InnoComm Mobile Technology Corp.

Amazon Modem Module Development Kit User Manual

Version 1.1

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[挑選日期]

TABLE OF CONTENT

Notice

InnoComm may make changes to the user guide at any time; the information in this document is subject to change without notice.

1. INTRODUCTION

This document describes operation and test setup of Amazon modem module. There are two types with Amazon modem module, one is PCI-E type (Amazon 1) and the other one is BTB connector type (Amazon 2). Extension board is used to connect Amazon modem module to PC side to do function test and debug.

1.1. Development Kit Content

The development kit for Amazon modem module contains following items.
1. Modem Module: Amazon modem module x 1
2. Extension Board x 1
3. RF cable x 1
4. External Antenna x 1
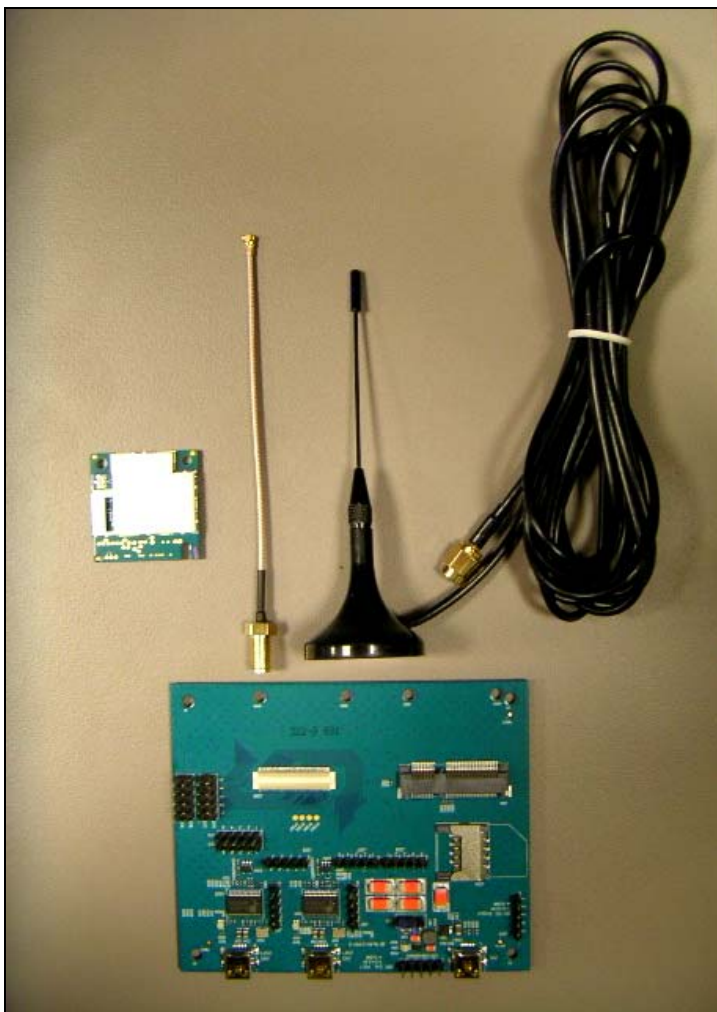5. SW driver disk x 1

Figure 1-1 Development Kit Content

1.2. Amazon modem module and Extension board photo
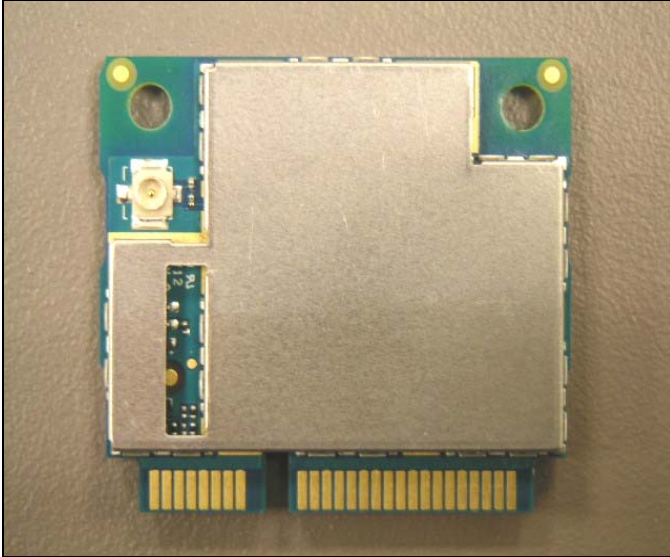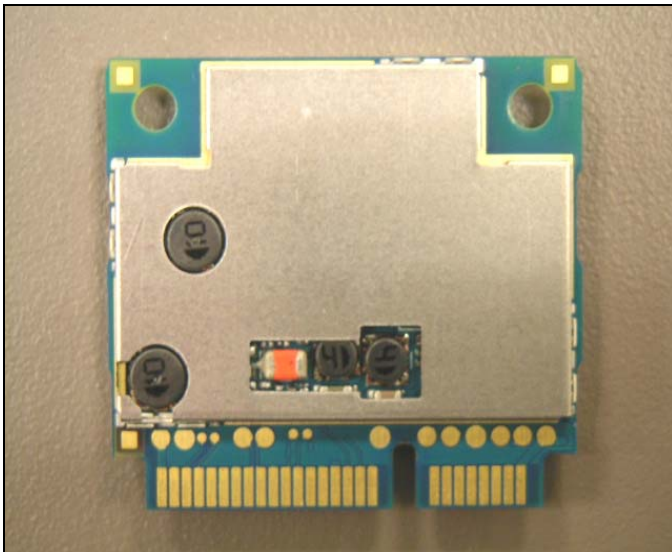
1.2.1. Amazon 1: PCI-E Type

