

# RF Exposure Evaluation in co-locating with other transmitters

## 1. Configuration

The host PC device has the following two types of configuration for the wireless communication features, and three transmission antennas are accommodated for the wireless LAN adapter.

This application includes the SAR test report for the applying modular transmitter device (FCC ID: PD9 LEN4965AGN, IC: 1000M-L4965AGN) measured with the conditions hereafter.

Figure-1 non WWAN model

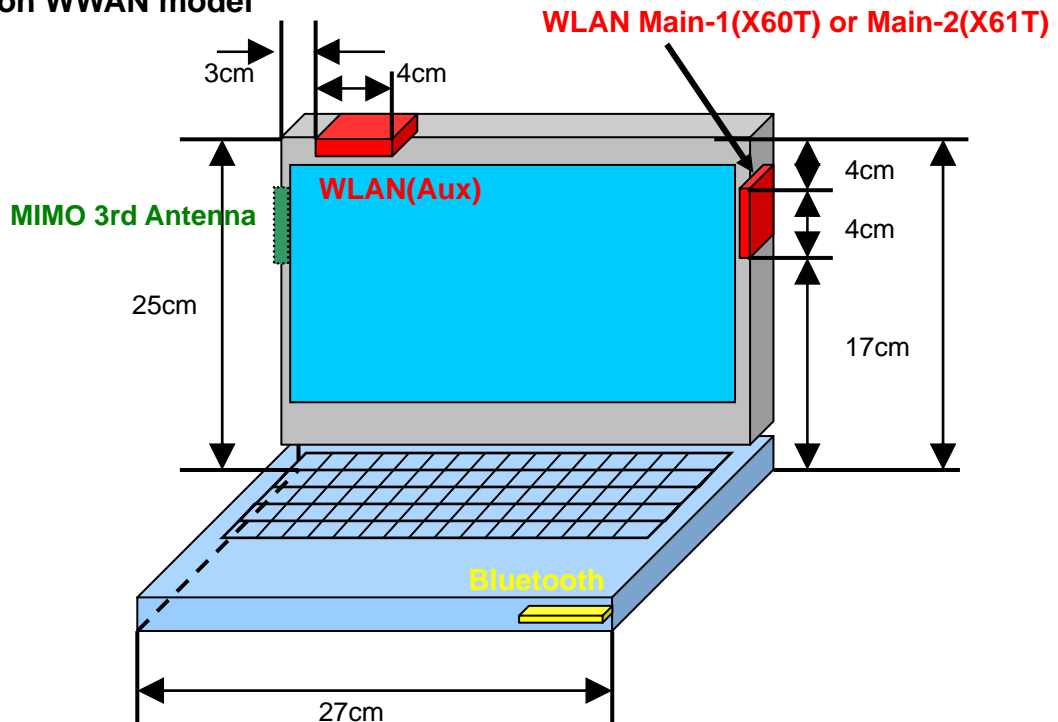
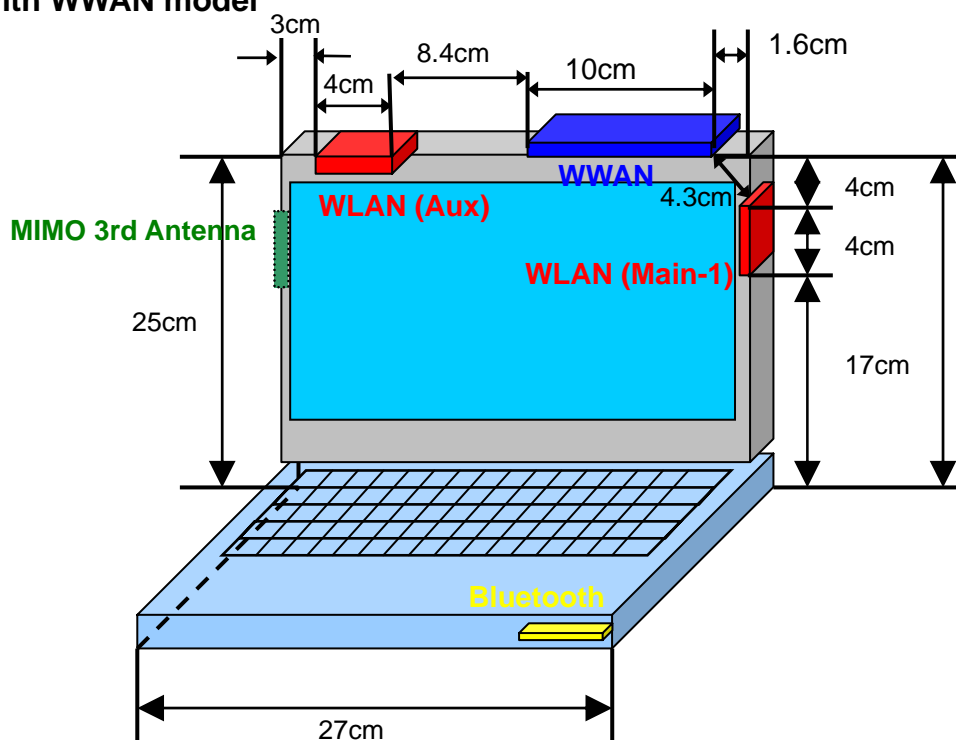


