Size 3 Tibbo Project PCB (TPP3), Gen 2
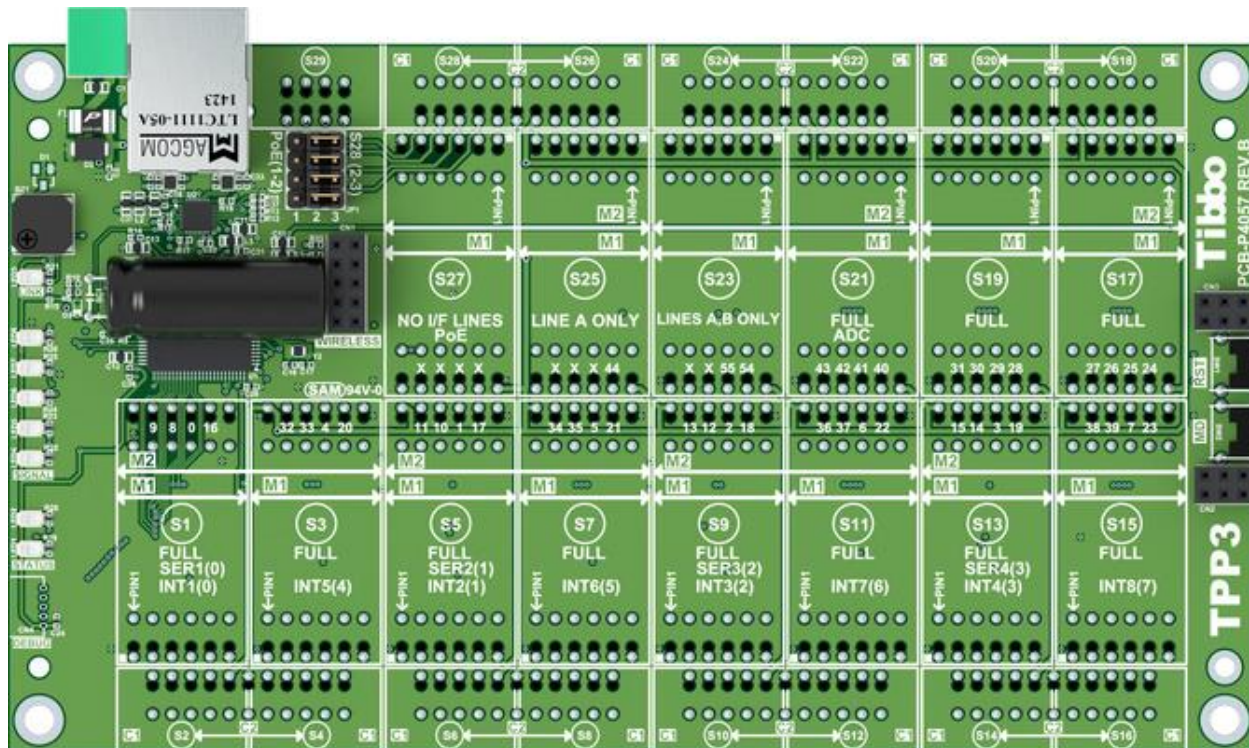

Size 3 Tibbo Project PCB is a Tibbo BASIC/C-programmable board belonging to the Tibbo Project System (TPS) line. The board offers substantial speed and functionality improvements over its predecessor — the original TPP3 board.

Offering 7 tiles for a total of 14 Tibbit module and 14 Tibbit connector sockets, the TPP3 can be used to create TPS configurations with up to four full serial ports, up to 25 relays, or up to 47 control lines, such as opto-inputs, PWMs, or open-collector outputs.

This product can be used as a bare board or assembled into a size 3 Tibbo Project Box (TPB3).

Size 3 Tibbo Project PCB is ideal for applications requiring no human-machine interface while calling for a significant number of I/O lines and functions. The TPP3 can be used to replace dumb PLC controllers or work as a safety, security, or access control device. The board is also ideal for factory, lab, shop, building, hotel, and home automation projects.

The TPP3 is supported by our Online Configurator. The configurator allows defining custom TPS systems, which can then be ordered from our online store.

Key Features

High-performance ARM CPU

14 module + 14 connector sockets
(for a total of 47 I/O lines)

10/100 Base-T Ethernet port with
onboard magnetics and RJ45 jack

Optional Wi-Fi connectivity
(with the WA2000 add-on module)

Optional BLE (Bluetooth Low Energy) connectivity (with the WA2000 add-on)

Optional 4G/LTE cellular connectivity
(requires Tibbit #45)

4 UART sockets support serial, Wiegand, and clock/data streams

Onboard buzzer

4-channel ADC

4 synchronous serial ports with
SPI and I2C modes

Onboard RTC with
backup supercapacitor

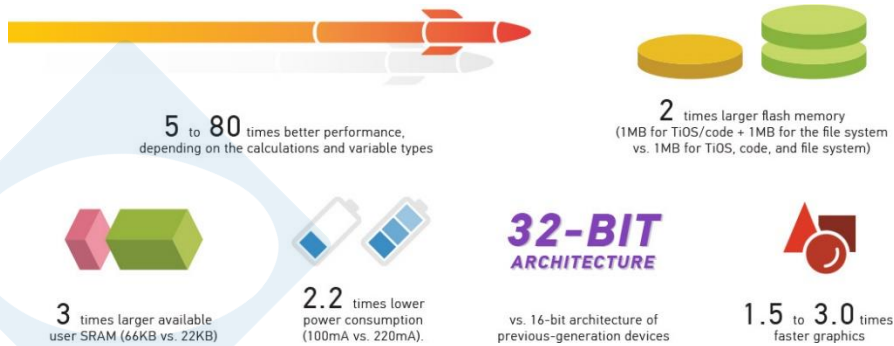1MB flash for TiOS and application code + 1MB for the flash disk file system

2048-byte EEPROM

5V power (use power Tibbits for
other power arrangements)

Supports over-the-air (OTA) firmware
updates (with the WA2000 add-on)

Performance Advantages Over the Original TPP3 Board

# TPP3(G2) is Supported by Cody, Our Template Project Generator

[Cody](#) is a template project generator that produces working Tibbo BASIC code from the information you provide via a few simple-to-understand configuration screens.

