

ANTENNA INFORMATION

OEM	Dell Inc.	
ODM	Compal Electronics Inc.	
Platform model name		
Intel platform (ex: Yes, No or NA)	No	
Platform type (ex: regular NB, convertible PC, AIO...etc)	Regular NB	
SAR minimum separation (mm)	FCC (1g)	201 mm (w/bumper)
		197.5 mm (w/o bumper)
	ISED (1g)	201 mm (w/bumper)
		197.5 mm (w/o bumper)
	ISED (10g)	8.5 mm (w/bumper)
		5 mm (w/o bumper)

Antenna manufacturer	Company name	Hongbo
	Address	4F., No. 143, Xinhua 1st Rd., Neihu Dist., Taipei City 114758 , Taiwan (R.O.C.)
Test location	Company name	SPORTON
	Address	No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)
Test Personnel	Name(Full name)	Robintseng
	E-mail	Robintseng@hong-bo.com.tw
	Tel/Mobile	03-6688-340 #206
Testing date		2025/04/08

Antenna Part number	Main	260-24474 (DC330031J0L)
	Aux	260-24475(DC330031J1L)
Antenna type (ex: PIFA, Dipole...etc)	Monopole	

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	1.98	1.91	2.62	3.31	3.33	2.43	4.69	4.21	3.82	3.67
Aux	2.03	0.42	1.64	2.41	2.41	-0.24	2.14	0.57	0.90	1.15

Cable Assembly Part Number and Information					
	Cable PN	Cable length(mm)	Cable diameter(mm)	Impedance(ohm)	Connector type
Main	Main	53mm	1.13mm	50.00	四代 PLUG FOR O.D. 1.13mm(IPEX 20565-001R-13)
Aux	Aux	314.5mm	1.13mm	50.00	四代 PLUG FOR O.D. 1.13mm(IPEX 20565-001R-13)

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

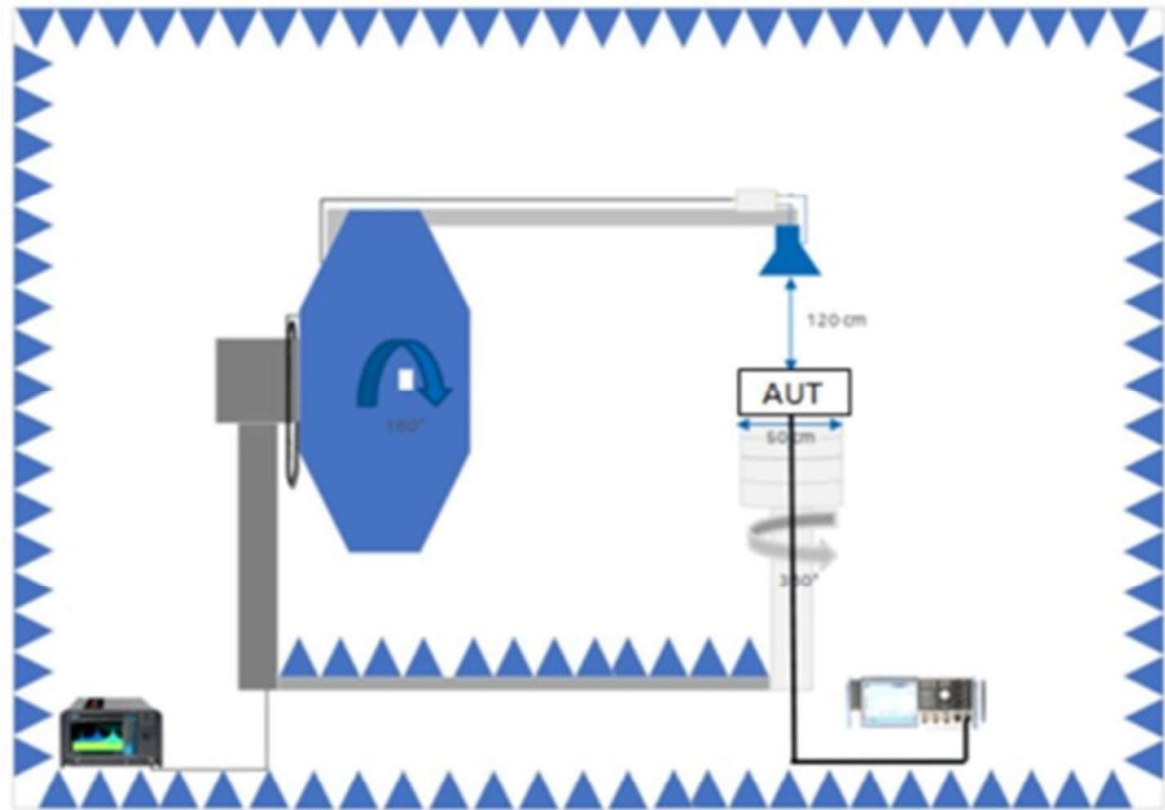
Cable loss (dB)										
	2.4GHz 2400-2483,5 MHz	5.2GHz 5150-6250MHz	5.3GHz 5250-5350MHz	5.6GHz 5470-5725MHz	5.8GHz 5725-5850MHz	5.9GHz 5850-5895MHz	6.2GHz 5925-6425MHz	6.5GHz 6425-6525MHz	6.7GHz 6525-6875MHz	7.0 GHz 6875-7125MHz
Main										
Aux										

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1. Test & System Description

1.1 Measurement Method and System



1.3 Equipment list

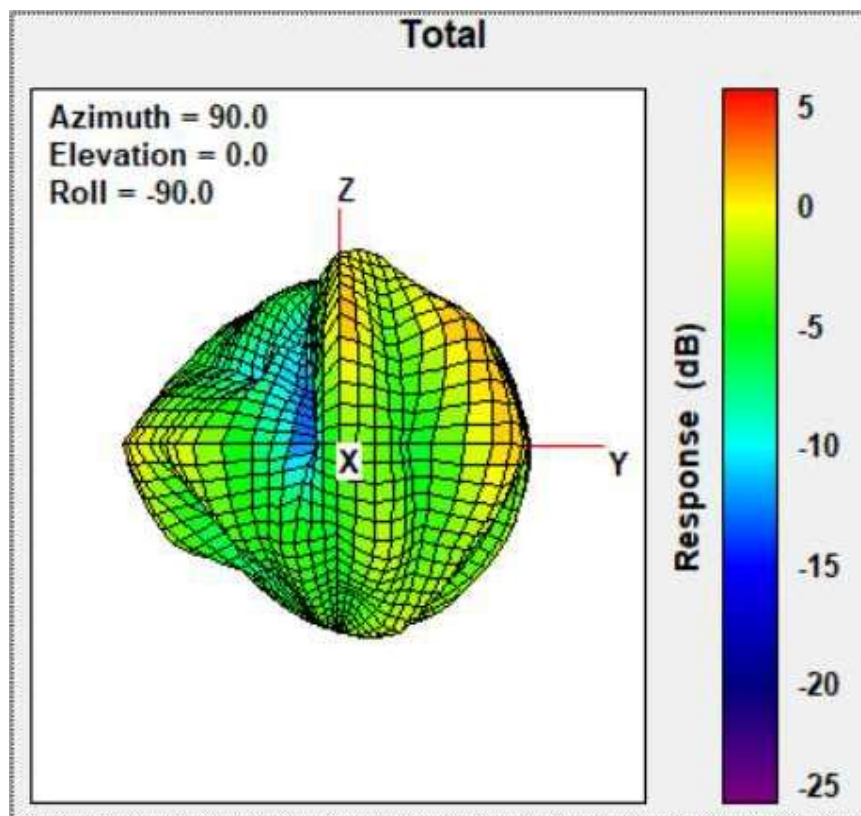
Test Equipment List					
ID	Model Name	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Anechoic Chamber	AMS8500	ETS-Lindgren	1047.00	2024-02-18	2025/8/18
Turn Table	ETS	ETS-Lindgren		N/A	N/A
Rotate controller	2090	ETS-Lindgren	NA	N/A	N/A
Horn antenna	HAD-0710	EMCO	111025-02	2025-01-13	2027/1/13
Vector Network Analyzer	E5071C	Keysight	MY46900218	2025-01-15	2028/1/15
Cable 40cm 18 GHz	201EH012010400	Worken Technology Inc.	NA	2025-01-20	2026/1/20
Cable 6m 18 GHz	201EH012016000	Worken Technology Inc.	NA	2025-01-20	2026/1/20
Cable 6m 18 GHz	201EH012016000	Worken Technology Inc.	NA	2025-01-20	2026/1/20
Cable 3.5m 18 GHz	201EH012013500	Worken Technology Inc.	NA	2025-01-20	2026/1/20
Cable 1.5m 18 GHz	201EH012011500	Worken Technology Inc.	NA	2025-01-20	2026/1/20