Figure 1-2 Amazon1 TOP

Figure 1-3 Amazon1 BOTTOM

1.2.2. Amazon 2: BTB Connector Type
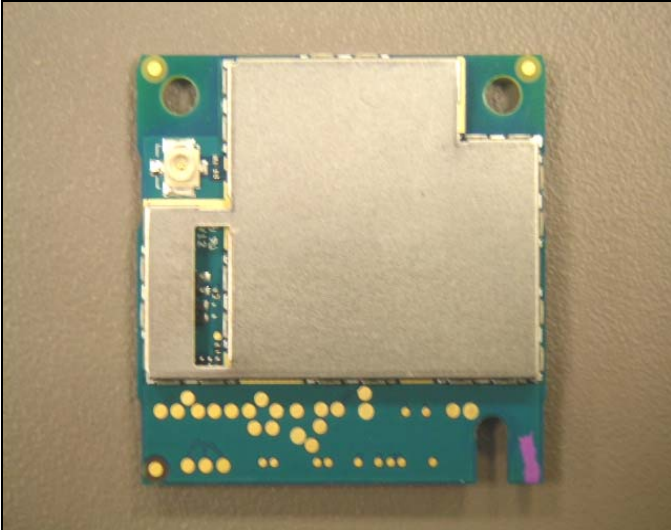
Figure 1-4 Amazon2 TOP
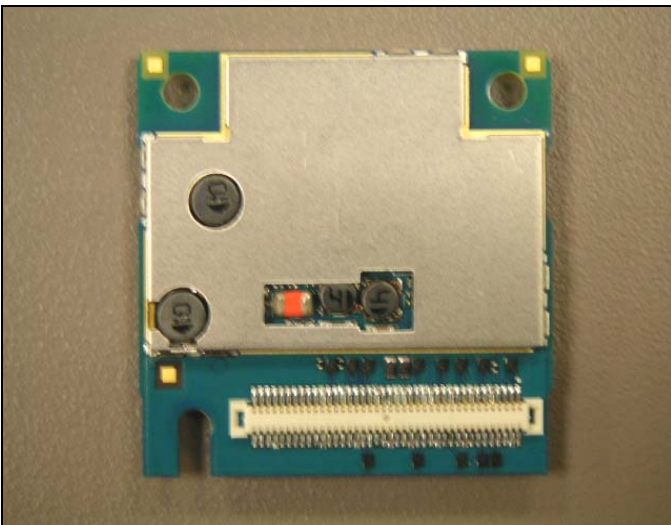
Figure 1-5 Amazon2 BOTTOM

1.2.3. Extension Board
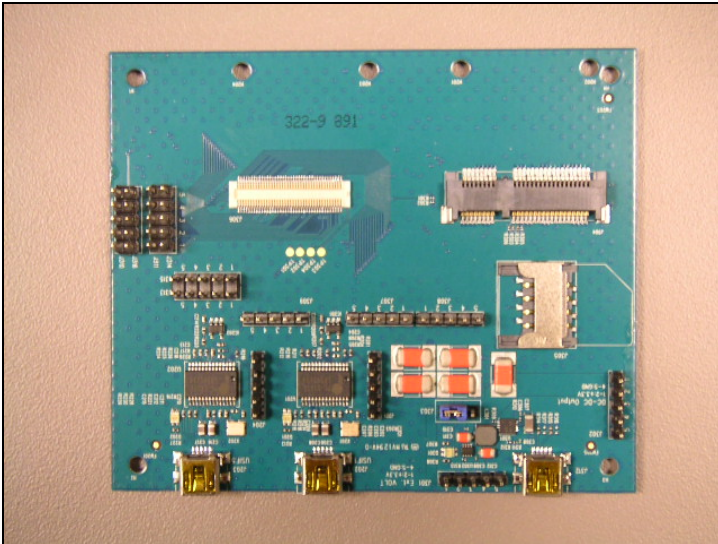
Figure 1-6 Extension Board

2. HW TEST SETUP

2.1. Connect PC USB Port to Extension Board USB Connector

Application: Test with Instrument (CMU200, Agilent 8960…) or Real network test
Requirement:
>   **SW:** Driver, CM (Connection manager) installation
>   **HW:** Test SIM for test with Instrument (CMU200, Agilent8960….etc) x1
>   Real SIM for test with Real network (Via external antenna) x1
>   Power supply x 1
>   Input voltage --- 3.3 V for Amazon 1
>   --- 3.7 V for Amazon 2
>   Instrument or external antenna x1
>   RF cable x 1
>   USB cable x1

