

Antenna Specification 天线规格书

制造商名称: Manufacturer:	万物相连通讯襄阳有限公司 All things connected Communications Xiangyang Limited
产品名称: Part Description:	Built-in antenna 内置天线
规格型号: Model No:	WWXL6010353
制造商P/N: Manufacturer P/N:	ANT00232-0A
日期: Issued Date:	2023. 11. 30

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Specification for Antenna

天线规格书

一、Antenna attachment position diagram

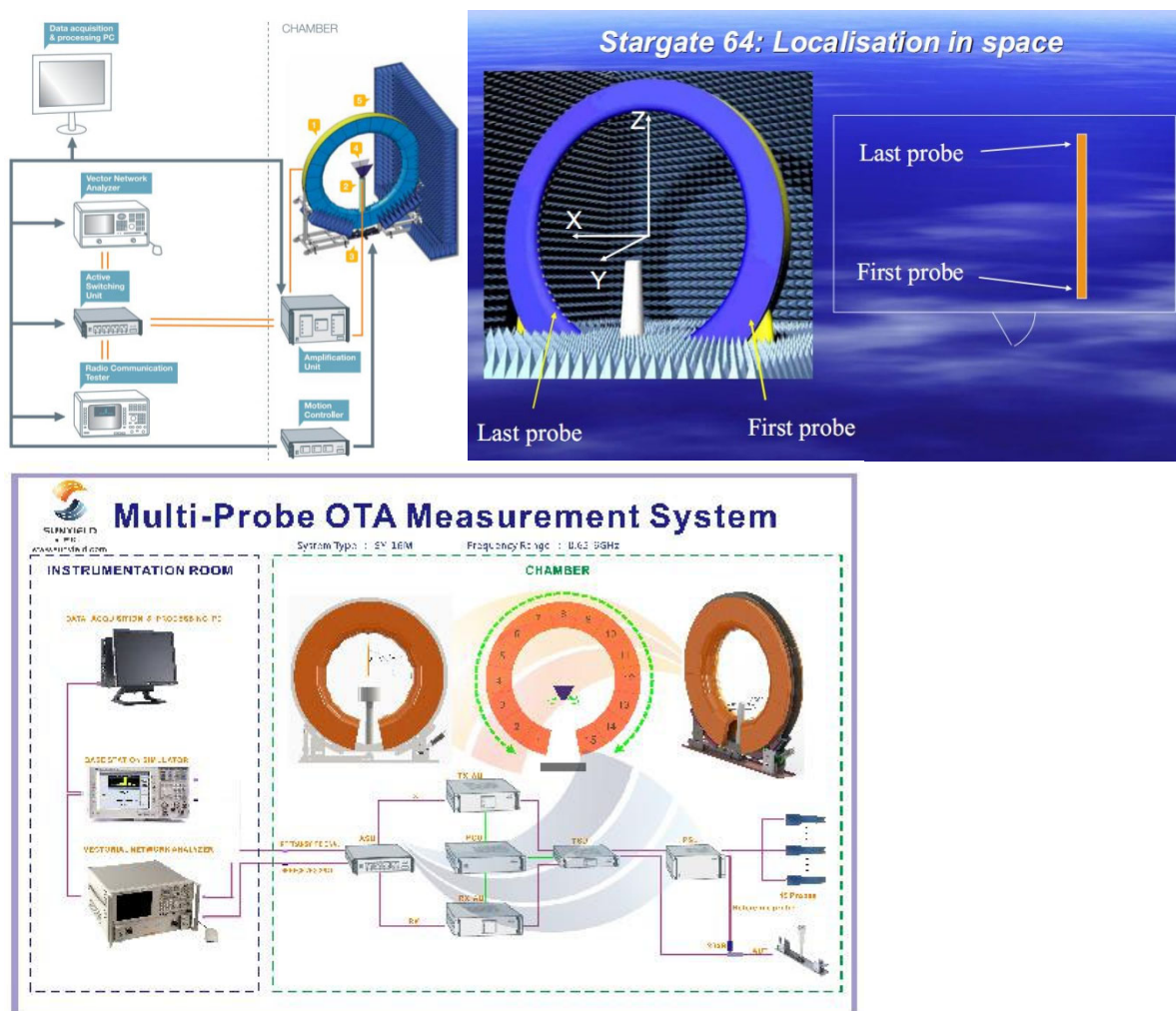


Antenna attachment position diagram

二、Test parameters产品测试参数

产品名称Name内置天线（WWXL6010353）		型号 ModelType	
电气参数ELECTRICAL SPECTFICATIONS		机械参数 MECHANICAL SPECTFICATIONS	
频率范围 FrenquencyRange 2400-2500/5150-5850MHz		尺寸Dimensions	43*23*1.0mm
输入阻抗 Impedance	50 Ω	连接器型号Connector	IPEX
驻波比 VSWR	≤ 2.0	线长linelength	110 $\pm$ 2mm 1.13 Low loss line gray 低损耗线灰色
