

ANTENNA INFORMATION

OEM	
ODM	Samsung
Platform model name	NT750QGK/ NP750QGK
Intel platform (ex: Yes, No or NA)	Yes
Platform type (ex: regular NB, convertible PC, AIO...etc)	NB
SAR minimum separation (mm)	9.7mm

Antenna manufacturer	WNC	
Address	Du Juan Road NO.121 Precision Machinery Industrial Park , Kunshan city , Jiangsu , China	
Antenna Part number	Main: BA42-00765A	BA42-00766A
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	2.08	1.91	2.22	1.97	1.17	1.61	1.01	2.86	3.97	2.94
Aux	2.47	1.16	0.50	0.87	1.91	1.99	0.19	4	2.85	3.23

Cable Assembly Part Number and Information					
	Cable PN	Cable length(cm)	Cable diameter(mm)	Impedance(ohm)	Connector type
Main	81XBLC15.G19	5.35	1.13	50 ohm Coaxial	MHF4L(IPEX)
Aux	81XBLC15.G20	36.05	1.13	50 ohm Coaxial	MHF4L(IPEX)

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

Table of Contents

Cover page	1
1. Intel Reference Gain and Type	3
2. Document Revision History	3
3. Test & System Description	
3.1 Measurement Method and System.....	4
3.2 Test setup.....	4
3.3 Equipment list.....	5
4. Radiation characteristics of antenna loaded in Host Platform	6
Annex A. Photographs	
A.1 Setup Photo.....	16
A.2 Test sample.....	17
Annex B. Antenna Location	
B.1 Antenna Host Platform Location Information.....	19
B.2 Antenna dimensional information for SAR evaluation.....	20

1. Intel Reference Gain and Type

Antenna Peak gain w/ cable loss (dBi)											
Band/Frequency		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
Design	EU/UK	3.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
PIFA	For WiFi 6E and earlier	3.24	3.64	3.73	4.77	4.97	4.72	4.83	4.30	5.37	5.59
	From WiFi 7	2.95	5.11	4.55	5.15	5.13	4.45	5.02	5.02	4.96	4.96
Dipole	For WiFi 6E and earlier	2.89	2.92	3.19	4.41	4.22	4.22	4.83	4.30	4.49	5.34
	From WiFi 7	2.95	4.03	4.11	5.15	5.13	4.45	5.02	4.71	4.49	4.96

3D Peak Antenna gain should be equal or greater than -2 dBi

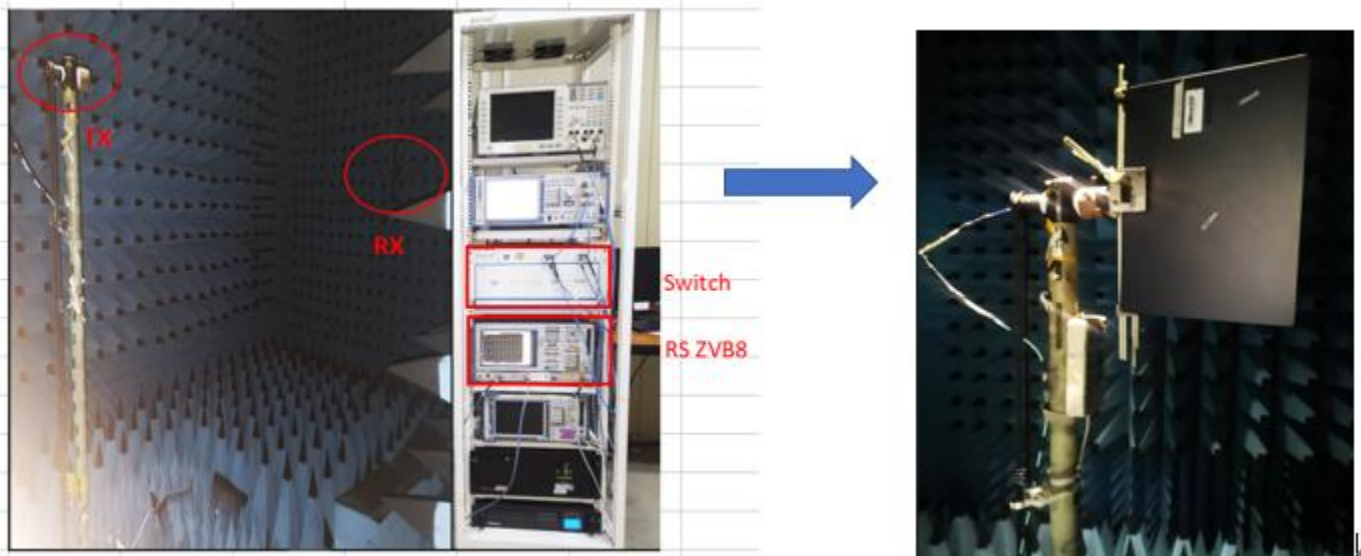
If a host integrator plans to use a lower gain antenna of the same type, additional CBP(FCC)/EDT(EU) testing need to be performed while the module is installed in the host.

