Quanta LI172 Test Operation Guide

<div align="right">

Version 0.1

Apr. 23, 2014

Winn

</div>

Contents

Revision History

Version	Release Date	Description
0.1	Apr. 23, 2014	1st Test Operation Guide Release

1. Introduction

This document gives the guidance on how to test Quanta devices.

2. Test Environment

Quanta LI172 device supports Windows XP, Windows Vista (32 bit), and Windows 7 (32 bit) operating system. It's recommended to install Quanta LI172 software in Windows 7 32-bit OS.
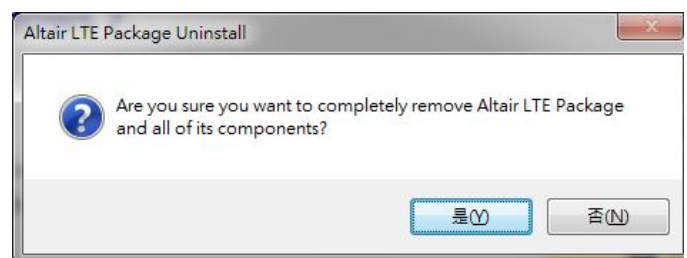
2.1. Uninstallation

In order to install latest version of software, uninstallation of previous version is required, including drivers, connection manager, and corresponding software tools.

2.1.1. Windows 7 (32 bit)

1. Please click

    Start→Programs→Altair Semiconductor→LTE ALT3100→Uninstall
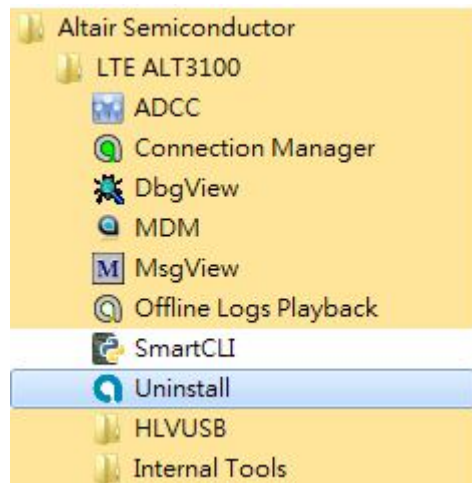
2. Please click "Yes (Y)" button.

3. Please click "Uninstall" button.

4. Please wait a few seconds to complete uninstallation.
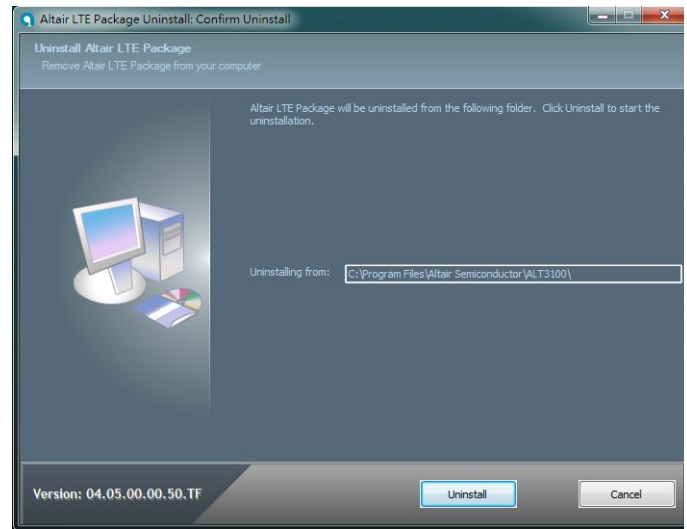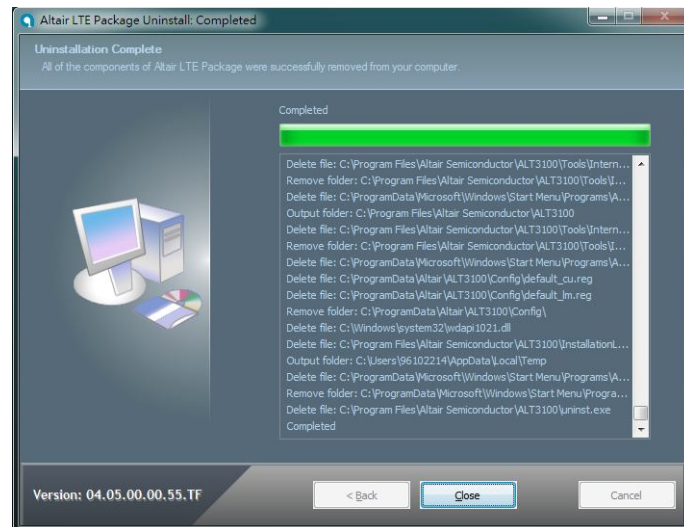

5. Please click "Close" button.

6. Please click "OK" button.

7. Please click

"Start→Programs→Altair Semiconductor→LTE ALT3100→HLVUSB→Uninstall".
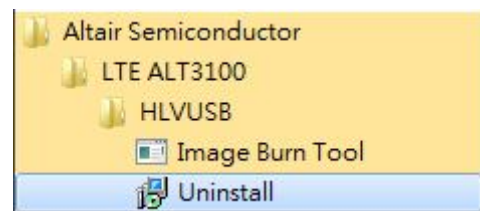
8. Please click "YES (Y)" button.

9. Please reboot your computer after you have completed the uninstallation.

2.2. Installation of drivers

2.2.1. Windows 7 (32 bit)

1. Please double clicks on "Altair(Quanta) Tool Package v1.0.0.exe" to start installation.

2. Please click "Next >" button.
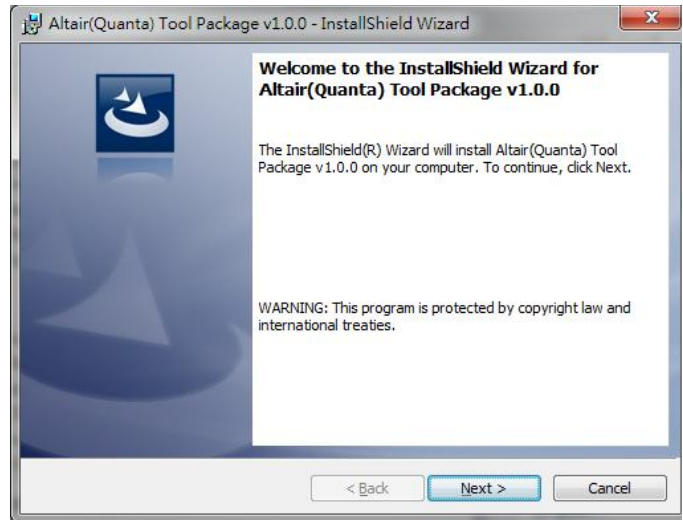
3. Please click "Install" button.

4. It will take a few minutes to complete installation.
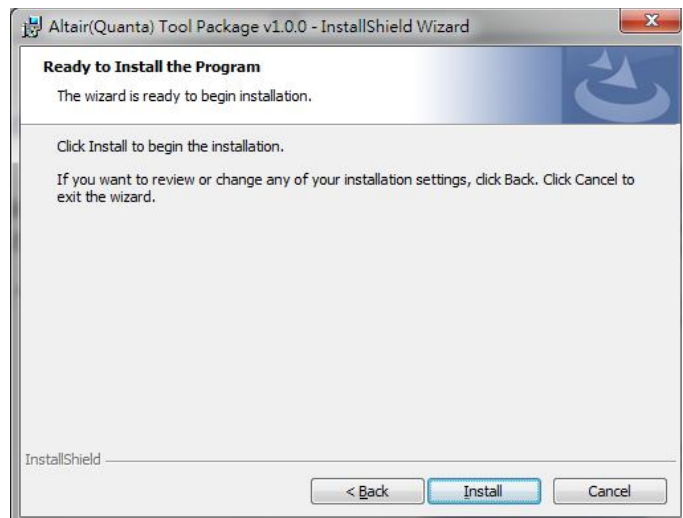
5. Please click "Next >" button.
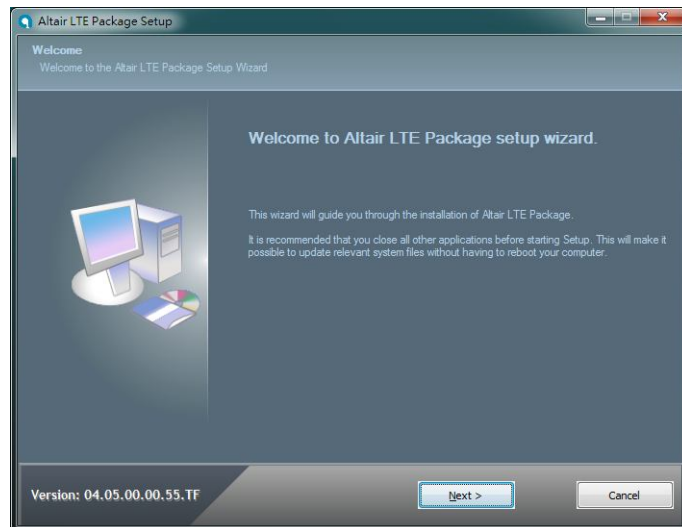
6. Please check "I accept the terms in the license agreement".

