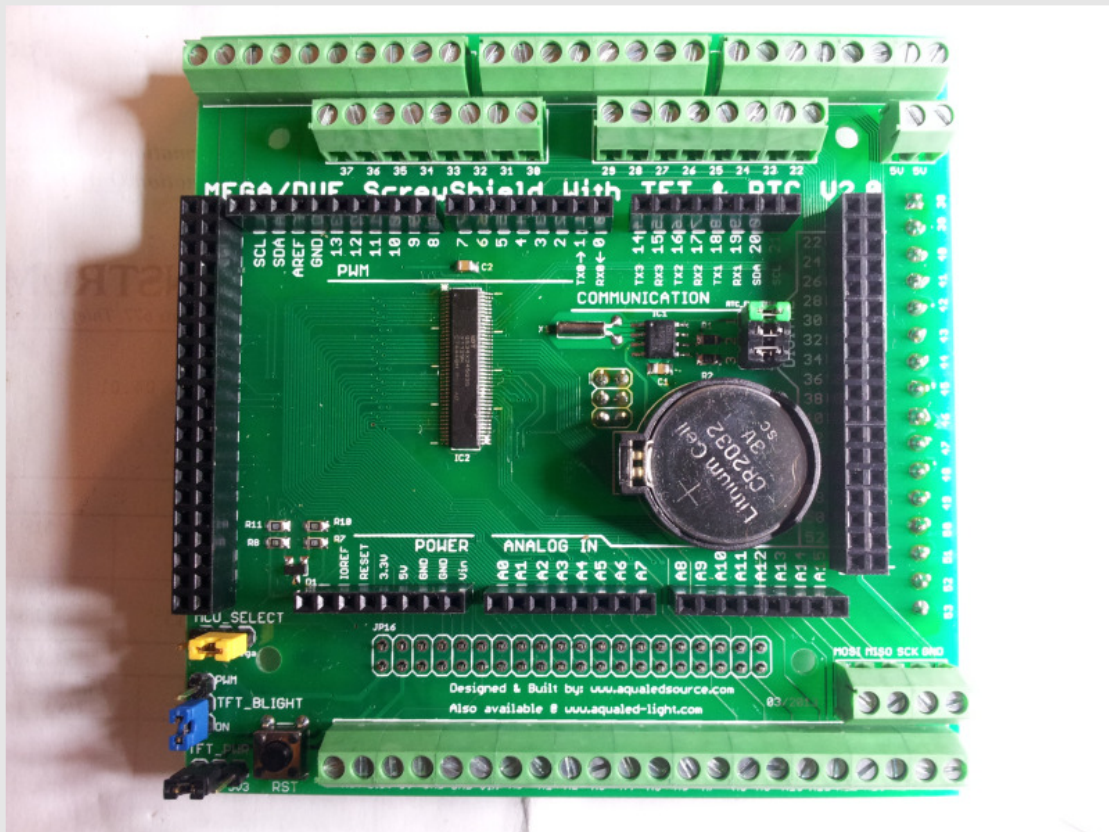


AQUALEDSOURCE

&

AQUALED LIGHT

Arduino Due/Mega R3 with TFT connector, RTC & Screw terminals



WARNING: Some versions of Arduino have the normal big USB plug on the side, the top of this plug must be insulated with tape or some other good electrical isolator, because the pins of JP1 on the bottom side of the shield PCB might hit that plug. This will cause a short-circuit.

Jumper settings

TFT MCU Select (Yellow Jumper):

MCU_SELECT => **Due** (For *Due pinout*), **Mega** (For *Mega pinout*)

For Due dedicated pinout usage, UTFT library must be patched in order to work. **You're expected to be using at least library version 2.0 from Henning Karlsen.** You should then replace the two files with the ones provided along with this user guide. Backup the old files anyway.

You should then open the file "HW_ARM_defines.h" and edit the following define and set it to "1":

```
//Set to 1 when using Due/Mega TFT&RTC Screwshield V2.0 from Aqualedge with  
//dedicated Due Pinout. To use the default Mega pinout with Due, leave it with "0" (zero)  
#define AQUALED_SHIELD_DUE_DEDICATED 1
```

Please look also below in code examples page for the correct way to initialize your TFT.

