

BIGTREETECH Direct PI V1.2

BIGTREETECH Pi Control Board V1.2 User Manual

Model: PI V1.2 | Brand: BIGTREETECH Direct

1. INTRODUCTION

The BIGTREETECH Pi Control Board V1.2 is a compact, high-performance single-board computer designed for advanced 3D printing applications, particularly those utilizing Klipper firmware. Featuring a 64-bit quad-core processor and 1GB DDR3L SDRAM, it offers robust processing power and extensive connectivity options for various projects.

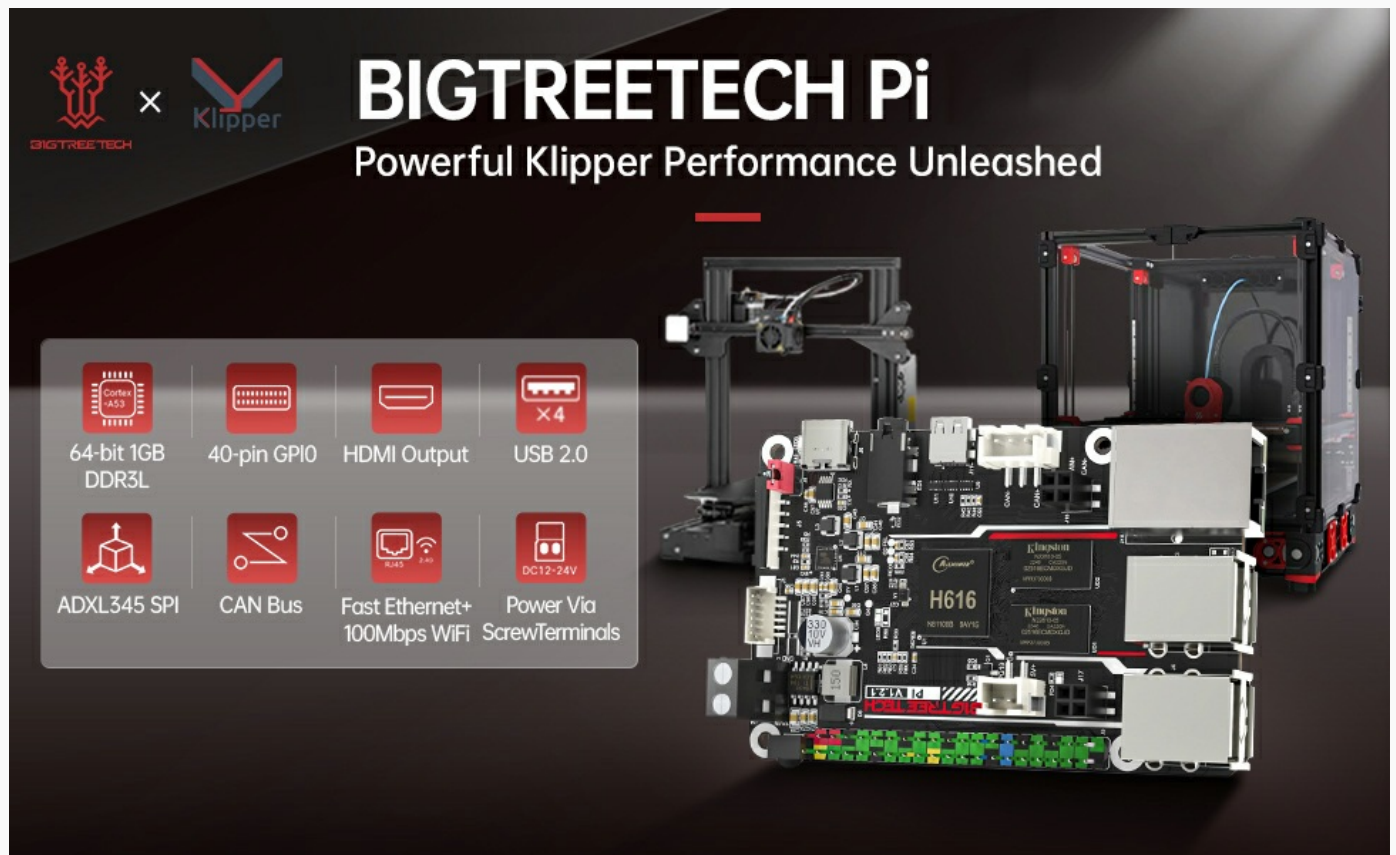


Image 1.1: Overview of the BIGTREETECH Pi Control Board V1.2.

