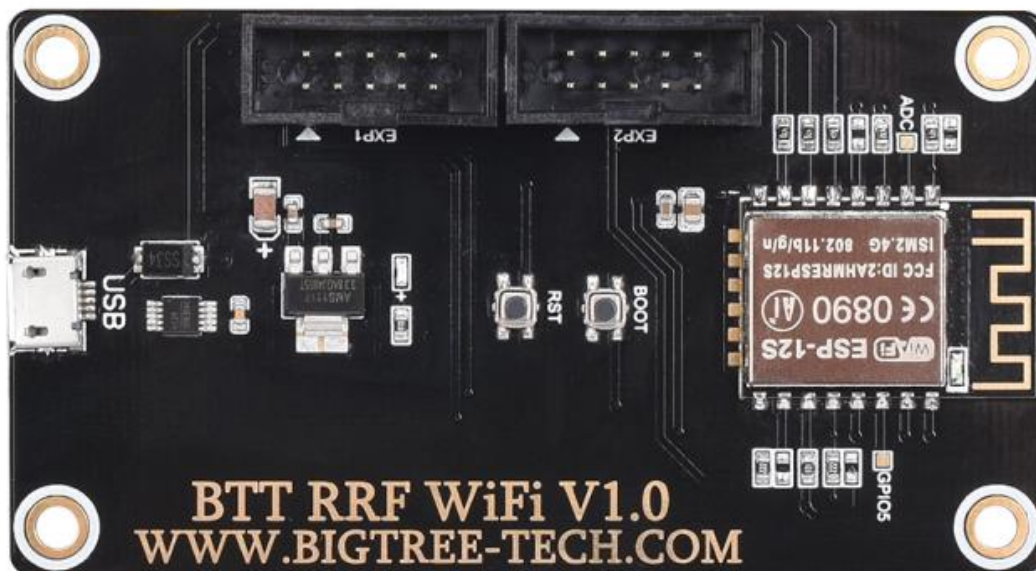# BIGTREETECH RRF WiFi V1.0
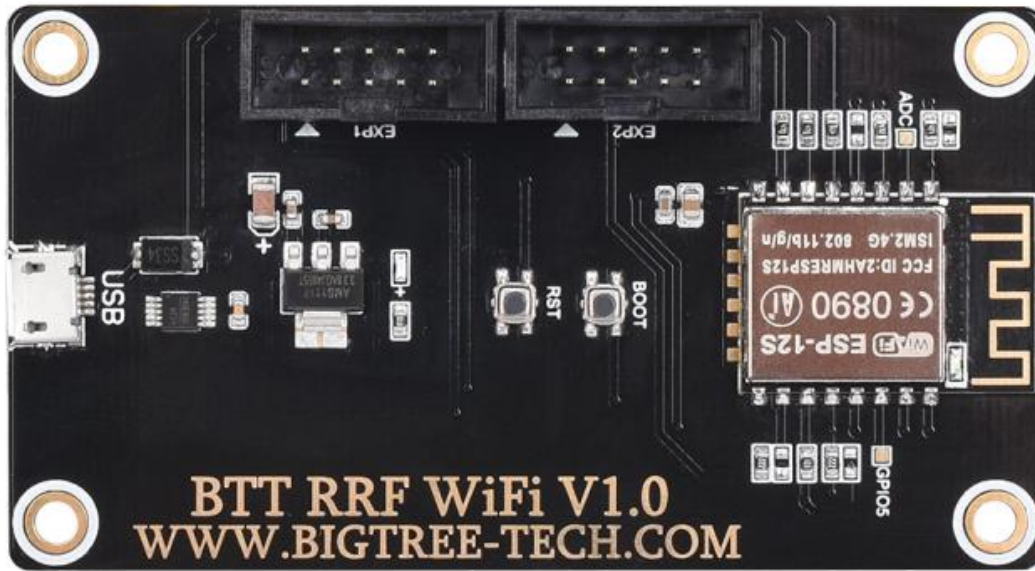
User Manual

RepRapFirmware supports skr 1.1、1.3、 1.4.

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：
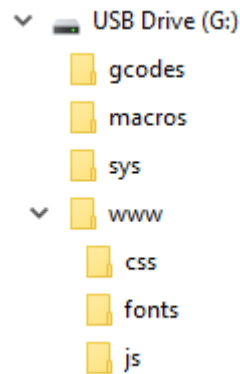
M552 S0
M587 S"your SSID" P"your password"
M552 S1
Then the blue light on the wifi chip will flash and stay on after the connection is established. The IP address will appear on the serial connection. You can also type M552 to get the current IP address.

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 used-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 thefollowing 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. For the SKR v1.4, mine contains the following。

```
//Config file to define Hardware Pins LPC Boards.
//Note: Each line should be less than 120 characters.
//      : Unwanted options can be commented out or set to NoPin. Lines commented out will get default values
//      : for pins the default is NoPin.
//      : Values for Arrays need to be contained within { and }
//      : Comments can be defined with // or # (comments are not supported inside arrays)
//      : Each config entry must be all on a single line.

//Config for BIQU SKR v1.4 (using config setting from Rob Mendon)

lpc.board = biquskr_1.4

//wifi pins
8266wifi.EspDataReadyPin = 0.28
8266wifi.LpcTfrReadyPin = 1.30
8266wifi.EspResetPin = 1.31
adc.prefilter.enable = true
```

board.txt examples can be found:

https://github.com/gloomyandy/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://configurator.reprapfirmware.org/
A copy of the SD card folders, as shipped with the latest Duets is available here: https://github.com/Duet3D/DuetWebControl/releases
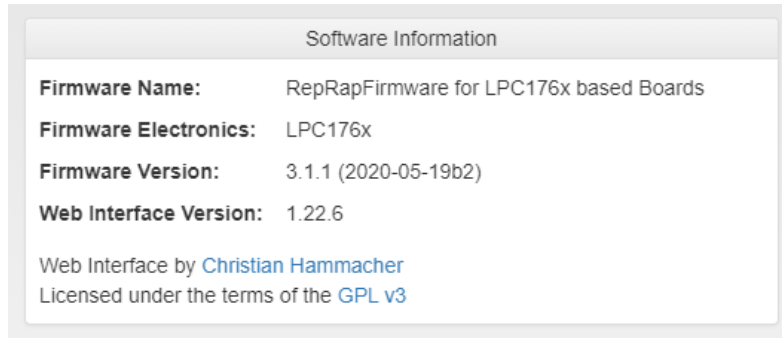
The /www folder and its subfolders hold the files served by the web server. If you are setting up a new SD card, populate the /www folder by extracting the contents of the DuetWebControl.zip file to it.
https://github.com/Duet3D/DuetWebControl/releases

Firmware version

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

Software Information	
Firmware Name:	RepRapFirmware for LPC176x based Boards
Firmware Electronics:	LPC176x
Firmware Version:	3.1.1 (2020-05-19b2)
Web Interface Version:	1.22.6

Web Interface by Christian Hammacher
Licensed under the terms of the GPL v3

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/gloomyandy/DuetWiFiSocketServer/releases
- Disconnect EXP1 and EXP2 from SKR RRF adapter board；
- Connect to RRF's USB；
- Open the NodeMcu PyFlasher:
  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
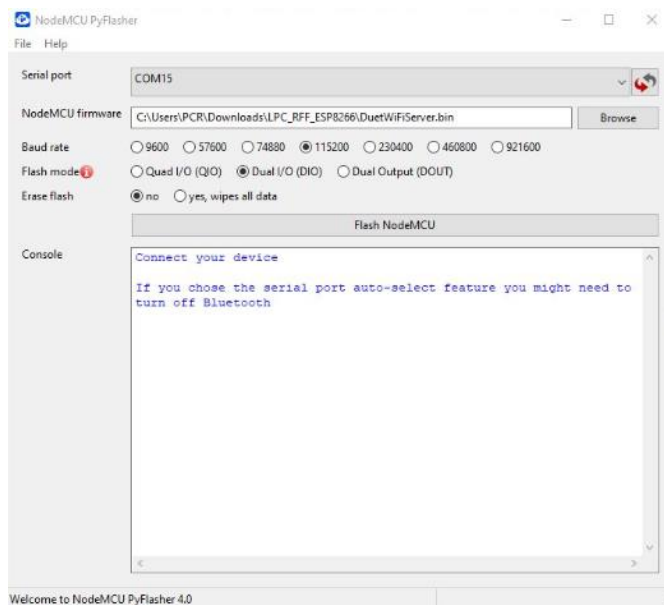
- press "Flash NodeMCU",and wait a minute.
- After the flashing is complete, you can disconnect the micro USB cable. Now you can plug EXP1 and EXP2 in and start the printer!

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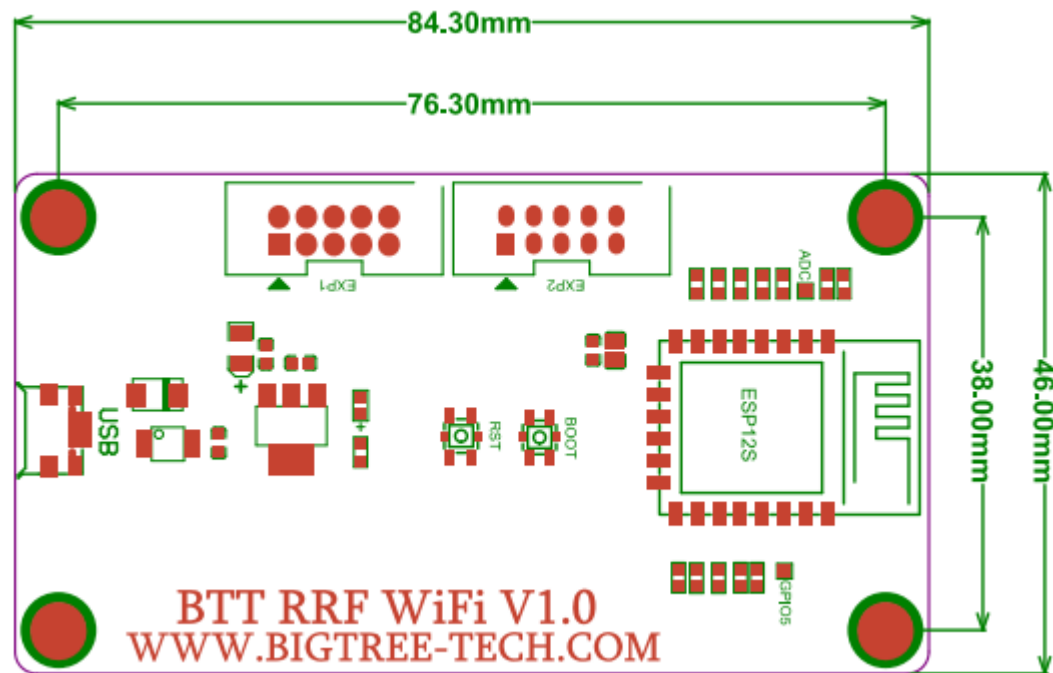
If you encounter other problems, please contact us. We will definitely answer your questions patiently. If you have any good suggestions on our products, please give us feedback. We will consider them seriously. Thank you for choosing BIGTREETECH products!