

RF Exposure Justification in co-locating with other transmitters

As shown in the separate exhibits “WLAN Antenna Info - xxx”, the applying host PC device incorporates the four kinds of transmitters listed below.

WLAN:	FCC ID: PD9LEN512ANMU	IC: 1000M-L512ANMU
Bluetooth:	FCC ID: QDS-BRCM1033	IC: 4324A-BRCM1033
UWB:	FCC ID: V4EUWB3480MPE	N/A
WWAN	FCC ID: J9CUNDP-1L	IC: 2723A-UNDP1
	or FCC ID: VV7-MBMF3507G-L	N/A

The minimum separation distance between human body and the WLAN Tx antenna of the host PC device is **30.5mm** (in Figure-2). Therefore the applying WLAN transmitter module (FCC ID: **PD9LEN512ANMU**, IC: **1000M-L512ANMU**) and the antenna system is subjected to SAR testing pursuant to FCC CFR 47 Section 2.1093, and “SAR Evaluation” category pursuant to IC RSS-102e clause 2.5.1.

The applying WLAN transmitter module has been tested and found to comply with the SAR limits as shown by the separate SAR report.

RF exposure justification regarding WLAN & WWAN co-location

The WLAN Tx antenna locates very close to WWAN Tx (main) antenna. However both transmitter modules do not establish network link connections simultaneously, but switch the operation each other within 11 seconds of handover time if one of them is in active. See “Hand-over logic” exhibit.

Therefore, NO RF Exposure evaluation in co-locating with WLAN and any WWAN transmitter is required.

RF exposure justification regarding WLAN & Bluetooth co-location

The “Figure-2: Lap held” mode and “Figure-5: Tablet Secondary Landscape” mode were selected for SAR testing as the worse cases.

The minimum antenna separation distance between the WLAN and Bluetooth antennas is 119mm (>5cm), so the Bluetooth device is not considered as a co-located transmitter. And the transmission power of the Bluetooth device installed in the host PC devices is 4.1mW as below.

Bluetooth Model name	FCC ID, IC Cert. Number	Grantee Name	Granted Date	Conducted Tx power
BCM92046MD_GEN	FCC ID: QDS-BRCM1033	Broadcom Corporation	Dec./ 14 / 2007	4.1 mW
	IC: 4324A-BRCM1033		Dec./ 19 / 2007	

Therefore, NO RF Exposure evaluation in co-locating with the Bluetooth transmitter is required pursuant to the FCC document “616217 D01 SAR for Laptop v01”, issued on December 7,2007.

RF exposure justification regarding WLAN & UWB co-location (US only)

UWB transmitter is not mentioned in FCC CFR 47 Section 2.1091 and 2.1093, so it does not subject to RF exposure requirement. Therefore, no additional SAR testing or RF Exposure evaluation is required for any combination with UWB transmitter.

Note) Only the WLAN Main antenna is used for Tx antenna for the applying WLAN modular device (Model: 512AN_MMW).