2. Radiation characteristics of antenna loaded in Host Platform

Main Antenna

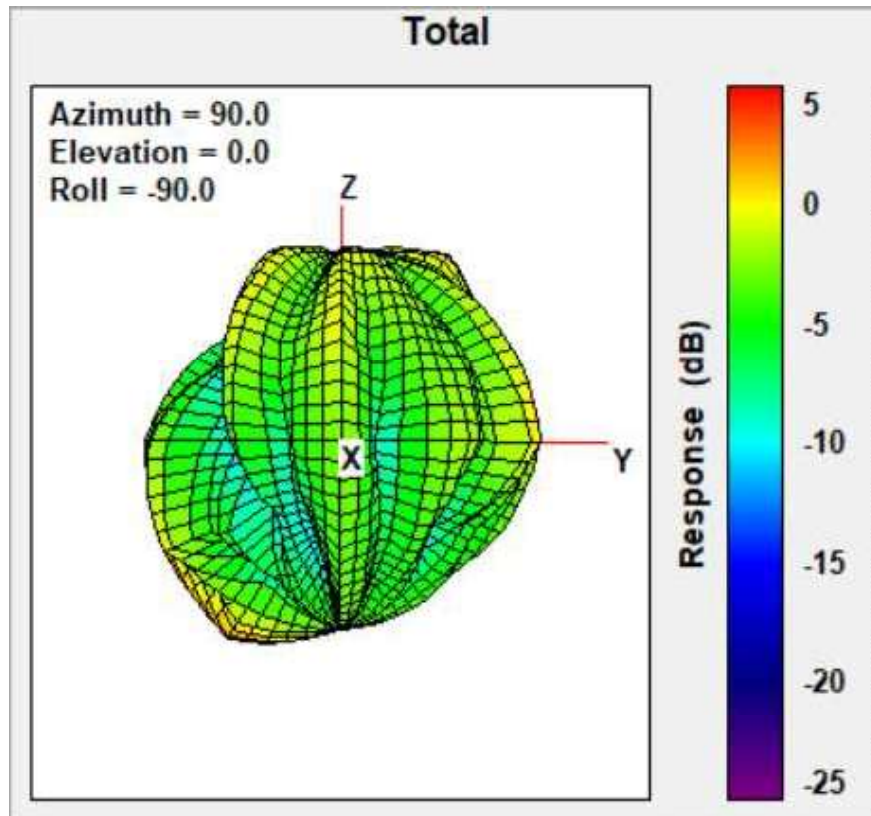
Max Antenna 3D Radiation Pattern 2400 – 2483.5 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
2400-2483.5	1.98



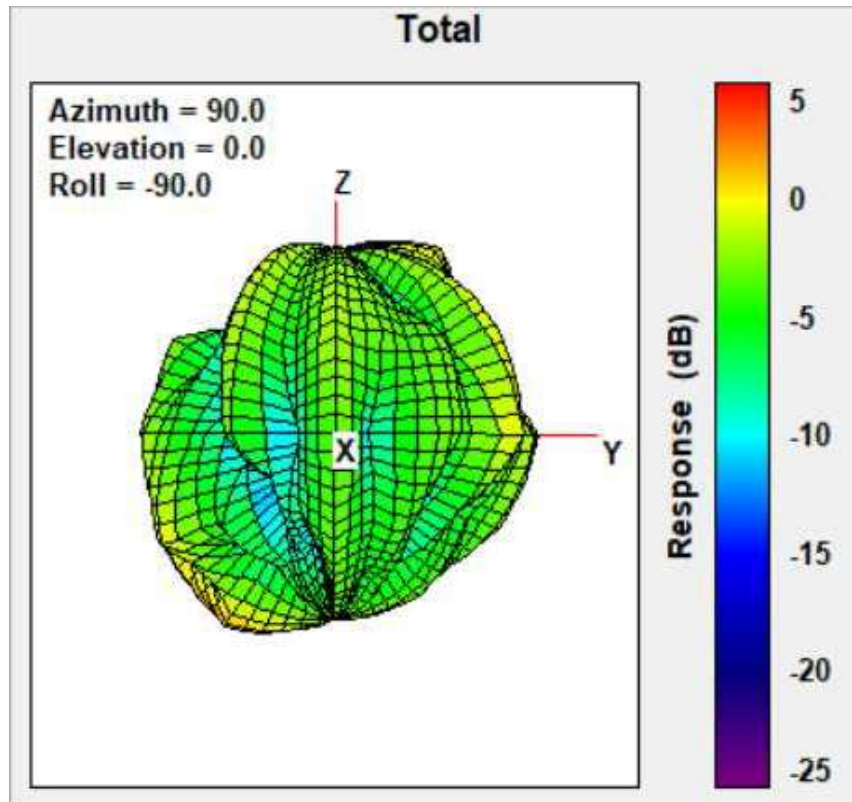
Max Antenna 3D Radiation Pattern 5150-5250 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5150-5250	1.91



