RF Exposure Evaluation
in co-locating with other transmitters

1. Configuration

  The host PC device (DL-Note) has the following two types of configurations for the wireless communication features. The Figure-1 is designed for US and Canada, and the Figure-2 is for US only.

  This application includes the SAR test report for the applying modular transmitter device (FCC ID: **PD9 LEN3945ABG**) measured with the Figure-2 representatively as the worse case.   The other transmitters listed below are to be certified separately under each respective FCC ID.

  The Bluetooth module can transmit with one of WWAN or WLAN modules simultaneously, but **the transmission of WLAN or WWAN module is controlled to switch exclusively.**   See the next page.

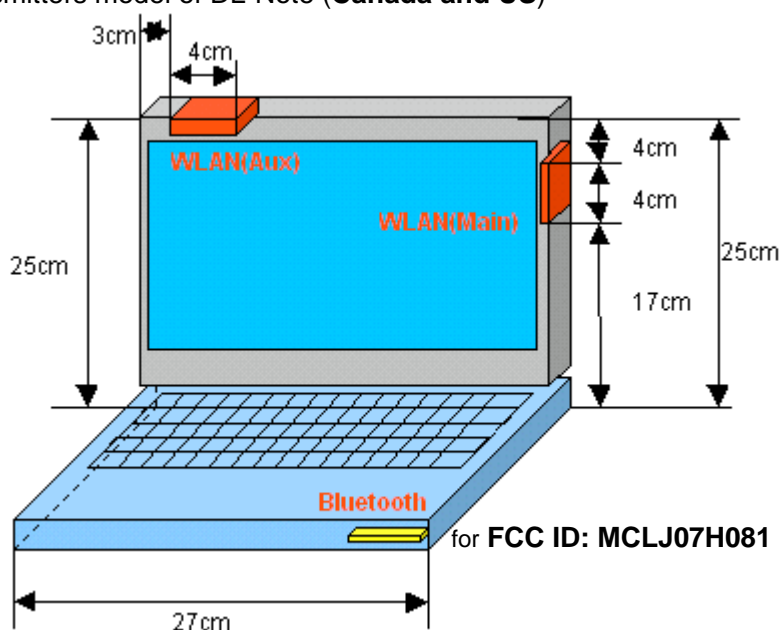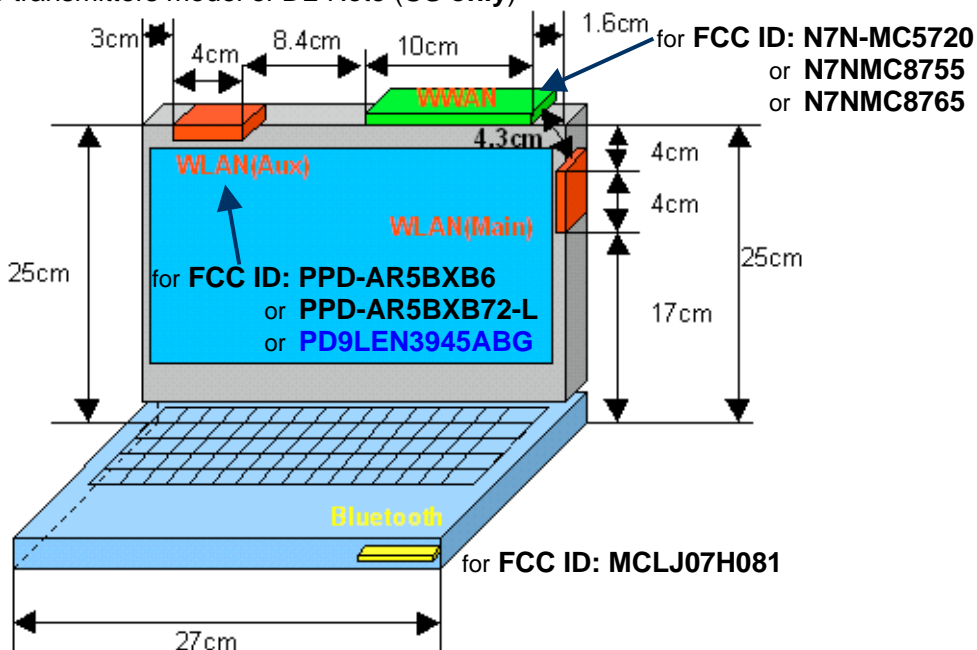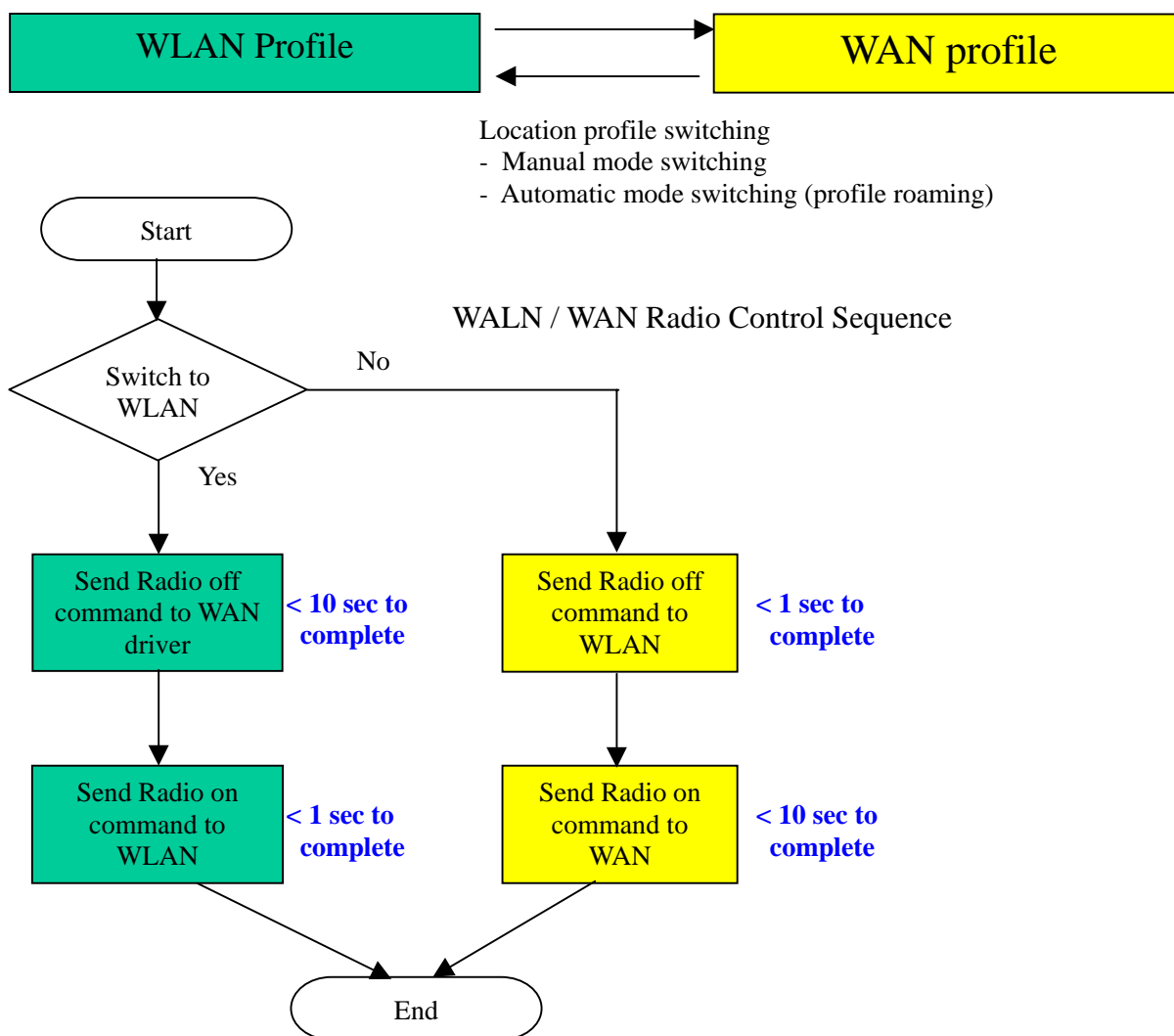**Figure-1**: Dual transmitters model of DL-Note (**Canada and US**)

Figure-2: Triple transmitters model of DL-Note (**US only**)

