

BIGTREETECH Direct TFT35 E3 V3.0.1

BIGTREETECH TFT35 E3 V3.0.1 Touch Screen Display User Manual

1. OVERVIEW

The BIGTREETECH TFT35 E3 V3.0.1 is a medium-sized, dual-mode, ultra-clear 3D printing machine display. It is designed to perfectly replace the original LCD screen of Ender 3 printers and offers enhanced compatibility with various 3D printer control boards. This display features a 32-bit CPU and supports firmware upgrades via SD card, providing a user-friendly interface for 3D printing operations.

2. KEY FEATURES

- **Powerful Microprocessor:** Equipped with an ARM Cortex-M3 series STM32F207VCT6 chip, featuring a 32-bit CPU with a 120MHz main frequency.
- **Easy Firmware Upgrade:** Firmware can be easily updated using an SD card.
- **Dual Working Modes:** Supports both UART serial port screen mode (touch function) and 12864 screen mode (no touch function), allowing users to switch between them.
- **Flexible Printing Options:** In serial port screen mode, supports printing from both SD card and U disk.
- **WIFI Connectivity:** Features a reserved WIFI port for external WIFI module integration, enabling WIFI functionality.
- **Extensive Compatibility:** Compatible with Ender series printers (Ender 3, Ender 3 V2, Ender 3 Pro, Ender 5, Ender 5 Plus) and various BIGTREETECH motherboards (SKR MINI E3 V3.0, SKR MINI E3 V2.0, Octopus, SKR V1.4 Turbo, SKR 3, SKR 3 EZ, SKR Pro V1.2).
- **Multi-function Expansion:** Includes reserved extension ports for filament breaking detection and automatic shutdown after printing.

3. PRODUCT SPECIFICATIONS

Specification	Detail
Appearance Size	93*87mm
Microprocessor	STM32F207VCT6 (ARM Cortex-M3 series, 32-bit CPU 120MHz)
Power Input	DC 5V

SD Card Logic Voltage	3.3V and 5V (e.g., supports MEGA2560 main control chip motherboard)
Screen Size	3.5 inches
Resolution	640 x 480 pixels
Display Type	LCD
Connectivity Technology	Wi-Fi (via external module), USB
Compatible Devices	Ender 3, Ender 3 V2, Ender 3 Pro, Ender 5, Ender 5 Plus, SKR MINI E3 V3.0, Octopus V1.1, SKR V1.4 Turbo, SKR 3, SKR 3 EZ, SKR Pro V1.2

4. WHAT'S IN THE BOX

- BIGTREETECH TFT35 E3 V3.0.1 Display

5. INSTALLATION

The TFT35 E3 V3.0.1 display is designed for straightforward installation, particularly as a direct replacement for the original LCD screen on Ender 3 series printers. The process generally involves removing the existing screen, connecting the new display, and securing it in place.

5.1 Physical Installation Steps

1. Carefully remove the screws securing the original LCD screen to its bracket on your 3D printer.
2. Disconnect the ribbon cables from the back of the original LCD screen.
3. Attach the TFT35 E3 V3.0.1 display to the existing bracket using the provided screws.
4. Connect the appropriate ribbon cables from your motherboard to the display. For serial touch screen mode, connect via TFT or AUX-1 on the motherboard through RS232. For 12864 screen mode, connect EXP1 and EXP2 to the motherboard.
5. Ensure all connections are secure before powering on the printer.

Easy Installation

Make it easy for view and operate when fixed on 3D printer



Image: Installation of the TFT35 E3 V3.0.1 display on an Ender 3 printer.

5.2 Connection Ports

The display board features several ports for connectivity and expansion:

- **EXP1 & EXP2:** Used for 12864 LCD screen mode on normal motherboards.
- **EXP3:** Used for 12864 LCD screen mode on E3 series motherboards (e.g., SKR MINI E3 V1.2).
- **TFT / AUX-1 (RS232):** Used for serial touch screen mode.
- **WIFI Port:** For connecting an external WIFI module (e.g., ESP01).
- **FIL-DET:** Port for filament breaking detection.
- **PS-ON:** Port for automatic shutdown after printing.
- **USB Host:** Supports U disk for printing.
- **SD Card Slot:** Supports SD card for printing and firmware updates.

