

ANTENNA INFORMATION

OEM	Lenovo
ODM	HuaQin
Platform model name	Legion Go S
Intel platform (ex: Yes, No or NA)	No
Platform type (ex: regular NB, convertible PC, AIO...etc)	Gaming
SAR minimum separation (mm)	3.95mm

Antenna manufacturer	INPAQ	
Address	Room 802, Unit A2, Kexing Science Park, Nanshan District, Shenzhen City, Guangdong Province	
Antenna Part number	Main: WA-F-LE-02-060	Aux: WA-F-LE-03-005
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	-0.22	1.4	1.58	2.64	1.63	0.67	1.67	1.95	0.24	1.00
Aux	-0.34	0.52	1.81	2.49	1.83	1.73	2.08	2.13	1.19	-0.61

Cable Assembly Part Number and Information					
	Cable PN	Cable length(mm)	Cable diameter(mm)	Impedance(ohm)	Connector type
Main	SY113/50-055	104.8	1.13	50	I-PEX MHF4L (20565-001R-13)
Aux	SY113/50-064	306.5	1.13	50	I-PEX MHF4L (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

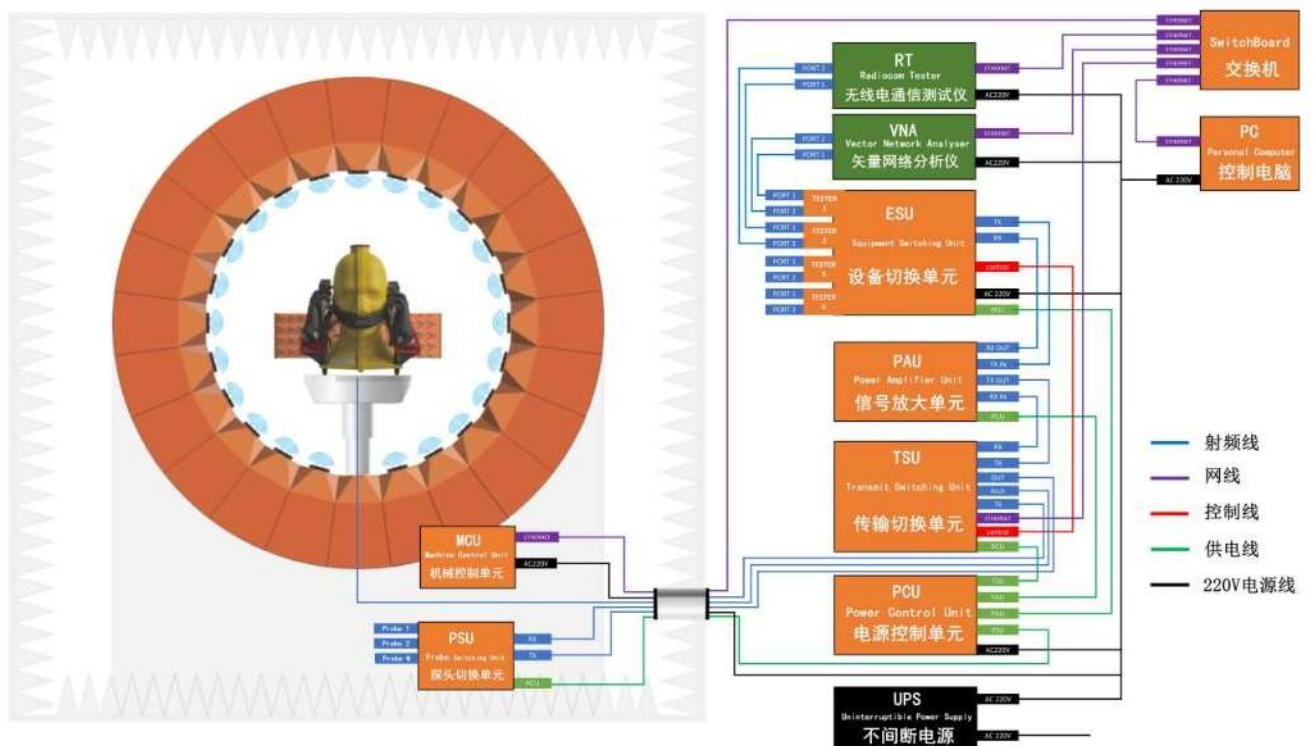
Revision #	Revision Details	Issued Date
Rev. 00	First Issue	2024.08.05

3. Test & System Description

3.1 Measurement Method and System

1. Use a low-loss coaxial cable to connect the notebook fixture
2. Fix the notebook fixture on the turntable
3. Connect the jig to the network analyzer port, and use the antenna of the test probe to collect data.