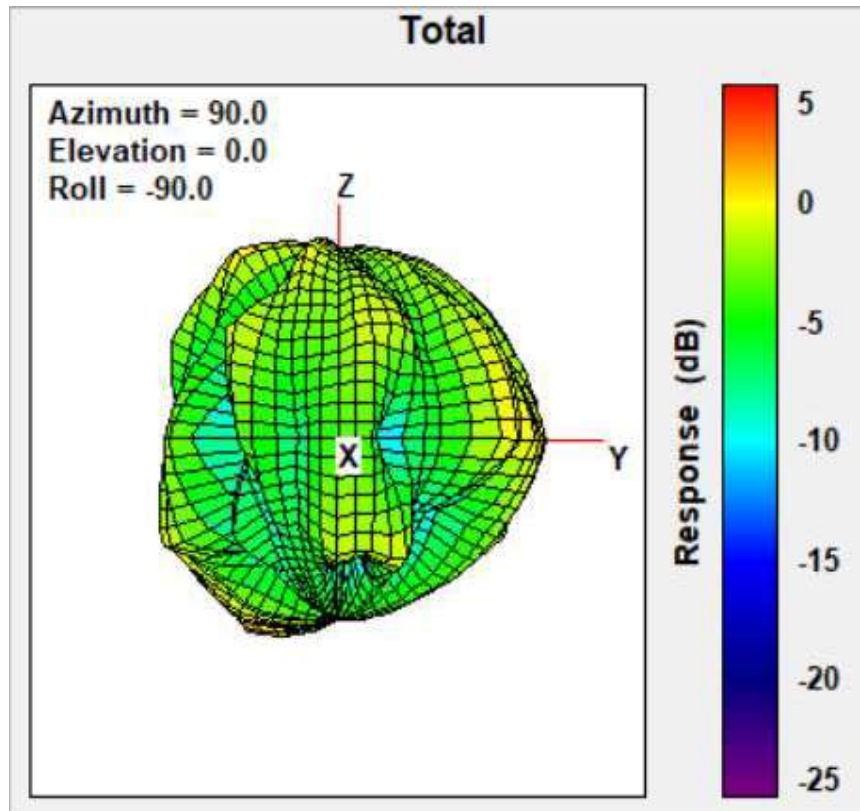
Max Antenna 3D Radiation Pattern 5250-5350 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5250-5350	2.62



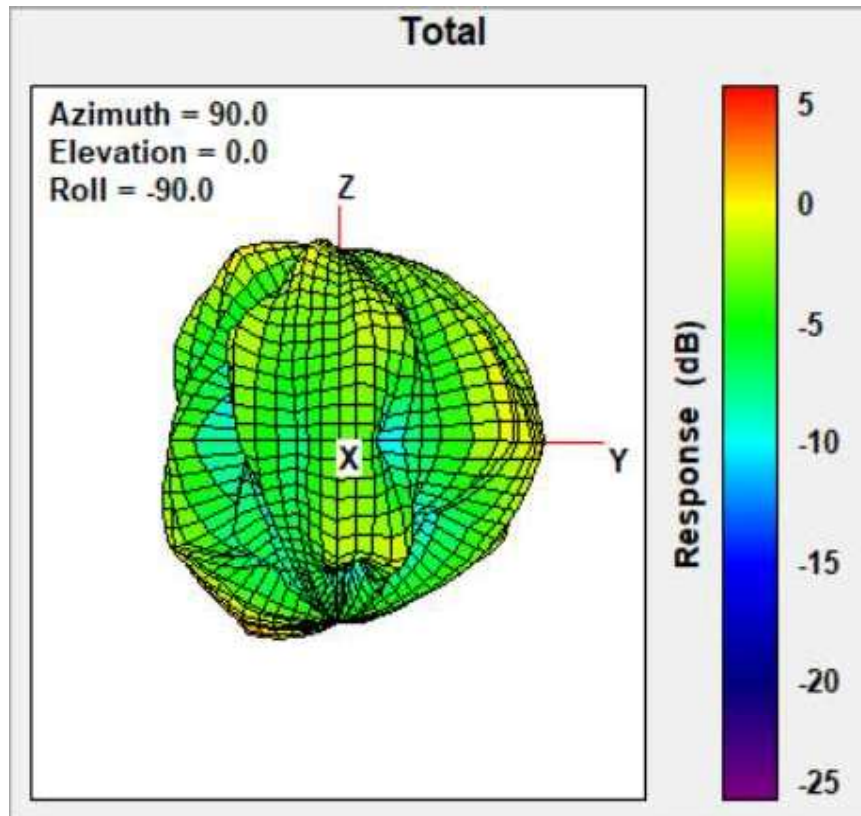
Max Antenna 3D Radiation Pattern 5470-5725 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5470-5725	3.31



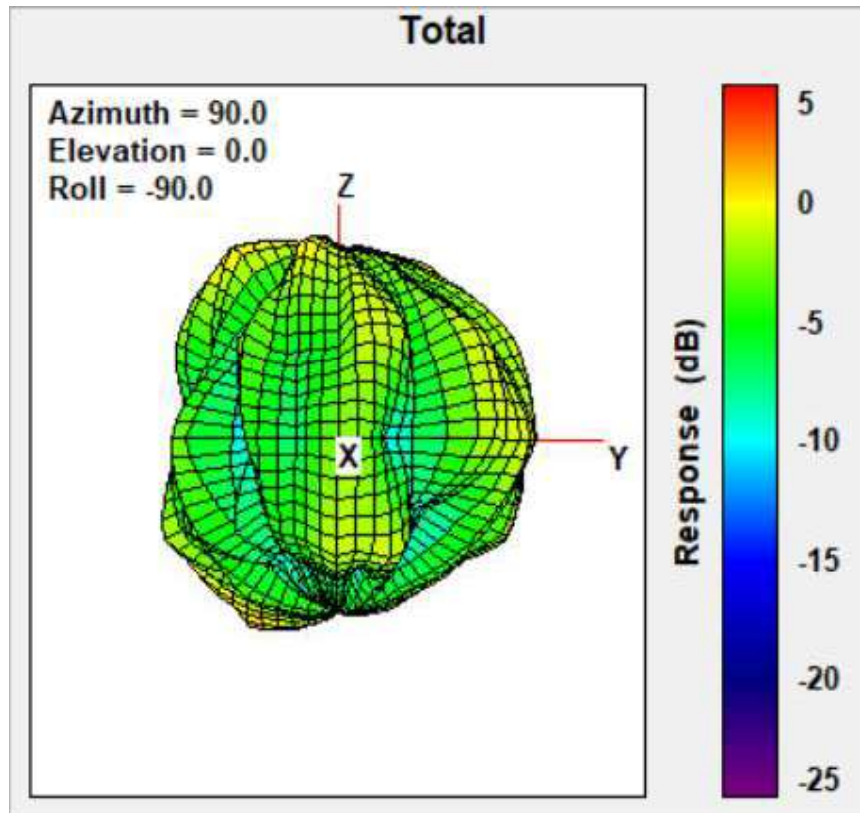
Max Antenna 3D Radiation Pattern 5725-5850 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5725-5850	3.33