Multiple Extension Ports

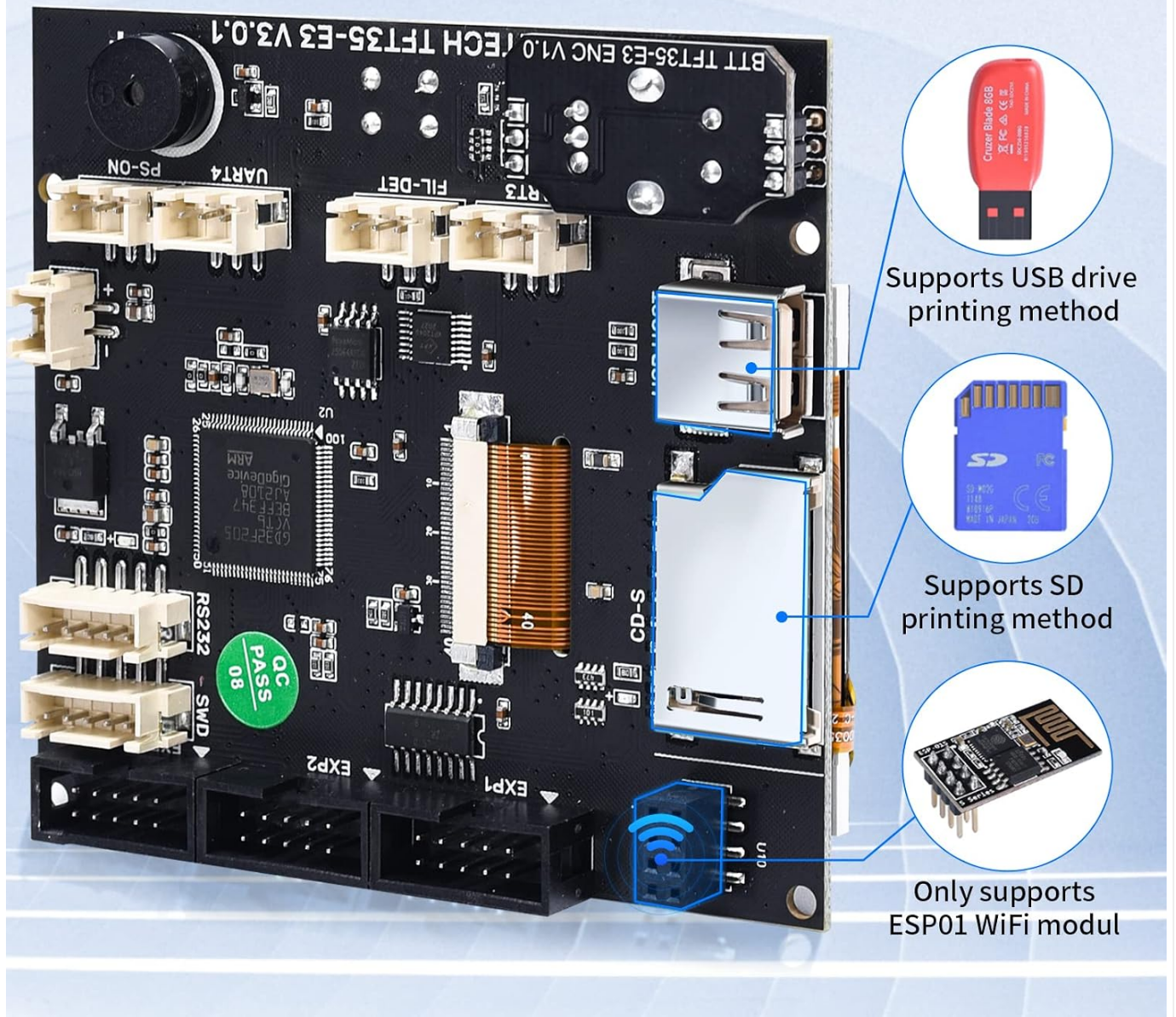


Image: Multiple extension ports on the TFT35 E3 V3.0.1 board.