3.2 Test setup



3.3 Equipment list

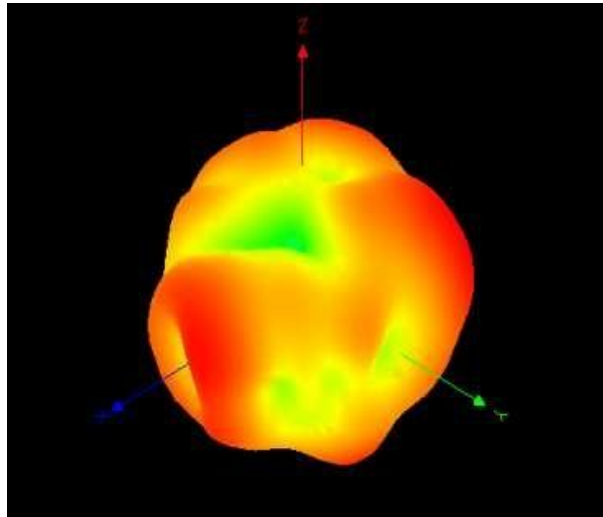
item	Device	Manufacturer	Cal.Date	Cal.Due.Date
1	Chamber isolation	TEM24	2024/2/5	2025/2/4
2	Turntable accuracy	TEM24	2023/10/28	2024/10/27
3	WPA Box(Tx route) Gain	TEM24	2023/10/28	2024/10/27
4	LNA Box(Rx route) Gain	TEM24	2023/10/28	2024/10/27
5	Probe Switch Box Loss	TEM24	2023/10/28	2024/10/27
6	Tester Switch Box Loss	TEM24	2023/10/28	2024/10/27
7	Signal Switch Box Loss	TEM24	2023/10/28	2024/10/27
8	Radio Communication Tester	Rohde&Schwarz	2024/7/25	2025/7/24
9	Network Analyzer	Keysight	2024/7/25	2025/7/24
10	Chamber Calb SMAJ-SMAJ-1.5m 0.1G-18G Loss	TEM24	2023/10/28	2024/10/27
11	Chamber Calb SMAJ-SMAJ-0.5m 0.1G-18G Loss	TEM24	2023/10/28	2024/10/27

4. Radiation characteristics of antenna loaded in Host Platform

Main Antenna

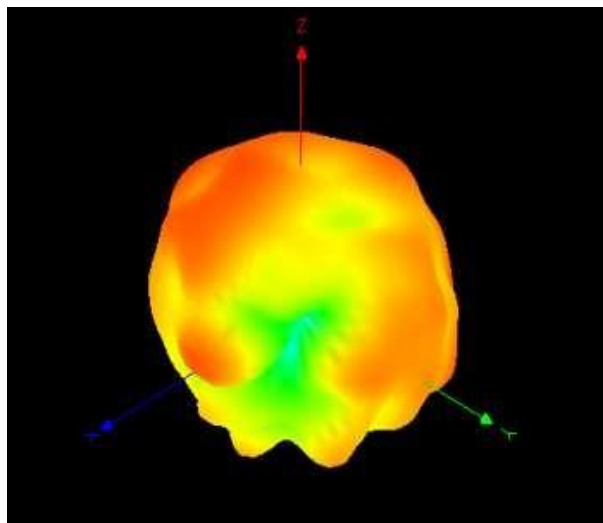
Max Antenna 3D Radiation Pattern 2400 – 2483.5 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
2400-2483.5	-0.22



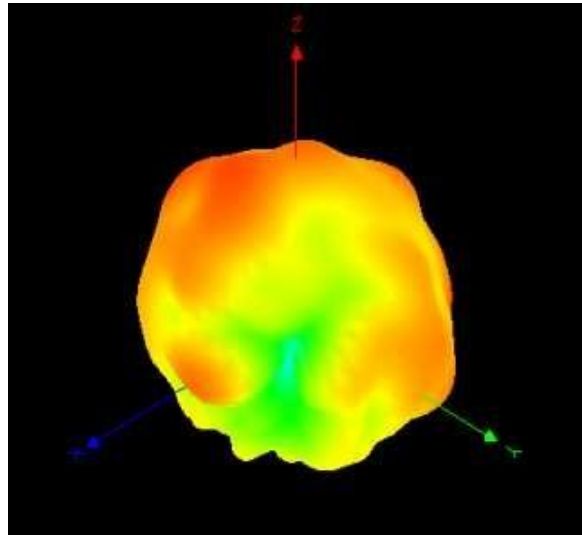
Max Antenna 3D Radiation Pattern 5150-5250 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5150-5250	1.4



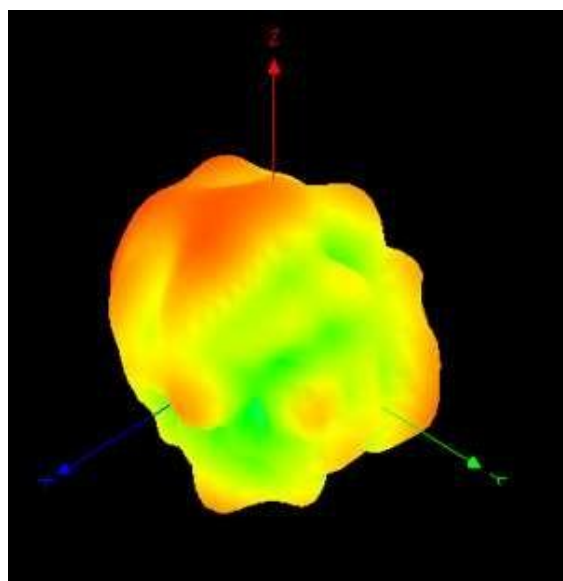
Max Antenna 3D Radiation Pattern 5250-5350 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5250-5350	1.58



