# 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.

The applying modular transmitter device (FCC ID: N7N-MC5720) was previously certified by the Commission on October/31/2006 with the same configuration in this application.

The difference from the previous grant condition is:
**to enable the simultaneous transmission with the WLAN modular transmitters listed below.**

The co-location with the Bluetooth module remains the same.

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

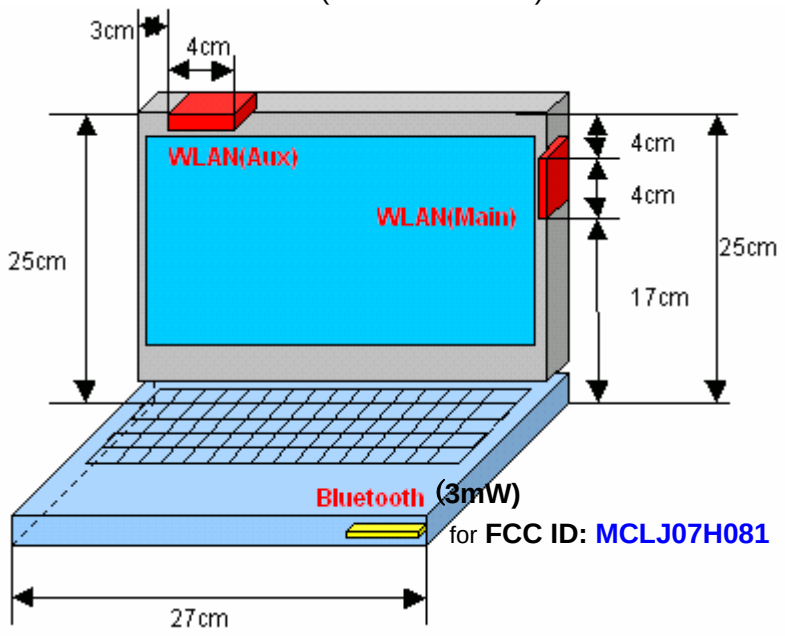
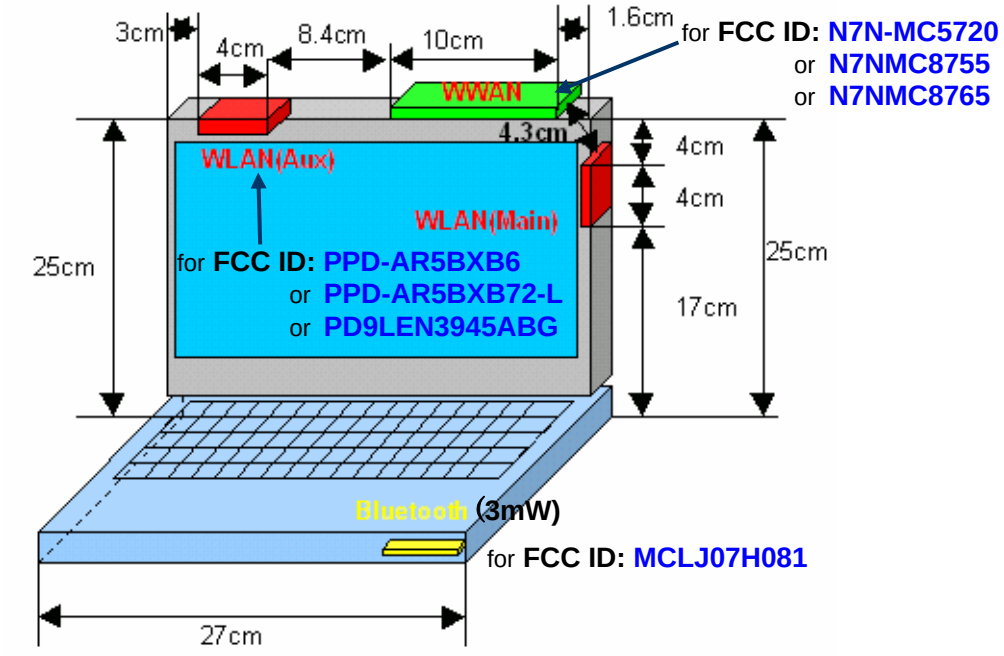



**Figure-2**: Triple transmitters model of DL-Note (**US only**)



## 2. 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 are categorized as a Potable device pursuant to FCC CFR 47 Section 2.1093.

