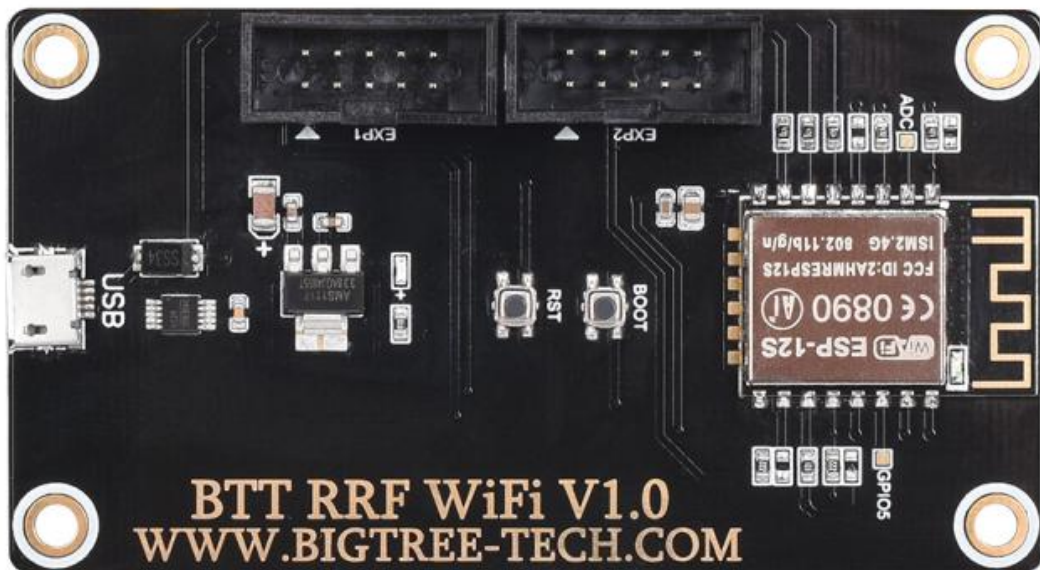


Shenzhen BIGTREE Technology Co., Ltd.  
**BIG TREE TECH**

# BIGTREETECH

## BTT RRF WiFi V1.0



RepRapFirmware supports skr 1.1, 1.3, 1.4

## Quick start

- Update motherboard firmware to RepRapFirmware, download “firmware-wifi.bin” and change the file name to firmware.bin :  
<https://github.com/gloomandy/RepRapFirmware/releases>
- Before you connect to the board, you need to ensure that an SD card is inserted and it has the correct files required by RepRapFirmware. An overview can be found here:  
[https://duet3d.dozuki.com/Wiki/Firmware\\_Overview#Section\\_SD\\_card\\_structure](https://duet3d.dozuki.com/Wiki/Firmware_Overview#Section_SD_card_structure)
- Also need to ensure that the latest version of DWC is on your SD card. It can be found here:  
<https://github.com/Duet3D/DuetWebControl/releases>
- And need to generate the config files required. That can be achieved by using the RRF config tool found here:  
<https://jaysuk.github.io/LPCConfigurator>

## Installation

Connect EXP1 and EXP2 on the RRF to the corresponding EXP1 and EXP2 on the motherboard. After turning on the power, the blue LED on the PCB will flash once.

Once connected, use the USB port on the SKR board to connect to the computer, use programs such as YAT or Pronterface to connect to the development board, and enter the following:

**M552 S0**

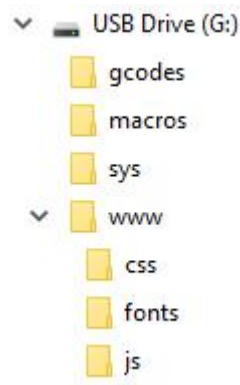
**M587 S"your SSID" P"your password"**

**M552 S1**

Then the blue light on the wifi chip will flash and stay on after the connection is established. The IP address will appear on the serial connection. You can also type M552 to get the current IP address.

## SD card structure

Duets use the following folder structure:



Folder **/gcodes** is used to hold g-code files for printing. You can use subfolders of **/gcodes** to organize these files.