2. KEY FEATURES

- **Main Control Chip:** ALLWINNER H616, 64-bit Quad-core, Cortex-A53 1.5GHz Processor.
- **RAM:** 1GB DDR3L SDRAM.
- **Compact Size:** 85*56mm, compatible with Raspberry Pi 3B/4B mounting dimensions.
- **Display Support:** MaliG32 MP2 GPU, supports OpenGL3.2, HDMI2.0A UHD 4K Video & Audio output, and SPI screens (e.g., BTT HDMI5/7, TFT35 SPI).
- **Connectivity:** Standard 40-pin GPIO header, 3.5mm audio jack, TF card slot, ADXL345 SPI interface, USB to CAN module support (requires CAN adapter V1.0 module), built-in IR receiver, RJ45 100Mbps wired network, built-in 2.4G WiFi module (100Mbps wireless network).
- **Power Options:** USB-C 5V power supply and DC12V-24V from a 3D Printer.
- **Compatibility:** Designed to run Klipper firmware and compatible with various BIGTREETECH control boards including SKR Mini E3 V3.0, Octopus V1.1, Octopus Pro, Max EZ, SKR V1.4 Turbo, SKR Pico, SKR 3, and EZ/Kraken series.

BIGTREETECH PI

Efficient to Run Linux / Support Debian/Programmable and fully customizable to suit your needs
High speed and High stability