CMU200

RF cable

DC POWER SUPPLY

+3.7   +3.7

PC

Power cable

USB cable (to USB)
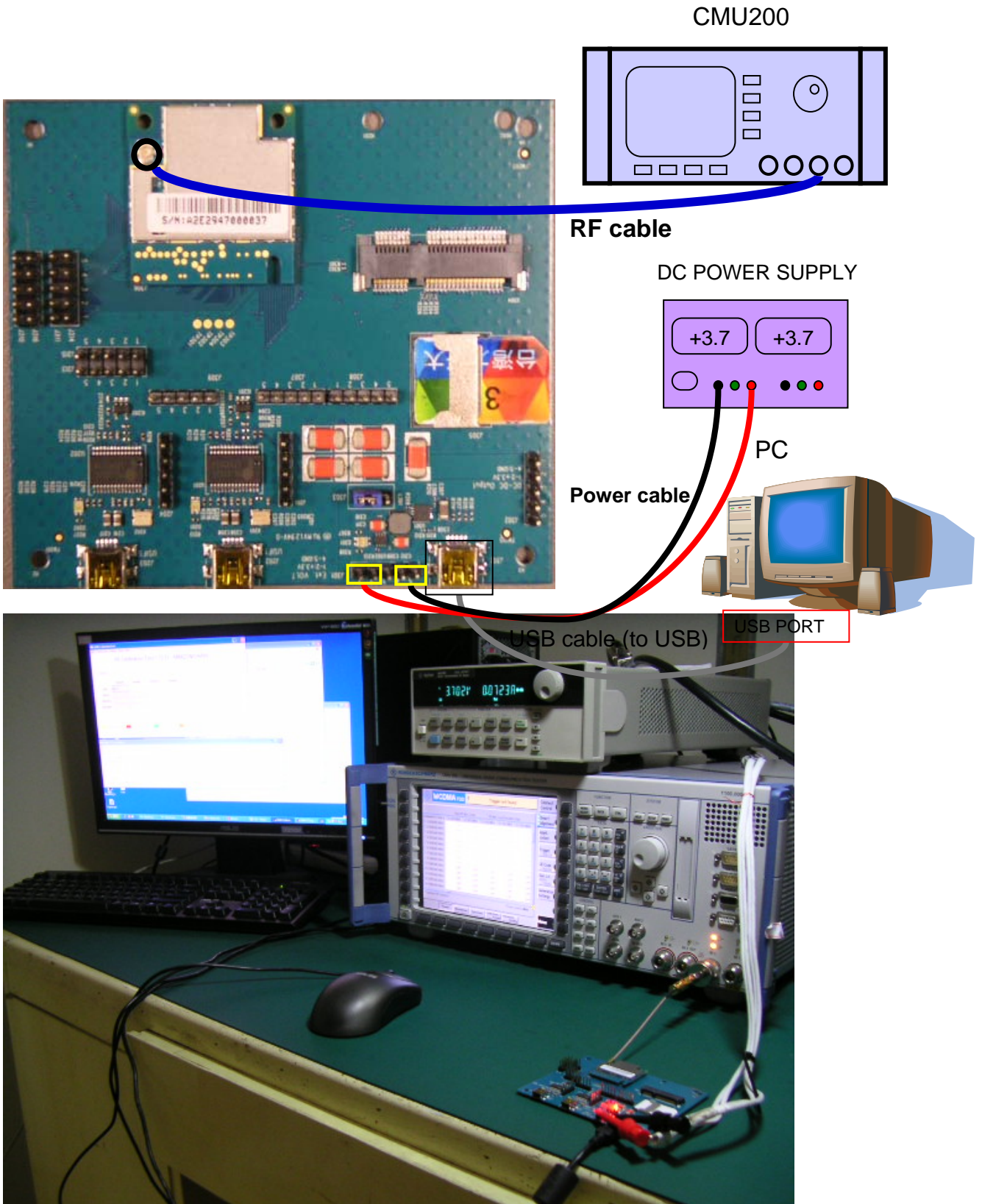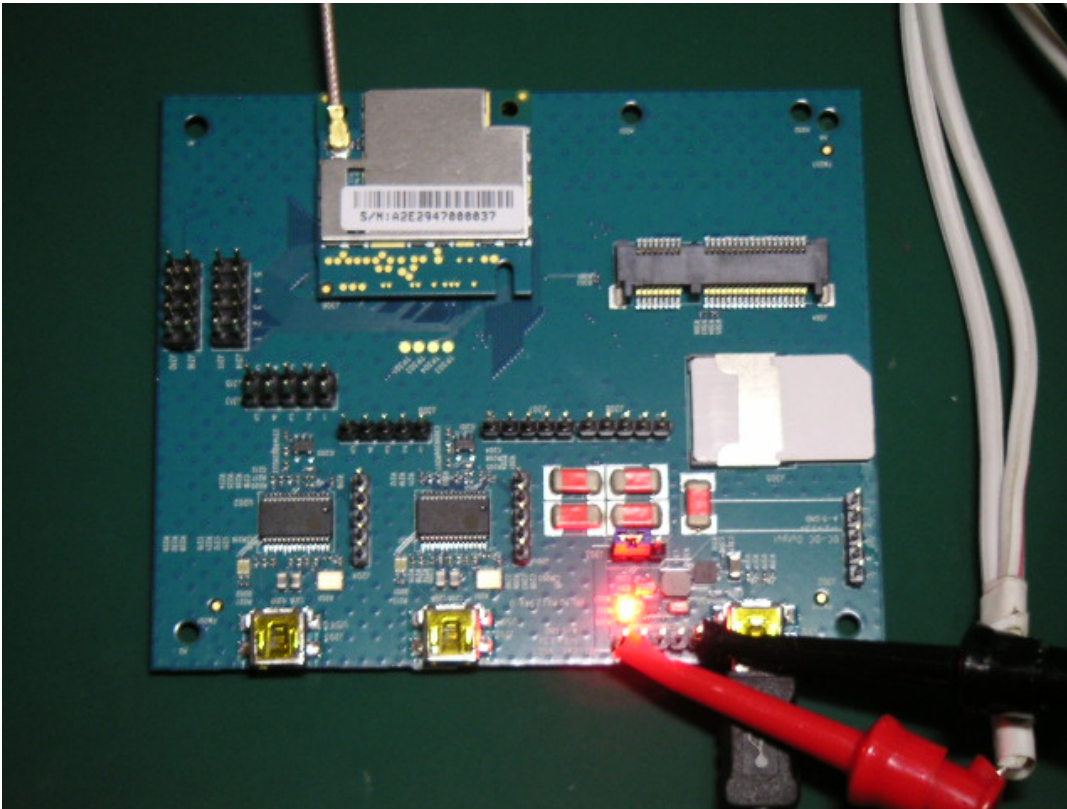
USB PORT

2.2. Connect PC USB Port to Extension Board USIF 1 Port

Application: Test with Instrument (CMU200, Agilent 8960…)
Requirement:
>**SW:** Driver
>**HW:** Test SIM card x 1
>>Power supply x 1
>>>Input voltage --- 3.3 V for Amazon 1
>>>>--- 3.7 V for Amazon 2
>>Instrument (CMU200, Agilent8960….etc) x1
>>RF cable x 1
>>USB cable x 1

