

# UMC-A21LG2 User Manual

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## Revision History

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## 1. Introduction

This User Manual of UMC-A21LG2 SMCC (Smart Meter Communication Card) is to describe how to use the following sections for lab test by specific qualified engineers or technicians. Furthermore, this SMCC is NOT intended for commercial use but designed as part of Smart Meter product which mainly provides 4G LTE WAN access and/or Sub-GHz radio / Zigbee HAN access capabilities. For the procedure of SMCC installation into electric meter and the operation of SMCC in assembly factory, that information is described in assembly instruction document.

### *FCC Interference Statement*

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

### *Radiation Exposure Statement*

This SMCC complies with FCC radiation exposure limits set forth for an uncontrolled environment. This SMCC should be installed and operated with minimum distance of 20cm between radiator and human body.

***Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the device.***

## 2. Test Setup Configuration

### 2.1 Power Supply and Debug Console Connection

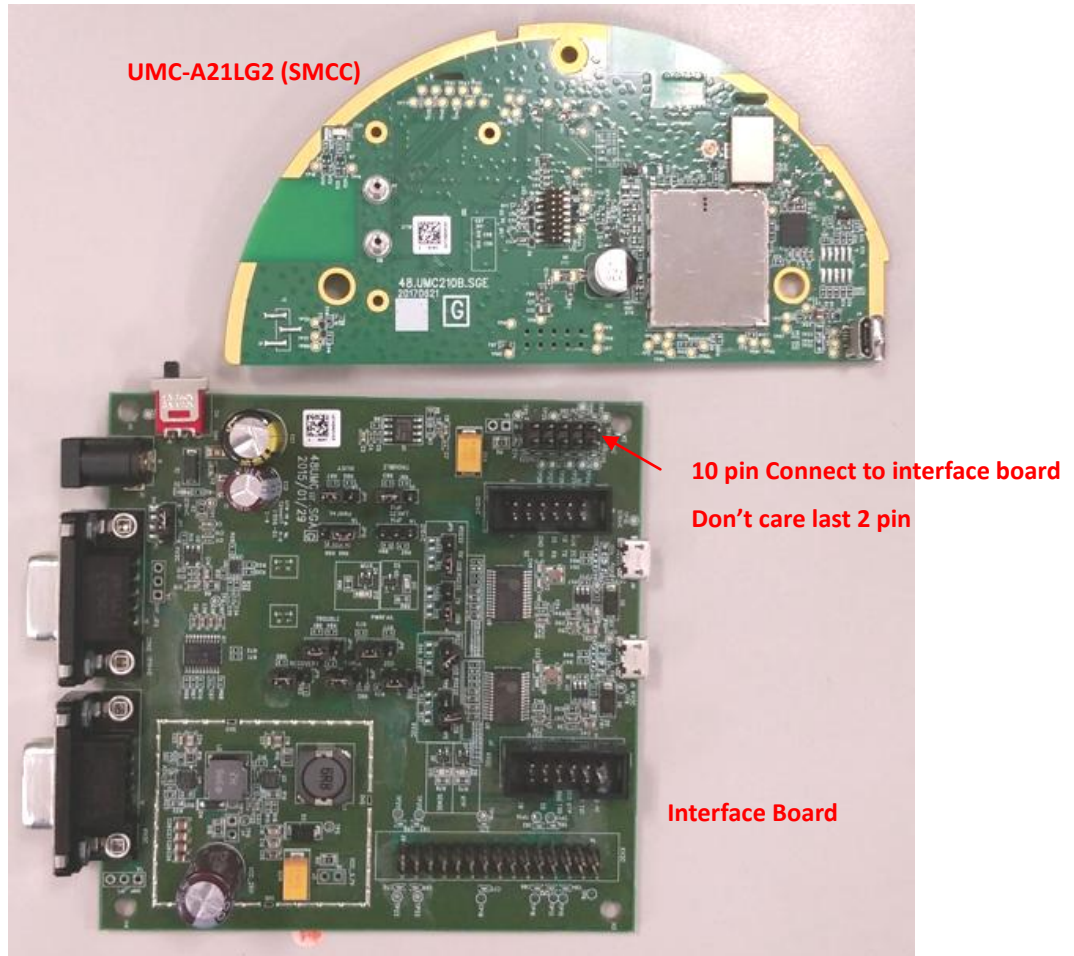
#### i. Top view of UMC-A21LG2

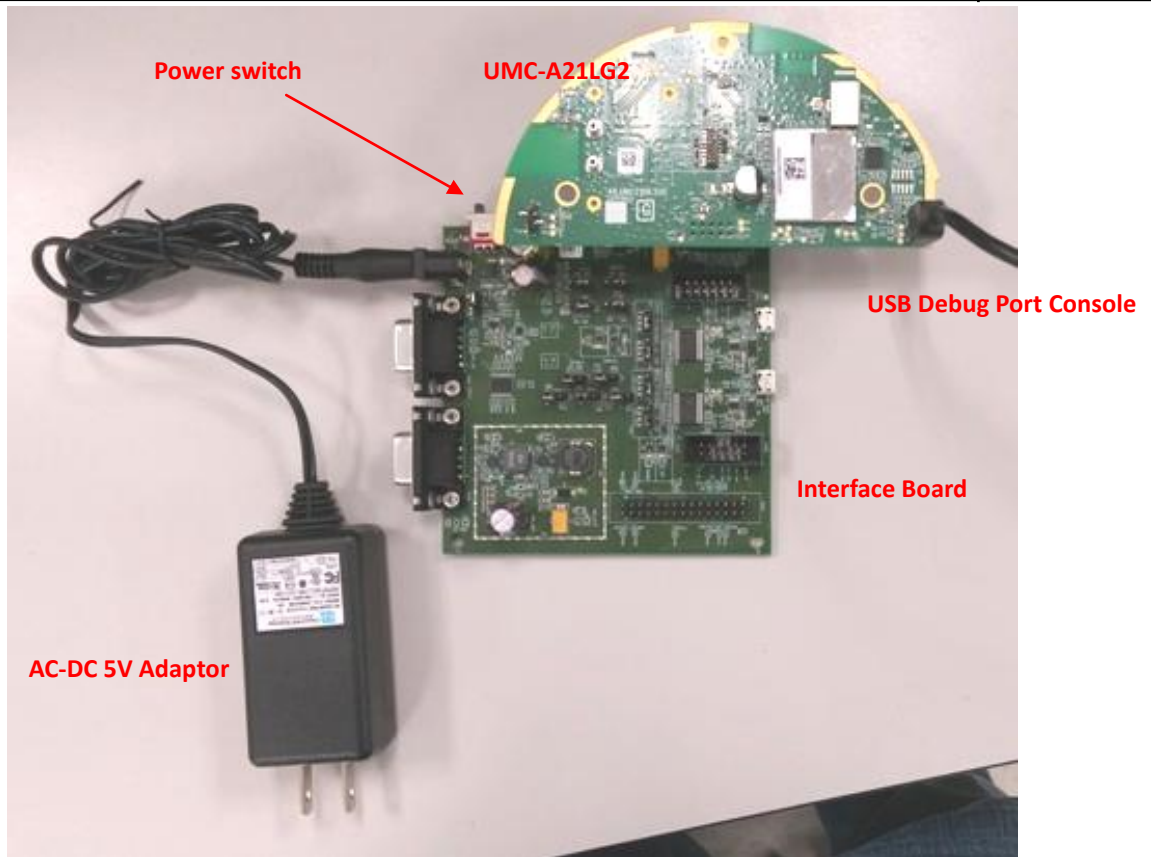


#### ii. Bottom view of UMC-A21LG2



### iii. Connection between interface board and UMC-A21LG2





### **Power on Sequence:**

- I. Connect UMC-A21LG2 to interface board
- II. Attach AC-DC Adaptor & USB Debug Port Cable
- III. Turn on by the power switch
- IV. Wait for 20 seconds when system ready

## 2.2 Antenna Connection



**Connect to LTE primary antenna**



## 2.3 Hardware Component Introduction

UMC-A21LG2



AC-DC 5V Adaptor



Antenna for L+G S4X meter

Interface Board



Antenna for L+G RXRe-SD meter

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### 3. LTE B13 Test

Highly recommend to use Anritsu MT8821C for RF conductive tests.setc

For LTE radiation tests, the LTE antenna gain lists below.

