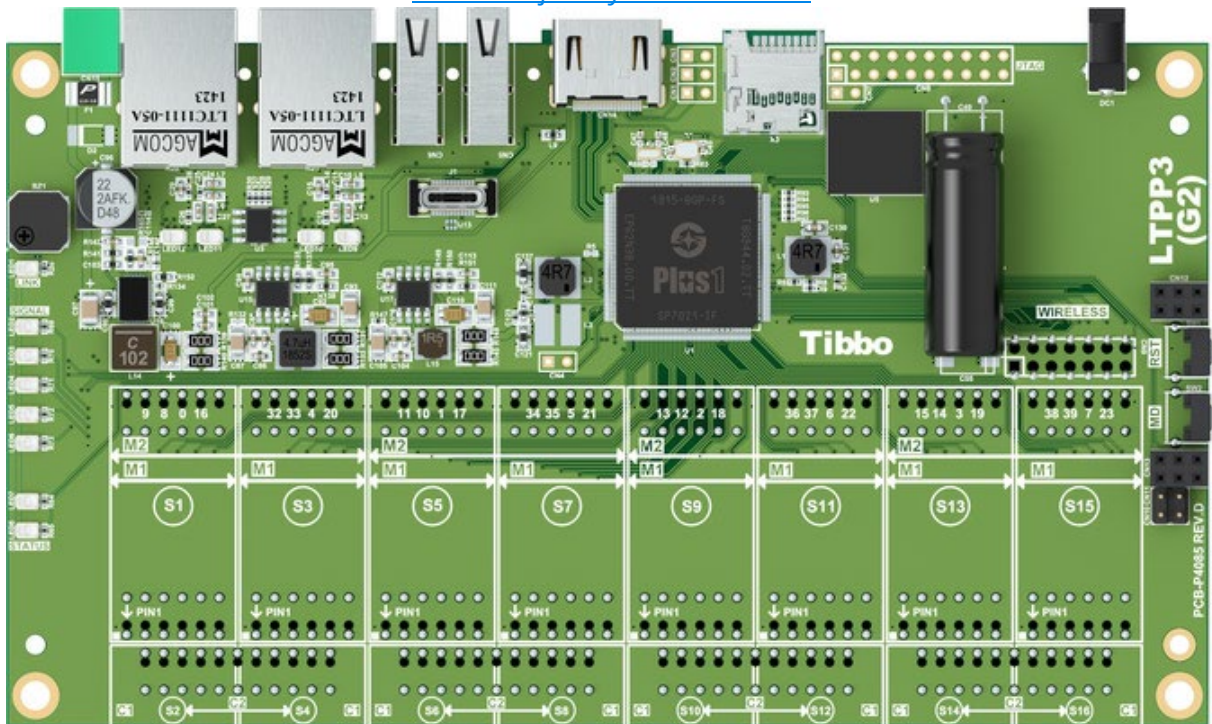


## Size 3 Linux Tibbo Project PCB (LTPP3), Gen. 2

[Tibbo Project System overview](#)



The LTPP3(G2) is a Linux-based Tibbo Project PCB belonging to the Tibbo Project System (TPS) platform. The board is based on the powerful quad-core 1GHz Cortex-A7 [Plus1 \(SP7021\) CPU](#) jointly developed by Sunplus and Tibbo.

The LTPP3(G2) features a powerful set of I/O ports located directly on the board. Dual Ethernet ports allow daisy-chaining with other Ethernet devices. Wireless connectivity (through an optional add-on module) has been expanded to 802.11a/b/g/n/ac and Bluetooth/BLE 5.0. Cellular connectivity is provided through the use of [Tibbit #45 \(4G LTE Cat-1\)](#) or [Tibbit #46 \(Cat-M/NB-IoT\)](#). Also new are integrated HDMI and serial-over-USB console ports, as well as two USB 2.0 Host ports with Type-A connectors and a built-in microSD slot. The board incorporates a power supply with an input range of 8V to 60V, eliminating the need for power Tibbits.