CMU200

RF cable

DC POWER SUPPLY

+3.7V   +3.7V

PC

Power cable

USB PORT

USB cable (to USIF1)
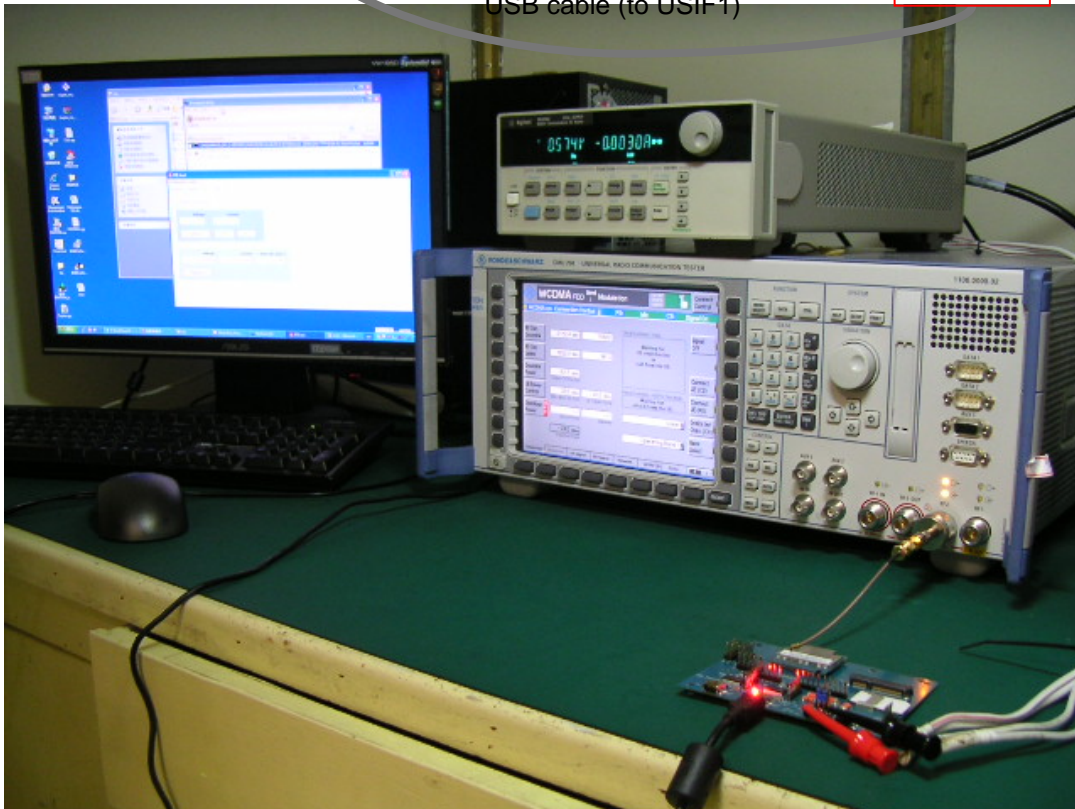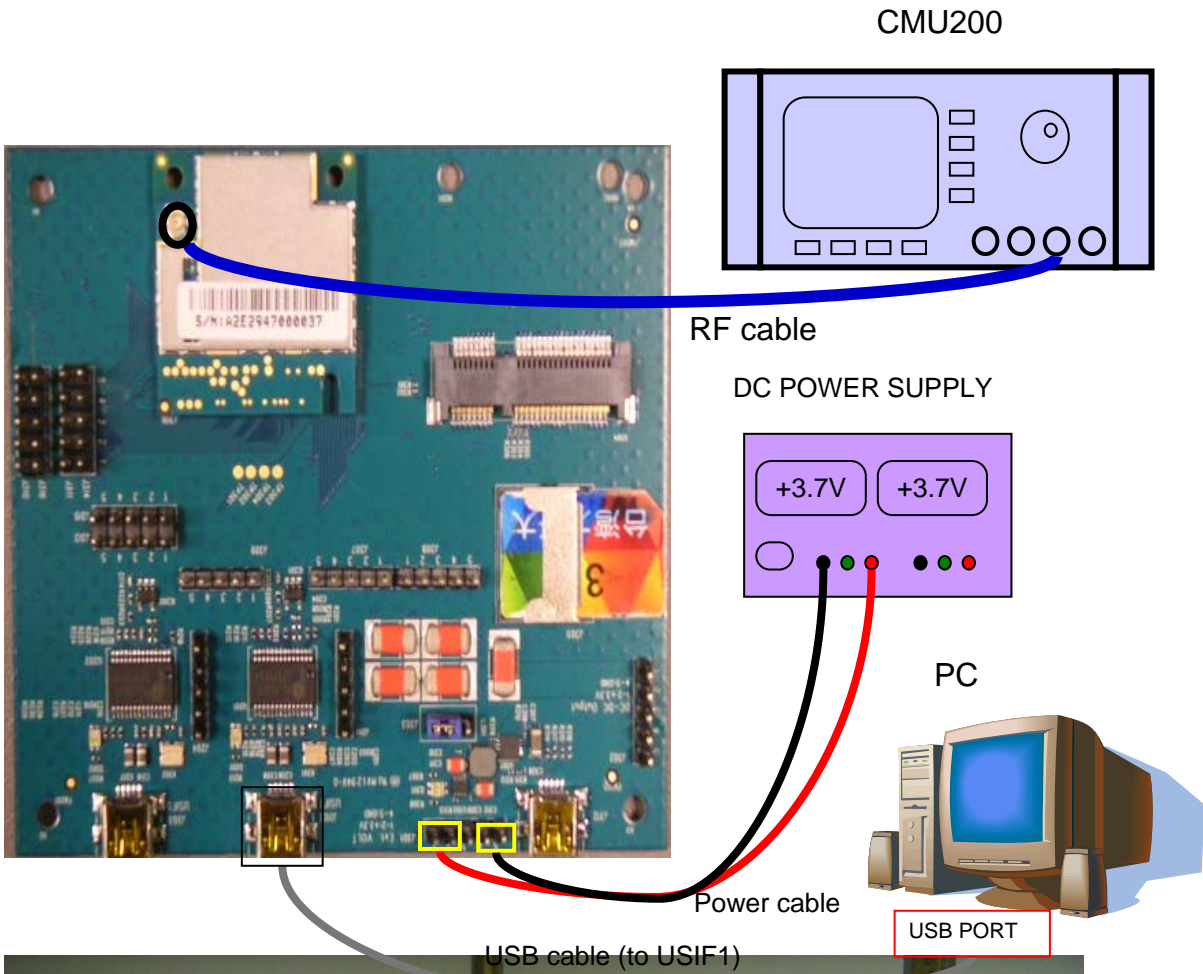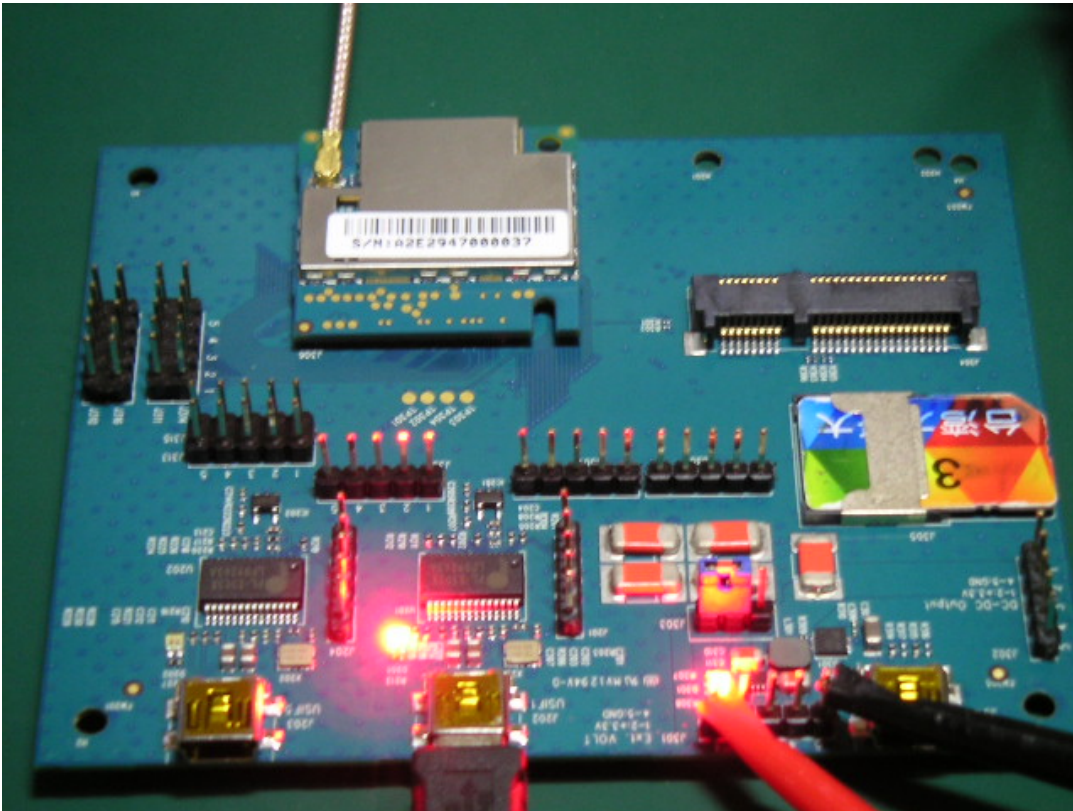
3. SW TEST SETUP

