ANTENNA INFORMATION

OEM	ASUS
ODM	Quanta Computer Inc.
Platform model name	FA506
Intel platform (ex: Yes, No or NA)	YES
Platform type (ex: regular NB, convertible PC, AIO…etc)	Regular NB
SAR minimum separation (mm)	N/A

Antenna manufacturer	INPAQ
Address	No.5,Chunqiu Road, Panyang Industrial Park Huangdai Town, Xiangcheng Zone, Suzhou
Antenna Part number	Main: **WA-P-LBLB-04-073** Aux: **WA-P-LBLB-04-073**
Antenna type (ex: PIFA, Dipole…etc)	PIFA

Antenna Peak gain w/ cable loss (dBi)*

	2.4GHz 2400-2483.5 MHz	**5.2GHz** 5150-5250MHz	**5.3GHz** 5250-5350MHz	**5.6GHz** 5470-5725MHz	**5.8GHz** 5725-5850MHz	**5.9GHz** 5850-5895MHz	**6.2GHz** 5925-6425MHz	**6.5GHz** 6425-6525MHz	**6.7GHz** 6525-6875MHz	**7.0 GHz** 6875-7125MHz
Main	2.00	1.07	1.07	1.95	2.09	2.49	-	-	-	-
Aux	1.82	0.71	0.71	-0.24	-0.24	0.61	-	-	-	-

Cable Assembly Part Number and Information

	Cable PN	**Cable length**(mm)	**Cable diameter**(mm)	**Impedance**(ohm)	**Connector type**
Main	405545041612	134	1.13	50	I-PEX MHF-4L
Aux	405545041621	171	1.13	50	I-PEX MHF-4L

* 3D Antenna Peak Gain required being test in system basis.

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1. Antenna Assembly Specifications

1A Antenna Part Number	1B Manufacturer	1C Antenna Type	1D Cable Assembly Part Number and Information	Freq Range MHz	1E * Peak Gain W/ Cable loss (dBi)	1F Peak Gain w/o Cable Loss (dBi)	1G Max VSWR	1H Cable Loss (dB)
(P/N: WA-P-LBLB-04-073) Tx1/ Rx1 Antenna	INPAQ	PIFA	(P/N: 405545041612) 50 ohm Coaxial length: 134 mm diameter: 1.13Normal Connector type : I-PEX MHF-4L	2400-2483.5	2.00	2.49	3	0.49
				5150-5250	1.07	1.84	3	0.77
				5250-5350	1.07	1.84	3	0.77
				5470-5725	1.95	2.74	3	0.79
				5725-5850	2.09	2.90	3	0.81
				5850-5895	2.49	3.35	3	0.86
				5925-6425	NA	NA	NA	NA
				6425-6525	NA	NA	NA	NA
				6525-6875	NA	NA	NA	NA
				6875-7125	NA	NA	NA	NA
(P/N: WA-P-LBLB-04-073) Tx2/ Rx2 Antenna	INPAQ	PIFA	(P/N: 405545041621) 50 ohm Coaxial length:171 mm diameter: 1.13Normal Connector type : I-PEX MHF-4L	2400-2483.5	1.82	2.45	3	0.63
				5150-5250	0.71	1.69	3	0.98
				5250-5350	0.71	1.69	3	0.98
				5470-5725	-0.24	0.77	3	1.01
				5725-5850	-0.24	0.79	3	1.03
				5850-5895	0.61	1.68	3	1.07
				5925-6425	NA	NA	NA	NA
				6425-6525	NA	NA	NA	NA
				6525-6875	NA	NA	NA	NA
				6875-7125	NA	NA	NA	NA

