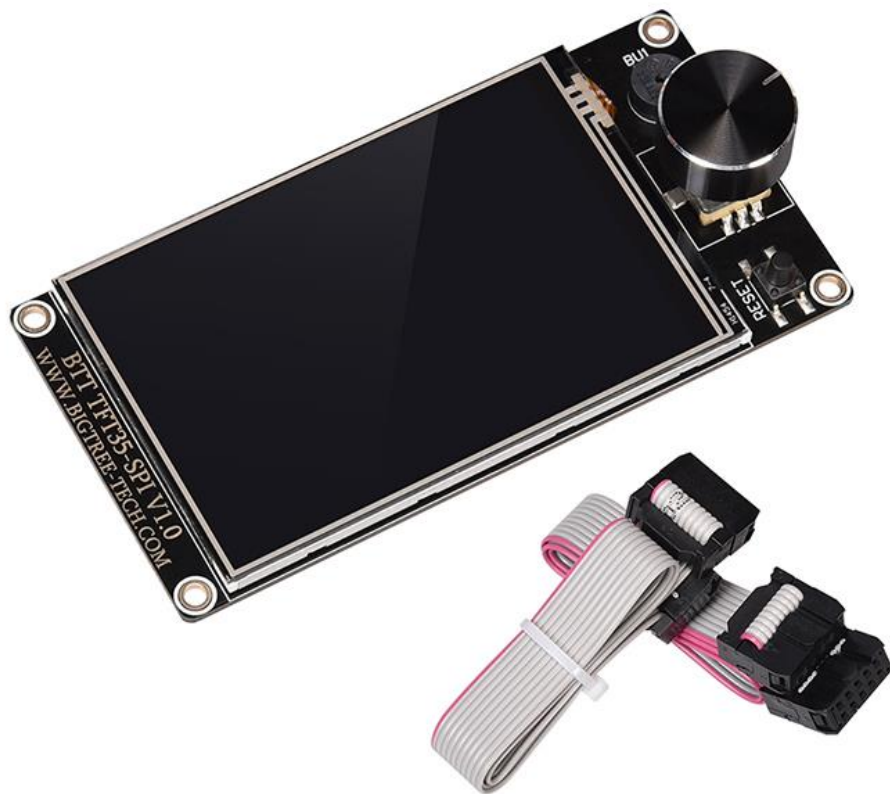


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TFT35-SPI V1.0



1. Introduction

The BTT TFT35-SPI V1.0 panel is a medium-sized, ultra-clear 3D printer display panel launched by the 3D printing team of Shenzhen Bigtree technology co., LTD., which can replace the LCD12864 screen.

1. Main Board Features:

- 1) Adopting SPI communication method and sharing the main control chip with the motherboard, greatly reducing the cost of touch screen;
- 2) Connect through EXP1+EXP2, the operation is simple and convenient;
- 3) The main control chips of the motherboard currently supported are LPC1768, LPC1769, STM32F103 series, STM32F407 series; such as SKR V1.3, SKR V1.4/Turbo, SKR Pro, etc.

2. Main Board Parameters:

Appearance size: 110*58mm

Installation size: see BTT TFT35-SPI V1.0 -size information for details

Power input: DC 5V

Logic voltage: 3.3V

Screen size: 3.5 inches

Resolution: 480*320

SPI display driver IC: ST7796

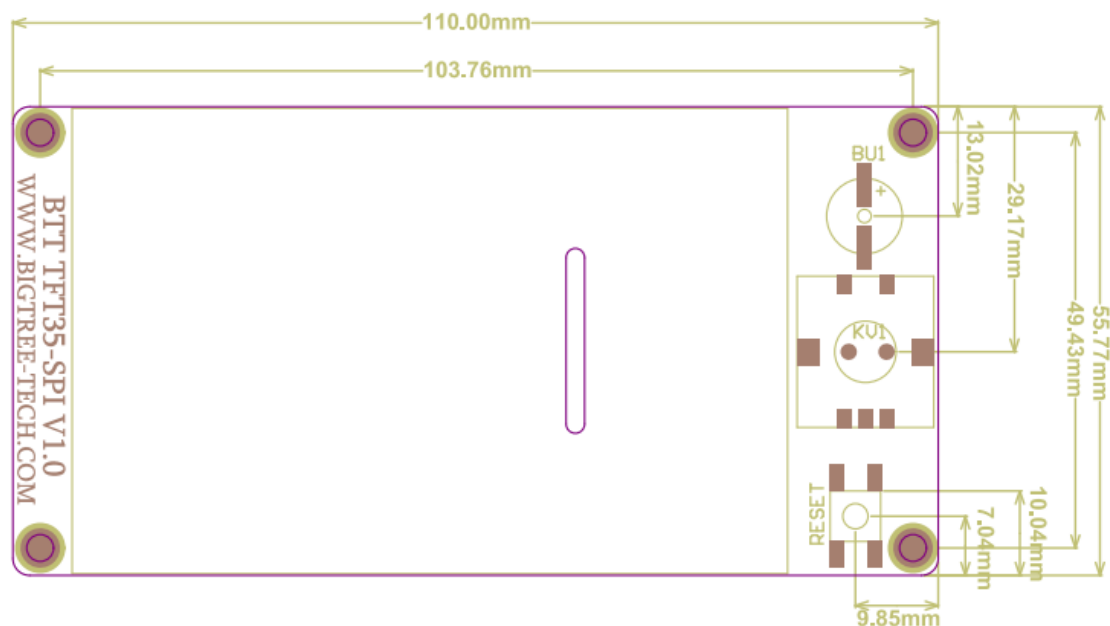
2. Main Board Indicator Light Description