Revision #	Revision Details	Issued Date
Rev.00	First Issue	2023.09.14

2. Document Revision History

3. Test & System Description

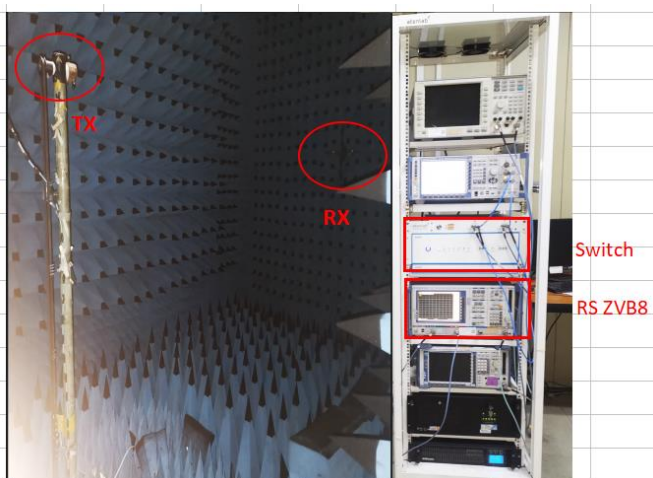
3.1 Measurement Method and System



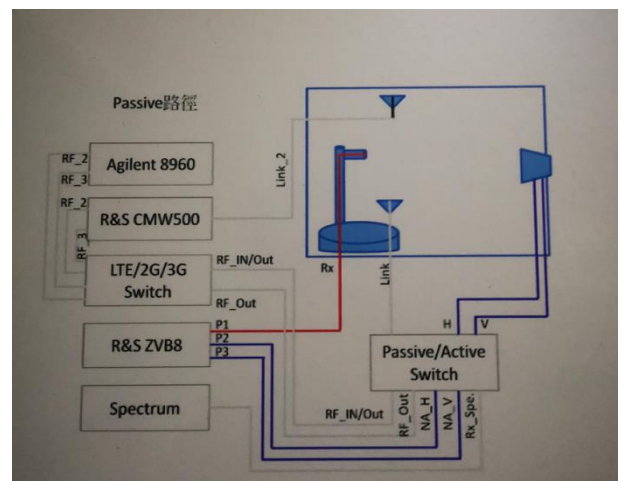
As right picture, make DUT to be 110 degree, lay it on chamber transmitting terminal, RX antenna receive the signal and feedback to Network analyzer, then test result come out by software calculating

3.2 Test setup

Test Environment



Test philosophy



3.3 Equipment list



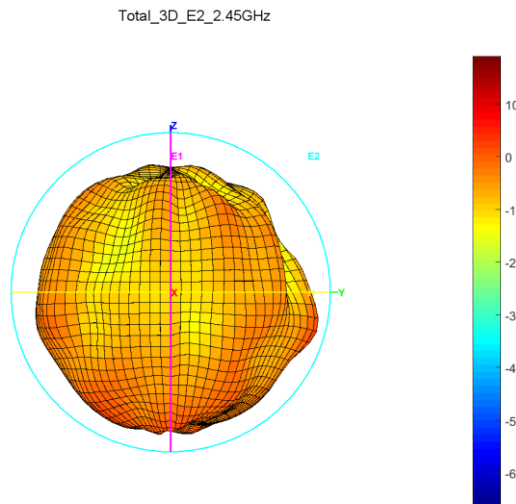
Equipment list						
NO.	Device	Type/Model	Serial#	Manufacturer	Cal-Date	Cal.DueDate
1	Chamber	\	\	ATEN LAB	2023.06.25	2023.12.24
2	Software	\	\	ATEN LAB	\	\
3	Active/passive switch	\	\	ATEN LAB	\	\
4	Network analyzer	ZVB8	1145.1010.10	R&S	2023.2.25	2024.2.24
5	Horn antenna	BBHX9120E	\	SCHWARZBECK	2020.06.22	\
Tester: Dongxiu.Ma Sign: <i>Dongxiu.Ma</i> Test Date: 2023.08						

4. Radiation characteristics of antenna loaded in Host Platform

Main Antenna

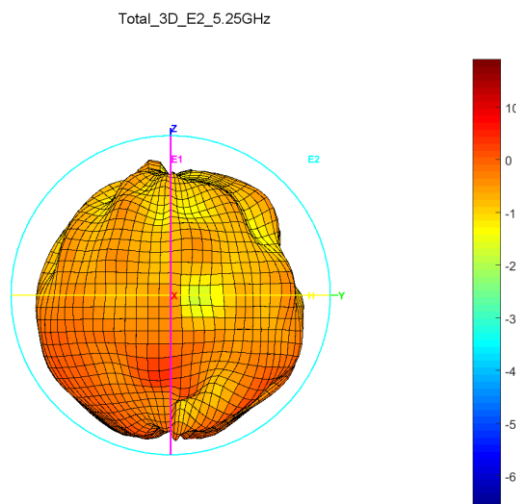
Max Antenna 3D Radiation Pattern 2400 – 2483.5 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
2400-2483.5	2.08



