

Subject: UMC-SKV2C User Manual

REV: 0.5

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## UMC-SKV2C User Manual

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## Revision History

Issue Date	Version	Description
2016/03/25	0.1	Initial Issued
2016/03/28	0.2	Add LTE P/D switch and appendix I
2016/03/30	0.3	Add assemble pictures including SMCC/Honey board/external antenna connection
2016/04/08	0.4	Update the control command for Zigbee
2016/04/26	0.5	Add warning messages and some notes

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## 1. Introduction

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

### ***FCC Interference Statement***

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

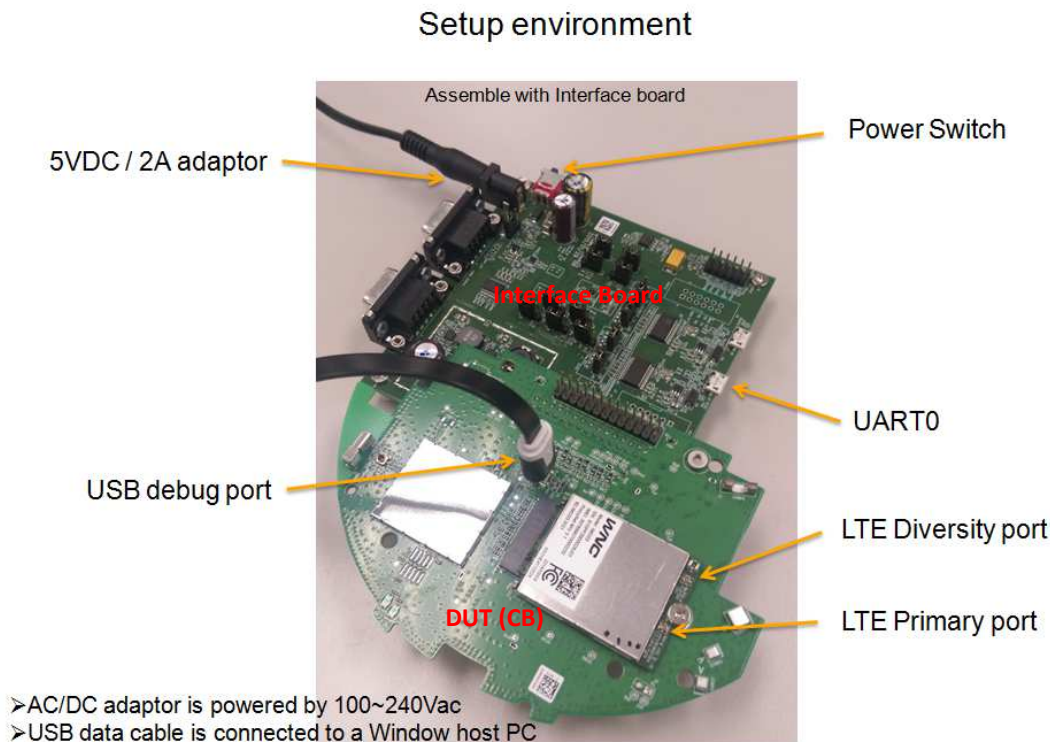
### ***Radiation Exposure Statement***

This module complies with FCC radiation exposure limits set forth for an uncontrolled environment. This module 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