Figure-2 with WWAN model



The WLAN antenna and WWAN Tx/Rx antenna are co-located with 43mm of separation distance. However both transmitter modules do not establish the network link connections simultaneously, but switch the operation each other within 11 seconds of hand over time when one is in active. (See Section 2 in this exhibit.)

So the SAR testing for the applying WLAN transmitter does not require any evaluation for co-location with WWAN devices.

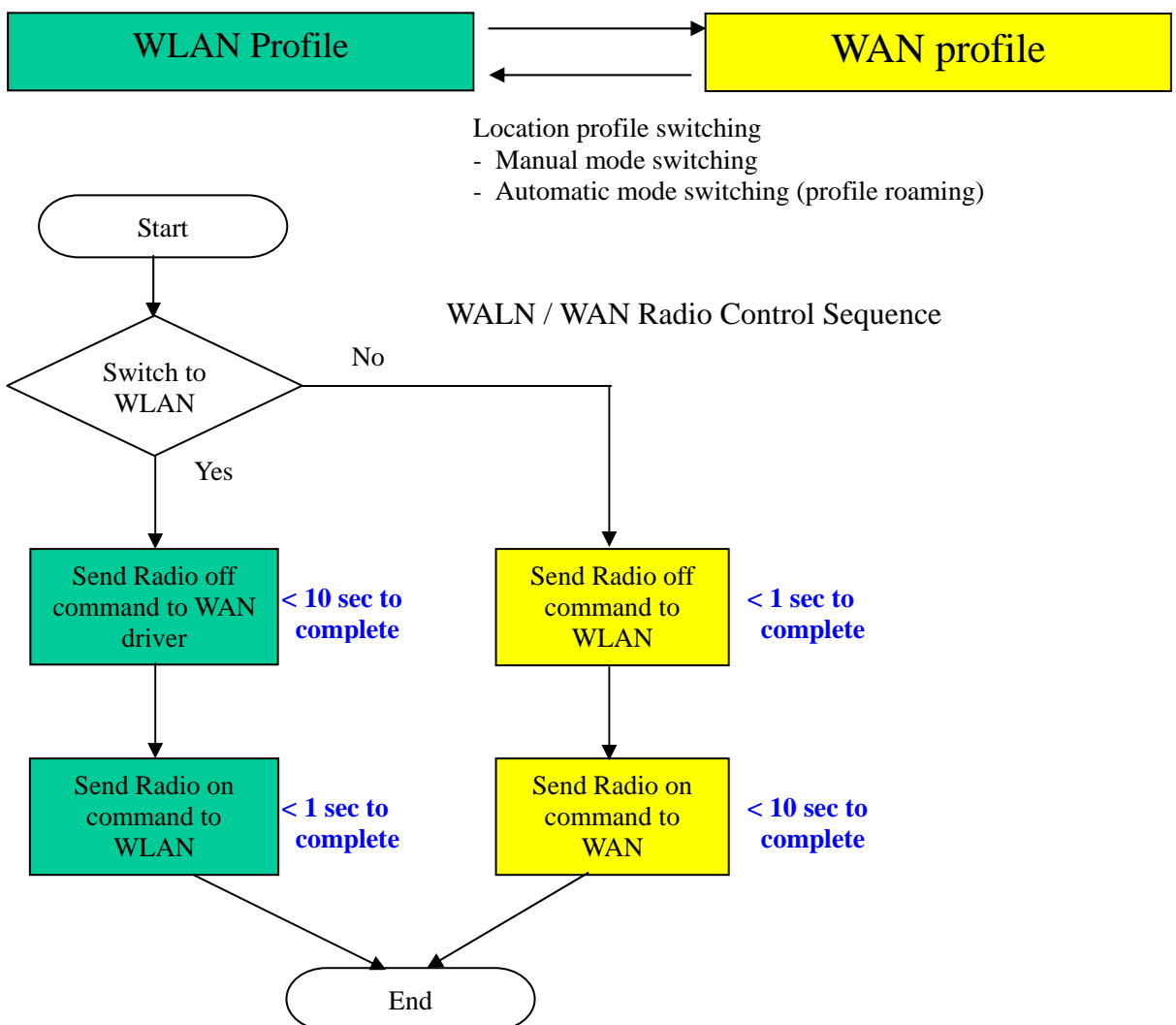
In the other hand, the separation distance between WLAN Tx/Rx antenna and Bluetooth antenna is 15mm (See Figure-3 in page 6), and both transmitters operate simultaneously. Therefore those transmitters are regarded as co-located devices, and then the SAR testing is required to be performed with the co-locating WWAN and Bluetooth devices in active.