7. Please click "Next >" button.
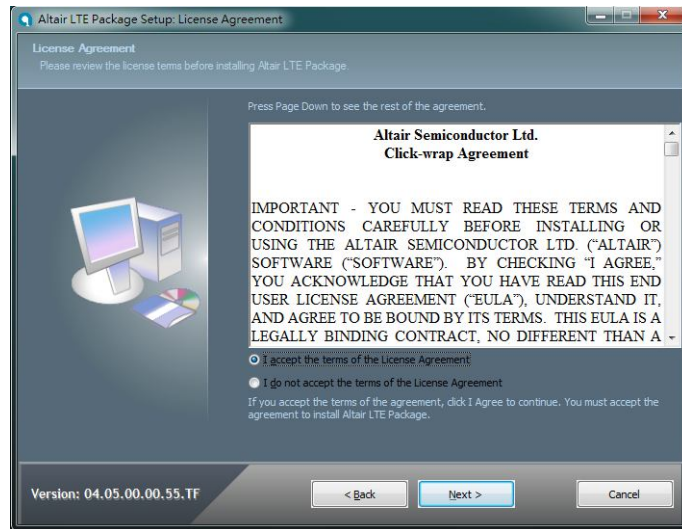
8. Please select "Full Installation" type.

9. Please click "Next >" button.

10. Please click "Next >" button.
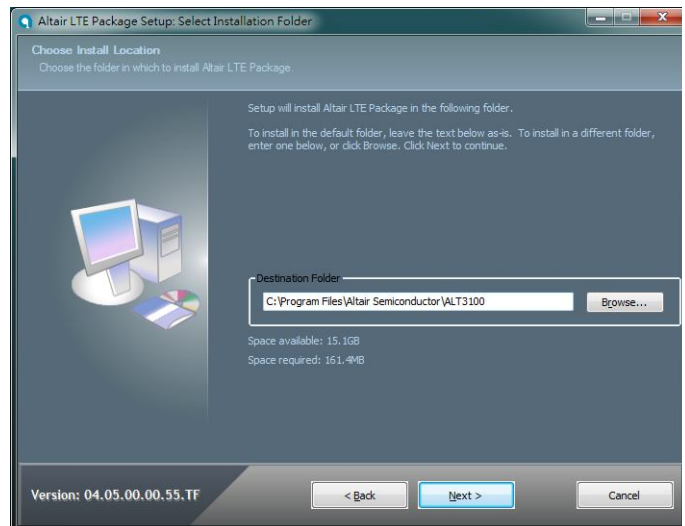
11. Please click "Install" button.
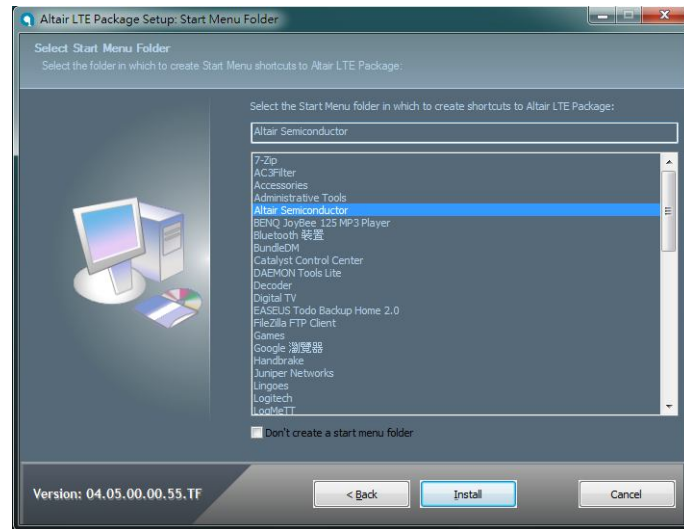
12. Please click "Next >" button.
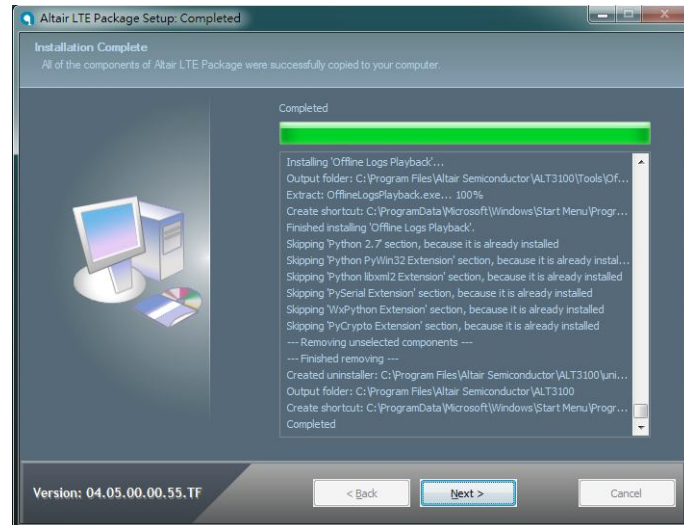
13. Please click "Finish" button.
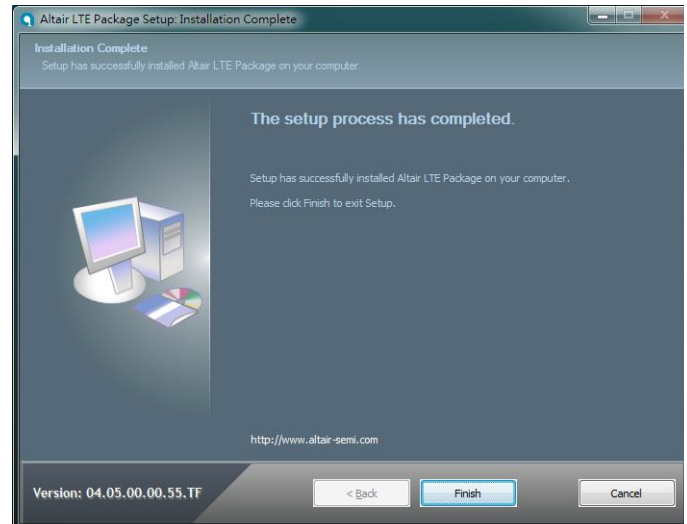
14. Please click "Next >" button.

15. Please check "I accept the terms in the license agreement".

16. Please click "Next >" button.
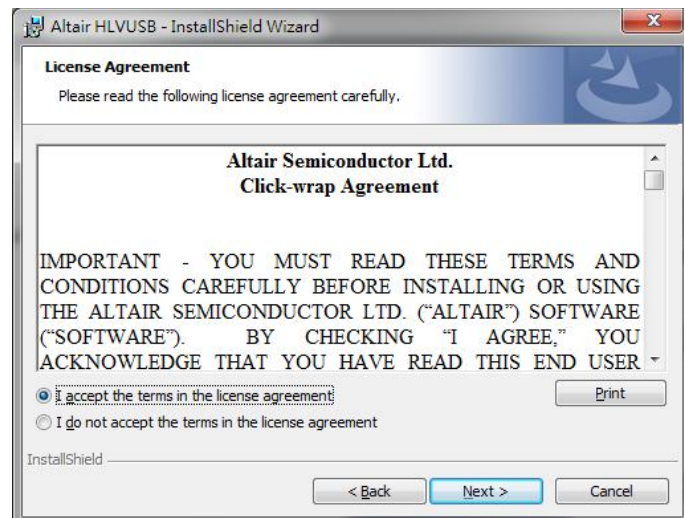
17. Please click "Install" button.
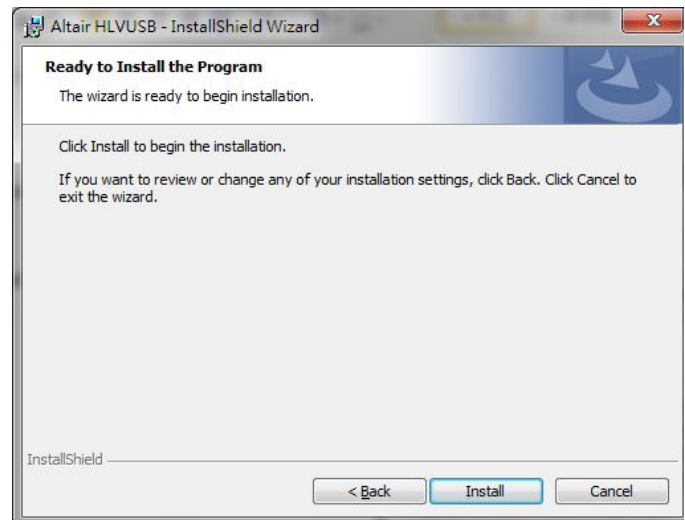
18. Please click "Continue to install driver anyway (I)".

19. Please click "Continue to install driver anyway (I)".

20. Please click "Continue to install driver anyway (I)".

21. Please click "Continue to install driver anyway (I)".

22. Please un-check "Launch "Hostless Image Burn"".

23. Please click "Finish" button to complete driver installation.
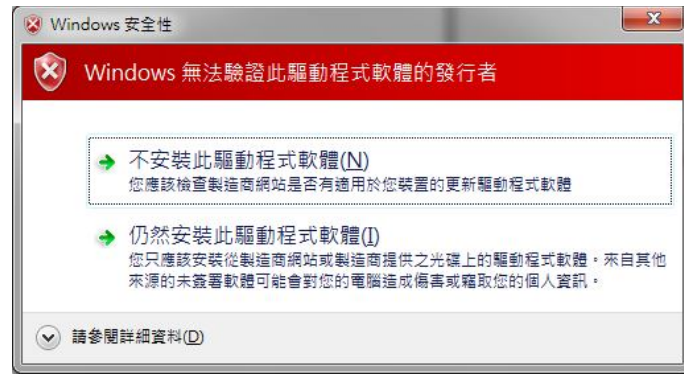
24. Please click "OK" button.
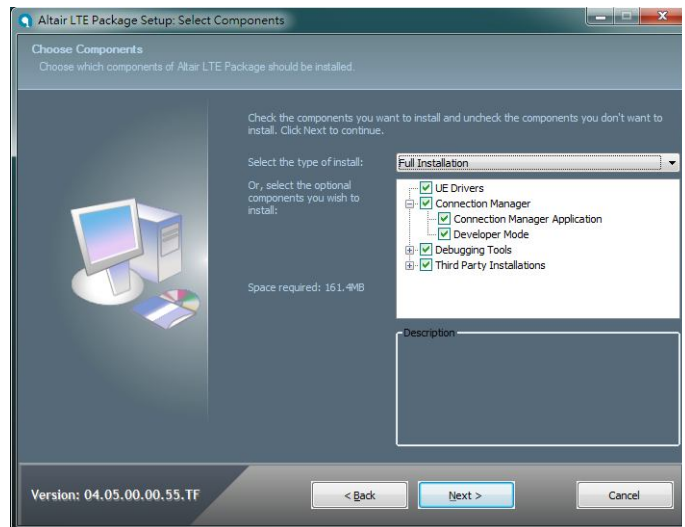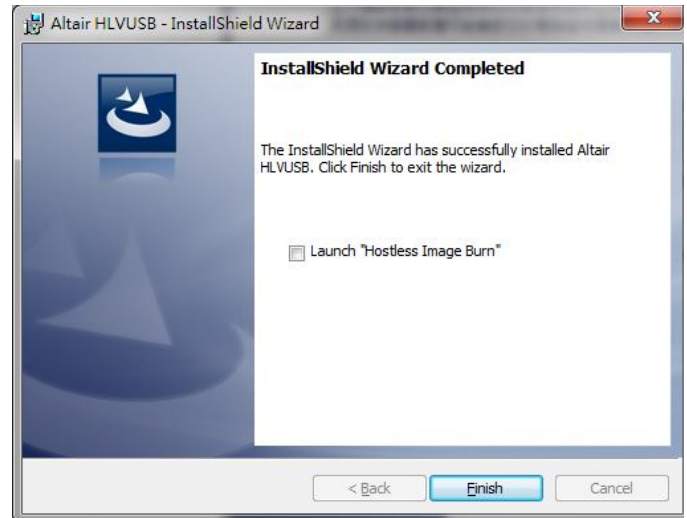
25. Please click "Finish" button.
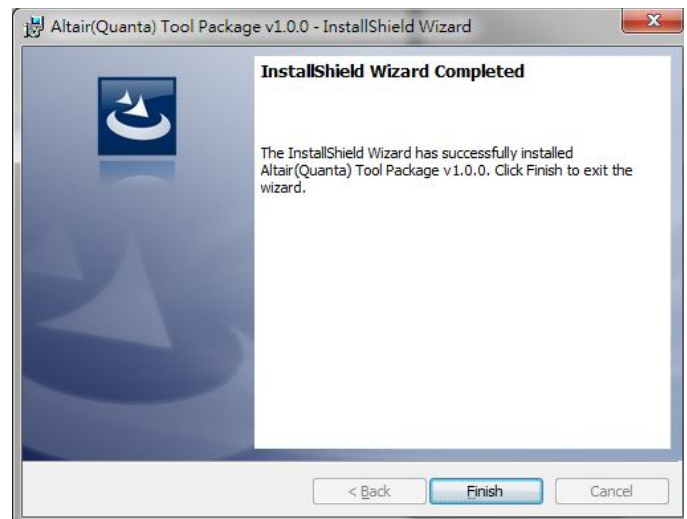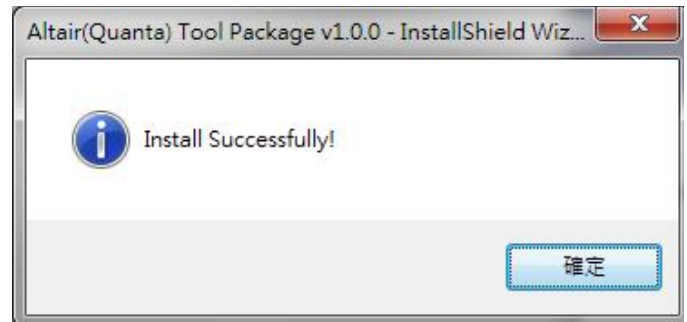
26. Please plug in Quanta device and please be patient and wait a few minutes to complete driver installation.

