

UC20_Module_for_3G_HAT_Board_User_Guide

V1.0 2017.07.20

1. Check environment

1. OS: Ubuntu 16.04.2 (see Figure 1)

Link: <http://ftp.ubuntu-tw.org/mirror/ubuntu-releases/16.04.2/ubuntu-16.04.2-desktop-amd64.iso>

```
$ lsb_release -a
```

2. Kernel version: 4.8.0 (see Figure 1)

```
$ uname -a
```

```
aaeon@aaeon-UP-CHT01:~$ lsb_release -a
No LSB modules are available.
Distributor ID: Ubuntu
Description:   Ubuntu 16.04.2 LTS
Release:      16.04
Codename:     xenial
aaeon@aaeon-UP-CHT01:~$ uname -a
Linux aaeon-UP-CHT01 4.8.0-58-generic #63~16.04.1-Ubuntu SMP Mon Jun 26 18:08:51 UTC 2017 x86_64 x86_64 x86_64 GNU/Linux
```

Figure 1: Ubuntu Environment

2. How to check UC20 3G Module

Step 1. Check device on USB.

```
$ lsusb
```

```
aaeon@aaeon-UP-CHT01:~$ lsusb
Bus 002 Device 001: ID 1d6b:0003 Linux Foundation 3.0 root hub
Bus 001 Device 007: ID 0424:2530 Standard Microsystems Corp.
Bus 001 Device 009: ID 05c6:9003 Qualcomm, Inc. Quectel UC20
Bus 001 Device 008: ID 1934:1202 Feature Integration Technology Inc. (Fintek)
Bus 001 Device 006: ID 0424:2514 Standard Microsystems Corp. USB 2.0 Hub
Bus 001 Device 003: ID 0424:4603 Standard Microsystems Corp.
Bus 001 Device 005: ID 0461:0010 Primax Electronics, Ltd HP PR1101U / Primax PMX-KPR1101U Keyboard
Bus 001 Device 004: ID 046d:c52b Logitech, Inc. Unifying Receiver
Bus 001 Device 002: ID 05e3:0606 Genesys Logic, Inc. USB 2.0 Hub / D-Link DUB-H4 USB 2.0 Hub
Bus 001 Device 001: ID 1d6b:0002 Linux Foundation 2.0 root hub
```

Step 2. Check kernel message.

```
$ dmesg | grep -i usb
```

You can see 3G port attached to ttyUSB(0~3)

```
[ 4.196867] usb 1-7.2.4: Manufacturer: Quectel, Incorporated
[ 5.076832] Modules linked in: snd_soc_sst_mtl_d_platform snd_soc_sst_match shpchp(+) snd_soc_core snd_compress mei_txe(+) m
wc3_pci(+) snd_pcm_dmaengine snd_pcm snd_seq_midi snd_seq_midi_event snd_rawmidi snd_seq snd_seq_device snd_timer intel_hid dw
_core sparse_keymap snd_pwm_lpss_platform soundcore pwm_lpss 8250_dw i2c_designware_platform(+) tpm_crb i2c_designware_core in
spi_pxa2xx_platform acpi_thermal_rel dptf_power int3406_thermal int3403_thermal int340x_thermal_zone acpi_pad mac_hid parport
parport_autofs4 hid_logitech_hidpp hid_logitech_dj hid_generic usbhid hid mmc_block i915 i2c_algo_bit drm_kms_helper syscopyar
t sysimgblt fb_sys_fops drm r8169 mii fjes video sdhci_acpi sdhci
[ 5.164451] usbcore: registered new interface driver usbserial
[ 5.164480] usbcore: registered new interface driver usbserial_generic
[ 5.164510] usbserial: USB Serial support registered for generic
[ 5.182575] usbcore: registered new interface driver option
[ 5.182608] usbserial: USB Serial support registered for GSM modem (1-port)
[ 5.183195] usb 1-7.2.4: GSM modem (1-port) converter now attached to ttyUSB0
[ 5.183748] usb 1-7.2.4: GSM modem (1-port) converter now attached to ttyUSB1
[ 5.186601] usb 1-7.2.4: GSM modem (1-port) converter now attached to ttyUSB2
[ 5.197176] usb 1-7.2.4: GSM modem (1-port) converter now attached to ttyUSB3
[ 5.225745] usbcore: registered new interface driver cdc_wdm
[ 5.238701] qmi_wwan 1-7.2.4:1.4: cdc-wdm1: USB WDM device
[ 5.239337] qmi_wwan 1-7.2.4:1.4 wwan0: register 'qmi_wwan' at usb-0000:00:14.0-7.2.4, WWAN/QMI device, c6:e8:5e:64:22:71
[ 5.249673] usbcore: registered new interface driver qmi_wwan
```