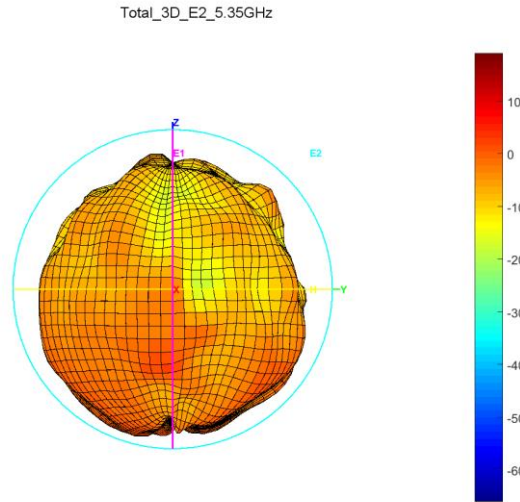
Max Antenna 3D Radiation Pattern 5150-5250 MHz

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



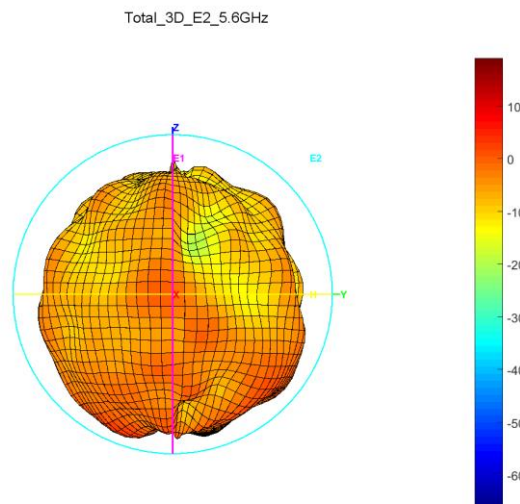
Max Antenna 3D Radiation Pattern 5250-5350 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5250-5350	2.22



Max Antenna 3D Radiation Pattern 5470-5725 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5470-5725	1.97



Max

Antenna

3D

Radiation

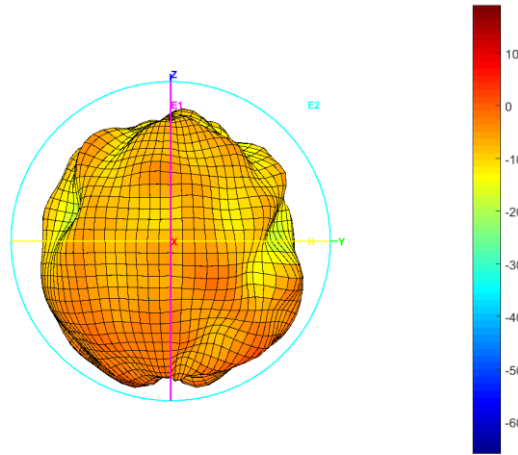
Pattern

5725-5850

MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5725-5850	1.17

Total_3D_E2_5.785GHz



Max

Antenna

3D

Radiation

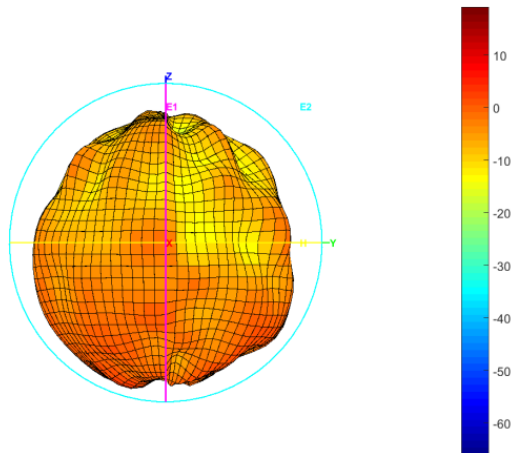
Pattern

5850-5895

MHz

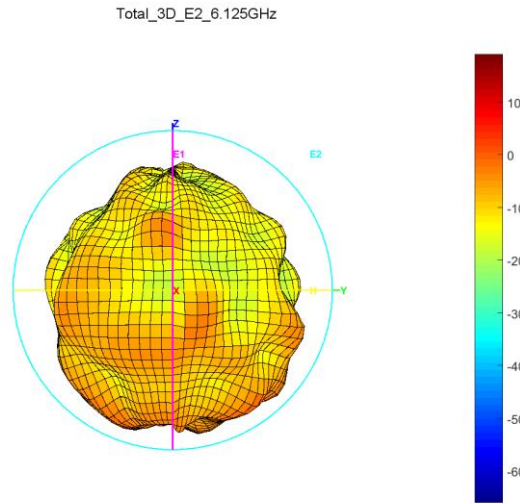
Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5850-5895	1.61

