LCD_Colour

Generated by Doxygen 1.8.2

Sat Dec 15 2012 18:58:37

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Chapter 1

LCD_Colour Library

Library for LCD_Colour with Nokia 7110 display

Based on Color LCD graphics library by RobG for Color LCD Booster Pack by RobG

Uses GLCD fonts

Developed with embedXcode

Author

Rei VILO
embedXcode.weebly.com

Date

Dec 15, 2012

Version

103

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See Also

- (Universal) Color LCD graphics library by RobG 22 March 2012 - 03:09 AM
  http://forum.43oh.com/topic/1956-universal-color-lcd-graphics-library/
- Color LCD Booster Pack by RobG 02 February 2012 - 10:01 PM
  http://forum.43oh.com/topic/1758-color-lcd-booster-pack/
- Serial_LCD Library Suite
  http://embeddedcomputing.weebly.com/serial-lcd.html
- Fonts generated with MikroElektronika GLCD Font Creator 1.2.0.0
  http://www.mikroe.com

Chapter 2

BoosterPack Versions and References

2.1 BoosterPack Versions and References

The BoosterPack comes in two versions, 1 or 2.

Check the version of the BoosterPack for the Chip Select pin

- version 1: Chip Select on pin P1_2
- version 2: Chip Select on pin P1_0

2.2 References

General thread is at http://forum.43oh.com/topic/1758-color-lcd-booster-pack/

Specific links to

- version 1: http://store.43oh.com/index.php?route=product/product&product_id=72
- version 2: http://store.43oh.com/index.php?route=product/product&product_id=80

Chapter 3

Class Index

3.1 Class List

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

LCD_Colour
Class for LCD BoosterPack and Nokia 7110 screen 9

Chapter 4

File Index

4.1 File List

Here is a list of all documented files with brief descriptions:

LCD_Colour.h
: Library for LCD_Colour with Nokia 7110 display 15

LCD_Colour.ino
: Main sketch 17

Terminal12.h
: Font library 18

Terminal6.h
: Font library 19

Chapter 5

Class Documentation

5.1 LCD_Colour Class Reference

Class for LCD BoosterPack and Nokia 7110 screen.

`#include <LCD_Colour.h>`

Public Member Functions

- LCD_Colour (uint8_t version=1)

  Constructor with default pins.
- LCD_Colour (uint8_t pinChipSelect, uint8_t pinSerialClock, uint8_t pinSerialData, uint8_t pinDataCommand, uint8_t pinPushButton)

  Constructor with specific pins.
- void begin ()

  Initialise.
- String WhoAmI ()

  Request information about the screen.
- void clear ()

  Clear the screen.
- void setFont (uint8_t font=0)

  Select font.
- void setColour (uint16_t colour)

  Set colour.
- uint16_t calculateColour (uint8_t red, uint8_t green, uint8_t blue)

  Calculate 16-bit colour from Red-Green-Blue components.
- uint8_t fontX ()

  Font size, x-axis.
- uint8_t fontY ()

  Font size, y-axis.
- void text (uint8_t x, uint8_t y, String s)

  Draw ASCII text (row and line coordinates)
- void setPenSolid (boolean flag=true)

  Set pen size.
- void point (uint8_t x1, uint8_t y1)

  Draw pixel.
- void line (uint8_t x1, uint8_t y1, uint8_t x2, uint8_t y2)

  Draw line, rectangle coordinates.

- void rectangle (uint8_t x1, uint8_t y1, uint8_t x2, uint8_t y2)

  Draw Rectangle, rectangle coordinates.
- void circle (uint8_t x1, uint8_t y1, uint8_t radius)

  Draw circle.
- void setBacklight (boolean flag=true)

  Switch backlight.
- boolean getButton ()

  Get button state.

5.1.1 Detailed Description

Class for LCD BoosterPack and Nokia 7110 screen.

5.1.2 Constructor & Destructor Documentation

5.1.2.1 LCD_Colour::LCD_Colour (uint8_t *version* = `1`)

Constructor with default pins.

Parameters

version	version of the BoosterPack, 1=default or 2

Note

Default pins for LaunchPad MSP430 / StellarPad LM4F
∗ P1_2 / PB_1 = Chip Select for version 1=default
∗ P1_0 / PB_5 = Chip Select for version 2
P1_5 / PB_4 = Serial Clock
P1_7 / PB_7 = Serial Data
P1_4 / PE_5 = Data/Command
PUSH2 / PUSH2 = Push Button 2

Warning

Check the version of the BoosterPack for the Chip Select pin

- pin P1_2 on version 1
- pin P1_0 on version 2

5.1.2.2 LCD_Colour::LCD_Colour (uint8_t *pinChipSelect*, uint8_t *pinSerialClock*, uint8_t *pinSerialData*, uint8_t *pinDataCommand*, uint8_t *pinPushButton*)

Constructor with specific pins.