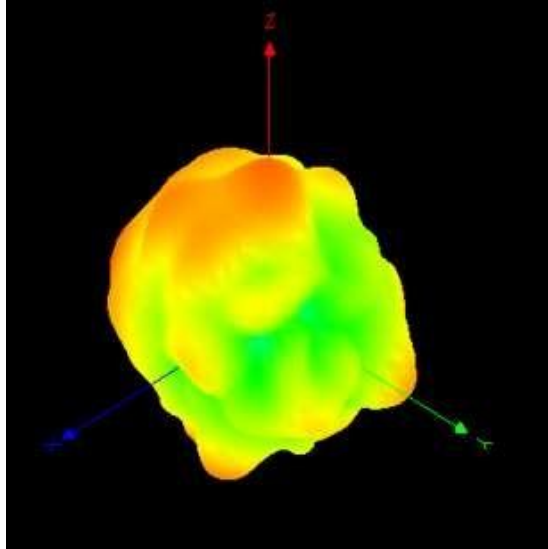
Max Antenna 3D Radiation Pattern 5470-5725 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5470-5725	2.64



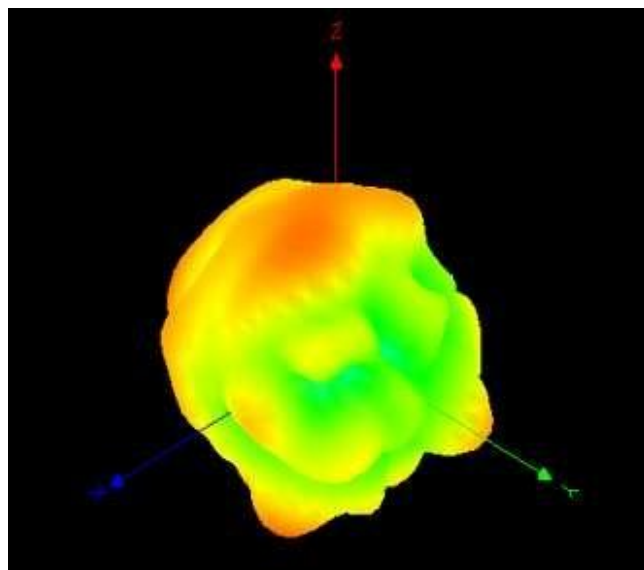
Max Antenna 3D Radiation Pattern 5727-5850 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5725-5850	1.63



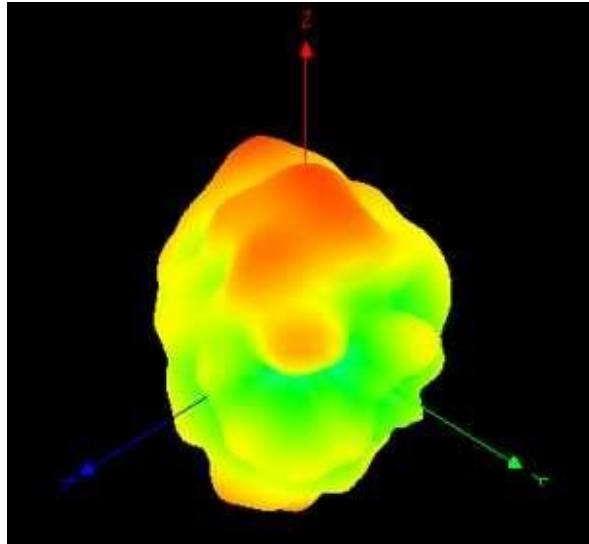
Max Antenna 3D Radiation Pattern 5850-5950 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5850-5950	0.67



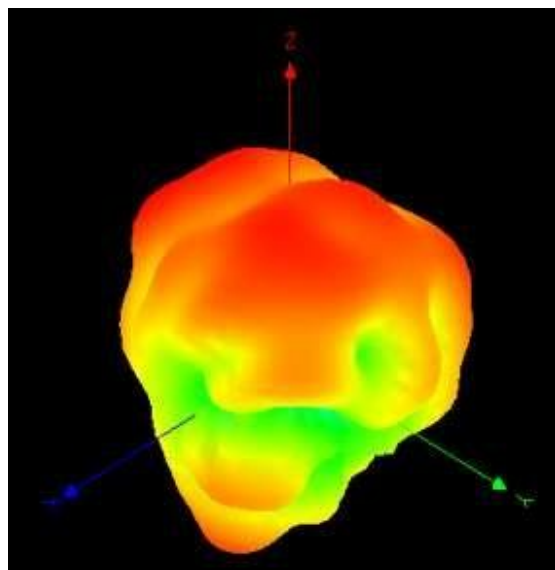
Max Antenna 3D Radiation Pattern 6150-6250 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6150-6250	1.67