After the motherboard is powered on:

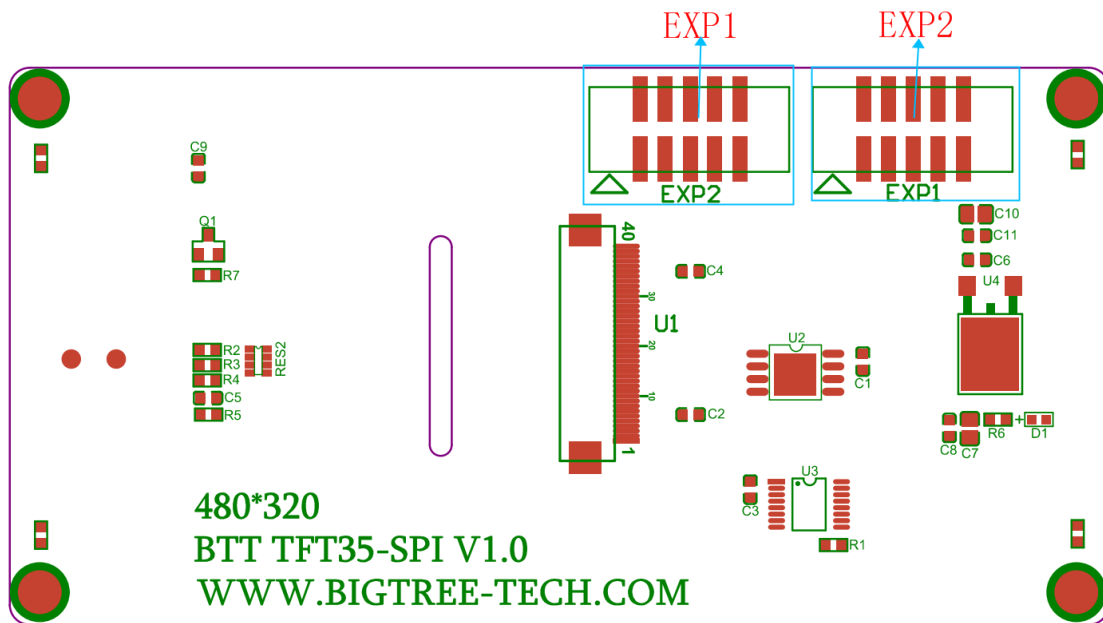
D1 red light is the power indicator: the red light is on, indicating that the power supply is normal;

3. Motherboard Interface Description

1. Dimensions



2. Wiring diagram



4. Motherboard firmware description

Since the screen shares the chip with the motherboard, after receiving the screen, the customer needs to update the motherboard firmware of our open source network to use:

1. Obtain the Motherboard Firmware:

Ask customer service or technical personnel to obtain;

