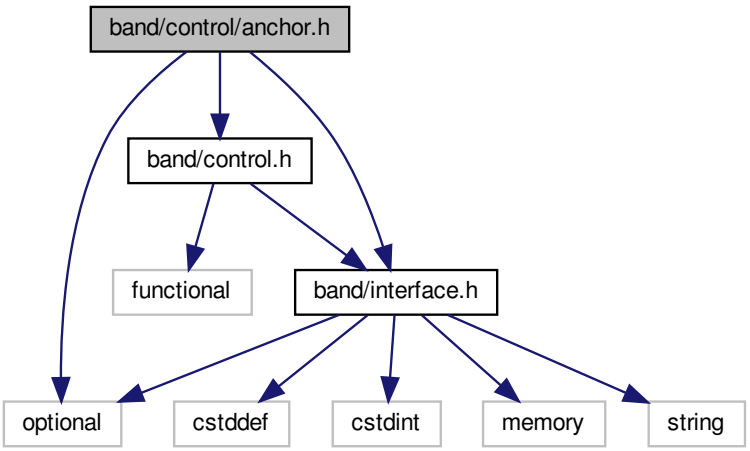
### Functions

- void band::Run (const Color &clear_color, const std::function< void()> &callback, Interface &interface, Control &control)
- void band::CleanUp (Interface &interface, Control &control)
- void band::Update (const Point &position, Interface &interface, Control &control)
- void band::DrawFrame (const Color &clear_color, const Point &position, Interface &interface, Control &control)

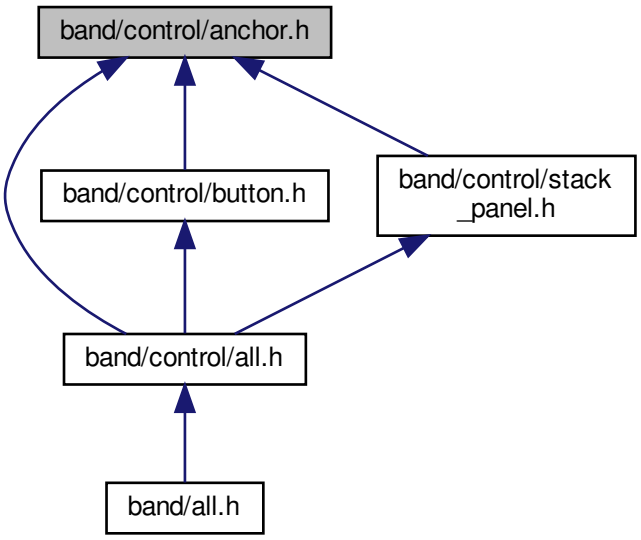
## 8.8 band/control/anchor.h File Reference

```
#include <optional>
#include "band/control.h"
#include "band/interface.h"
```

Include dependency graph for anchor.h:



This graph shows which files directly or indirectly include this file:




### Classes

- class band::control::Anchor< T >

### Namespaces

- band
- band::control

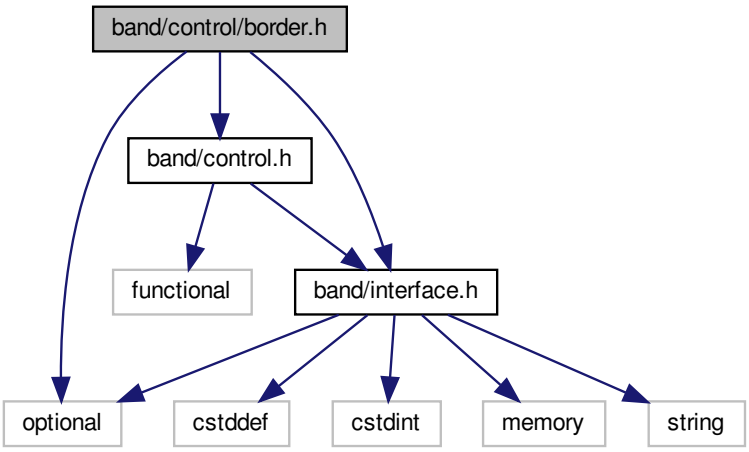
## 8.9 band/control/border.d File Reference

## 8.10 band/control/border.h File Reference

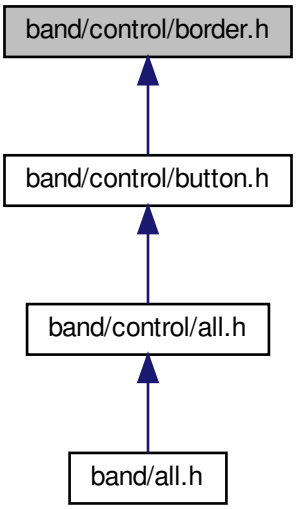
```
#include <optional>
#include "band/control.h"
```

```
#include "band/interface.h"
```