Total_3D_E2_5.895GHz



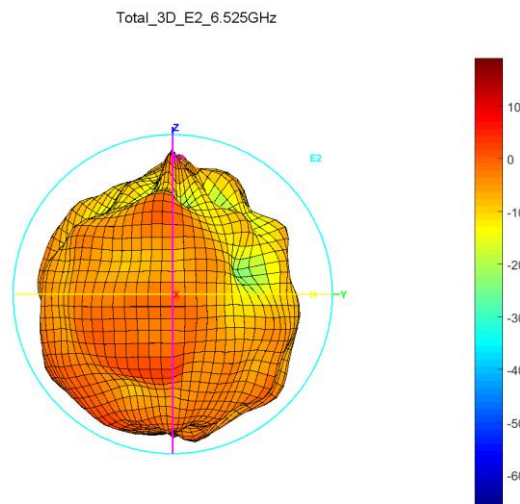
Max Antenna 3D Radiation Pattern 5925-6425 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5925-6425	1.01



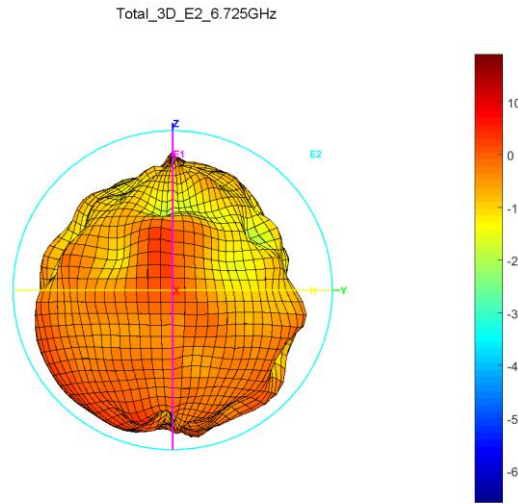
Max Antenna 3D Radiation Pattern 6425-6525 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6425-6525	2.86



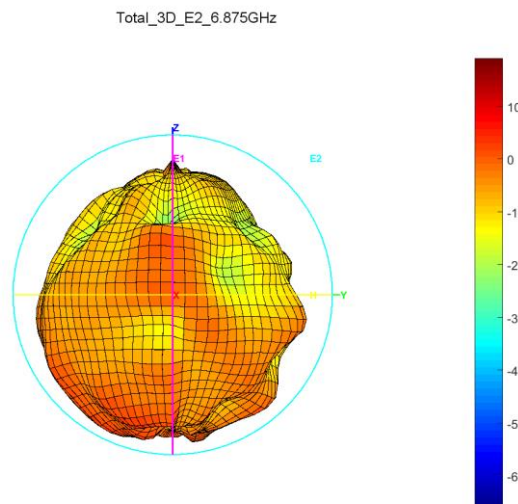
Max Antenna 3D Radiation Pattern 6525-6875 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6525-6875	3.97



Max Antenna 3D Radiation Pattern 6875-7125 MHz

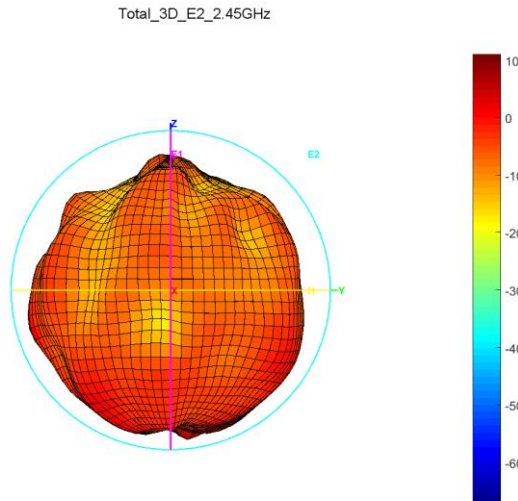
Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6875-7125	2.94



Auxiliary Antenna

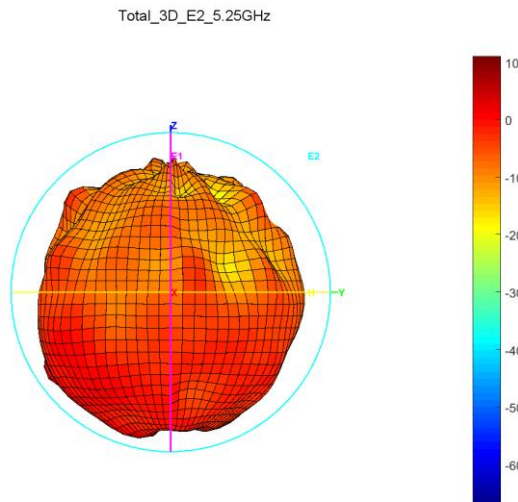
Max Antenna 3D Radiation Pattern 2400 – 2483.5 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
2400-2483.5	2.47



