## LCD5110\_Basic - Arduino library support for Nokia 5110 compatible LCDs

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Basic functionality of this library are based on the demo-code provided by ITead studio. You can find the latest version of the library at http://www.henningkarlsen.com/electronics

This library has been made to make it easy to use the basic functions of the Nokia 5110 LCD module on an Arduino.

If you make any modifications or improvements to the code, I would appreciate that you share the code with me so that I might include it in the next release. I can be contacted through http://www.henningkarlsen.com/electronics/contact.php

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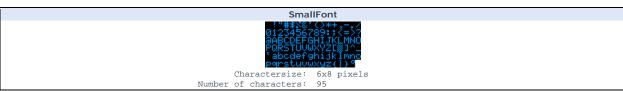
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| Version: | 1.0 | 12 Aug 2011 | • initial release |
|----------|-----|-------------|-------------------|
|----------|-----|-------------|-------------------|

# Defined Literals:

| Aligr   | nment |
|---|-------|
| For use with print(), printNumI() and printNumF() |       |
|   |       |
| LEFT:   | 0     |
| RIGHT:  | 9999  |
| CENTER:   | 9998  |

# Included Fonts:







## Functions:

```
InitLCD();

Initialize the LCD.

Parameters: None

Usage: myGLCD.initLCD(); // Initialize the display

Notes: This will reset and clear the display.
```

```
cirScr();
Clear the screen.

Parameters: None
Usage: myGLCD.clrScr(); // Clear the screen
```

| clrRow(row[, start_x[, end_x]]); |   |  |  |  |  |  |  |
|----------------------------------|---|--|--|--|--|--|--|
| Clear a part of, or a whole row. |   |  |  |  |  |  |  |
| Parameters:                      | <pre>row: 8 pixel high row to clear (0-5) start_x: <optional></optional></pre>              |  |  |  |  |  |  |
|                                  | <pre>x-coordinate to start the clearing on (default = 0) end_x: <optional></optional></pre> |  |  |  |  |  |  |
|                                  | x-coordinate to end the clearing on (default = 83)  |  |  |  |  |  |  |
| Usage:                           | myGLCD.clrRow(5, 42); // Clear the right half of the lower row                              |  |  |  |  |  |  |

|   | invert(mode);  |  |  |  |
|---|--|--|--|--|
| Set inversion of the display on or off. |  |  |  |  |
| Parameters:                             | mode: true - Invert the display false - Normal display |  |  |  |
| Usage:                                  | myGLCD.invert(true); // Set display inversion on       |  |  |  |

```
PrintNuml(num, x, y);

Print an integer number at the specified coordinates.

You can use the literals LEFT, CENTER and RIGHT as the x-coordinate to align the string on the screen.

Parameters:

num: the value to print (-2,147,483,648 to 2,147,483,647) INTEGERS ONLY

x: x-coordinate of the upper, left corner of the first digit/sign

y: y-coordinate of the upper, left corner of the first digit/sign

Usage:

myGLCD.print(num,CENTER,0); // Print the value of "num" centered at the top of the screen

Notes:

The y-coordinate will be adjusted to be aligned with an 8 pixel high display row.

In effect only 0, 8, 16, 24, 32 and 40 can be used as y-coordinates.
```

#### printNumF(num, dec, x, y);

Print a floating-point number at the specified coordinates.

You can use the literals LEFT, CENTER and RIGHT as the x-coordinate to align the string on the screen.

WARNING: Floating point numbers are not exact, and may yield strange results when compared. Use at your own discretion.

Parameters: num: the value to print (See note)

dec: digits in the fractional part (1-5) 0 is not supported. Use printNumI() instead.

x-coordinate of the upper, left corner of the first digit/sign (0-239) y-coordinate of the upper, left corner of the first digit/sign (0-319)

myGLCD.print(num, 3, CENTER,0); // Print the value of "num" with 3 fractional digits top centered Usage:

Supported range depends on the number of fractional digits used.

Approx range is +/-  $2*(10^{\circ}(9-\text{dec}))$ The y-coordinate will be adjusted to be aligned with an 8 pixel high display row. In effect only 0, 8, 16, 24, 32 and 40 can be used as y-coordinates.

### setFont(fontname);

Select font to use with print(), printNumI() and printNumF().

fontname: Name of the array containing the font you wish to use myGLCD.setFont(SmallFont); // Select the font called SmallFont Usage

Notes: You must declare the font-array as an external or include it in your sketch.

### drawBitmap (x, y, sx, sy, data[, flash]);

Draw a bitmap on the screen.

Notes:

Parameters: x-coordinate of the upper, left corner of the bitmap x:

y-coordinate of the upper, left corner of the bitmap y: sx: width of the bitmap in pixels

sy: height of the bitmap in pixels data: array containing the bitmap-data

flash: <optional>

true - data-array is in flash memory (Default) false - data-array is in RAM

myGLCD.drawBitmap(0, 0, 32, 32, bitmap); // Draw a 32x32 pixel bitmap in the upper left corner Usage Notes:

You can use the online-tool "ImageConverter 5110" to convert pictures into compatible arrays.

The online-tool can be found on my website. Requires that you #include <avr/pgmspace.h>