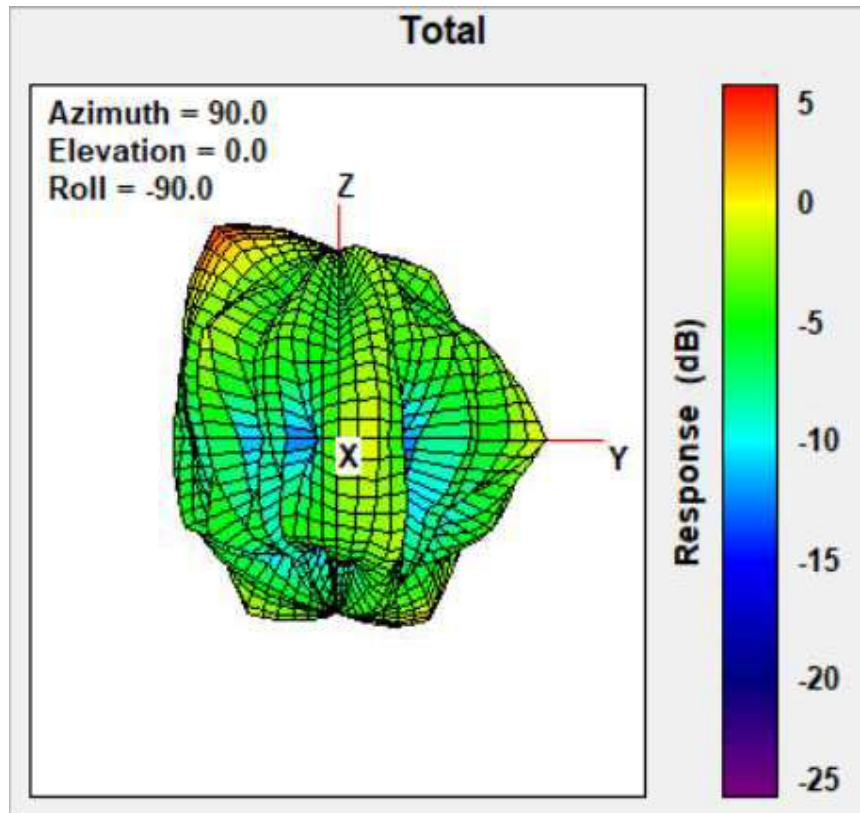
Max Antenna 3D Radiation Pattern 5850-5895 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5850-5895	2.43



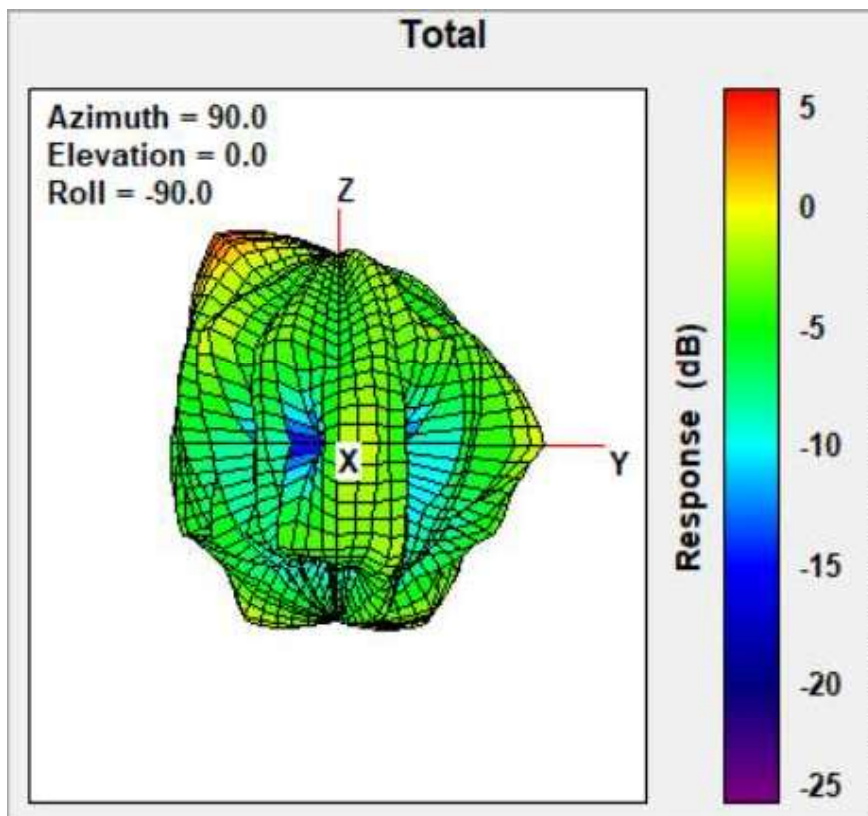
Max Antenna 3D Radiation Pattern 5925-6425 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5925-6425	4.69



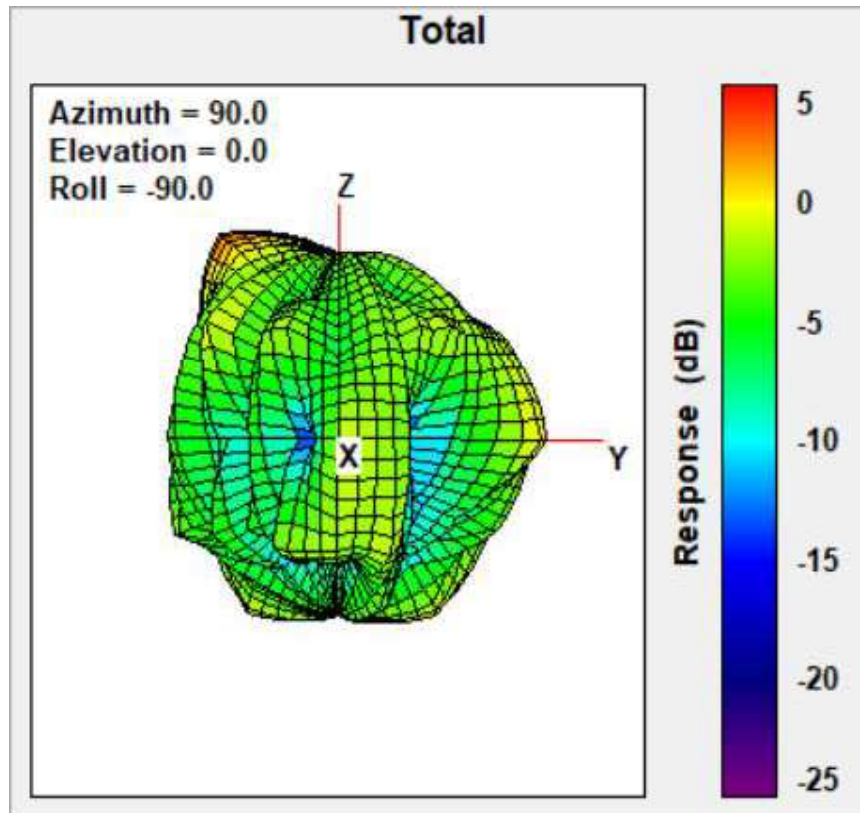
Max Antenna 3D Radiation Pattern 6425-6525 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6425-6525	4.21



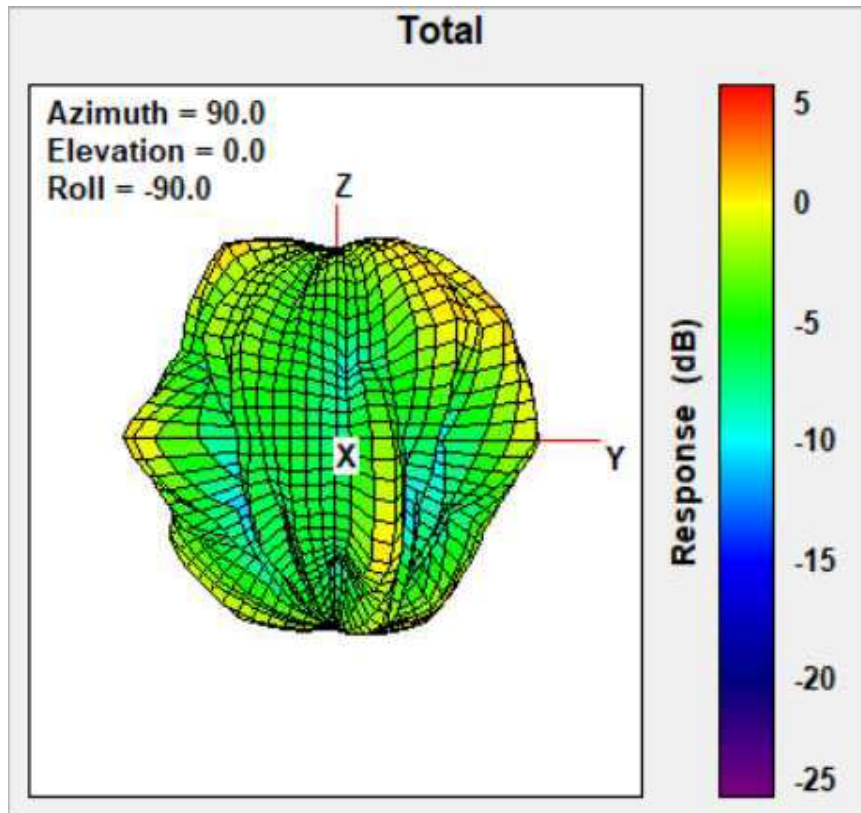
Max Antenna 3D Radiation Pattern 6525-6875 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6525-6875	3.82



