

# ANTENNA INFORMATION

OEM	Dell
ODM	COMPAL
Platform model name	T07H
Intel platform (ex: Yes, No or NA)	Yes
Platform type (ex: regular NB, convertible PC, AIO...etc)	"Portable Computer – Tablet".
SAR minimum separation (mm)	2mm

Antenna manufacturer	Changshu HongBo Telecommunication Technology Co., Ltd.		
Address	No. 8, Liuzhou Road, Lushan Industrial Park, Xinxing Development Zone, Changshu City, Jiangsu Province, China		
Antenna Part number	Main: MPN:330-24044 CPN:DC33002U64L	Aux: MPN:330-24044 CPN:DC33002U64L	
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	2.01	-0.51	0.27	1.85	1.85	1.54	2.63	2.28	2.21	0.62
Aux	1.87	-1.44	-0.07	0.27	1.75	1.92	2.43	1.10	0.51	0.19

Cable Assembly Part Number and Information					
	Cable PN	Cable length(mm)	Cable diameter(mm)	Impedance(ohm)	Connector type
Main	White 1.13SLLS SY113L/50-143	102.5	1.13	50	I-PEX MHF- 4L(20565-001R-13)
Aux	Black 1.13SLLS SY113L/50-118	66	1.13	50	I-PEX MHF- 4L(20565-001R-13)

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

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## 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.

## 2. Document Revision History

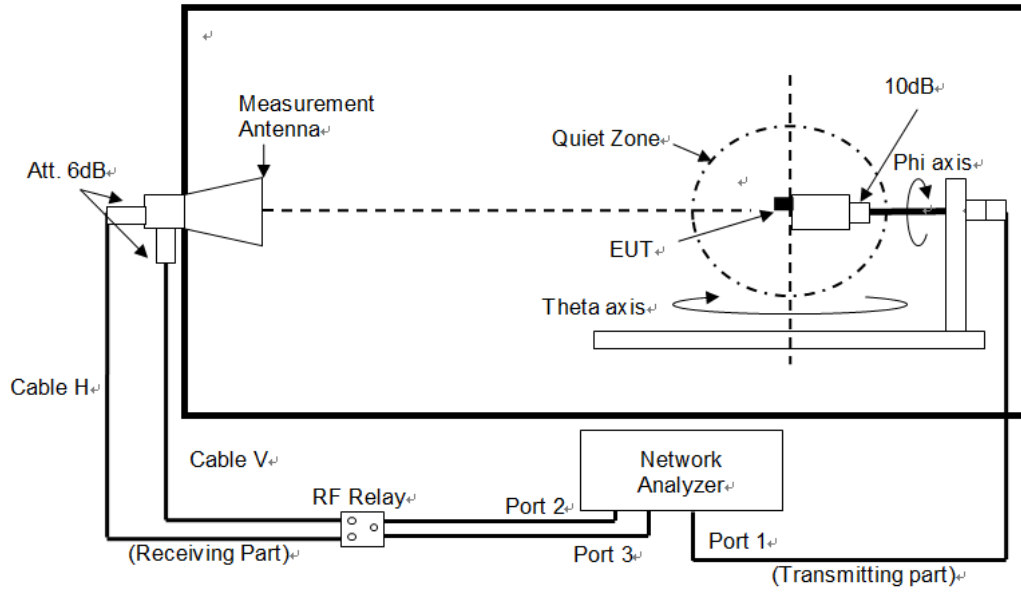
Revision #	Revision Details	Issued Date

### 3. Test & System Description

#### 3.1 Measurement Method and System

This test report is prepared for host antenna testing under a Full Anechoic Chamber.

#### 3.2 Test setup



### 3.3 Equipment list

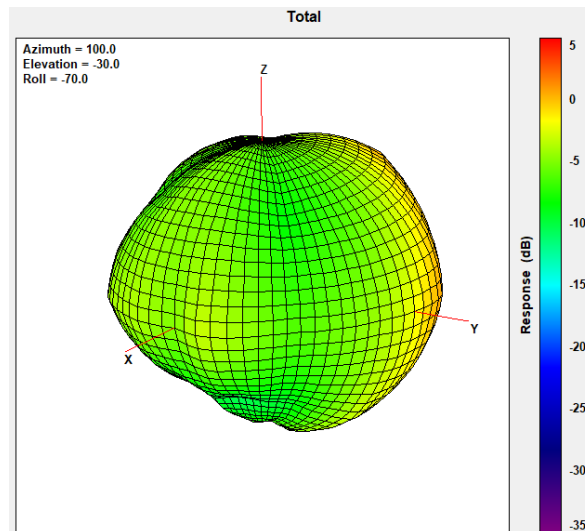
Name	Manufacture	Type/Model	Serial Number	Cal. Date	Cal. Due Date
ENA Series Network Analyze	Keysight	E5071C	MY46108594	2023/8/3	2024/8/3
RF Switch	Keysight	3499A	MY4200955	NCR	NCR
Multi-Axis Positioner Controller	ETS-Lindgren	2090	N/A	NCR	NCR
Medium-Duty Positioner	ETS-Lindgren	2015	N/A	NCR	NCR
Measurement Horn Antenna	EMCO	Aug-64	86722	NCR	NCR

