

ANTENNA INFORMATION

OEM	ASUS
ODM	HUAQIN
Platform model name	PM3606CKA
Intel platform (ex: Yes, No or NA)	
Platform type (ex: regular NB, convertible PC, AIO...etc)	Regular NB
SAR minimum separation (mm)	FCC (1g) ISED (1g) ISED (10g)

Antenna manufacturer	Company name	INNOWAVE
	Address	Building H, No. 55, Shengchuang Road, Yushan Town, Kunshan City, Jiangsu Province
Test location	Company name	INNOWAVE
	Address	Building H, No. 55, Shengchuang Road, Yushan Town, Kunshan City, Jiangsu Province
Test Personnel	Name(Full name)	Sunny Ye
	E-mail	yexiangyang@innowave.cn
	Tel/Mobile	17603761603
Testing date		2025/05/06

Antenna Part number	Main	F001K5713191000
	Aux	F001K5713191000
Antenna type (ex: PIFA, Dipole...etc)		PIFA Antenna

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	2.45	3.14	3.24	3.12	3.12	3.42	2.89	3.20	3.20	3.89
Aux	2.23	3.13	2.77	3.02	3.38	3.38	2.88	3.12	4.01	3.95

Cable Assembly Part Number and Information					
	Cable PN	Cable length(mm)	Cable diameter(mm)	Impedance(ohm)	Connector type
Main	S001K5702111000	263.55	1.13	50Ω	IPEX fourth generation terminals
Aux	S001K5702531000	332.15	1.13	50Ω	IPEX fourth generation terminals

* 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
Monopole	From WiFi 7	2.83	4.57	4.44	4.95	4.95	4.43	4.87	4.91	4.91	4.79

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

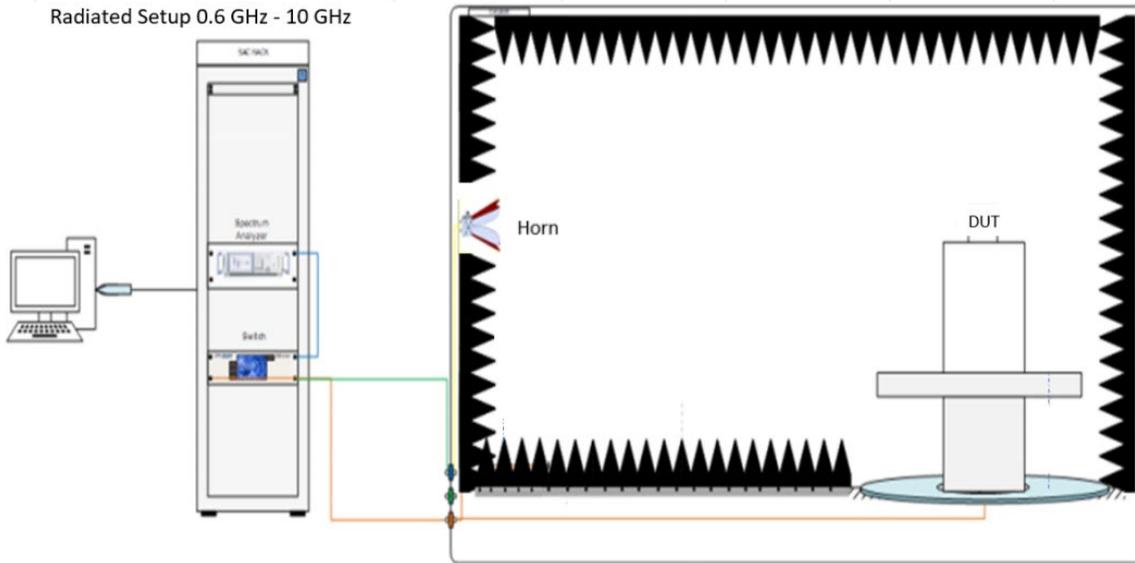
Revision #	Revision Details	Issued Date
Rev. 00	First Issue	2024.11.01

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

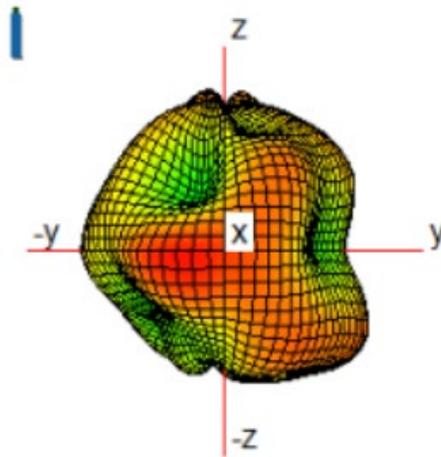
Number	Device	Type/Model	Serial	Manufacturer	Cal. Date	Cal. due. Date
1	Chamber	FATC3	5720	ETS-Lindgren	2024/12/25	2025/12/24
2	Turn table control box	ETS	-	ETS-Lindgren	N/A	N/A
3	Turn table control computer	Desktop	LPTPTOP-JQTTOKRA	LENOVO	N/A	N/A
4	Network Analyzer	5071C	5071C	Keysight	2024/12/25	2025/12/24
5	Hron Antenna	3117	E00157734	Bwant	2024/12/23	2025/12/22
6	Test system host	EMC Center	159757	ETS-Lindgren	N/A	N/A
7	RF Line TX	UFA147A-0-0480-200200	MFR64639223720	Micro-coax	2024/12/20	2025/12/19
8	RF Line RX	UFA147A-0-0480-200200	MFR64639223720	Micro-coax	2024/12/20	2025/12/19
9	Cable 2m 1GHz-8.5GHz	UFA147A-0-0480-200200	MFR64639223720	Micro-coax	2024/12/20	2025/12/19
10	Optical fiber line	RXY-00727-1603	-	Jmtt	N/A	N/A
11	Cable 2.5m 1GHz-8.5GHz	UFA147A-0-0480-200200	MFR64639223720	Micro-coax	2024/12/21	2025/12/20
12	Cable 1.2m 1GHz-8.5GHz	UFA147A-0-0480-200200	MFR64639223720	Micro-coax	2024/12/21	2025/12/20
13	Cable 1m 1GHz-8.5GHz	UFA147A-0-0480-200200	MFR64639223720	Micro-coax	2024/12/21	2025/12/20
14	Cable 2m 1GHz-8.5GHz	UFA147A-0-0480-200200	MFR64639223720	Micro-coax	2024/12/21	2025/12/20
15	Cable 1m 1GHz-8.5GHz	UFA147A-0-0480-200200	MFR64639223720	Micro-coax	2024/12/13	2025/12/12
16	Temp&Humidity Logger	RA12E-TH1-RAS	RA12-DOEB1A	Avtech	2024/12/20	2025/12/19