Parameters

pinChipSelect	Chip Select pin number
pinSerialClock	Serial Clock pin number
pinSerialData	Serial Data pin number
pinData-Command	Data Command pin number
pinPushButton	Push Button pin number

5.1.3 Member Function Documentation

5.1.3.1 uint16_t LCD_Colour::calculateColour (uint8_t *red,* uint8_t *green,* uint8_t *blue*)

Calculate 16-bit colour from Red-Green-Blue components.

Parameters

red	red component, 0x00..0xff
green	green component, 0x00..0xff
blue	blue component, 0x00..0xff

Returns

16-bit colour

5.1.3.2 void LCD_Colour::circle (uint8_t *x1,* uint8_t *y1,* uint8_t *radius*)

Draw circle.

Parameters

x1	center, point coordinate, x-axis
y1	center, point coordinate, y-axis
radius	radius

5.1.3.3 uint8_t LCD_Colour::fontX ( )

Font size, x-axis.

Returns

horizontal size of current font, in pixels

5.1.3.4 uint8_t LCD_Colour::fontY ( )

Font size, y-axis.

Returns

vertical size of current font, in pixels

5.1.3.5 boolean LCD_Colour::getButton ( )

Get button state.

Returns

true=pressed, otherwise false

Note

in case the button is pressed, debounce is checked

5.1.3.6 void LCD_Colour::line (uint8_t *x1*, uint8_t *y1*, uint8_t *x2*, uint8_t *y2*)

Draw line, rectangle coordinates.

Parameters

x1	top left coordinate, x-axis
y1	top left coordinate, y-axis
x2	bottom right coordinate, x-axis
y2	bottom right coordinate, y-axis

5.1.3.7 void LCD_Colour::point (uint8_t *x1*, uint8_t *y1*)

Draw pixel.

Parameters

x1	point coordinate, x-axis
y1	point coordinate, y-axis

5.1.3.8 void LCD_Colour::rectangle (uint8_t *x1*, uint8_t *y1*, uint8_t *x2*, uint8_t *y2*)

Draw Rectangle, rectangle coordinates.

Parameters

x1	top left coordinate, x-axis
y1	top left coordinate, y-axis
x2	bottom right coordinate, x-axis
y2	bottom right coordinate, y-axis

5.1.3.9 void LCD_Colour::setBacklight (boolean *flag* = `true`)

Switch backlight.

Parameters

flag	default=true backlight on, false off

5.1.3.10 void LCD_Colour::setColour (uint16_t *colour*)

Set colour.

Parameters

colour	16-bit coded colour

5.1.3.11 void LCD_Colour::setFont (uint8_t *font* = `0`)

Select font.

Parameters

font	default=0=small, 1=large

5.1.3.12 void LCD_Colour::setPenSolid (boolean *flag* = `true`)

Set pen size.

Parameters

flag	default=true=solid, false=wire frame

5.1.3.13 void LCD_Colour::text (uint8_t *x*, uint8_t *y*, String *s*)

Draw ASCII text (row and line coordinates)

Parameters

x	row number, x-axis
y	line number, y-axis
s	text string

5.1.3.14 String LCD_Colour::WhoAmI ( )

Request information about the screen.

Returns

string with hardware version

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

- LCD_Colour.h
- LCD_Colour.cpp

Chapter 6

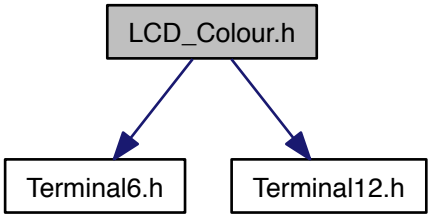
File Documentation

6.1 LCD_Colour.h File Reference

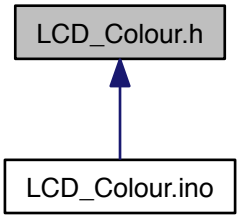
Library for LCD_Colour with Nokia 7110 display.

```
#include "Terminal6.h"
#include "Terminal12.h"
```

Include dependency graph for LCD_Colour.h:



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



Classes

- class LCD_Colour

  Class for LCD BoosterPack and Nokia 7110 screen.

