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HCDotMatrix Arduino library for 8x8 LED dot matrix module

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HCDotMatrix Arduino library for 8x8 LED dot matrix module

Author

admin
Site Admin

Joined: Sun Aug 05, 2012 4:02 pm

Posts: 647

Message

HCDotMatrix Arduino library for 8x8 LED dot matrix module

1588BS

This Arduino library was written to work with our 8 x 8 LED dot matrix module (HCOPTO0011)

You will need to download and unzip this library to the Aduino development environment library area

On Windows:
My Documents\Arduino\libraries\
My Documents\Arduino\libraries\
My Documents\Arduino\libraries\

On Mac:
Documents/Arduino/libraries/
Documents/Arduino/libraries/
Documents/Arduino/libraries/

or similarly for Linux.

To use the library just include the HCDotMatrix.h header file and create an instance of the HCDotMatrix library. E.g:

Code:

```
HCDotMatrix HCDotMatrix(R0,R1,R2,R3,R4,R5,R6,R7,C0,C1,C2,C3,C4,C5,C6,C7);
```

Where R0 to R7 are the digital IO pins connected to the modules 8 row pins and C0 to C7 are the digital IO pins used to connect to the modules 8 column pins.

The following functions are available with this library:

Code:

```
HCDotMatrix.print(Array[], TextPosition);
```

Outputs a string of ascii test to the module with a column pixel offset of TextPosition. But incrementing the value of TextPosition this allows you create the illusion of scrolling text. Array[] is of type char array[] with a null termination, and TextPosition is of type Int.

Code:

```
HCDotMatrix.UpdateMatrix();
```

This must be continually run in your main loop or via a timer interrupt (See HCTimer2 library) to keep the matrix refreshed.

Example Arduino Sketch:**Code:**

```
/* FILE:      ARD_HC_Dot_Matrix_Example_1
   DATE:      19/09/13
   VERSION: 0.1

REVISIONS:

19/09/13 Created version 0.1

This is an example of how to use the Hobby Components 8x8 LED dot matrix
display module (HCOPTO0011)

To connect the LED module to an Arduino development board please follow
the pinout below:

MATRIX LED      ARDUINO

R1              D9
R2              D4
R3              A0 (D14)
R4              D6
R5              D10
R6              A1 (D15)
R7              D11
R8              A3 (D17)

C1*             D5
C2*             D12
C3*             D13
C4*             D8
C5*             A2 (D16)
C6*             D7
C7*             D3
C8*             D2

* ALL MATRIX COLOUMN PINS MUST BE CONNECTED TO THE ARDUINO BOARD VIA A 220R
RESISTOR OTHERWISE YOU MAY RISK DAMAGING THE MODULE.

HCOPTO0011 8X8 MATRIX LED PINOUT:

PIN  1   2   3   4   5   6   7   8
LED  C8  C7  R2  C1  R4  C6  C4  R1

PIN  9   10  11  12  13  14  15  16
LED  R5  R7  C2  C3  R8  C5  R6  R3

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INCLUDING, BUT NOT LIMITED TO, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES FOR ANY
REASON WHATSOEVER.
*/

/* Include the 7 segment display library */
#include <HCDotMatrix.h>

/* Create an instance of HCDotMatrix(pinout). Where pinout is the DIO pin
   connections to the module in the order of R0...R7 and C0...C7 */
HCDotMatrix HCDotMatrix(9,4,14,6,10,15,11,17,5,12,13,8,16,7,3,2);

/* Stores the position index for the portion of text to display */
int TextPosition;
/* Used to control the scroll speed. */
int ScrollCounter = 0;

void setup()
{

}

/* Main program */
```

```
void loop()
{
  /* Increment the scroll counter */
  ScrollCounter++;

  /* Has enough time passed to move the text by one position ?*/
  if (ScrollCounter >= 100)
  {
    /* Have we got to the end of the text (24 characters x 8 pixels wide)?
       If so go back to the start.*/
    if (TextPosition > (24*8))
      TextPosition = 0;

    /* Output a string to the matrix buffer and specify the display
       column position */
    HCDotMatrix.print("WWW.HOBBYCOMPONENTS.COM", TextPosition);

    TextPosition++;
    ScrollCounter = 0;
  }

  /* Refresh the display. This must be run continuously */
  HCDotMatrix.UpdateMatrix();
}
```