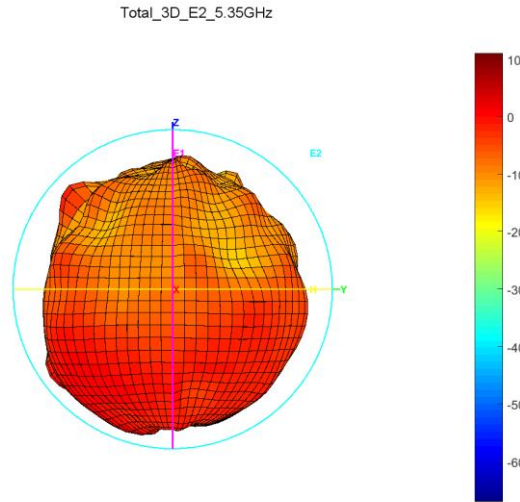
Max Antenna 3D Radiation Pattern 5150-5250 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5150-5250	1.16



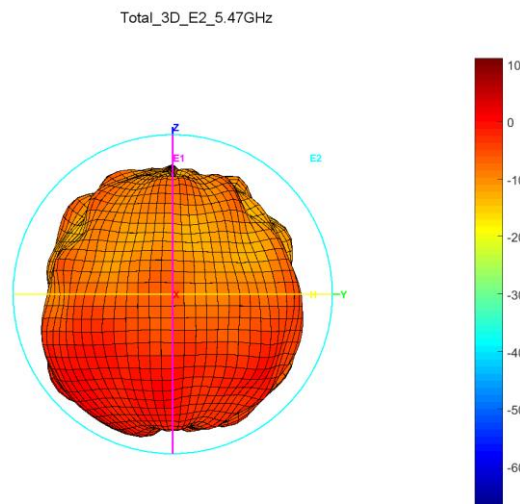
Max Antenna 3D Radiation Pattern 5250-5350 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5250-5350	0.5



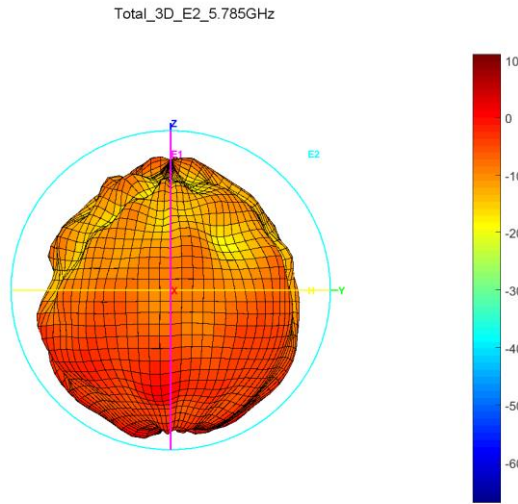
Max Antenna 3D Radiation Pattern 5470-5725 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5470-5725	0.87



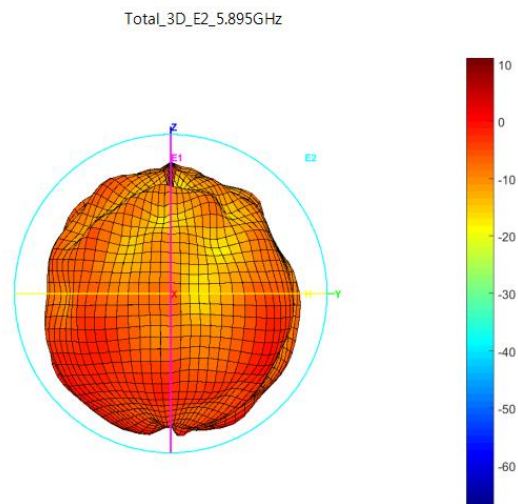
Max Antenna 3D Radiation Pattern 5725-5850 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5725-5850	1.91



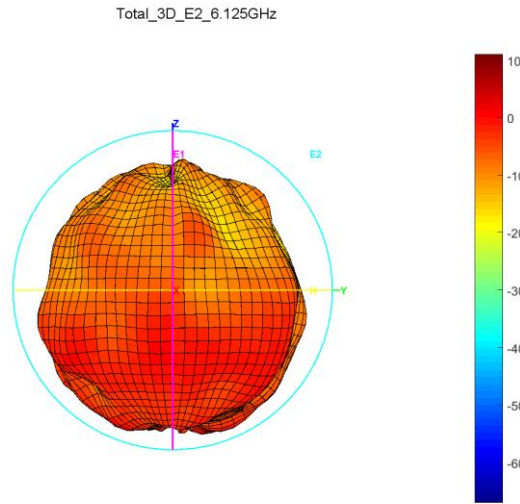
Max Antenna 3D Radiation Pattern 5850-5895 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5850-5895	1.99