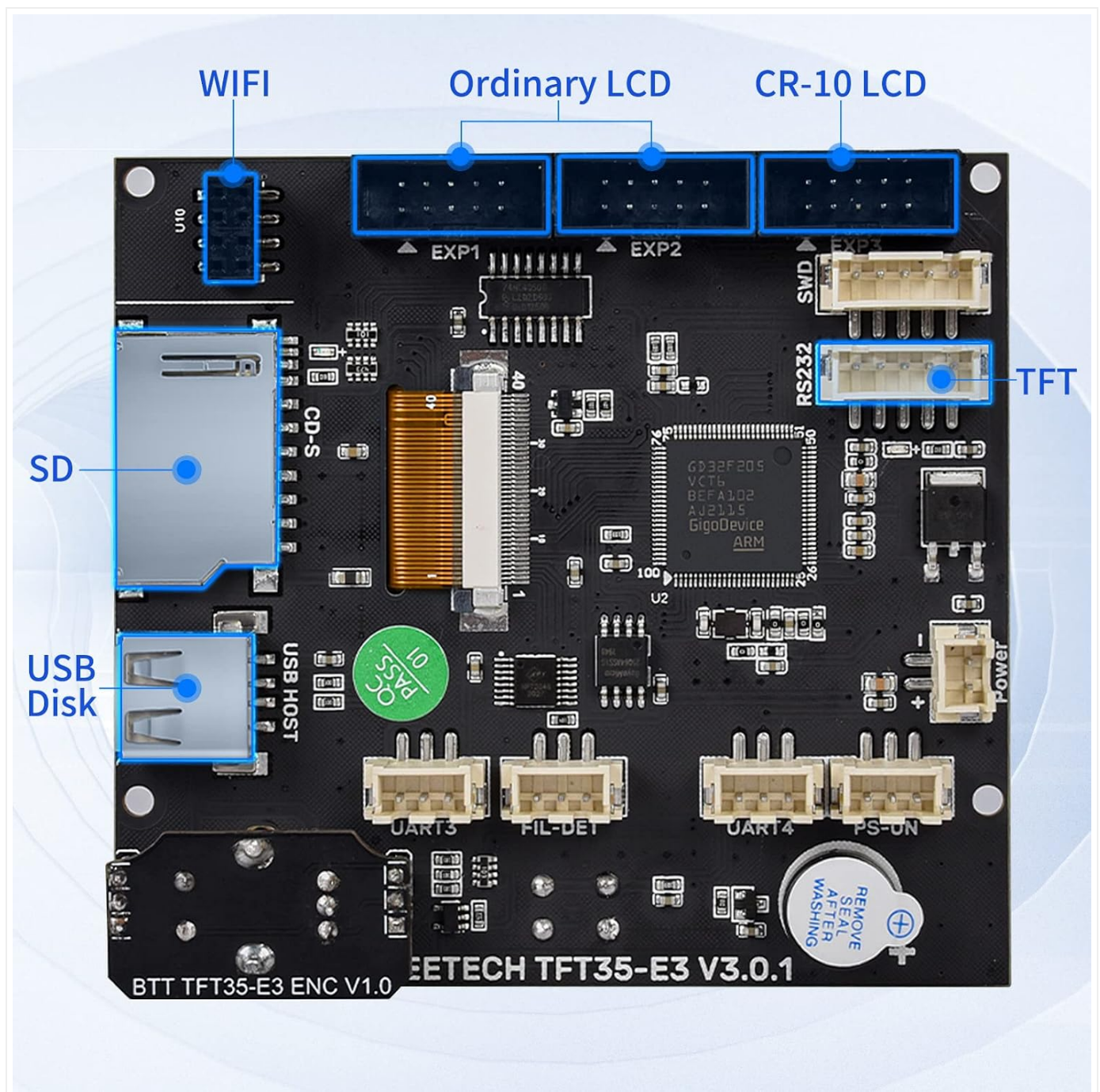


Image: Detailed view of the TFT35 E3 V3.0.1 board's various connection ports.