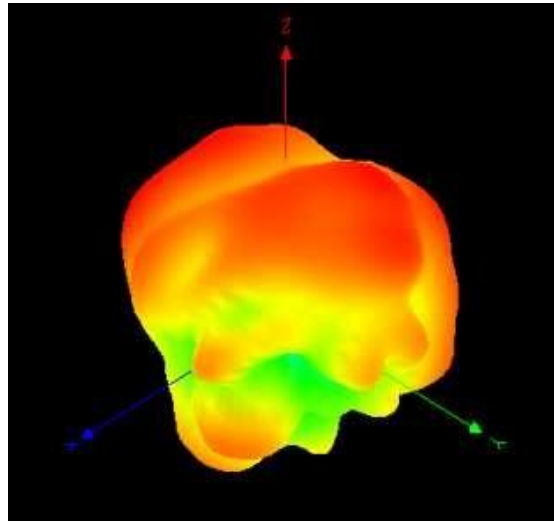
Max Antenna 3D Radiation Pattern 6450-6550 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6450-6550	1.95



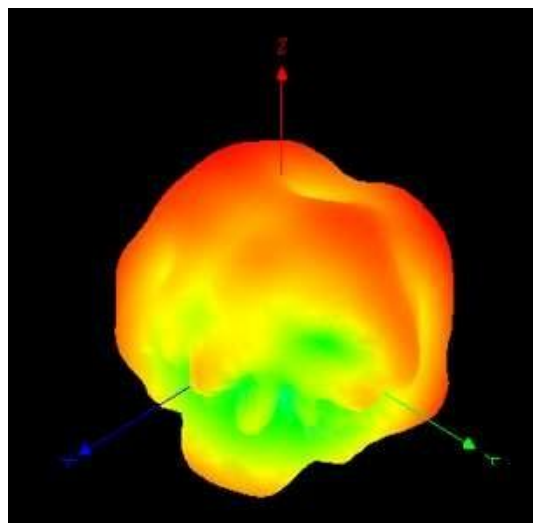
Max Antenna 3D Radiation Pattern 6650-6750 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6650-6750	0.24



Max Antenna 3D Radiation Pattern 6950-7050 MHz

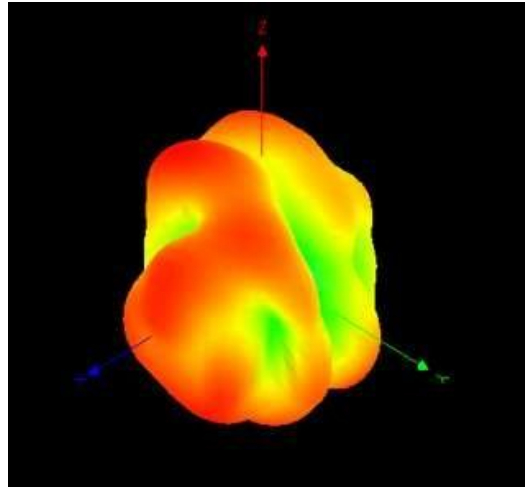
Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6950-7050	1.00



Auxiliary Antenna

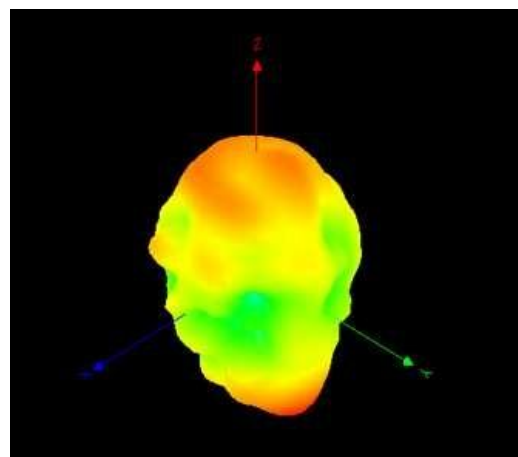
Max Antenna 3D Radiation Pattern 2400 – 2483.5 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
2400-2483.5	-0.34



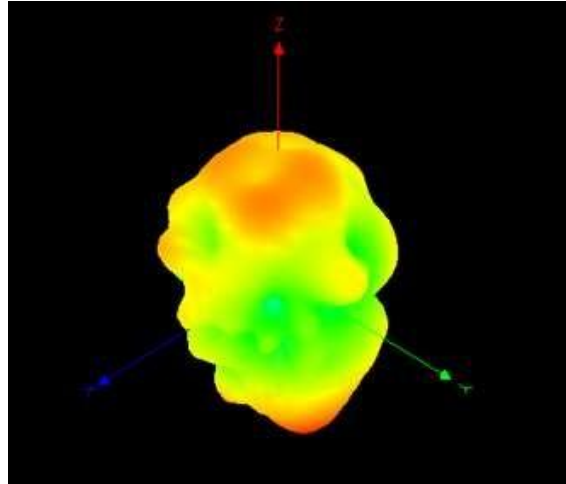
Max Antenna 3D Radiation Pattern 5150-5250 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5150-5250	0.52