2. Test & System Description

3.1 Measurement Method and System

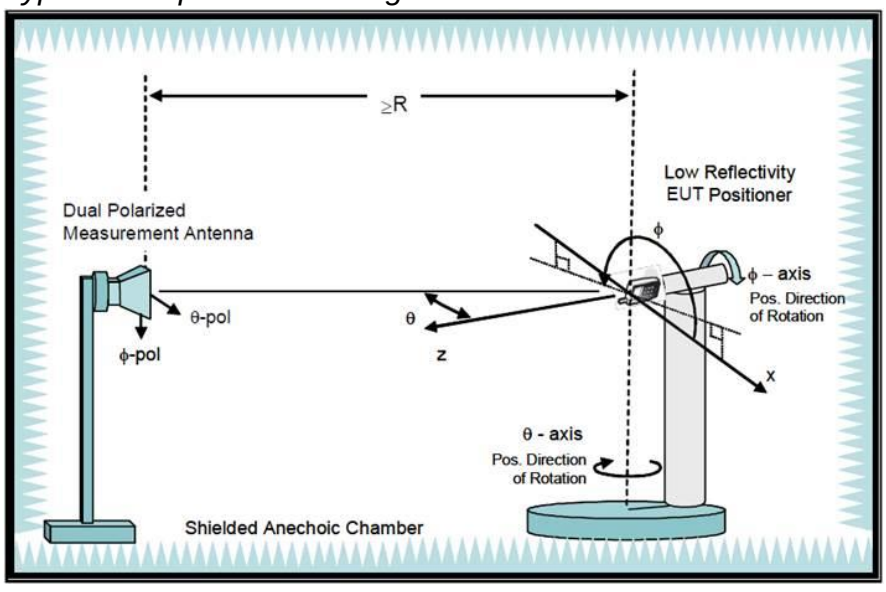
ETS-Lindgren AMS-8500 system is 3D fully anechoic chamber, it is applied to the “Conical Cut test method”, the detail description is described as below.

The Conical Cut method requires the ability of the Measurement Antenna to be physically rotated in the theta plane (overhead) of the EUT for implementations using a single Measurement Antenna, Eleven conical cuts are required to capture data at every 15 degrees from the EUT, with the top (0 degrees) and bottom (180 degrees) cuts not being measured. Typically, the EUT will remain affixed to a
turntable during the entire measurement process. The Measurement Antenna will be positioned at a starting theta angle. The EUT will then be rotated around the full 360 degrees of phi rotation. The Measurement Antenna will then be positioned at the next theta angle, and the process repeated.

		θ -Axis	Φ-Axis
Passive	Step size	15º~165º step: 15º	0º~345º step: 15º
	N / M (Points)	12	24

3.2 Test setup

Typical Setup for ETS-Lindgren AMS-8500:



3.3 Equipment list

Anechoic Chamber

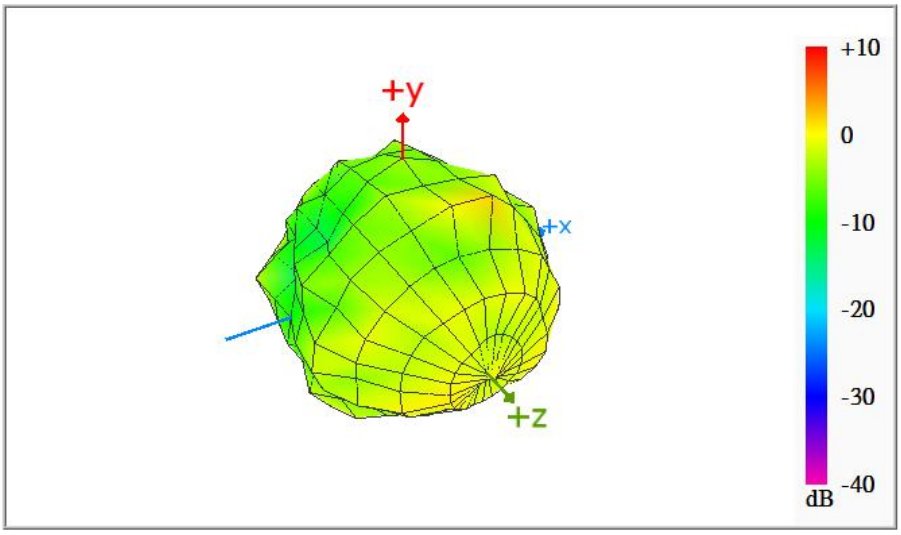
Equipment Description	Manufacturer	Identification no.	Current calibration date	Next calibration date
Network analyzer	Agilent	E5071C	2023/01/06	2024/01/08
Measurement software	ETS-Lindgren	EMQuest	2023/03/03	2024/03/04
Multi axis positioning system(MAPSTM)	ETS-Lindgren	EMCO 2115	2023/03/03	2024/03/04
Multi axis positioning system(MAPSTM)	ETS-Lindgren	EMCO 2110	2023/03/03	2024/03/04
MAPSTM controller	ETS-Lindgren	EMCO 2090	2023/03/03	2024/03/04
Horn antenna	ETS-Lindgren	3164-10	2023/03/03	2024/03/04
Cable 40cm 18 GHz	Jmtt	201EH012010400	2023/04/07	2024/04/08
Cable 6m 18 GHz	Jmtt	201EH012016000	2023/04/07	2024/04/08
Cable 6m 18 GHz	Jmtt	201EH012016000	2023/04/07	2024/04/08
Cable 3.5m 18 GHz	Jmtt	201EH012013500	2023/04/07	2024/04/08
Cable 1.5m 18 GHz	Jmtt	201EH012011500	2023/04/07	2024/04/08

