AP6214A_Bluetooth_User_Guide

V1.0 2017.08.21

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1. Bluetooth Driver and Kernel Configuration

1. Check Environment

Step 1. Check OS version: Ubuntu 16.04.2 (see Figure 1)

$ lsb_release -a

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

Step 2. Check 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. Update Bluetooth Firmware

Step 1. Copy ap6214a_bt_driver.zip to home path and unzip it

$ unzip ap6214a_bt_driver.zip

```
aaeon@aaeon-UP-CHCR1:~$
aaeon@aaeon-UP-CHCR1:~$ unzip ap6214a_bt_driver.zip
Archive:  ap6214a_bt_driver.zip
   creating: ap6214a_bt_driver/
   creating: ap6214a_bt_driver/firmware/
  inflating: ap6214a_bt_driver/firmware/BCM43430A1.hcd
  inflating: ap6214a_bt_driver/UP_Core_BT_RST.sh
aaeon@aaeon-UP-CHCR1:~$
```

Step 2. Create a firmware folder to /etc/

$ sudo mkdir -p /etc/firmware

```
aaeon@aaeon-UP-CHCR1:~$
aaeon@aaeon-UP-CHCR1:~$ sudo mkdir -p /etc/firmware
```

Step 3. Copy firmware of AP6214A to /etc/firmware/

$ sudo cp ap6214a_bt_driver/firmware/BCM43430A1.hcd /etc/firmware/

```
aaeon@aaeon-UP-CHCR1:~$
aaeon@aaeon-UP-CHCR1:~$ sudo cp ap6214a_bt_driver/firmware/BCM43430A1.hcd /etc/firmware/
```

Step 4. Change UP_Core_BT_RST.sh permission

$ cd ap6214a_bt_driver
$ chmod +x UP_Core_BT_RST.sh

```
aaeon@aaeon-UP-CHCR1:~$ cd ap6214a_bt_driver/
aaeon@aaeon-UP-CHCR1:~/ap6214a_bt_driver$ chmod +x UP_Core_BT_RST.sh
aaeon@aaeon-UP-CHCR1:~/ap6214a_bt_driver$
```

Step 5. Reboot system

$ sudo reboot

3. Start Bluetooth Module

Step 1. Reset Bluetooth module

$ sudo ap6214a_bt_driver/UP_Core_BT_RST.sh

```
aaeon@aaeon-UP-CHCR1:~$ sudo ap6214a_bt_driver/UP_Core_BT_RST.sh
```

Step 2. Attach the Bluetooth serial device via UART HCI

$ sudo hciattach /dev/ttyS**X** bcm43xx

X is your UART port number that connect to Bluetooth module

```
aaeon@aaeon-UP-CHCR1:~$ sudo hciattach /dev/ttyS2 bcm43xx
bcm43xx_init
Set Controller UART speed to 3000000 bit/s
Flash firmware /etc/firmware/BCM43430A1.hcd
Set Controller UART speed to 3000000 bit/s
Device setup complete
aaeon@aaeon-UP-CHCR1:~$
```