64-bit
Quad-Core Architecture

ARM Cortex-A53 1.5GHZ
Processor

1GB DDR3L SDRAM
RAM

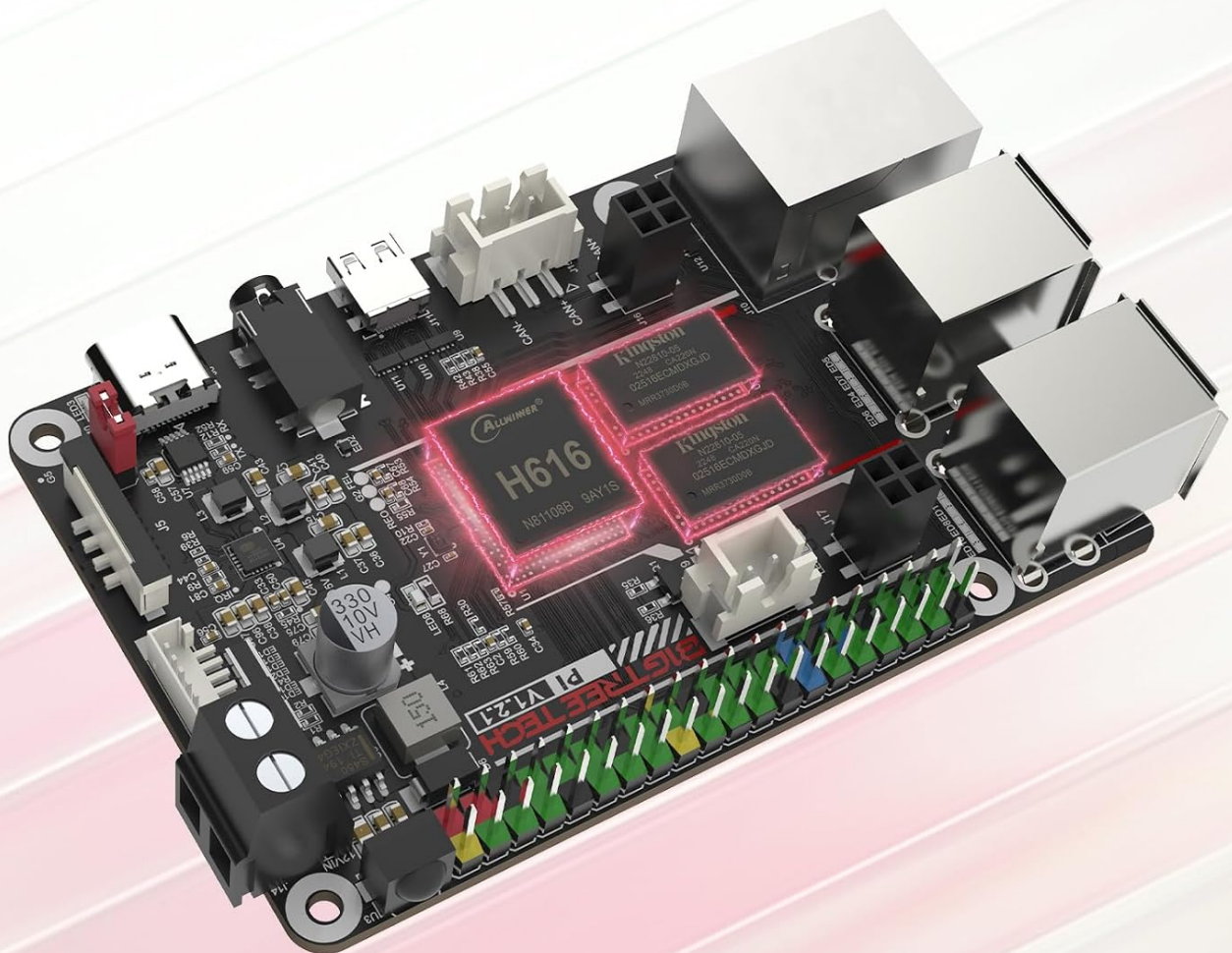


Image 2.1: The BIGTREETECH Pi Control Board V1.2, showcasing its core components and features.

3. SETUP GUIDE

3.1 Initial Power-Up

1. **Insert MicroSD Card:** Prepare a MicroSD card with the appropriate operating system image (e.g., Debian Linux for Klipper). Insert it into the TF card slot on the board.
2. **Connect Power:** The board supports two power input methods:
 - **USB-C 5V:** Connect a 5V/2A USB-C power adapter to the USB-C port.
 - **DC 12V-24V:** Connect a 12V-24V DC power supply (e.g., from a 3D printer) to the screw terminals.
3. **Connect Peripherals:** If using a display, connect it via HDMI or SPI. Connect a keyboard and mouse to the USB 2.0 ports for initial setup if needed.
4. **Network Connection:** Connect an Ethernet cable to the RJ45 port or attach the included WiFi antenna for wireless connectivity.

Discover More Flexible Power & Seamless Connectivity

Supports USB-C 5V power supply and DC12-24V from a 3D printer, making it easy and efficient to power up the board without any extra adapters or power sources.

**DC 5V±5%/2A
via the USB Type-C Port**

**DC 12V-24V
via the Screw Terminals**

With both wired and WiFi options, users can choose the best network connection for their particular situation, giving them greater control over their computing experience.

Onboard RJ45 port, supports a 100Mbps wired network.

**Built-in 2.4G WiFi module,
supports 100Mbps wireless network. Users
can connect the included WiFi antenna to get a stronger and more stable WiFi signal.**

Image 3.1: Power input options (USB-C 5V and DC 12-24V) and network connectivity (RJ45 and WiFi antenna).

3.2 Operating System and Klipper Installation

For detailed instructions on installing the operating system and Klipper firmware, refer to the official BIGTREETECH GitHub documentation. This process typically involves flashing an image to the MicroSD card and configuring Klipper for your specific 3D printer setup.