3. Radiation characteristics of antenna loaded in Host Platform

Main Antenna

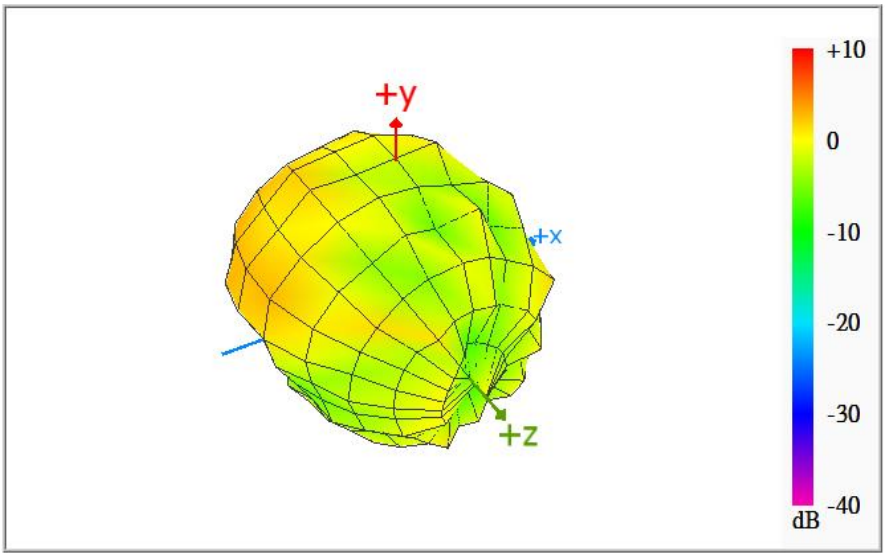
Max Antenna 3D Radiation Pattern 2400 – 2483.5 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
2400-2483.5	2.00