3.1 Driver Installation

3.1.1. HS-USB Driver Installation

The HS-USB driver should be installed when using USB Port. Following are the steps for installation.

Step 1: Unzip and install the driver. File name: WMC_Comneon2_3.12.1 Driver\ Setup.exe. Then it will create one folder under C:\Program Files\Comneon\Highspeed Modem 0x20\Drivers\.
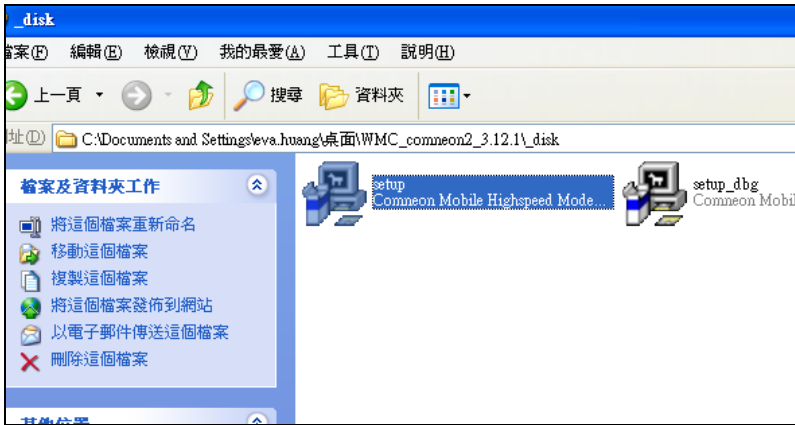
Figure 3-1 Setup.exe
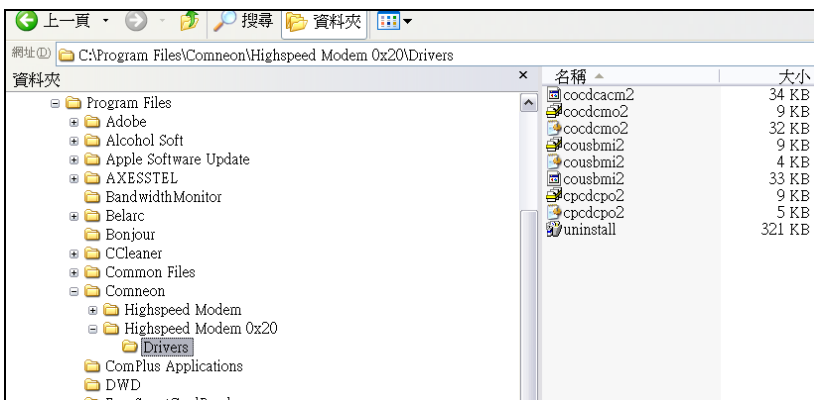
Figure 3-2 Driver folders