27. Please click "Close (C)" button.

28. Please reset Quanta device (take out and plug in the usb cable), it will take about 50 seconds for Quanta embedded system to be ready.

驅動程式軟體安裝

裝置驅動程式軟體安裝不成功

Gadget Serial (COM111)	❌ 裝置已拔除
Multifunction Gadget with multiple configurations	✔ 已可使用
Remote NDIS based Internet Sharing Device #4	✔ 已可使用
Gadget Serial (COM112)	✔ 已可使用

如何處理裝置未正確安裝的問題?

關閉(C)

3. Operation of Connection Manager

3.1. Windows 7 (32 bit)

3.1.1. Basic Configuration

1. In order to get information from our embedded connection manager, it's mandatory to configure as the following instructions.

2. Please click

   Start→Programs→Altair Semiconductor→LTE ALT3100→Connection Manager.
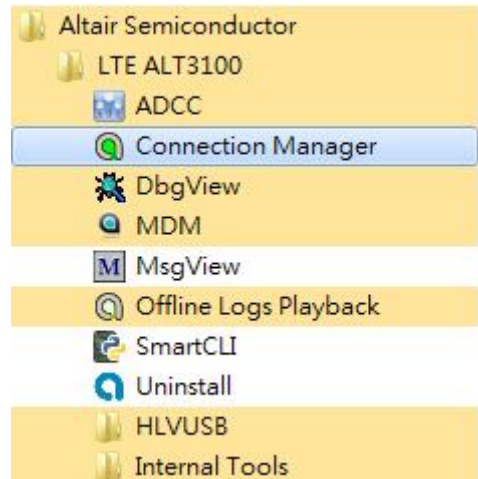
3. Please right click on top of connection manager and select

   Options→Device Location→Technician PC.
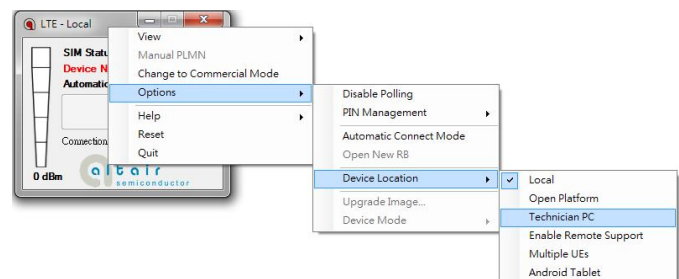
4. Connection manager will pop out window for you to enter IP and port.

5. Please enter IP address "10.0.0.1". **(see NOTE)**

6. Please click "OK" button.

NOTE: If you have successfully installed Quanta LI172 device, the embedded module will generate DHCP server and its IP address is "10.0.0.1". Meanwhile, our Quanta device will get a DHCP address "10.0.0.133" automatically.

7. Please check if connection manager shows device information correctly and the red Altair logo turns into yellow color.
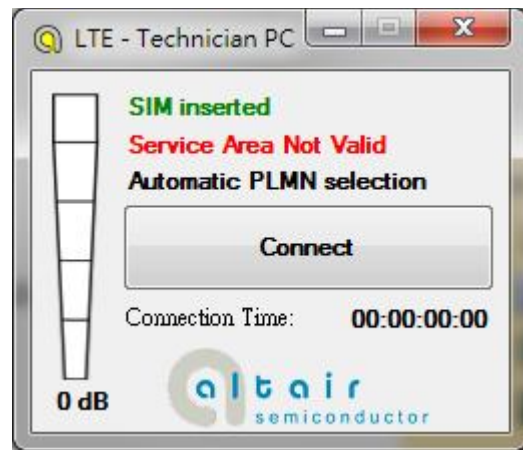
3.1.2. Extended Information

1. Please right click on top of connection manager and select

    View→Extended Information.

2. Connection manager will pop out "Extended Information" window.

3. It's NOT mandatory to set up this "Configuration" tab, connection manager will scan all the supported frequency bands and try to connect to the network.
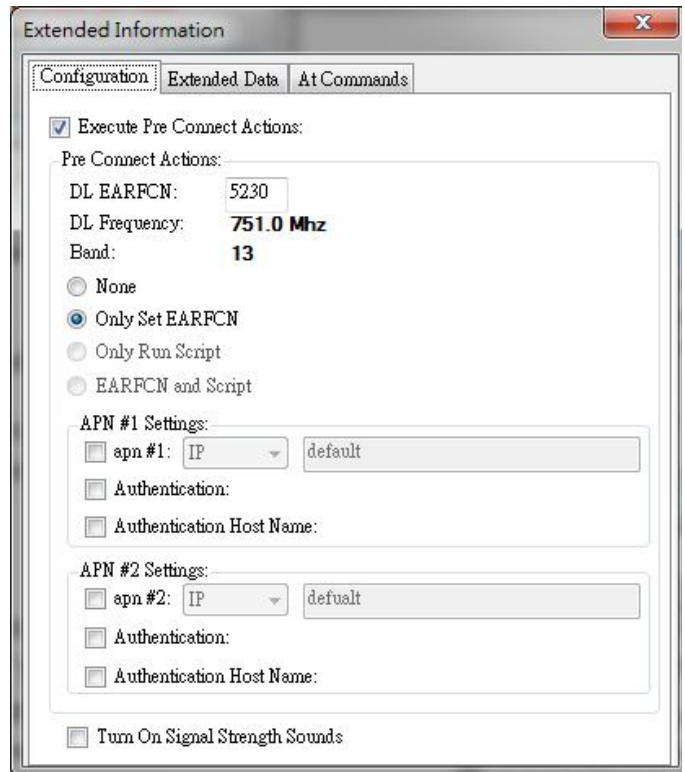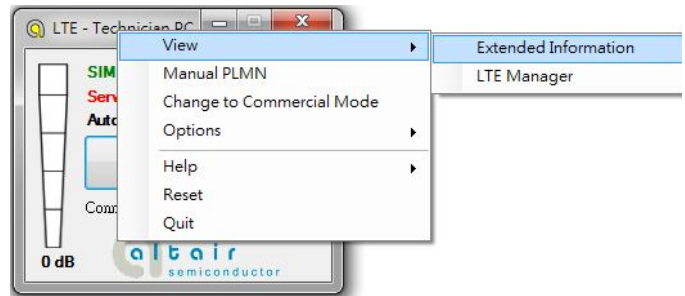
4. The "Extended Data" tab shows information of Connection Status, APN, Transmission mode, Bandwidth, DL EARFCN, Band, PLMN and Physical Cell ID and so on.
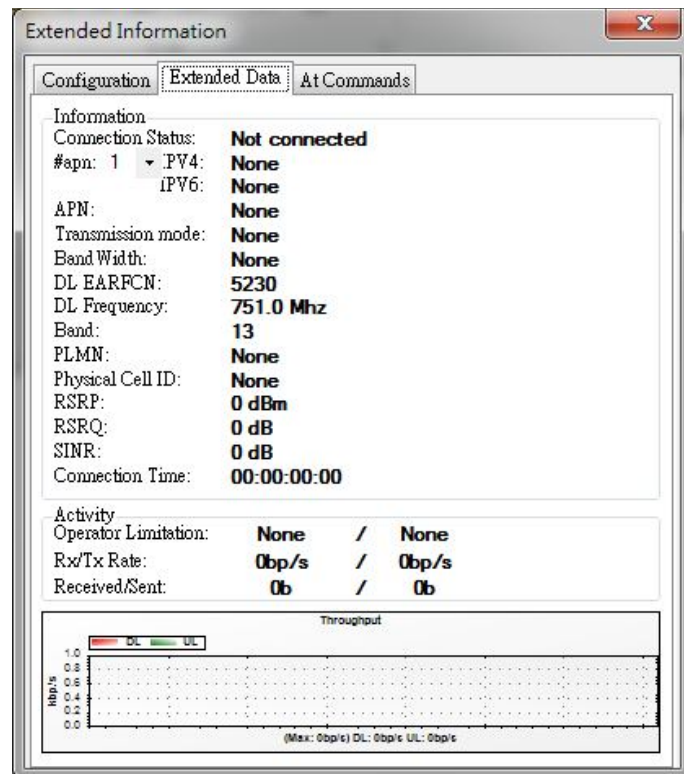
5. The "At Commands" tab will allow you to send AT Commands sets to configure supported functional parameters or to get supported information you want.
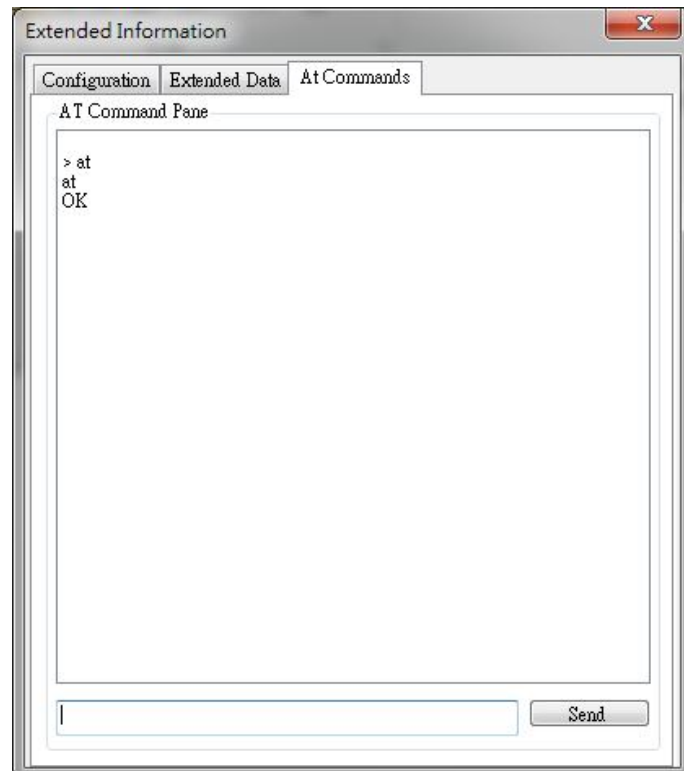
3.1.3. LTE Manager