#### 4. Radiation characteristics of antenna loaded in Host Platform

##### Main Antenna

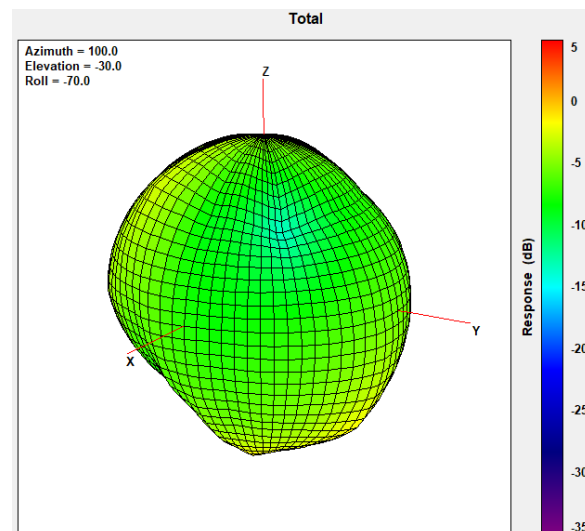
Max Antenna 3D Radiation Pattern 2400 – 2483.5 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
2400-2483.5	2.01



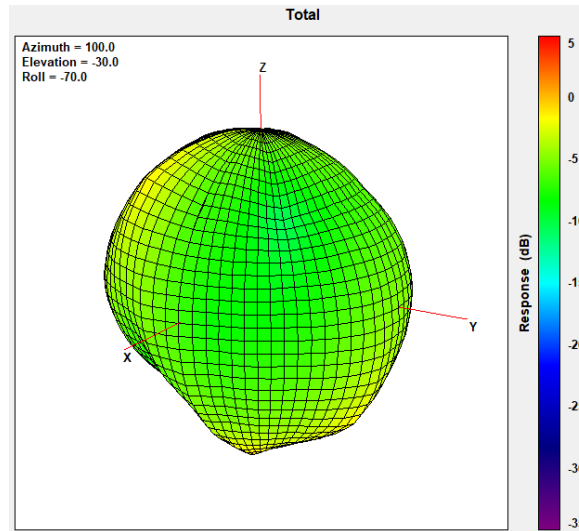
Max Antenna 3D Radiation Pattern 5150-5250 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5150-5250	-0.51



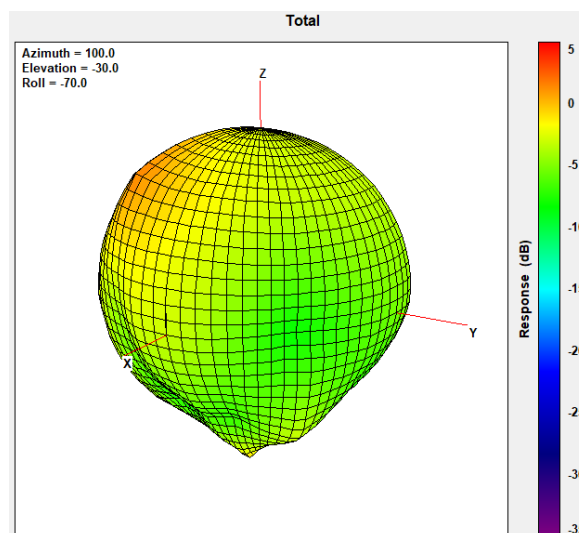
### Max Antenna 3D Radiation Pattern 5250-5350 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5250-5350	0.27



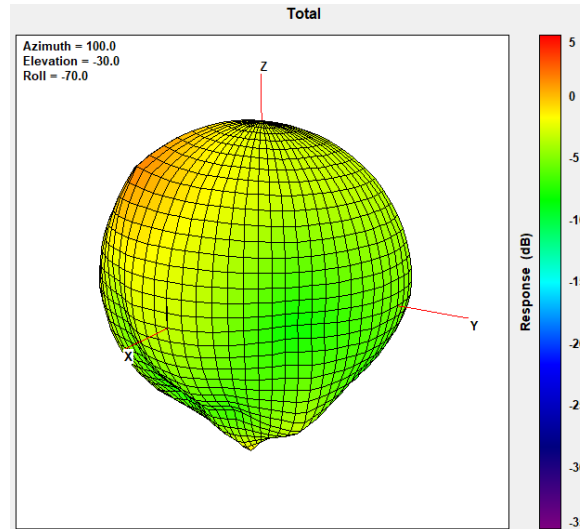
### Max Antenna 3D Radiation Pattern 5470-5725 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5470-5725	1.85



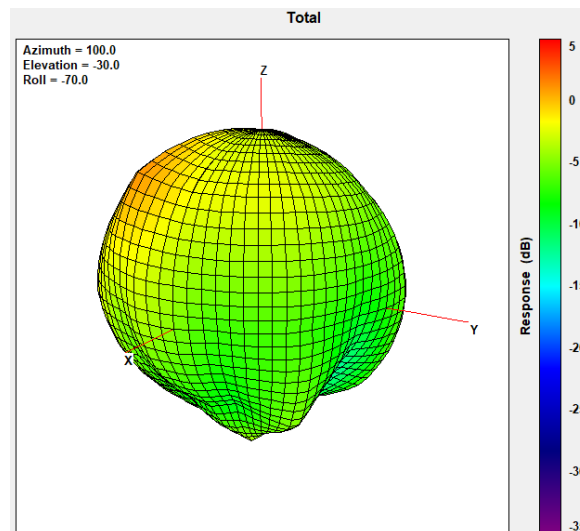
### Max Antenna 3D Radiation Pattern 5725-5850 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5725-5850	1.85



