

## Quick Start Guide

Model: NM8207

Date: Jun, 27 2017

Rev 0.5

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## 1 Revision History

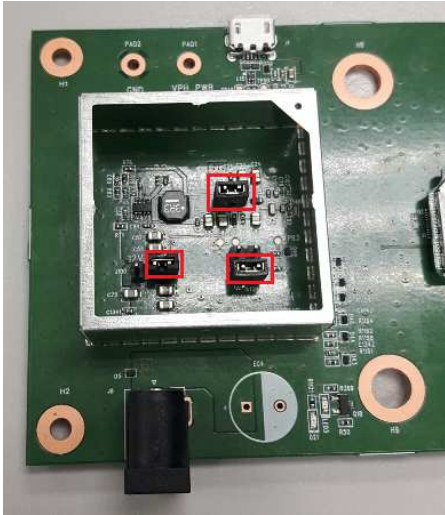
0.1	2017/06/09	Initial version	Woody Cheng
0.2	2017/06/13	Changed model name to NM8207.	Woody Cheng
0.3	2017/06/21	Add module and Dev kit installation guide on section 2.3 &2.4	GuanYu Jiang
0.4	2017/06/27	Added section 3, "Create data call connection".	Woody Cheng
0.5	2017/06/27	Updated the screenshot of the section 3 step7.	Woody Cheng

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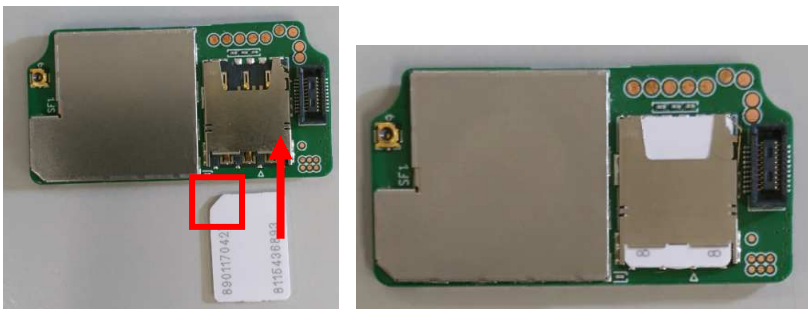
## 2 Setup/connect the device for testing.

