

# Getting Started with Raspberry Pi 4G Base HAT with Quectel miniPCle Modules

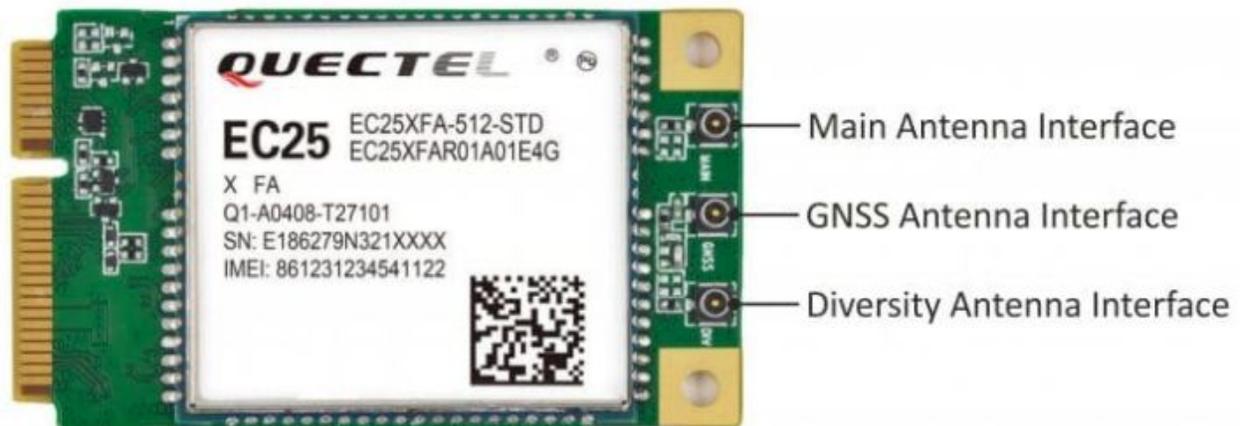
## Hardware Setup

1. Attach the Quectel mini PCIe module to the HAT.



2. Attach the antenna to the mini PCIe module.  
Make sure the right antenna is connected to the right connector interface.

i.e. EC25 Antenna Interface



3. Insert the SIM into the base HAT
4. Now attach the HAT to the Raspberry Pi.
5. Finally connect the micro-USB cable to the HAT and Raspberry Pi.

# Setup Internet Connection

## Check Driver

Open up a terminal and run the command below. You should see Quectel Wireless Solutions Co., Ltd. with module name.

RPI Command

**lsusb**

Expected output is as follows

```
Bus 001 Device 009: ID 2c7c:0125 Quectel Wireless Solutions Co., Ltd. EC25 LTE modem
Bus 002 Device 001: ID 1d6b:0003 Linux Foundation 3.0 root hub
Bus 001 Device 002: ID 2109:3431 VIA Labs, Inc. Hub
Bus 001 Device 001: ID 1d6b:0002 Linux Foundation 2.0 root hub
```

RPI Command

**dmesg | grep ttyUSB**

Output should be as follows

```
[ 154.014341] usb 1-1.1.2: GSM modem (1-port) converter now attached to ttyUSB0
[ 154.015183] usb 1-1.1.2: GSM modem (1-port) converter now attached to ttyUSB1
[ 154.015632] usb 1-1.1.2: GSM modem (1-port) converter now attached to ttyUSB2
[ 154.015994] usb 1-1.1.2: GSM modem (1-port) converter now attached to ttyUSB3
```

Now we are ready to start setting up the internet connection. Now install the minicom app to communicate with the modem.

RPI Command

**sudo apt install minicom -y**

Now open the serial communication for /dev/ttyUSB2 device and 115200 baud rate using minicom with the command

RPI Command

**minicom -D /dev/ttyUSB2 -b 115200**

The minicom application should look like this.

```
Welcome to minicom 2.7.1

OPTIONS: I18n
Compiled on Aug 13 2017, 15:25:34.
Port /dev/ttyUSB2

Press CTRL-A Z for help on special keys

AT
OK

CTRL-A Z for help | 115200 8N1 | NOR | Minicom 2.7.1 | VT102 | Offline | ttyUSB2
```

Validate the communication by sending **AT** command. You should get a response of **OK**.

### Configure miniPCle Module

To configure the modem for ECM mode, enter the following command.

Minicom Command

**AT+QCFG="usbnet",1**

The response should be **OK**.

The modem may reboot after the execution of the command. Wait for the minicom screen to be activated again.

### Configure APN

If you don't know your APN, you can learn it from your SIM provider. APN for different networks are different (AirTel, Vodafone, Idea etc).

Minicom Command

**AT+CGDCONT=1,"IP","Network APN"**

The response should be **OK**.

## **Reboot the modem**

Now reboot the modem using the following command.

Minicom Command

**AT+CFUN=1,1**

Wait for the modem to boot again. It may take 30 seconds. Once the modem reboots, the minicom screen will be activated again.

Now test the internet connection by pinging a website. Your network connection icon in Raspberry Pi OS should be changed.