### Max Antenna 3D Radiation Pattern 5850-5895 MHz

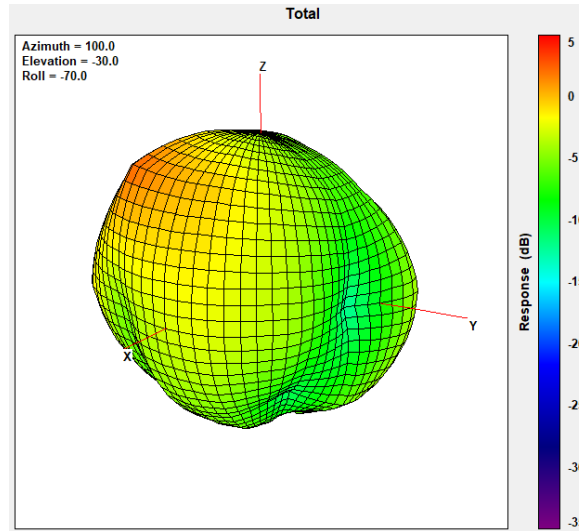
Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5850-5895	1.54





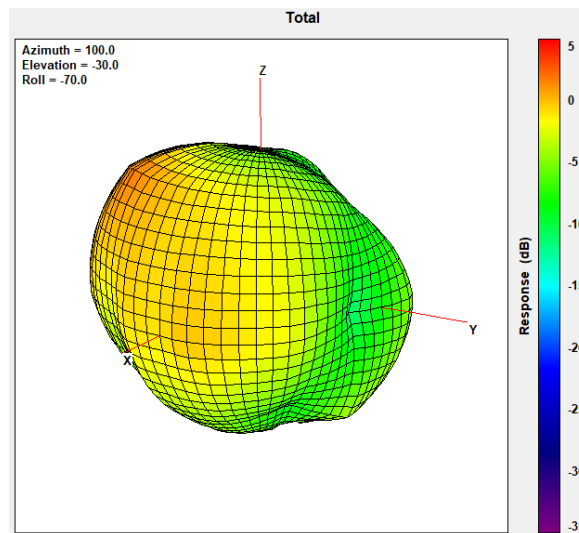
### Max Antenna 3D Radiation Pattern 5925-6425 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5925-6425	2.63



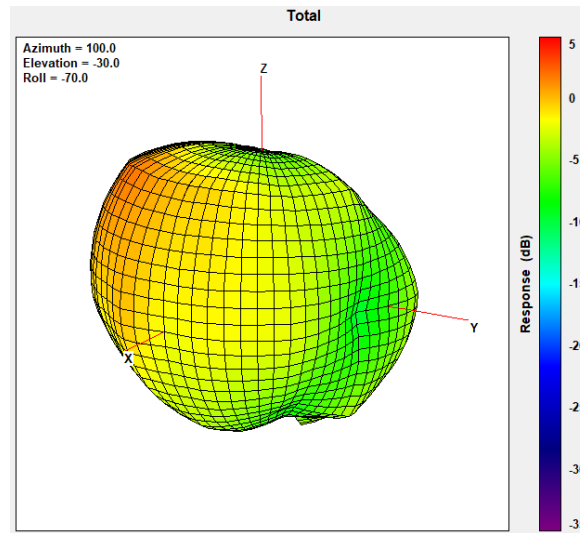
### Max Antenna 3D Radiation Pattern 6425-6525 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6425-6525	2.28



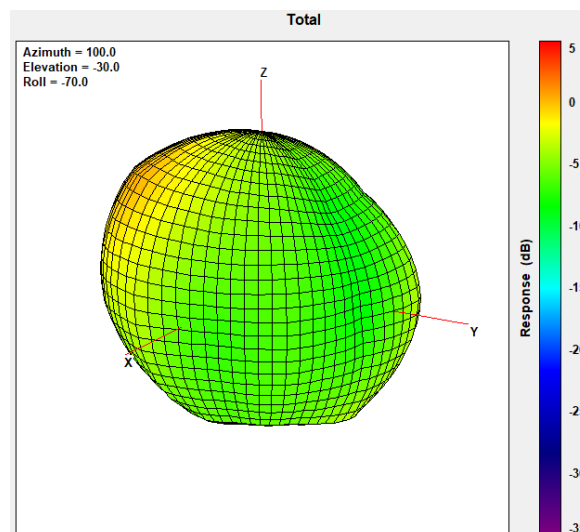
## Max Antenna 3D Radiation Pattern 6525-6875 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6525-6875	2.21



## Max Antenna 3D Radiation Pattern 6875-7125 MHz

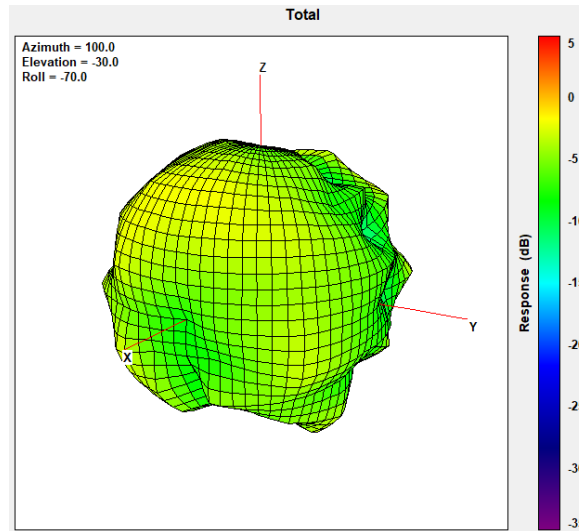
Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6875-7125	0.62