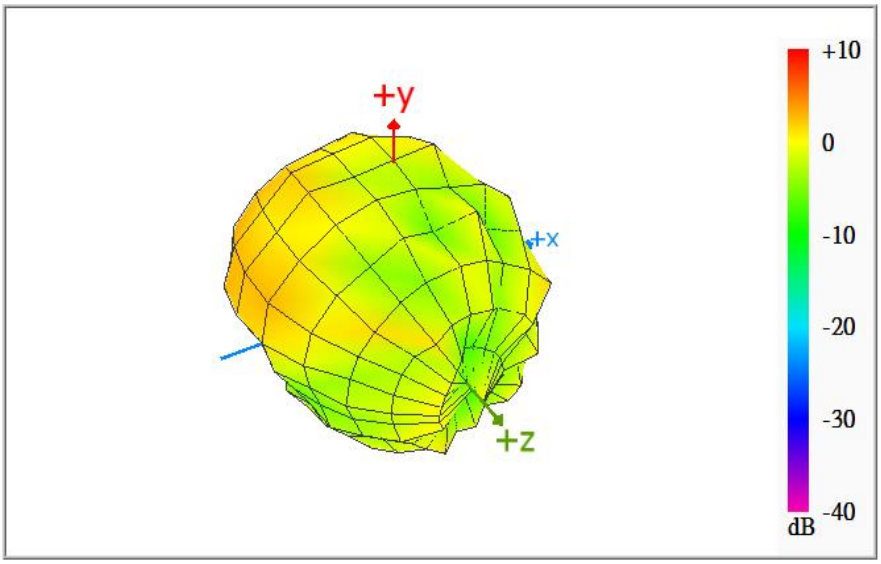
Max Antenna 3D Radiation Pattern 5150-5250 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5150-5250	1.07



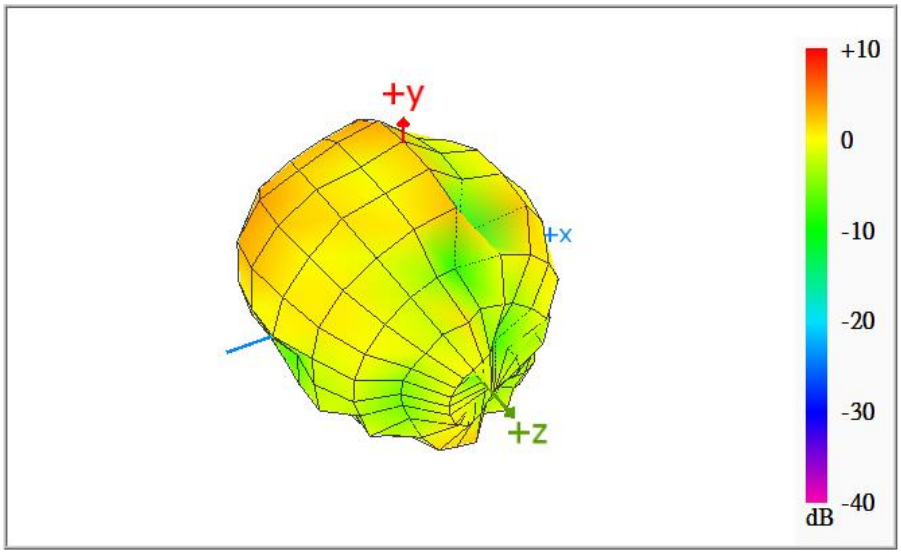
Max Antenna 3D Radiation Pattern 5250-5350 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5250-5350	1.07



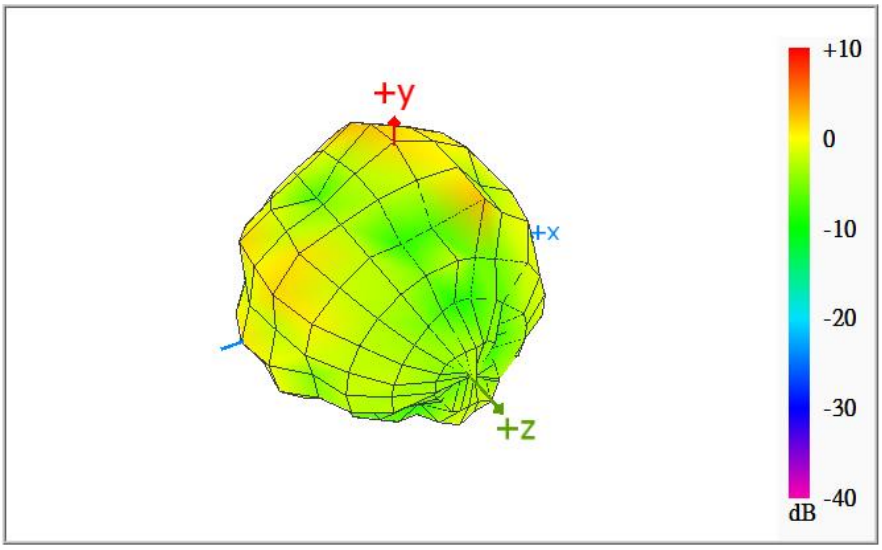
Max Antenna 3D Radiation Pattern 5470-5725 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5470-5725	1.95