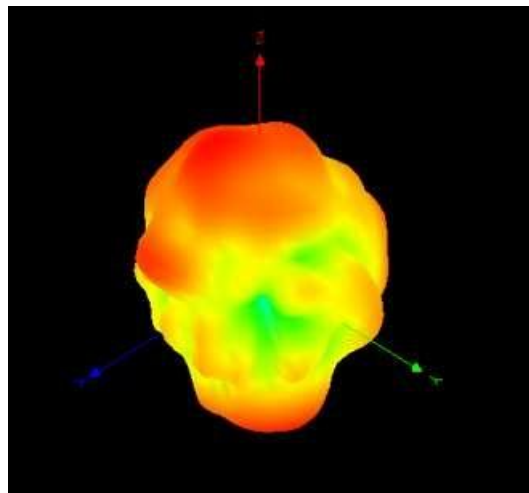
Max Antenna 3D Radiation Pattern 5250-5350 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5250-5350	1.81



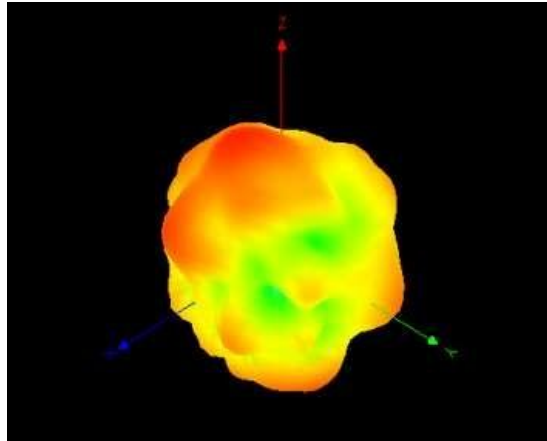
Max Antenna 3D Radiation Pattern 5470-5725 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5470-5725	2.49



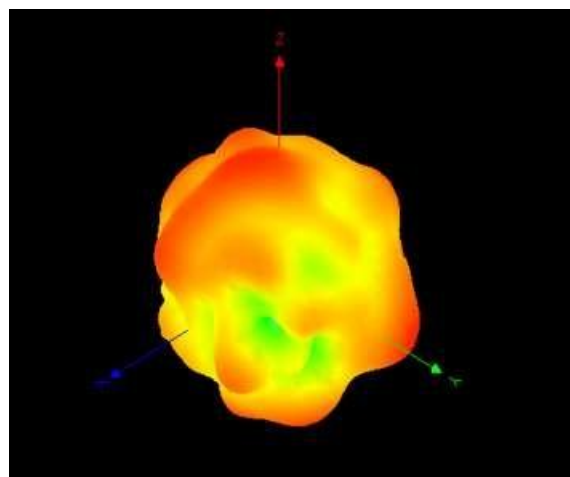
Max Antenna 3D Radiation Pattern 5722-5850 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5725-5850	1.83



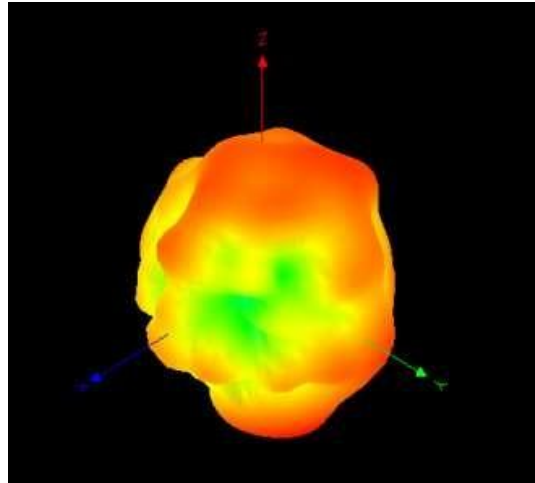
Max Antenna 3D Radiation Pattern 5850-5950 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5850-5950	1.73



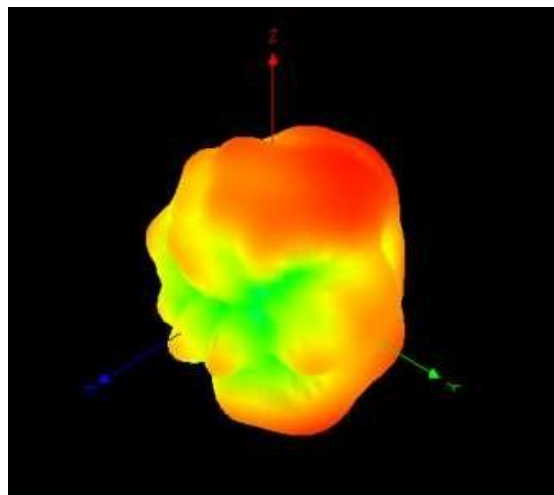
Max Antenna 3D Radiation Pattern 6150-6250 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6150-6250	2.08