### Auxiliary Antenna

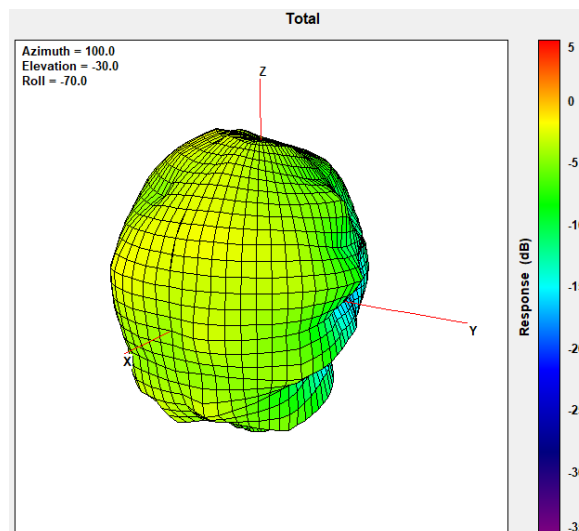
#### Max Antenna 3D Radiation Pattern 2400 – 2483.5 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
2400-2483.5	1.87



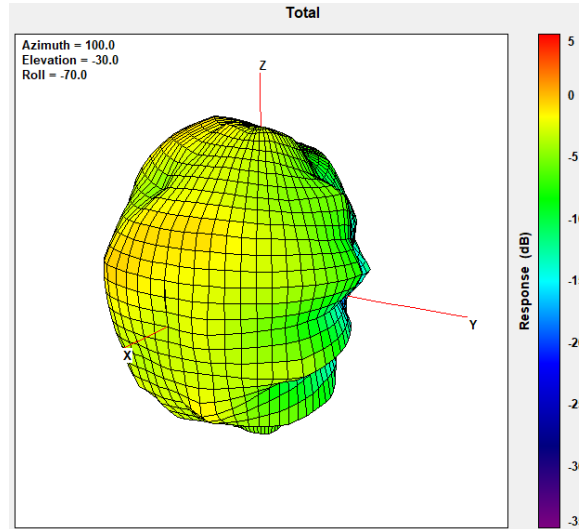
#### Max Antenna 3D Radiation Pattern 5150-5250 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5150-5250	-1.44



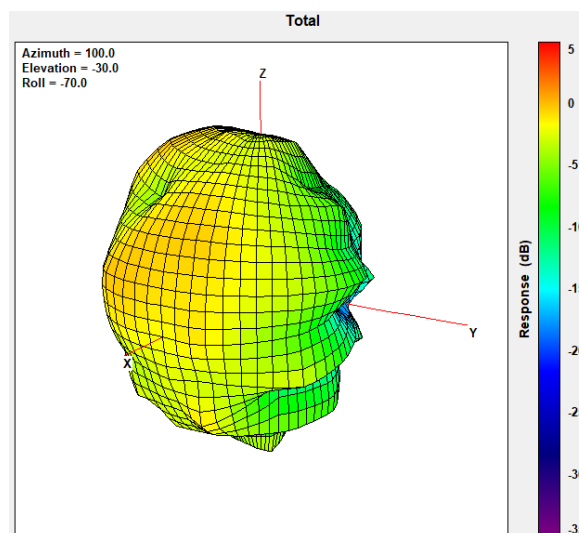
### Max Antenna 3D Radiation Pattern 5250-5350 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5250-5350	-0.07



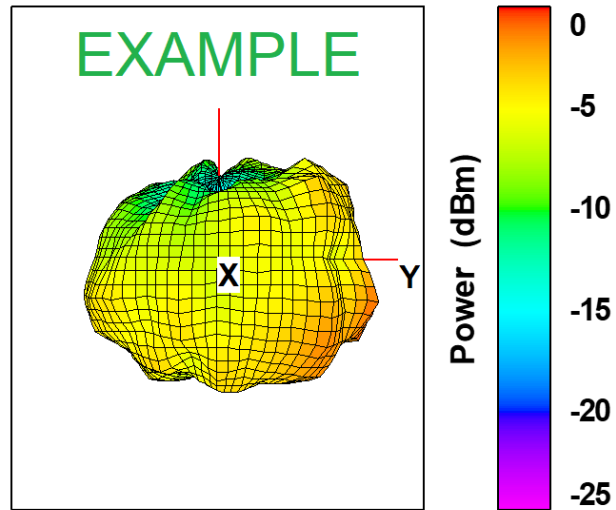
### Max Antenna 3D Radiation Pattern 5470-5725 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5470-5725	0.27



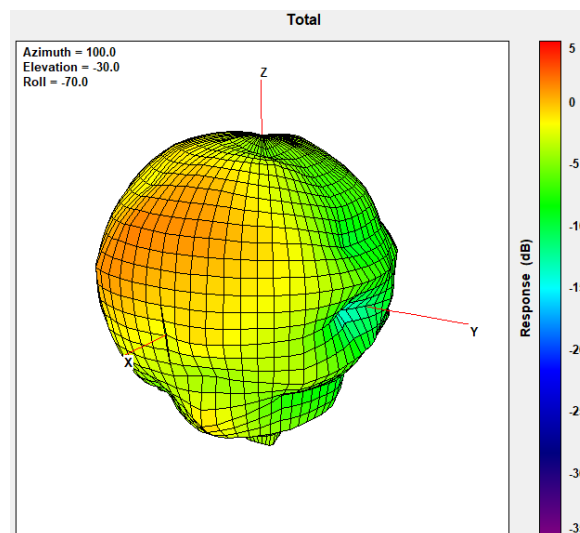
### Max Antenna 3D Radiation Pattern 5725-5850 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5725-5850	1.75