Step 2: Connect UE device to PC with USB2.0 cable, and power on device

Step 3: Install HS_USB Driver to PC. When device powered on and PC detect the device. The driver will install automatically or set direction to C:\Program Files\Comneon\Highspeed Modem 0x20\Drivers

Figure 3-3: Auto installations

6 virtual ports will be installed. (Comneon Mobile Highspeed Port), and One Modem Port. (Comneon Mobile Highspeed Modem MPE1)
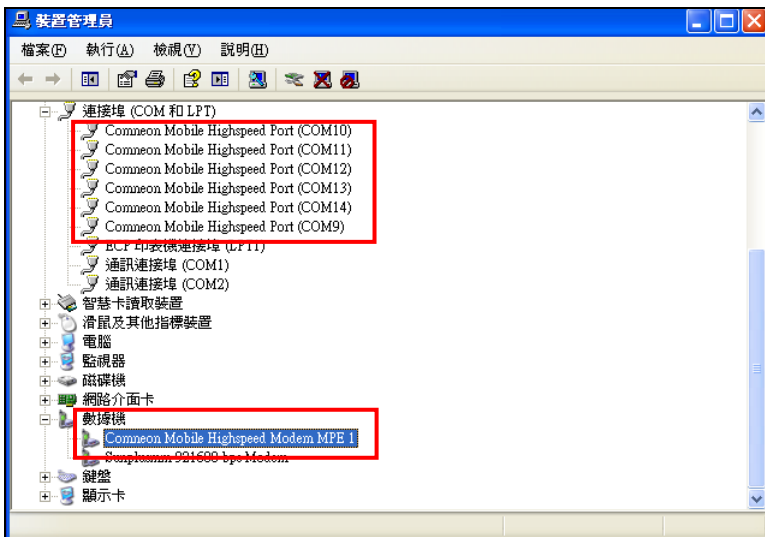
Figure 3-4 Virtual Ports

3.1.2. Prolific Driver Installation

The Prolific Driver should be installed when using USIF 1 or USIF 5 Port. Following are the steps for installation.
Step 1: Unzip and install File name: PL2303_Prolific_DriverInstaller_v10518.exe.

Step 2: Plug in USIF1 or USIF 5. PC will detect USB to Serial Ports and install the driver automatically.
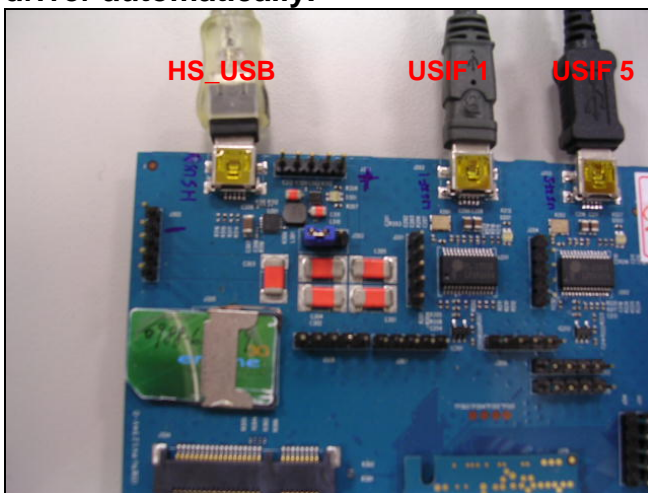
Figure 3-5 USIF1 and USIF 5 Port

Figure 3-6 USB to Serial Ports

3.1.3. Connection Manager Installation

Step1: Unzip ProjAmazonSetup.rar and install ProjP330Setup.

Figure 3-7 Connection Manager Installation

Step 2: Execute Connection Manager on desktop. A Network Connection, NET, will be created and modem should be "Comneon Mobile Highspeed Modem".

Figure 3-8 Connection Manager Icon

Figure 3-9 Network Connection

3.2 Connection Manager

Connection Manager is used to perform network data link and SMS function.
Following are basic descriptions of each icon in main menu.

Home:
>   Back to Main Menu

SMS:
>   - Create new message
>   - List, read/edit Phone Book from SIM, Outlook list.
>   - Inbox, read/reply/ delete from SMS storage.
>   - Draft, save draft SMS in CM
>   - Outbox, template storage when unable to sent SMS
>   - Sent, see sent message in CM

Data Link:
>   Connection/ Disconnection Data call to network

CM setting:
>   -SMS, include storage, SMSC number setting, and SMS valid period
>   -Profile, Operator APN setting (default is "internet")
>   -Network, Setting camping method, GSM/ UMTS selection, Fight mode switch, PIN lock.
>   - Data,
>>   --Data usage, Limit total Data transfer
>>   --History, record Data connection history
>   -Sys Info, Device IMEI, SW information
>   -Debug, AT command line and history, HW control (power on/off, Radio on/off, Card reset).