6. OPERATING MODES

The TFT35 E3 V3.0.1 display offers two distinct operating modes to suit different user preferences and motherboard configurations:

6.1 UART Serial Port Screen Mode (Touch Mode)

This mode provides a full-color touch interface with intuitive icons for controlling your 3D printer. It supports printing directly from an SD card or a U disk. This mode is ideal for users who prefer a modern, graphical interface.

6.2 12864 Screen Mode (Marlin Mode)

This mode emulates the classic 12864 LCD screen interface, typically found on many 3D printers. It does not feature touch functionality and is navigated using the rotary encoder. This mode is suitable for users accustomed to the traditional Marlin-style interface or for compatibility with specific motherboard setups where touch mode is not supported (e.g., when running Klipper, only 12864 mode is supported for this display).

6.3 Switching Between Modes

To switch between the two working modes, press and hold the rotary encoder for approximately 3 seconds. A mode selection page will appear, allowing you to choose your desired mode by pressing the encoder again after selection.

Supports Touch/12684 Modes

Switch between UART serial port screen and 12864 screen mode easily



Image: The TFT35 E3 V3.0.1 display supporting both Touch and 12864 modes.

User-friendly UI Interface

3.5" Smart Display allows convenient operation via simple interface



Image: User-friendly UI interface of the 3.5-inch smart display.

7. MEDIA INTEGRATION

7.1 Official Product Video

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Video: This official BIGTREE TECH video demonstrates the features, installation process, and dual-mode operation of the TFT35 E3 V3.0.1 Smart Display. It covers the physical installation, connecting cables, switching between Marlin and Touch modes, and using SD card/U disk for printing.

8. TROUBLESHOOTING

If you encounter issues with your BIGTREE TECH TFT35 E3 V3.0.1 display, consider the following troubleshooting steps:

- **Firmware Issues:** Ensure your display and motherboard have the latest compatible firmware. Firmware can typically be found on the BIGTREE TECH GitHub page. Follow the instructions carefully for updating via SD card.
- **G-code Not Recognized:** If your printer is not reading G-code files correctly, especially after a display upgrade, verify that the G-

code is properly sliced for your printer's configuration and that the display's firmware is correctly configured to interpret it. Sometimes, specific G-code commands in the start/end scripts might conflict with new display firmware.

- **Cold Extrusion Errors:** If the printer attempts to extrude filament before the hotend reaches the target temperature, resulting in a 'cold extrusion' error, ensure that your G-code includes appropriate preheating commands before any extrusion movements. Also, check the printer's firmware settings for minimum extrusion temperatures.
- **Display Not Responding/Incorrect Mode:** If the display is unresponsive or stuck in an incorrect mode, try restarting the printer. If the issue persists, attempt to switch modes by pressing and holding the rotary encoder for 3 seconds. Verify all ribbon cable connections are secure and correctly oriented.
- **SD Card/U Disk Not Detected:** Ensure the SD card or U disk is properly formatted (usually FAT32) and contains valid G-code files. Re-insert the storage device and try again.
- **Compatibility Issues:** While the display is highly compatible, ensure your specific motherboard model and its firmware are fully supported. Refer to BIGTREETECH documentation for detailed compatibility lists.

9. WARRANTY AND SUPPORT

For any questions or technical assistance regarding your BIGTREETECH TFT35 E3 V3.0.1 touch screen, please contact BIGTREETECH's technical support team. They are available to help you resolve any issues you may encounter.

ASK A QUESTION ABOUT THIS MANUAL

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page's manual context to help answer it.

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