Max Antenna 3D Radiation Pattern 6875-7125 MHz

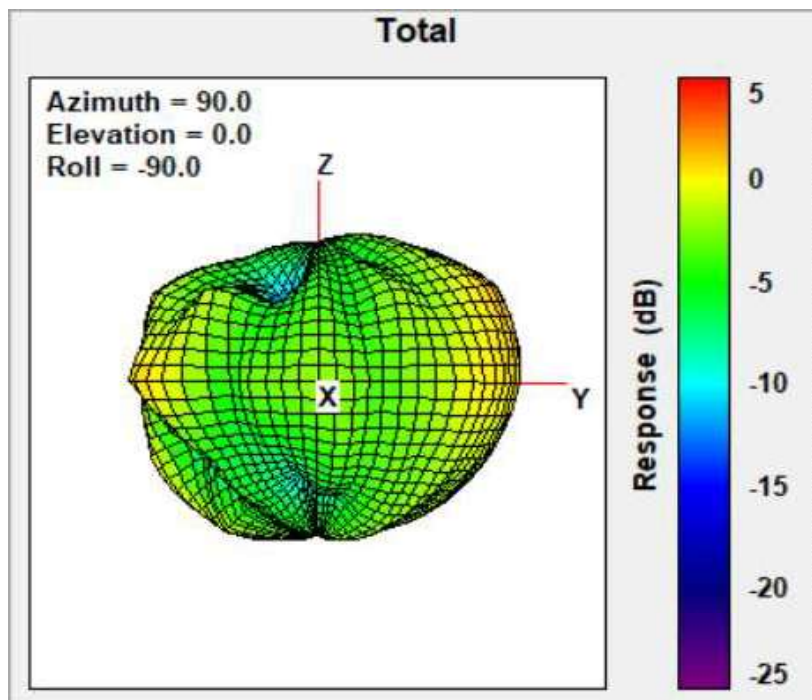
Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6875-7125	3.67



Auxiliary Antenna

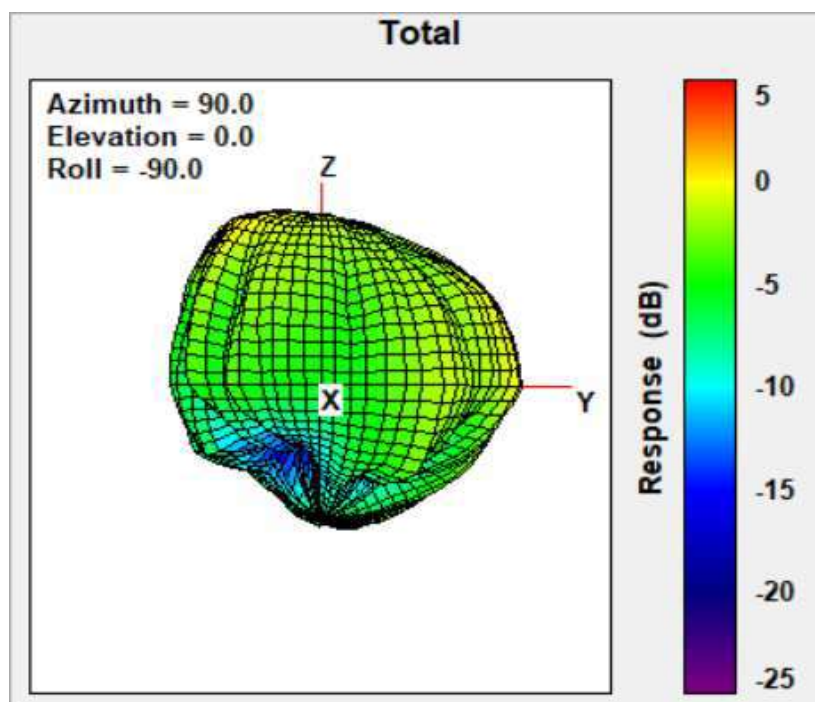
Max Antenna 3D Radiation Pattern 2400 – 2483.5 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
2400-2483.5	2.03



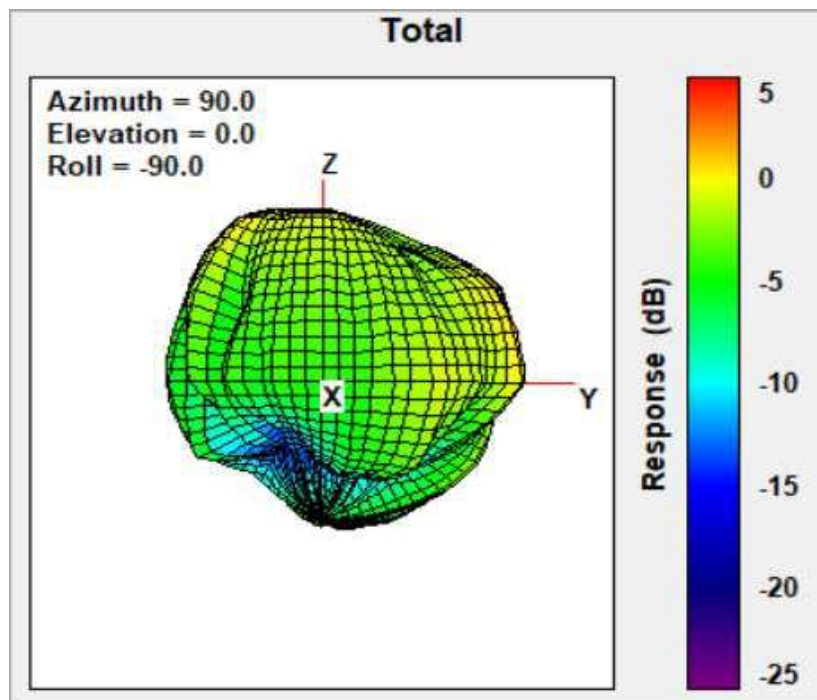
Max Antenna 3D Radiation Pattern 5150-5250 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5150-5250	0.42