Step 3. Check Bluetooth device

$ hciconfig

```
aaeon@aaeon-UP-CHCR1:~$ hciconfig
hci0:   Type: BR/EDR  Bus: UART
        BD Address: B0:F1:EC:1F:BF:B9  ACL MTU: 1021:8  SCO MTU: 64:1
        UP RUNNING PSCAN
        RX bytes:773 acl:0 sco:0 events:53 errors:0
        TX bytes:3307 acl:0 sco:0 commands:53 errors:0
```
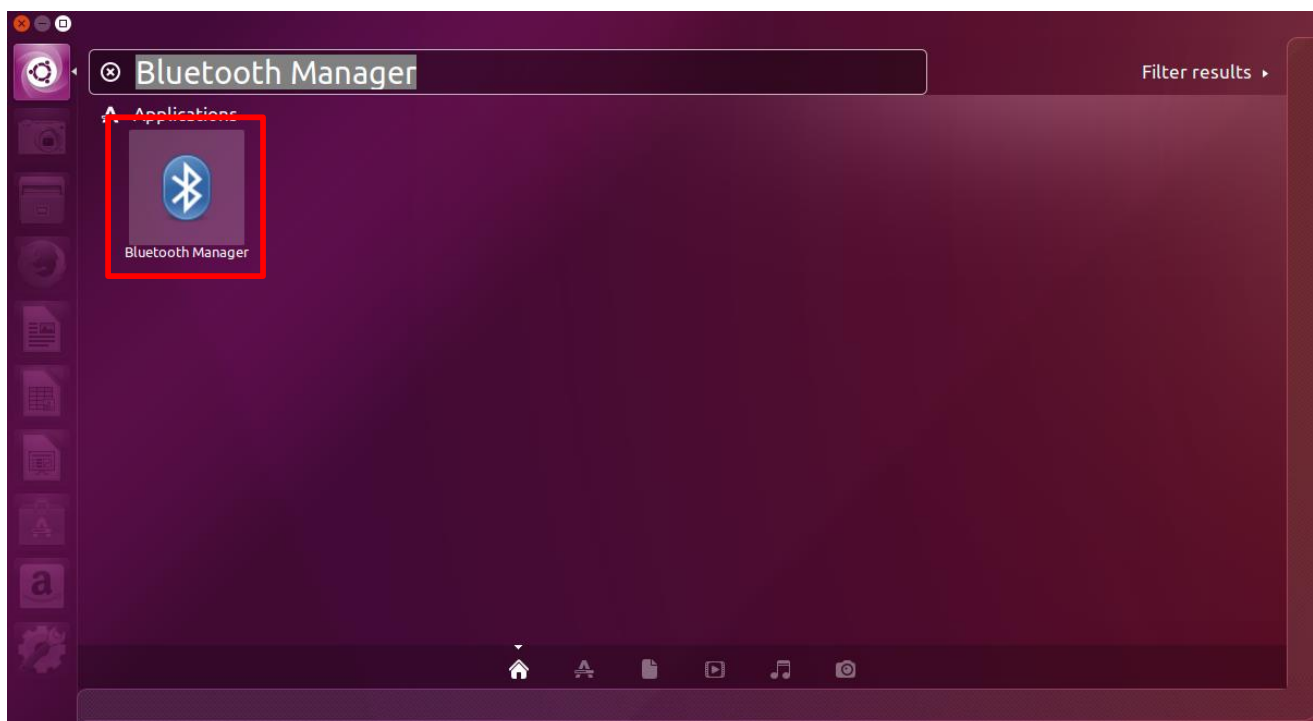
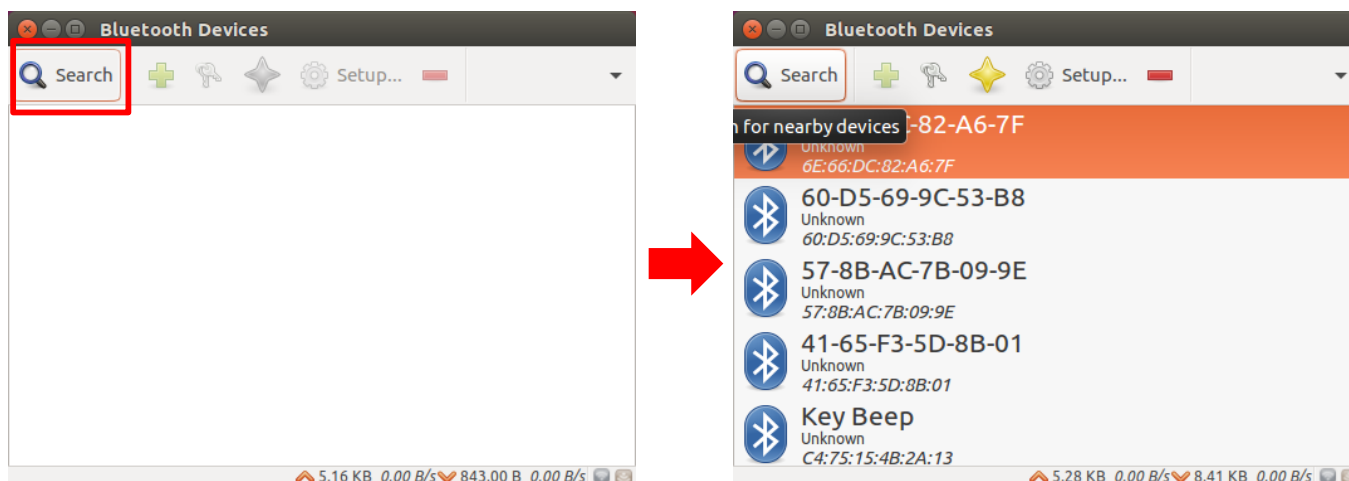# 2. Manage Bluetooth Device