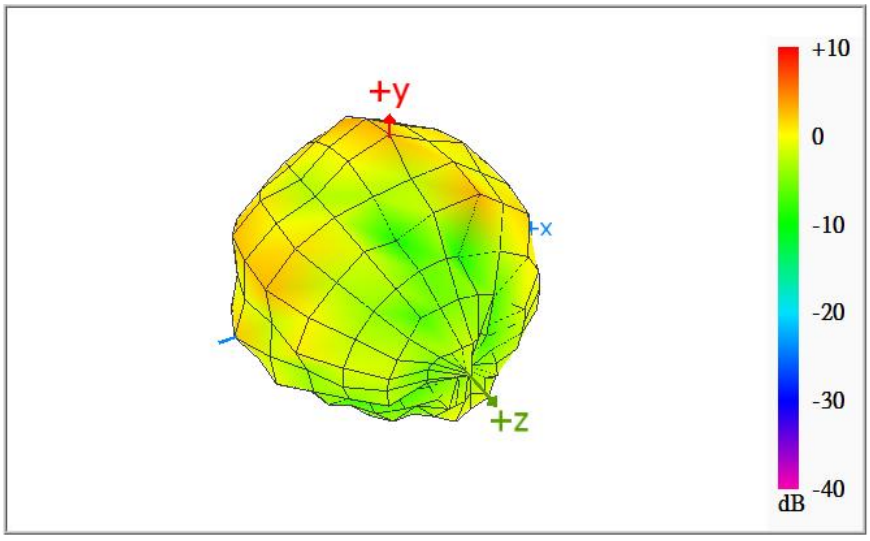
Max Antenna 3D Radiation Pattern 5725-5850 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5725-5850	2.09



Max Antenna 3D Radiation Pattern 5850-5895 MHz

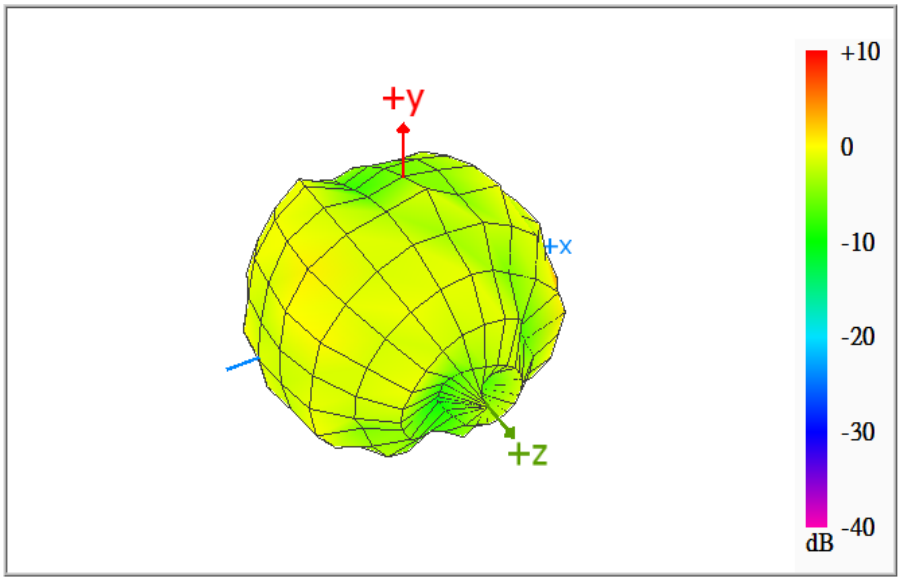
Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5725-5850	2.49



