





ShenZhen VLG Wireless TECHNOLOGY CO.,LTD

SPECIFICATION

Project	S90 Intelligent Horseshoe Lock LDS Antenna			Frequency Band	708-960,1710-2690 MHz & 2400-2500 MHz											
VLG SCT P/N	V2055-002-A-01			Version	A											
RF	yahu.huang	Check	yahu. huang	QC	hong. yu	Check	hong. yu									
ME	xiaorui.chai		xiaorui. chai	PM	chunxin. wang		chunxin. wang									
Date	December 28, 2022															
Customer item P/N	Customer Project Name: S90 Intelligent Horseshoe Lock LDS Antenna															
	Customer Item No. :															
Customer Remark																
VLG Wireless Technology																
R&d project customer satisfaction survey (Customer please according to our research and development, a comment or PM management staff, supervise and urge us serve you better)																
RF	<input type="checkbox"/> satisfaction		<input type="checkbox"/> largely satisfactory		<input type="checkbox"/> Not satisfied											
ME	<input type="checkbox"/> satisfaction		<input type="checkbox"/> largely satisfactory		<input type="checkbox"/> Not satisfied											
PM	<input type="checkbox"/> satisfaction		<input type="checkbox"/> largely satisfactory		<input type="checkbox"/> Not satisfied											
Customer Suggestions:																
<div> <div>The antenna images :</div> <div>   </div> </div>																

The form number: VLG/QRF7.3-24/A4

Save the fixed number of year: 2 years

Shenzhen Baoan District Xixiang street Tiegang Road Oyster Industrial Park a plant 3 floors 4 floors

Design Specifications	Typical	Units
Antenna type	LDS support+Leadwire	
working Frequency	708-960,1710-2690 &2400-2500	MHz
Gain	4G: -1.17 ~4.67 BT: 0.10~0.80	dBi
Antenna efficiency	4G: 25.93~55.00 BT: 38.02 ~ 41.91	%
VSWR	<7	
Ploriaztion	Linear polarization	
Axial Ratio	When the antenna is circular polarization, note the axial ratio in the working bandwidth	N/A
Radiation pattern	omnidirectional	
impedance	50 ohm	
Power handling	33	dBm
Interface	IPEX	
Overall dimensions	See drawing section	
Weight	no requirement	
Operatin Temp	-30 ----- 70	°
Storing Temp	-30 ----- 70	°

www.vlg.com.cn

VLG has possession of proprietary information provided in this report and this proprietary information shall be kept in strict confidence and not disclosed to any person or firm without the prior written consent of VLG Communication Technology.

S90 Intelligent Horseshoe Lock LDS Antenna Specification

1、Indication

The report mainly provides the test status of various electrical performance parameters of the S90 Intelligent Horseshoe Lock LDS Antenna. (As shown in Figure 1 below)



Figure 1 S90 Intelligent Horseshoe Lock LDS Antenna

www.vlg.com.cn

VLG Communication has possession of proprietary information provided in this report and this proprietary information shall be kept in strict confidence and not disclosed to any person or firm without the prior written consent of VLG Communication Technology.

2、 Electrical Performance

2.1 Specification standard

S90 Intelligent Horseshoe Lock LDS Antenna working band is at 708-960, 1710-2690MHz&2400-2500MHz.

2.2 Antenna matching circuit

S90 Intelligent Horseshoe Lock LDS Antenna matches the original matching circuit.

2.3 VSWR Test

A. Test setup

VSWR measurements (S11) were performed using Agilent E5071B Network Analyzer and the previously described test fixture. A ferrite-loaded coaxial cable was used to mitigate surface currents on the outside of the cabling. The testing was performed in free space ETS AMP8500S chamber.

B. VSWR

The table below shows the standing wave ratio value of the edge frequency of the working band of S90 Intelligent Horseshoe Lock LDS Antenna matches the original matching circuit.