Step 1. Install Bluetooth manager

$ sudo apt-get install -y blueman

```
aaeon@aaeon-UP-CHCR1:~$ sudo apt-get install -y blueman
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  gnome-icon-theme
The following NEW packages will be installed:
  blueman gnome-icon-theme
0 upgraded, 2 newly installed, 0 to remove and 175 not upgraded.
Need to get 11.3 MB of archives.
After this operation, 20.7 MB of additional disk space will be used.
Get:1 http://tw.archive.ubuntu.com/ubuntu xenial/universe amd64 gnome-icon-theme all 3.12.0-1ubuntu3 [9630 kB]
Get:2 http://tw.archive.ubuntu.com/ubuntu xenial/universe amd64 blueman amd64 2.0.4-1ubuntu2 [1673 kB]
Fetched 11.3 MB in 2s (5567 kB/s)
Selecting previously unselected package gnome-icon-theme.
(Reading database ... 248969 files and directories currently installed.)
Preparing to unpack .../gnome-icon-theme_3.12.0-1ubuntu3_all.deb ...
Unpacking gnome-icon-theme (3.12.0-1ubuntu3) ...
Selecting previously unselected package blueman.
Preparing to unpack .../blueman_2.0.4-1ubuntu2_amd64.deb ...
```
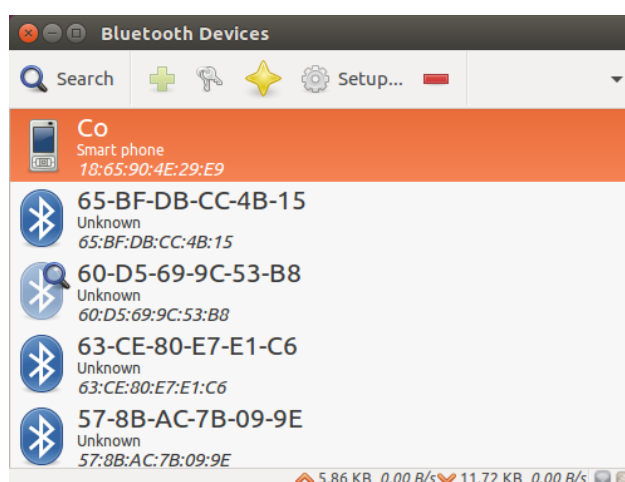
Step 2. Execute Bluetooth manager
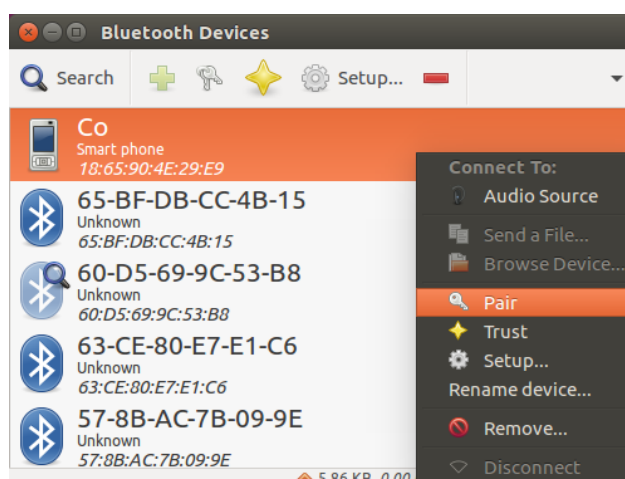
Step 3. Search Bluetooth devices (Click "Search" button)