Include dependency graph for border.h:




This graph shows which files directly or indirectly include this file:




## Classes

- class band::control::Border

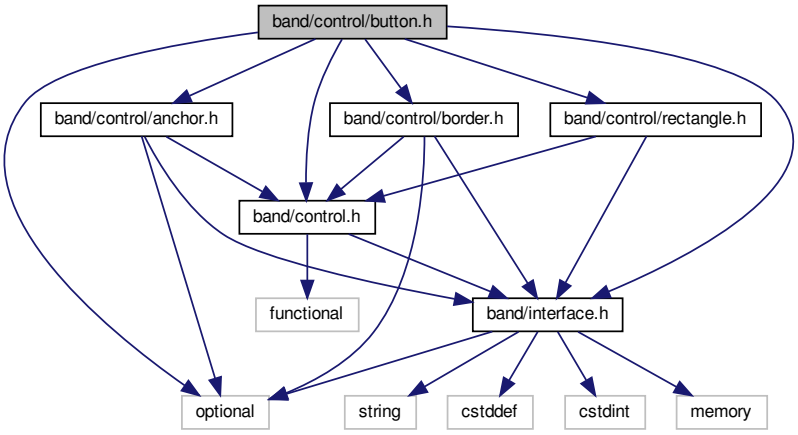
### Namespaces

- band
- band::control

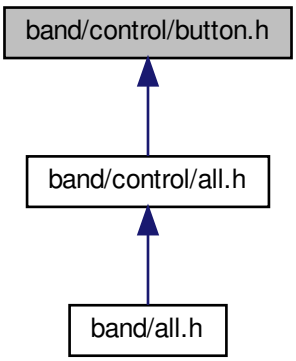
## 8.11 band/control/button.h File Reference

```
#include <optional>
#include "band/control.h"
#include "band/control/anchor.h"
#include "band/control/border.h"
#include "band/control/rectangle.h"
#include "band/interface.h"
```

Include dependency graph for button.h:




This graph shows which files directly or indirectly include this file:



### Classes

- class band::control::Button< T >

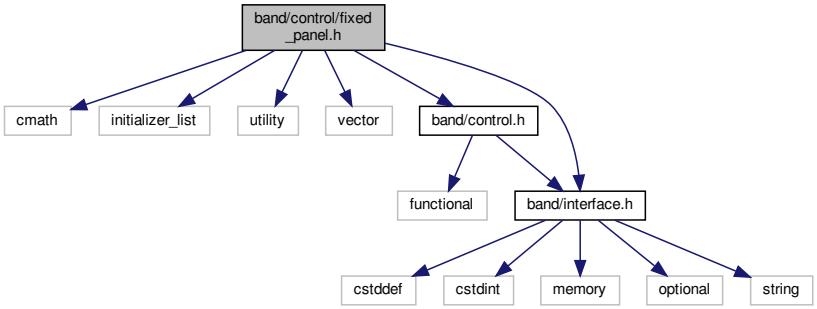
### Namespaces

- band
- band::control

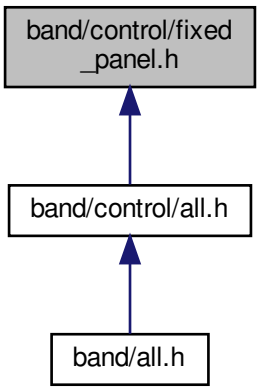
## 8.12 band/control/fixed_panel.h File Reference

```
#include <cmath>
#include <initializer_list>
#include <utility>
#include <vector>
#include "band/control.h"
#include "band/interface.h"
```

Include dependency graph for fixed_panel.h:




This graph shows which files directly or indirectly include this file:



### Classes

- class band::control::FixedPanel< T >

### Namespaces

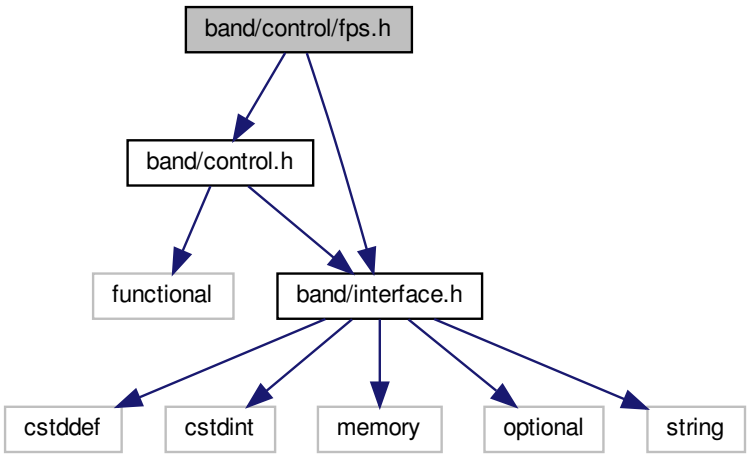
- band
- band::control

## 8.13 band/control/fps.d File Reference

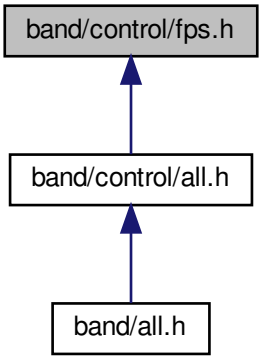
## 8.14 band/control/fps.h File Reference

```
#include "band/control.h"
#include "band/interface.h"
```

Include dependency graph for fps.h:



This graph shows which files directly or indirectly include this file:




### Classes

- class band::control::Fps

### Namespaces

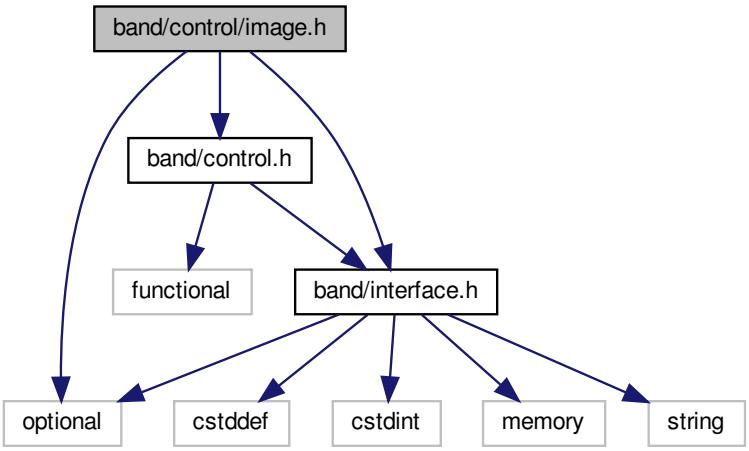
- band
- band::control

## 8.15 band/control/image.d File Reference

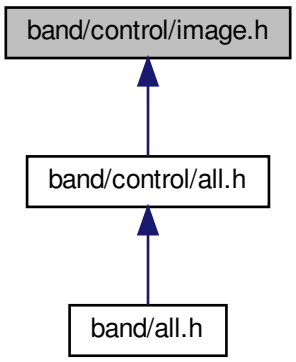
## 8.16 band/control/image.h File Reference

```
#include <optional>
#include "band/control.h"
#include "band/interface.h"
```

Include dependency graph for image.h:




This graph shows which files directly or indirectly include this file:




## Classes

- class band::control::Image

## Namespaces

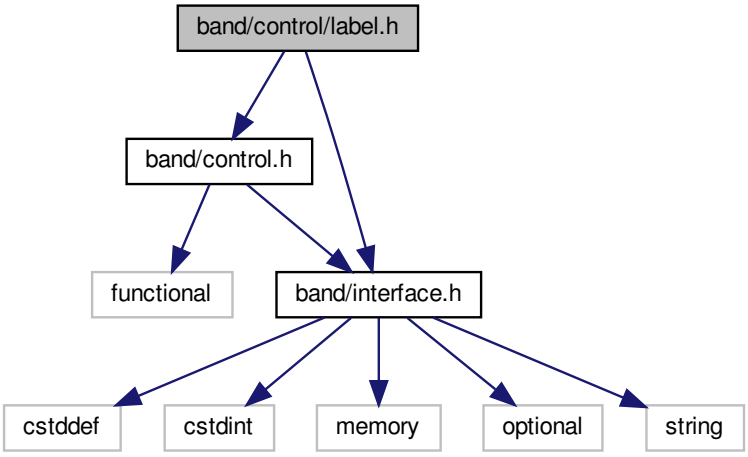
- band
- band::control

## 8.17 band/control/label.d File Reference

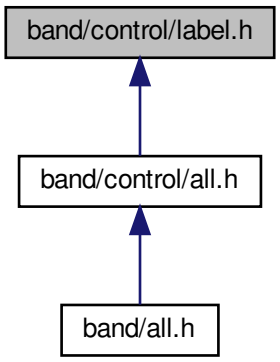
## 8.18 band/control/label.h File Reference

```
#include "band/control.h"
#include "band/interface.h"
```

Include dependency graph for label.h:




This graph shows which files directly or indirectly include this file:




### Classes

- class band::control::Label

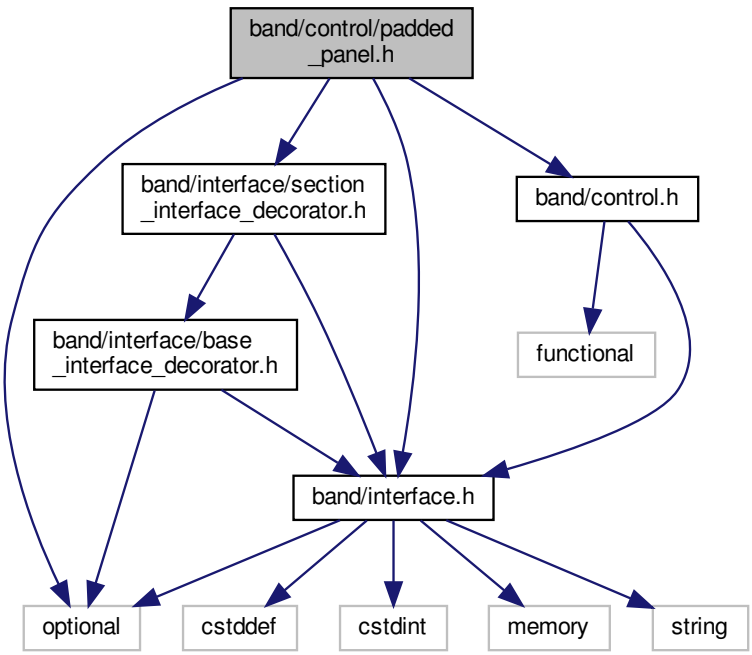
### Namespaces

- band
- band::control

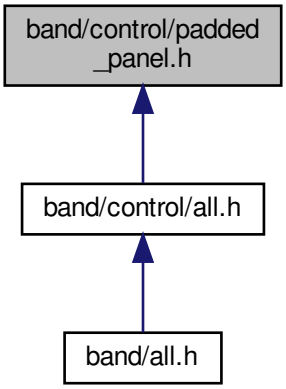
## 8.19 band/control/padded_panel.h File Reference

```
#include <optional>
#include "band/control.h"
#include "band/interface.h"
#include "band/interface/section_interface_decorator.h"
```

Include dependency graph for padded_panel.h:



This graph shows which files directly or indirectly include this file:




### Classes

- class band::control::PaddedPanel< T >

### Namespaces

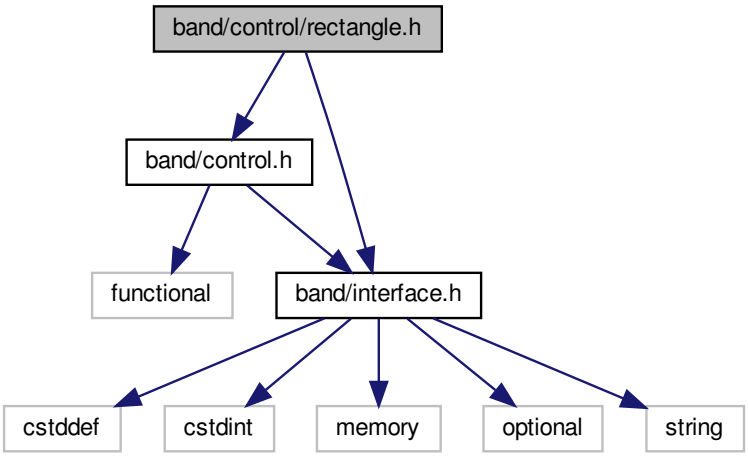
- band
- band::control

## 8.20 band/control/rectangle.d File Reference

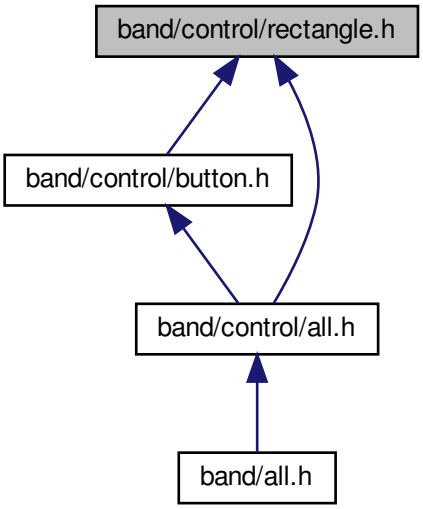
## 8.21 band/control/rectangle.h File Reference

```
#include "band/control.h"
#include "band/interface.h"
```

Include dependency graph for rectangle.h:




This graph shows which files directly or indirectly include this file:




## Classes

- class band::control::Rectangle

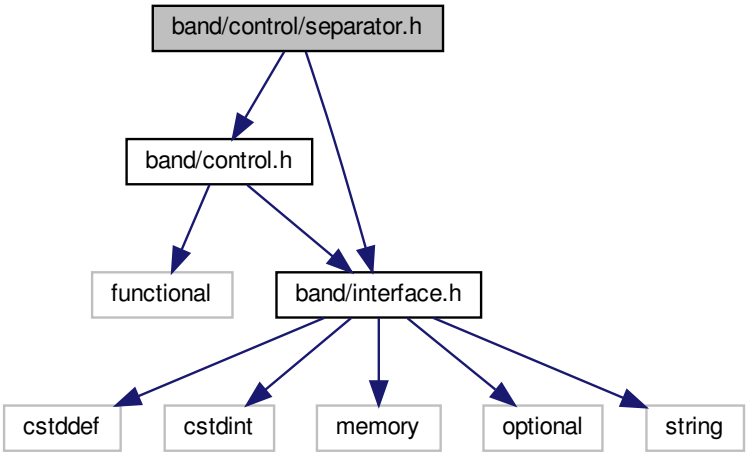
### Namespaces

- band
- band::control

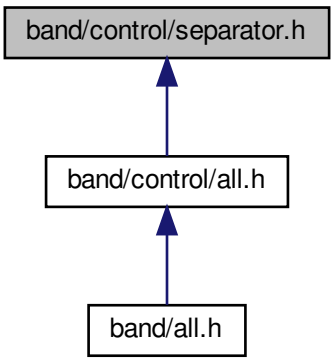
## 8.22 band/control/separator.h File Reference

```
#include "band/control.h"
#include "band/interface.h"
```

Include dependency graph for separator.h:




This graph shows which files directly or indirectly include this file:



### Namespaces

- band
- band::control

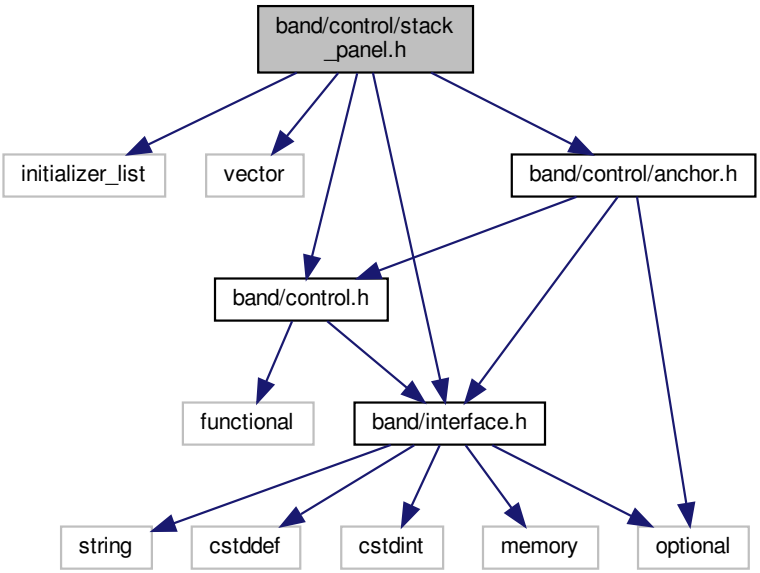
### Typedefs

- using band::control::Separator = ::band::control::Rectangle

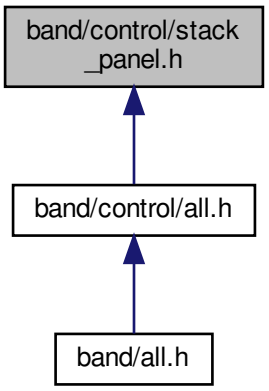
## 8.23 band/control/stack_panel.h File Reference

```
#include <initializer_list>
#include <vector>
#include "band/control.h"
#include "band/control/anchor.h"
#include "band/interface.h"
```

Include dependency graph for stack_panel.h:



This graph shows which files directly or indirectly include this file:




### Classes

- class band::control::StackPanel< T >

### Namespaces

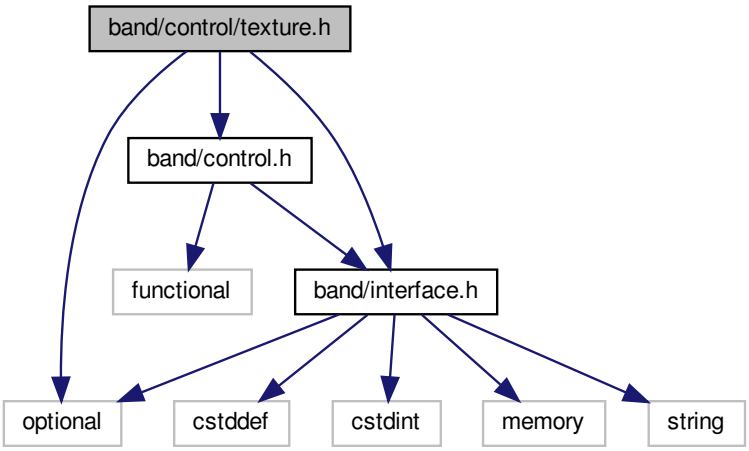
- band
- band::control

## 8.24 band/control/texture.d File Reference

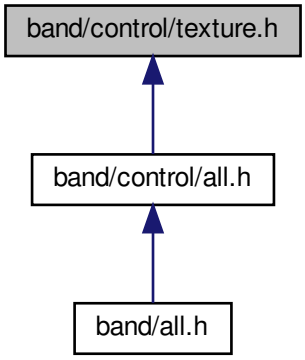
## 8.25 band/control/texture.h File Reference

```
#include <optional>
#include "band/control.h"
#include "band/interface.h"
```

Include dependency graph for texture.h:




This graph shows which files directly or indirectly include this file:




## Classes

- class band::control::Texture

## Namespaces

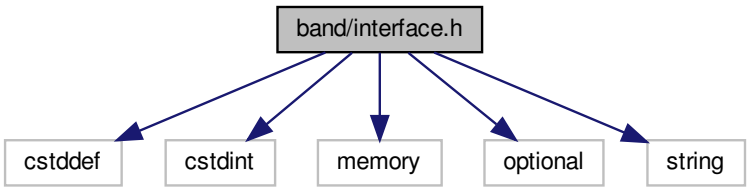
- band
- band::control

## 8.26 band/interface.d File Reference

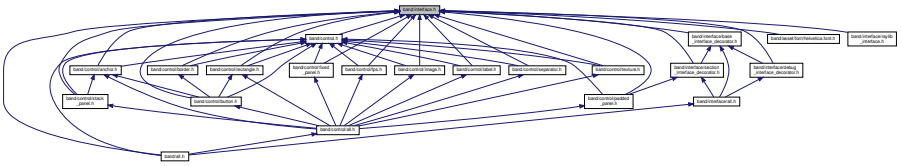
## 8.27 band/interface.h File Reference

```
#include <cstddef>
#include <cstdint>
#include <memory>
#include <optional>
#include <string>
```

Include dependency graph for interface.h:




This graph shows which files directly or indirectly include this file:



### Classes

- struct band::File
- struct band::Dimension
- struct band::Point
- struct band::Line
- struct band::Circle
- struct band::Triangle
- struct band::Rectangle
- struct band::Area
- struct band::WindowArea
- struct band::Color
- class band::Interface

### Namespaces

- band

## Typedefs

- using band::Text = std::string
- using band::Size = uint32_t
- using band::TextureId = size_t
- using band::ImageId = size_t
- using band::FontId = size_t
- using band::Real = double
- using band::Component = uint8_t

## Enumerations

- enum band::Alignment { band::Alignment::kTop, band::Alignment::kMiddle, band::Alignment::kBottom }
- enum band::Direction { band::Direction::kHorizontal, band::Direction::kVertical }
- enum band::Unit { band::Unit::kPixel, band::Unit::kRatio }
- enum band::Leg { band::Leg::kWidth, band::Leg::kHeight }