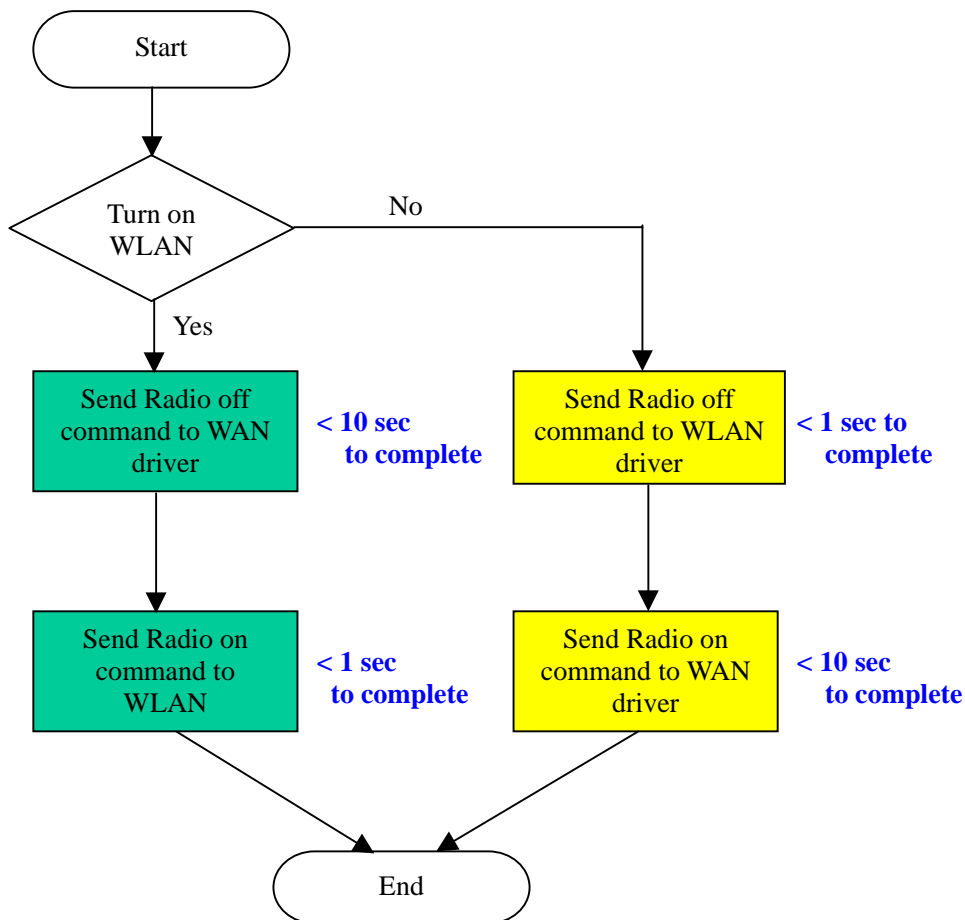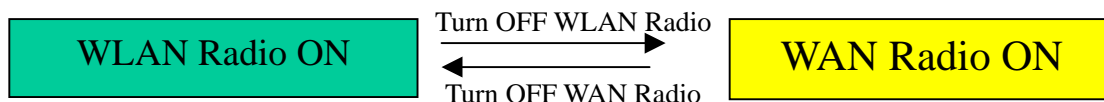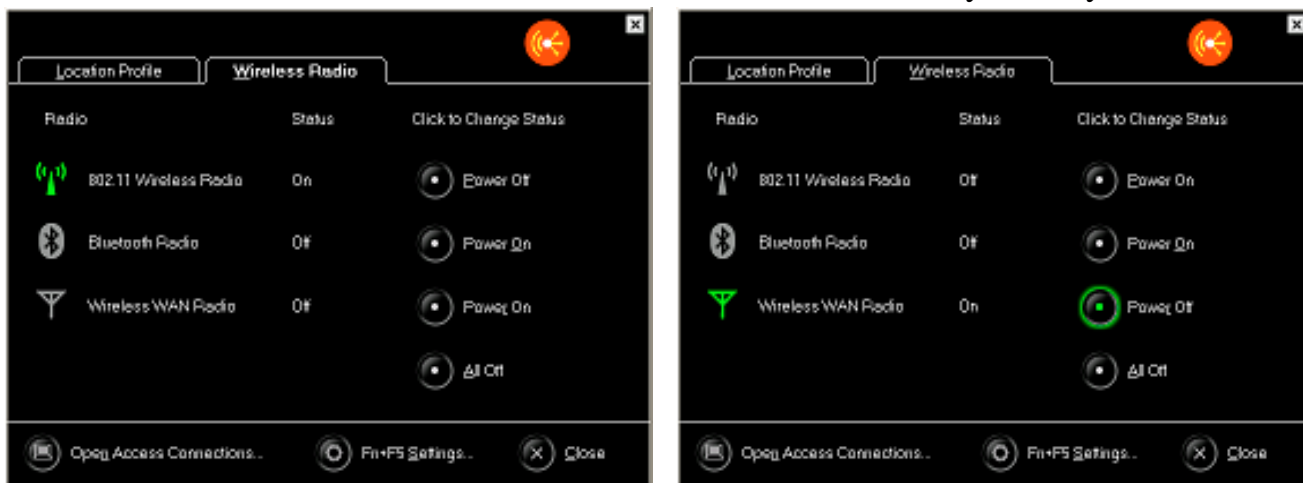## 2. Wireless LAN /WAN switching scheme within 11 seconds of handover time