1. Please right click on top of connection manager and select

   View→LTE Manager.

2. Connection manager will pop out a "Supervisor Password" window.

3. Please input "123456" and click "OK" button.

4. It will pop out a "LTE Manager" window.

5. LTE Manager shows information about GeneralInfo, LogCreator, Dispatcher, Relay, and GPS Tool.
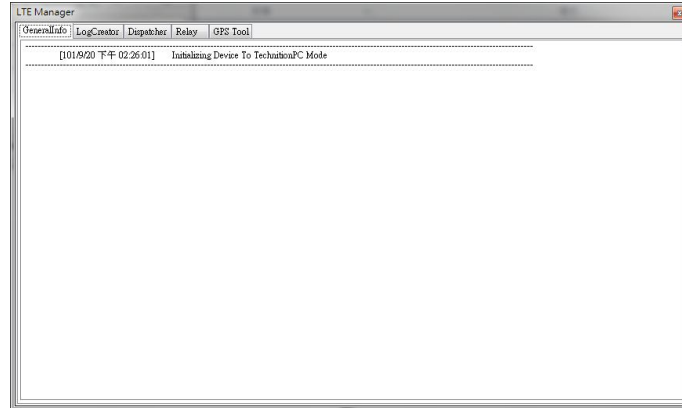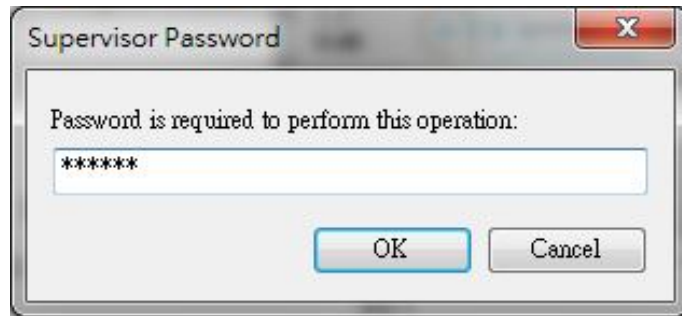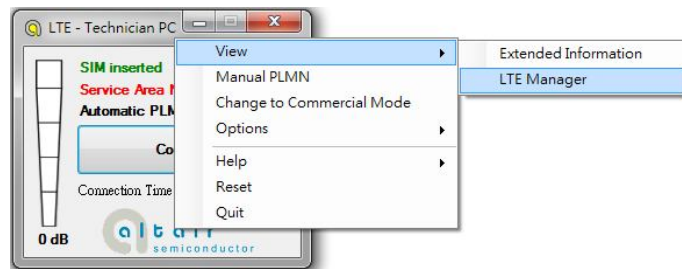
3.1.4. Manual PLMN

1. Please right click on top of connection manager and select

   Manual PLMN.

2. Connection manager will pop out a "Plmn Search" window.
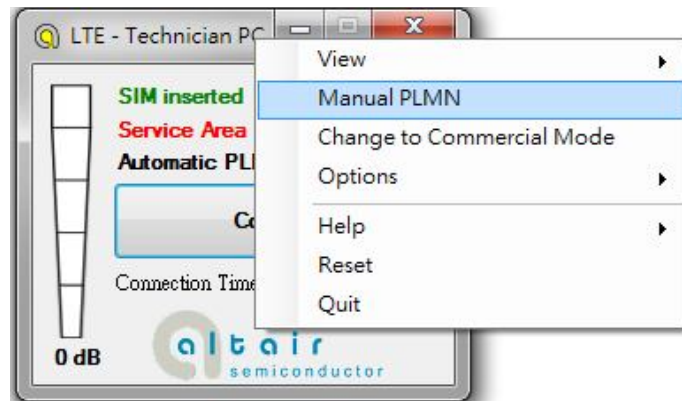
3. It's not necessary for you to select PLMN manually if you want to connect to network.
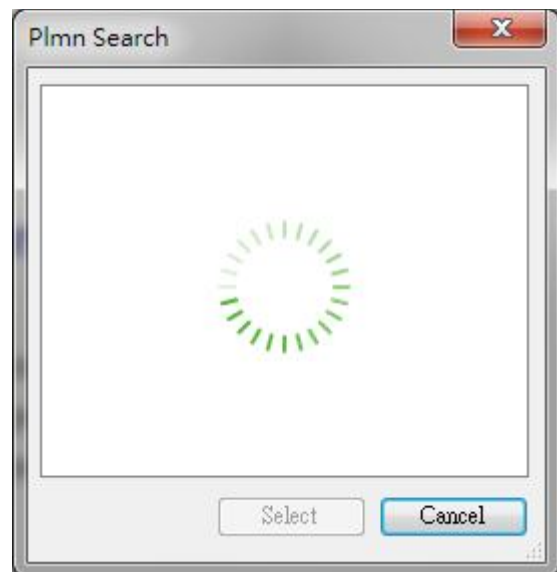
3.1.5. Change to Commercial Mode

1. Please right click on top of connection manager and select

   "Change to Commercial Mode".

2. Connection manager will pop out a "User Mode Changed" dialog.
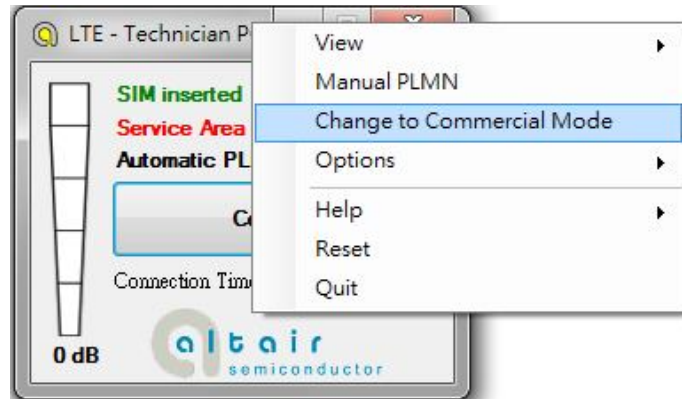
3. Please click "YES (Y)" button.
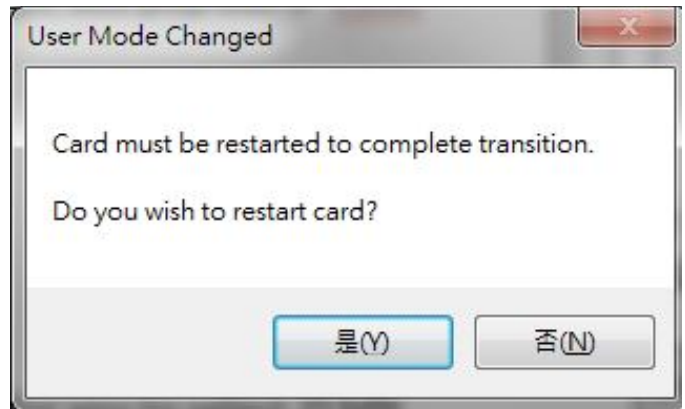
4. Please wait a few seconds for device to be ready.

3.1.6. Disable Polling

1. Please right click on top of connection manager and select

    "Options→Disable Polling".

2. Connection manager will stop searching for available network.
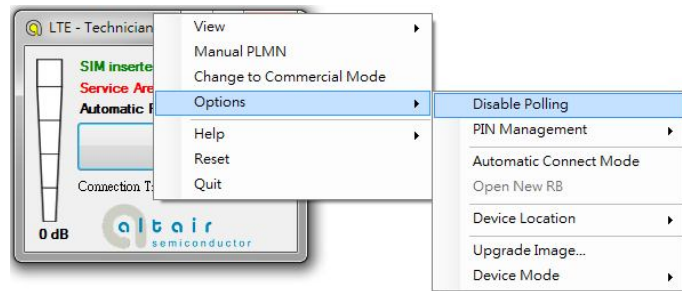
3.1.7. PIN Management

1. Please right click on top of connection manager and select

   "Options→PIN Management→PIN Information" to get PIN information.