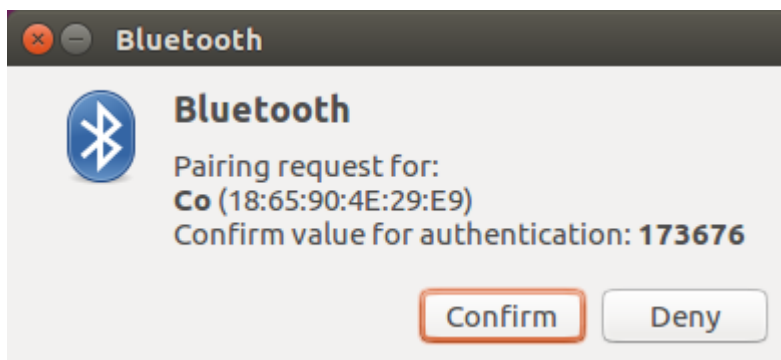**Step 4.** Choose device

Ex: Choose a smart phone device

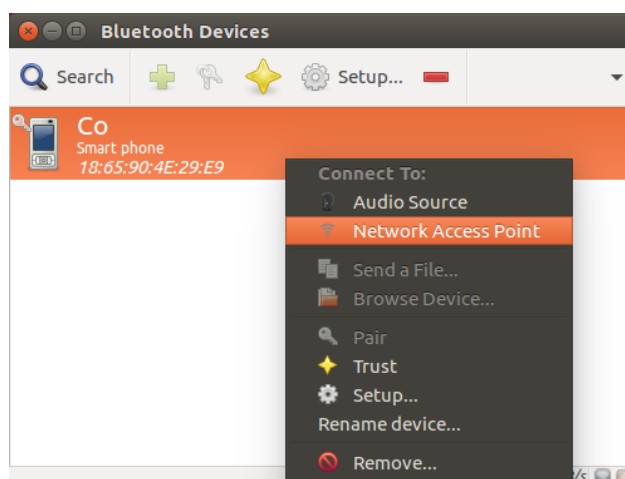**Step 5.** Right click on your mouse and pair device.
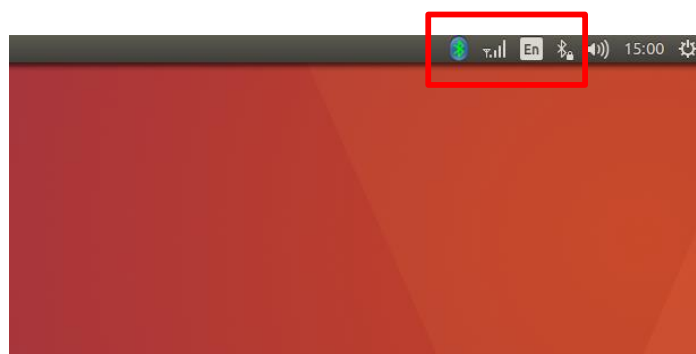
Step 6. Confirm pairing (Click "Confirm" button)
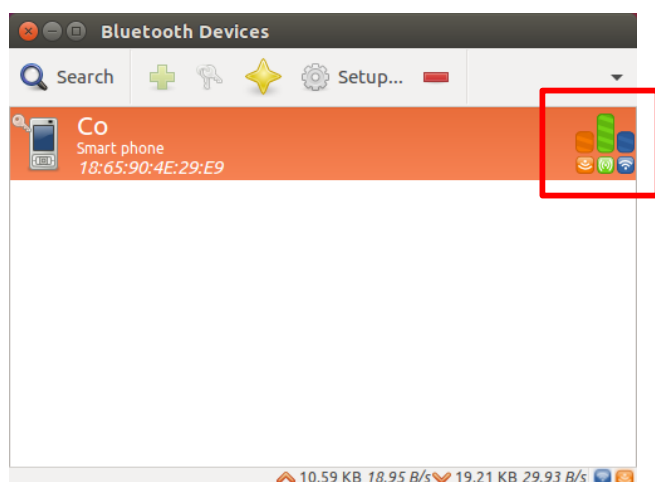

Step 7. Connect device

Ex: Connect to network access point

Step 8. Check connect status

Step 9. Test network

$ ifconfig

$ ping 8.8.8.8

```
aaeon@aaeon-UP-CHCR1: ~

aaeon@aaeon-UP-CHCR1:~$ ifconfig
bnep0     Link encap:Ethernet  HWaddr b0:f1:ec:1f:bf:b9
          inet addr:172.20.10.6  Bcast:172.20.10.15  Mask:255.255.255.240
          inet6 addr: fe80::8cce:c125:7ded:a2fa/64 Scope:Link
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:18 errors:0 dropped:0 overruns:0 frame:0
          TX packets:36 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:2418 (2.4 KB)  TX bytes:3321 (3.3 KB)

enp4s0    Link encap:Ethernet  HWaddr 00:07:32:40:b8:9b
          UP BROADCAST MULTICAST  MTU:1500  Metric:1
          RX packets:36174 errors:0 dropped:0 overruns:0 frame:0
          TX packets:4366 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:14911350 (14.9 MB)  TX bytes:279766 (279.7 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:359 errors:0 dropped:0 overruns:0 frame:0
          TX packets:359 errors:0 dropped:0 overruns:0 carrier:0
          collisions:1 txqueuelen:1
          RX bytes:27775 (27.7 KB)  TX bytes:27775 (27.7 KB)

aaeon@aaeon-UP-CHCR1:~$ 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=468 ms
64 bytes from 8.8.8.8: icmp_seq=2 ttl=44 time=77.3 ms
64 bytes from 8.8.8.8: icmp_seq=3 ttl=44 time=57.1 ms
64 bytes from 8.8.8.8: icmp_seq=4 ttl=44 time=65.1 ms
64 bytes from 8.8.8.8: icmp_seq=5 ttl=44 time=61.3 ms
64 bytes from 8.8.8.8: icmp_seq=6 ttl=44 time=73.6 ms
64 bytes from 8.8.8.8: icmp_seq=7 ttl=44 time=73.0 ms
64 bytes from 8.8.8.8: icmp_seq=8 ttl=44 time=70.6 ms
64 bytes from 8.8.8.8: icmp_seq=9 ttl=44 time=57.6 ms
64 bytes from 8.8.8.8: icmp_seq=10 ttl=44 time=67.0 ms
^C
--- 8.8.8.8 ping statistics ---
10 packets transmitted, 10 received, 0% packet loss, time 9013ms
rtt min/avg/max/mdev = 57.156/107.172/468.746/120.699 ms
aaeon@aaeon-UP-CHCR1:~$
```