Folder **/macros** is used to hold user-defined macro files. The names of these files appear as menu entries in DuetWebControl and on PanelDue. You can use subfolders of **/macros** to organize these files.

Folder **/sys** is used to hold system files and to hold firmware update files ready for installation. It should contain at least the following files:

- **config.g** holds the firmware configuration script, which is executed at startup.
- **config-override.g** holds the configuration parameters that were saved when you last ran M500. Your config.g file should normally include command M501 near the end, to load these saved values at startup and override any similar commands earlier in config.g.
- **homex.g**, **homey.g**, **homez.g** and **homeall.g** are the homing scripts for a Cartesian or CoreXY printer. For a delta printer there is **homedelta.g** instead.
- **bed.g** holds the script for probing the bed and calculating bed compensation on a Cartesian or CoreXY printer, or doing delta calibration on a delta printer.
- **pause.g** is run when you pause a print.
- **resume.g** is run when you resume a print.
- **cancel.g** is optional, but if present is run when you cancel a paused print.
- **start.g** is optional, but if present is run whenever you start a job from the SD card.
- **stop.g** is optional, but if present is run when a SD card print finishes normally with a M0 command at the end of the print job.
- **trigger2.g**, **trigger3.g**, ... are optional files that can be configured to run when particular endstop pins are triggered, for example by an emergency-stop button.

- If your Z probe needs to be deployed and retracted, the script files **deployprobe.g** and **retractprobe.g** are used. They are invoked automatically and by the M401 and M402 commands.

Finally, you will also need a **board.txt** file in the sys folder.

board.txt examples can be found:

<https://github.com/gloommyandy/RepRapFirmware/tree/v3.01-dev-lpc/LPC/ExampleBoardConfig>

NOTE: the folders /gcodes, /macros, /sys must be named exactly as shown. Often the distribution of configuration for a specific printer platform will come with the folder named /sys-<printer\_type> the -<printer\_type> must be removed.

The configurator can be used to setup these files for your printer type:  
<https://jaysuk.github.io/LPCConfigurator>

A copy of the SD card folders, as shipped with the latest Duets is available here:  
<https://github.com/Duet3D/DuetWebControl/releases>

The /www folder and its subfolders hold the files served by the web server. If you are setting up a new SD card, populate the /www folder by extracting the contents of the DuetWebControl.zip file to it.

## Firmware version

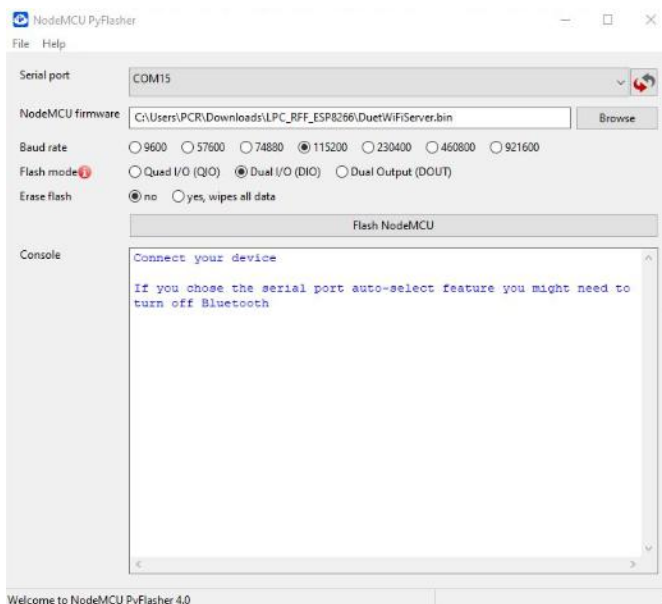
Click "Settings" in WebControl and select "General" to view the firmware version as shown below:

Software Information	
<b>Firmware Name:</b>	RepRapFirmware for LPC176x based Boards
<b>Firmware Electronics:</b>	LPC176x
<b>Firmware Version:</b>	3.1.1 (2020-05-19b2)
<b>Web Interface Version:</b>	1.22.6
Web Interface by <a href="#">Christian Hammacher</a> Licensed under the terms of the <a href="#">GPL v3</a>	

The firmware has been installed, but it is advisable to check for updates. If you want to upgrade it to the latest version, please refer to "RepRapFirmware Update".

## RepRapFirmware Update

- Get the latest firmware:  
<https://github.com/gloomandy/DuetWiFiSocketServer/releases>
- Disconnect EXP1 and EXP2 from SKR RRF adapter board;
- Connect to RRF's USB, and press BOOT, RST and then release RST before releasing BOOT to enter burning mode;
- Open the NodeMcu PyFlasher and select the correct serial port:  
<https://github.com/marcelstoer/nodemcu-pyflasher/releases>
- Select the correct DuetWifiServer.bin、Baudrate and Flashmode. If you're using esptool.py, please refer to the following guidelines:
- <https://rosspeter.org/flashing-the-webserver-on-my-rff-skr-adapterboard>



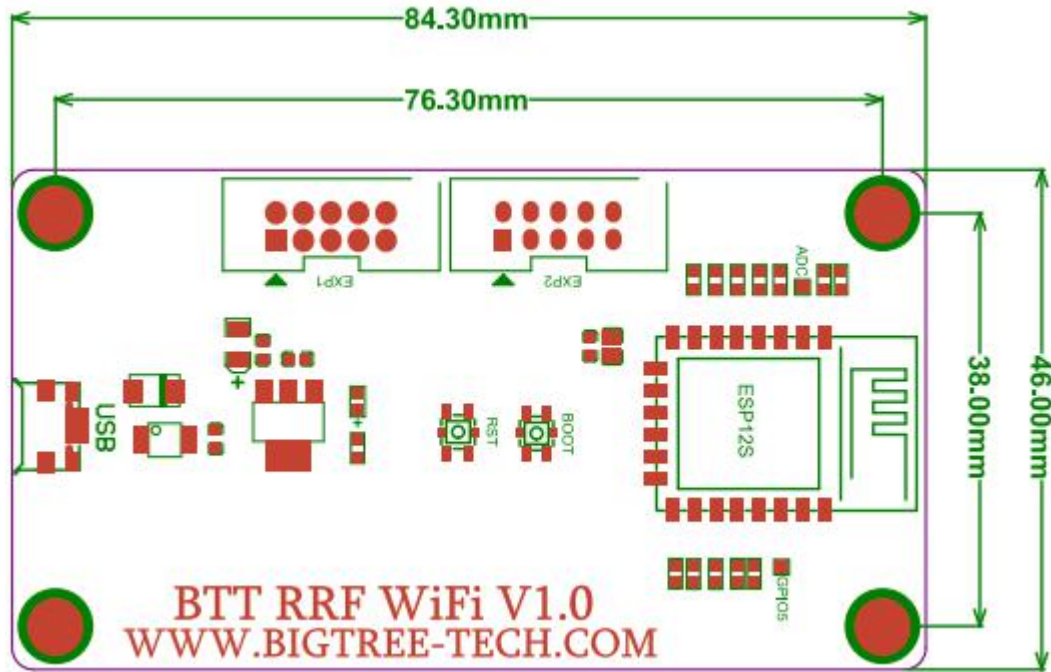
- Press "Flash NodeMCU", and wait a minute.
- After the flashing is complete, you can disconnect the micro USB cable. Now you can plug EXP1 and EXP2 in and start the printer!

## Known firmware issues and limitations

Version 1.22.6 firmware used with DuetWebControl 1.22.6 had the following known issues and limitations:

- Connecting to the Duet 2 WiFi by name only works if your client device supports mDNS protocol (e.g. Apple Bonjour service). Otherwise you have to connect to it by IP address.
- You cannot change microstepping on the fly during a print, because you must re-home the printer after changing microstepping.
- WIFI module firmware cannot be updated via M997 S1, only via USB interface.

## Size diagram



If you encounter other problems, please contact us. We will definitely answer your questions patiently. If you have any good suggestions on our products, please give us feedback. We will consider them seriously.

Thank you for choosing BIGTREETECH products!