2.1 Install USB driver.

2.2 Adjust jumpers on carrier board.

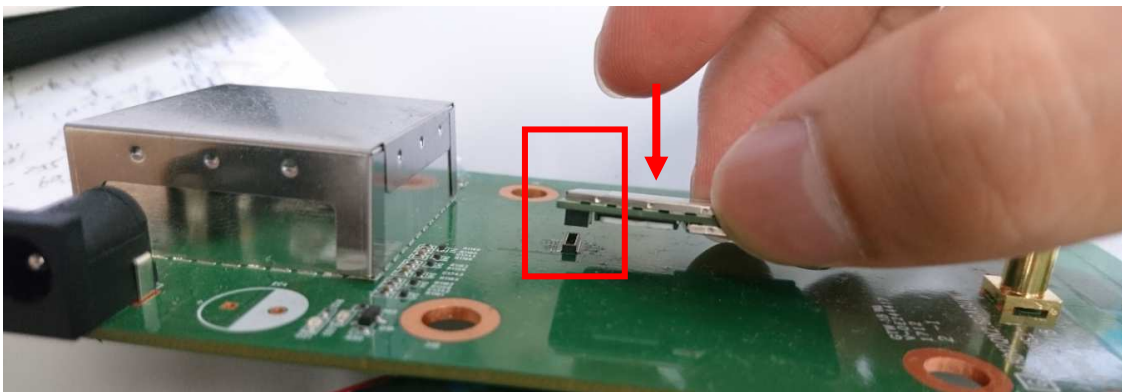


2.3 Insert Nano SIM card into NM8207 module.



2.4 Connect NM8208 module with carrier board

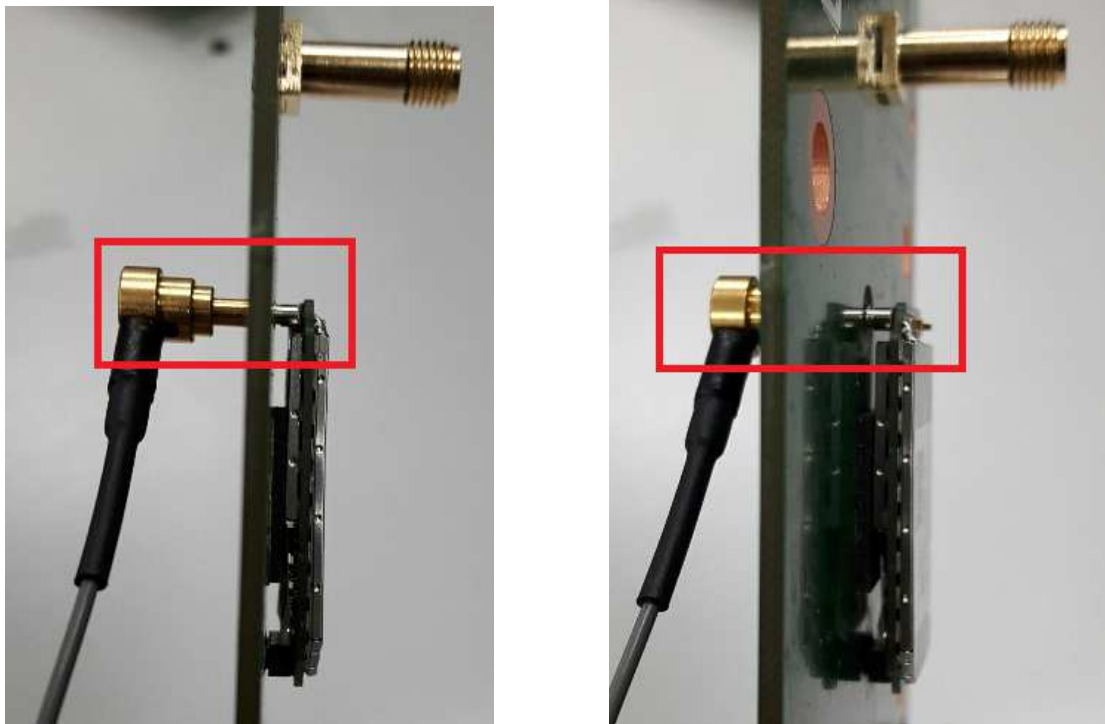
A particular attention must be paid, please make sure the board to board connectors are perfect aligned before pushing down the NM8207 module toward the carrier board.



**Caution: An inappropriate installation will break the board to board connectors permanently.**

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## 2.5 Connect antenna cable with NM8207 module.



## 2.6 Connect carrier board and PC via USB cable.



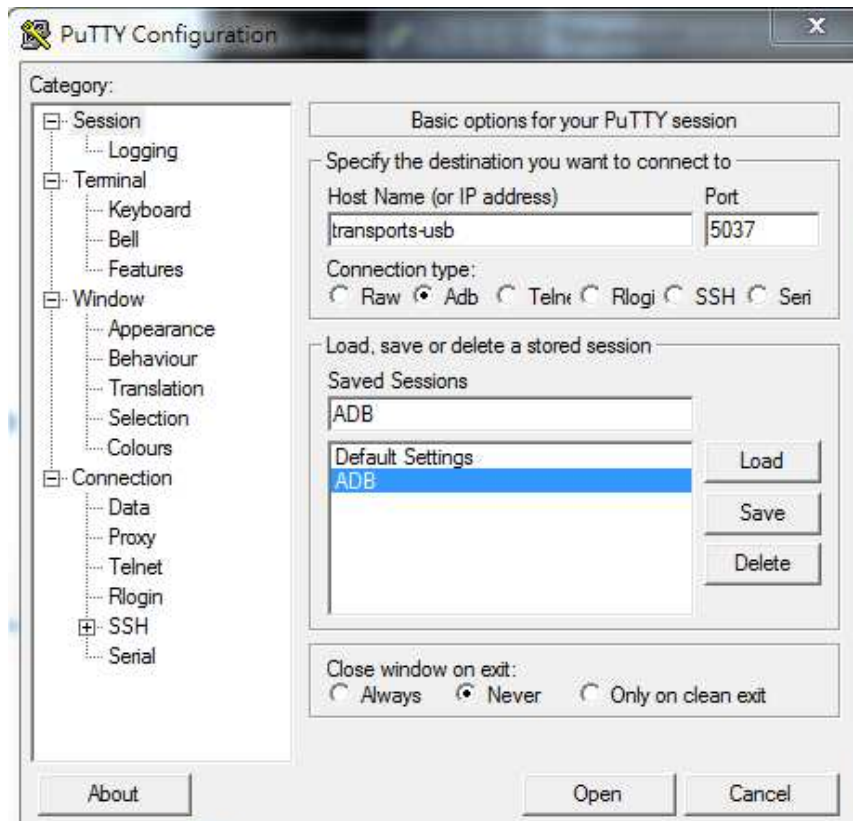
## 3 Create data call connection

Please follow the steps below to create data call connection.