Device status Bar:
>   Show device status. (Not detected, Camping, Data link success…)

Figure 3-10 shows the main menu icons
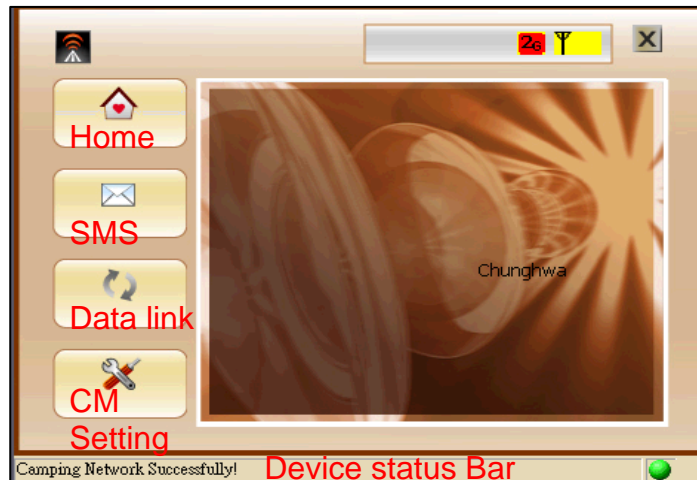
Figure 3-10 Main Menu Screen

Note:
1. Please use "Exit" to quit CM. Tape the "x" on the window is to minimize CM into
Windows application try, and it will not quit the CM. (See Figure 3-11)
2. Do not Open CM twice at same time. Modem com port will be hold when another CM is
running.
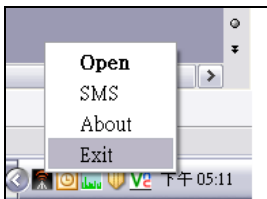
Figure 3-11 correct way to quit CM

3.3   Connection With Test Instrument

Following steps show how to connect device to test instrument.

Step 1: Plug in USIF 1 port.

Figure 3-12 USIF 1 port

Step 2: PC detects Prolific_USB -to- Serial Comm Port. (See Figure 3-13)
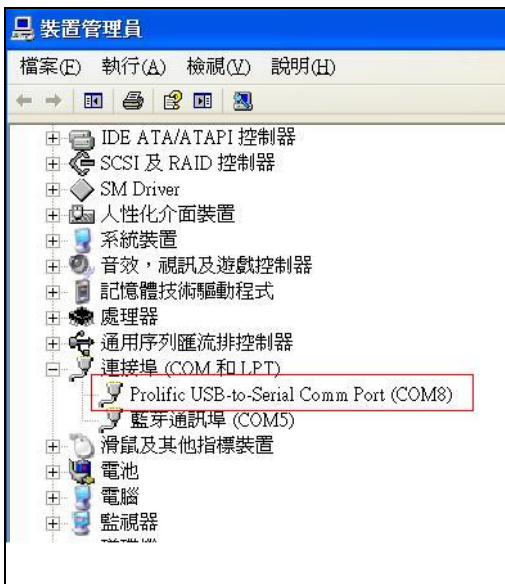
Figure 3-13 Prolific_USB -to- Serial Comm Port

Step 3: Set up HyperTerminal as Figure 3-14.
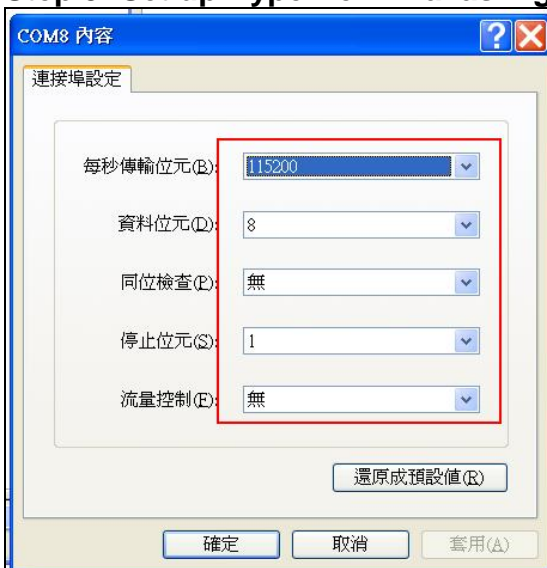
Figure 3-14 Hyper Terminal Settings

Step 4: Send AT Command via HyperTerminal as Figure 3-15

Figure 3-15 Send AT command

Reference AT commands are as following:

1. Auto-search Network: AT+COPS=0
2. Make a circuit-switch call to instrument: ATD123456;   (Do not miss the semicolon.)
3. In case, if SIM is locked by PIN number (e.g., 0000), use AT+CPIN="0000" to unlock SIM PIN. Before unlock, the SIM PIN Lock will also cause ERROR when issuing AT+COPS=0. (Use AT+CPIN? to query the PIN status if you are not sure the SIM requires PIN or not.)