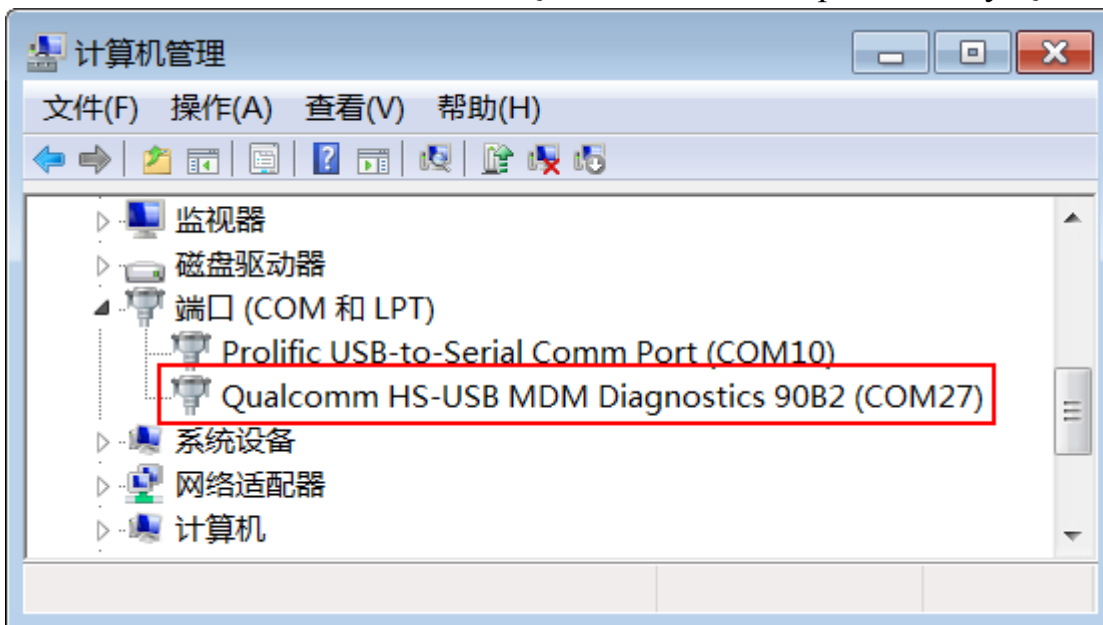
- LTE Main Antenna for L+G S4X meter
  - ✧ Band 13 Peak Gain: -0.5dBi ~ -3.0dBi
- LTE Main Antenna for L+G RXRe-SD meter
  - ✧ Band 13 Peak Gain: 0.5dBi ~ 3.0dBi

## 4. Interfaces

This SMCC offers following interfaces to communicate with LTE radio. Before using USB emulated ports, it requires to install the Qualcomm's USB driver on your windows PC at first. After driver installation is finished, device manager will show below USB emulated COM ports.

### 4.1 Qualcomm HS-USB MDM Diagnostics 90B2 (COM port)

This port is created for modem debugging purpose and used by Qualcomm PC tools to communicate with the LTE radio. Qualcomm's tool is protected by Qualcomm License.