After this changes you're ready to compile your sketch.

Note: You may leave this define set to "0" if you wish to use the Mega pinout with Due.

TFT Backlight (Blue Jumper):

TFT_BRIGHT => **PWM** (to dim the backlight using PWM on port D10), **ON** (always on at max bright)

TFT voltage selection (Black Jumper near reset button):

TFT_PWR => **3V3** (for 3.3V TFT's), **5V** (for 5v TFT's)

RTC (DS1307) settings:

Jumper Name: RTC_ENA/DISA

J1 (Green) - (IN = *RTC enable*, OUT = *RTC disable*);

J2 (Black) - (IN = *SCL pull-up resistor on*, OUT *SCL pull-up resistor off*);

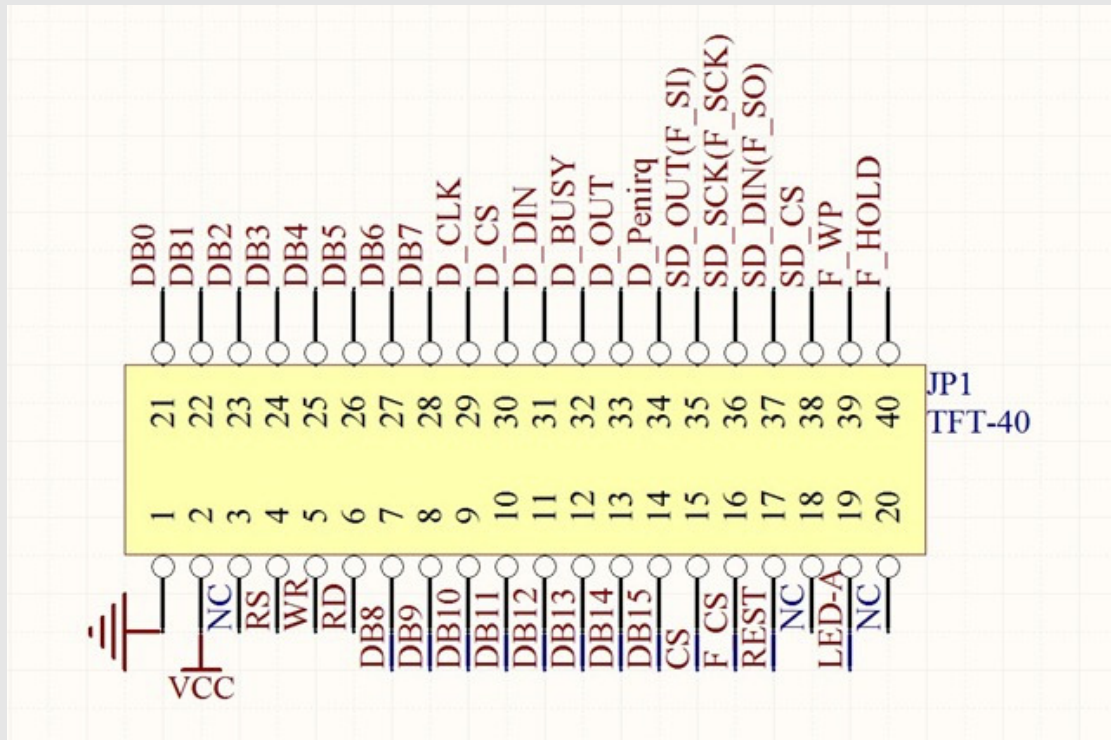
J3 (Black) - (IN = *SDA pull-up resistor on*, OUT = *SDA pull-up resistor off*)

Header blocks JP16 and JP17:

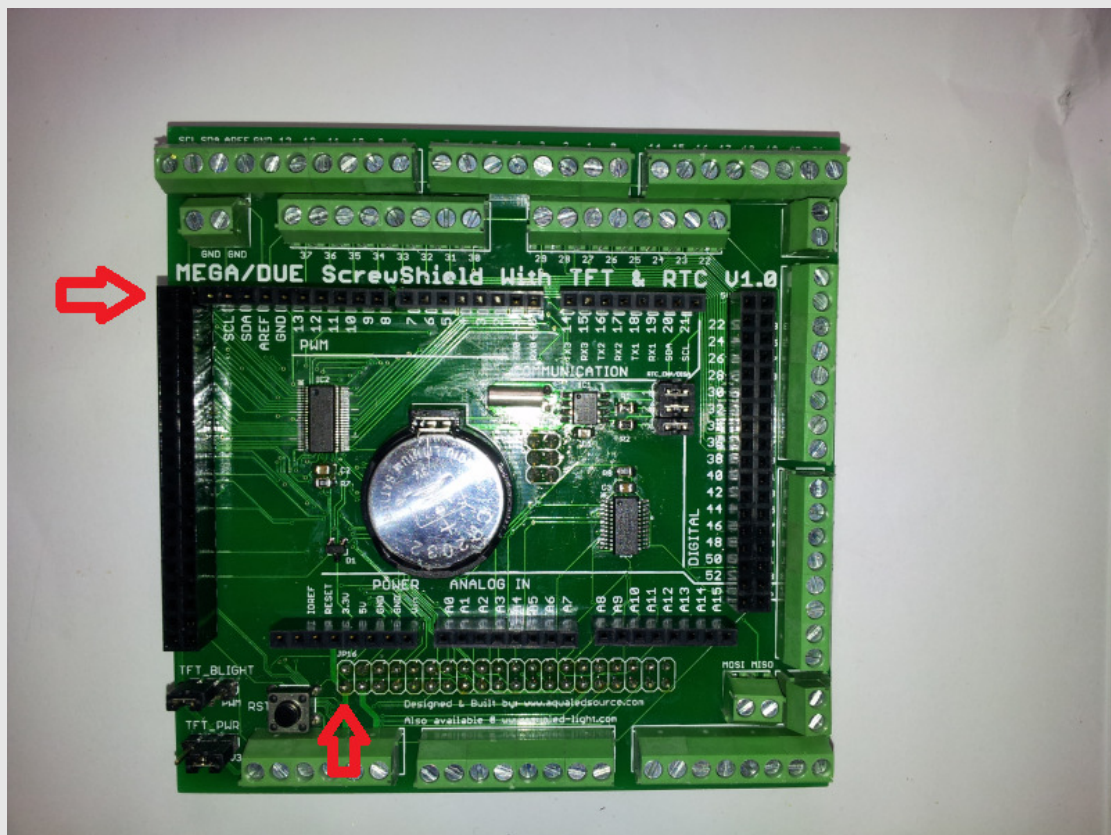
These are the TFT headers, you can use one or the other depending how you like the board displacement, both work the same.

Usually the JP16 is for 5" TFT as they have the connectors on the middle bottom of their PCB, but can be used with other displays to have a Portrait like TFT orientation.

TFT Header Pinout:



TFT header Pin 1 on shield marked on **RED**:



Code examples using the latest Henning Karlsen TFT library

(<http://www.henningkarlsen.com/electronics/index.php>):

Program configuration example:

```
#include <tinyFAT.h>
#include <UTFT.h>
#include <UTFT_tinyFAT.h>

char TFTMODEL=ITDB32WD;

#if (AQUALED_SHIELD_DUE_DEDICATED==1) //This will read the define from the library
UTFTf myGLCD(TFTMODEL,25,26,27,28); // Due dedicated pinout for control pins
#else
UTFTf myGLCD(TFTMODEL,38,39,40,41); // Mega standard pinout for control pins
#endif

ITDB02_Touch myTouch(62,63,64,65,66); //A8 up to A12 Pins on Arduino board

Void Setup()
{
myGLCD.InitLCD(LANDSCAPE);
myGLCD.setFont(BigFont);

myTouch.InitTouch(LANDSCAPE);
myTouch.setPrecision(PREC_HI);

file.initFAT(SPI SPEED_VERYHIGH); // Optional, this can be tried to increase the reading
speed if your SD card can handle it
}
Void loop()
{
}
```