The separate SAR report includes the measurement results performed with the applying transmitter (**FCC ID: PD9LEN4965AGN, IC: 1000M-L4965AGN**) and the co-located Bluetooth transmitter (FCC ID: MCLJ07H081, IC: 2878D-J07H081) in active and transmitting simultaneously.

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

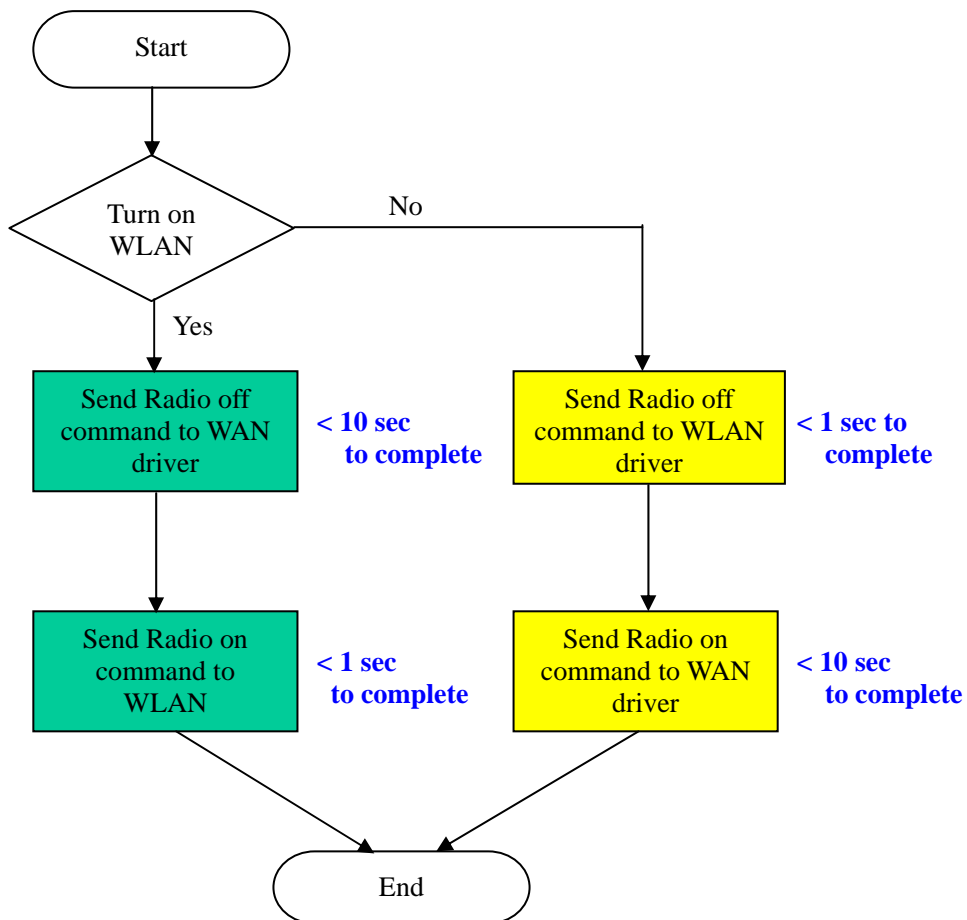
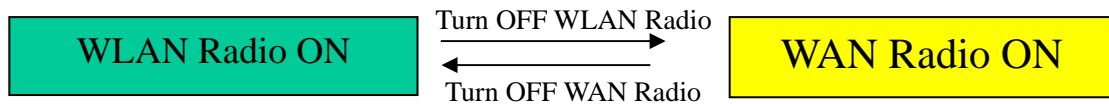
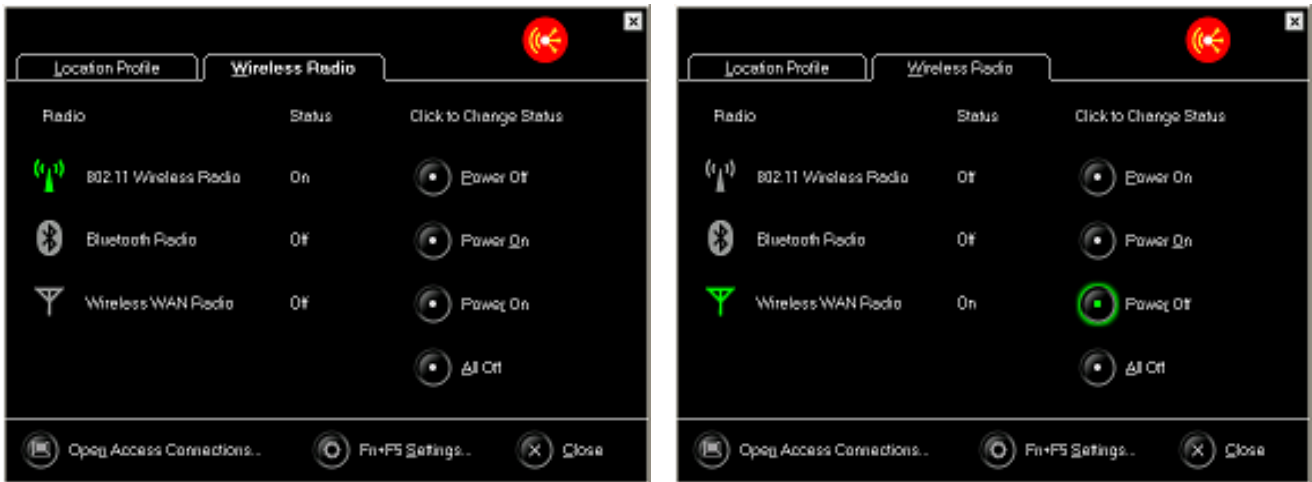
### Location profile switching scenario

- 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)