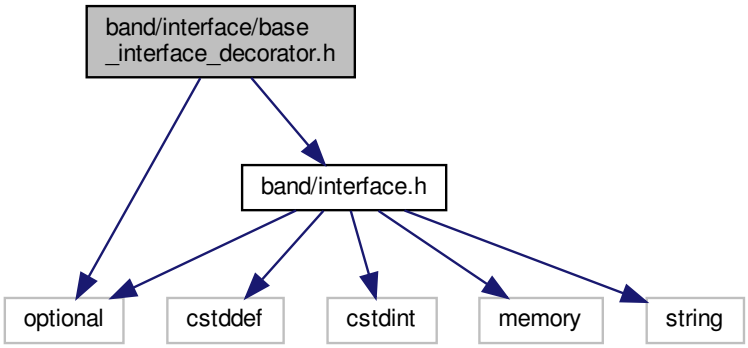
## Functions

- bool band::operator== (const Dimension &a, const Dimension &b)
- bool band::operator!= (const Dimension &a, const Dimension &b)
- bool band::IsDimensionGreaterThanOrEqualTo (const Dimension &a, const Dimension &b, Real pixels)
- Dimension band::MaxDimension (const Dimension &a, const Dimension &b, Real pixels)
- Dimension band::MinDimension (const Dimension &a, const Dimension &b, Real pixels)
- Dimension band::AddDimensions (const Dimension &a, const Dimension &b, Real pixels)
- Dimension band::SubtractDimensions (const Dimension &a, const Dimension &b, Real pixels)
- Dimension band::MultiplyDimension (const Dimension &a, Real scalar)
- bool band::operator== (const Point &a, const Point &b)
- bool band::operator!= (const Point &a, const Point &b)
- bool band::operator== (const Line &a, const Line &b)
- bool band::operator!= (const Line &a, const Line &b)
- bool band::operator== (const Circle &a, const Circle &b)
- bool band::operator!= (const Circle &a, const Circle &b)
- bool band::operator== (const Triangle &a, const Triangle &b)
- bool band::operator!= (const Triangle &a, const Triangle &b)
- bool band::operator== (const Rectangle &a, const Rectangle &b)
- bool band::operator!= (const Rectangle &a, const Rectangle &b)
- bool band::operator== (const Area &a, const Area &b)
- bool band::operator!= (const Area &a, const Area &b)
- bool band::operator== (const WindowArea &a, const WindowArea &b)
- bool band::operator!= (const WindowArea &a, const WindowArea &b)
- bool band::operator== (const Color &a, const Color &b)
- bool band::operator!= (const Color &a, const Color &b)
- std::unique_ptr< Interface > band::DefaultInterface ()

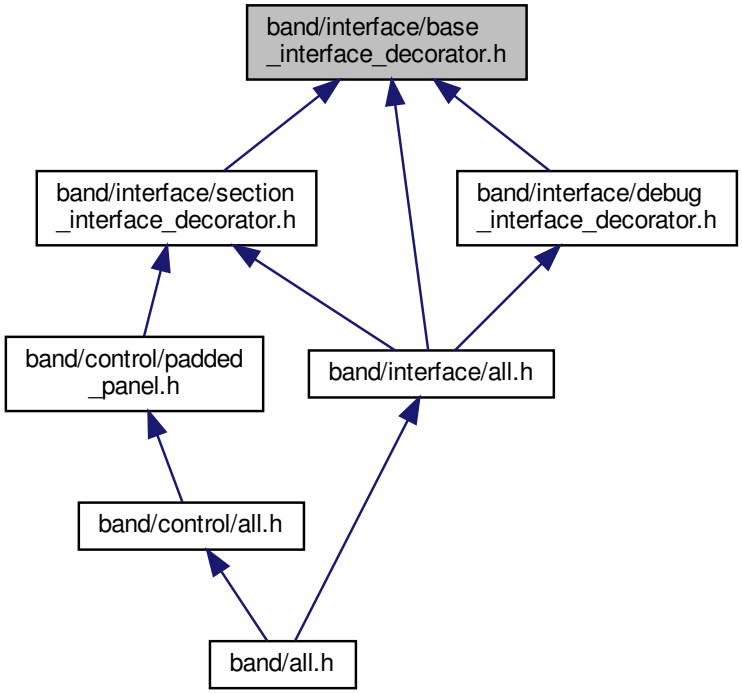
## 8.28 band/interface/base_interface_decorator.h File Reference

```
#include <optional>
#include "band/interface.h"
```

Include dependency graph for base_interface_decorator.h:




This graph shows which files directly or indirectly include this file:



### Classes

- class band::interface::BaseInterfaceDecorator< T >

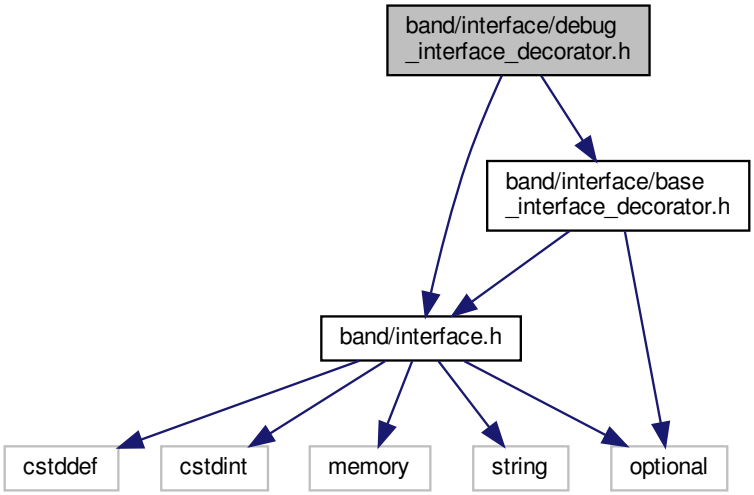
### Namespaces

- band
- band::interface

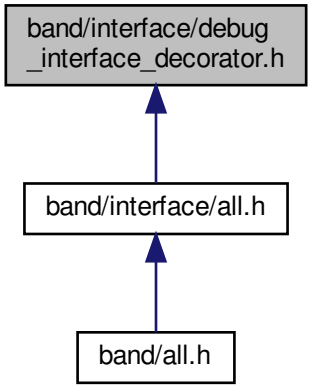
## 8.29 band/interface/debug_interface_decorator.h File Reference

```
#include "band/interface.h"
#include "band/interface/base_interface_decorator.h"
```