2. Connection manager will pop out "PIN Information" window.

3. Please click "OK" button.
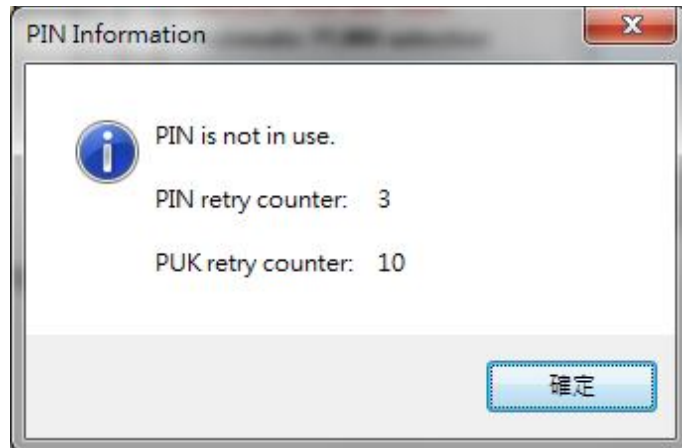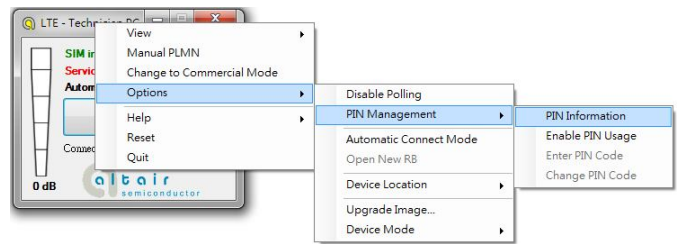
4. You also can enable PIN usage by right click on top of connection manager and select

   "Options→PIN Management→Enable PIN Usage".

5. Please input correct PIN code and click "OK" button.
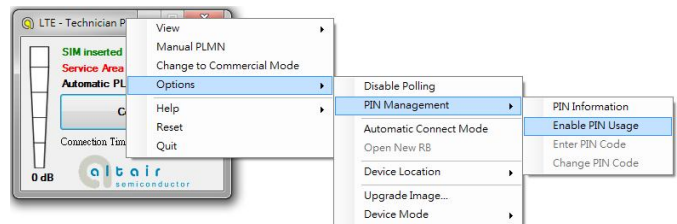
3.1.8. Automatic Connect Mode

1. Please right click on top of connection manager and select

    "Options→Automatic Connect Mode" to switch connection manager from manual connect mode to automatic connect mode.

2. Connection manager will automatically connect to network.
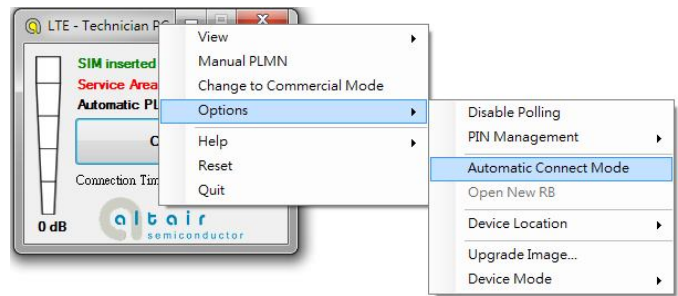
3.1.9. Device Location

1. For Quanta hostless device, please use "Technician PC" only.

2. Please right click on top of connection manager and select

    "Options→Device Location→Technician PC".

3. Please set IP address to "10.0.0.1" and click "OK" button.

4. Connection manager will get information from Quanta hostless device.
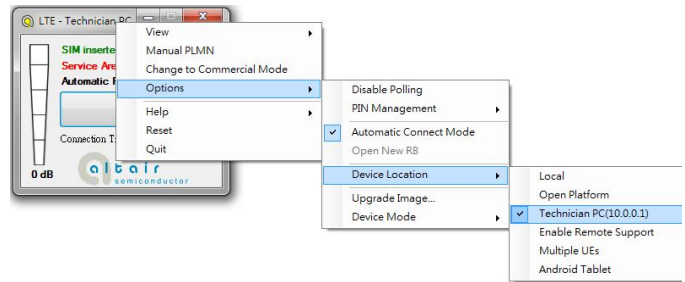
3.1.10. Help

1. Please right click on top of connection manager and select

   "Help→About".

2. Connection manager will pop out a "LTE Card Info" message box.
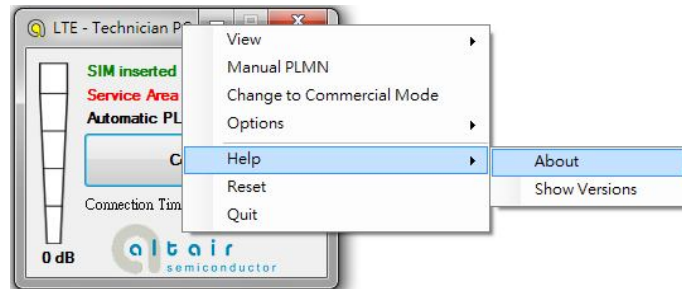
3. It will show information of IMSI number, IMEI number, Supported Bands, Current firmware version, and System package version.

4. Please click "OK" button.
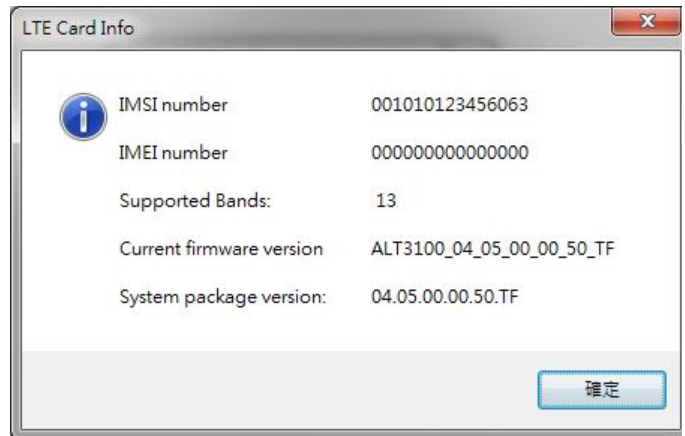
5. Please right click on top of connection manager and select

   "Help→Show Versions".

6. Connection manager will pop out a "Version info" message box.
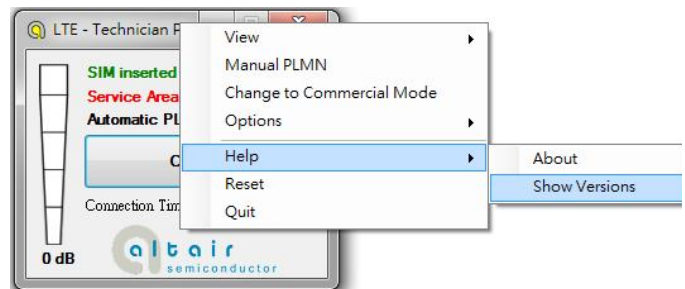
7. It will show information of System release version, SWInfra release version, and Current firmware version.

8. Please click "OK" button.
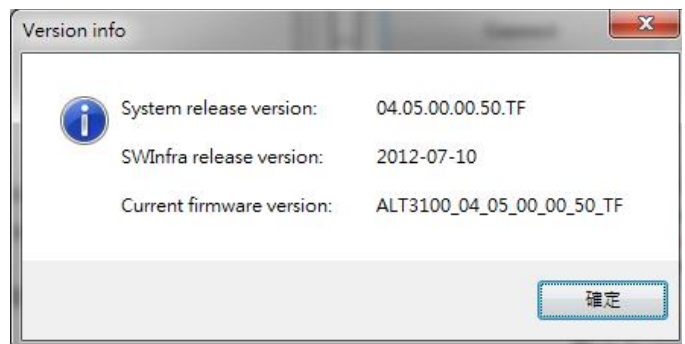
3.1.11. Reset

1. Please right click on top of connection manager and select

   "Reset".

2. Connection manager will pop out a "" message box.
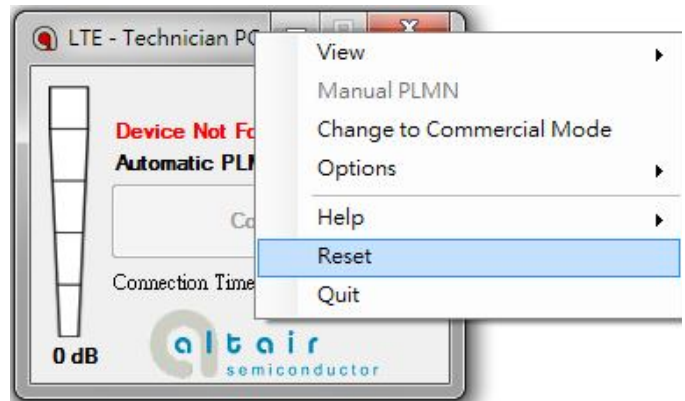
4. Diagnostic Tool

4.1. MsgView

1. Please open MsgView by clicking

   Start→Programs→Altair Semiconductor→LTE ALT3100→MsgView.

2. Please click "Start Logging" button to start message logging.

3. Please plug in Quanta device and wait a few seconds for device to be ready.

4. Once you find an issue, please stop testing and data logging, please save log file and send it to Quanta.
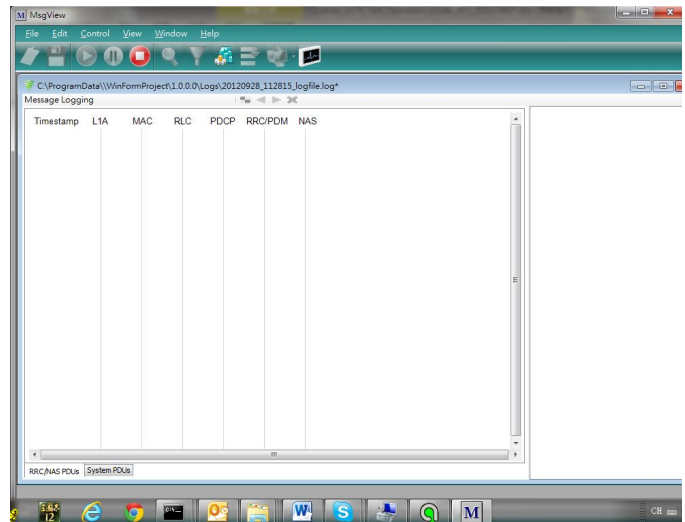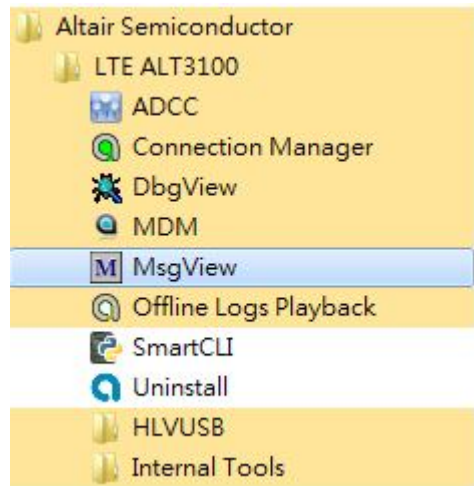
4.2. DbgView

1. Please open DbgView by clicking

   Start→Programs→Altair Semiconductor→LTE ALT3100→DbgView.