增益 Gain	$\geq 1.51/0.31\text{dBi}$	效率 Efficiency	$\geq 52.38\%$
极化方式 Polarization	linear Vertical 线极化	工作温度WorkingTemperature	-45 $^{\circ}\text{C}$ - +85 $^{\circ}\text{C}$
辐射方向 Radiation	Omnidirectional 全向	存放温度Limit Temperature	-45 $^{\circ}\text{C}$ - +85 $^{\circ}\text{C}$

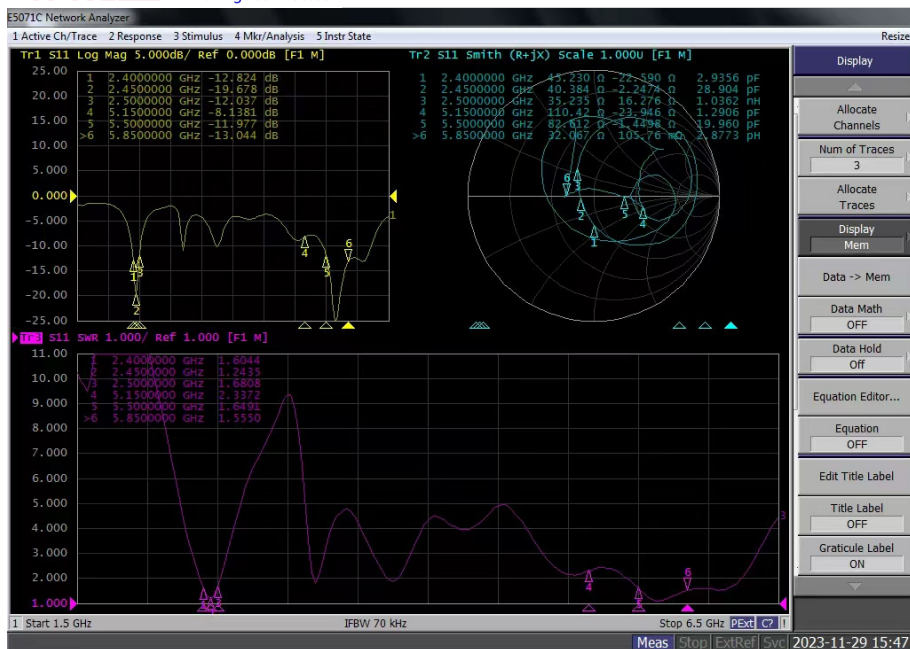
三、Antenna test environment 天线测试环境



test macro 测试系统:	SY-16M Antenna measurement system 天线测量系统
testing environment 测试环境:	temperature 温度 $22^{\circ}\text{C} \pm 3^{\circ}\text{C}$, humidity 湿度 $50\% \pm 15\%$
testing equipment 测 试设备:	Agilent 5071C Agilent 8960 Comprehensive measuring instrument 综测仪 Agilent CMW500 4G Comprehensive measuring instrument 综测仪

四、Antenna Passive Parameters 天线无源参数:

1、VSWR驻波比图:



V.S.W.R

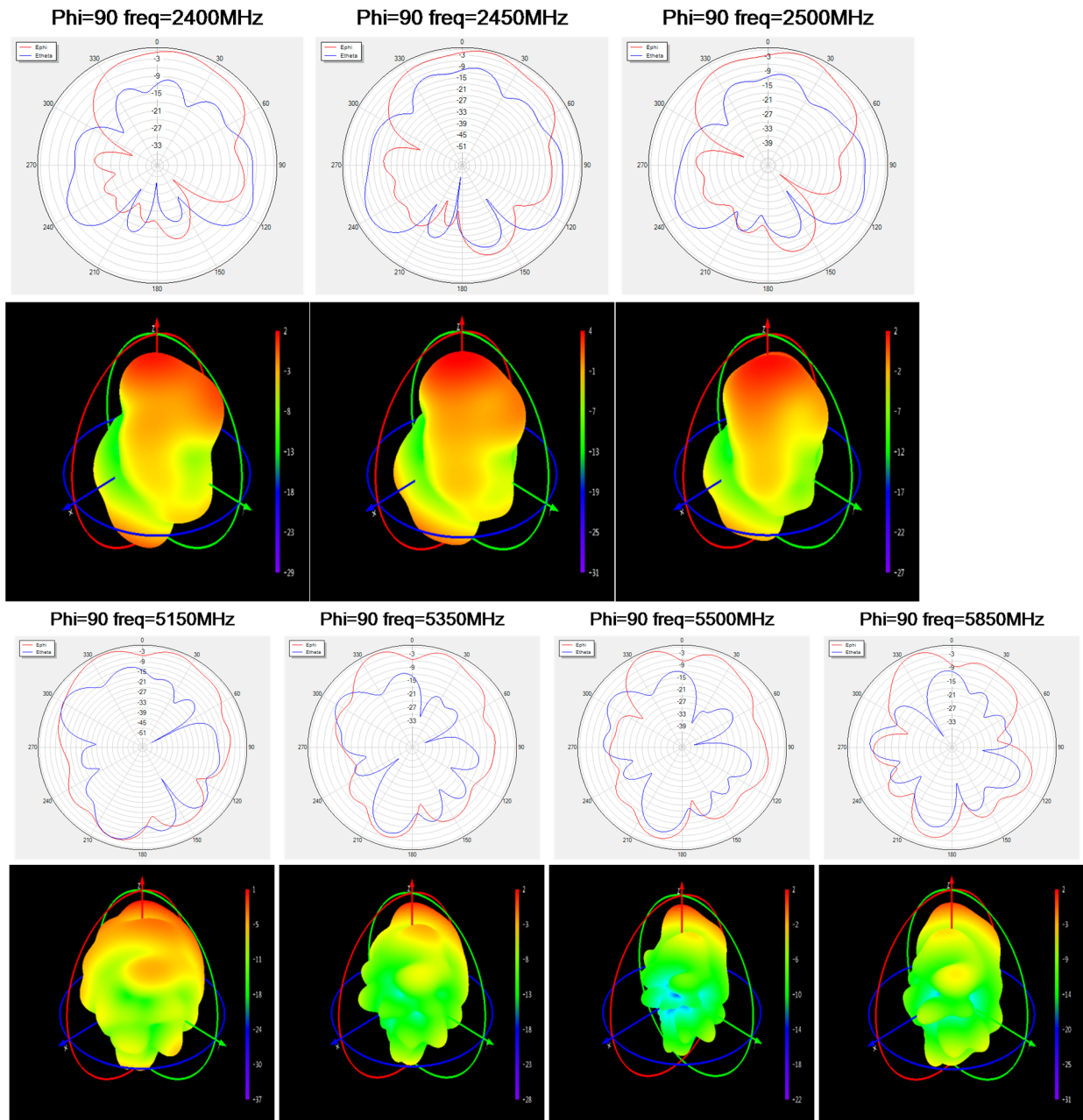
Freq/GHz	2.4	2.45	2.5	5.15	5.5	5.85
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2、Gain and Efficiency增益和效率:

Antenna pattern-WiFi 0

Gain&Efficiency&PhaseCenter 增益、效率和相位中心								
frequency 频率 (MHz)	gain 增益 (dBi)	efficiency 效率(%)	frequency 频率 (MHz)	gain 增益 (dBi)	efficiency 效率(%)	frequency 频率 (MHz)	gain 增益 (dBi)	efficiency 效率(%)
2400	1.51	52.38	5150	0.43	52.94	5700	1.7	58.04
2410	1.9	52.73	5200	0.31	52.7	5750	1.71	57.54
2420	2.19	53.11	5250	0.65	54.44	5800	1.91	57.93
2430	2.54	54.62	5300	0.8	55.41	5850	1.61	55.34
2440	2.6	55.31	5350	0.9	55.55			
2450	2.76	56.87	5400	1.23	57.15			
2460	2.69	58.34	5450	1.41	58.46			
2470	2.54	58.91	5500	1.39	57.83			
2480	2.23	58.29	5550	1.38	57.08			
2490	1.95	58.14	5600	1.53	58.09			
2500	1.72	57.2	5650	1.59	58.33			

3、2D/3D directional diagram 2D/3D方向图:



4、Active parameter有源数据

Test tools: Microwave Anechoic Chamber+ROHDE&SCHWARZ CMW 500

Standard:As shown in the table

Testing Environment: Same as passive test

Test mode: 802.11b 11Mbps BW 20M

Standard: TRP $\geq$ 10dbm TIS $\leq$ -60dbm

Test	Wifi 2G TRP			Test	Wifi 2G TIS		
CH	1	6	11	CH	1	6	11
Frequency (MHz)	2412	2437	2462	Frequency (MHz)	2412	2437	2462
TRP(dBm)	21.78	22.03	21.58	TIS(dBm)	-90.41	-90.6	-90.64

Test mode: 802.11g 54Mbps BW 20M

Standard: TRP $\geq$ 10dbm TIS $\leq$ -60dbm

Test	Wifi 2G TRP			Test	Wifi 2G TIS		
CH	1	6	11	CH	1	6	11
Frequency (MHz)	2412	2437	2462	Frequency (MHz)	2412	2437	2462
TRP(dBm)	20.2	19.92	19.43	TIS(dBm)	-77.59	-77.92	-77.91

Test mode: 802.11NMCS7 BW 20M

Standard: TRP $\geq$ 10dbm TIS $\leq$ -60dbm

Test	Wifi 2G TRP			Test	Wifi 2G TIS		
CH	1	6	11	CH	1	6	11
Frequency (MHz)	2412	2437	2462	Frequency (MHz)	2412	2437	2462
TRP(dBm)	17.96	18.57	17.99	TIS(dBm)	-74.36	-73.94	-73.66

Test mode: 802.11axHE11 BW 40M

Standard: TRP $\geq$ 10dbm TIS $\leq$ -60dbm

Test	Wifi 2G TRP			Test	Wifi 2G TIS		
CH	1	6	11	CH	1	6	11
Frequency (MHz)	2412	2437	2462	Frequency (MHz)	2412	2437	2462
TRP(dBm)	14.9	14.89	14.42	TIS(dBm)	-65.89	-65.66	-65.63

Wi-Fi 5G TRP&TIS

Test mode: 802.11a54Mbps BW 20M

Standard: TRP $\geq$ 10dbm TIS $\leq$ -60dbm

Test	Wifi 5G TRP				Test	Wifi 5G TIS			
CH	36	64	149	161	CH	36	64	149	161
Frequency (MHz)	5180	5320	5745	5805	Frequency (MHz)	5180	5320	5745	5805
TRP(dBm)	18.44	18.98	20.66	20.11	TIS(dBm)	-77.38	-75.48	-77.94	-77.05

Test mode: 802.11nMCS7 BW 20M

Standard: TRP≥10dbm TIS≤-60dbm

Test	Wifi 5G TRP				Test	Wifi 5G TIS			
CH	36	64	149	161	CH	36	64	149	161
Frequency (MHz)	5180	5320	5745	5805	Frequency (MHz)	5180	5320	5745	5805
TRP(dBm)	17.01	17.96	18.67	19.24	TIS(dBm)	-71.31	-73.86	-73.83	-72.99

Test mode: 802.11axHE11 BW 40M

Standard: TRP≥10dbm TIS≤-60dbm

Test	Wifi 5G TRP				Test	Wifi 5G TIS			
CH	36	64	149	161	CH	36	64	149	161
Frequency (MHz)	5180	5320	5745	5805	Frequency (MHz)	5180	5320	5745	5805
TRP(dBm)	12.95	12.97	14.76	14.33	TIS(dBm)	-64.83	-65.18	-65.35	-64.43