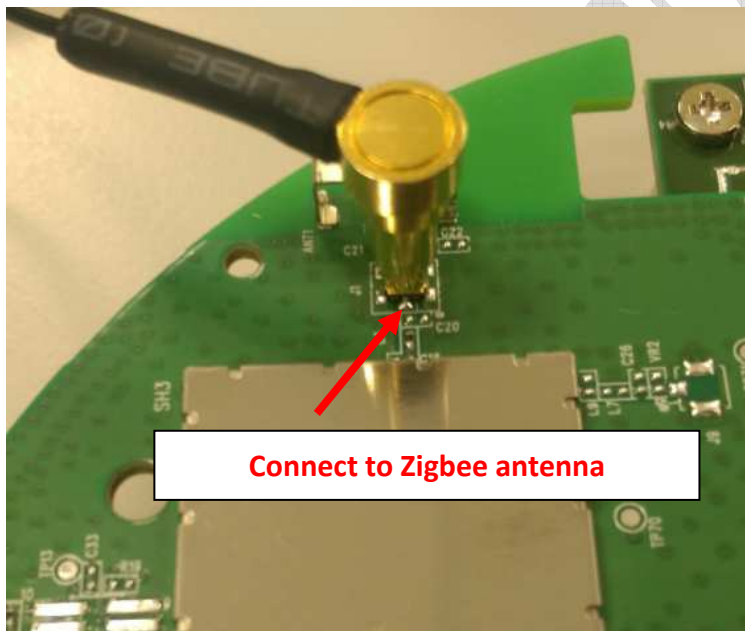
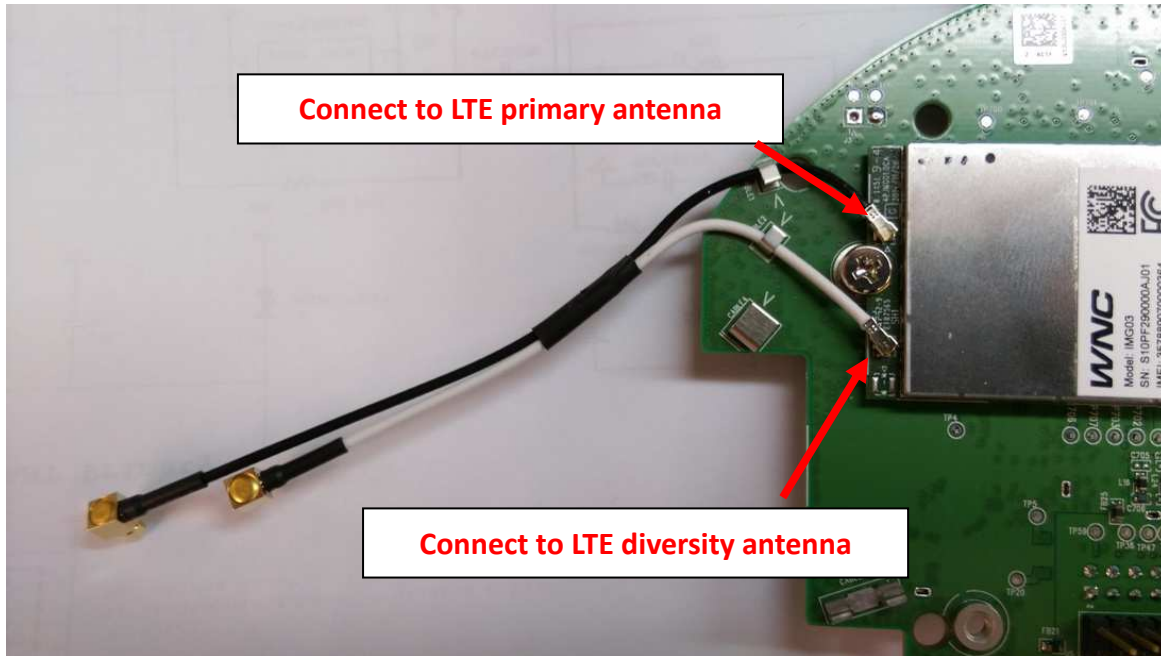


#### Power on Sequence:

- I. Connect 30-pin-to-Jig-board cable
- II. Attach AC-DC Adaptor & USB Debug Port Cable
- III. Wait for 20 seconds when system ready