4. OPERATING THE BOARD

Once the operating system and Klipper are installed and configured, the BIGTREETECH Pi V1.2 acts as the control hub for your 3D printer. You can interact with it via a connected display, SSH over the network, or through a web interface like Fluidd or Mainsail, which are commonly used with Klipper.

4.1 Display Options

The board supports various display configurations:

- **HDMI:** Connect to an HDMI monitor for 4K UHD video and audio output.
- **SPI Screen:** Compatible with BTT HDMI5/7 and TFT35 SPI touch screens.



Image 4.1: The BTT Pi V1.2 board connected to a BTT HDMI5 V1.2 TFT35 SPI touch screen display.

5. CONNECTIVITY AND PORTS

The BIGTREETECH Pi V1.2 offers a comprehensive set of ports for diverse applications:

- **40-pin GPIO Header:** Standard header for connecting various sensors and modules.
- **USB 2.0 Ports (x4):** For connecting peripherals like keyboards, mice, USB drives, and cameras.
- **HDMI Port:** Micro HDMI for video and audio output.
- **Ethernet (RJ45):** 100Mbps wired network connection.
- **WiFi Module:** Built-in 2.4G WiFi for 100Mbps wireless network, with an external antenna for improved signal.
- **3.5mm Audio Jack:** For audio output.
- **TF Card Slot:** For MicroSD card storage.
- **ADXL345 SPI Interface:** Dedicated port for connecting an ADXL345 accelerometer for Klipper input shaper calibration.
- **CAN Bus Port:** Dedicated port for a USB to CAN module (requires CAN adapter V1.0 module, sold separately).
- **Infrared Receiver Tube:** For IR remote control functionality.
- **PWM Fan Port:** For connecting an external fan for improved heat dissipation.

Rich Connectivity

Its 40-pin GPIO, 4 USB ports, HDMI, Ethernet, and more ensure that you have all the connections you need to bring your innovative ideas to life.