Location profile switching scenario

- Exclusive control for WLAN and WAN when WLAN and WAN location profile is applied by user (manual mode switching)

- Exclusive control when automatic location switching is performed by Access Connections (automatic profile roaming)

| WLAN Profile | → ← | WAN profile |

Location profile switching
- Manual mode switching
- Automatic mode switching (profile roaming)

Start

WALN / WAN Radio Control Sequence

Switch to WLAN — No

Yes

Send Radio off command to WAN driver — **< 10 sec to complete**

Send Radio off command to WLAN — **< 1 sec to complete**

Send Radio on command to WLAN — **< 1 sec to complete**

Send Radio on command to WAN — **< 10 sec to complete**

End

Radio control by software menu (Fn+F5 hot key)

Exclusive control when WLAN or WAN Radio ON is selected by hot key

WLAN Radio ON	Turn OFF WLAN Radio ⟶	WAN Radio ON
	⟵ Turn OFF WAN Radio	

Start

Turn on WLAN — No

Yes

| Send Radio off command to WAN driver | **< 10 sec to complete** | Send Radio off command to WLAN driver | **< 1 sec to complete** |

| Send Radio on command to WLAN | **< 1 sec to complete** | Send Radio on command to WAN driver | **< 10 sec to complete** |

End

Wireless WAN/LAN status indication

The sifting status from WAN(LAN) to LAN(WAN) is also indicated with the following LED.   The switching time is actually shorter than 11 seconds of logical control limit time.

3. Justification for SAR testing

The subjected host device is a tablet type PC, and the transmission antennas are very close to the human body. Therefore the applying LMA transmitter and the antenna system is categorized as a Potable device pursuant to FCC CFR 47 Section 2.1093.

The WLAN and WWAN modules do not establish the network link connections simultaneously, but switch to the other within 11 seconds of handover time when one is in active. So each independent SAR testing for WLAN or WWAN module is available for RF exposure evaluation.

The separate SAR test report (Number: 06LR023SAR-F) was measured for the applying modular transmitter (FCC ID: PD9LEN3945ABG). The maximum measurement result was 0.142W/Kg (clause 9.4, page 23), then the applying device (FCC ID: PD9LEN3945ABG) has found to comply with the SAR limits.

The SAR testing was performed with the co-located Bluetooth (FCC ID: MCLJ07H081) in active and transmitting simultaneously.