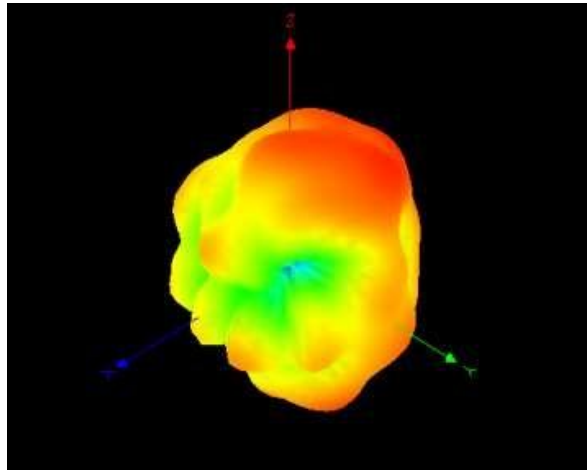
Max Antenna 3D Radiation Pattern 6450-6550 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6450-6550	2.13



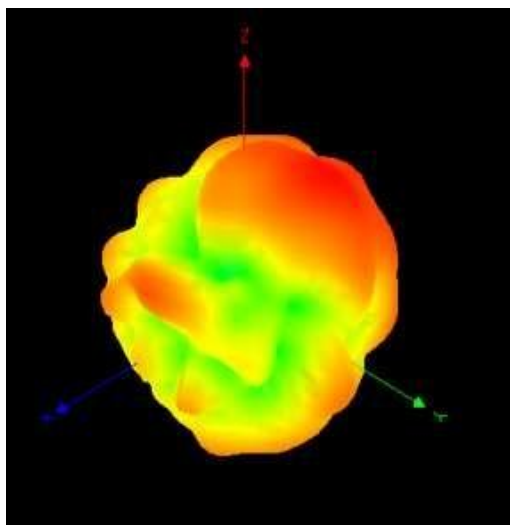
Max Antenna 3D Radiation Pattern 6650-6750 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6650-6750	1.19



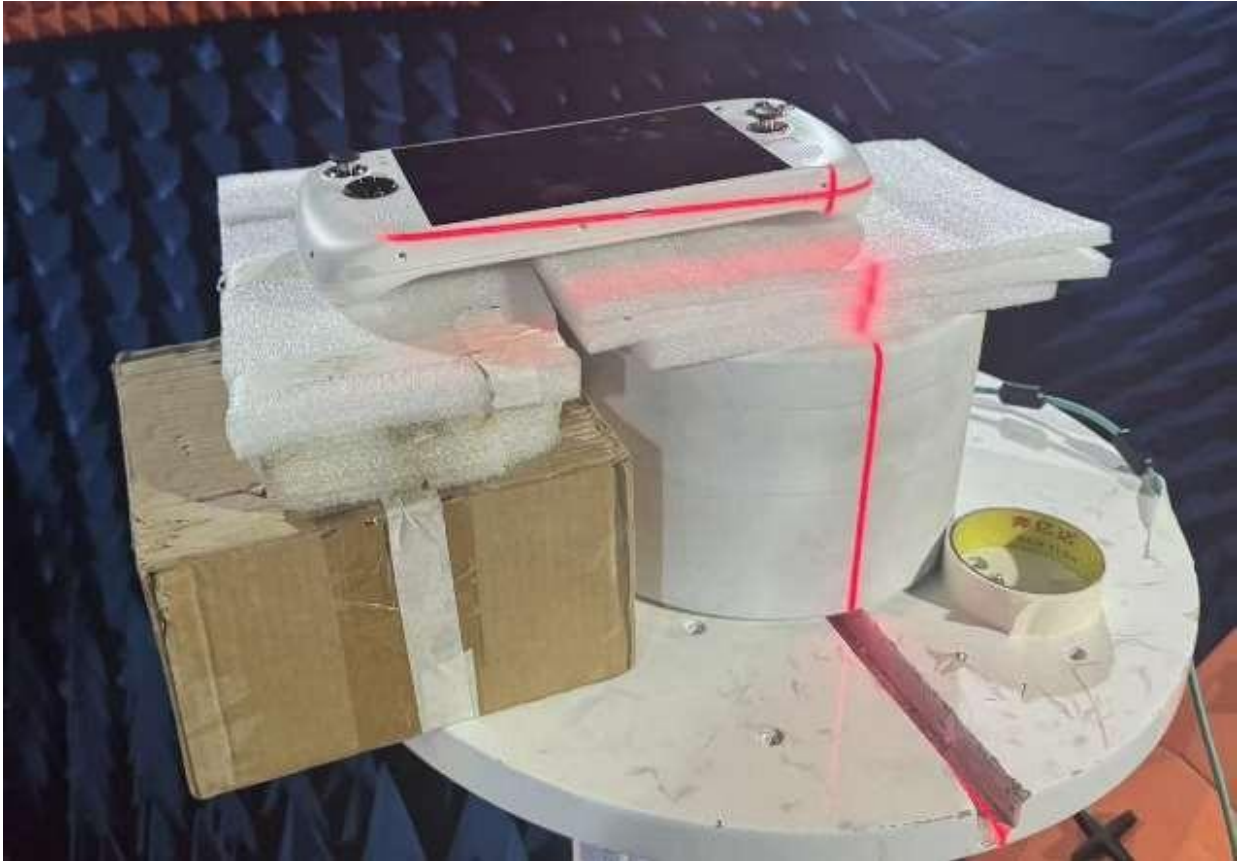
Max Antenna 3D Radiation Pattern 6950-7050 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6950-7050	-0.61