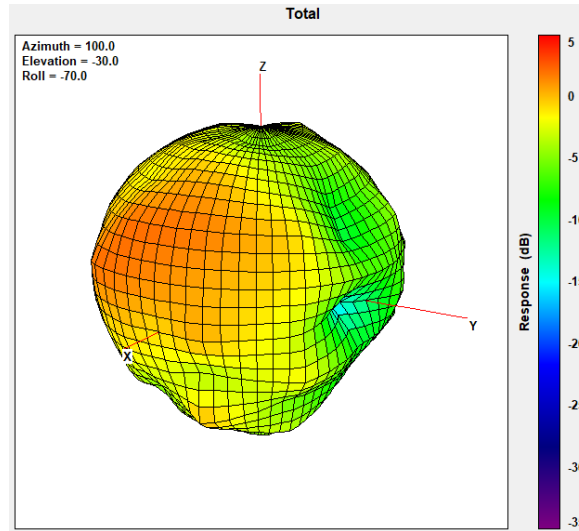
### Max Antenna 3D Radiation Pattern 5850-5895 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5850-5895	1.92



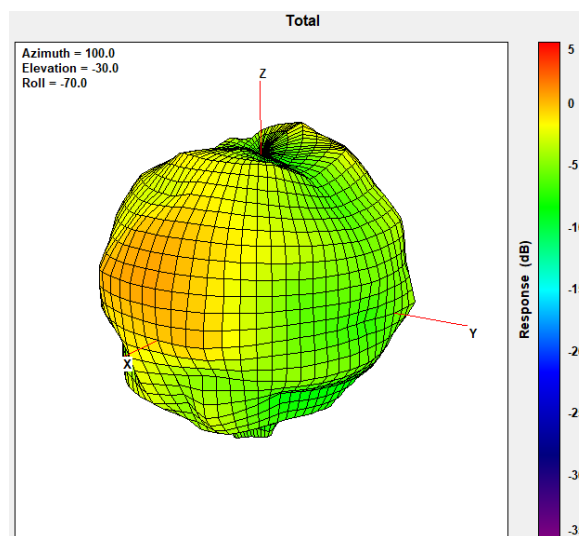
### Max Antenna 3D Radiation Pattern 5925-6425 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5925-6425	2.43



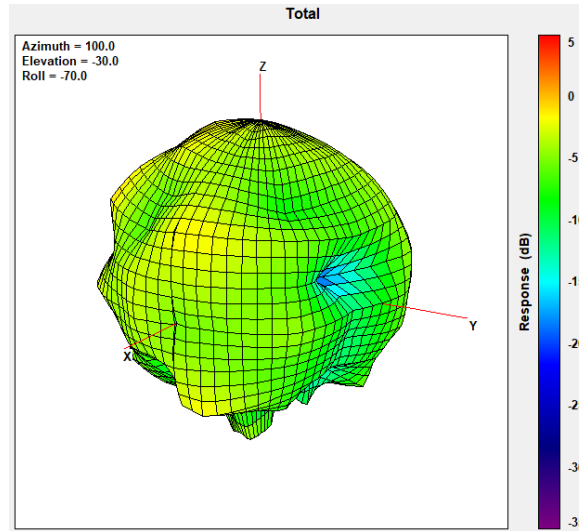
### Max Antenna 3D Radiation Pattern 6425-6525 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6425-6525	1.10



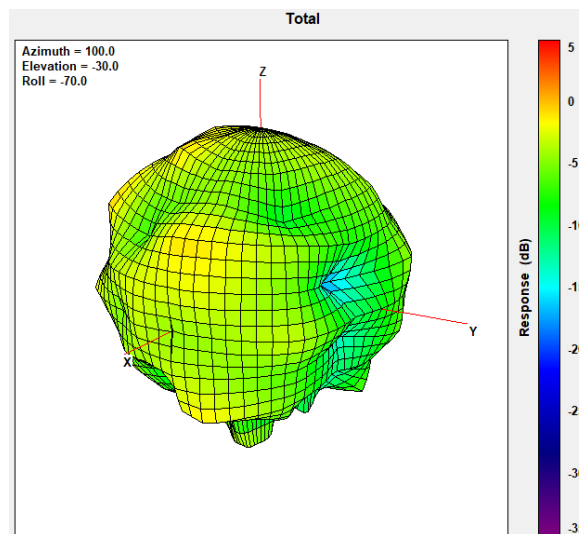
### Max Antenna 3D Radiation Pattern 6525-6875 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6525-6875	0.51