Figure-1: Notebook mode

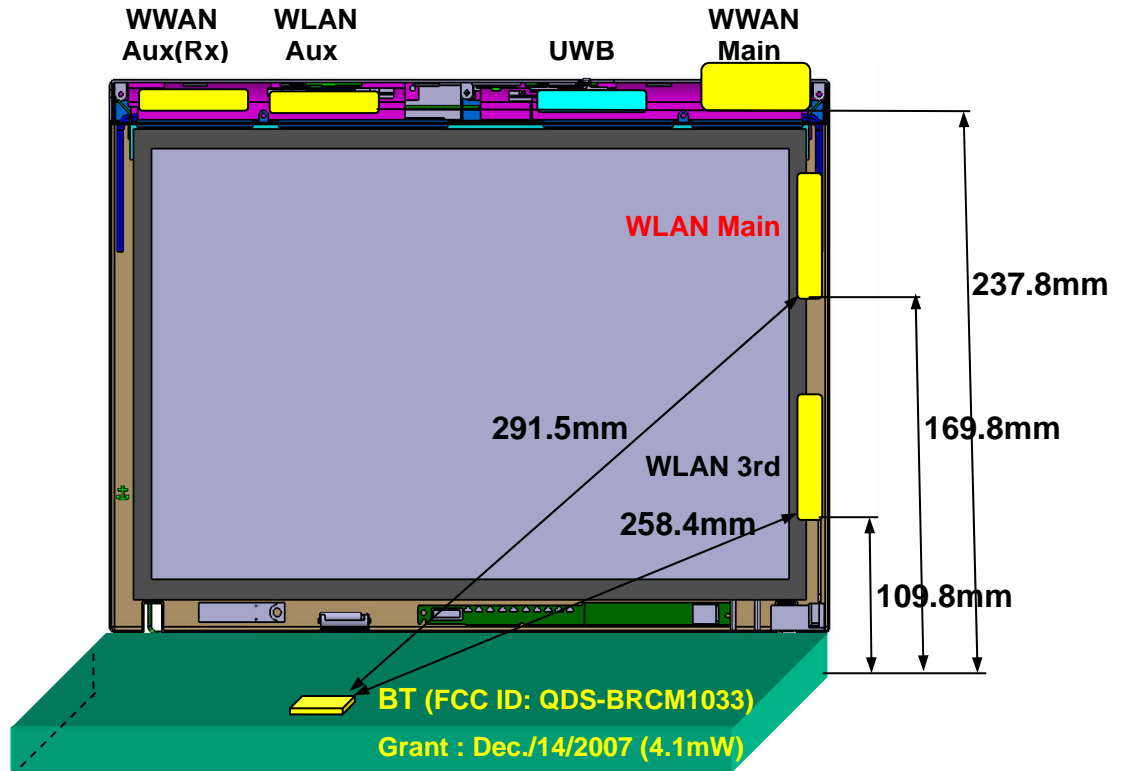


Figure-2: Lap Held

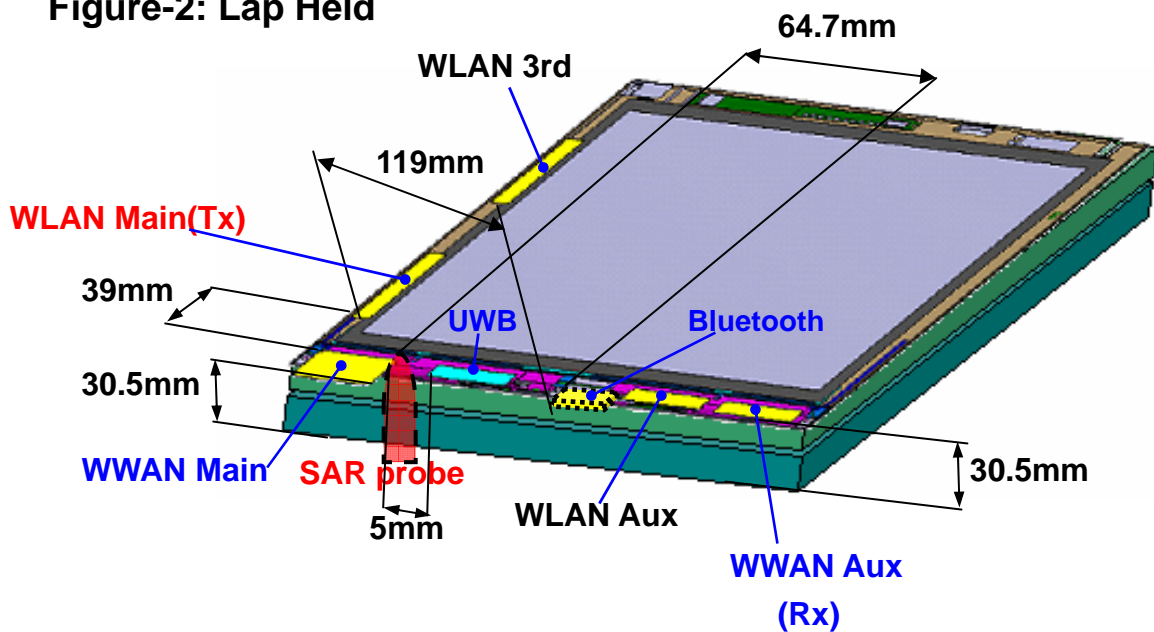


Figure-3:
Tablet PL (Primary Landscape)