The separate SAR test report (Number: 06U10665-1B) was measured for the applying modular transmitter (FCC ID: N7N-MC5720) with the co-located WLAN (FCC ID: PPD-AR5BXB72-L) and Bluetooth (FCC ID: MCLJ07H081) in active. PPD-AR5BXB72-L was selected representatively as the worst case among the three co-located WLAN transmitter devices.

Also the co-located WLAN modules (FCC ID: PD9LEN3945ABG, PPD-AR5BXB72-L and PPD-AR5BXB6) were examined the SAR independently with the co-located Bluetooth (FCC ID: MCLJ07H081) in active, and granted on October/18/2006, October/31/2006 and November/07/2006. The document Numbers of SAR test reports for these transmitters referred in this exhibit are 06LR023SAR-F, 06U10634-4B and 06LR024SAR-F.

Hereafter, the calculation of grid-summed SAR result for WWAN and each WLAN SAR testing is used for the RF exposure evaluation.

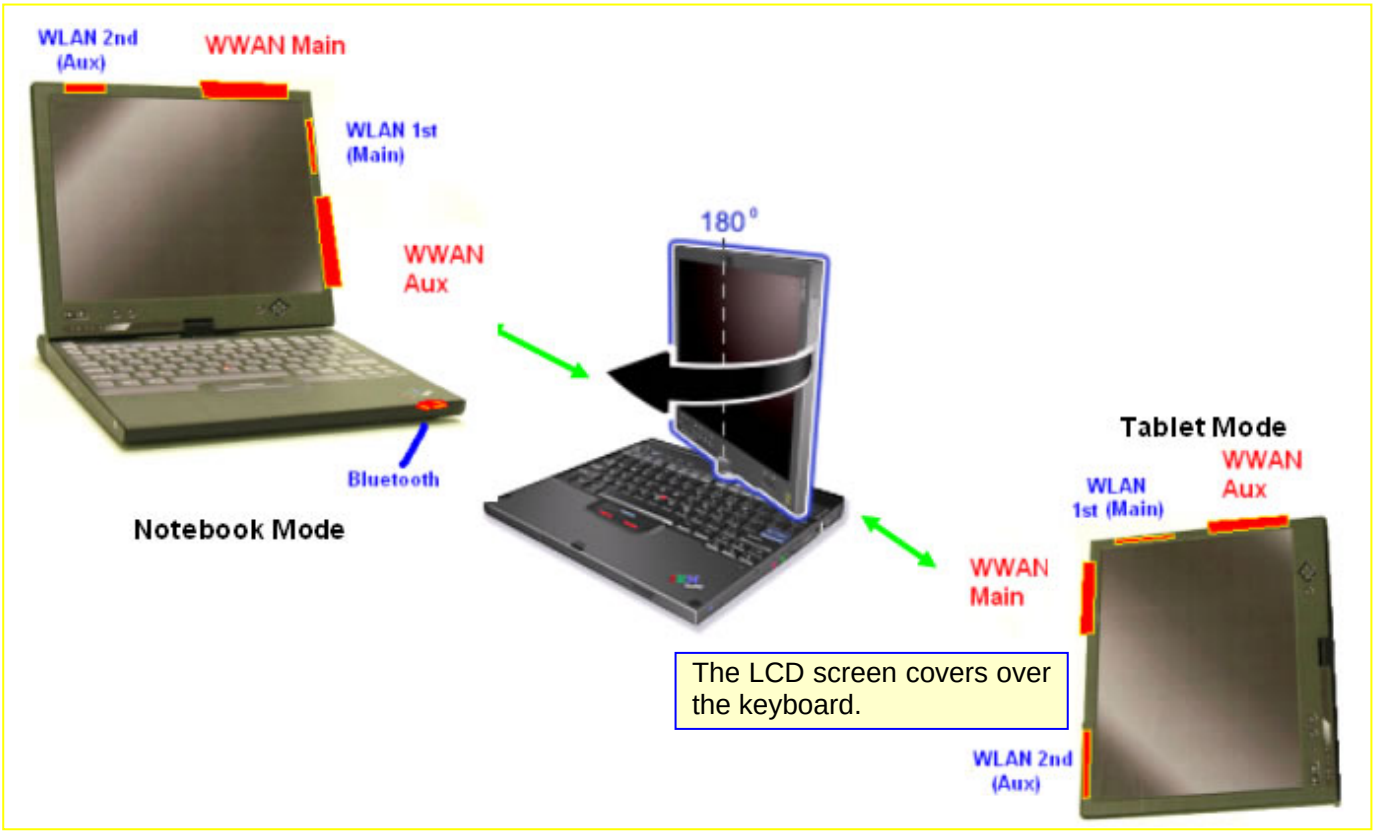
## 3. Conclusion

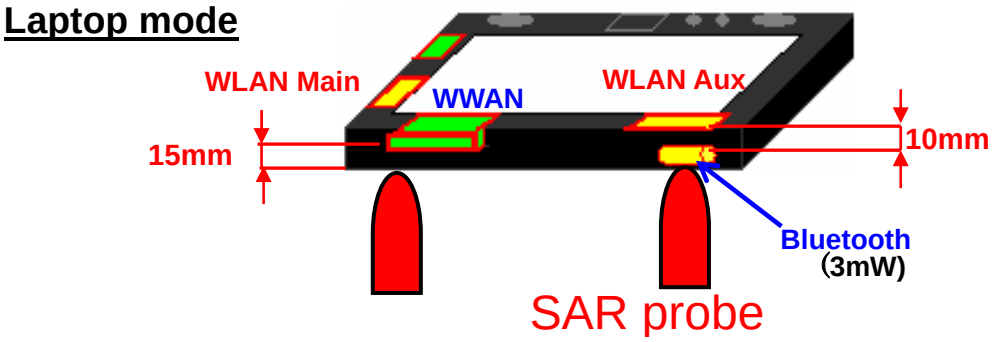
The maximum grid-summed SAR results for the WWAN and WLAN modules are as follows, then the applying device (FCC ID: N7N-MC5720) has found to comply with the limits for the SAR compliance according to FCC CFR 47 section 2.1093, Portable devices.

| | |
|---|---|
| Part 22E with WLAN and Bluetooth | 0.744 mW/g |
| Part 24H with WLAN and Bluetooth | 0.772 mW/g |

## 4. Summary of grid-summed SAR result

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



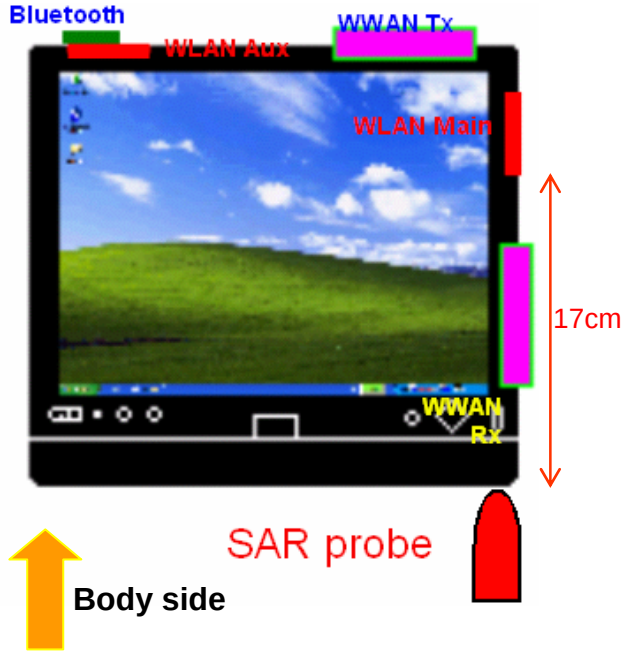

### Table-1 Grid-summed SAR result of Laptop mode

[Unit of results: mW/g]