### Max Antenna 3D Radiation Pattern 6875-7125 MHz

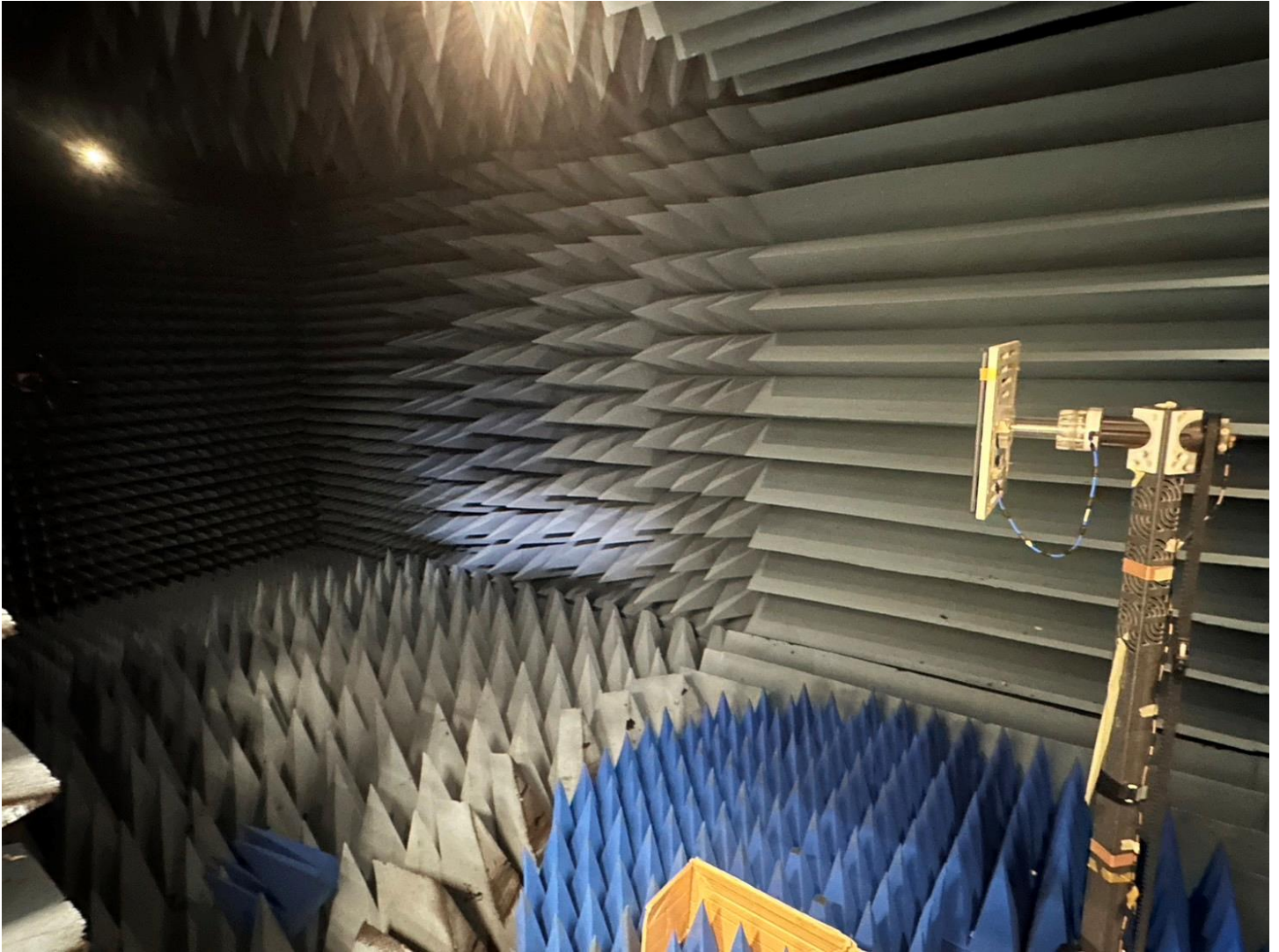
Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6875-7125	0.19