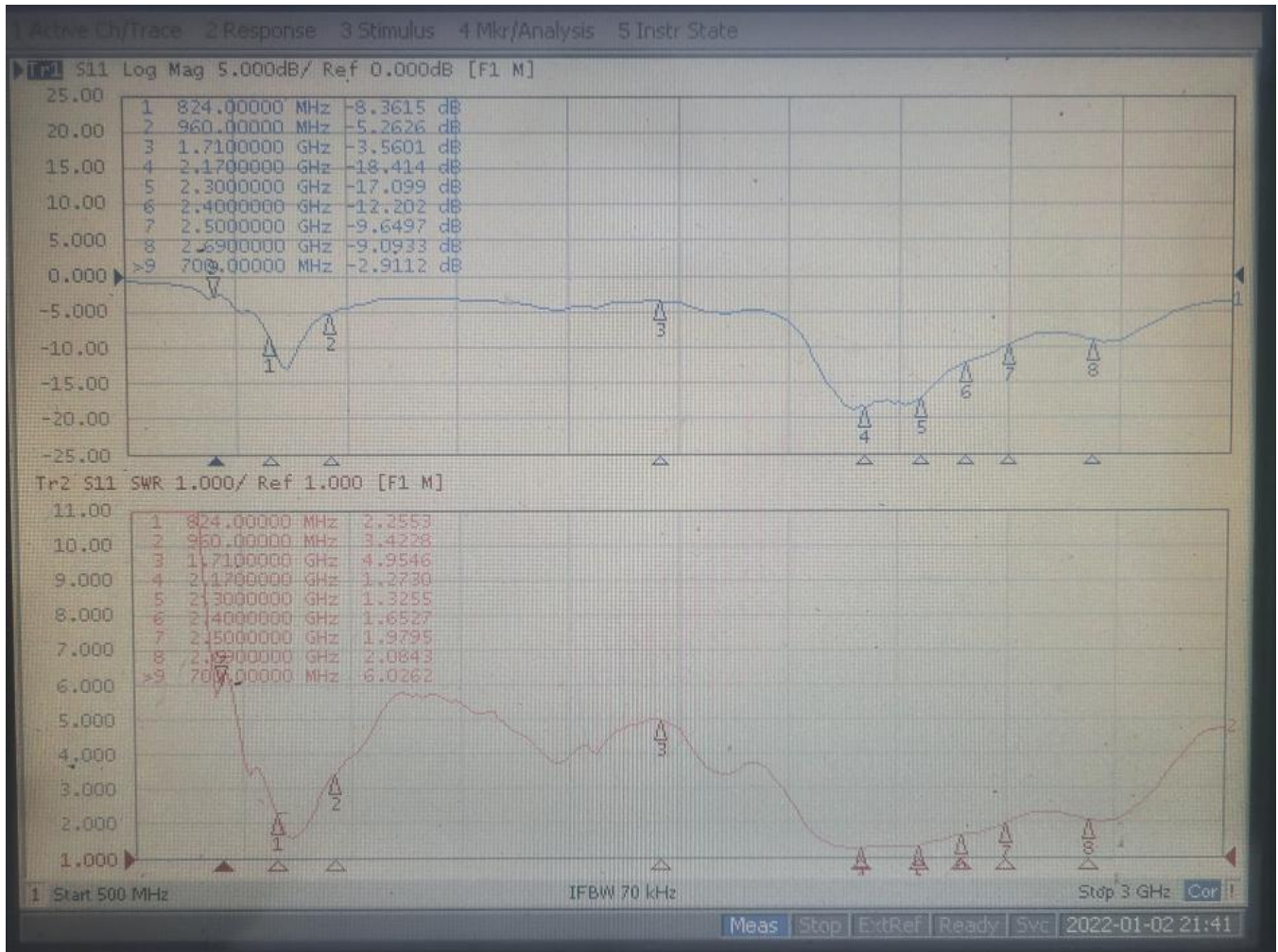
Frequency band	frequency (MHz)	VSWR
4G	700	6.02
	960	3.42
	1710	4.95
	2690	2.08
BT	2400	2.74
	2500	2.28

www.vlg.com.cn

VLG Communication has possession of proprietary information provided in this report and this proprietary information shall be kept in strict confidence and not disclosed to any person or firm without the prior written consent of VLG Communication Technology.