4. Radiation characteristics of antenna loaded in Host Platform

Main Antenna

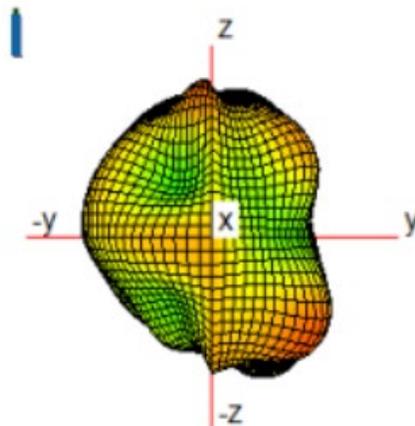
Max Antenna 3D Radiation Pattern 2400 – 2483.5 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
2400-2483.5	2.45



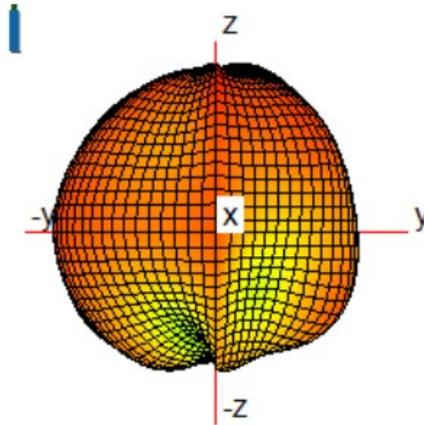
Max Antenna 3D Radiation Pattern 5150-5250 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5150-5250	3.14



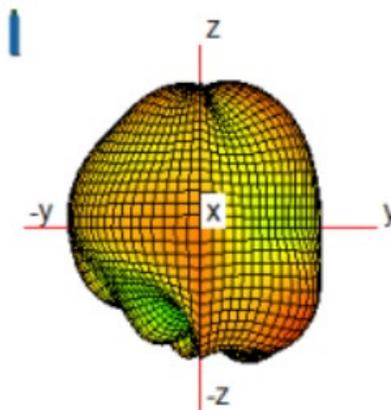
Max Antenna 3D Radiation Pattern 5250-5350 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5250-5350	3.24



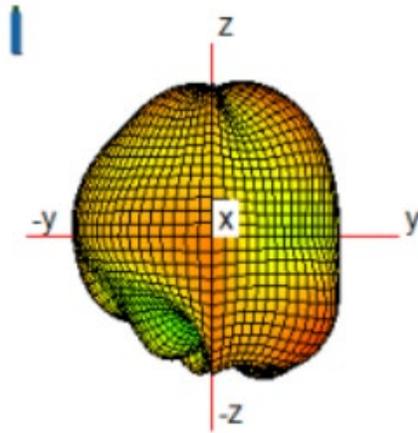
Max Antenna 3D Radiation Pattern 5470-5725 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5470-5725	3.12



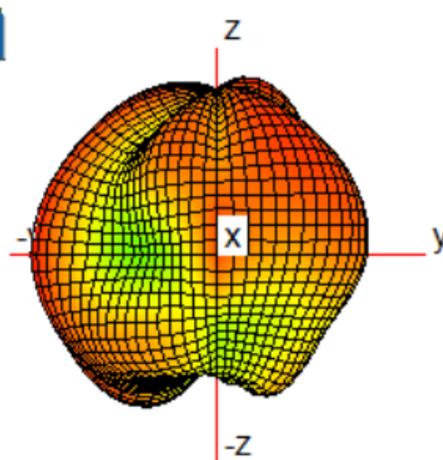
Max Antenna 3D Radiation Pattern 5725-5850 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5725-5850	3.12



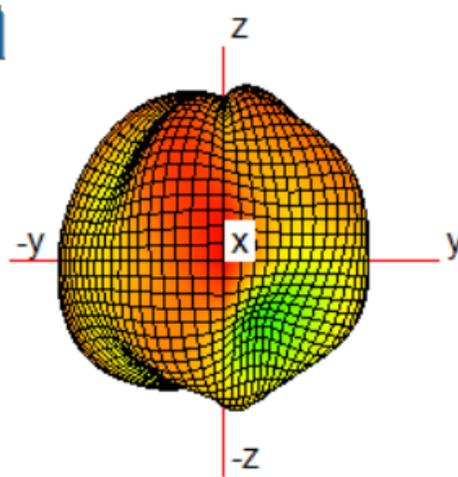
Max Antenna 3D Radiation Pattern 5850-5895 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5850-5895	3.42



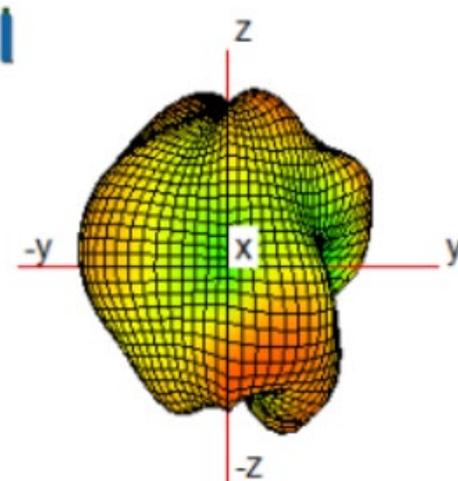
Max Antenna 3D Radiation Pattern 5925-6425 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5925-6425	2.89