Example Sketch Using HCTimer2 Library:

```
Code:
/* FILE:      ARD_Dot_Matrix_Example_2
   DATE:      19/03/13
   VERSION:   0.1

REVISIONS:

19/09/13 Created version 0.1

This is an example of how to use the 8x8 LED dot matrix display module (HCOPT00011).
This example uses the HCTimer2 library as well as the HCDotMatrix library to keep
the LED's regularly updated whilst keeping the main loop completely free for other
code.

To connect the LED module to an Arduino development board please follow
the pinout below:

MATRIX LED      ARDUINO

R1              D9
R2              D4
R3              A0 (D14)
R4              D6
R5              D10
R6              A1 (D15)
R7              D11
R8              A3 (D17)

C1*             D5
C2*             D12
C3*             D13
C4*             D8
C5*             A2 (D16)
C6*             D7
C7*             D3
C8*             D2

* ALL MATRIX COLOUMN PINS MUST BE CONNECTED TO THE ARDUINO BOARD VIA A 220R
RESISTOR OTHERWISE YOU MAY RISK DAMAGING THE MODULE.

HCOPT00011 8X8 MATRIX LED PINOUT:

PIN  1   2   3   4   5   6   7   8
LED  C8  C7  R2  C1  R4  C6  C4  R1

PIN  9  10  11  12  13  14  15  16
LED  R5  R7  C2  C3  R8  C5  R6  R3

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HOBBY COMPONENTS SHALL NOT, IN ANY CIRCUMSTANCES, BE LIABLE FOR ANY DAMAGES,
INCLUDING, BUT NOT LIMITED TO, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES FOR ANY
REASON WHATSOEVER.
*/
```

```
/* Include the 7 segment display library */
#include <HCDotMatrix.h>

/* Include the HCTimer2 library */
#include <HCTimer2.h>

/* Create an instance of HCDotMatrix(pinout). Where pinout is the DIO pin
   connections to the module in the order of R0...R7 and C0...C7 */
HCDotMatrix HCDotMatrix(9,4,14,6,10,15,11,17,5,12,13,8,16,7,3,2);

int TextPosition;

void setup()
{
    /* Initialise the HCTimer2 library with a 2.04mS interval.
       See HCTimer2 library for more information */
    HCTimer2Init(T2_CLK_DIV_128, 254);
}

/* Main program */
void loop()
{
    for (TextPosition = 0; TextPosition <= (24*8); TextPosition++)
    {
        /* Output a string to the matrix buffer and specify the display
           column position */
        HCDotMatrix.print("WWW.HOBBYCOMPONENTS.COM", TextPosition);
        delay(80);
    }
}






/* Use the HCTimer2 Timer 2 interrupt to constantly refresh the
   matrix LED display. */
void HCTimer2()
{
    /* Output the current buffer to the matrix */
    HCDotMatrix.UpdateMatrix();
}
```





Library:

Attachment:

HCDotMatrix.zip

You do not have the required permissions to view the files attached to this post.

Thu Oct 24, 2013 3:37 pm	Profile
<div><div>kukot</div><div>Joined: Fri Aug 29, 2014 5:13 pm</div><div>Posts: 1</div></div>	<div><div> Re: HCDotMatrix Arduino library for 8x8 LED dot matrix modul</div><div>I can't make this work :S</div></div>
Fri Aug 29, 2014 5:23 pm	Profile
<div><div>andrew</div><div>Site Admin</div><div>Joined: Sun Aug 05, 2012 4:15 pm</div><div>Posts: 640</div></div>	<div><div> Re: HCDotMatrix Arduino library for 8x8 LED dot matrix modul</div><div>Do you mean you can't compile the software or you are not seeing anything on the dot matrix module?</div><div></div><div>Comments made by this poster do not necessarily reflect the views of Hobby Components Ltd.</div></div>
Sat Aug 30, 2014 1:41 pm	Profile
<div><div>boo</div><div>Joined: Sat Apr 04, 2015 3:40 am</div><div>Posts: 1</div></div>	<div><div> Re: HCDotMatrix Arduino library for 8x8 LED dot matrix modul</div><div>Some problem in schematic and I have the inverted module. So I edit constructor in cpp to add appropriate variable also</div></div>
Sun Apr 05, 2015 6:20 pm	Profile
<div><div>tom</div><div>Joined: Tue Apr 14, 2015 9:00 pm</div><div>Posts: 3</div></div>	<div><div> Re: HCDotMatrix Arduino library for 8x8 LED dot matrix modul</div><div>got issues as well so in a desperate attempt i went in with a multimeter and i now have a completely different pinout will post it as soon as i'm home although i now can manually light up any led i want by applying power to the appropriate pins the library and examples will not work for me instead every led on the module lights up and simply stays lit 😊 want it to display some text for electronic music box im making for my wife</div></div>
Tue Apr 14, 2015 9:53 pm	Profile
<div><div>andrew</div><div>Site Admin</div><div>Joined: Sun Aug 05, 2012 4:15 pm</div><div>Posts: 640</div></div>	<div><div> Re: HCDotMatrix Arduino library for 8x8 LED dot matrix modul</div><div>Could either if you confirm that you are using the LED module that came with either the Experimenters or Master kit? If so I'll take a look at the library and see if I can fix it.</div><div></div></div>