**Step1:** Insert SIM card into module.

**Step2:** Connect PC and module via USB cable. And run “adb shell” on PC side in advance.

**Step3:** Use putty to connect module.



**Step4:** Execute the following commands to setup APN and launch connection manager.

```
/ # wnc-tools at_cmd AT+CGDCONT=1,\"IP\", \"internet\", \"\", \"\", 0,0  
/ # wnc-tools at_cmd "at+cgdcont?"  
/ # /etc/init.d/start_QCMAP_ConnectionManager_le start  
/ # QCMAP_CLI
```

```
/ # wnc-tools at_cmd AT+CGDCONT=1,\"IP\", \"internet\", \"\", \"\", 0,0  
OK  
/ # wnc-tools at_cmd "at+cgdcont?"  
+CGDCONT: 1, "IP", "internet", "0.0.0.0", 0, 0, 0, 0  
OK  
/ # /etc/init.d/start_QCMAP_ConnectionManager_le start  
Starting QCMAP_ConnectionManager: done  
/ # QCMAP_CLI
```

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**Step5:** Select 30 to setup Mobile AP and then select 1 to enable it.

```
47. Get WWAN Profile          97. Get IP Passthrough Config
48. Set WWAN Profile          98. Get IP Passthrough State
49. Get UPnP Status           99. Add Ethernet module
50. Get DLNA Status           100. Teardown/Disable and Exit
Option > 30
Please input MobileAP State(1-Enable/0-Disable) : 1

qcmapi_cli_main.cpp 213:qcmapi_msgr_qmi_qcmapi_ind: user_handle 2 msg_id 41 ind_buf_len 14.
qcmapi_cli_main.cpp 404:qcmapi_msgr_qmi_qcmapi_ind: Mobile AP Connected...
MobileAP Enable succeeds.
```

**Step6:** Select 32 to connect Backhaul and set call type to IPv4.

```
47. Get WWAN Profile          97. Get IP Passthrough Config
48. Set WWAN Profile          98. Get IP Passthrough State
49. Get UPnP Status           99. Add Ethernet module
50. Get DLNA Status           100. Teardown/Disable and Exit
Option > 32
Please input Backhaul State(1-Connect/0-Disconnect) : 1

Please input Call Type (1-IPV4; 2-IPV6) : 1
ConnectBackHaul succeeds.
```

If the module connected to network successfully, "IPV4 WWAN Connected" message would show on the putty.

```
49. Get UPnP Status           99. Add Ethernet module
50. Get DLNA Status           100. Teardown/Disable and Exit
Option >
qcmapi_cli_main.cpp 213:qcmapi_msgr_qmi_qcmapi_ind: user_handle 2 msg_id 34 ind_buf_len 25.
qcmapi_cli_main.cpp 239:qcmapi_msgr_qmi_qcmapi_ind: IPV4 WWAN Connected
```

**Step7:** Keep the original putty window, and then use putty to new another adb session to check the connection.

```
/ # ifconfig rmnet_data0
rmnet_data0 Link encap:UNSPEC HWaddr 00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00
inet addr 10.64.30.159 Mask:255.255.255.192
inet6 addr: fe80::b1a6:990a:a459:df5f/64 Scop:Link
UP RUNNING MTU:1500 Metric:1
RX packets:11 errors:0 dropped:0 overruns:0 frame:0
TX packets:16 errors:0 dropped:0 overruns:0 frame:0
collisions:0 txqueuelen:1000
RX bytes:700 (700.0 B) TX bytes:1356 (1.3 KiB)

/ # ping 8.8.8.8 -c 3
PING 8.8.8.8 (8.8.8.8) 56(84) bytes of data.
64 bytes from 8.8.8.8: icmp_req=1 ttl=45 time=325 ms
64 bytes from 8.8.8.8: icmp_req=2 ttl=45 time=331 ms
64 bytes from 8.8.8.8: icmp_req=3 ttl=45 time=319 ms

--- 8.8.8.8 ping statistics ---
3 packets transmitted, 3 received, 0% packet loss, time 2004ms
rtt min/avg/max/mdev = 319.113/325.408/331.641/5.114 ms
/ #
```