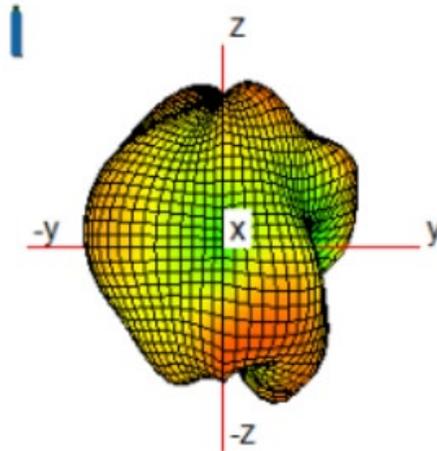
Max Antenna 3D Radiation Pattern 6425-6525 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6425-6525	3.20



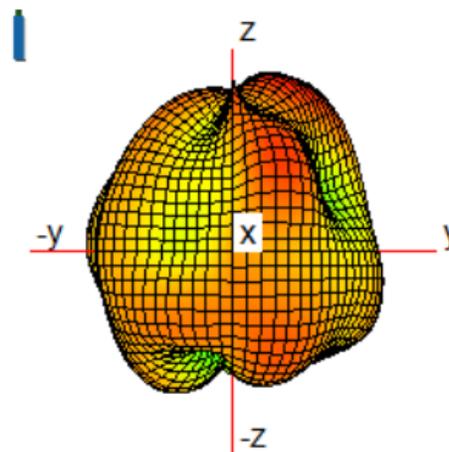
Max Antenna 3D Radiation Pattern 6525-6875 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6525-6875	3.20



Max Antenna 3D Radiation Pattern 6875-7125 MHz

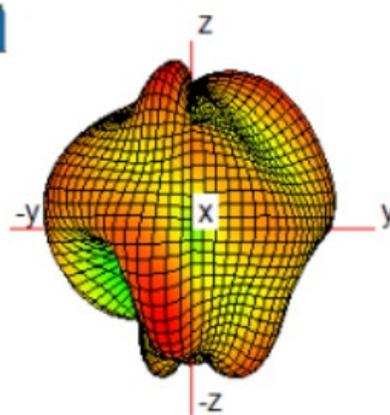
Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6875-7125	3.89



Auxiliary Antenna

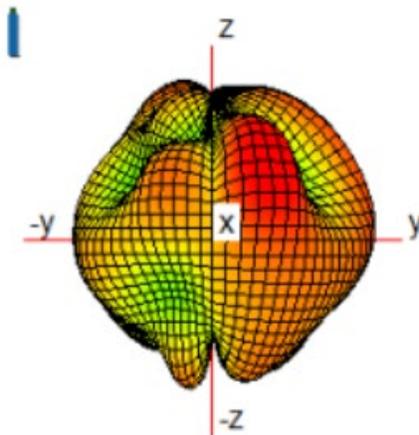
Max Antenna 3D Radiation Pattern 2400 – 2483.5 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
2400-2483.5	2.23



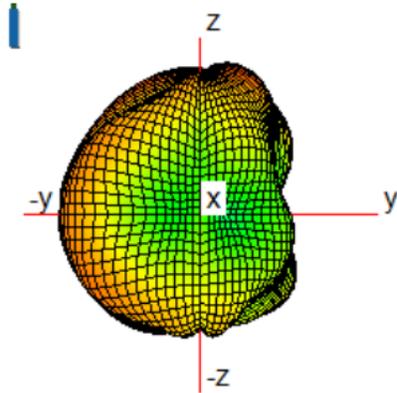
Max Antenna 3D Radiation Pattern 5150-5250 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5150-5250	3.13



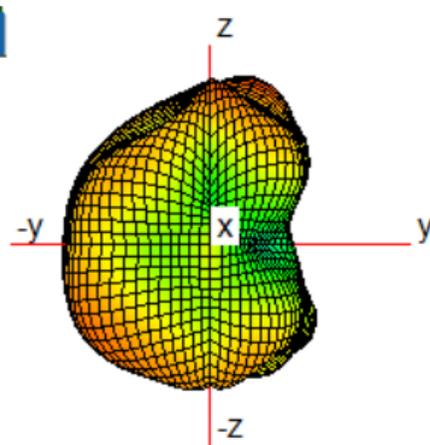
Max Antenna 3D Radiation Pattern 5250-5350 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5250-5350	2.77



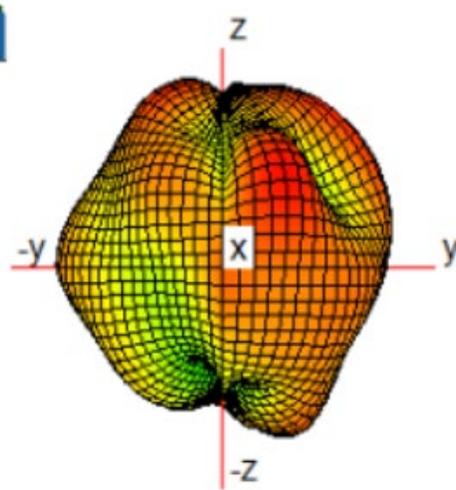
Max Antenna 3D Radiation Pattern 5470-5725 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5470-5725	3.02