**[Caution] Improper power on sequence might lead to system boot-up failure!**

## 2.2 Antenna Connection

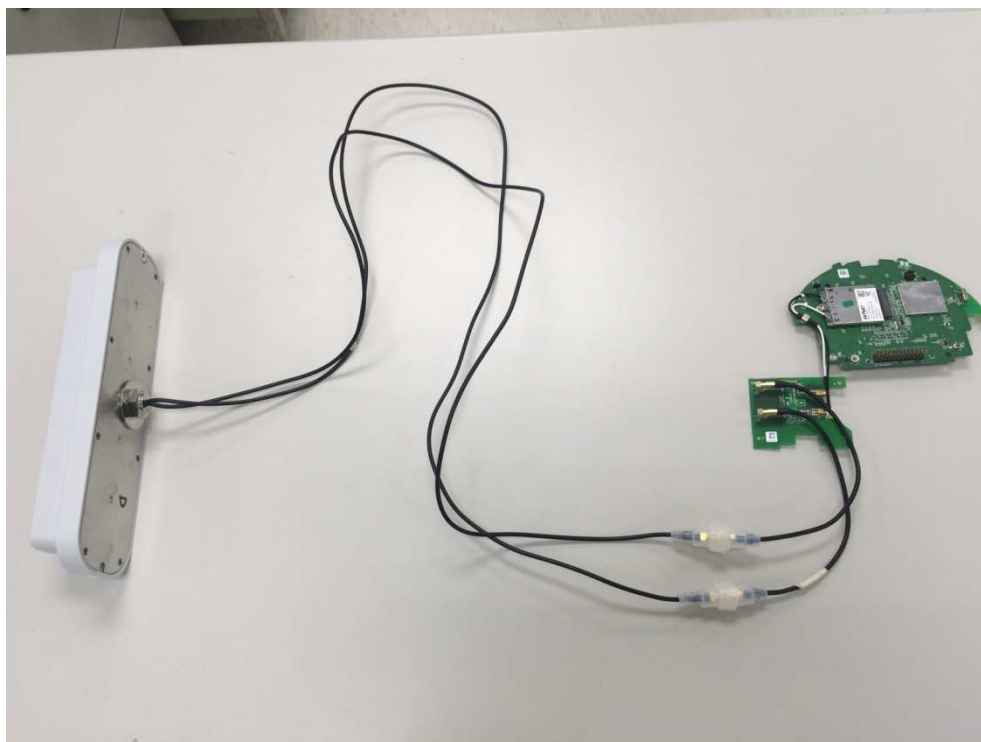


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## 2.3 Whole DUT connection



## 2.4 Hardware Component Introduction



AC-DC 5V Adaptor



Interface Board



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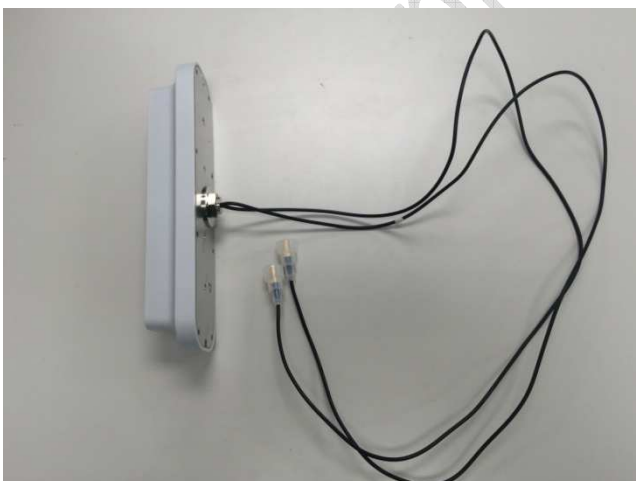
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Honey Board