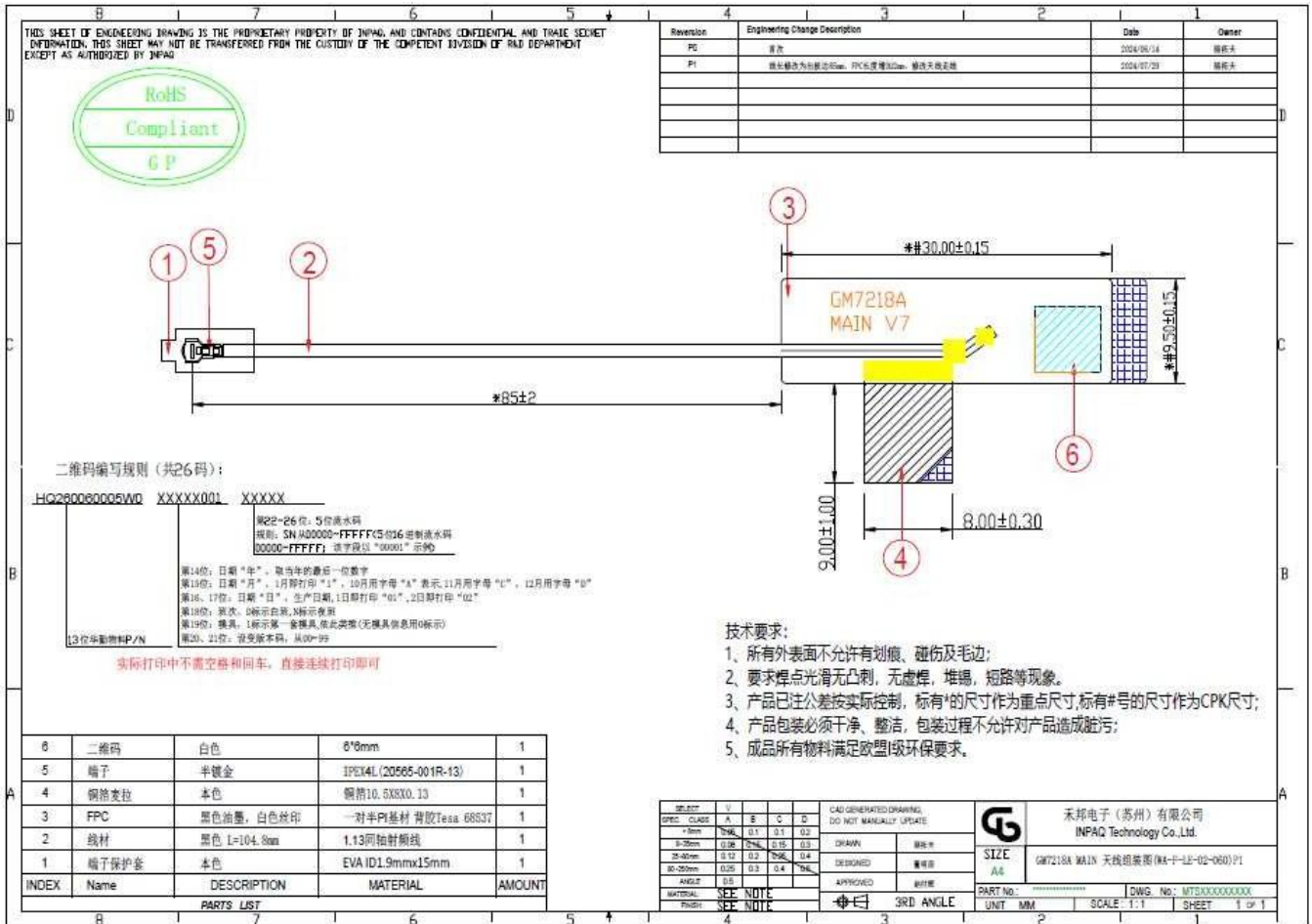
Annex A. Photographs

A.1 Setup Photo



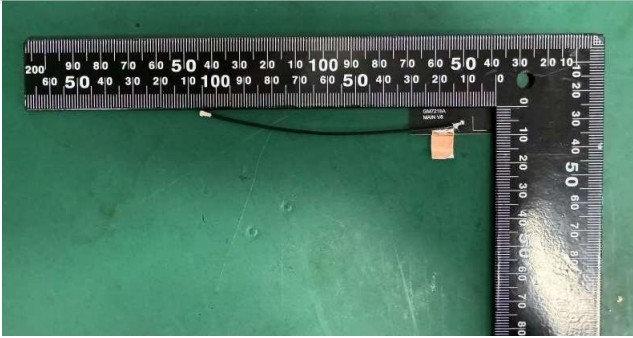
Main Antenna

Antenna Drawing



Antenna Photo

Front



Back


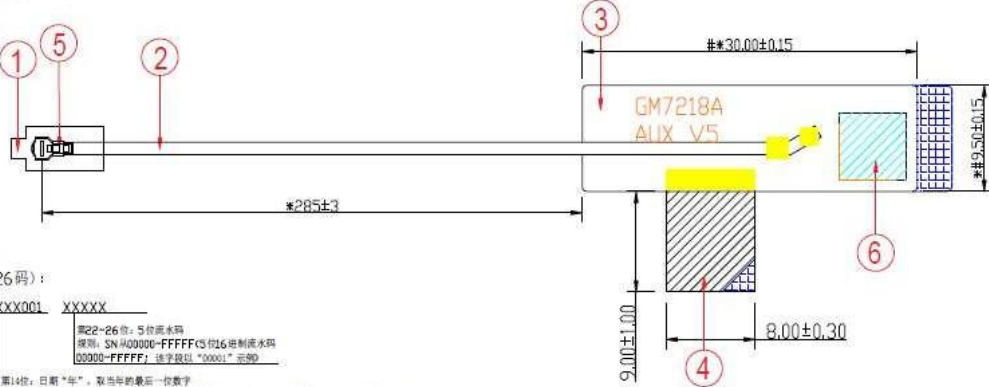


Note: antenna photo should include L type ruler

Aux Antenna

Antenna Drawing

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二维码编写规则 (共26码):
HQ280060005V0 XXXXX001 XXXXX

第22-26位: 5位流水码
 规则: SN A000000-FFFFF(位16进制流水码 00000-FFFFF); 该字段以“00001”开始

第14位: 日期“年”, 取当年的最后一位数字
 第15位: 日期“月”, 1月即打印“1”, 10月用字母“A”表示, 11月用字母“C”, 12月用字母“D”
 第16、17位: 日期“日”, 生产日期, 1日期打印“01”, 2日期打印“02”
 第18位: 班次, 1标示白班, 2标示夜班
 第19位: 模具, 1标示第一套模具, 依次类推(无模具信息用0标示)
 第20、21位: 设备流水码, A00-99

实际打印中不需空格和回车, 直接连续打印即可

Revision	Engineering Change Description	Date	Owner
P0	首件	2024/08/14	廖志杰
P1	附件名称增加增加: 修改天线名称	2024/07/29	廖志杰

技术要求:

- 1、所有外表面不允许有划痕、碰伤及毛边;
- 2、要求焊点光滑无凸刺, 无虚焊, 堆锡, 短路等现象。
- 3、产品已注公差按实际控制, 标有*的尺寸作为重点尺寸, 标有#号的尺寸作为CPK尺寸;
- 4、产品包装必须干净、整洁, 包装过程不允许对产品造成脏污;
- 5、成品所有物料满足欧盟环保要求。

INDEX	Name	DESCRIPTION	MATERIAL	AMOUNT
8	二维码	白色	8*8mm	1
5	端子	半镀金	IPEX4L (20505-001R-13)	1
4	铜箔麦拉	本色	铜箔10, 50X30, 13	1
3	FPC	黑色油墨, 白色丝印	一对半PI基材 背胶Tesa 68537	1