2.3.1 S11 parameter

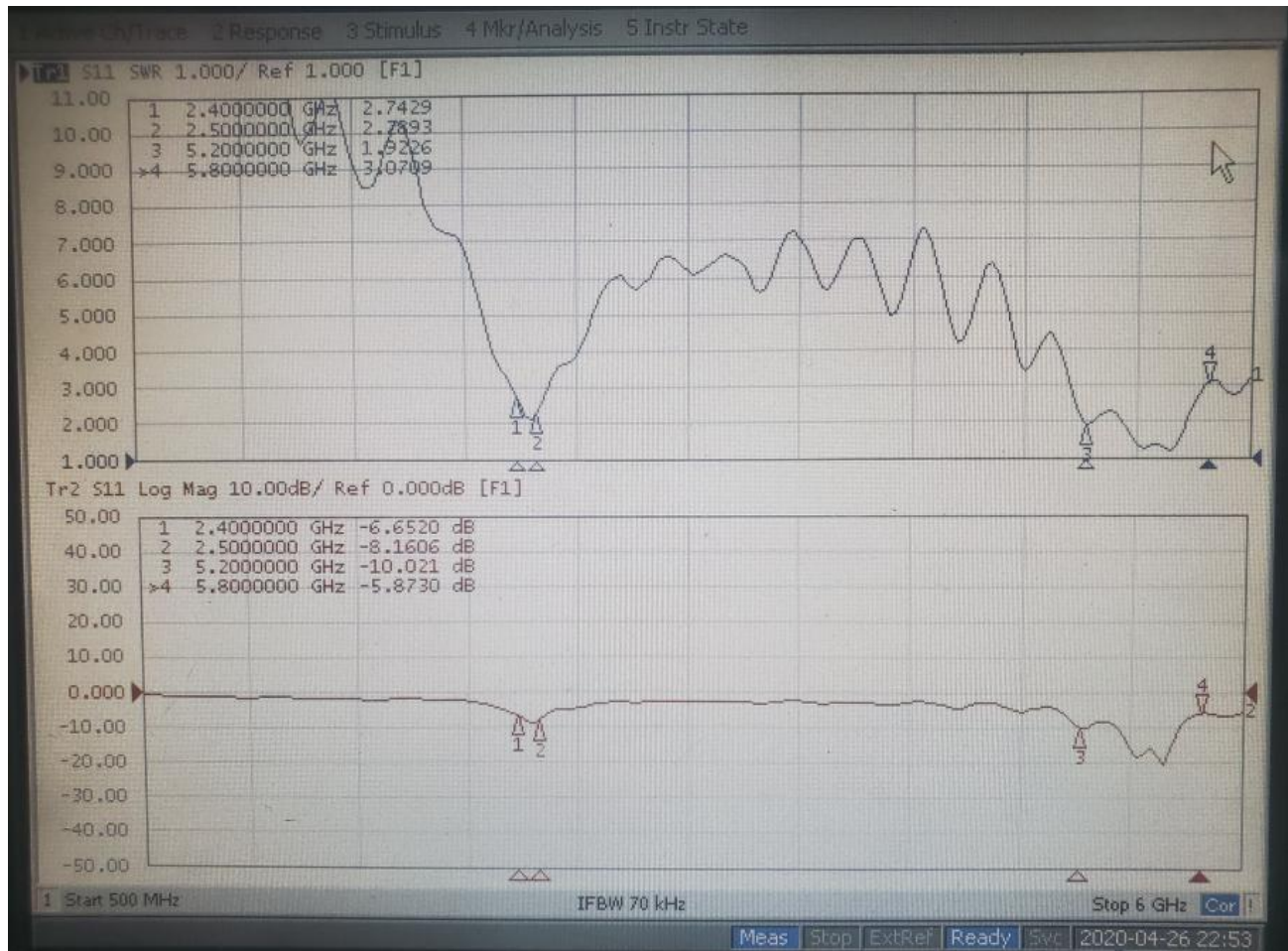
4G Antenna:



www.vlg.com.cn

VLG Communication has possession of proprietary information provided in this report and this proprietary information shall be kept in strict confidence and not disclosed to any person or firm without the prior written consent of VLG Communication Technology.