Extension Cable

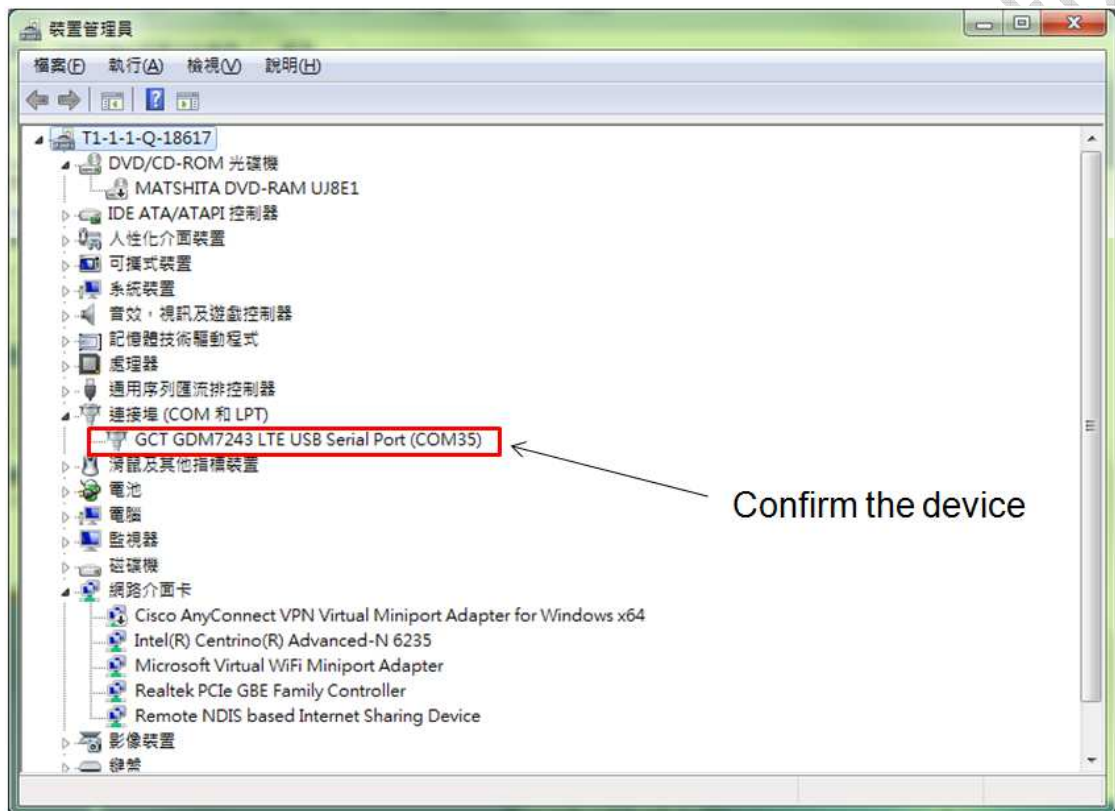


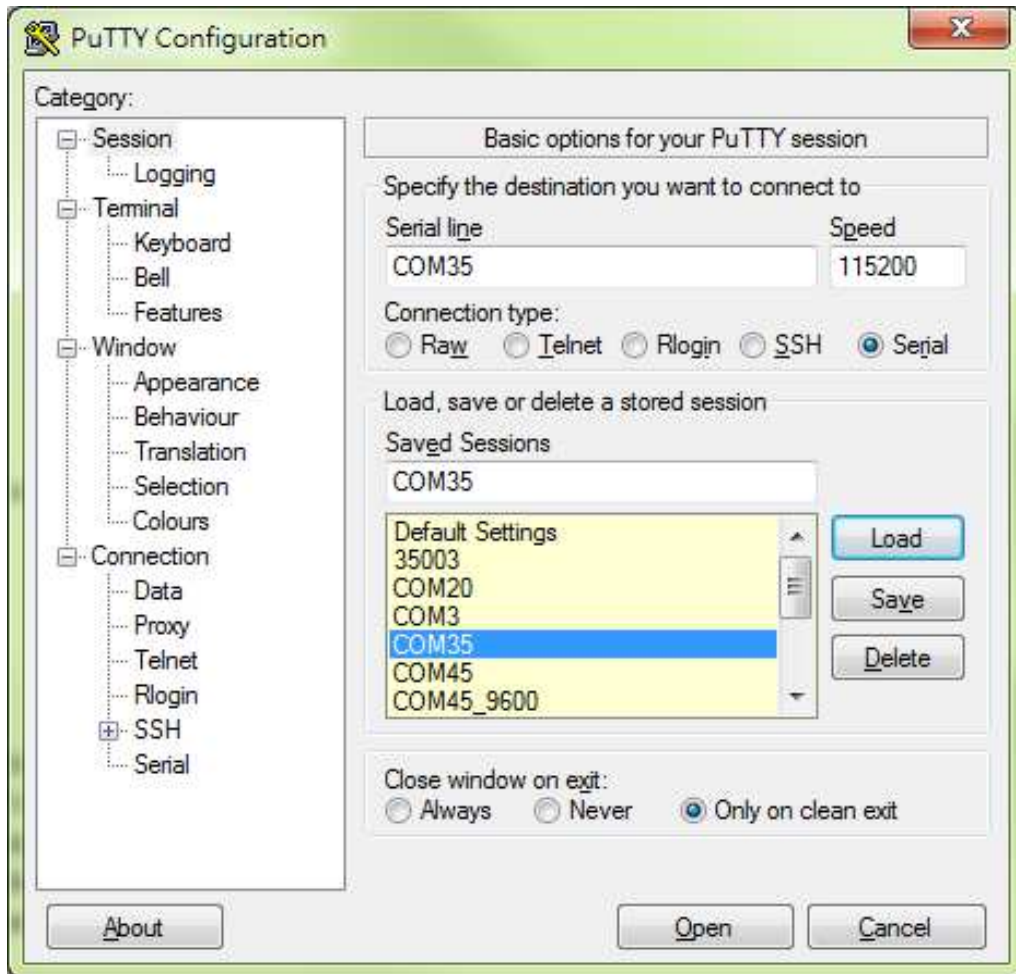
External Antenna

## 3. Zigbee Test

### 3.1 COM port Setup in a Windows Host PC

Install PuTTY for connection to DUT, refer to <http://www.putty.org/>

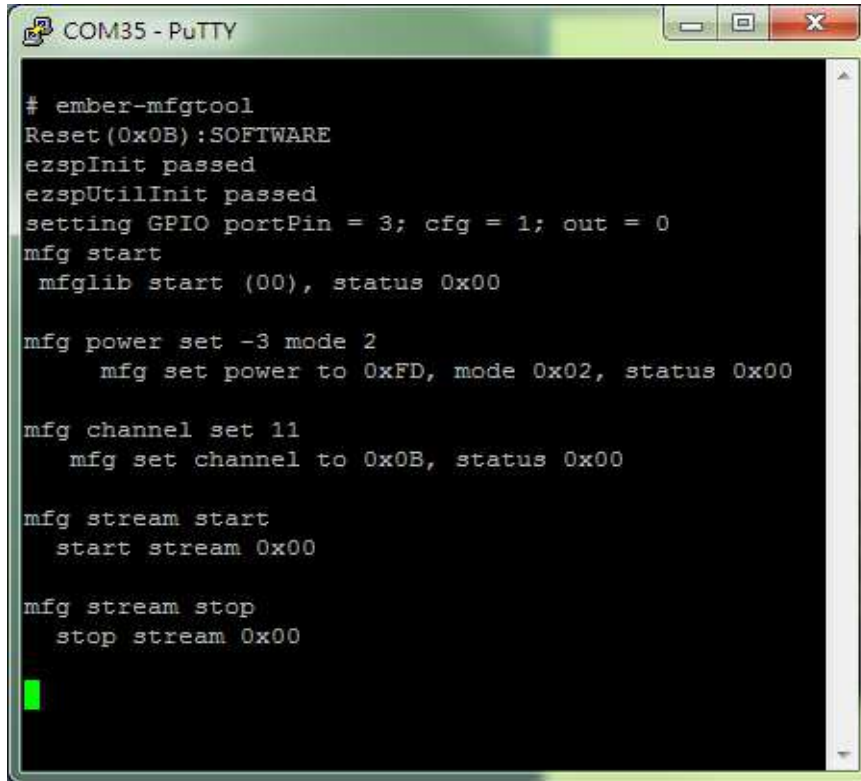




Serial Line: **COMxx** ; Speed: **115200** ; Connection Type: **Serial**

**Note: If there is no response when typing anything in the com port, please see the appendix I.**

## 3.2 Enter Zigbee Control mode



```
# ember-mfgtool
Reset (0x0B):SOFTWARE
ezspInit passed
ezspUtilInit passed
setting GPIO portPin = 3; cfg = 1; out = 0
mfg start
  mfglib start (00), status 0x00

mfg power set -3 mode 2
  mfg set power to 0xFD, mode 0x02, status 0x00

mfg channel set 11
  mfg set channel to 0x0B, status 0x00

mfg stream start
  start stream 0x00

mfg stream stop
  stop stream 0x00
```

Enter Zigbee control mode: **ember-mfgtool**

