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Thread: Advice on display options

10-11-2014, 09:15 AM #1

Experimentalist

Senior Member

Join Date: Nov 2012
Location: Chipping Norton, UK
Posts: 195

Advice on display options

I am looking to buy a display from http://www.buydisplay.com/ specifically this one ER-TFTM050-3

There are many options to choose from and I would be grateful of any advice on which options will make my life easier for interfacing with T3.0/T3.1. The options are below. I presume to get the fastest update rates I should go for the parallel interface? It appears I can specify both parallel and serial and decide later which to use. The display supports both 8 bit and 16 bit parallel interfaces so I guess the fastest possible updates would be with the 16 bit parallel interface.

Not sure which parallel option is best to go for to get the best compatibility with existing libraries, 6800 or 8080?

Most of my reading suggests to go SPI for the serial interface, but should I select 3-wire or 4-wire is I2C a better option?

I have a project that uses the SDFat library and I want to use that code. I use the PJRC SD card adapter and so I am reasonably certain I should select SPI mode for the SD card option.

- Accessory for Parallel Interface

- 6800 Parallel Interface
- 8080 Parallel Interface

- Serial Interface
  - 3-wire Serial Interface
  - 4-wire Serial Interface
  - I2C Serial Interface
- Accessory for MicroSD Card Interface
  - SD Mode
  - SPI Mode

Anyone have any advice or experience with this screen?

Thanks
Ex.

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10-11-2014, 09:28 AM #2

stevech

Senior Member

Join Date: Jun 2013
Location: So. Calif
Posts: 2,053

I'd use I2C if the cable length can be 6 inches or so.

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10-11-2014, 09:48 AM #3

Experimentalist

Senior Member

Join Date: Nov 2012
Location: Chipping Norton, UK
Posts: 195

> Originally Posted by **stevech**
> *I'd use I2C if the cable length can be 6 inches or so.*

Do you know of any libraries supporting I2C that I could use?

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10-11-2014, 11:03 AM #4

PaulStoffregen

Senior Member

Since that display is based on the RA8875, you're probably going to end up using Adafruit's library, which is SPI.

Join Date: Nov 2012
Posts: 7,583

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10-11-2014, 11:49 AM #5

stevech

Senior Member
Join Date: Jun 2013
Location: So. Calif
Posts: 2,053

> Originally Posted by **PaulStoffregen**
> *Since that display is based on the RA8875, you're probably going to end up using Adafruit's library, which is SPI.*

Beware, if you have 2+ SPI devices active. With I2C it may be less contentious.

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10-11-2014, 01:18 PM #6

Experimentalist

Senior Member
Join Date: Nov 2012
Location: Chipping Norton, UK
Posts: 195

> Originally Posted by **PaulStoffregen**
> *Since that display is based on the RA8875, you're probably going to end up using Adafruit's library, which is SPI.*

So back to the question 3 or 4 wire?

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11-04-2014, 07:47 PM #7

Fyod

Member
Join Date: Jun 2014
Posts: 70

Bumping this thread because I bought one of these.
The interface options you choose are basically just how they solder a couple jumpers and add resistors.
I ordered the 6800/3wire interface.
My only problem now is that the available interface connection for SPI doesn't have INT/RST pins. So if I understand correctly, I should resolder the jumpers for the 8/16bit interface and then connect all the pins that are in the library?
So far I'm not even getting a backlight when connected to a 3.6V battery.

Edit: Ok, nevermind, I should have 4wire and it looks like I

should have a 10K resistor on R2, which is now 0ohm.

Last edited by Fyod; 11-04-2014 at 08:32 PM.

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11-05-2014, 02:41 PM #8

Fyod

Member
Join Date: Jun 2014
Posts: 70

So I have this setup now

4 wire serial
J9,J11,J13,J15 open
J10,J12,J14,J16 short
R1,R2,R3 all 10Kohm resistors

Vin 3.xV on JP1 pin 3,4, ground pin 1,2 (2,4 out to power Teensy and 1,3 to battery)
Teensy 11 mosi to 8875 JP1 pin 7 sdi
Teensy 12 miso to 8875 JP1 pin 6 sdo
Teensy 13 sck to 8875 JP1 pin 8 sclk
Teensy 10 cs to 8875 JP1 pin 5 scs

Not even a blink at this point.

Some good info here, but 7"
http://weatherhelge.wordpress.com/20...d-upn-running/
Interesting library here
https://github.com/sumotoy/RA8875

Update: read somewhere that the 3 resistors can be removed, tried it, no response, RA8875 not found using Adafruit lib.
Update 2: tested with new extra Teensy, nothing.
Switching miso/mosi causes the Serial Monitor to not write the "not found"message.
Weird thing is I was recently testing a 2.8"Adafruit TFT and couldn't get that one to work either.

Last edited by Fyod; 11-05-2014 at 07:48 PM.

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11-06-2014, 02:42 PM #9

Fyod

Member

It's alive!
Had two wires swapped.
Currently running without the resistors, not sure if I should

Join Date: Jun 2014
Posts: 70

solder them back on or not.