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

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



## 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

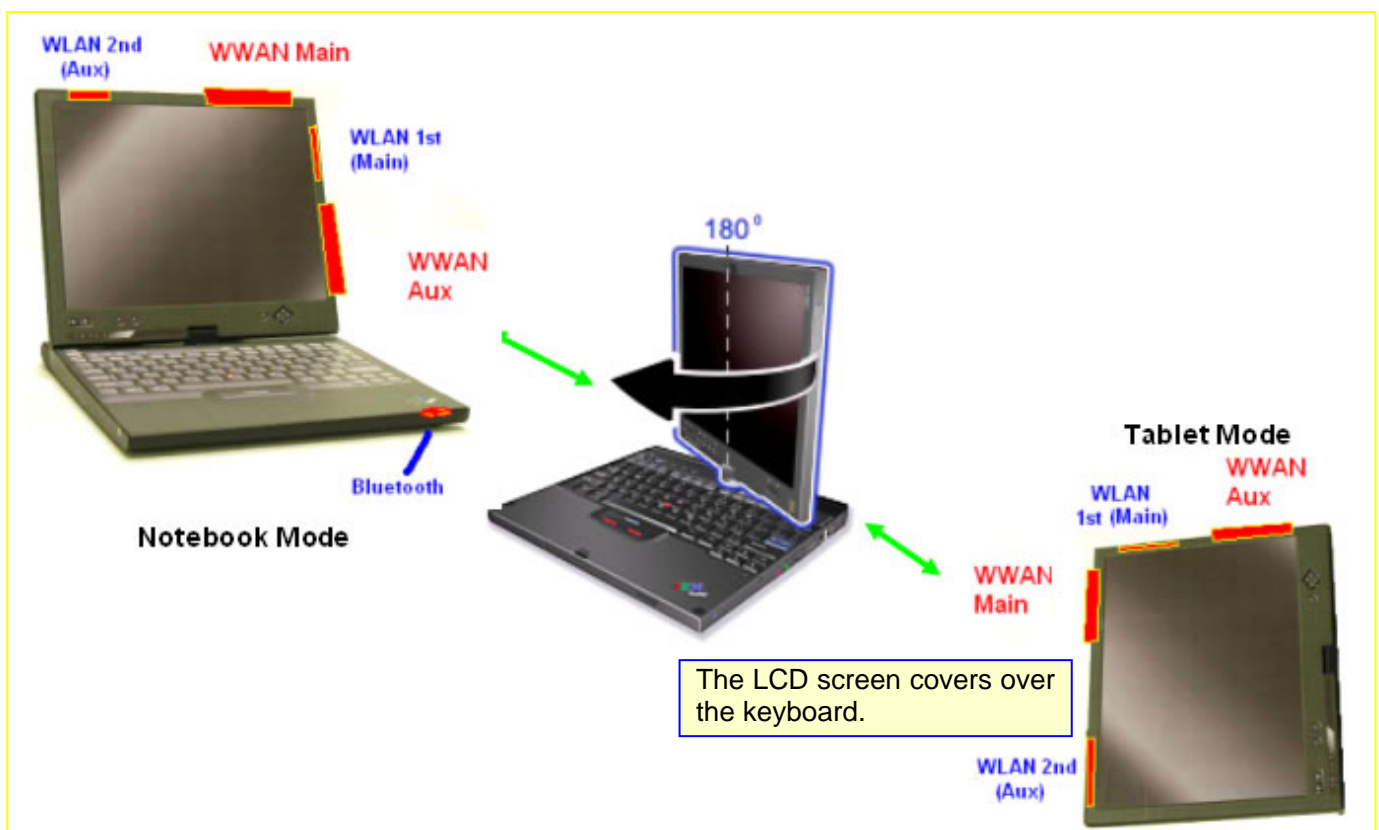
The subjected host device is a tablet type PC, and the transmission antennas are very close to the human body. Therefore the applying LMA transmitter and the antenna system is categorized as a Potable device pursuant to FCC CFR 47 Section 2.1093 and RSS-102e clause 2.5.1.

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.

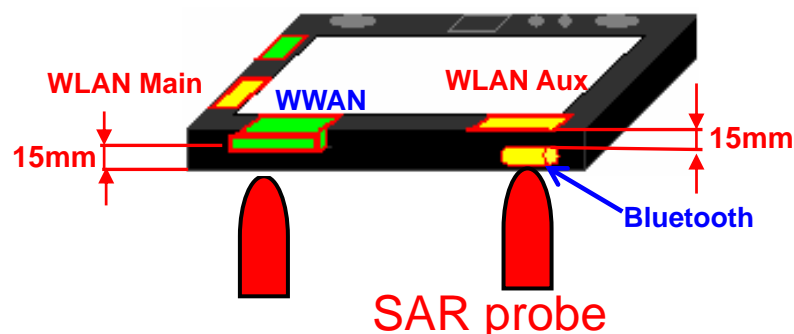
The separate SAR test report was measured for the applying modular transmitter (**FCC ID: PD9 LEN4965AGN, IC: 1000M-L4965AGN**). Then the applying device has found to comply with the SAR limits.

The SAR testing was performed with the co-located Bluetooth (FCC ID: MCLJ07H081, IC: 2878D-J07H081) in active and transmitting simultaneously.

The SAR test was performed with the following configuration. The same terms of each configuration are referred in the SAR test report.