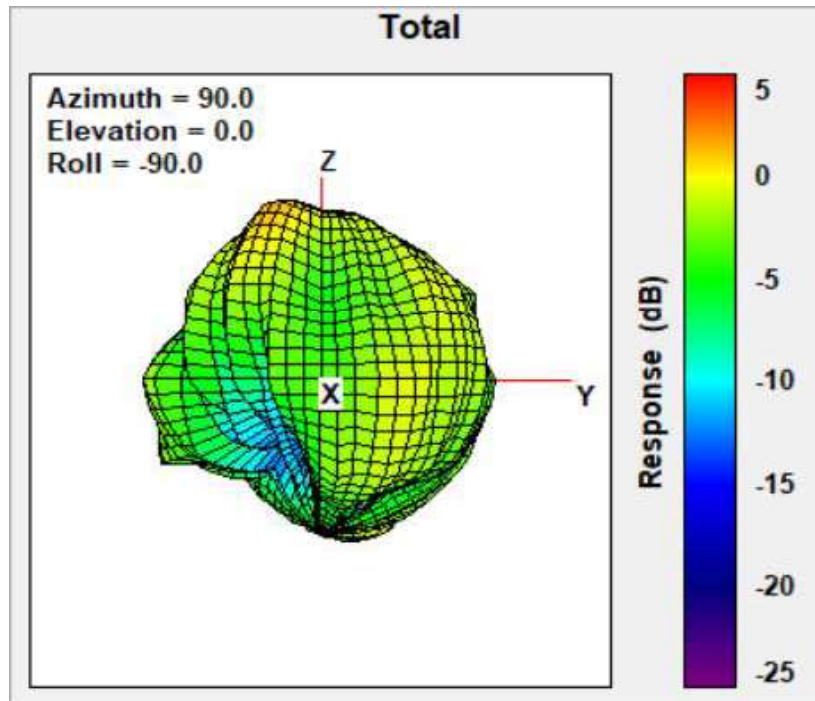
Max Antenna 3D Radiation Pattern 5250-5350 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5250-5350	1.64



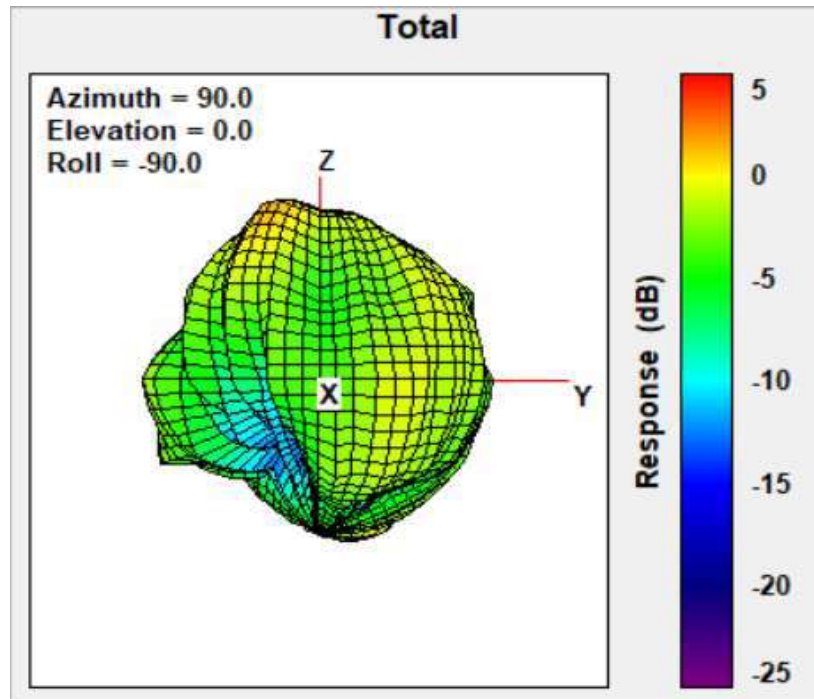
Max Antenna 3D Radiation Pattern 5470-5725 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5470-5725	2.41



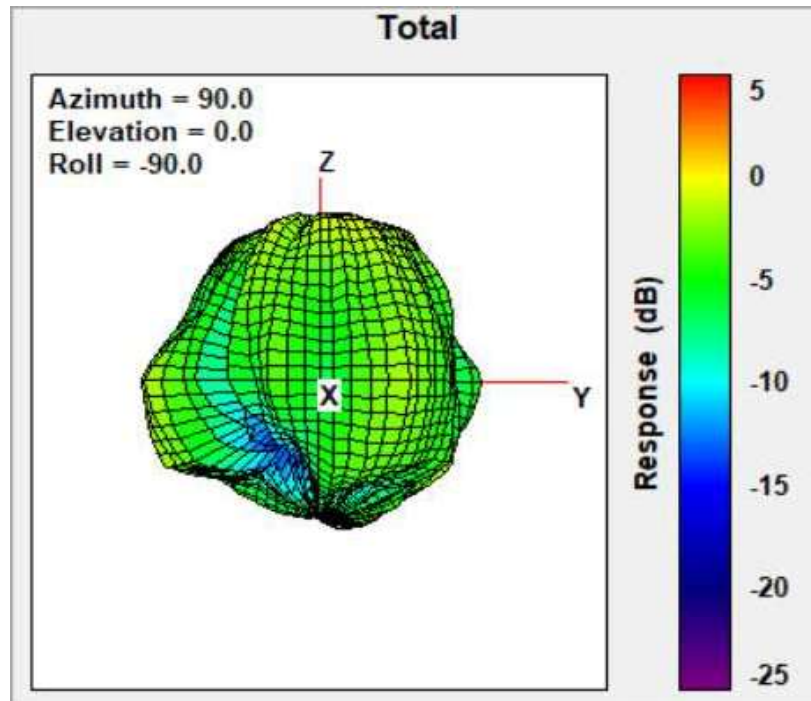
Max Antenna 3D Radiation Pattern 5725-5850 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5725-5850	2.41



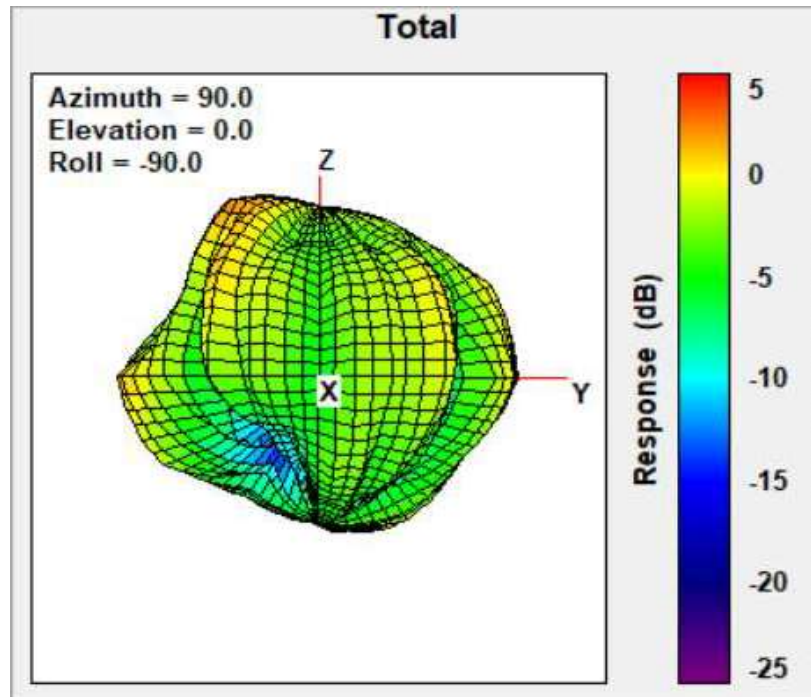
Max Antenna 3D Radiation Pattern 5850-5895 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5850-5895	-0.24