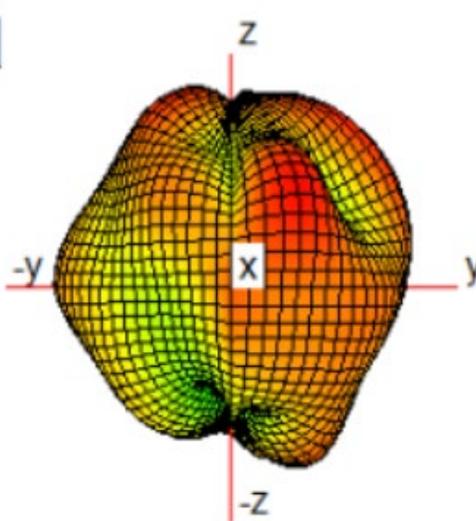
Max Antenna 3D Radiation Pattern 5725-5850 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5725-5850	3.38



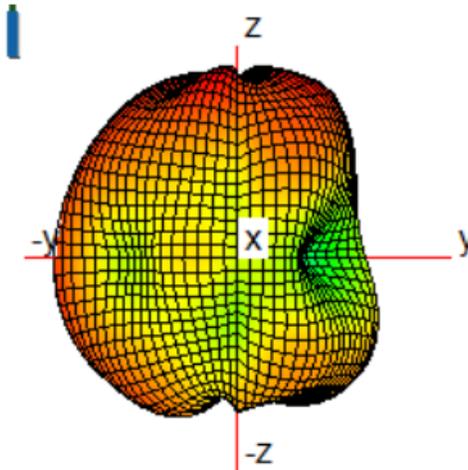
Max Antenna 3D Radiation Pattern 5850-5895 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5850-5895	3.38



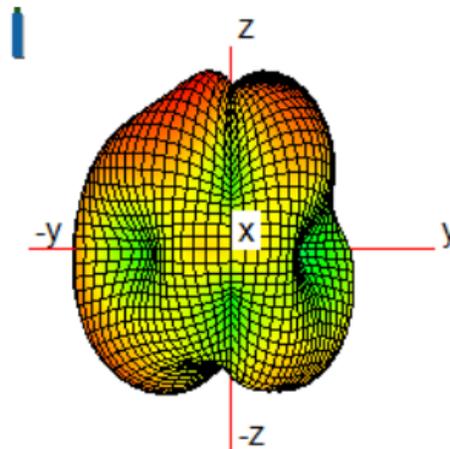
Max Antenna 3D Radiation Pattern 5925-6425 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5925-6425	2.88



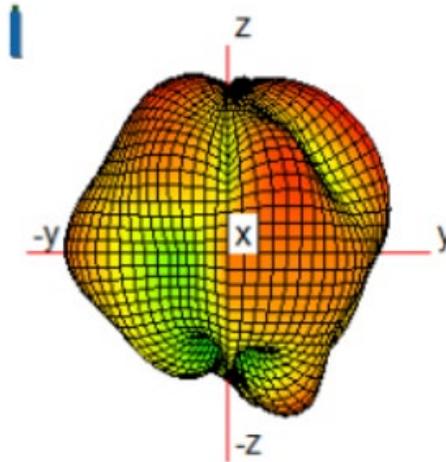
Max Antenna 3D Radiation Pattern 6425-6525 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6425-6525	3.12



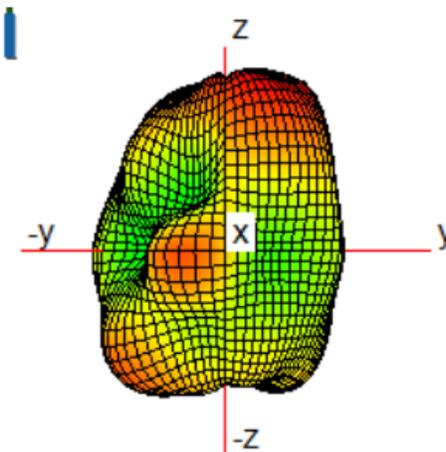
Max Antenna 3D Radiation Pattern 6525-6875 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6525-6875	4.01



Max Antenna 3D Radiation Pattern 6875-7125 MHz

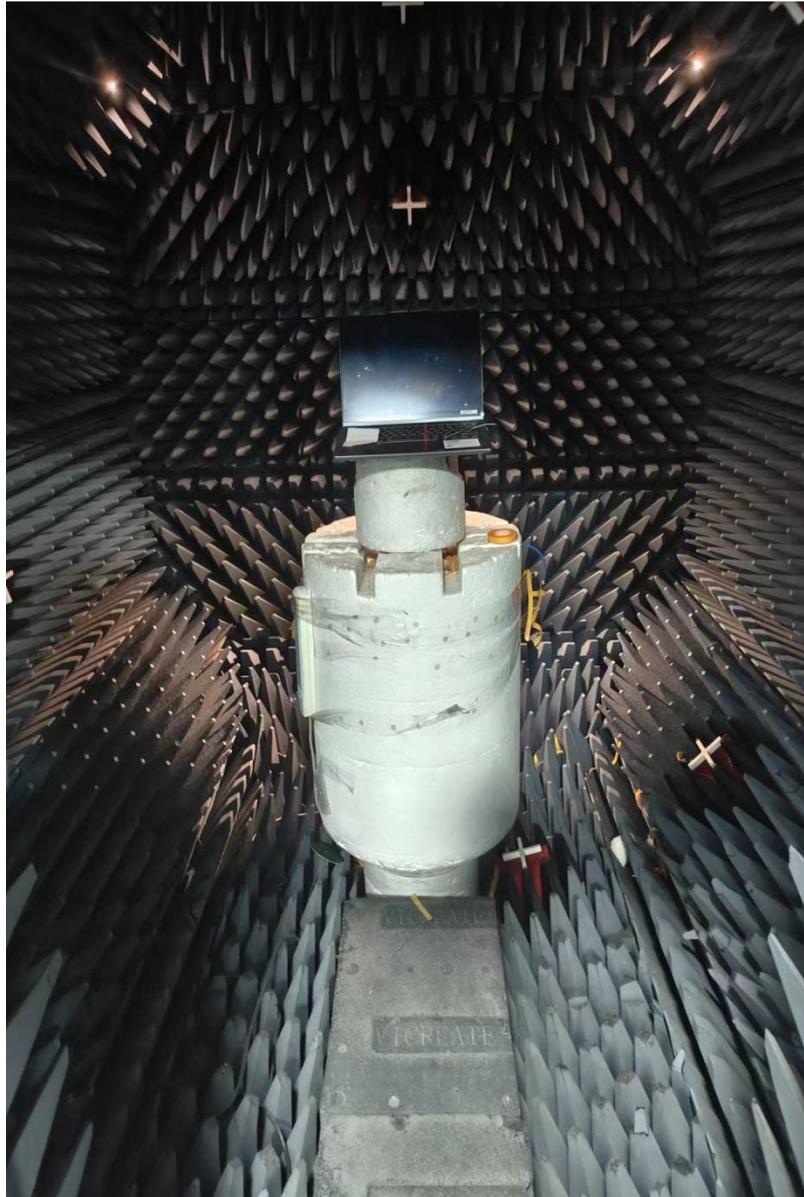
Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6875-7125	3.95