Step 3. Check network interface.

```
$ ifconfig -a
```

```
aaeon@aaeon-UP-CHT01:~$ ifconfig -a
enp1s0    Link encap:Ethernet  HWaddr 00:07:32:43:3a:c4
          inet addr:172.16.13.140  Bcast:172.16.13.255  Mask:255.255.255.0
          inet6 addr: fe80::b133:87cc:78e5:54d3/64  Scope:Link
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:13686  errors:0  dropped:0  overruns:0  frame:0
          TX packets:378  errors:0  dropped:0  overruns:0  carrier:0
          collisions:0  txqueuelen:1000
          RX bytes:1412767 (1.4 MB)  TX bytes:56346 (56.3 KB)

lo        Link encap:Local Loopback
          inet addr:127.0.0.1  Mask:255.0.0.0
          inet6 addr: ::1/128  Scope:Host
          UP LOOPBACK RUNNING  MTU:65536  Metric:1
          RX packets:209  errors:0  dropped:0  overruns:0  frame:0
          TX packets:209  errors:0  dropped:0  overruns:0  carrier:0
          collisions:0  txqueuelen:1
          RX bytes:15607 (15.6 KB)  TX bytes:15607 (15.6 KB)

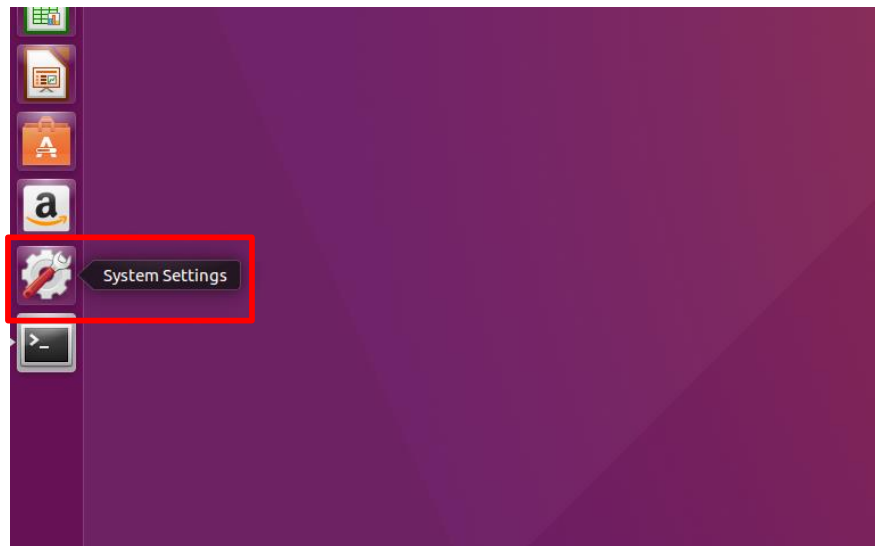
wwp0s20u7u2u4i4 Link encap:Ethernet  HWaddr 82:c0:8d:a7:39:b0
          BROADCAST MULTICAST  MTU:1500  Metric:1
          RX packets:0  errors:0  dropped:0  overruns:0  frame:0
          TX packets:0  errors:0  dropped:0  overruns:0  carrier:0
          collisions:0  txqueuelen:1000
          RX bytes:0 (0.0 B)  TX bytes:0 (0.0 B)
```

