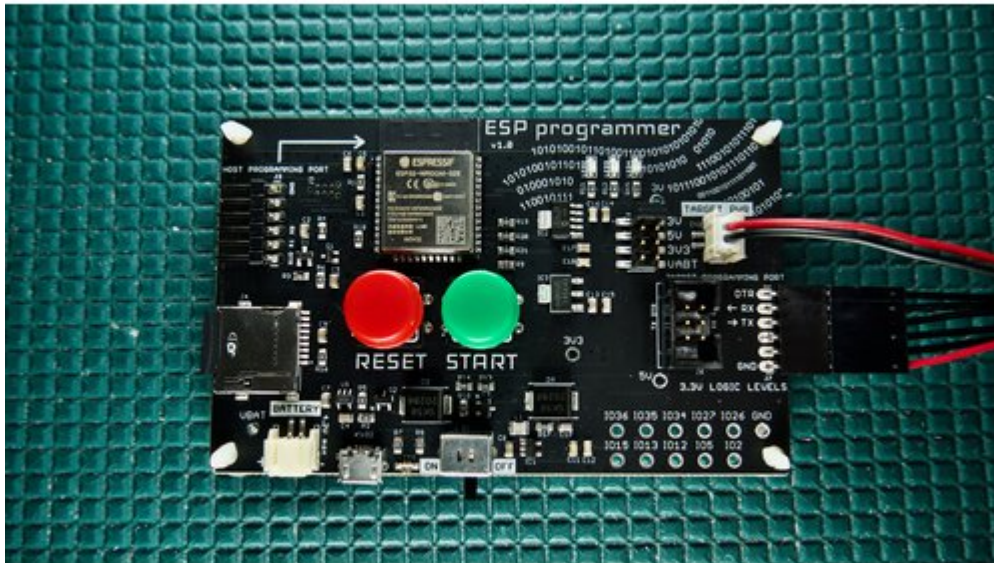


Standalone ESP32 Programmer and Test Solution

 [tindie.com/products/kdcircuits/standalone-esp32-programmer-and-test-solution](https://www.tindie.com/products/kdcircuits/standalone-esp32-programmer-and-test-solution)



ESP32 based board that flashes bin files from SD Card to a target ESP32

Need a quick way to update your ESP32 Firmware?

Factory programming 100's, 1000's of ESP32 based boards?

Don't feel like installing IDE's just to upload a bin file?

OTA not so reliable?

Command line uploading too complicated?

Windows/Mac Software updates break your automated fixture programming software?

Could go on and on with reasons why this board could be the perfect fit for your needs!

This board was designed out of necessity - the trigBoard sells by the 1000's and programming/testing each board manually can be time consuming and error prone. Automated software was written to solve this problem... but as new batches of boards are delivered, the software on the PC has had issues with new updates, driver issues... and so on... That was the inspiration for a fully standalone programming and test solution! Simply copy the bin files to a micro SD card, hit the green button and you're good to go!

- Board ships preloaded with base firmware ready for flashing ESP32's
- Includes 8GB micro SD card with example bin files for programming trigBoard
- Powered by micro USB power or 4.2V lithium battery (built in charger), which makes the board versatile for updating boards in the field.

- Target board is programmed from standard UART connection and also toggles DTR/RTS line, to activate auto-reset circuit for ESP32 to enter download mode.
- Simple two button interface for mass programming START and RESET. x3 LEDs Red/Yellow/Green to indicate programming status. This all keeps the process very easy for the user.
- On board jumper selects power output from JST PH 2.0mm connector. 3.0V is a controlled power source, which is useful for integrating a power cycle from the programmer as well as for calibration. Other selections that are always on, 5V, 3.3V, and the raw battery voltage.
- 1x6 female connector for “FTDI” style cables, and 2x3 IDC male header, which is useful for Tag Connect Cables.
- EXPANSION! All spare IO broken out to pads, which could be used to control an automated fixture - relays, sensors, etc... or even if the auto-reset circuit requires RTS and CTS signal. This board was used to program 100's of trigBoards (so far) and used a relay to toggle the sensor input. Was such a simple job - could sit there and watch movies while the board does all the work. Just swapping boards and smashing green button!
- It's based on an ESP32! This means you have the ability to activate an AP for your target ESP32 to connect to and communicate with. The trigBoard tester firmware did just this and sent over messages containing critical board information that was part of the automated test sequence. You also have bluetooth available as well.
- The board provides a 6 pin UART interface that can be used to provide information back up to a PC. Test logs, MAC address, etc... Even had one customer consider using this with a thermal printer.
- SPIFFS programming! This is very cool if you have to fully copy a board that uses something like ArduinoJSON to store configuration/parameters in SPIFFS. Or even if images, audio, or other media. For the trigBoard programmer, a blank SPIFFS bin file was loaded to fully erase the SPIFFS.
- Schematic is available for the board, so in case any modifications are needed to support an automated test fixture.

What's included?

- ESP Programmer board preloaded with firmware ready to flash files
- Mounted on removable standoffs
- RED/GREEN button caps glued on (can break these off if needed)
- 150mm 6 pin extension cable for the FTDI style pinout
- 150mm 2 pin JST-JST Cable for providing power to target
- 8GB micro SD card with 4 bin example bin files (same as used to program the trigBoard)
- JST Puller Board - this a fantastic tool for safely unplugging the 2pin JST-PH connector from your target.

How was it tested?

- Each board is programmed by another programmer board! This flashes the base firmware to the board.

- A test SD card is used to flash a trigBoard with a special bin file that simply blinks the LED - then we know the board is able to program ESP32's
- The SD card that ships with the board is inserted, USB is plugged in one last time to make sure that the card mounts and all files are found, green LED flashes, then the board is ready to ship out!

Any concerns?

- The board has only been tested with ESP32-WROOM modules so far, so potentially some changes may be needed to support other variants.
- The board's power supply was designed for an ESP32 load with some margin, but if the target has other circuitry with significant power demands, then it may be a good idea to power the target board externally.