Offering four tiles for a total of [eight Tibbit module and eight Tibbit connector sockets](#), the LTPP3(G2) can be used to create TPS configurations with up to four full serial ports, up to 16 relays, or up to 32 control lines, such as opto-inputs, PWMs, or open-collector outputs.

The LTPP3(G2) can be used as a bare board or assembled into a [Size 3 Linux Tibbo Project Box \(LTPB3\)](#). It also serves as the evaluation board for our [Plus1 \(SP7021\) chip](#).

Customize and order an LTPP3(G2)-based TPS through [CODY](#), or choose a base board configuration [below](#).

## Mainlined Drivers for the Plus1 Ensure Long-Term Stability

As part of Tibbo's longstanding commitment to our customers, the primary drivers for the Plus1 SoC have been mainlined into the official Linux kernel. The UART, SPI, NVMEM, RTC, and PINCTRL drivers were added in kernel version 5.18, while the PWM driver is already in the maintainers' tree and will be merged into 5.19-rc1.

Upstreamed drivers have passed the scrutiny of the official kernel maintainers for quality, security, and stability. This means you can develop projects without having to worry about compatibility as the operating system evolves.

## Docker Container Makes Creating Custom Linux Images Fast and Easy

Tibbo supplies a board support package in a [Docker container](#) to help you quickly customize and build Linux firmware. With this container, there is no need to download tools and compilers or install new operating systems. It contains our [Ubuntu-based distribution](#), scripts, drivers, and build tools.

Tibbo's container is regularly updated and tagged, providing you with a stable, consistent, and convenient starting point for your projects. Download the latest version of the development environment or choose an earlier state — all without any configuration. To help you get started, we've even created a [step-by-step tutorial video](#) demonstrating its use.

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## Two Ready-to-Use Distributions

### Ubuntu-Based Distribution for End-User Applications and Rapid Prototyping

**Ubuntu** is one of the most popular Linux variants in the world. Thanks to its widespread adoption, it boasts a vast user base and offers a wide variety of community resources for all manner of projects, big and small.

Tibbo's Ubuntu-based distribution is perfect for when you just want to plug the LTPP3(G2) board in and get going with your work. An accompanying **Personal Package Archive (PPA)** provides libraries, drivers, and an **Out-of-Box Experience (OOBE)** script that simplifies the board's configuration and software development.

# Yocto-Based Distribution for Mass Deployment and Production Devices

The **Yocto Project** aims to improve the process of creating embedded Linux distributions for specific applications. Because it provides sophisticated tools for defining what components should be included in a Linux build, it is recommended for our customers working on [Plus1-based](#) mass-produced products or planning large, repeatable Linux deployments.

By building your Linux with Yocto, you can significantly decrease the resulting package size, as well as improve your product's reliability by removing unnecessary components that so often litter Linux distributions.

Yocto is quite complex, and so it is not for everyone. If your goal is just to use our LTPP3(G2) board, we recommend (at least starting with) our [Ubuntu-based distribution](#).

## Key Features

- Based on [Plus1 \(SP7021\)](#) quad-core 1GHz Cortex-A7 CPU
- Eight module + eight connector sockets (for a total of 32 I/O lines)
- **Two** 10/100 Base-T Ethernet ports support daisy-chaining
- Optional 802.11a/b/g/n/ac + Bluetooth/BLE 5.0
- Two USB 2.0 Host ports with USB Type-A connectors
- Four UARTs + serial-over-USB console port
- HDMI port for connecting external displays
- Onboard buzzer
- Up to four SPI and four I2C interfaces
- Onboard RTC with backup supercapacitor
- 512MB DDR3 SDRAM, 4GB eMMC
- microSD card slot
- 2048-byte EEPROM
- Integrated power supply with 8V~60V input range