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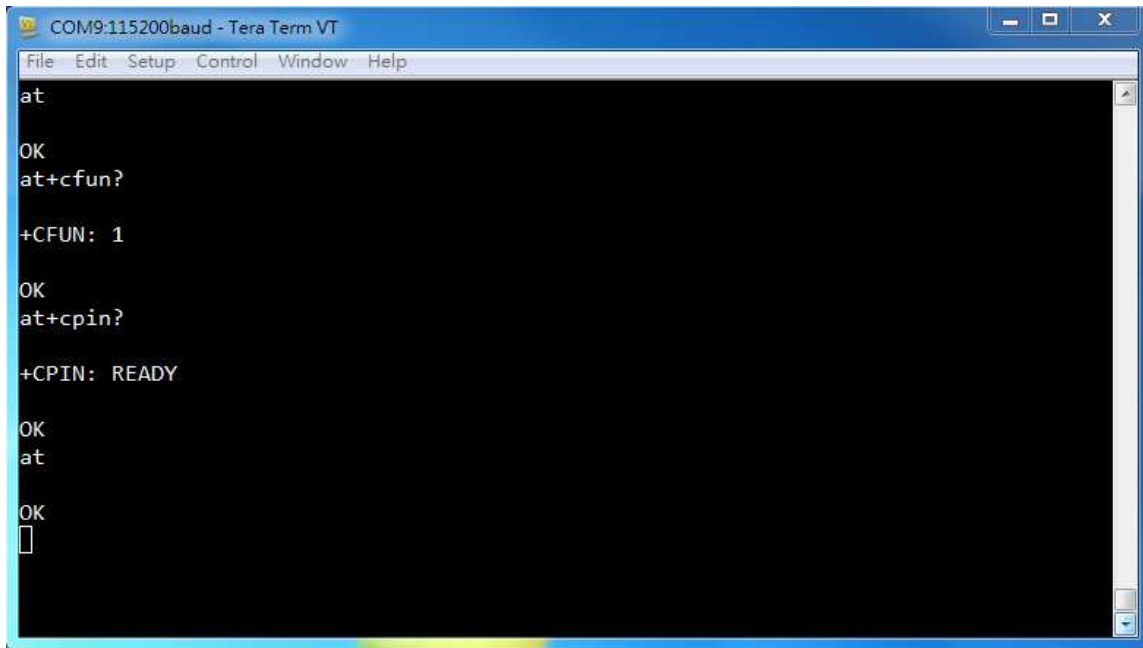
## 4 Execute AT command

### 4.1 Connect to NMEA port of module.

After the NMEA port was shown on device manager.

You can connect to it via Tera Term tool. (or putty)

Then you can use it to send AT command to module.



The screenshot shows a Tera Term VT terminal window titled "COM9:115200baud - Tera Term VT". The window has a menu bar with "File", "Edit", "Setup", "Control", "Window", and "Help". The terminal content is as follows:

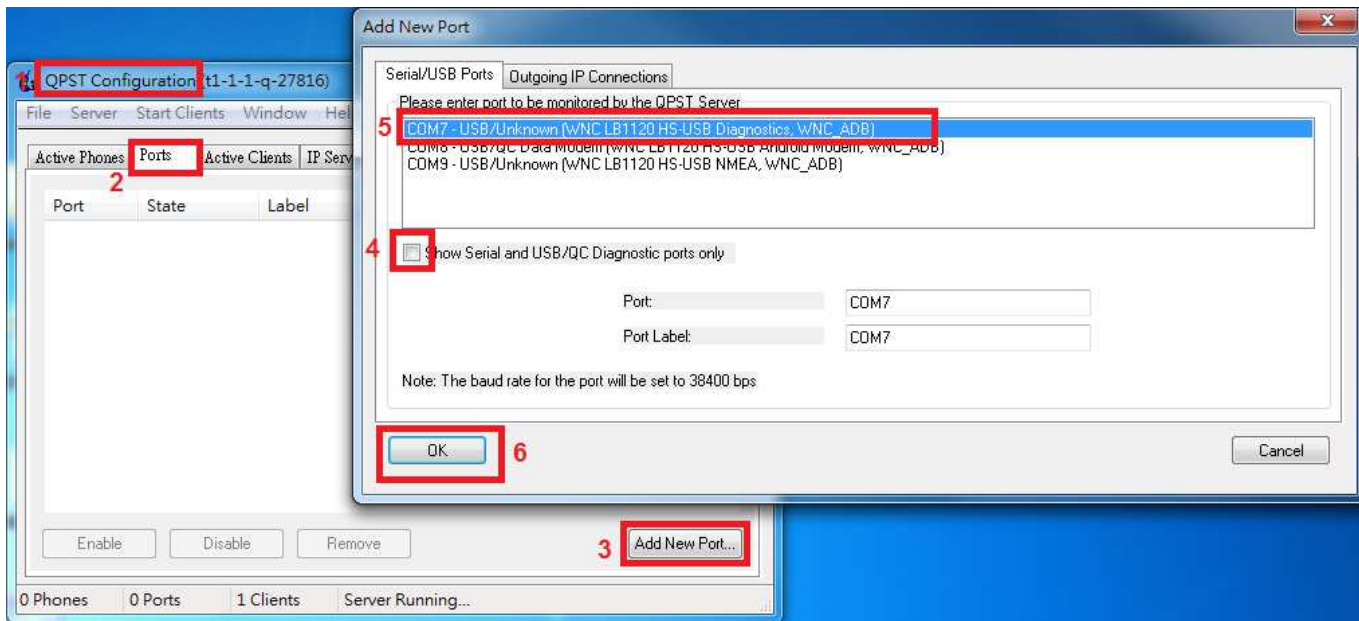
```
at
OK
at+cfun?
+CFUN: 1
OK
at+cpin?
+CPIN: READY
OK
at
OK
█
```

## 5 Connect to QPST

### 5.1 Add Diagnostics port

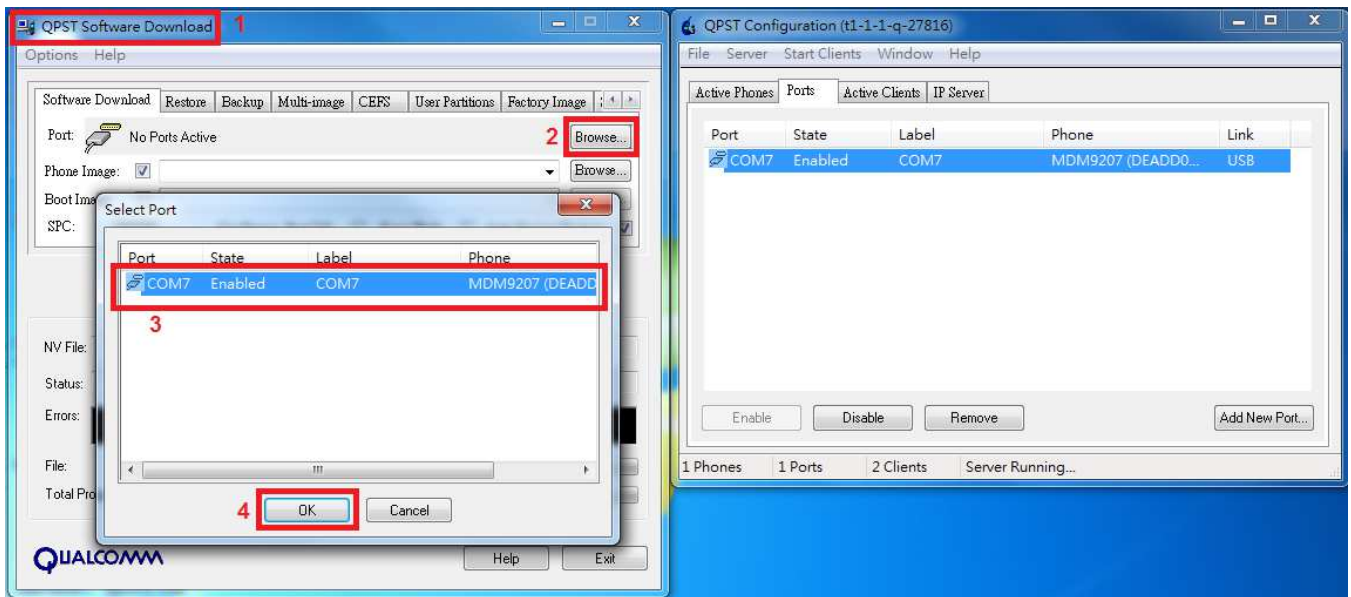
After the Diagnostics port was shown on device manager. Then you can use "QPST Configuration" tool to add Diagnostics port. Please follow the steps on the screenshot to add port.