The SAR test was performed with the following configuration, and the same terms of each configuration are referred in the SAR test report. **The WWAN is listed for reference only.**
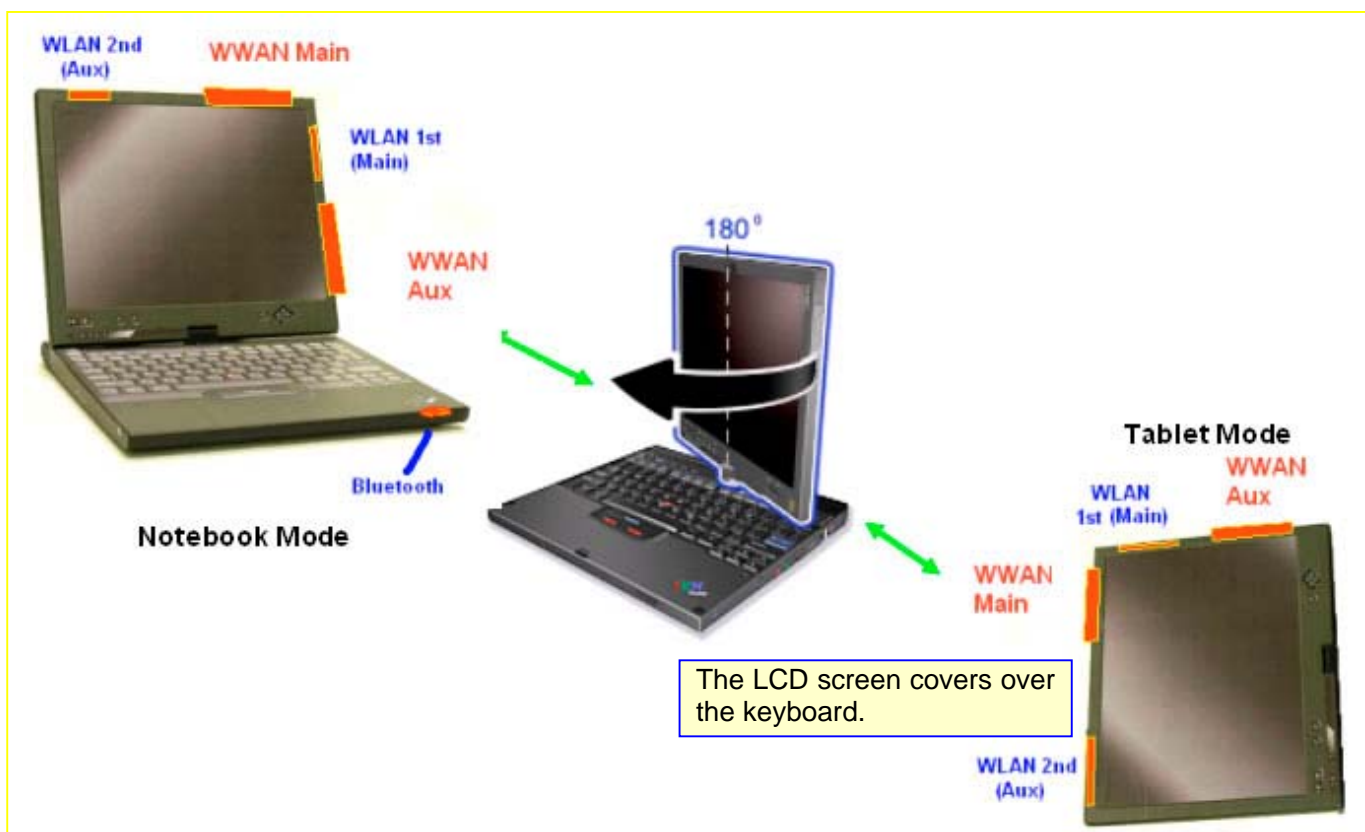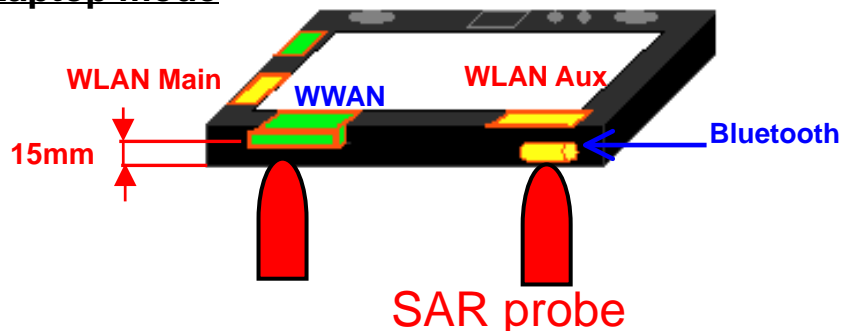

Figure-3: **Laptop mode**

Figure-4: Tablet PL (Primary Landscape)