Annex A. Photographs

A.1 Setup Photo

<insert test diagram here for test site utilized>



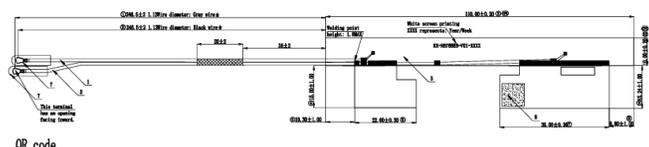
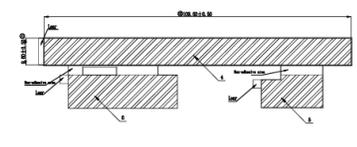
A.2 Test sample

Main Antenna

Antenna Drawing

Confidential

Version	Marking	Change the content	Signature	Date
T01		Original Draft drawing	Ma Yunfei	2025.05.07
T02		Reduce the size and add electrical marking	Ma Yunfei	2025.05.08
T03		Add the size and electrical marking to the drawing and change the drawing	Ma Yunfei	2025.05.09
V01		Production drawing	Ma Yunfei	2025.05.09

The coding principles are as follows (26people, HQ26006008M04928xxxxRX01) :

- HQ26006008M0 Customer part number
- 4 : Denote the tail code for the year 2024
- 9 :In September, October, November and December, use A/C/D respectively.
- 28:Production date
- XXXX: Flow code, specification SN ranges from 00000 to 9999
- RX:The factory code is fixed as "RX"
- 01:Version number: 2 digits, T01 is 01, T02 is 02

Technical requirements:

- "★" Size is the key dimension. With "CPK" The required dimensions for CPK calculation, "Δ" For design changes;
- The solder joints should be smooth without protrusions or burrs, and there should be no cases of incomplete soldering, bridging, short circuits, etc.;
- The dimensions of the drawing are used to verify the shape function and assembly.
- Meet the salt spray test / self-test and other reliability tests related requirements. Follow our company's internal RX-WI-QAC-014 reliability test standards. All materials must comply with our company's RX-WI-QAC-008Product Environmental Substance Prohibition Management Standard. All materials must meet the requirements of HF, halogen-free, RoHS 2.0 and Reach.
- The packaging is done in accordance with the packaging requirements provided by Ruixiang Engineering.
- This file is a commercial secret and is restricted to the designated individuals or organizations only. Without permission, it must not be disclosed to any third party.

Deformation range: 0 - 1.9mm. No S-shaped or W-shaped local deformation is allowed.

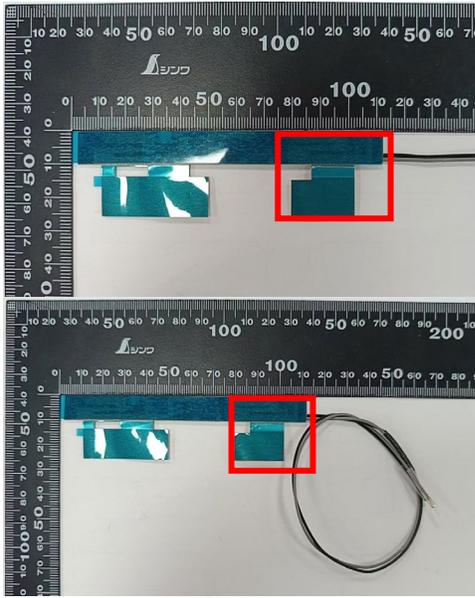
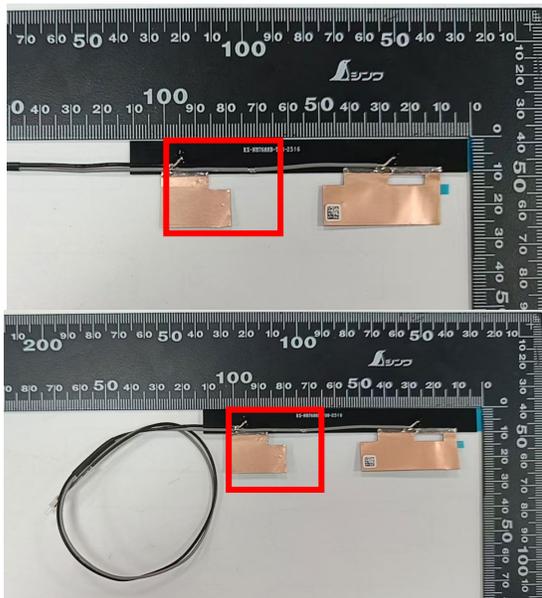
Serial Number	Name	Material Number	Description	Quantity
9	Heat shrink tubing	S0018571411000	L=200MM	1
8	QR code	T030001	Copperplate paper 6x6mm	1
7	Heat proof Alumin. foil	M029820990001	Transparency L=20mm φ=1.9mm	1
6	Ground copper foil 1.5mm	M00185746591000	22x15mm (Welding)	1
5	Ground copper foil 1.5mm	M00185746591000	15x20mm (Welding)	1
4	backline	M00185719191000	HF-0510	1
3	PCB	M0018573611000	FR4 Single-panel T=0.4mm	1
2	Ceramic cable	S00185705531000	Gold-plated low-loss wire diameter 1.3MM, 90°	1
1	Ceramic cable	S0018570211000	Gold-plated low-loss wire diameter 1.3MM, black; HF4 fourth-generation terminals	1