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11-12-2014, 03:27 PM #10

Experimentalist

Senior Member
Join Date: Nov 2012
Location: Chipping Norton, UK
Posts: 195

So I bought one of these but it is still in the box, not had time to play until now. You say you had

> Originally Posted by **Fyod**
> *two wires swapped*

Can you report back with your final jumper and wiring settings?

You also say you are

> Originally Posted by **Fyod**
> *currently running without the resistors*

I presume you mean R1, R2 and R3?

From reading the display datasheet, the section on page 11, '4.5 Jump Point Description' the '4-wire Serial Interface' section indicates R1, R2 & R3 should be 10K but the page you linked https://github.com/sumotoy/RA8875 seems to point to running without these 3 resistors? That site also seems to suggest there is no point in opting for a parallel interface as it is not the data transfer that takes the time, rather the chip executing the commands, which answers my previous question:

> Originally Posted by **Experimentalist**
> *I presume to get the fastest update rates I should go for the parallel interface?*

Looks like I am going to follow your and his lead and opt for a 4-wire SPI interface.

Finally having had time to RTFM the interface choices make more sense. I originally thought you could specify one parallel and one serial interface and then use either later. I got this impression from the order page as it would let you choose both options simultaneously. I realise now you can choose only one of all the parallel and serial options, I think that cost me 50 cents as I chose one of each :0)

I would appreciate it if you have time to respond prior to me breaking out the soldering iron. If you can post a picture as well that would be great :0)

I hope you have time to post, otherwise I will resort to empirical observation as usual

Ex.

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11-12-2014, 03:53 PM #11

Fyod

Member
Join Date: Jun 2014
Posts: 70

The pin-pin layout I wrote above should be correct.
I don't have the stuff here so if that pinout doesn't work for you, let me know and I'll double check.

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11-12-2014, 04:03 PM #12

Experimentalist

Senior Member
Join Date: Nov 2012
Location: Chipping Norton, UK
Posts: 195

Thanks, will give it a go. What about the resistors?

Just got distracted and ordered two of the 7" screens, whoops :0)

My draw full of varying size and touch interface displays is becoming quite impressive!

Ex

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11-12-2014, 04:23 PM #13

Fyod

Member
Join Date: Jun 2014
Posts: 70

Still removed (R1,2,3) and working fine.

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02-03-2015, 10:55 PM #14

Ristola

Junior Member
Join Date: Jul 2014
Posts: 10

I purchased the 7" display, 4-Wire and jumpers are configured per manual.
I am curious what RA8875 library you guys have been using ?
I was not able to get Adafruit's library to work, however

the library @ https://github.com/sumotoy/RA8875 works perfectly.

Has anyone gotten the BMPDraw from SD to work using these displays ?
I can access the display or the SD card, but not both at the same time as I can on the ILI9341 controllers.

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02-04-2015, 12:04 AM #15

Fyod

Member
Join Date: Jun 2014
Posts: 70

I used Sumotoy's too. I think he's a member on this forum.
The only problem with the displays are the miniature fonts. There's a graphic font library somewhere that I got working, but it was very slow and hard to get into portrait mode.

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02-12-2015, 01:16 PM #16

Experimentalist

Senior Member
Join Date: Nov 2012
Location: Chipping Norton, UK
Posts: 195

> Originally Posted by **Ristola**
>
> *I purchased the 7" display, 4-Wire and jumpers are configured per manual.*
> *I am curious what RA8875 library you guys have been using ?*
> *I was not able to get Adafruit's library to work, however the library @ https://github.com/sumotoy/RA8875 works perfectly.*
>
> *Has anyone gotten the BMPDraw from SD to work using these displays ?*
> *I can access the display or the SD card, but not both at the same time as I can on the ILI9341 controllers.*

Sorry for the very slow reply. I have been using the Sumotoy library extensively whilst learning all about the RA8875. I have a working bitmap draw sketch, see below. I use the hardware serial for all my projects so you may need to do some editing to get debugging working.

I took the bitmap example sketch from the Arduino library and converted it to use the full blown SdFat library, hardware serial and the Sumotoy RA8875 library. I got it working and have not done anything else with it to date. I will leave my comments in as I was having trouble whilst testing it switching back and forth from TEXT to GRAPHICS modes but I have not investigated this as I was only

interested in getting the bitmap to draw at the time.

It would need some work to use practically but it is working for me as a test script.

Hope it helps.

Code:

```
        // BMP rows are padded (if needed) t
o 4-byte boundary
        rowSize = (bmpWidth * 3 + 3) & ~3;

        // If bmpHeight is negative, image i
s in top-down order.
        // This is not common but has been o
bserved in the wild.
        if(bmpHeight < 0) {
          bmpHeight = -bmpHeight;
          flip      = false;
        }

                // Ensure that the bitmap fi
ts on the screen
        if((x + bmpWidth - 1) >= tft.width()
) x = tft.width() - bmpWidth;
        if((y + bmpHeight - 1) >= tft.height
()) y = tft.height() - bmpHeight;

        // Set TFT address window to clipped
 image bounds

        for (row=0; row < bmpHeight; row++)
{ // For each scanline...
          // Seek to start of scan line.  It
 might seem labor-
          // intensive to be doing this on e
very line, but this
          // method covers a lot of gritty d
```

Last edited by Experimentalist; 02-12-2015 at 01:24 PM. ***Reason:*** *Clarity*

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