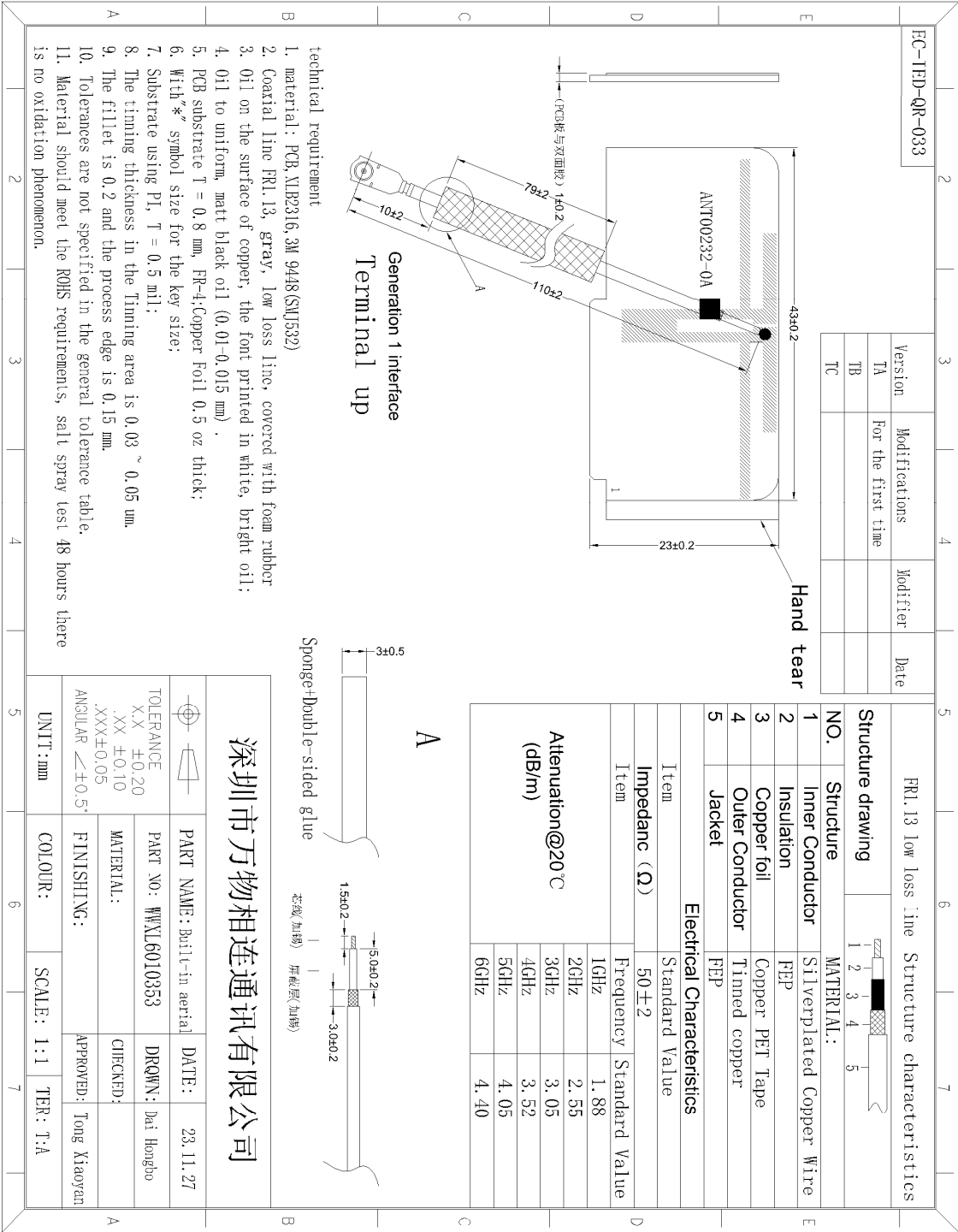
五、Product characteristics产品特点

1. Choose high-quality RF cable with small attenuation选用优质射频电缆，自身衰减小；
2. Stable performance性能稳定；
3. Stable performance频带内驻波良好。

六、Drawing产品结构图

由 Autodesk 教育版产品制作

由 Autodesk 教育版产品制作



Hand tear

43±0.2

23±0.2

1

110±2

78±2

1±0.2

(PCB板与双面胶)

Generation 1 interface
Terminal up

technical requirement

1. material: PCB, XLB2316, 3M 9448 (SMJ532)

2. Coaxial line FRL.13, gray, low loss line, covered with foam rubber

3. Oil on the surface of copper, the font printed in white, bright oil;

4. Oil to uniform, matt black oil (0.01-0.015 mm) .

5. PCB substrate T = 0.8 mm, FR-4; Copper Foil 0.5 oz thick;

6. With "*" symbol size for the key size;

7. Substrate using PI, T = 0.5 mil;

8. The timing thickness in the finishing area is 0.03 ~ 0.05 um.

9. The fillet is 0.2 and the process edge is 0.15 mm.

10. Tolerances are not specified in the general tolerance table.

11. Material should meet the RoHS requirements, salt spray test 48 hours there is no oxidation phenomenon.

3±0.5

1.5±0.2

5.0±0.2

3.0±0.2

芯线(加锡)

屏蔽层(加锡)

深圳市万物相连通讯有限公司

PART NAME: Built-in aerial

DATE: 23.11.27

PART NO: WXL6010353

DRAWN: Dai Hongbo

MATERIAL:

CHECKED:

FINISHING:

APPROVED: Tong Xiaoyan

UNIT: mm

COLOUR:

SCALE: 1:1

TER: T:A

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