Tolerance Table	Name	Machine type	Design	Date
>200 ± 0.20	KK57(NB7688B)	KK57-antenna finished product	Ma Yunfei	2025.05.16
100-200 ± 0.15	F001K5713191000	R F	Ye Xiangyang	2025.05.16
50-100 ± 0.12	V01	Frame	Li Shihui	2025.05.16
10-50 ± 0.10	FIT	Third-person perspective		
0-10 ± 0.05	mm			

Antenna Photo

Front

Back



Note: antenna photo should include L type ruler

Aux Antenna

Antenna Drawing

Confidential

Version Marking Change the content Signature Date
 V01
 V02
 V03
 V04

9 Shell material: 0001037411000 L-200M 1
 8 QR code: T020001 Copperplate paper: 6x9mm 1
 7 Base prep. class: 0000020000001 Transparency: L=20mm φ=1.5mm 1
 6 Second copper foil: 000103746501000 22x15mm (Welding) 1
 5 Second copper foil: 000103746501000 15x30mm (Welding) 1
 4 Backing: 0001037191000 0F-size 1
 3 PCB: 0001037611000 FR4 Single-panel T=0.4mm 1
 2 Coated side: 00010370501000 Under layer size diameter: 1.1MM, error: 1
 1 Coated side: 00010370211000 Under layer size diameter: 1.1MM, blank: 1
 Serial Number: Material Number: Description: Inventory

The coding principles are as follows (20people, HQ26006000M04928xxxx001) :
 : HQ26006000M0 Customer part number
 4 : Denote the tail code for the year 2024
 9 : In September, October, November and December,
 use A/C/D respectively.
 28: Production date
 XXXX: Flow code, specification SN ranges from 00000 to 9999
 RX: The factory code is fixed as "RX"
 01: Version number: 2 digits, T01 is 01, T02 is 02
 Technical requirements:
 1. * Size is the key dimension. With "φ" The required dimensions for CPK calculation, "Δ" For reference dimensions, "△" For design changes;
 2. The solder joints should be smooth without protrusions or burrs, and there should be no cases of incomplete soldering, bridging, short circuits, etc.;
 3. The dimensions of the drawing are used to verify the shape function and assembly.
 4. Meet the salt spray test / self-test and other reliability tests related requirements. Follow our company's internal RX-WI-QAC-014 reliability test standards. All materials must comply with our company's RX-WI-QAC-008 Product Environmental Substance Prohibition Management Standard. All materials must meet the requirements of HF, halogen-free, RoHS 2.0 and Reach.
 5. The packaging is done in accordance with the packaging requirements provided by Ruixiang Engineering.
 6. This file is a commercial secret and is restricted to the designated individuals or organizations only. Without permission, it must not be disclosed to any third party.

Deformation range: 0 - 1.9mm. No S-shaped or W-shaped local deformation is allowed.

Tolerance Table

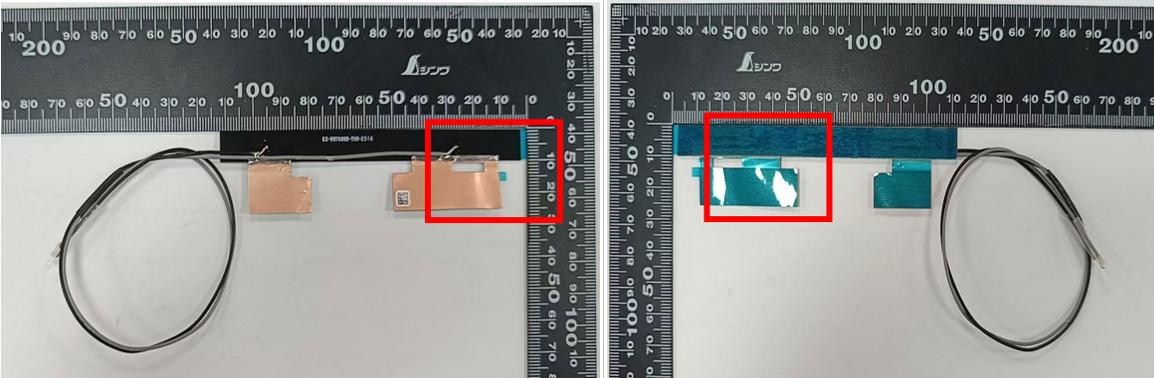
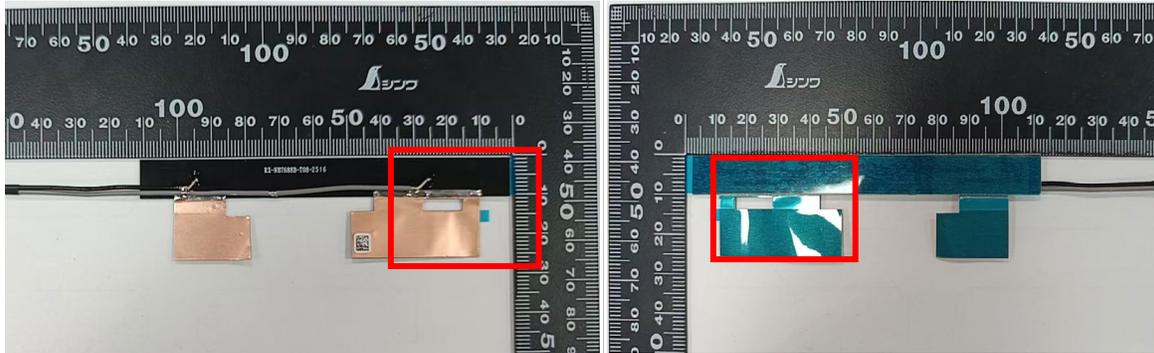
>200	± 0.20	mm
100-200	± 0.15	
50-100	± 0.12	mm
10-50	± 0.10	
0-10	± 0.05	

Machine type: KK57(NB7688B) Design: Ma Yunfei Date: 2025. 05. 16
 Name: KK57-Antenna (finished product) R F: Ye Xiangyang Date: 2025. 05. 16
 Material Number: F001K5713191000 Review and Approval: Li Shihui Date: 2025. 05. 16
 Version: V01 Frame: A4
 Proportion: FIT Third-person perspective
 Unit: mm
INNOWAVE
 Kunshan Innovave Communication Technology Co., LTD.