2. Please plug in Quanta device and wait a few seconds for device to be ready, and the DbgView will start data logging.

3. Please click "Save" button to save log to a file.

4. Once you find any issue, please stop testing and data logging, and please send this log file to Quanta.
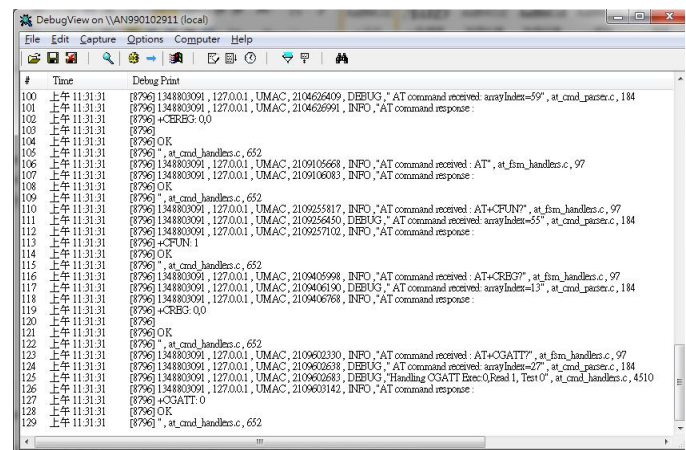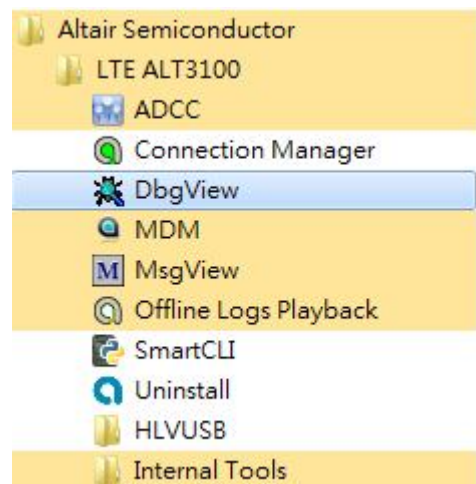
5. Firmware Upgrade

5.1. Image Burn Tool

1. Please click

    Start➔Programs➔Altair Semiconductor➔LTE ALT3100➔HLVUSB➔Image Burn Tool.
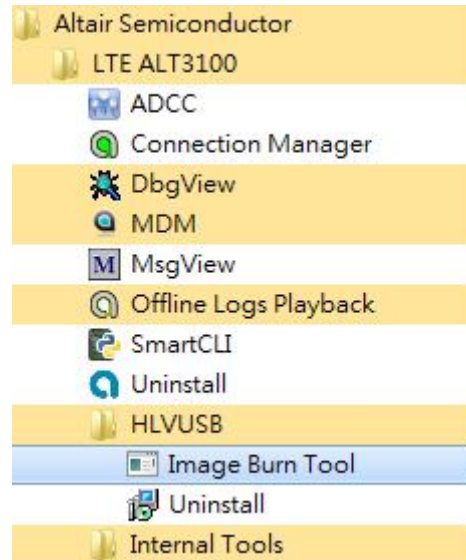
2. Please check "U-Boot Env".

3. Please check "U-Boot".

4. Please check "Linux".

5. Please check "File System".

6. Please check "NVM".

7. Please click "Start" button to start firmware upgrade process.
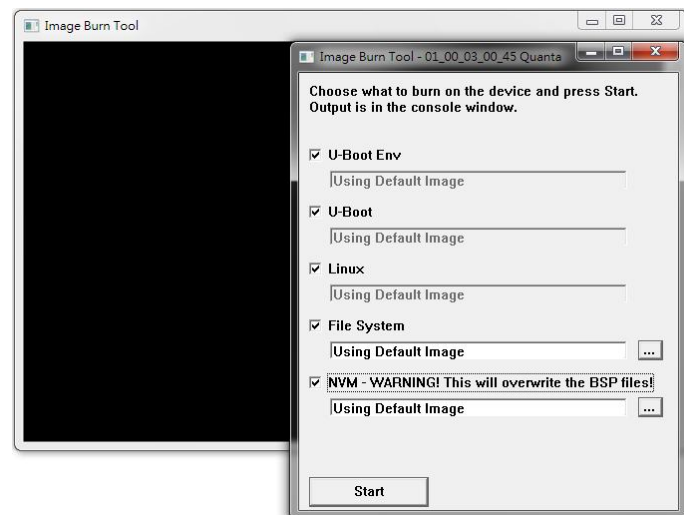
8. Please click "YES (Y)" button.
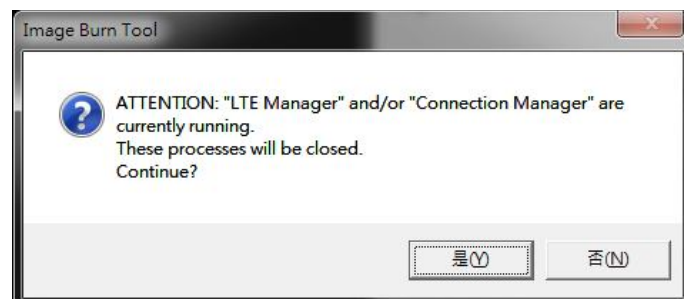
9. It will show message "Waiting for device reset …".

10. The easiest way to reset device is to power cycle device (i.e. to take out and plug in device).

11. If you are doing remote firmware upgrade process, please follow the following procedure to reset device.
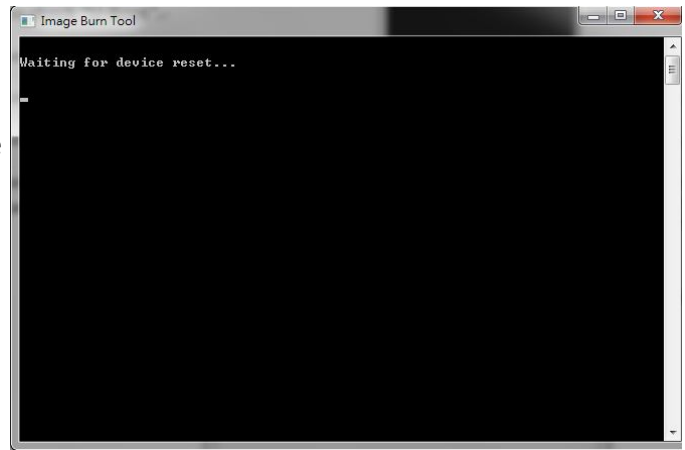
12. Please open device manager and find network interface of Quanta device "Remote NDIS based Internet Sharing Device #".

13. Please disable this network interface by right click on it.

14. Please enable this device again.
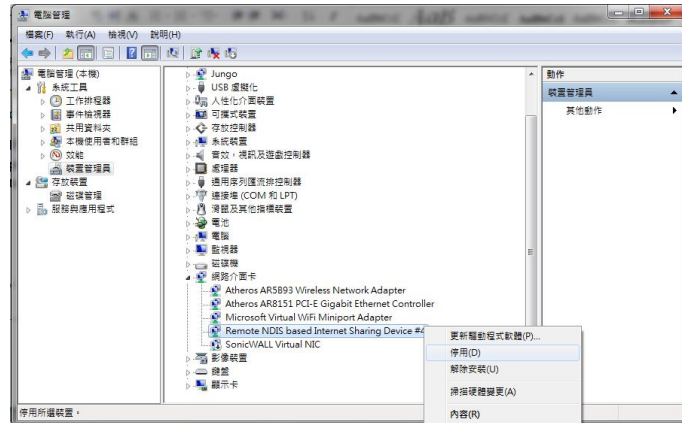
15. Please find your Gadget Serial COM port number (for example, COM112).
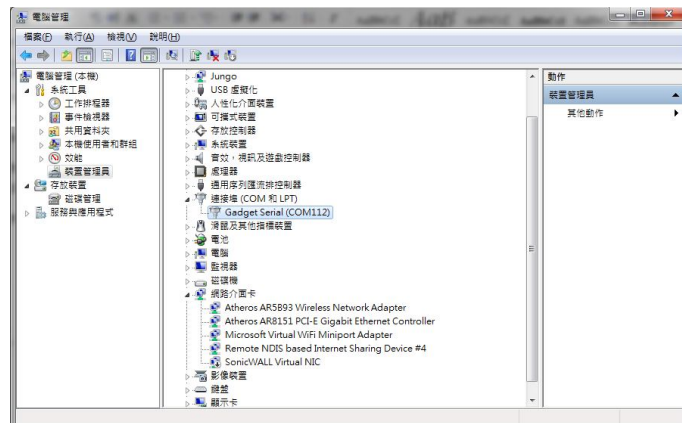
16. Please open COM112 COM port (for example, open it by putty.exe)