Auxiliary Antenna

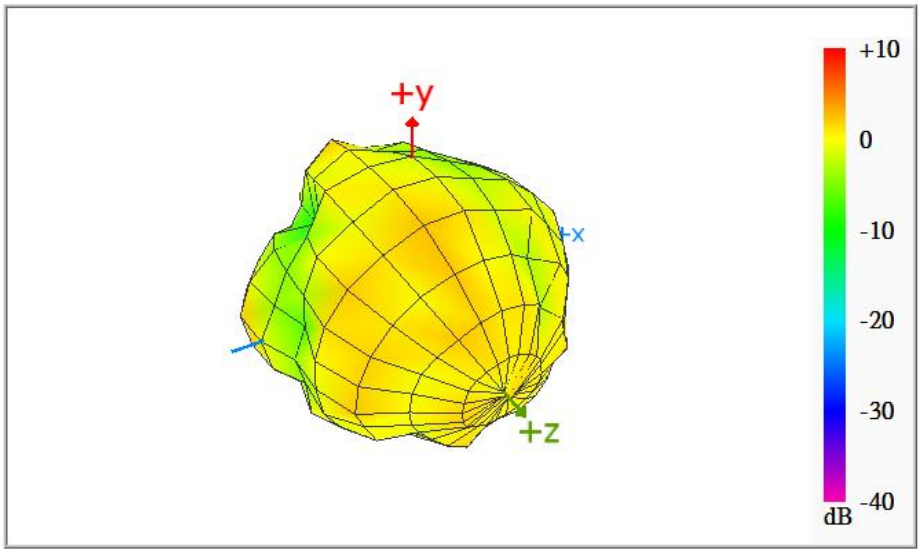
Max Antenna 3D Radiation Pattern 2400 – 2483.5 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
2400-2483.5	1.82



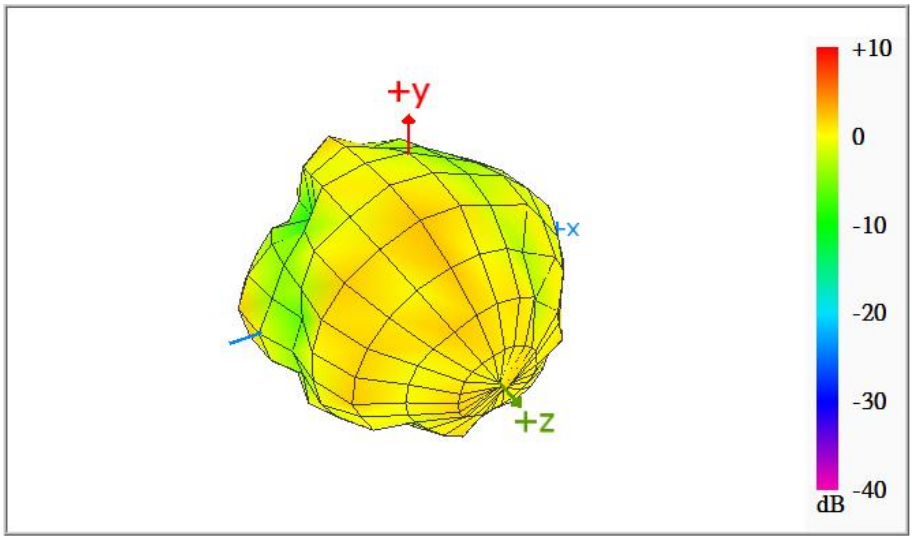
Max Antenna 3D Radiation Pattern 5150-5250 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5150-5250	0.71