Antenna Photo

Front

Back



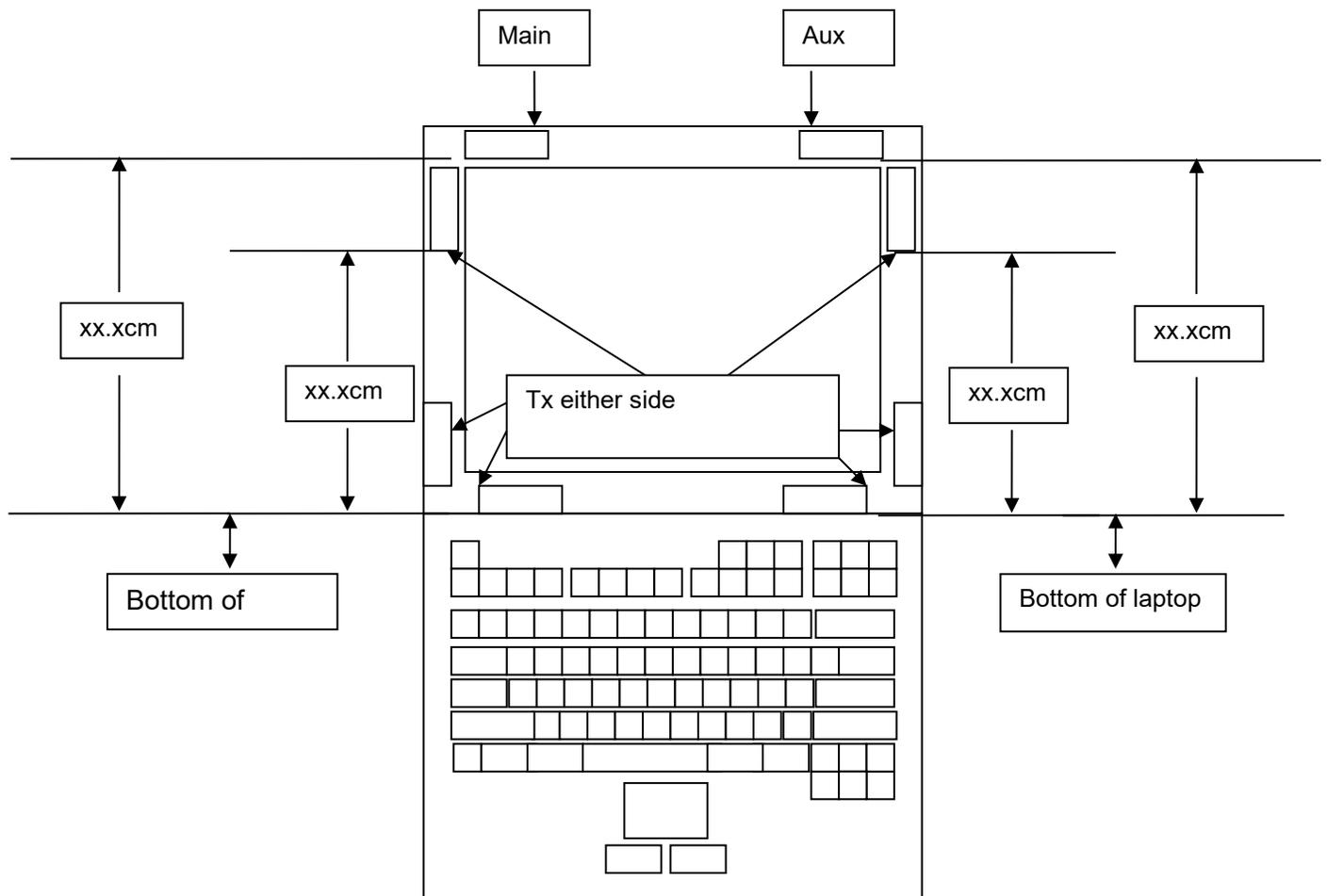
Note: antenna photo should include L type ruler

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).