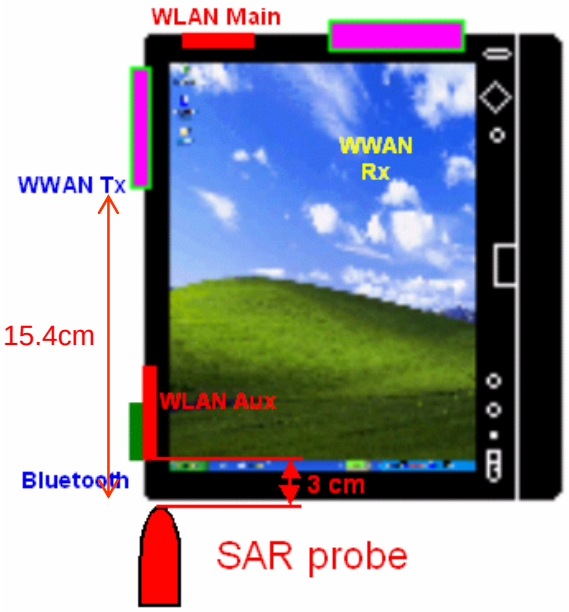
| WWAN | | N7N-MC5720 | WLAN | PPD-AR5BXB72-L + MCLJ07H081 | | PPD-AR5BXB6 + MCLJ07H081 | PD9LEN3945ABG + MCLJ07H081 | Sum of WLAN + WWAN |
|---|---|---|---|---|---|---|---|---|
| | | | | Main | Aux | | | |
| SAR Test Report No. | | 06U10665-1B | | 06U10634-4B | | 06LR024SAR-F | 06LR023SAR-F | |
| Laptop (Lap-Held) | EVDO-22H | 0.076 | 2.4G (DTS) | 0.115 | 0.122 | 0.067 | 0.051 | 0.412 *1 |
| | | | 5.2G (U-NII) | **0.264** | **0.072** | 0.166 | 0.095 | |
| | EVDO-24E | 0.436 | 5.8G (DTS) | 0.173 | 0.050 | 0.185 | 0.103 | **0.772** *1 |

*1: MC5720 SAR result + the highest SAR result of WLAN (i.e. MIMO Main+Aux in 5.2GHz band)

**Tablet PL (Primary Landscape)**




**Tablet PP (Primary Portrait)**




## Table-2 Grid-summed SAR result of Tablet Primary mode

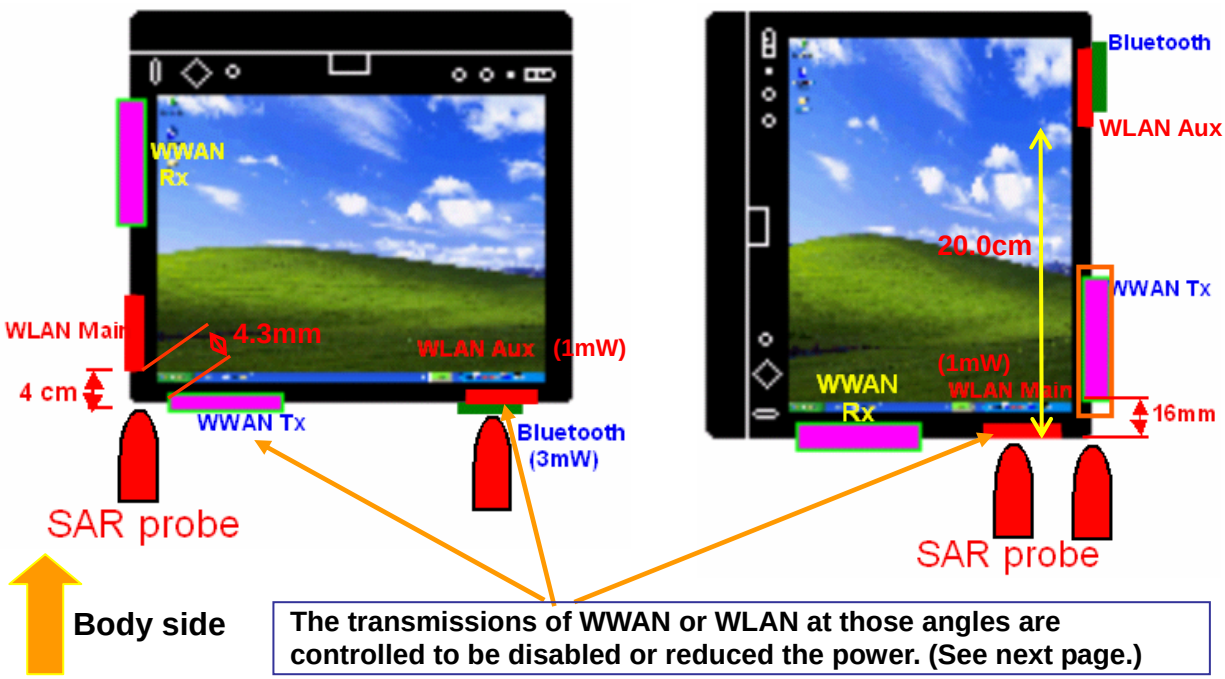
[Unit of results: mW/g]

| WWAN | | N7N-MC5720 | WLAN | PPD-AR5BXB72-L + MCLJ07H081 | | PPD-AR5BXB6 + MCLJ07H081 | PD9LEN3945ABG + MCLJ07H081 | Sum of WLAN + WWAN |
|---|---|---|---|---|---|---|---|---|
| | | | | Main | Aux | | | |
| SAR Test Report No. | | 06U10632-4B | | 06U10634-4B | | 06LR024SAR-F | 06LR023SAR-F | |
| Primary Portrait | EVDO-22H | 0.066 | 2.4G (DTS) | (mobile) | 0.361 | 0.203 | 0.142 | **0.744** *2 |
| | | | 5.2G (U-NII) | (mobile) | **0.678** | 0.107 | 0.097 | |
| | EVDO-24E | 0.046 | 5.8G (DTS) | (mobile) | 0.233 | 0.175 | 0.122 | 0.724 *2 |

*2: MC5720 SAR result + the highest SAR result of WLAN

## Tablet SL (Secondary Landscape)

## Tablet SP (Secondary Portrait)




## Table-3 Grid-summed SAR result of Tablet Secondary mode

[Unit of results: mW/g]

| WWAN | | N7N-MC5720 | WLAN | PPD-AR5BXB72-L + MCLJ07H081 | | PPD-AR5BXB6 + MCLJ07H081 | PD9LEN3945ABG + MCLJ07H081 | Sum of WLAN + WWAN |
|---|---|---|---|---|---|---|---|---|
| | | | | Main | Aux | | | |
| SAR Test Report No. | | 06U10665-1B | | 06U10634-4B | | 06LR024SAR-F | 06LR023SAR-F | |
| Secondary Landscape | EVDO-22H | 0.0 (disabled) | 2.4G (DTS) | 0.024 | *3 (0.024) | 0.053 | 0.040 | 0.140 *5 |
| | | | 5.2G (U-NII) | 0.042 | *3 (0.042) | 0.097 | 0.062 | |
| | EVDO-24E | 0.0 (disabled) | 5.8G (DTS) | **0.070** | *3 (**0.070**) | 0.135 | 0.068 | 0.140 *5 |
| Secondary Portrait | EVDO-22H | 0.183 | 2.4G (DTS) | *3 (0.024) | *4 (0.024) | 0.058 | 0.033 | 0.323 *5 |
| | | | 5.2G (U-NII) | *3 (0.042) | *4 (0.042) | 0.079 | 0.125 | |
| | EVDO-24E | 0.091 | 5.8G (DTS) | *3 (**0.070**) | *4 (**0.070**) | 0.053 | 0.120 | 0.231 *5 |

*3: SAR exemption pursuant to the footnote 14 of the Section 3 in Supplement C to OET Bulletin 65.
Instead, the main WLAN antenna's values in Secondary Landscape mode are used as a worse case.

*4: No SAR was measured for WLAN due to the distance of mobile antenna.
Instead, the main WLAN antenna's values in Secondary Landscape mode are used as a worse case.

*5: MC5720 SAR result + the highest SAR result of WLAN

## [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 the screen returns to **PL** mode 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.