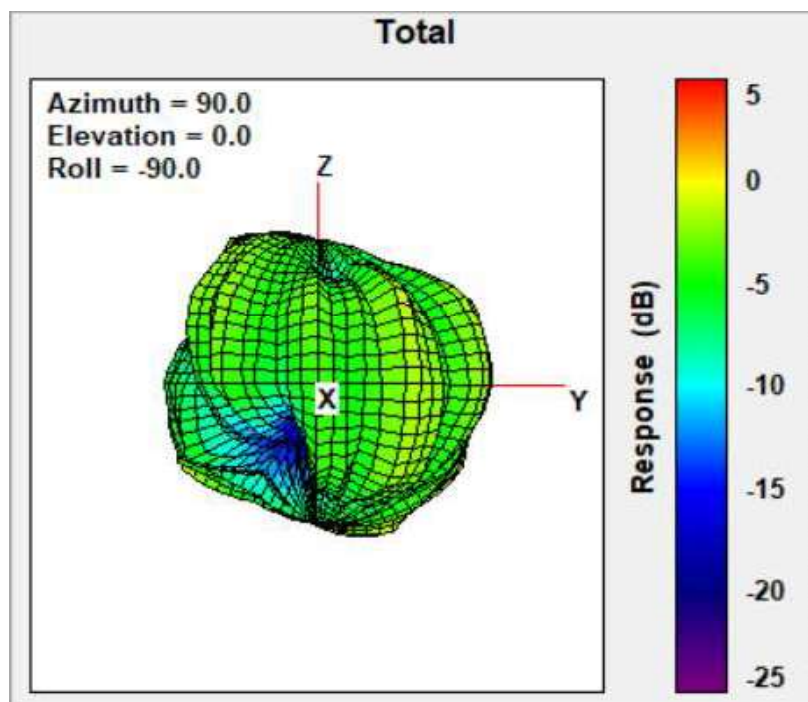
Max Antenna 3D Radiation Pattern 5925-6425 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5925-6425	2.14



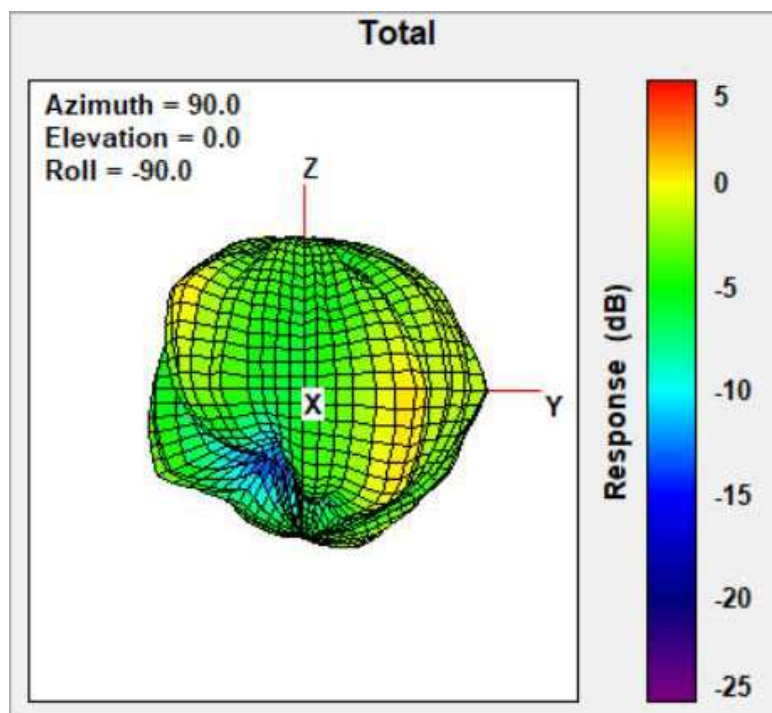
Max Antenna 3D Radiation Pattern 6425-6525 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6425-6525	0.57



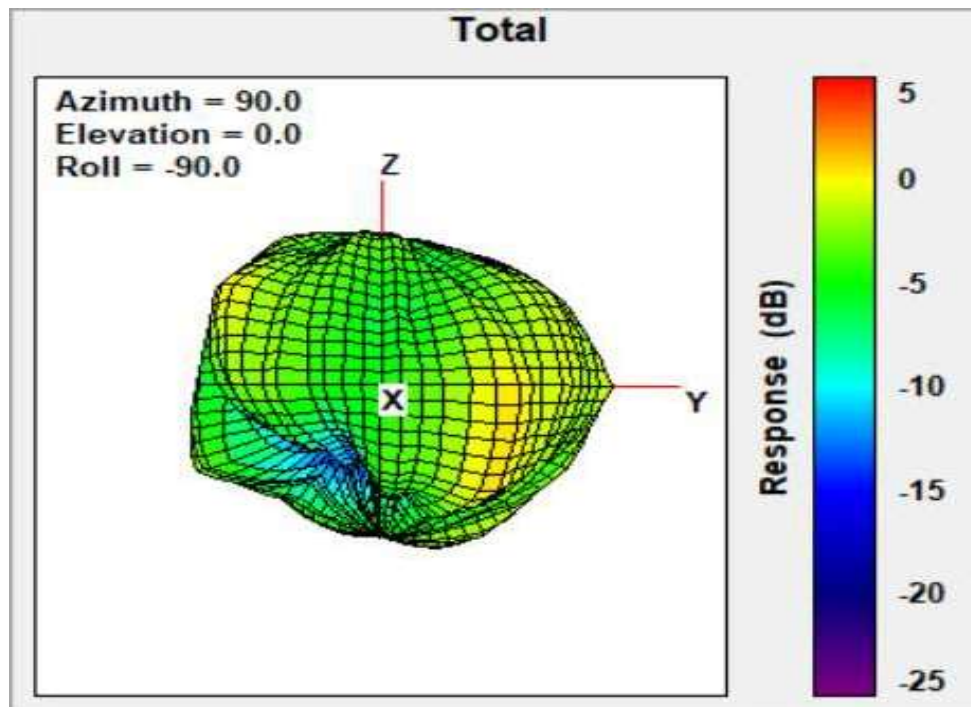
Max Antenna 3D Radiation Pattern 6525-6875 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6525-6875	0.90



Max Antenna 3D Radiation Pattern 6875-7125 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6875-7125	1.15