# Annex A. Photographs

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## A.1 Setup Photo

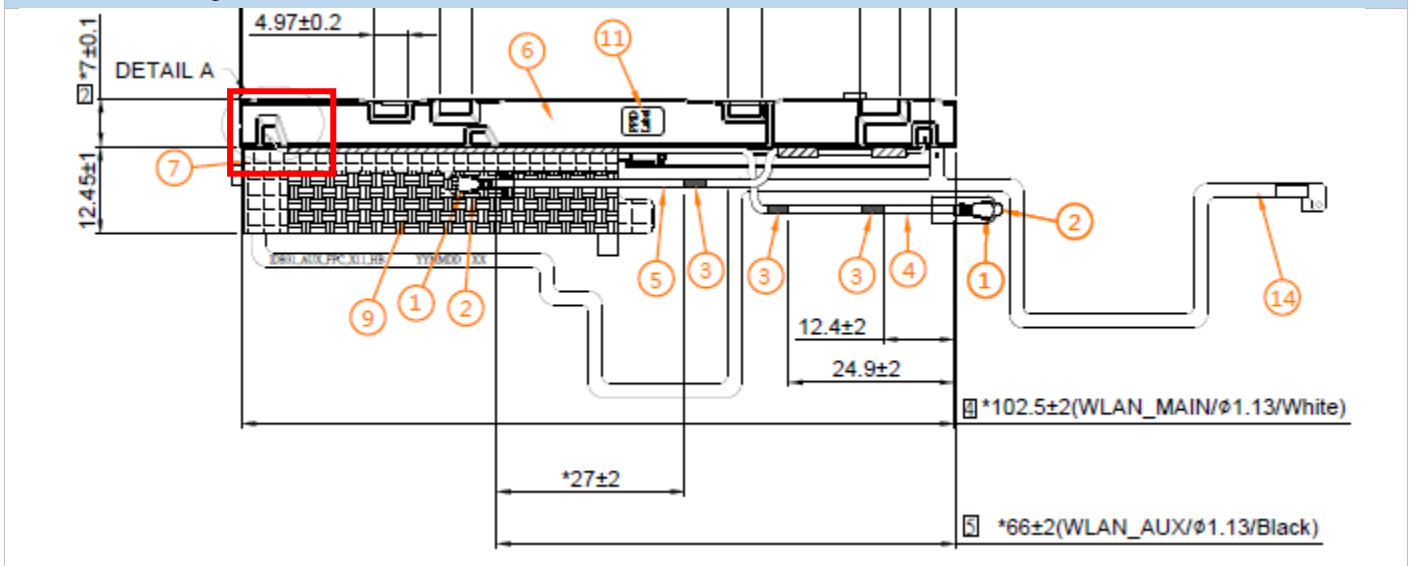




## A.2 Test sample

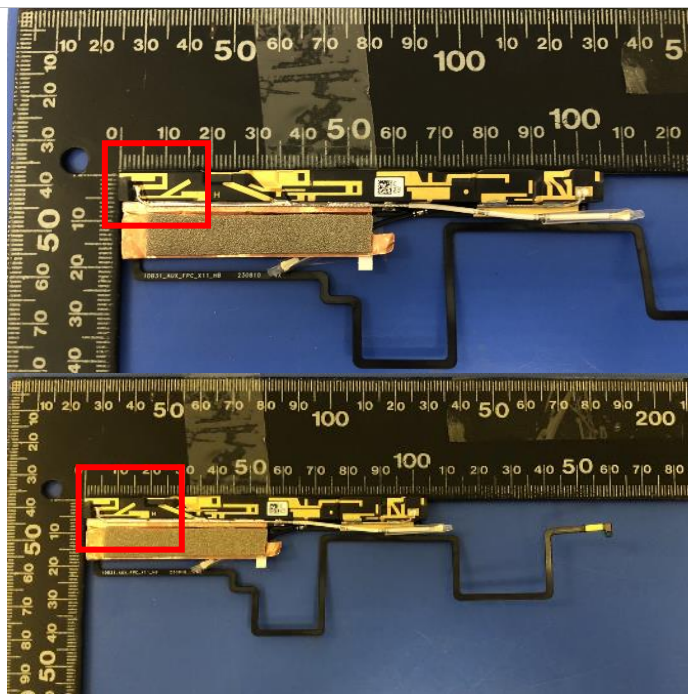
### Main Antenna

#### Antenna Drawing

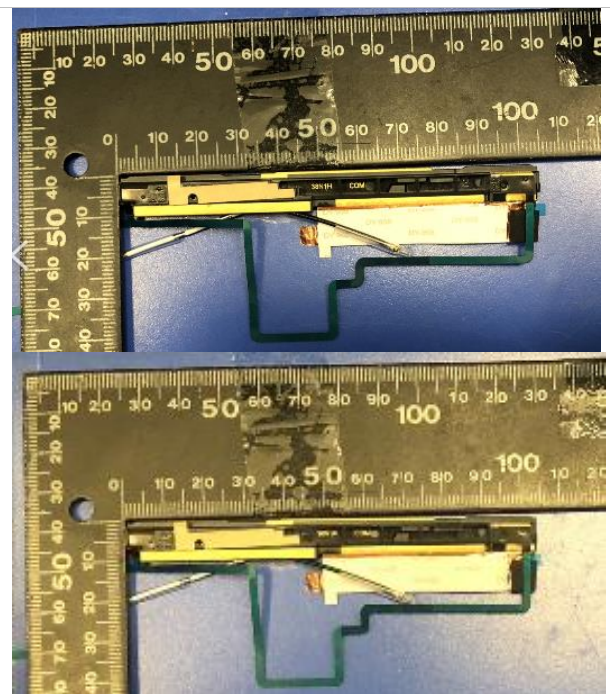


#### Antenna Photo

##### Front



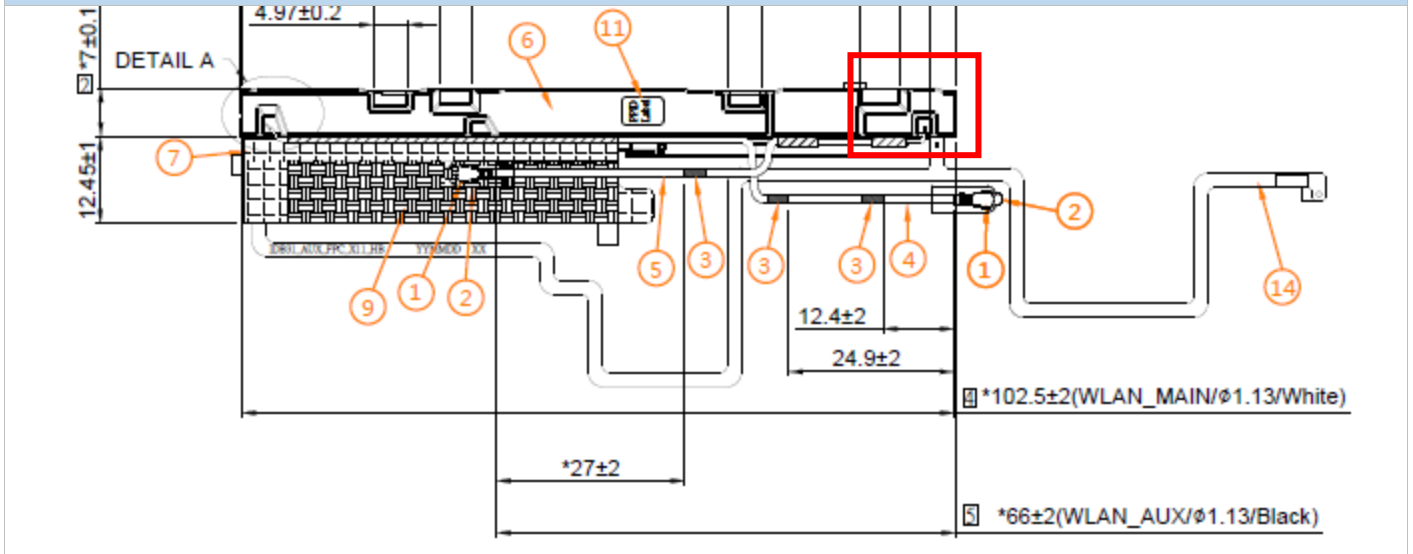
##### Back



Note: antenna photo should include L type ruler

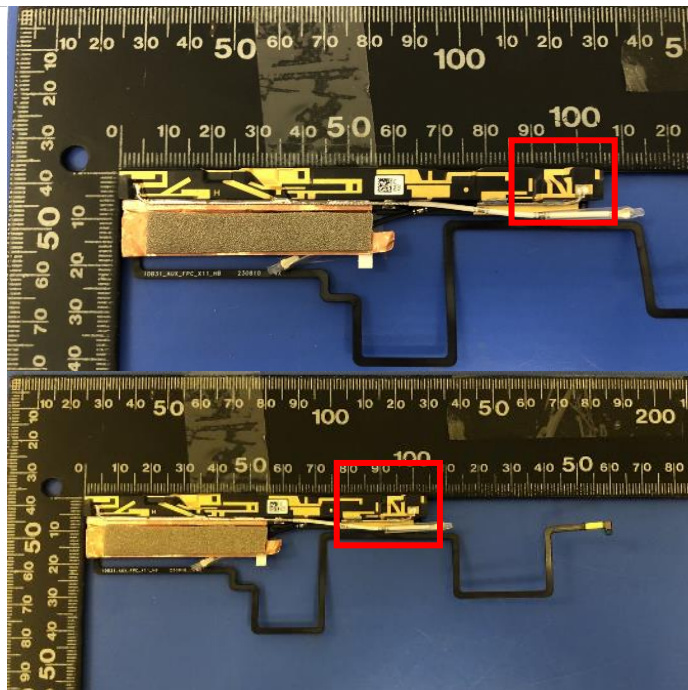
## Aux Antenna

### Antenna Drawing

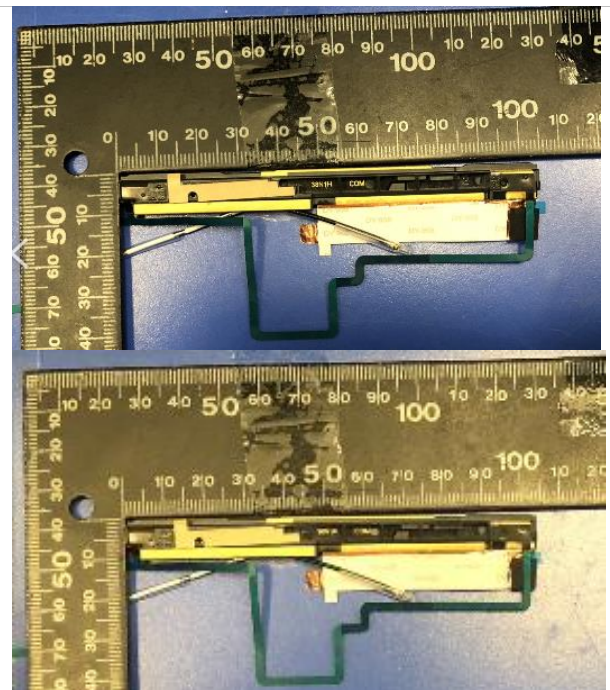


### Antenna Photo

#### Front



#### Back



**Note: antenna photo should include L type ruler**

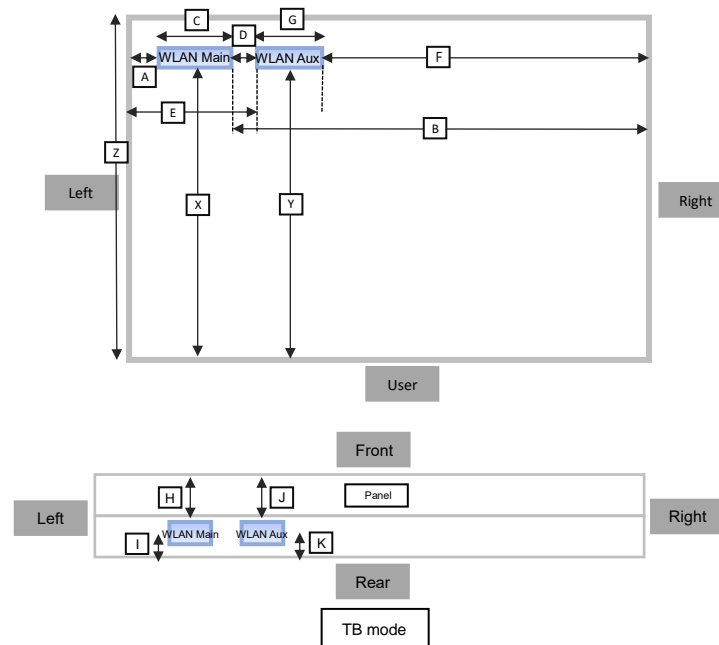
# Annex B. Antenna Location

## 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.

Minimum Separation Distance			
Item	Antenna	Position	Distance (mm)
A	WLAN-Main	To left	17mm
B	WLAN-Main	To right	256mm
C	WLAN-Main	Main antenna length	18mm
D	Main-Aux	Main to Aux	72mm
E	WLAN-Aux	To left	106mm
F	WLAN-Aux	To right	200mm
G	WLAN-Aux	Aux antenna length	14mm
X	WLAN-Main	To user	202mm
Y	WLAN-Aux	To user	202mm
Z	TB	Depth	206mm



Minimum Separation Distance			
Item	Antenna	Position	Distance (mm)
H	WLAN-Main	To front	3mm
I	WLAN-Main	To rear	2mm
J	WLAN-Aux	To front	3mm
K	WLAN-Aux	To rear	2mm

## 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.