This web-based app allows you to quickly create a working project that contains proper peripheral, port, and socket initialization. With Cody, you can also swiftly pour in huge chunks of your future product's functionality: persistent storage of parameters (setting), data tables, multi-level onscreen setup menus, and much much more.

No less important is that Cody generates a template project with the right structure. Software developers know that all programming platforms have (a few) right and (many) wrong ways to structure the code and get things done. Choosing the wrong path usually makes the code slow, inefficient, and unreliable. Cody prevents you from getting lost by giving you the right scaffolding for your project. [Try Cody now...](#)

LegendTilesSockets
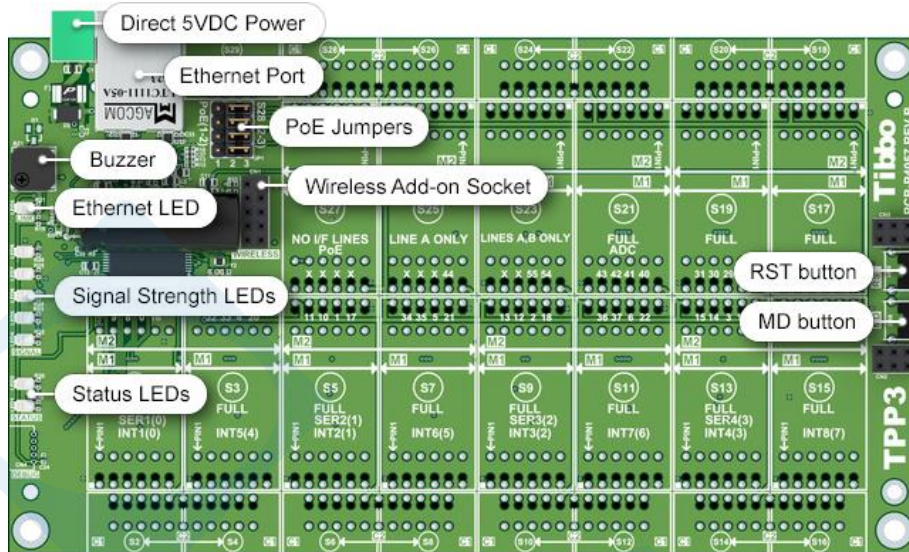
Capacity:

- 47 I/O lines
- 7 tiles
- 14 sockets for Tibbit modules
- 14 sockets for Tibbit connectors
- 1 extra socket for Tibbit #37 (RF connector)

Compatible with:

- Most Tibbits
- WA2000 Wi-Fi add-on module
- TPB3 enclosure

Hardware

Specifications:

- 32-bit architecture.
- Powered by Tibbo OS (TiOS).
- 10/100BaseT auto-MDIX Ethernet port with RJ45/magnetics.
- Optional Wi-Fi interface (requires the WA2000 add-on module).
- Optional BLE interface (requires the WA2000 add-on module).
- Optional 4G/LTE cellular interface (requires Tibbit #45).
- 7 tiles with 47 general-purpose I/O lines:
  - 14 sockets for Tibbit modules;
  - 14 sockets for Tibbit connectors;
  - 1 extra socket for Tibbit #37 (RF connector);
  - 4 Tibbit module sockets have UART capability:
    - Baudrates of up to 460,800bps;

- o None*/even/odd/mark/space parity modes;
- o 7* or 8 bits/character;
- o Full-duplex mode w. RTS/CTS, XON/XOFF flow control;
- o Half-duplex mode with direction control;
- o Encoding/decoding of Wiegand, clock/data streams.
- o 8 module sockets have interrupt capability;
- o 1 module socket has four ADC lines;
- o 1 module socket has PoE capability;
- o 4 remappable synchronous serial ports with SPI and I2C modes.
- Onboard buzzer.
- RTC with a backup supercapacitor.
- 66KB SRAM for Tibbo BASIC/C variables and data.
- 1MB flash for TiOS and application code.
- **Additional** 1MB flash for the hardened fault-tolerant file system.
- 2048-byte EEPROM for data storage.
- Eight onboard LEDs:
  - o Green and red main status LEDs;
  - o Yellow Ethernet link LED;
  - o Five blue LEDs (for Wi-Fi signal strength indication, etc.).
- Software-controlled PLL allows selecting full, medium, or low speed.
- Reliable power-on/ brown-out reset circuit.
- Power: 100mA @ 5V (100Base-T mode, full speed).
- Dimensions (LxW): 165 x 94mm.
- Operating temperature range: -40 ~ +70°C.
- Firmware is upgradeable through:
  - o The serial port;
  - o Ethernet LAN; or
  - o Over-the-air (requires the WA2000 and an iOS or Android device).
- Tibbo BASIC/C application can be debugged through the Ethernet LAN.
- CE- and FCC-certified.

The TPP3(G2) does not support the combination of the 7 bits/character mode and the "none" parity mode.