Appendix 1: Detail description of Extension board

1. Placement
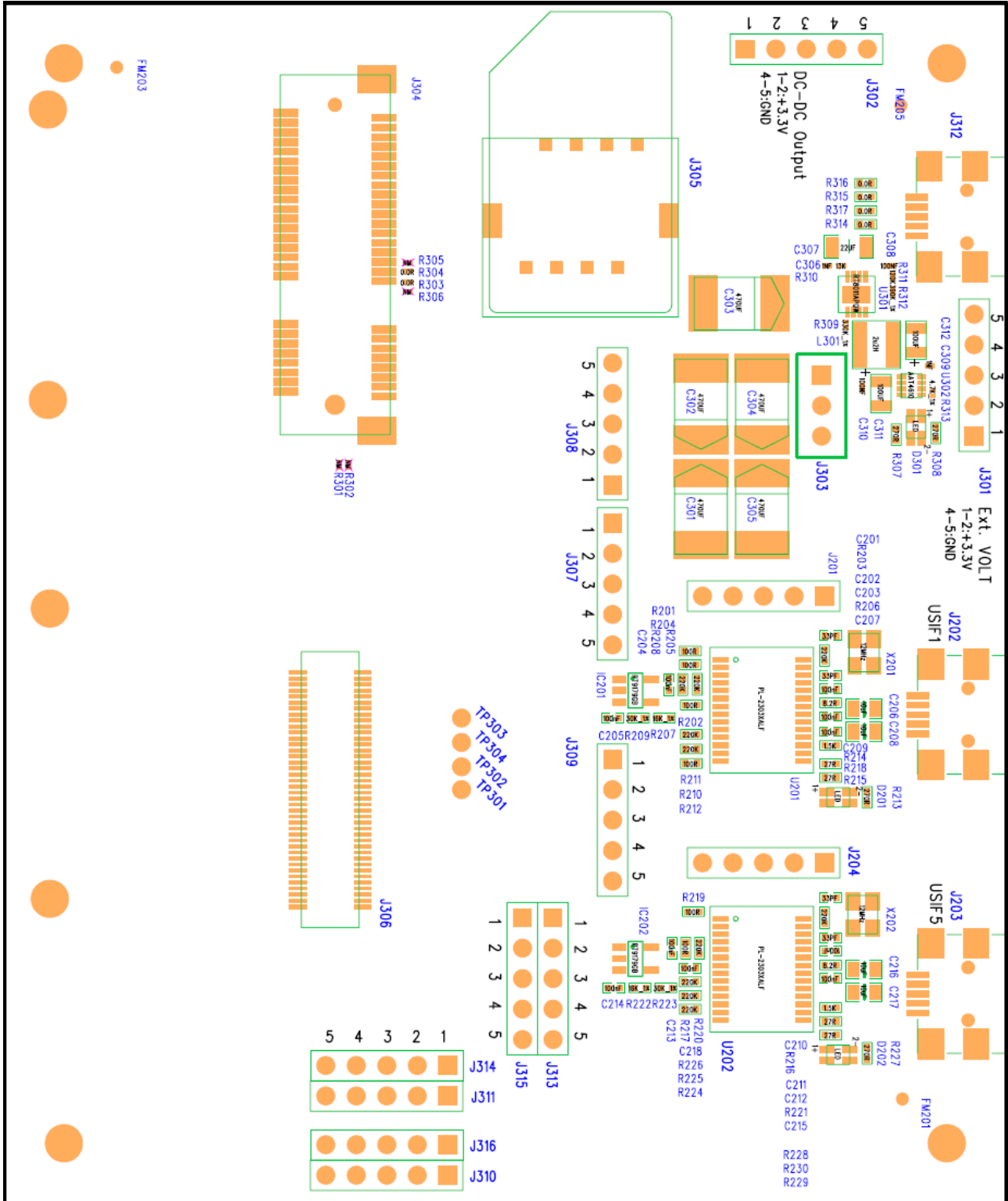
CAUTION:
DO NOT insert Amazon1 and Amazon2 Modules at the same time!

2. Connector
J312 : **USB port**
J202 : **USIF1 Port to USB**
J203 : USIF5 port to USB
J304 : **PCI-E Slot**
J305 : **SIM card connector**
J306 : BTB connector

3. Jumper
J201 : USIF1 signal
        Pin1 : TXD (X-GOLD 616 output)
        Pin2 : RXD (X-GOLD 616 input)
        Pin3 : RTS (X-GOLD 616 output)
        Pin4 : CTS (X-GOLD 616 input)
        Pin5 : GND

J204 : USIF5 signal
        Pin1 : TXD (X-GOLD 616 output)
        Pin2 : RXD (X-GOLD 616 input)
        Pin3 : RTS (X-GOLD 616 output)
        Pin4 : CTS (X-GOLD 616 input)
        Pin5 : GND

J301 : **External voltage input**
        Pin1 : **Input 3.3V for Amazon 1 and 3.7V for Amazon 2**
        Pin2 : **Input 3.3V for Amazon 1 and 3.7V for Amazon 2**
        Pin3 : NC
        Pin4 : GND
        Pin5 : GND

J302 : DC to DC convertor output
        Pin1 : Output
        Pin2 : Output
        Pin3 : NC
        Pin4 : GND
        Pin5 : GND

J303 : **Power select**
        Pin1-2 short : power from USB (J312)
        Pin 2-3 short: power from jumper (J301)---**Default**

J307 : SPI test pin
        Pin1 : SPI_SOMI
        Pin2 : SPI_SIMO
        Pin3 : SPI_CLK
        Pin4 : SPI_CS
        Pin5 : GND

J308 : AGPS control test pin
        Pin1 : AGPS_BLANKIUNG
        Pin2 : AGPS_REFCLK
        Pin3 : AGPS_SYNC
        Pin4 : PIN16
        Pin5 : GND

J309 : PCM test pin
                 Pin1 : PCM_CLK
                 Pin2 : PCM_UL
                 Pin3 : PCM_DL
                 Pin4 : PCM_SYNC
                 Pin5 : GND

J310 : Control test pin
                 Pin1 : SRDY
                 Pin2 : MRDY
                 Pin3 : USB_ON
                 Pin4 : SIM_OFF
                 Pin5 : GND

J311 : I2S test pin
                 Pin1 : I2S2_CLK
                 Pin2 : I2S2_RX
                 Pin3 : I2S2_TX
                 Pin4 : I2S2_SYNC
                 Pin5 : GND

J313 : GPIO test pin
                 Pin1 : GPIO1
                 Pin2 : GPIO2
                 Pin3 : GPIO3
                 Pin4 : SIM_CD
                 Pin5 : GND

J314 : CLOCK test pin
                 Pin1 : FSYS2_CLK
                 Pin2 : FSYS2_EN
                 Pin3 : FSYS3_CLK
                 Pin4 : FSYS3_EN
                 Pin5 : GND

J315 : Control test pin
                 Pin1 : RF_PA_ON
                 Pin2 : RST_XMM6160
                 Pin3 : DBR_BLANKING
                 Pin4 : PWR_FAIL
                 Pin5 : GND

J316 : Control test pin
                 Pin1 : TX_PWR_TH
                 Pin2 : CLKOUT2
                 Pin3 : NC
                 Pin4 : FSYS4_CLK
                 Pin5 : GND

Appendix 2: Federal Communications Commission (FCC) Statement

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 gain allowed for use with this device is -0.95 dBi.
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: YAI-AZ1901".