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Wed Apr 15, 2015 7:36 am	Profile
tom Joined: Tue Apr 14, 2015 9:00 pm Posts: 3	<div> Re: HCDotMatrix Arduino library for 8x8 LED dot matrix modul</div> <p>Hi Andrew , I have taken a look at my order history and indeed it is an 1588BS display from the experimenters kit. I have made some progress and can now based on the blink sketch control the columns and make them scroll. As promised in previous post i give the pinout as i have found it This pinout has the following orientation 1588BS text to the left with the 1 on the top the right hand side contains pin 9 to 16 beginning from the top</p> <p>Matrix pin control element Arduino</p> <p>1 C4 D8 2 C2 D12 3 R2 D4 4 R3 A0 5 C1 D5 6 R5 D10 7 C3 D13 8 C6 D7 9 R8 A3 10 R7 D11 11 C7 D3 12 R1 D9 13 C5 A2 14 R6 A1 15 R4 D6 16 C8 D2</p> <p>I could post the scrolling sketch i've made if requested</p>
Wed Apr 15, 2015 1:03 pm	Profile
andrew Site Admin Joined: Sun Aug 05, 2012 4:15 pm Posts: 640	<div> Re: HCDotMatrix Arduino library for 8x8 LED dot matrix modul</div> <p>Thanks for confirming and the info. I'll take a look at the library. Please bear with me though because I'll probably have to wire one up first. I'll post back here I figure out a fix for it.</p> <hr/> <p>Comments made by this poster do not necessarily reflect the views of Hobby Components Ltd.</p>
Wed Apr 15, 2015 4:11 pm	Profile
tom Joined: Tue Apr 14, 2015 9:00 pm Posts: 3	<div> Re: HCDotMatrix Arduino library for 8x8 LED dot matrix modul</div> <p>Hi Andrew,</p> <p>Victory at last I found the correct pinout for the 1588BS LED matrix</p> <p>from top left pin 1 to 8 1:R5 goes to D10 2:R7 goes to D11 3:C2 goes to D12 4:C3 goes to D13 5:R8 goes to A3 6:C5 goes to A2 7:R6 goes to A1 8:R3 goes to A0</p> <p>from bottom right pin 9 to 16 9: R1 goes to D9 10:C4 goes to D8 11:C6 goes to D7 12:R4 goes to D6 13:C1 goes to D5 14:R2 goes to D4 15:C7 goes to D3 16:C8 goes to D2</p> <p>*All C's must be connected through a 220 ohm resistor sketches are working now must be an older model of display than the one you're offering now with a different pinout than presented in the sketch info 😓 thanks a lot for the support</p> <p>😓 see now i had it reversed</p>
Fri Apr 17, 2015 6:22 pm	Profile
andrew Site Admin Joined: Sun Aug 05, 2012 4:15 pm Posts: 640	<div> Re: HCDotMatrix Arduino library for 8x8 LED dot matrix modul</div> <p>That's great. We did indeed change the modules in the kit but this was quite some time ago so you must have a very old kit. I could still do with looking at the library because it's getting a little out of date and would benefit with a update.</p> <hr/> <p>Comments made by this poster do not necessarily reflect the views of Hobby Components Ltd.</p>

Sat Apr 18, 2015 8:21 am

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