## 3.3 Zigbee Test Command

Freq. channel setting:

Channel Low : 11 -> CH11

Channel Mid : 18 -> CH18

Channel High : 25 -> CH25

Power level/mode setting:

Enable callback:

Single tone output:

Single tone output stop:

Modulation signal output:

Modulation signal output stop :

*mfg channel set 11*

*mfg power set -3 mode 2*

*mfg start 1*

*mfg tone start*

*mfg tone stop*

*mfg stream start*

*mfg stream stop*

## 4. LTE B4/B13 Test

It is suggested to use Anritsu MT8820C for RF conductive test  
For LTE radiation tests, the LTE antenna gain lists below.

### ➤ LTE Main Antenna

- ✧ Band 13 Peak Gain: 2.0 dBi ~ 2.5 dBi
- ✧ Band 4 Peak Gain: 4.5 dBi ~ 5.0 dBi

### ➤ LTE Diversity Antenna

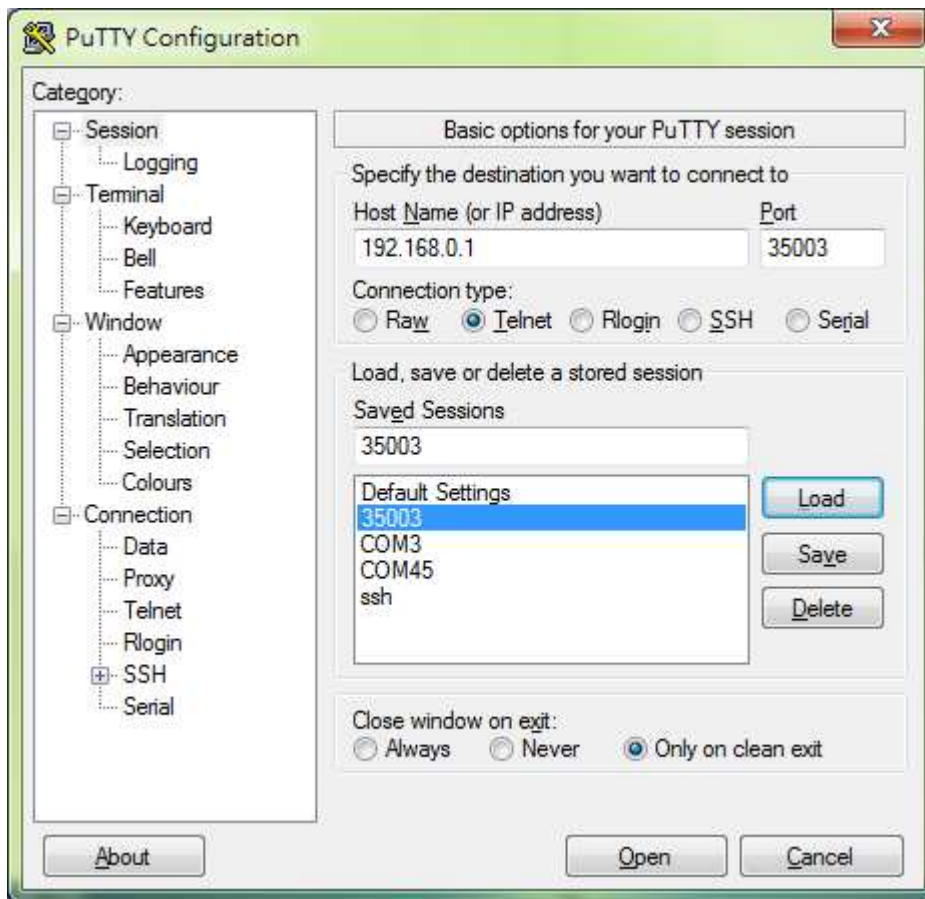
- ✧ Band 13 Peak Gain: 2.0 dBi ~ 2.5 dBi
- ✧ Band 4 Peak Gain: 2.5 dBi ~ 3.0 dBi

### 4.1 For LTE connection to Test Equipment

When UMC-I210C is installed with test SIM, it can automatically connect to tester, such as Anritsu 8820C.