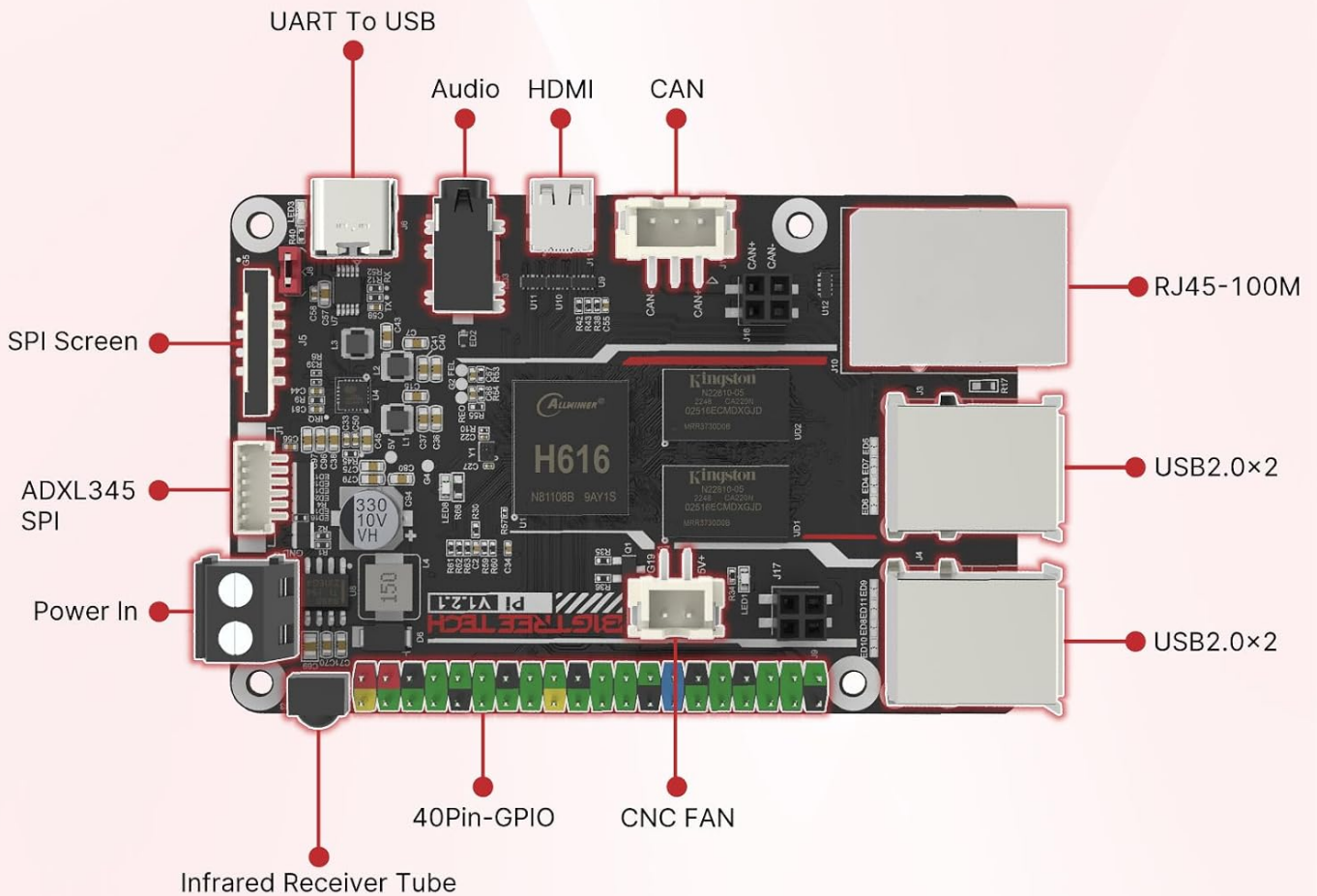


Image 5.1: Detailed diagram of the BIGTREETECH Pi V1.2 board, labeling all available ports and interfaces.



Image 5.2: Close-up of the reserved ADXL345 interface on the BTT Pi V1.2 motherboard.



Image 5.3: The BTT Pi V1.2 board with support for CAN Bus connectivity.

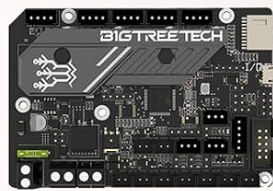
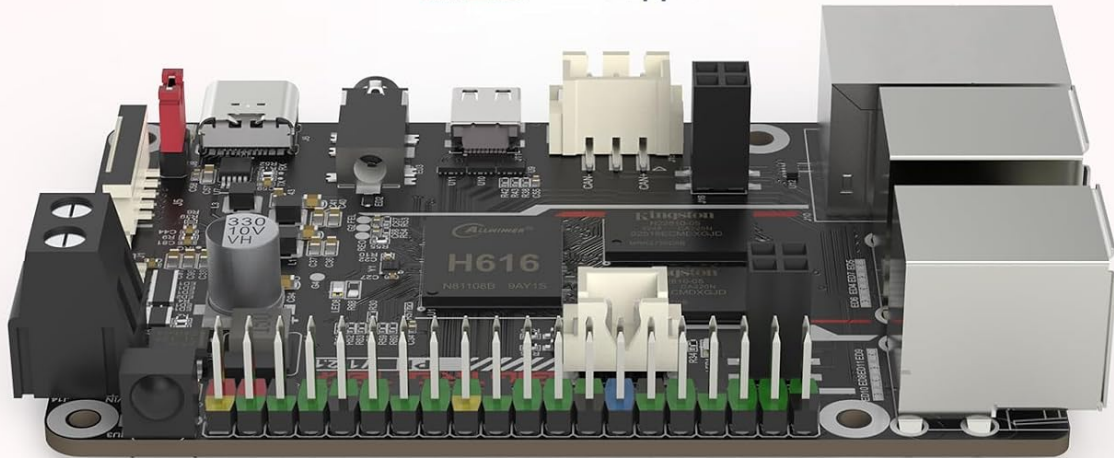
6. COMPATIBILITY