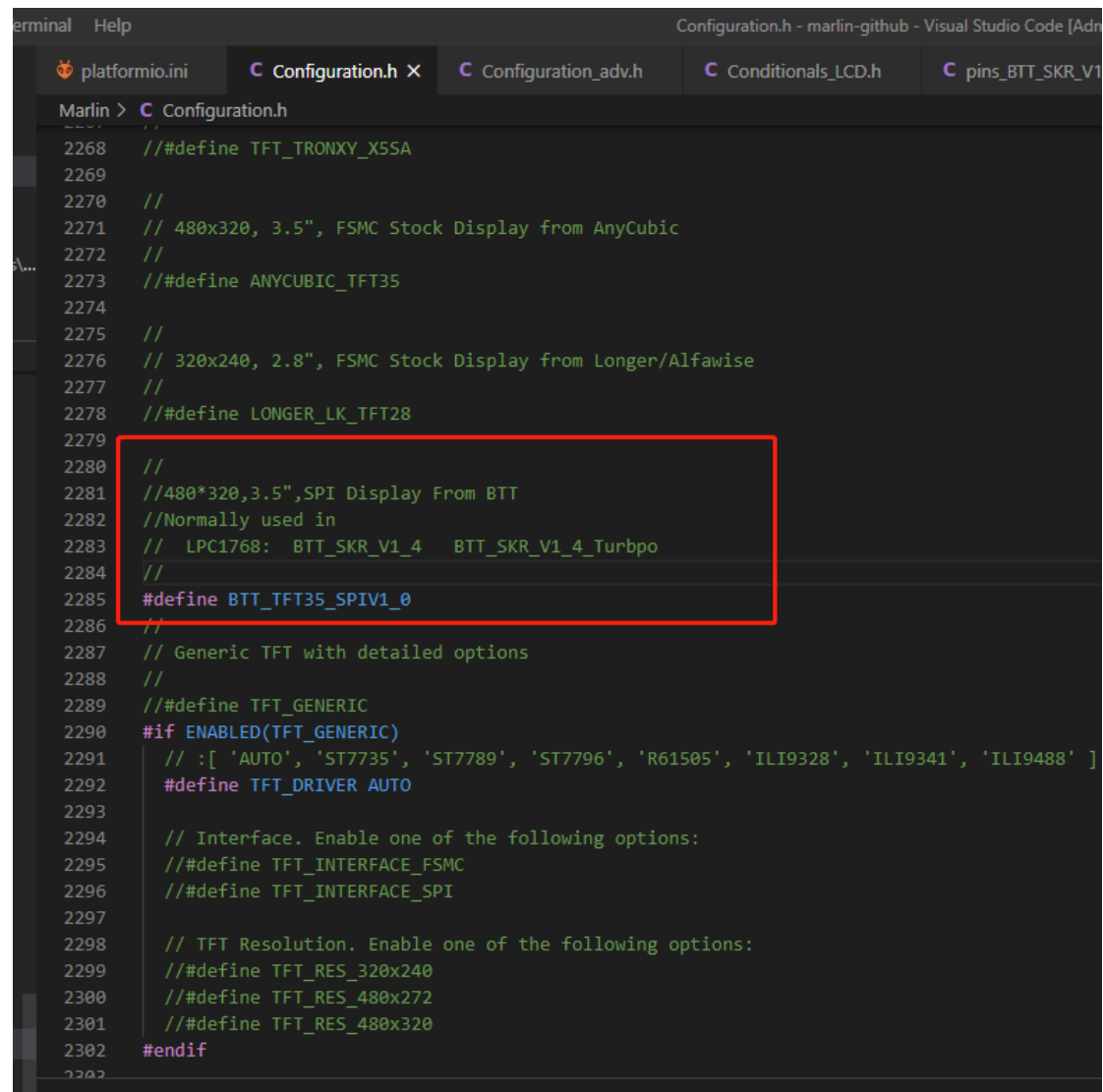
Or log in to our original website to download:

<https://github.com/bigtreotech/Marlin>

2. Main Board Firmware Modification:

After opening the firmware and changing the configuration according to your own machine, perform the following operations to open the touch screen function:

Find **BTT_TFT35_SPIV1_0** in configuration.h and open it as shown below.

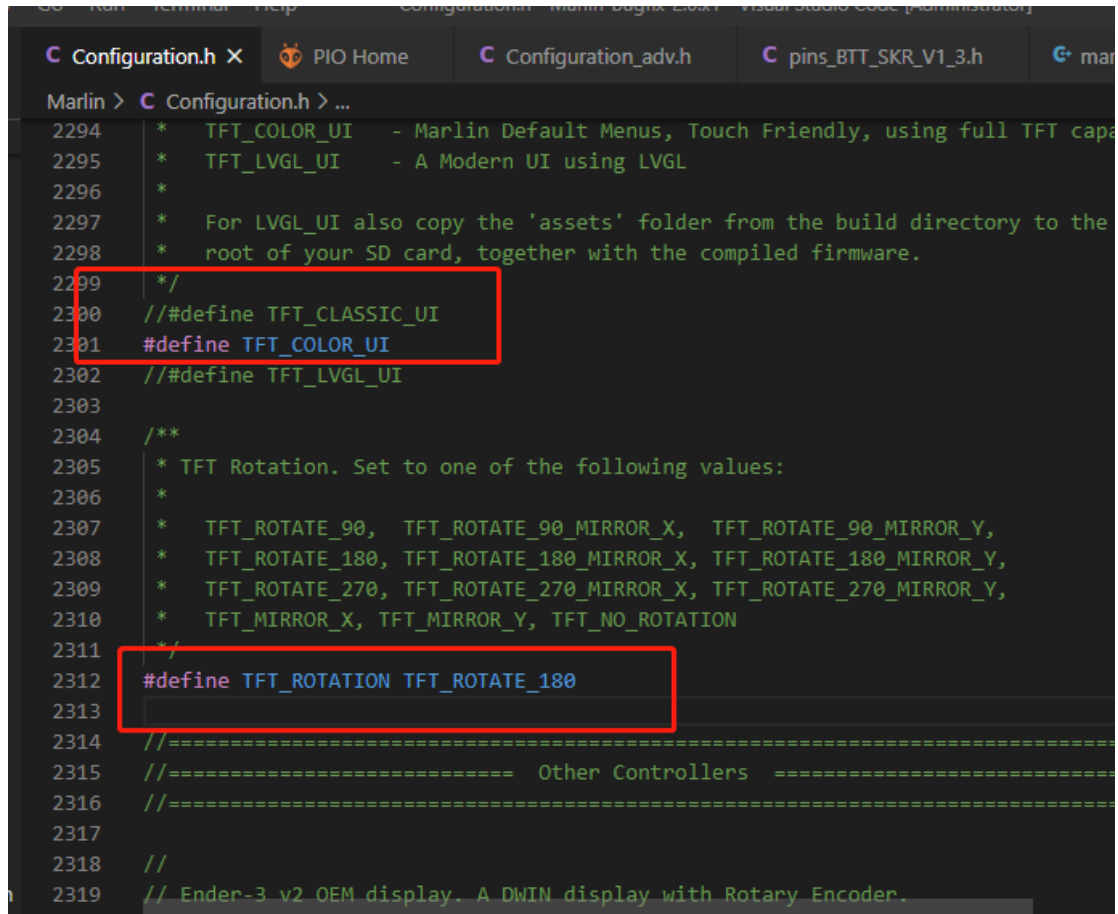


```
terminal  Help  Configuration.h - marlin-github - Visual Studio Code [Adn
platformio.ini  Configuration.h X  Configuration_adv.h  Conditionals_LCD.h  pins_BTT_SKR_V1
Marlin > Configuration.h
2268  // #define TFT_TRONXY_X5SA
2269
2270  //
2271  // 480x320, 3.5", FSMC Stock Display from AnyCubic
2272  //
2273  // #define ANYCUBIC_TFT35
2274
2275  //
2276  // 320x240, 2.8", FSMC Stock Display from Longer/Alfawise
2277  //
2278  // #define LONGER_LK_TFT28
2279
2280  //
2281  // 480x320, 3.5", SPI Display From BTT
2282  // Normally used in
2283  // LPC1768: BTT_SKR_V1_4 BTT_SKR_V1_4_Turbpo
2284  //
2285  #define BTT_TFT35_SPIV1_0
2286  //
2287  // Generic TFT with detailed options
2288  //
2289  // #define TFT_GENERIC
2290  #if ENABLED(TFT_GENERIC)
2291  // :[ 'AUTO', 'ST7735', 'ST7789', 'ST7796', 'R61505', 'ILI9328', 'ILI9341', 'ILI9488' ]
2292  #define TFT_DRIVER AUTO
2293
2294  // Interface. Enable one of the following options:
2295  // #define TFT_INTERFACE_FSMC
2296  // #define TFT_INTERFACE_SPI
2297
2298  // TFT Resolution. Enable one of the following options:
2299  // #define TFT_RES_320x240
2300  // #define TFT_RES_480x272
2301  // #define TFT_RES_480x320
2302  #endif
2303
```

The first marlin mode has two UI options: **TFT_CLASSIC_UI** (marlin classic UI) and **TFT_COLOR_UI** (new marlin color UI)

The second LCD display mode: TFT_ROTATION

Two effective options are recommended: **TFT_ROTATE_180** and **TFT_NO_ROTATION**



```
Marlin > C Configuration.h > ...
2294 * TFT_COLOR_UI - Marlin Default Menus, Touch Friendly, using full TFT capa
2295 * TFT_LVGL_UI - A Modern UI using LVGL
2296 *
2297 * For LVGL_UI also copy the 'assets' folder from the build directory to the
2298 * root of your SD card, together with the compiled firmware.
2299 */
2300 // #define TFT_CLASSIC_UI
2301 #define TFT_COLOR_UI
2302 // #define TFT_LVGL_UI
2303
2304 /**
2305  * TFT Rotation. Set to one of the following values:
2306  *
2307  * TFT_ROTATE_90, TFT_ROTATE_90_MIRROR_X, TFT_ROTATE_90_MIRROR_Y,
2308  * TFT_ROTATE_180, TFT_ROTATE_180_MIRROR_X, TFT_ROTATE_180_MIRROR_Y,
2309  * TFT_ROTATE_270, TFT_ROTATE_270_MIRROR_X, TFT_ROTATE_270_MIRROR_Y,
2310  * TFT_MIRROR_X, TFT_MIRROR_Y, TFT_NO_ROTATION
2311 */
2312 #define TFT_ROTATION TFT_ROTATE_180
2313
2314 //=====
2315 //===== Other Controllers =====
2316 //=====
2317
2318 //
2319 // Ender-3 v2 OEM display. A DWIN display with Rotary Encoder.
```

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```
2441
2442 //
2443 // ADS7843/XPT2046 ADC Touchscreen such as ILI9341 2.8
2444 //
2445 #define TOUCH_SCREEN
2446 #if ENABLED(TOUCH_SCREEN)
2447   #define BUTTON_DELAY_EDIT 50 // (ms) Button repeat delay for edit screens
2448   #define BUTTON_DELAY_MENU 250 // (ms) Button repeat delay for menus
2449
2450   //#define TOUCH_SCREEN_CALIBRATION
2451
2452   // #define TOUCH_CALIBRATION_X 12316
2453   // #define TOUCH_CALIBRATION_Y -8981
2454   // #define TOUCH_OFFSET_X -43
2455   // #define TOUCH_OFFSET_Y 257
2456   // #define TOUCH_ORIENTATION TOUCH_LANDSCAPE
2457
2458   #if ENABLED(TFT_COLOR_UI)
2459     //#define SINGLE_TOUCH_NAVIGATION
2460   #endif
2461 #endif
2462
2463 //
2464 // RepRapWorld REPRAPWORLD_KEYPAD v1.1
2465 // http://reprapworld.com/products/electronics/repwr/keypad\_v1.0\_fully\_assembled
```

Enable SPI screen BTT-UI (picture UI) mode

Find the definition of BTT_UI_SPI in the configuration.h file and open it

```
Marlin > Configuration.h > ...
2184 //
2185 //#define TOUCH_UI_FTDI_EVE
2186 //
2187 //
2188 // Touch-screen LCD for Anycubic printers
2189 //
2190 //#define ANYCUBIC_LCD_I3MEGA
2191 //#define ANYCUBIC_LCD_CHIRON
2192 #if EITHER(ANYCUBIC_LCD_I3MEGA, ANYCUBIC_LCD_CHIRON)
2193   #define LCD_SERIAL_PORT 3 // Default is 3 for Anycubic
2194   //#define ANYCUBIC_LCD_DEBUG
2195 #endif
2196 //
2197 //
2198 // BTT_UI_SPI Picture LCD
2199 //
2200 #define BTT_UI_SPI
2201 //
2202 //
2203 // Third-party or vendor-customized controller interfaces.
2204 // Sources should be installed in 'src/lcd/extensible_ui'.
2205 //
2206 //#define EXTENSIBLE_UI
2207 //
2208 #if ENABLED(EXTENSIBLE_UI)
2209   //#define EXTUI_LOCAL_BEEPER // Enables use of local Beeper pin with external display
2210 #endif
2211 //
2212 //=====
```

3. After changing the firmware, compile the firmware.bin file, put it into the root directory of the mainboard TF card, and power it on again for about ten seconds to use.

5. Points for Attention:

1. The name of the firmware file in the SD card cannot be changed (including upper and lower case);
2. The wiring process must be carried out under the premise of power failure, and the power can be turned on after checking that the wiring is correctly connected and the driver is correctly inserted to prevent the board and the screen from being burned due to the wrong wiring and causing unnecessary losses;
3. Pay attention to the wire sequence when wiring, do not insert reversely; please refer to the PIN file for the detailed wire sequence;
4. Before merging to Marlin official website, you must use the firmware on our github to work with this screen. After merging, you can use the marlin official website firmware.
5. When wiring, look for EXP1 and EXP2, don't plug it in reverse, please look for must-play products, address imitation products! ! !

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If you encounter any problems during use, you are welcomed to contact us, and we will surely answer it for you; if you have any good comments or suggestions on our products, you are also welcomed to give us back, and we will carefully measure your opinions or suggestions, thank you for choosing BIGTREETECH products, thank you!