## 4.2 LTE Rx Primary/Secondary switch for OTA

Login the cli mode (only in service mode 1,4)

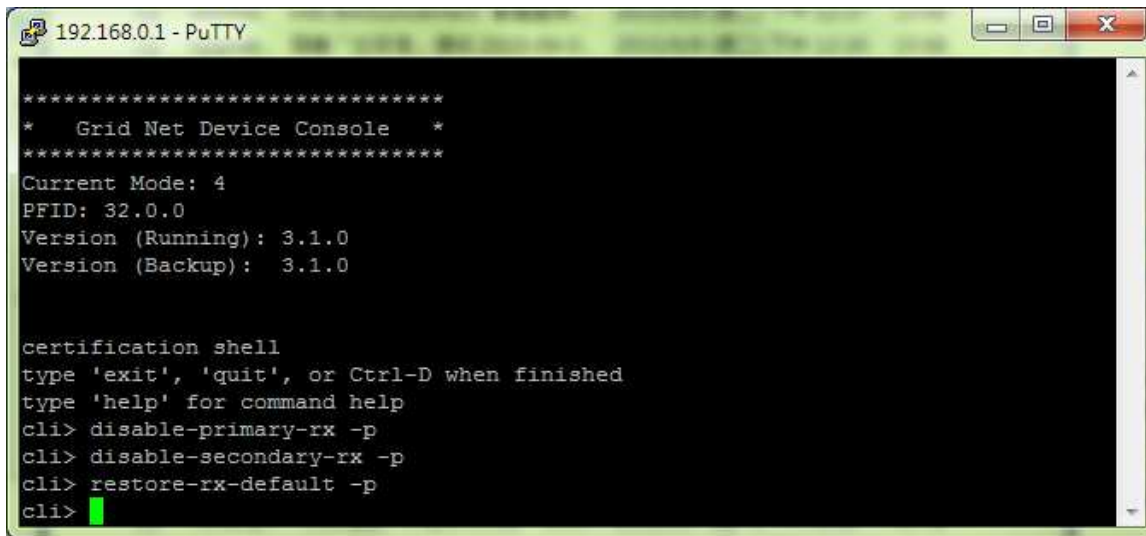


Telnet IP:192.168.0.1 Port: 35003

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```
192.168.0.1 - PuTTY

*****
*   Grid Net Device Console   *
*****
Current Mode: 4
PFID: 32.0.0
Version (Running): 3.1.0
Version (Backup): 3.1.0