The BIGTREETECH Pi V1.2 is designed for broad compatibility within the 3D printing ecosystem, especially with Klipper firmware. It is compatible with the following BIGTREETECH control boards:

- SKR Mini E3 V3.0
- Octopus V1.1
- Octopus Pro
- Max EZ
- SKR V1.4 Turbo
- SKR Pico
- SKR 3
- EZ/Kraken series

Klipper Compatibility Elevate Your 3D Printing Game

Enjoy faster print speeds ,superior print quality,and advanced features



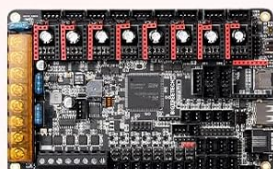
SKR MINI E3 V3.0



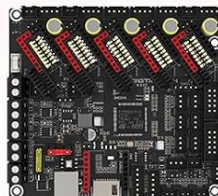
SKR Pico



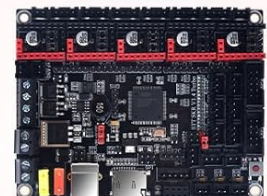
Octopus



Octopus pro



SKR3 EZ



SKR V1.4 turbo

Image 6.1: The BIGTREETECH Pi V1.2 demonstrating compatibility with Klipper and various BIGTREETECH control boards.

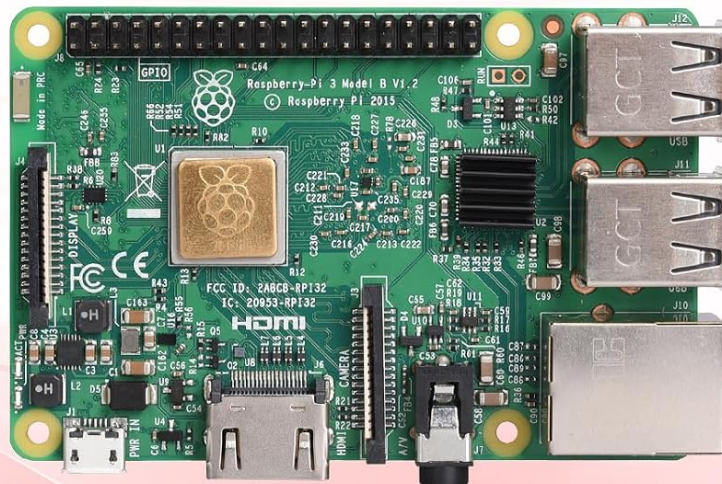
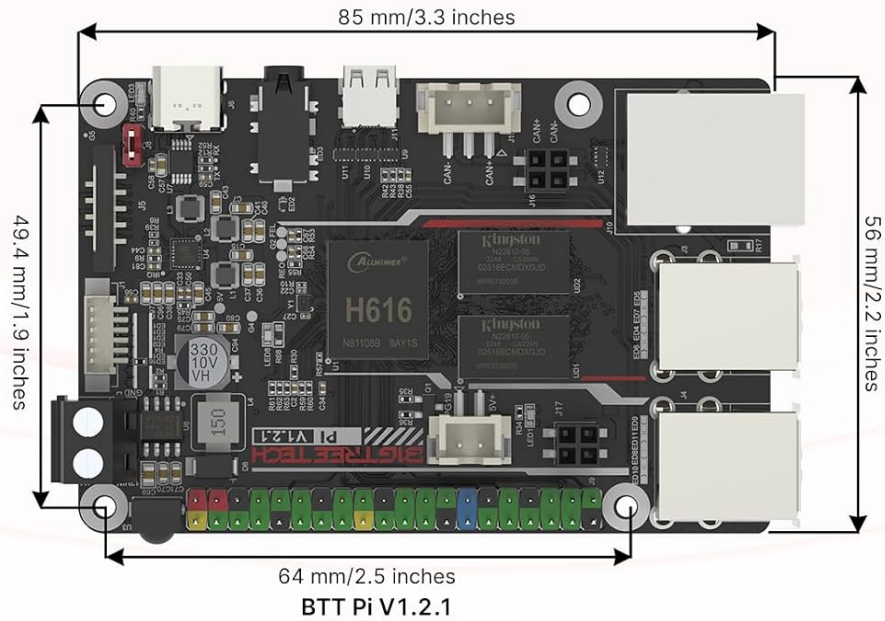
7. SPECIFICATIONS