3. How to connect

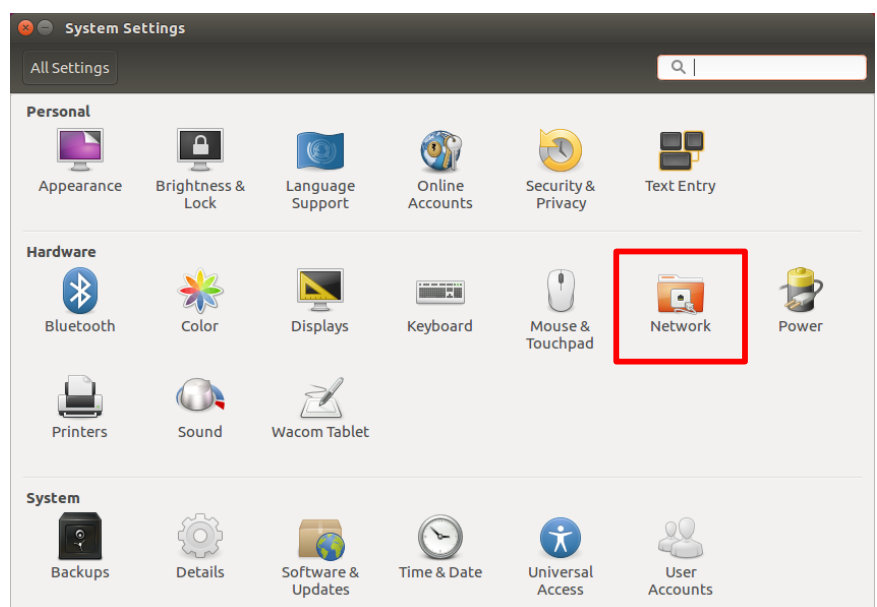
Step 1. Setting network.

a. Open setting window.

1. System Settings

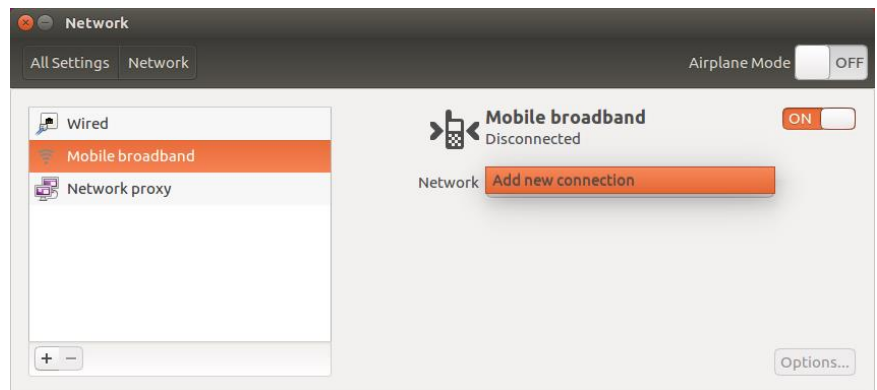


2. Network

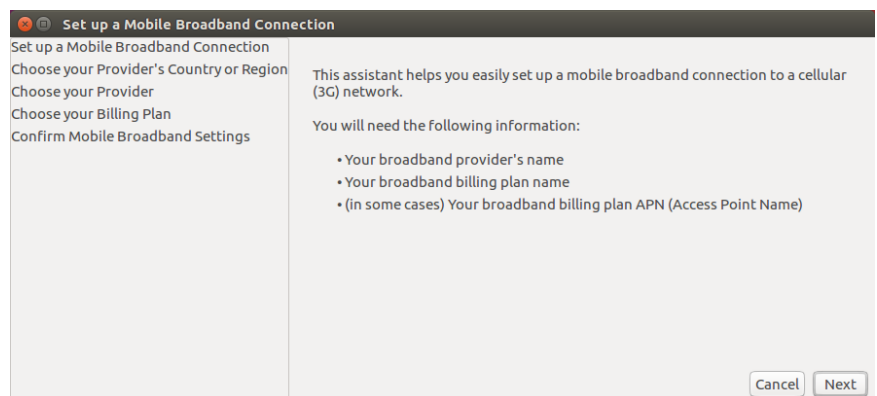


b. Setting network.