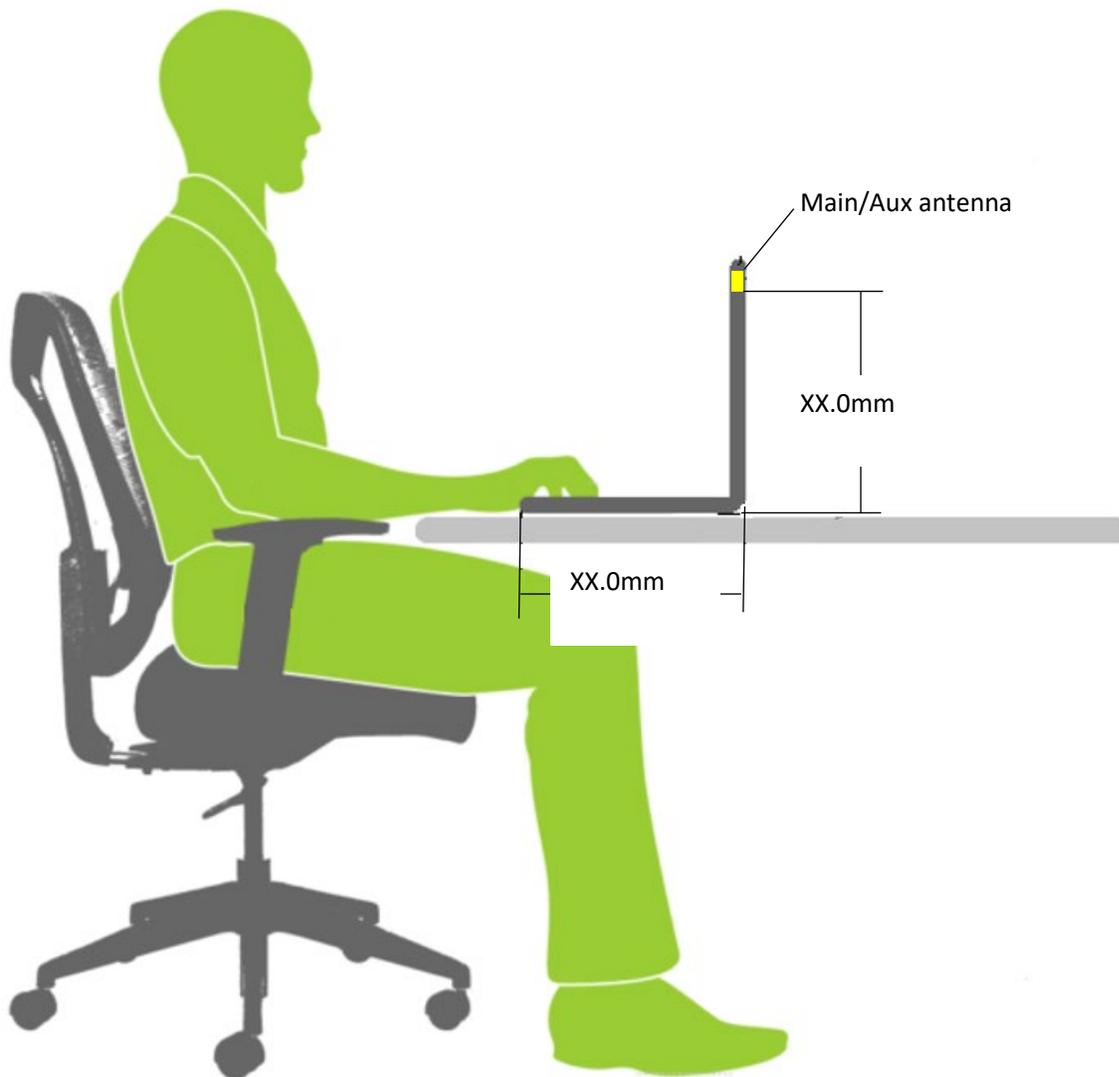
Any antenna that transmits must show dimensions to bottom of laptop. Provide a description of the materials that are used for supporting or surrounding transmit antennas; for example, non-conductive plastics vs. conductive coated plastic or metallic materials.



B.2 Antenna dimensional information for SAR evaluation

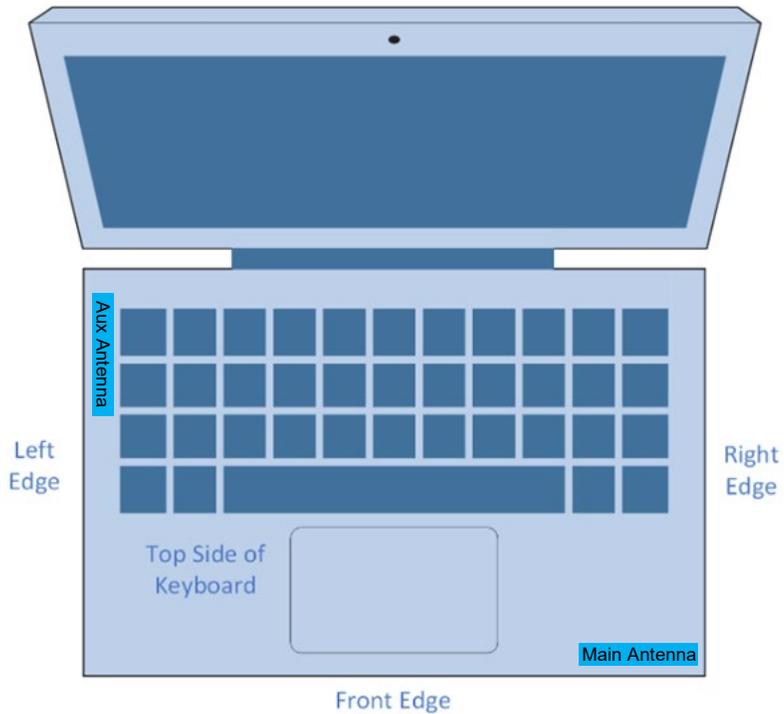
Include a dimensioned photo(s) or dimensioned drawing(s) showing the distance (mm) between the transmit antennas and the user. For notebook/laptop hosts show lapheld position (example below). For tablet hosts show all orientations including lapheld, primary & secondary portrait, primary & secondary landscape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

Antennas on the panel section



Measuring Surface	Antenna	Separation Distance(antenna-to- Surface)(mm)	1g SAR
Bottom Side	Main		FCC/ISED
	Aux		FCC/ISED

Antennas on the keyboard section



Measuring Surface	Antenna	Separation Distance(antenna-to-Surface)(mm)	1g or 10g SAR
Bottom Side	Main		1g (FCC/ISED)
	Aux		1g (FCC/ISED)
Front Edge	Main		1g (ISED)
	Aux		1g (ISED)
Left Edge	Main		10g (ISED)
	Aux		10g (ISED)
Right Edge	Main		10g (ISED)
	Aux		10g (ISED)
Top side of Keyboard	Main		10g (ISED)
	Aux		10g (ISED)