Feature	Detail
Brand	BIGTREETECH Direct
Model Name	BIGTREETECH Pi
Model Number	PI V1.2
Processor	ALLWINNER H616, 64-bit Quad-core, Cortex-A53
CPU Speed	1.5 GHz
RAM	1GB DDR3L SDRAM

Feature	Detail
GPU	MaliG32 MP2 (Supports OpenGL3.2)
HDMI	Micro HDMI *1 (Supports HDMI2.0A UHD 4K Video & Audio)
Storage	MicroSD Card Slot
Ethernet	100M Ethernet PHY (RJ45)
Wireless	Built-in 2.4G WiFi Module (100Mbps)
USB Ports	4x USB 2.0
Audio	3.5mm Audio Port
GPIO	Standard 40-pin GPIO Header
Other Interfaces	SPI Screen, ADXL345 SPI, USB to CAN module (requires adapter), IR Receiver
Power Input	USB-C 5V, DC 12V-24V (via screw terminals)
Operating System	Linux
Dimensions (L x W x H)	85mm x 56mm (3.3"L x 2.52"W x 0.03"H)

Same Size/Mounting Holes as the Raspberry-Pi

A Nice Alternative for Your Next Pi Project , Making it a seamless fit for your existing projects



Raspberry-Pi 3 Model B

Image 7.1: Physical dimensions of the BIGTREETECH Pi V1.2, showing its similarity in size to the Raspberry Pi 3 Model B.

8. TROUBLESHOOTING

This section provides general guidance for common issues. For specific technical support, refer to the official BIGTREETECH resources.

8.1 Power Issues

- **No Power/LEDs Off:** Ensure the power supply is correctly connected and provides the correct voltage (5V via USB-C or 12-24V via DC terminals). Check the power cable for damage.
- **Intermittent Power:** Verify the power supply is stable and provides sufficient current (at least 2A for 5V).

8.2 Network Connectivity Problems

- **No Wired Connection:** Check the Ethernet cable and router connection. Ensure the RJ45 port LEDs are active.
- **No Wireless Connection:** Ensure the WiFi antenna is securely attached. Verify WiFi credentials and network settings in the operating system.

8.3 Display Not Working

- **HDMI Output:** Check HDMI cable connections. Ensure the display is set to the correct input source.
- **SPI Screen:** Verify the SPI screen is correctly connected and configured in the operating system.

8.4 Klipper Firmware Issues

- **Klipper Not Starting:** Check the MicroSD card for proper OS and Klipper installation. Review Klipper logs for error messages.
- **Printer Not Responding:** Verify communication between the BIGTREETECH Pi and your 3D printer's mainboard. Check wiring and serial port configuration.

9. OFFICIAL PRODUCT VIDEO

Your browser does not support the video tag.

Video 9.1: Official BIGTREETECH BTT Pi product overview. This video provides a visual introduction to the board's features and capabilities.

10. WARRANTY AND SUPPORT

BIGTREETECH Direct products typically come with a manufacturer's warranty. For detailed warranty information, return policies, and technical support, please refer to the official BIGTREETECH website or contact their customer service directly. Keep your purchase receipt for warranty claims.

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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.

Name

Anonymous

Email

you@example.com

After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. [Privacy details](#).

Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question