17. Please select "Serial" as your "Connection type".

18. Please fill in "COM112" as your "Serial line".

19. Please click "Open" button to set up connection.
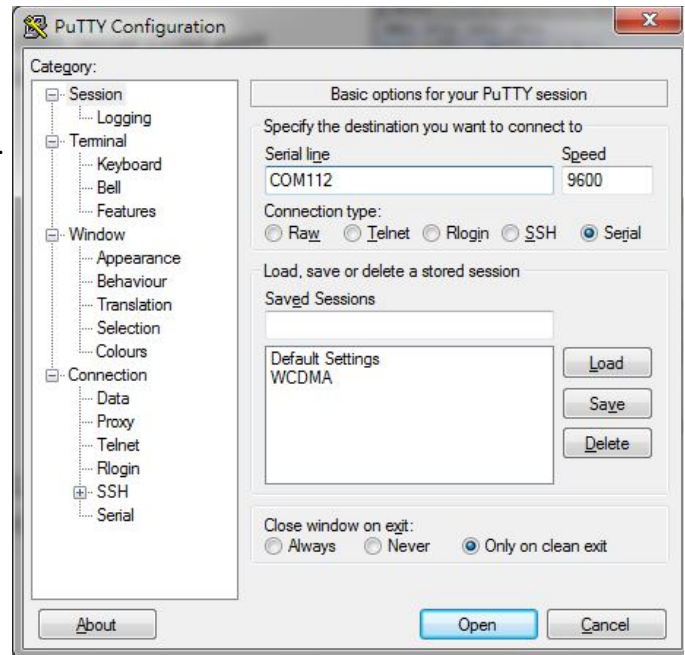
20. Please enter "at".

21. Please check if it responds with "OK".

22. Please enter "atz" AT command to reboot Quanta device.
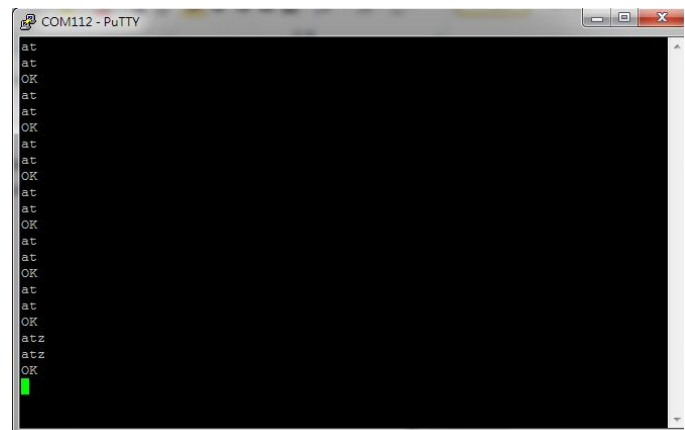
23. After Quanta device reboots successfully, the "Image Burn Tool" will start to do firmware upgrade process.

24. Please make sure you Quanta device has finished the firmware upgrade process with "---- Finished ----".

25. Please close "Image Burn Tool".

26. Please take out and plug in Quanta device.
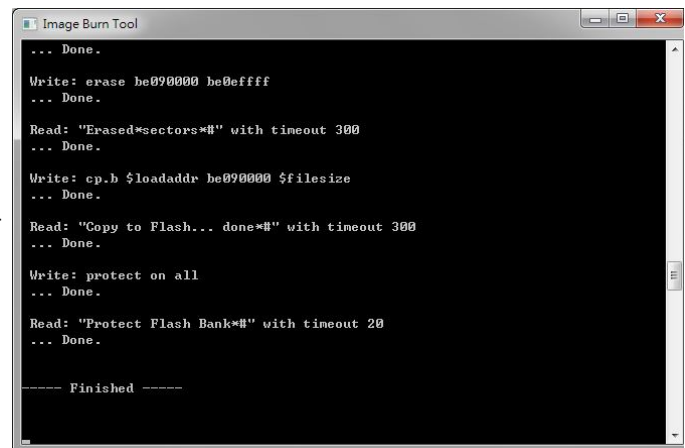
27. In order to recover the original calibration data, please use ADCC tool.

28. After the device reboot successfully, please open "Altair Device Control Center" by clicking, Start→Programs→Altair Semiconductor→LTE ALT3100→ADCC.

29. Please click "Open Connection" and wait for a few minutes.

30. Please click "BSP DB" tab.
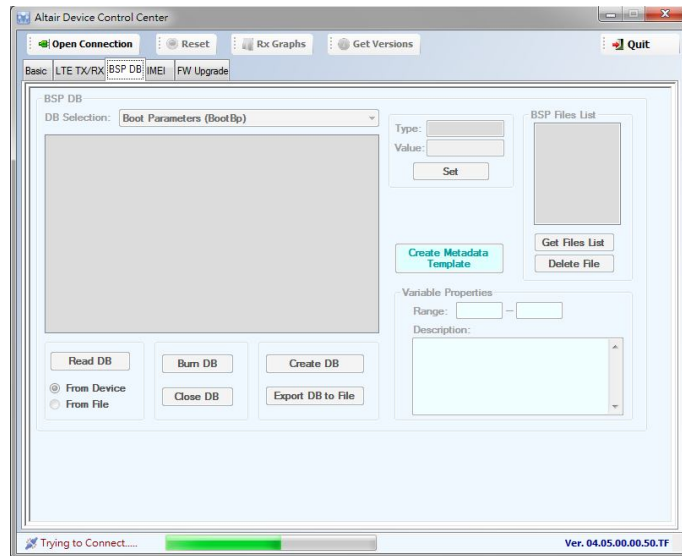
31. Please select "Boot Parameters (Boot Bp).

32. Please select "From File".

33. Please click Read DB and find the source DB and click "Open" button to read it.
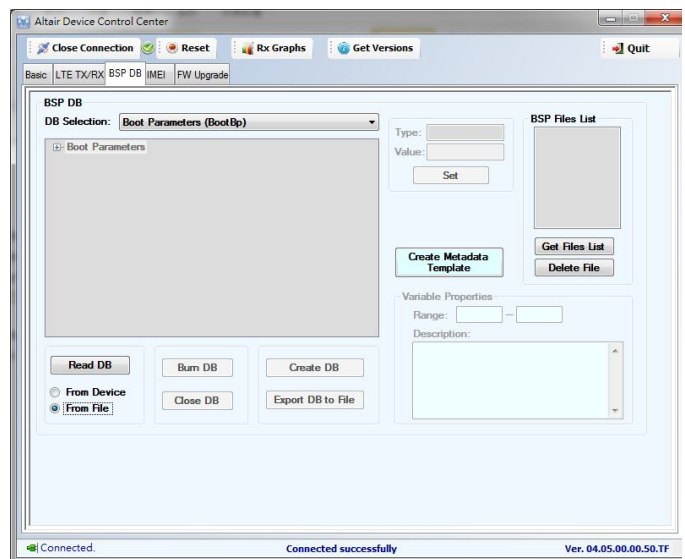
34. Please click "Burn DB" button to start burning.

35. Please repeat this procedure to burn the other DBs.
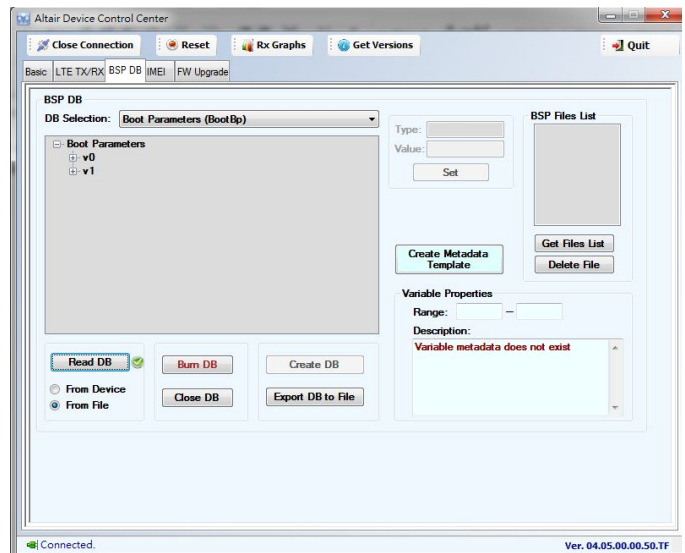
6. OMA-DM

6.1. Mandatory Configuration

1. **It's necessary to configure Quanta device with the following parameters before you start OMA-DM testing**.

2. **It's mandatory to configure Quanta device with the following parameters if your device is upgraded to new firmware.**

3. **Please make sure that the device is not connected to LTE network (i.e. offline from eNodeB) before you do any configuration**.

4. Please open connection manager.

5. Please enter the following AT commands sequentially (Please refer section 3.1.2).

   AT%SETCFG="enable_test_mode","0"

   AT%SETCFG="vzw_mode","1"

   AT%SETACFG=ecm.Mode.VzwMode,true

   AT%SETACFG=ecm.Mode.VzwImsTestMode,false

6. Please check if it returns "OK".

7. Please confirm your configuration by entering the following AT commands sequentially.

   AT%GETCFG="enable_test_mode"

   (it shall be "0")

   AT%GETCFG="vzw_mode"

   (it shall be "1")

   AT%GETACFG=ecm.Mode.VzwMode

   (it shall be "true")
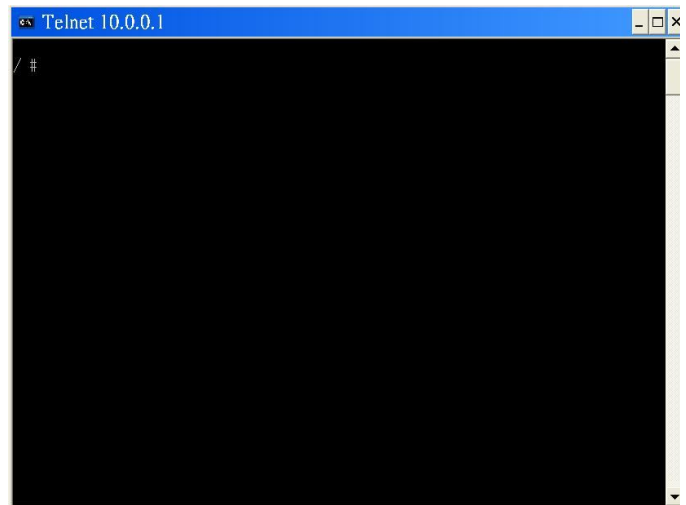
   AT%GETACFG=ecm.Mode.VzwImsTestMode

   (it shall be "false")