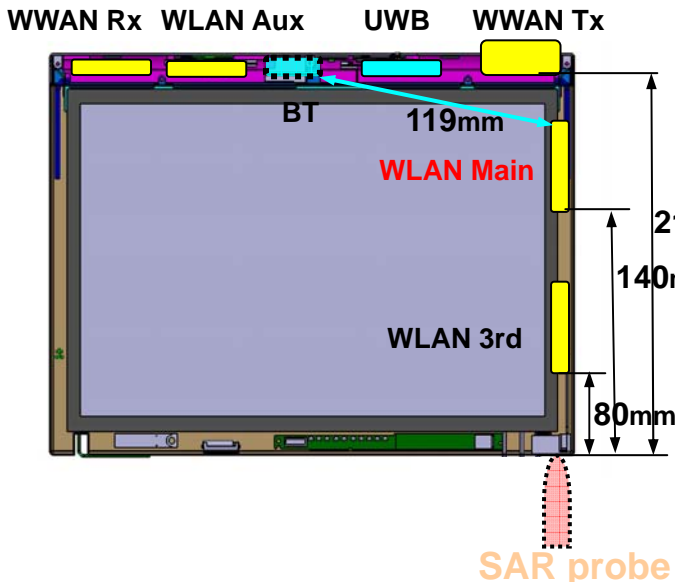


Figure-4:
Tablet PP (Primary Portrait)

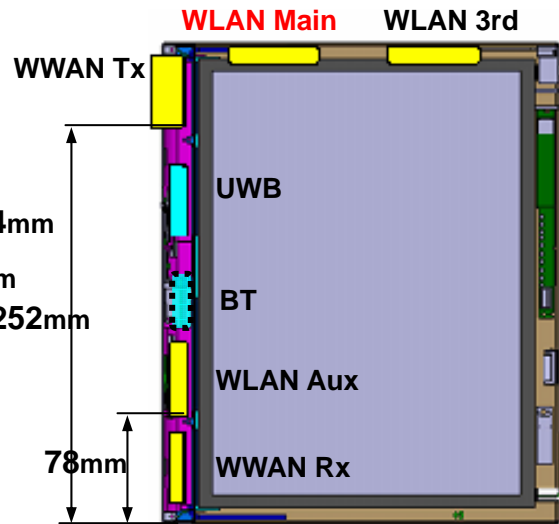


Figure-5:
Tablet SL (Secondary Landscape)

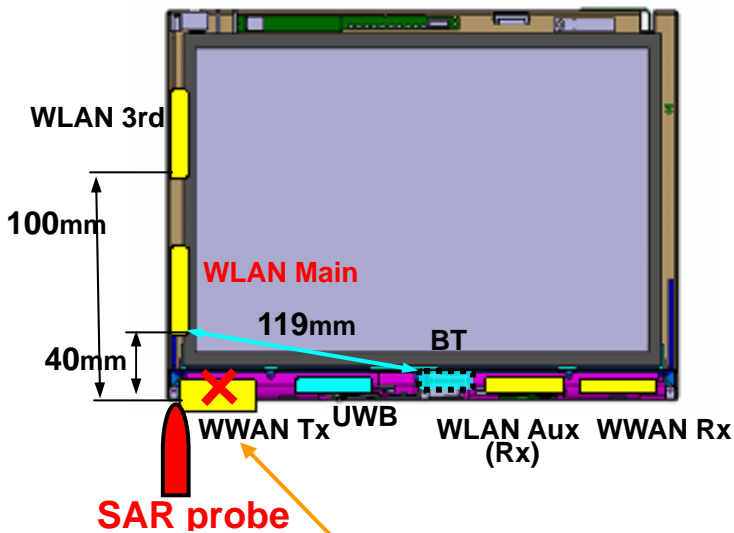
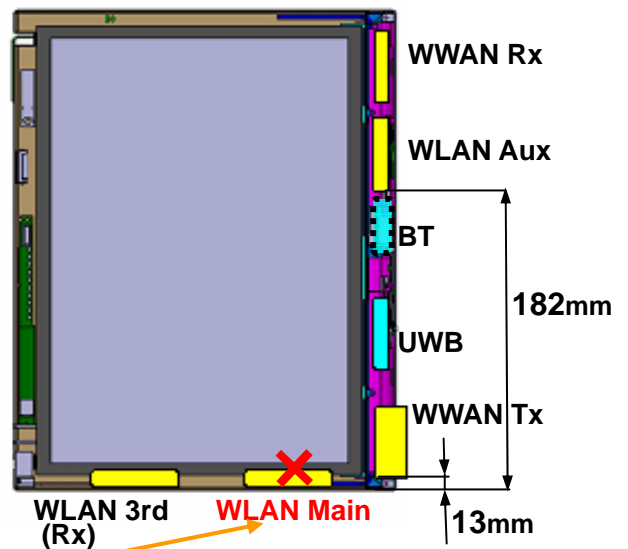


Figure-6:
Tablet SP (Secondary Portrait)



✗ Tx antennas in these rotary screen positions do not transmit RF.

*1: See separate exhibit "Tablet Tx control logic" in more details.