Variables

Colours constants

- const uint16_t blackColour = 0b0000000000000000

  black
- const uint16_t whiteColour = 0b1111111111111111

  white
- const uint16_t redColour = 0b1111100000000000

  red
- const uint16_t greenColour = 0b0000011111100000

  green
- const uint16_t blueColour = 0b0000000000011111

  blue
- const uint16_t yellowColour = 0b1111111111100000

  yellow
- const uint16_t cyanColour = 0b0000011111111111

  cyan
- const uint16_t orangeColour = 0b1111101111100000

  orange
- const uint16_t magentaColour = 0b1111100000001111

  magenta
- const uint16_t violetColour = 0b1111100000011111

  violet
- const uint16_t grayColour = 0b0111101111101111

  gray

6.1.1 Detailed Description

Library for LCD_Colour with Nokia 7110 display. Based on Color LCD graphics library by RobG for Color LCD Booster Pack by RobG

Uses GLCD fonts *Developed* with `embedXcode`

Author

Rei VILO
`http://embeddedcomputing.weebly.com`

Date

Dec 15, 2012

Version

release 103

Copyright

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http://embeddedcomputing.weebly.com

See Also

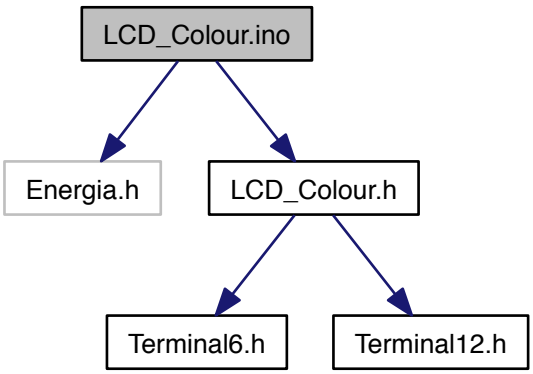
- (Universal) Color LCD graphics library by RobG 22 March 2012 - 03:09 AM
  http://forum.43oh.com/topic/1956-universal-color-lcd-graphics-library/
- Color LCD Booster Pack by RobG 02 February 2012 - 10:01 PM
  http://forum.43oh.com/topic/1758-color-lcd-booster-pack/
- Serial_LCD Library Suite
  http://embeddedcomputing.weebly.com/serial-lcd.html
- Fonts generated with MikroElektronika GLCD Font Creator 1.2.0.0
  http://www.mikroe.com

6.2 LCD_Colour.ino File Reference

Main sketch.

```
#include "Energia.h"
#include "LCD_Colour.h"
```

Include dependency graph for LCD_Colour.ino:



Functions

- void setup ()

  Setup code.
- void loop ()

  Loop code.

Variables

- LCD_Colour myScreen

  Screen.

6.2.1 Detailed Description

Main sketch.

Developed with `embedXcode`

Author

Rei VILO
embedXcode.weebly.com

Date

déc. 15, 2012 13:34

Version

103

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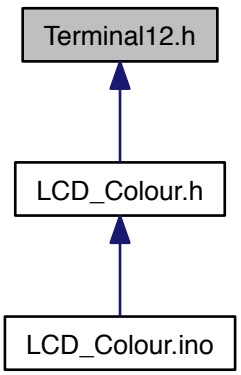
See Also

ReadMe.txt for references

6.3 Terminal12.h File Reference

Font library.

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



6.3.1 Detailed Description

Font library. Font Terminal 12 x 16

Developed with embedXcode

Author

Rei VILO
http://embeddedcomputing.weebly.com

Date

May 26, 2012

Version

1

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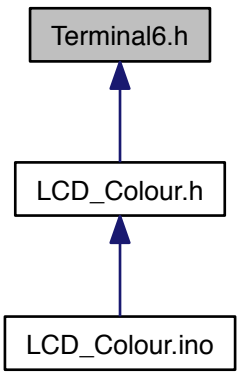
See Also

Font Generated by MikroElektronika GLCD Font Creator 1.2.0.0
MikroeElektronika 2011 http://www.mikroe.com

6.4 Terminal6.h File Reference

Font library.

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



6.4.1 Detailed Description

Font library. Font Terminal 6 x 8

Developed with embedXcode

Author

Rei VILO
http://embeddedcomputing.weebly.com

Date

May 26, 2012

Version

1

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See Also

Font Generated by MikroElektronika GLCD Font Creator 1.2.0.0
MikroeElektronika 2011 http://www.mikroe.com

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