

# TTGO T-Display ESP32 WiFi & Bluetooth Board – 1.14" LCD

The **TTGO T-Display ESP32 WiFi & Bluetooth Board** is a compact and powerful development board that combines the advanced capabilities of the ESP32 microcontroller with a built-in **1.14-inch color LCD display**. This unique combination makes it ideal for Internet of Things (IoT) applications, portable devices, wearable electronics, and interactive projects where a visual interface is required. Featuring **dual-core processing, Wi-Fi and Bluetooth connectivity, and 4MB Flash memory**, the TTGO T-Display is perfect for both beginners and experienced developers looking to bring their projects to life.



## ◆ ESP32 Dual-Core Performance

At the heart of the TTGO T-Display lies the **ESP32 microcontroller**, a dual-core Tensilica LX6 processor capable of running at up to 240 MHz. This makes it one of the most powerful boards in its size category. With 520KB SRAM and 4MB Flash memory, the ESP32 can handle


complex tasks such as real-time data processing, wireless communication, and graphical display output.

#### ◆ Built-In 1.14" Color LCD Display

One of the standout features of this board is its integrated **1.14-inch TFT LCD screen** with a resolution of 135 x 240 pixels. This display allows developers to show real-time sensor readings, system status, or interactive user interfaces directly on the board without the need for external components. For projects such as portable monitors, smartwatches, or handheld IoT devices, the built-in screen saves space and reduces wiring complexity.

#### ◆ Wi-Fi and Bluetooth Connectivity

The **TTGO T-Display ESP32 board** comes with integrated **Wi-Fi 802.11 b/g/n** and **Bluetooth v4.2 (Classic + BLE)**, enabling wireless communication with other devices and the cloud. You can connect it to local Wi-Fi networks for IoT applications, use Bluetooth Low Energy for low-

power sensor communication, or pair it with smartphones and tablets for interactive control.  Wide Range of Applications

The combination of processing power, wireless communication, and a built-in LCD makes the **TTGO T-Display ESP32** suitable for many applications, including:

- **IoT Dashboards** – Display live sensor data such as temperature, humidity, or air quality.
- **Wearable Devices** – Build smartwatches, fitness trackers, or health monitors.
- **Portable Meters** – Create handheld testers or measurement tools with a graphical interface.
- **Wireless Communication Projects** – Use Wi-Fi and Bluetooth to send and display data in real time.
- **Educational Projects** – Perfect for teaching IoT, embedded systems, and graphical programming.

 Easy to Program – Arduino & More

Like other ESP32 boards, the **TTGO T-Display** is fully compatible with the **Arduino IDE**, allowing easy programming with existing libraries and examples. Developers can also use **PlatformIO, MicroPython, and ESP-IDF (Espressif's official development framework)**. The included display is supported by popular libraries such as **TFT\_eSPI**, making it simple to render text, graphics, and even animations.



#### ◆ Technical Specifications

- **Microcontroller:** ESP32 Dual-Core Tensilica LX6 (up to 240 MHz)
- **SRAM:** 520 KB
- **Flash Memory:** 4 MB
- **Connectivity:**
  - Wi-Fi 802.11 b/g/n (2.4 GHz)
  - Bluetooth v4.2 (Classic + BLE)
- **Display:** 1.14" TFT LCD, 135 x 240 pixels, ST7789 driver
- **USB Interface:** USB Type-C
- **Operating Voltage:** 3.3V (regulated from USB 5V input)
- **GPIO Pins:** Multiple GPIOs with UART, SPI, I<sup>2</sup>C, ADC, DAC, PWM support
- **Programming Compatibility:** Arduino IDE, PlatformIO, MicroPython, ESP-IDF
- **Dimensions:** Approx. 51 mm × 25 mm

#### ◆ Benefits of Using TTGO T-Display ESP32 Board

- **All-in-One Solution:** Combines ESP32 performance with an integrated color LCD.
- **Compact & Portable:** Small size makes it perfect for handheld or wearable devices.
- **Wireless Ready:** Built-in Wi-Fi and Bluetooth for versatile communication.
- **Beginner-Friendly:** Works with Arduino IDE and popular libraries.
- **Cost-Effective:** Affordable option for projects requiring both display and wireless communication.

## ✓ Conclusion

The **TTGO T-Display ESP32 WiFi & Bluetooth Board – 1.14" LCD** is a compact, powerful, and highly versatile development board that opens up endless possibilities for IoT and interactive projects. With dual-core ESP32 performance, built-in wireless connectivity, and a vibrant TFT display, it eliminates the need for additional hardware and simplifies development.

Whether you are building a portable IoT monitor, a wearable device, or a wireless data logger with real-time feedback, the TTGO T-Display ESP32 provides everything you need in a small and affordable package.