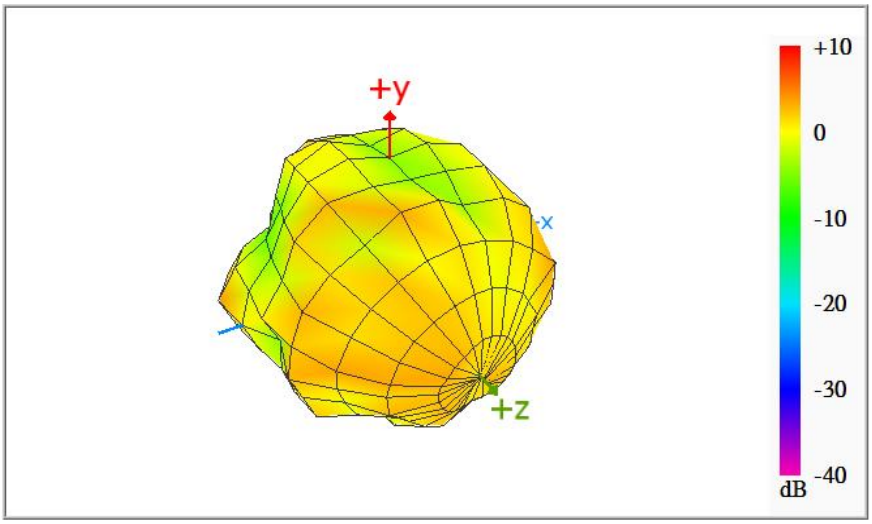
Max Antenna 3D Radiation Pattern 5250-5350 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5250-5350	0.71



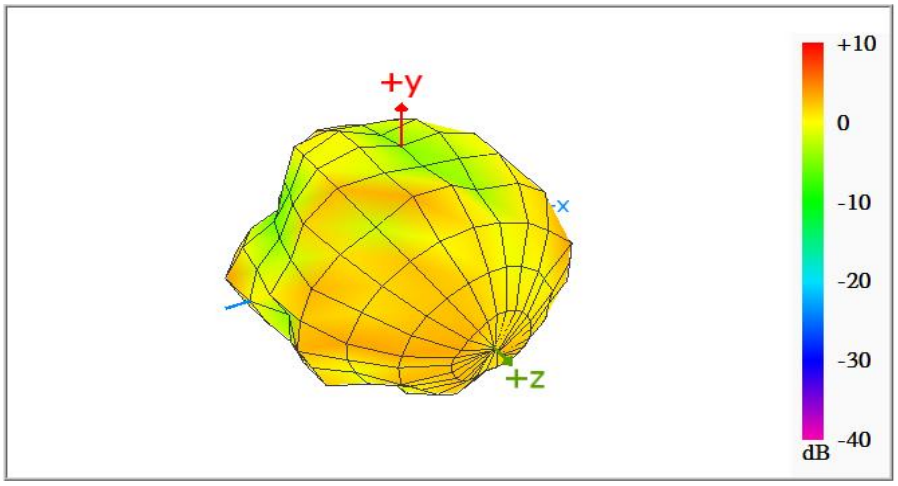
Max Antenna 3D Radiation Pattern 5470-5725 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5470-5725	-0.24



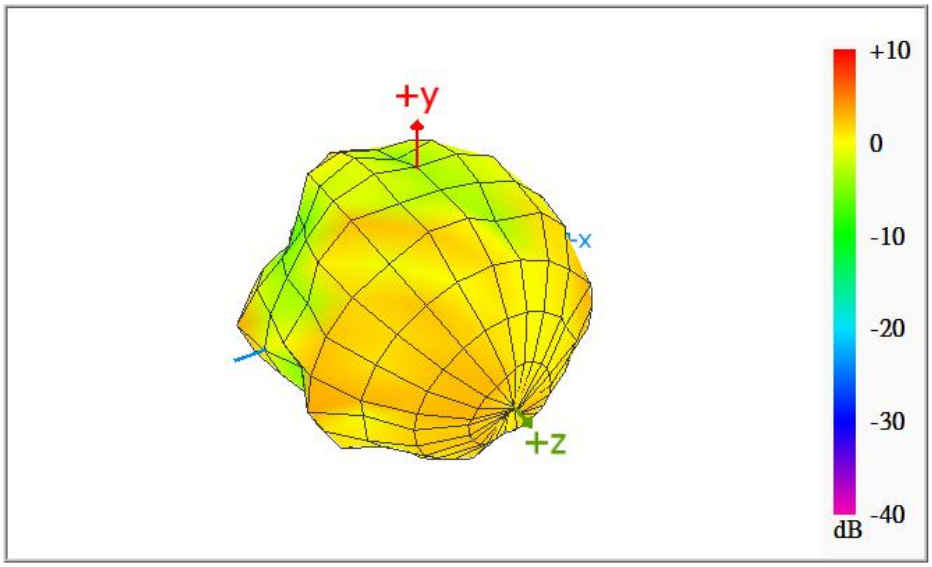
Max Antenna 3D Radiation Pattern 5725-5850 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5725-5850	-0.24