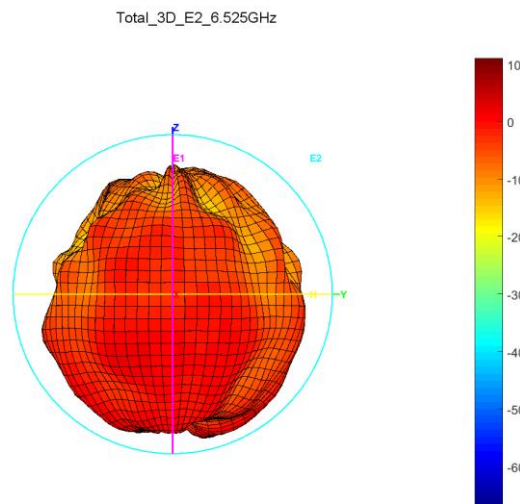
Max Antenna 3D Radiation Pattern 5925-6425 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5925-6425	0.19



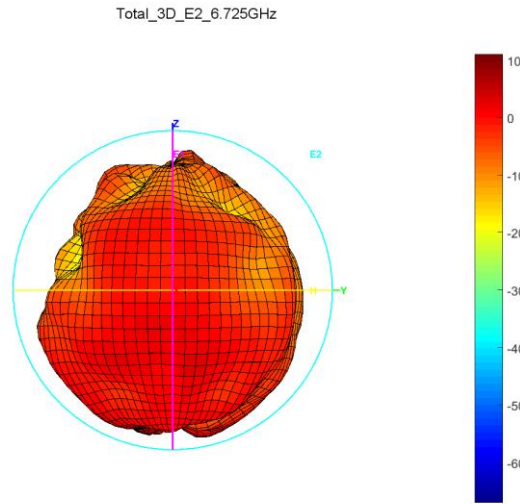
Max Antenna 3D Radiation Pattern 6425-6525 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6425-6525	4



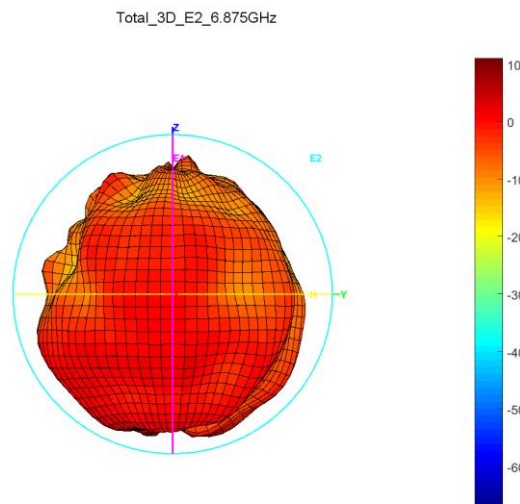
Max Antenna 3D Radiation Pattern 6525-6875 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6525-6875	2.85



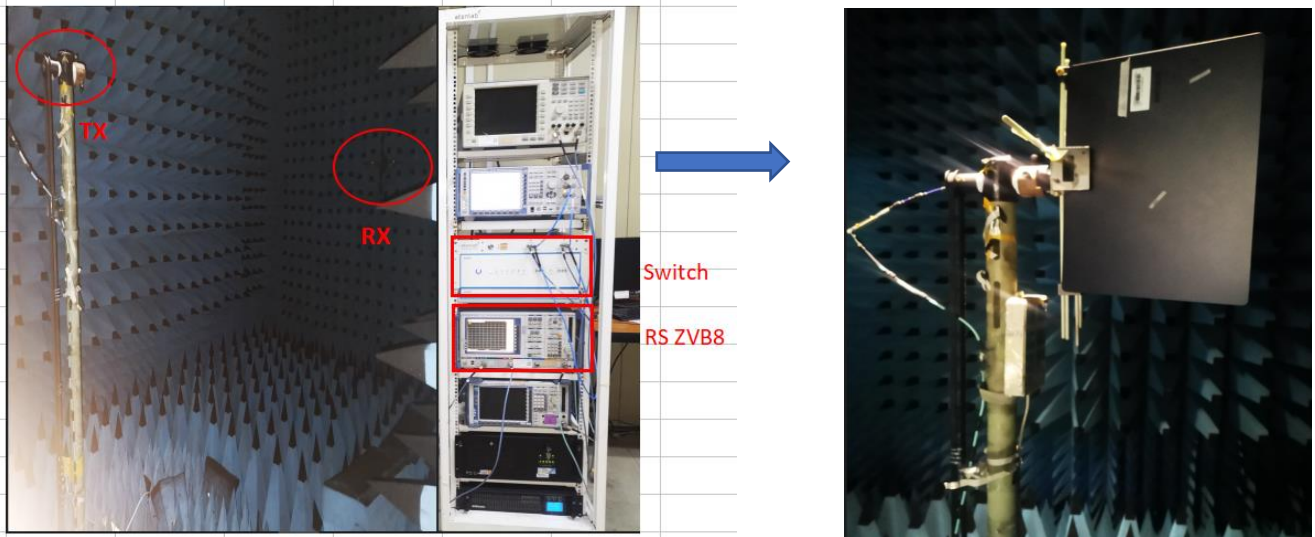
Max Antenna 3D Radiation Pattern 6875-7125 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6875-7125	3.23