certification shell
type 'exit', 'quit', or Ctrl-D when finished
type 'help' for command help
cli> disable-primary-rx -p
cli> disable-secondary-rx -p
cli> restore-rx-default -p
cli>
```

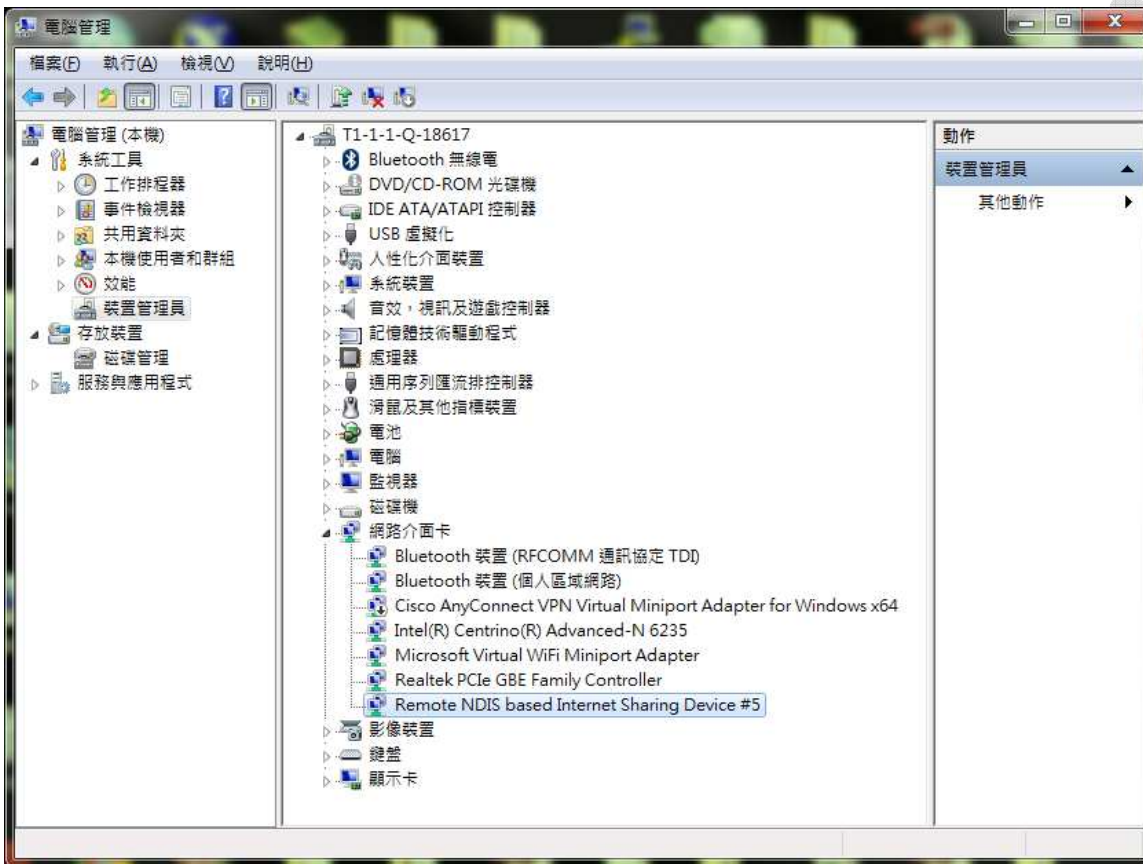
- ***disable-primary-rx -p*** ➔ Disable Primary Rx
- ***disable-secondary-rx -p*** ➔ Disable secondary Rx
- ***restore-rx-default -p*** ➔ Enable Primary/Secondary Rx

Note: The setting will persist across reboots

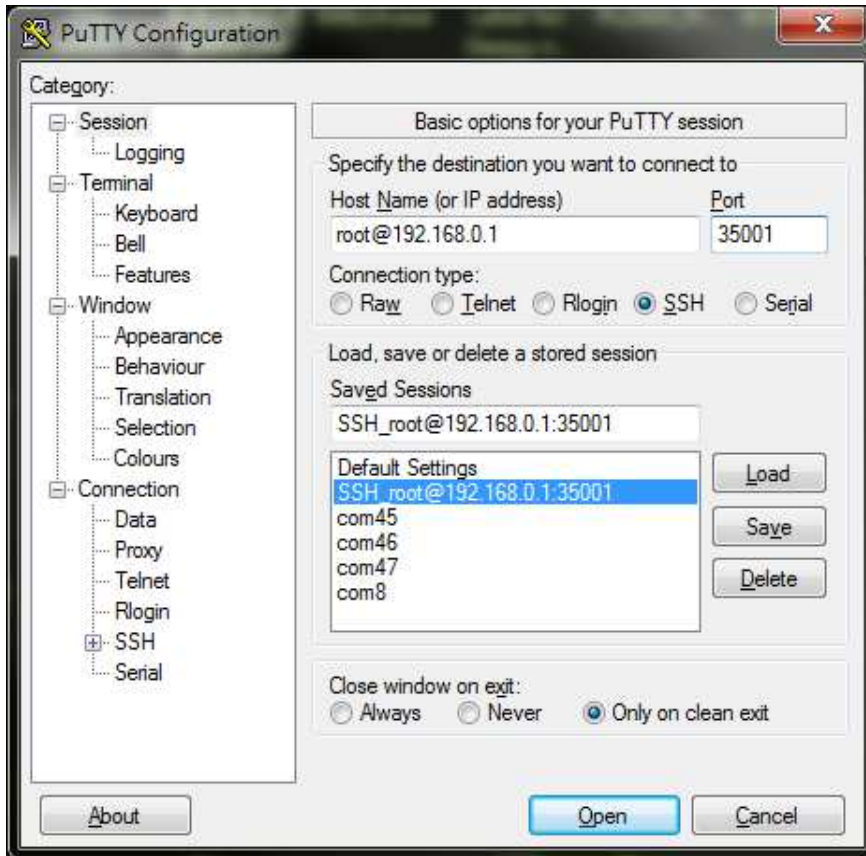
## Appendix I

### Change System Service Mode for Serial Port Control

Step 1: Confirm windows capture the device

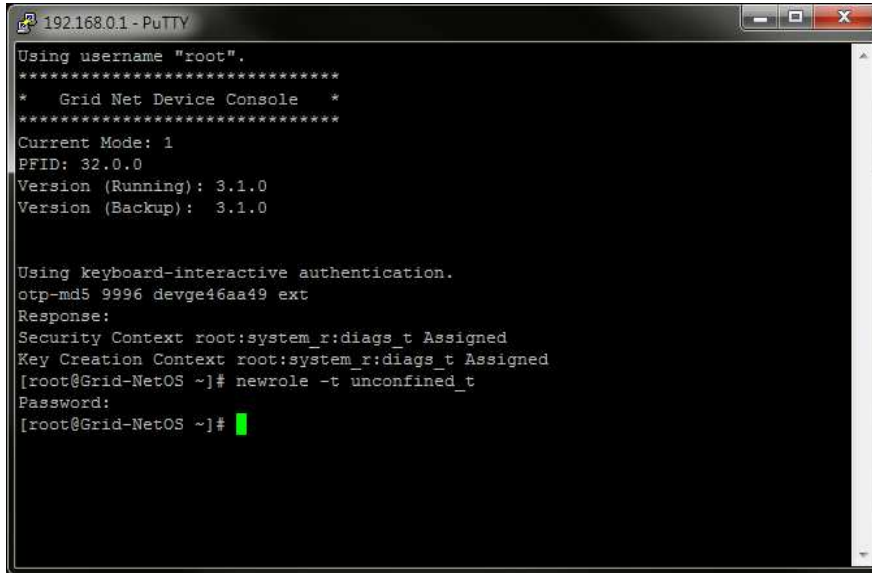


## Step 2: Establish SSH connection by Putty in windows



- Hostname: **root@192.168.0.1** port: **35001** Connection type: **SSH**
- Click “NO” for continue without saving ssh key

## Step 3: Login with one time password.