2	线材	灰色 L=306.5mm	1.13同轴射频线	1
1	端子保护套	本色	EVA ID1.9mmx15mm	1

SELECT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26					
SPEC. CLASS	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB			
*mm	7.62	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54			
0.25mm	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25		
0.125mm	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	
0.0625mm	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	
ANGLE	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
MINIPL	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
UNIT	MM	MM	MM	MM	MM	MM	MM	MM	MM	MM	MM	MM	MM	MM	MM	MM	MM	MM	MM	MM	MM	MM	MM	MM	MM	MM	MM	MM	MM	MM	MM

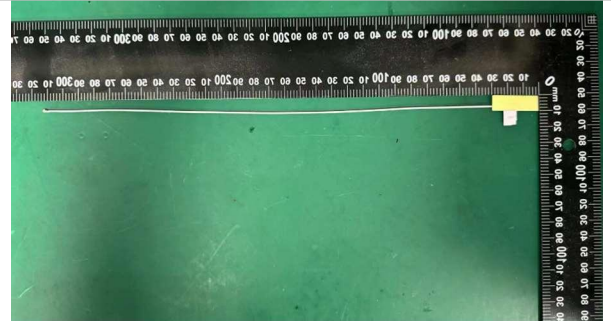
DRAWN	廖志杰	DESIGNED	廖志杰	APPROVED	廖志杰	PART No.	GM7218A AUX V5	DWG. No.	M7S-0000000000
INPAQ Technology Co., Ltd.		INPAQ Technology Co., Ltd.		INPAQ Technology Co., Ltd.		INPAQ Technology Co., Ltd.		INPAQ Technology Co., Ltd.	
SCALE: 1:1		SCALE: 1:1		SCALE: 1:1		SCALE: 1:1		SCALE: 1:1	
SHEET: 1 OF 1		SHEET: 1 OF 1		SHEET: 1 OF 1		SHEET: 1 OF 1		SHEET: 1 OF 1	

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.