Annex A. Photographs

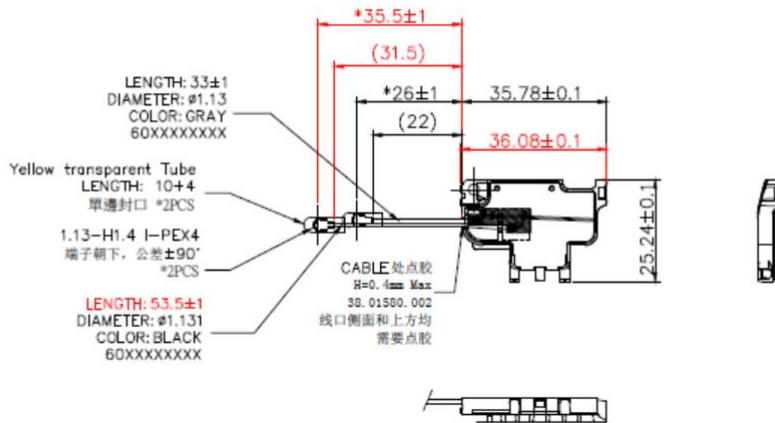
A.1 Setup Photo



A.2 Test sample

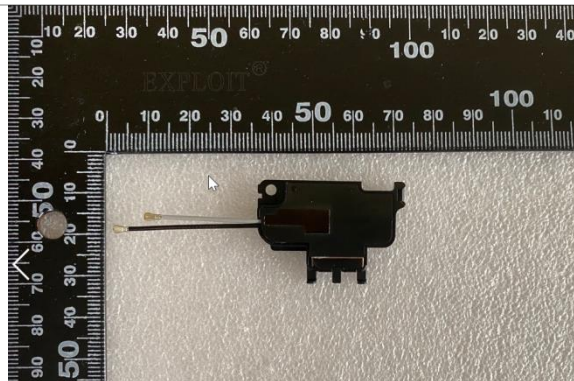
Main Antenna

Antenna Drawing

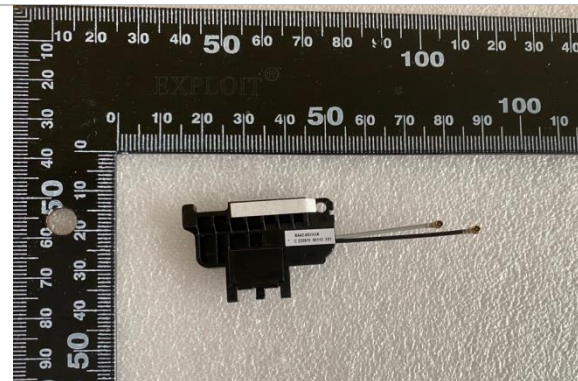


Antenna Photo

Front



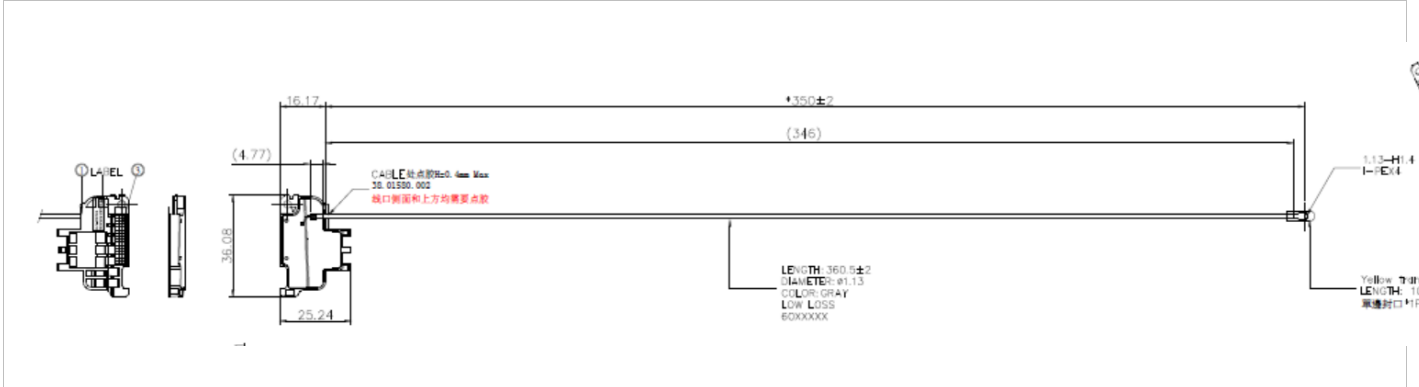
Back