Max Antenna 3D Radiation Pattern 5850-5895 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5725-5850	0.61

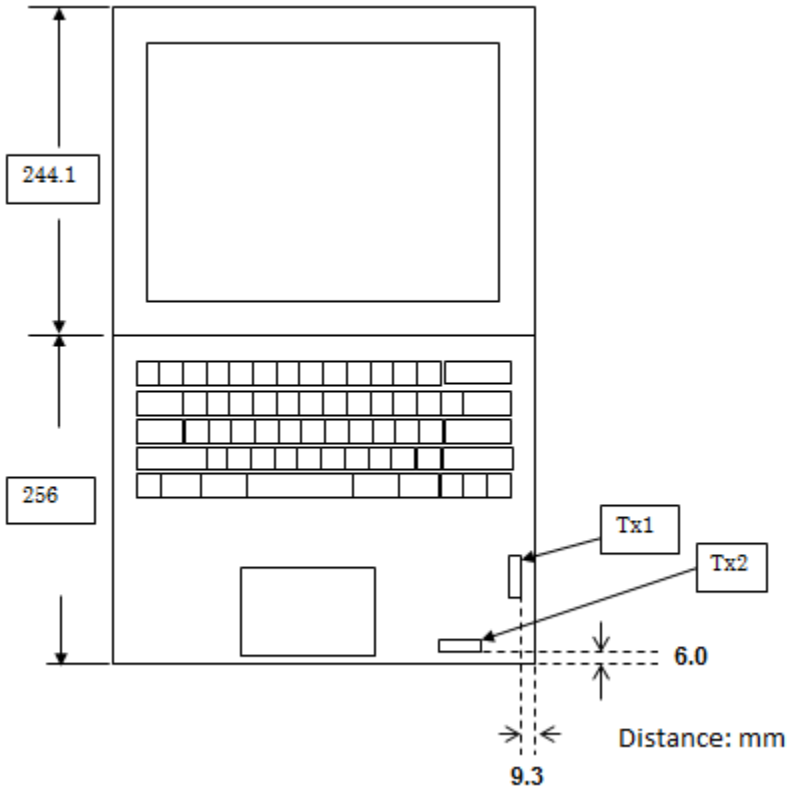


Annex B. Antenna Location

B.1 Antenna Host Platform Location Information

Include a dimensioned photo(s) or dimensioned drawing(s) of Main and Aux antenna placements (measurements are not required for receive-only antenna).

Any antenna that transmits must show dimensions to bottom of laptop. Provide a description of the materials that are used for supporting or surrounding transmit antennas; for example, non-conductive plastics vs. conductive coated plastic or metallic materials.



B.2 Antenna dimensional information for SAR evaluation

Include a dimensioned photo(s) or dimensioned drawing(s) showing the distance (mm) between the transmit antennas and the user. For notebook/laptop hosts show lapheld position (example below). For tablet hosts show all orientations including lapheld, primary & secondary portrait, primary & secondary landscape positions. Include a description of any proximity sensors or power throttling implementations that limit or exclude use of any host orientation.