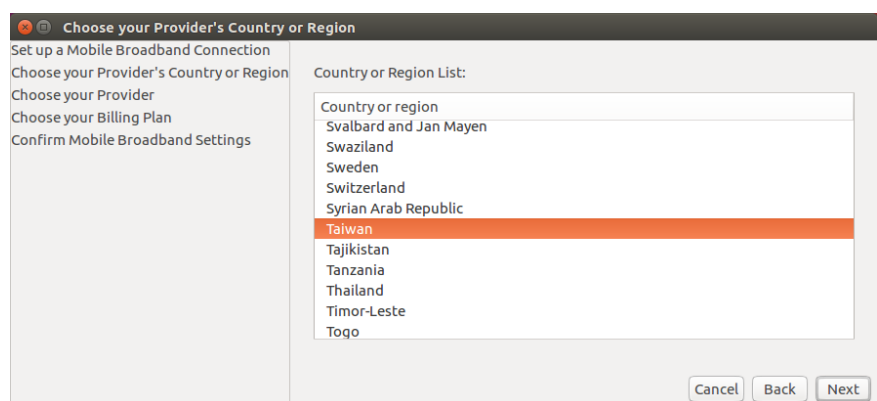
1. Add new connection



2. Start to set up, please press "Next"



3. Choose your country



4. Choose your provider

Choose your Provider

Set up a Mobile Broadband Connection
Choose your Provider's Country or Region
Choose your Provider
Choose your Billing Plan
Confirm Mobile Broadband Settings

Select your provider from a list:

Provider

- Chunghua Telecom (emome)
- Far EasTone / KGT
- TransAsia
- TW Mobile
- Vibo Telecom / Aurora

I can't find my provider and I wish to enter it manually:

Provider:

Cancel Back Next



5. Choose your billing plan

Choose your Billing Plan

Set up a Mobile Broadband Connection
Choose your Provider's Country or Region
Choose your Provider
Choose your Billing Plan
Confirm Mobile Broadband Settings

Select your plan:

Default

Selected plan APN (Access Point Name):

internet

! Warning: Selecting an incorrect plan may result in billing issues for your broadband account or may prevent connectivity.
If you are unsure of your plan please ask your provider for your plan's APN.

Cancel Back Next



6. Confirm settings

Confirm Mobile Broadband Settings

Set up a Mobile Broadband Connection
Choose your Provider's Country or Region
Choose your Provider
Choose your Billing Plan
Confirm Mobile Broadband Settings

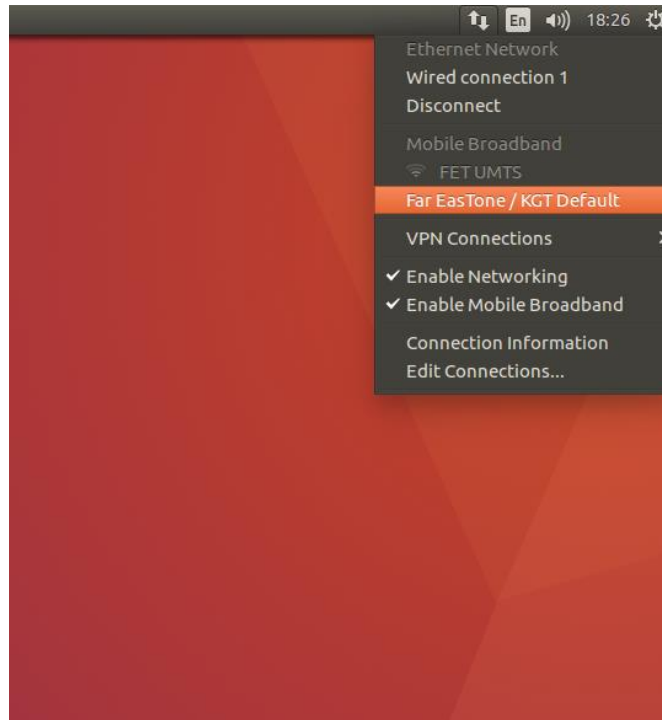
Your mobile broadband connection is configured with the following settings:

Your Provider:
Far EasTone / KGT, Taiwan

Your Plan:
Default
APN: internet

Cancel Back Apply

Step 2. Mobile Connection.



Step 3. Check connection status.

\$ ifconfig

```
aaeon@aaeon-UP-CHT01: ~  
aaeon@aaeon-UP-CHT01:~$ ifconfig  
enp1s0  Link encap:Ethernet  HWaddr 00:07:32:43:3a:c4  
UP BROADCAST MULTICAST  MTU:1500  Metric:1  
RX packets:30716 errors:0 dropped:0 overruns:0 frame:0  
TX packets:195 errors:0 dropped:0 overruns:0 carrier:0  
collisions:0 txqueuelen:1000  
RX bytes:3220102 (3.2 MB)  TX bytes:27839 (27.8 KB)  
  
lo      Link encap:Local Loopback  
inet addr:127.0.0.1  Mask:255.0.0.0  
inet6 addr: ::1/128 Scope:Host  
UP LOOPBACK RUNNING  MTU:65536  Metric:1  
RX packets:2066 errors:0 dropped:0 overruns:0 frame:0  
TX packets:2066 errors:0 dropped:0 overruns:0 carrier:0  
collisions:0 txqueuelen:1  
RX bytes:152053 (152.0 KB)  TX bytes:152053 (152.0 KB)  
  
wwp0s20u7u2u4i4 Link encap:Ethernet  HWaddr 22:02:44:fb:0b:be  
inet addr:10.6.215.15  Bcast:10.6.215.31  Mask:255.255.255.224  
UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1  
RX packets:8 errors:0 dropped:0 overruns:0 frame:0  
TX packets:23 errors:0 dropped:0 overruns:0 carrier:0  
collisions:0 txqueuelen:1000  
RX bytes:1214 (1.2 KB)  TX bytes:3215 (3.2 KB)  
aaeon@aaeon-UP-CHT01:~$
```

Step 4. Mobile network test.

```
$ ping 8.8.8.8
```

```
aaeon@aaeon-UP-CHT01: ~  
aaeon@aaeon-UP-CHT01:~$ ping 8.8.8.8  
PING 8.8.8.8 (8.8.8.8) 56(84) bytes of data.  
64 bytes from 8.8.8.8: icmp_seq=1 ttl=44 time=745 ms  
64 bytes from 8.8.8.8: icmp_seq=2 ttl=44 time=283 ms  
64 bytes from 8.8.8.8: icmp_seq=3 ttl=44 time=302 ms  
64 bytes from 8.8.8.8: icmp_seq=4 ttl=44 time=285 ms  
64 bytes from 8.8.8.8: icmp_seq=5 ttl=44 time=309 ms  
64 bytes from 8.8.8.8: icmp_seq=6 ttl=44 time=383 ms  
64 bytes from 8.8.8.8: icmp_seq=7 ttl=44 time=316 ms  
64 bytes from 8.8.8.8: icmp_seq=8 ttl=44 time=326 ms  
64 bytes from 8.8.8.8: icmp_seq=9 ttl=44 time=305 ms  
64 bytes from 8.8.8.8: icmp_seq=10 ttl=44 time=296 ms  
64 bytes from 8.8.8.8: icmp_seq=11 ttl=44 time=292 ms  
^C  
--- 8.8.8.8 ping statistics ---  
11 packets transmitted, 11 received, 0% packet loss, time 10010ms  
rtt min/avg/max/mdev = 283.400/349.791/745.624/127.900 ms  
aaeon@aaeon-UP-CHT01:~$
```