Note: antenna photo should include L type ruler

Aux Antenna

Antenna Drawing

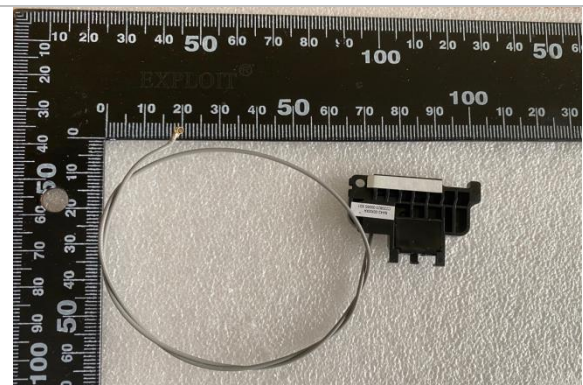


Antenna Photo

Front



Back



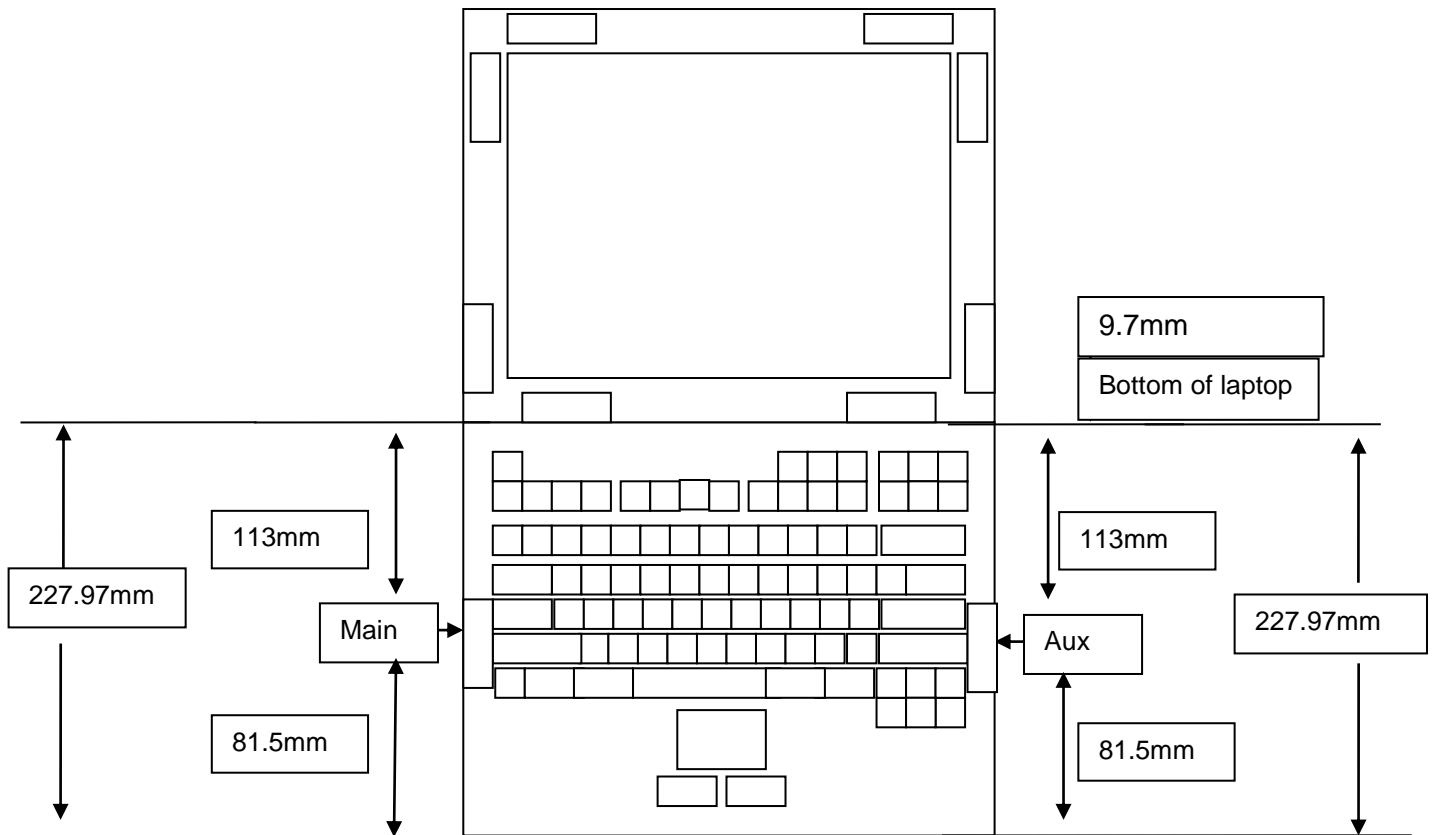
Note: antenna photo should include L type ruler

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.