**Figure-3: Laptop (Lap Held) mode**

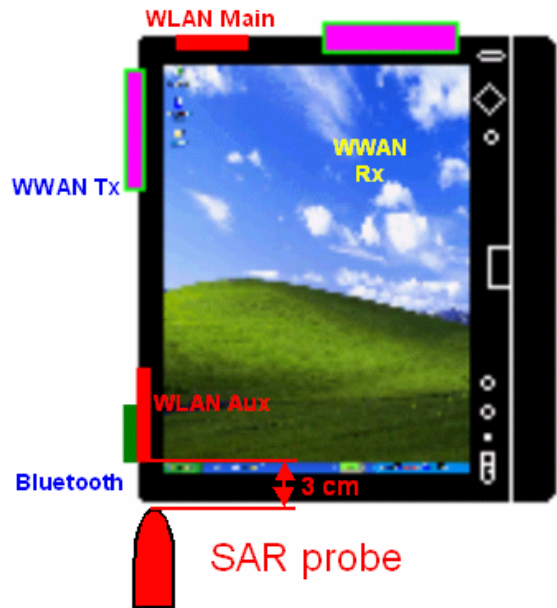




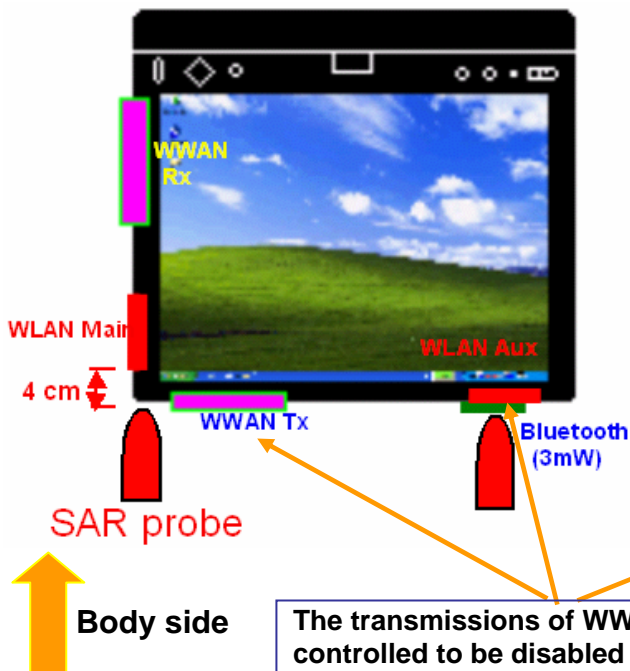
**Figure-4: Tablet PL (Primary Landscape)**



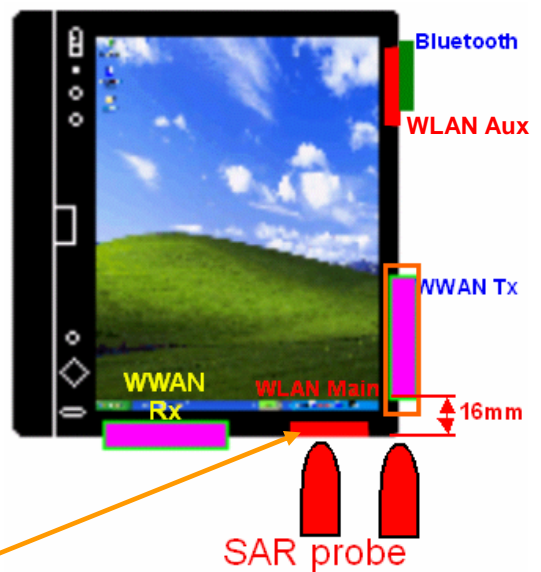
**Figure-5: Tablet PP (Primary Portrait)**



**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**”.



- 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 performs transmission control according to the kind of each wireless card. When applying card (FCC ID: PD9LEN4965AGN, IC: 1000M-L4965AGN) was used, it's forced to switch the transmission to the main antenna, and the Aux antenna won't be used. The MIMO function does not work in this Tablet mode.
- When the **SP** screen mode was selected, the system also performs transmission control according to the kind of each wireless card. When applying card (FCC ID: PD9LEN4965AGN, IC: 1000M-L4965AGN) was used, it's forced to switch the transmission to the Aux antenna, and the main antenna won't be used. The MIMO function does not work in this Tablet mode.