## 5.2 Add port to QPST Software Download

Add Diagnostics port to “QPST Software Download”, then you can start to use it to do QPST functions.



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It powered by DC 3.3V (normal voltage), rating for lowest voltage is 2.97V and highest voltage is 3.63V

Test Antenna spec.

Ant.	Gain(dBi) Including cable loss	Frequency range (MHz to MHz)	Antenna Type	Connector Type (External only)
ANT1	3.4	824 to 849 MHz	PIFA	I-PEX MHF IV
	4.39	880 to 915 MHz		
ANT2	2.62	1850 to 1915 MHz	PIFA	I-PEX MHF IV
	4.25	1710 to 1785 MHz		
	3.82	1920 to 1980 MHz		

## 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/TV technician for help.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

### **Radiation Exposure Statement:**

This equipment complies with FCC / ISED radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

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**This device is intended only for OEM integrators under the following conditions:**

- 1) The antenna must be installed such that 20 cm is maintained between the antenna and users.
- 2) The transmitter module may not be co-located with any other transmitter or antenna.

As long as 2 conditions above are met, further transmitter test will not be required. However, the OEM integrator is still responsible for testing their end-product for any additional compliance requirements required with this module installed

**IMPORTANT NOTE:** In the event that these conditions can not be met (for example certain laptop configurations or co-location with another transmitter), then the FCC authorization is no longer considered valid and the FCC ID can not be used on the final product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate FCC authorization.

## **End Product Labeling**

This transmitter module is authorized only for use in device where the antenna may be installed such that 20 cm may be maintained between the antenna and users. The final end product must be labeled in a visible area with the following: "Contains FCC ID: PY317200381". The grantee's FCC ID can be used only when all FCC compliance requirements are met.

## **Manual Information To the End User**

The OEM integrator has to be aware not to provide information to the end user regarding how to install or remove this RF module in the user's manual of the end product which integrates this module.

The end user manual shall include all required regulatory information/warning as show in this manual.

1.

## Industry Canada statement:

This device complies with ISED's licence-exempt RSSs. 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.

Le présent appareil est conforme aux CNR d'ISED applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) le dispositif ne doit pas produire de brouillage préjudiciable, et (2) ce dispositif doit accepter tout brouillage reçu, y compris un brouillage susceptible de provoquer un fonctionnement indésirable.

## Radiation Exposure Statement:

This equipment complies with ISED radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

## Déclaration d'exposition aux radiations:

Cet équipement est conforme aux limites d'exposition aux rayonnements ISED établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec un minimum de 20 cm de distance entre la source de rayonnement et votre corps.

This device is intended only for OEM integrators under the following conditions: (For module device use)

- 1) The antenna must be installed such that 20 cm is maintained between the antenna and users, and
- 2) The transmitter module may not be co-located with any other transmitter or antenna.

As long as **2** conditions above are met, further transmitter test will not be required. However, the OEM integrator is still responsible for testing their end-product for any additional compliance requirements required with this module installed.

Cet appareil est conçu uniquement pour les intégrateurs OEM dans les conditions suivantes: (Pour utilisation de dispositif module)

- 1) L'antenne doit être installée de telle sorte qu'une distance de 20 cm est respectée entre l'antenne et les utilisateurs, et 2) Le module émetteur peut ne pas être coïmplanté avec un autre émetteur ou antenne.

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Tant que les **2** conditions ci-dessus sont remplies, des essais supplémentaires sur l'émetteur ne seront pas nécessaires. Toutefois, l'intégrateur OEM est toujours

**End Product Labeling** This transmitter module is authorized only for use in device where the antenna may be installed such that 20 cm may be maintained between the antenna and users. The final end product must be labeled in a visible area with the following: "Contains IC: 4054A-17200381".

## **Plaque signalétique du produit final**

Ce module émetteur est autorisé uniquement pour une utilisation dans un dispositif où l'antenne peut être installée de telle sorte qu'une distance de 20cm peut être maintenue entre l'antenne et les utilisateurs. Le produit final doit être étiqueté dans un endroit visible avec l'inscription suivante: "Contient des IC: 4054A-17200381".