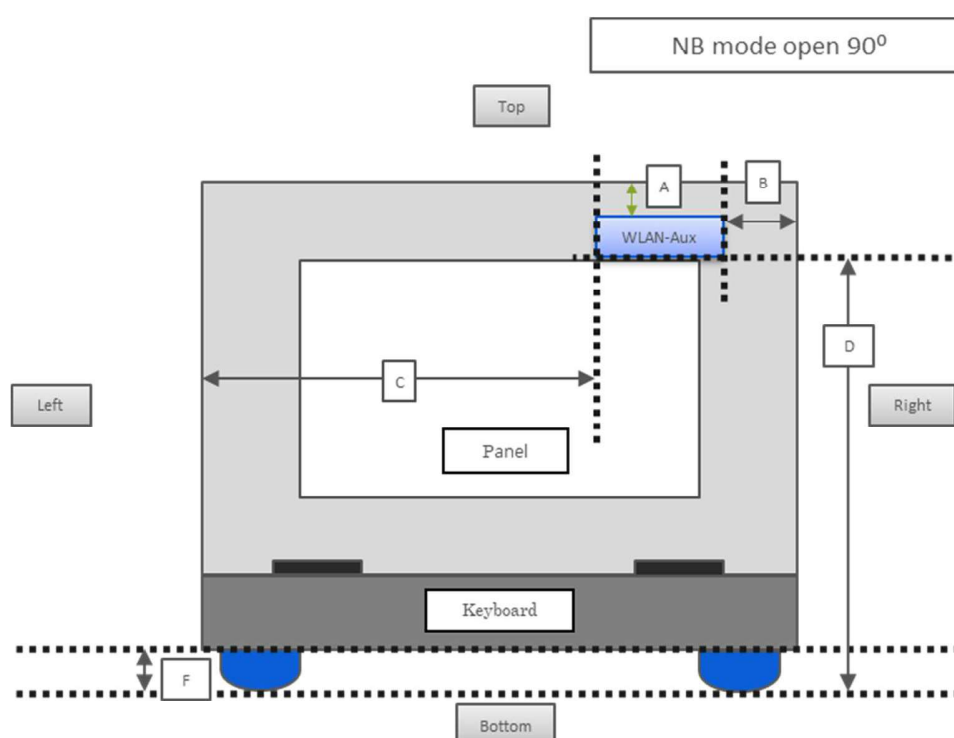
Annex B. Antenna Location

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).

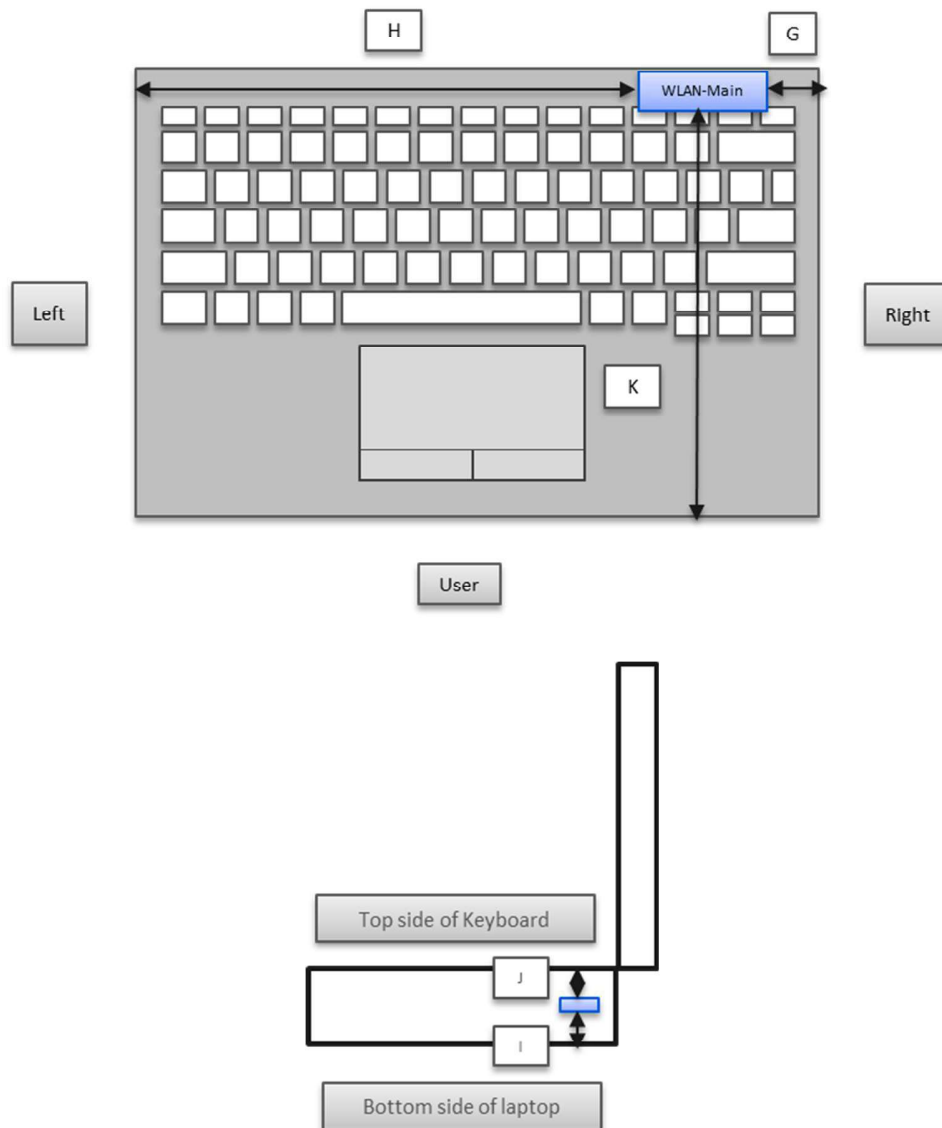
Any antenna that transmits must show dimensions to bottom of laptop. Provide a description of the materials that are used for supporting or surrounding transmit antennas; for example, non-conductive plastics vs. conductive coated plastic or metallic materials.

Aux Antenna:



Minimum Separation Distance			
Item	Antenna	Position	Distance (mm)
A	WLAN-Aux	to Top	5
B		to Right	40
C		to Left	234.90
D		to Bottom	201
F	NB	Bumper thickness	3.5

Main Antenna:



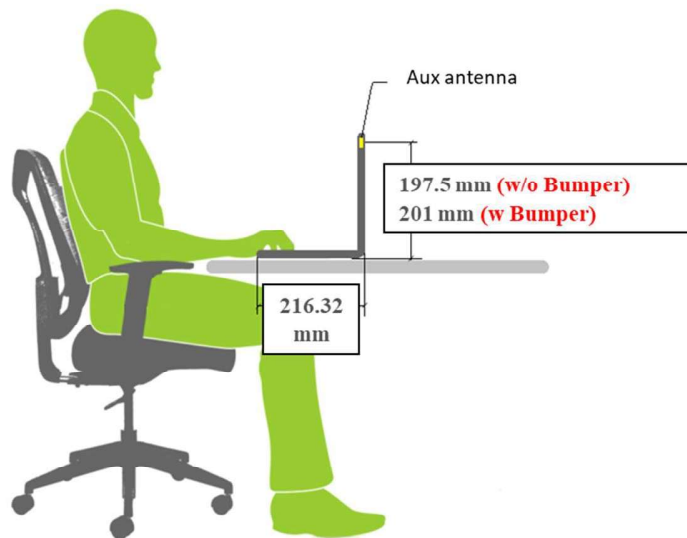
Minimum Separation Distance				
Item	Antenna	Position	Distance (mm)	1g or 10g SAR
F	WLAN-Main	to Right	79.17	10g (ISED)
G		to Left	190.76	10g (ISED)
H		to Bottom of laptop	8.5	1g (FCC/ISED)
I		to Top side of Keyboard	2.96	10g (ISED)
J		to User (front)	192.61	1g (ISED)

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.

Antennas on the panel section

Aux Antenna:



Main Antenna:

