

# **BIGTREETECH**

# **TFT35 SPI V2.1**

## **User Manual**

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## Revision History

Revision	Description	Date
01.00	First Draft	2022/08/09
01.01	Use lower SPI speed if the TFT is randomly displayed confusion	2023/01/30

## 1 Brief Introduction

BIGTREETECH TFT35 SPI V2.1 is a medium-size and clear 3D printer display developed by the 3D printing team of Shenzhen Big Tree Technology Co., Ltd.

### 1.1 Main Features

1. SPI is used for LCD display, and I2C is used for touch. The touch screen is controlled by the chip on the motherboard, which significantly reduces its cost.
2. It is connected to the motherboard through the FPC cable, simple and convenient.
3. Designed with XH2.54 terminal, which can communicate with the board through the terminal.

### 1.2 Product Parameters

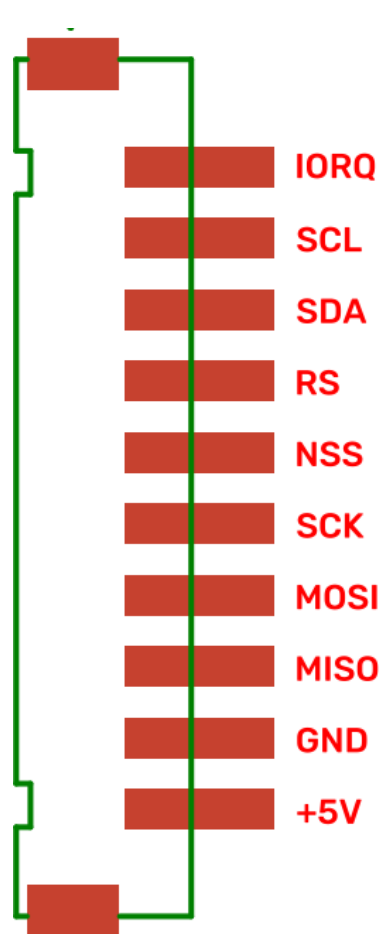
1. Product Dimensions: 98 x 56mm
2. Mounting Dimensions: 98 x 56mm, you can read more details here:  
**BIGTREETECH TFT35 SPI V2.1\_SIZE**
3. Input Voltage: DC 5V
4. Logic Voltage: DC 3.3V
5. Screen Size: 3.5-inch
6. Resolution: 480x320
7. Driver IC for SPI Display: ILI9488
8. Driver IC for Touch: NS2009

### 1.3 Indicator Light

When the motherboard is powered on: the power indicator, D2 red light, lights up, indicating that the power supply is functioning normally.



## 2.2 Pin-out



(XH2.54 Pinout)

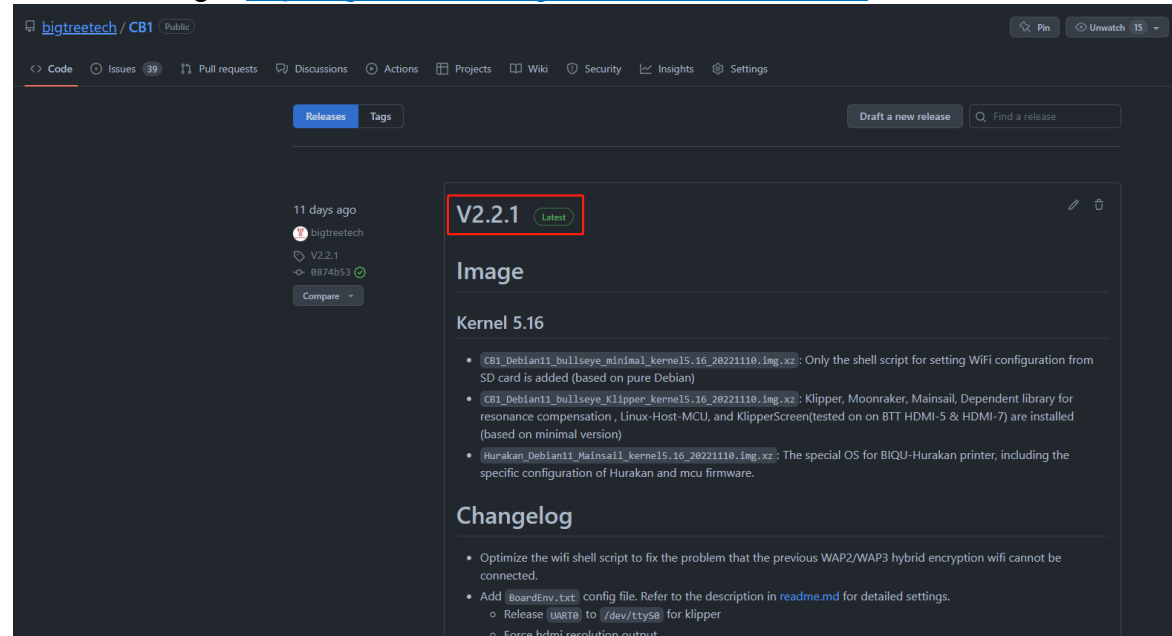


(1.0 Pitch 9P FPC Pinout)

### 3 Software Settings

Currently, it only supports CB1. V2.2.0 and earlier OS do not support TFT35 SPI. Please use V2.2.1 and later OS.

CB1 OS Image: <https://github.com/bigtreotech/CB1/releases>



After the OS writes to the SD card, there is a FAT32 partition named BOOT, open "BoardEnv.txt" file with Notepad, Notepad++ or VSCode.

BOOT (J:)			
名称	修改日期	类型	大小
dtb	2022/11/9 2:50	文件夹	
dtb-5.16.17-sun50iw9	2022/11/9 2:50	文件夹	
gcode	2022/11/9 10:35	文件夹	
.next	2022/11/9 2:50	NEXT 文件	0 KB
BoardEnv.txt	2022/11/9 2:53	文本文档	1 KB
boot.bmp	2022/11/9 2:52	BMP 图像	10 KB
boot.cmd	2022/11/9 2:48	Windows 命令脚本	4 KB
boot.scr	2022/11/9 2:53	屏幕保护程序	4 KB
config-5.16.17-sun50iw9	2022/11/9 2:39	17-SUN50IW9 ...	176 KB
Image	2022/11/9 2:39	文件	20,631 KB
initrd.img-5.16.17-sun50iw9	2022/11/9 2:54	17-SUN50IW9 ...	9,171 KB
system.cfg	2022/11/10 17:52	文本文档	1 KB
System.map-5.16.17-sun50iw9	2022/11/9 2:39	17-SUN50IW9 ...	4,239 KB
ulnitrd	2022/11/9 2:54	文件	9,171 KB
vmlinuz-5.16.17-sun50iw9	2022/11/9 2:39	17-SUN50IW9 ...	20,631 KB

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Uncomment `overlays=tft35_spi` to enable TFT35 SPI screen (Delete '#' at the beginning of the line).

**NOTE:** If the OS image of v2.2.1 version is used. Set to `overlays=tft35_spi25` instead of `overlays=tft35_spi` Use the SPI speed of 25Mhz instead of the default 50Mhz to avoid display confusion. If the OS image after V2.2.1 is used, The OS will use a lower and more stable speed by default.

```
BoardEnv.txt X
J: > BoardEnv.txt
1  bootlogo=true
2  overlay_prefix=sun50i-h616
3
4  # default 'display' for debug, 'serial' for /dev/ttyS0
5  console=display
6
7  # Specify HDMI output resolution (eg. extraargs=video=HDMI-A-1:800x480-24@60)
8  #extraargs=video=HDMI-A-1:1024x600-24@60
9
10 # uncomment the following overlays for TFT35_SPI screen
11 overlays=tft35_spi
12
13 # uncomment the following overlays for MCP2515 spi to canbus module
14 #overlays=mcp2515
15
16 # uncomment the following overlays in order to use both TFT35_SPI and MCP2515
17 #overlays=tft35_spi mcp2515
18
19 # uncomment the following overlays and parameters to release 'spidev1.1' to user space
20 # NOTE: 'spidev1.1' cannot be used together with TFT35_SPI and MCP2515
21 #overlays=spi-spidev
22 #param_spidev_spi_bus=1
23 #param_spidev_spi_cs=1
24 #param_spidev_max_freq=1000000
25
26 #-----#
27 rootdev=UUID=bbeb24dc-1974-46f7-ac2c-7685cebf5a27
28 rootfstype=ext4
```