Figure-5: Tablet PP (Primary Portrait)
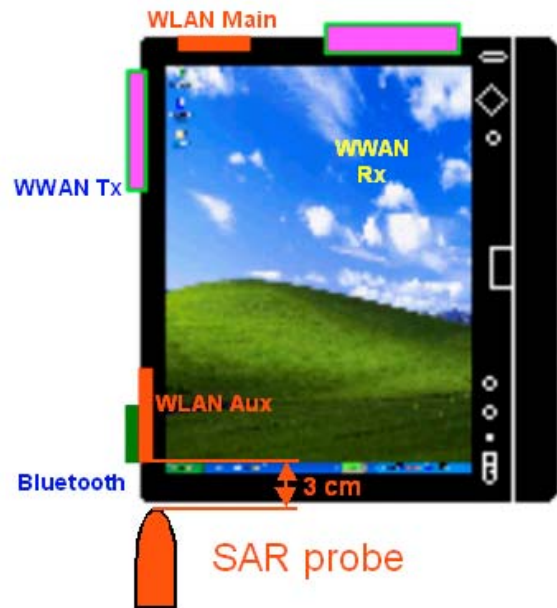

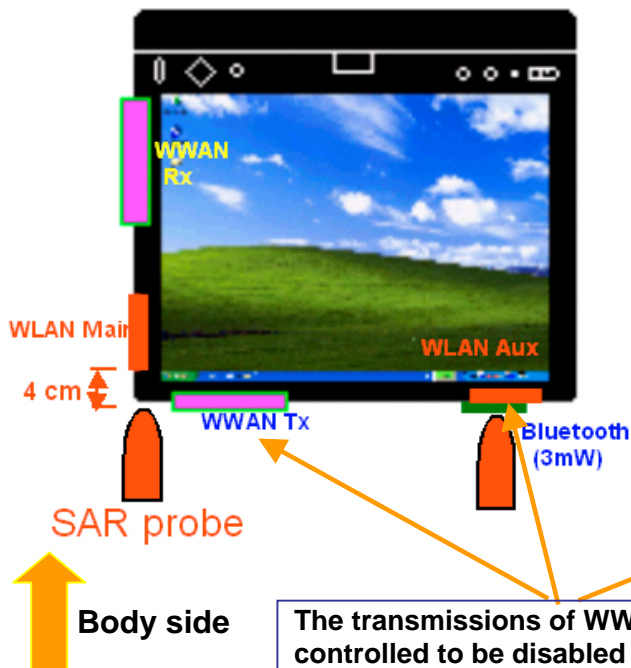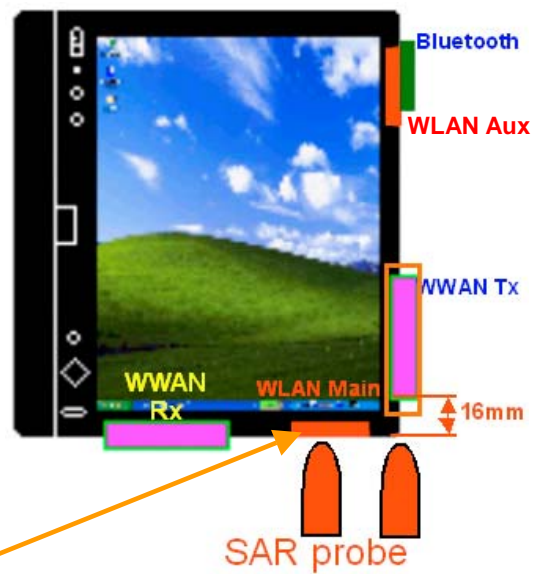## Figure-6: Tablet SL (Secondary Landscape)

Figure-7: Tablet SP (Secondary Portrait)

The transmissions of WWAN or WLAN at those angles are controlled to be disabled or reduced the power. (See next page.)

[Transmission control in "Tablet" operation mode]

● The system recognizes mechanically that it is transformed from **"Notebook mode"** to **"Tablet mode".**

Notebook mode

Tablet mode

● The screen angle of **Tablet mode** is determined by operators with the screen rotation switch shown below, then the system recognizes which screen mode in **PL, PP, SL** or **SP** is selected.

● When the **SL** screen mode was selected, the system controls the transmission power of the Aux antenna for WLAN module (FCC ID: PPD-AR5 BXB72-L**)** to restrain to 1mW, or the transmission of WLAN module (FCC ID: PPD-AR5 BXB6 or PD9LEN3945ABG) is forced to switch to the main antenna.
If WWAN module was active, the system does not function with **SL** mode for any WWAN module and returns to **PL** model automatically so that operator won't use the **SL** mode.

● When the **SP** screen mode was selected, the system controls the transmission power of the Main antenna for WLAN module (FCC ID: PPD-AR5 BXB72-L) to restrain to 1mW, or the transmission of WLAN module (FCC ID: PPD-AR5 BXB6 or PD9LEN3945ABG) is forced to switch to the Aux antenna.

screen rotation switch