```
192.168.0.1 - PuTTY
Using username "root".
*****
*   Grid Net Device Console   *
*****
Current Mode: 1
PFID: 32.0.0
Version (Running): 3.1.0
Version (Backup): 3.1.0

Using keyboard-interactive authentication.
otp-md5 9996 devge46aa49 ext
Response:
Security Context root:system_r:diags_t Assigned
Key Creation Context root:system_r:diags_t Assigned
[root@Grid-NetOS ~]# newrole -t unconfined_t
Password:
[root@Grid-NetOS ~]#
```

## Login with one time pass word

Look up the corresponding password in the OTP list below.

Ex: 9998 ➔ NOB YET HECK CAKE CUR MALE

Enter command: ***newrole -t unconfined\_t***

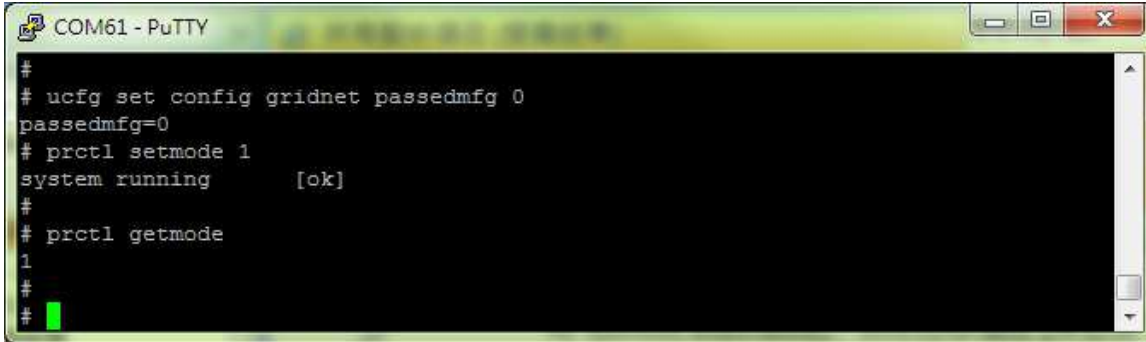
Look up the corresponding password in the OTP list below.

Ex: 9997 ➔ VOID COON MEET TEST OVER MOD

### One Time Password (OTP ) List:

9989: ACTS EDGY AMID TAG TREE SLIM  
9990: DO SAT HI SOIL A HATE  
9991: SOON CUE PEG SAUL LACK IFFY  
9992: SALK NAVY ROVE INCA LOON HIT  
9993: GULF NOUN HUH TAKE OLIN SILO  
9994: WAYS AUNT GAUL IRK TALK ROSE  
9995: HAT PRY CLAW CHIC GAP CHIN  
9996: MAC OLAF GLOM OVAL SAC LO  
9997: VOID COON MEET TEST OVER MOD  
9998: NOB YET HECK CAKE CUR MALE

## Step 4: Set system service mode



```
# ucfg set config gridnet passedmfg 0
passedmfg=0
# prctl setmode 1
system running      [ok]
#
# prctl getmode
1
#
#
```

- *ucfg set config gridnet passedmfg 0*

*prctl setmode 1*                      Set system service mode to 1

- *prctl getmode*                      Read the system mode