Extended Information

Configuration | Extended Data | At Commands

AT Command Pane

> AT%SETCFG="enable_test_mode","0"
OK

> AT%SETCFG="vzw_mode","1"
OK

> AT%SETACFG=ecm.Mode.VzwMode,true
OK

> AT%SETACFG=ecm.Mode.VzwImsTestMode,false
OK

> AT%GETCFG="enable_test_mode"
0
OK

> AT%GETCFG="vzw_mode"
1
OK

> AT%GETACFG=ecm.Mode.VzwMode
true
OK

> AT%GETACFG=ecm.Mode.VzwImsTestMode
false
OK

Send
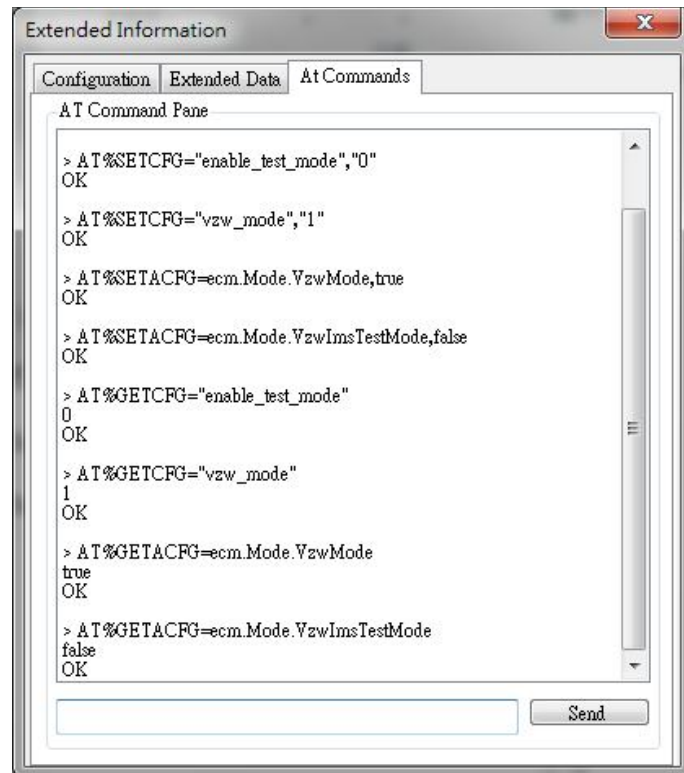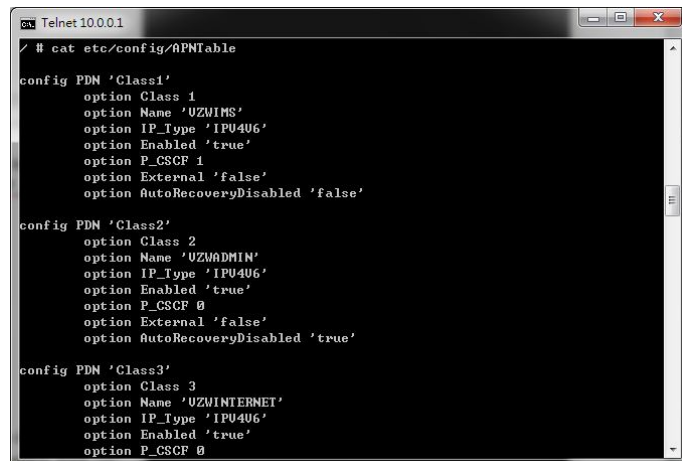
6.2. How to Enable/Disable APN

1. Please make sure your device has disconnected from network.

2. If you would like to edit APN table, it's necessary to telnet to embedded connection manager. (Please refer to section 3.1.1)

3. Please open command console.

4. Please key in "telnet 10.0.0.1" and press enter.

5. If you failed to telnet 10.0.0.1, please manually set your IP address to 10.0.0.133.

6. After successfully telnet to 10.0.0.1, please key in "**cat /etc/config/APNTable**" and press enter.

7. There are 4 APNs in table, and you can see its configurations, including NAME, IP_Type, P_CSCF and so on.

8. For example, if you would like to disable "VZWIMS" APN, please use the editor tool "vi" to edit this APNTable.

9. Therefore, please key in

   "**vi /etc/config/APNTable**" and press enter.

10. Please move cursor to

    Option Enabled "**true**"

11. Please modify this value to "**false**".

    NOTE: If you are not familiar with vi commands, please refer to section 6.6 for more information.

12. Please enter "**Shift+z**" twice to save file.

13. Please key in

    "**cat /etc/config/APNTable**" and press enter.
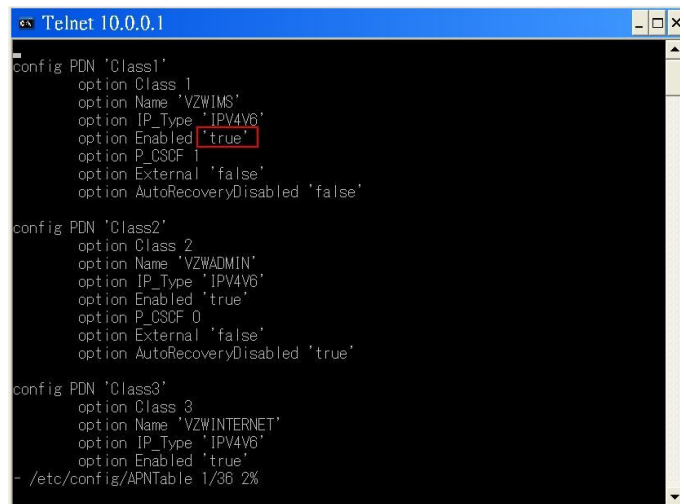
14. Please check if "VZWIMS" APN is disabled.

    Option Enabled 'false'

15. Please enter "**reboot**" command to reboot device in order to take effect of the configuration.

16. You can also follow above procedures to enable/disable other APNs.

    NOTE: Please make sure to reboot device in order to take effect of your setting.

6.3. How to Modify OMA-DM Server URL

1. Please make sure your device has disconnected from network.

2. If you would like to edit OMA-DM server URL, it's necessary to telnet to embedded connection manager. (Please refer to section 3.1.1)

3. Please open command console.

4. Please key in "**telnet 10.0.0.1**" and press enter.

5. If you failed to telnet 10.0.0.1, please manually set your IP address to 10.0.0.133.

6. Please key in

   "**vi etc/config/service**" and press enter.

7. Please modify the server URL to

"ivzwmdmii.iot.motive.com"

8. Please enter "**Shift+z**" twice to save file.

9. Please key in "**cat /etc/config/service**" and check if the server URL is set up correctly.

10. Please key in

    "**vi etc/config/vdmc/tree-motive.xml**"

    and press enter.

11. Please key in "**/https**" to search the server URL.

12. Please modify the server URL to

https://ivzwmdmii.iot.motive.com/southbound-connector/dm

13. Please also check if port number is "**443**".

14. Please enter "**Shift+z**" twice to save file.

6.4. How to Online Enable/Disable Internet APN

1. Please check if your device has connected to LTE network successfully.

2. If you would like to online enable/disable "INTERNET" APN (see NOTE), it's necessary to enter specific AT command.

   NOTE: Online enable/disable "INTERNET" APN means it's not mandatory to reboot device to take effect of "INTERNET" APN. Please note that this method is applicable to "INTERNET" APN only, and this configuration will be lost after device reboots.
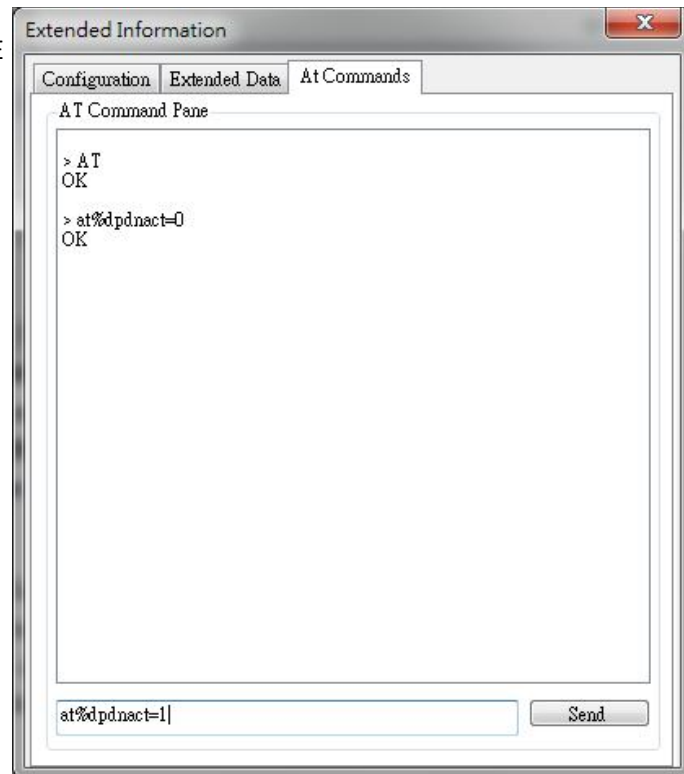
3. If you enter "**at%dpdnact=0**" to disable "INTERNET" APN, the LTE connection will be lost. On the contrary, if you enter "**at%dpdnact=1**" to enable "INTERNET" APN, device will reconnect to LTE network.

6.5. How to Enable/Disable OMA-DM log

1. Please make sure your device has disconnected from network.

2. If you would like to enable/disable OMA-DM log, it's necessary to telnet to embedded connection manager. (Please refer to section 3.1.1)

3. Please open command console.

4. Please key in "**telnet 10.0.0.1**" and press enter.

5. If you failed to telnet 10.0.0.1, please manually set your IP address to 10.0.0.133.

6. Please key in

   "**vi etc/config/service**" and press enter.

7. Please modify the value of DebugLevel to "**debug**".

8. Please enter "**Shift+z**" twice to save file.

9. Please enter "**reboot**" command to reboot device.

10. Please enter "**cat /tmp/vdm.log**" and check OMA-DM logs.

6.6. How to Use VI editor

Please google search "vi manual" or by clicking below URL directly.
http://glaciated.org/vi/

FCC Regulations:

●This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

●This device has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiated radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation if this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

-Reorient or relocate the receiving antenna.
-Increase the separation between the equipment and receiver.
-Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
-Consult the dealer or an experienced radio/TV technician for help.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

▶ RF Exposure Information

This Modular Approval is limited to OEM installation for mobile and fixed applications only. The antenna installation and operating configurations of this transmitter, including any applicable source-based time-averaging duty factor, antenna gain and cable loss must satisfy MPE categorical Exclusion Requirements of §2.1091.

The antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons, must not be collocated or operating in conjunction with any other antenna or transmitter, except in accordance with FCC multi-transmitter product procedures.

The end user has no manual instructions to remove or install the device and a separate approval is required for all other operating configurations, including portable configurations with respect to 2.1093 and different antenna configurations.

Maximum antenna gains allowed for use with this device are 3.82 dBi for band 13 and 5.82 dBi for band 4.
When the module is installed in the host device, the FCC ID label must be visible through a window on the final device or it must be visible when an access panel, door or cover is easily re-moved. If not, a second label must be placed on the outside of the final device that contains the following text: "Contains FCC ID: HFS-LI172".