Include dependency graph for debug_interface_decorator.h:



This graph shows which files directly or indirectly include this file:




### Classes

- class band::interface::DebugInterfaceDecorator< T >

### Namespaces

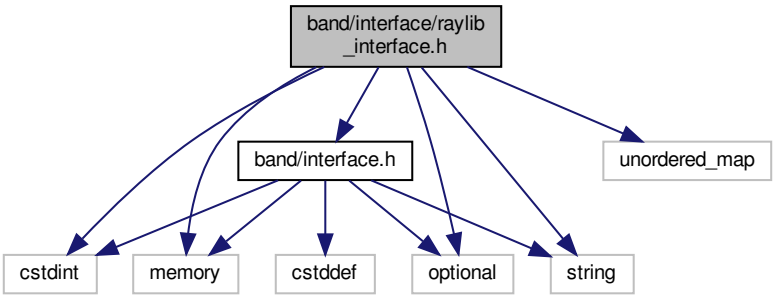
- band
- band::interface

## 8.30 band/interface/raylib_interface.d File Reference

## 8.31 band/interface/raylib_interface.h File Reference

```
#include <cstdint>
#include <memory>
#include <optional>
#include <string>
#include <unordered_map>
```

```
#include "band/interface.h"
```
Include dependency graph for raylib_interface.h:




### Classes

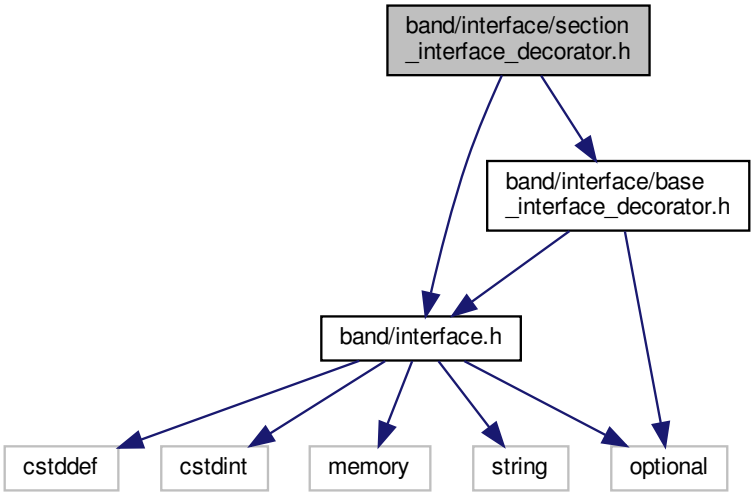
- class band::interface::RaylibInterface

### Namespaces

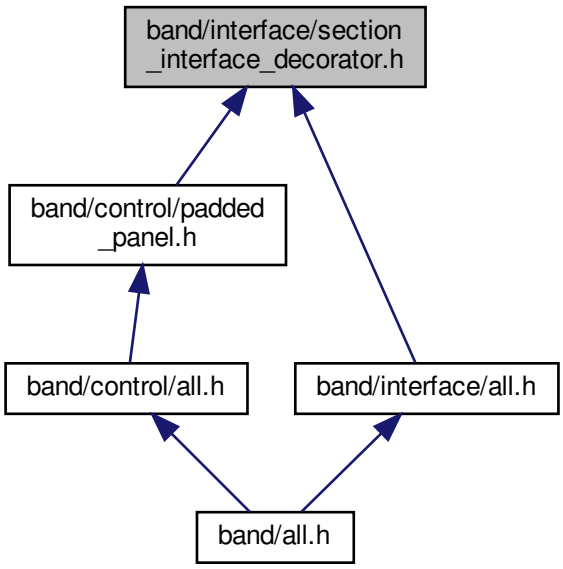
- band
- band::interface

## 8.32 band/interface/section_interface_decorator.h File Reference

```
#include "band/interface.h"
#include "band/interface/base_interface_decorator.h"
```
Include dependency graph for section_interface_decorator.h:



This graph shows which files directly or indirectly include this file:




### Classes

- class band::interface::SectionInterfaceDecorator< T >

### Namespaces

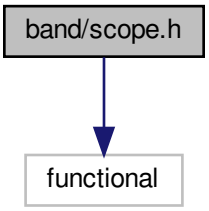
- band
- band::interface

## 8.33 band/scope.d File Reference

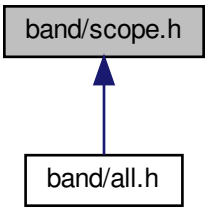
## 8.34 band/scope.h File Reference

```
#include <functional>
```

Include dependency graph for scope.h:




This graph shows which files directly or indirectly include this file:




### Classes

- class band::Scope

### Namespaces

- band

## 8.35 README.md File Reference

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