## 4.2 Qualcomm HS-USB WWAN Adapter 90B2

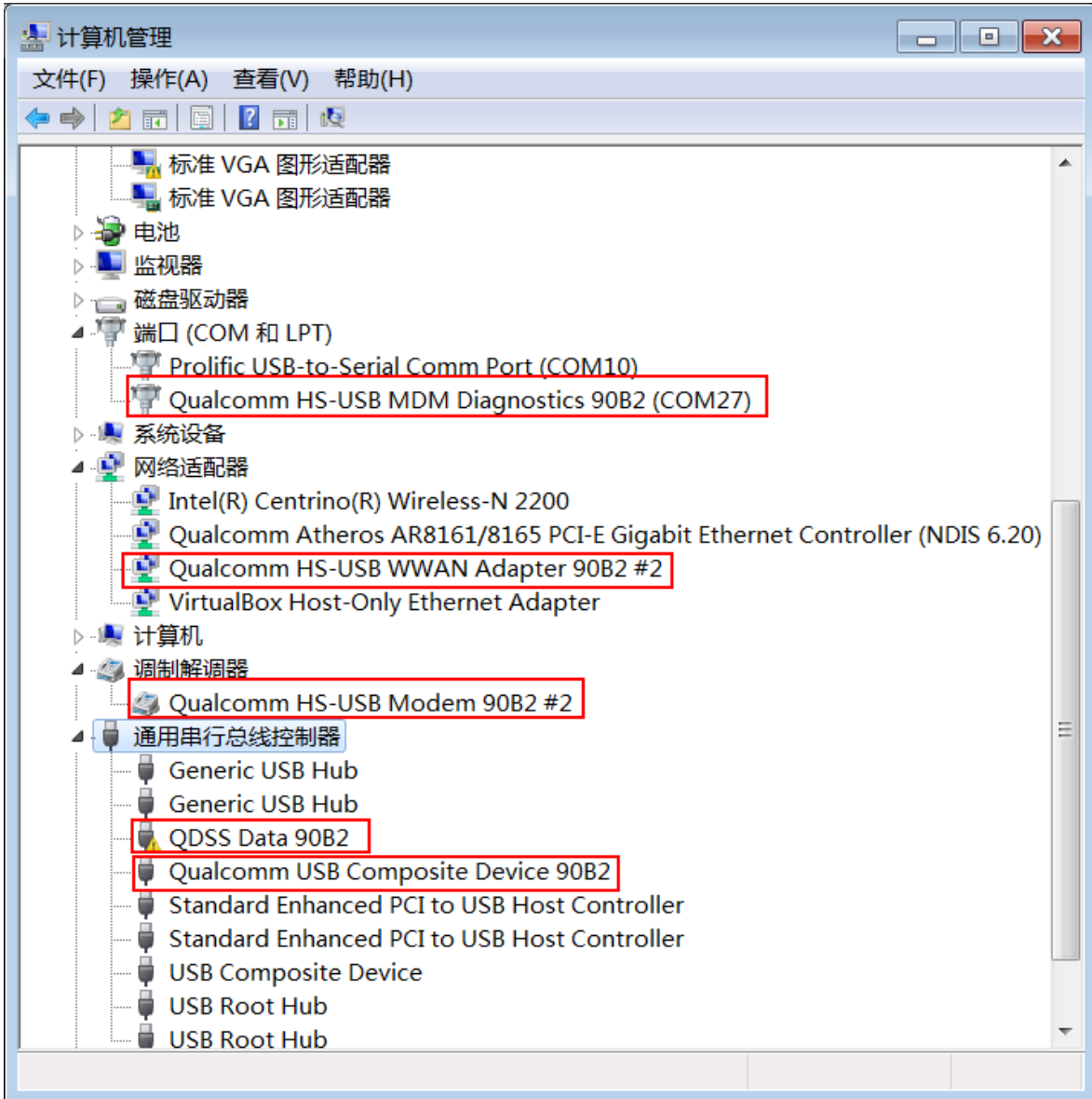
This port is created as a virtual network interface which could be used by PC to connect with Internet.



## 4.3 Qualcomm HS-USB Modem 90B2

This port is also called as modem port. Testers could use PC terminal tool to connect with the port and send AT commands to control modem directly.





## 5. Federal Communication Commission Interference 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 equipment 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 radiate 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 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 technician for help.

## Appendix I

### Environmental Setup

#### 1. Windows 7 x64

The environment setup was tested on Windows 7 x64 successfully.

#### 2. USB driver

QUD.WIN.1.1 Installer-10037.3 will be needed to be installed for the following ports:

- Qualcomm HS-USB MDM Diagnostics 90B2
- Qualcomm HS-USB MDM WWAN Adapter 90B2
- Qualcomm USB Composite Device 90B2
- QDSS Data 90B2
- Qualcomm HS-USB Modem 90B2