BT Antenna:

www.vlg.com.cn

VLG Communication has possession of proprietary information provided in this report and this proprietary information shall be kept in strict confidence and not disclosed to any person or firm without the prior written consent of VLG Communication Technology.

2.3.2 Antenna Passive Efficiency

4G Antenna:

Freq (MHz)	Gain (dBi)	Efficiency (dB)	Efficiency (%)
708	-1.17	-5.05	31.23
718	-1.15	-4.91	32.30
728	-0.86	-4.67	34.14
738	-0.38	-4.17	38.30
748	-0.16	-3.76	42.04
758	-0.03	-3.46	45.03
768	0.03	-3.15	48.44
778	0.07	-2.88	51.49
788	0.15	-2.79	52.54
798	0.14	-2.81	52.39
808	0.32	-2.75	53.11
818	0.46	-2.76	52.94
828	0.35	-2.79	52.57
838	0.31	-2.77	52.83
848	0.01	-2.93	50.95
858	-0.08	-2.99	50.28
868	-0.15	-3.02	49.86
878	-0.30	-3.19	47.98
888	-0.47	-3.31	46.65
898	-0.40	-3.49	44.80
908	-0.44	-3.70	42.63
918	0.05	-3.81	41.55
928	0.23	-4.03	39.58
938	0.11	-4.20	38.03
948	-0.22	-4.49	35.54
958	-0.52	-4.73	33.66
960	-0.59	-4.79	33.20

www.vlg.com.cn

VLG Communication has possession of proprietary information provided in this report and this proprietary information shall be kept in strict confidence and not disclosed to any person or firm without the prior written consent of VLG Communication Technology.

Freq (MHz)	Gain (dBi)	Efficiency (dB)	Efficiency (%)
1710	0.39	-5.41	28.76
1745	-0.20	-5.86	25.93
1780	0.85	-5.38	28.96
1815	0.92	-5.15	30.56
1850	0.88	-5.03	31.37
1885	1.29	-4.70	33.90
1920	1.54	-4.54	35.13
1955	1.86	-4.41	36.19
1990	1.96	-4.40	36.34
2025	3.01	-3.72	42.46
2060	3.32	-3.40	45.70
2095	3.18	-3.06	49.45
2130	2.57	-3.07	49.29
2165	2.21	-3.17	48.23
2200	2.43	-3.12	48.77
2235	2.64	-3.18	48.11
2270	2.93	-3.45	45.22
2305	2.94	-3.82	41.51
2340	3.41	-3.71	42.59
2375	3.67	-3.63	43.31
2410	3.60	-3.43	45.37
2445	3.63	-3.15	48.41
2480	4.35	-2.74	53.22
2515	4.67	-2.60	55.00
2550	4.20	-2.84	51.98
2585	4.05	-2.91	51.13
2620	3.92	-3.09	49.13
2655	3.82	-3.23	47.54
2690	1.68	-5.22	30.09

BT Antenna:

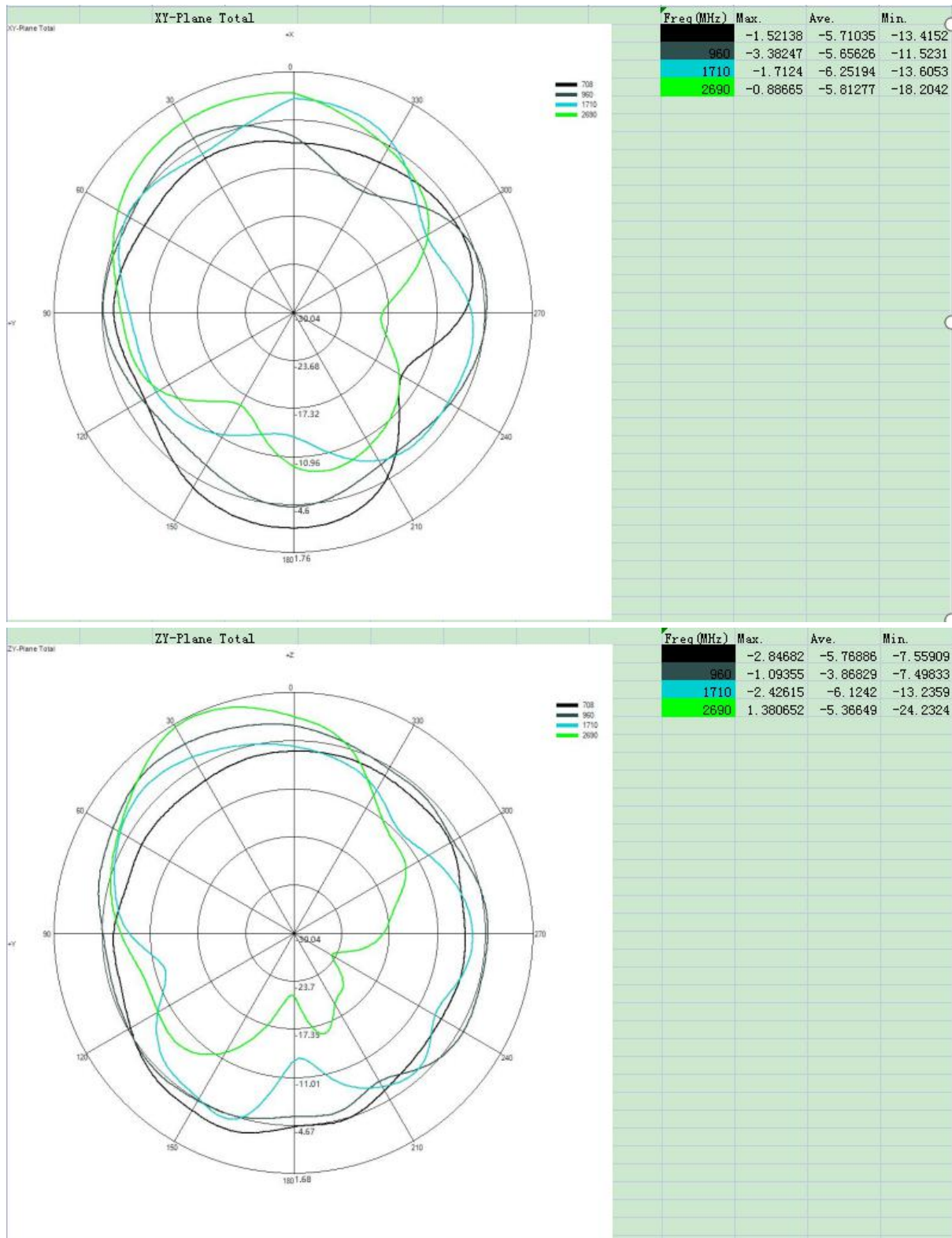
Freq (MHz)	Gain (dBi)	Efficiency (dB)	Efficiency (%)
2400	0.60	-4.11	38.82
2410	0.62	-4.05	39.35
2420	0.80	-3.94	40.35
2430	0.78	-3.90	40.78
2440	0.71	-3.90	40.73
2450	0.79	-3.78	41.90
2460	0.75	-3.78	41.91
2470	0.69	-3.82	41.49
2480	0.52	-3.89	40.85
2490	0.47	-3.96	40.17
2500	0.10	-4.20	38.02

www.vlg.com.cn

VLG Communication has possession of proprietary information provided in this report and this proprietary information shall be kept in strict confidence and not disclosed to any person or firm without the prior written consent of VLG Communication Technology.

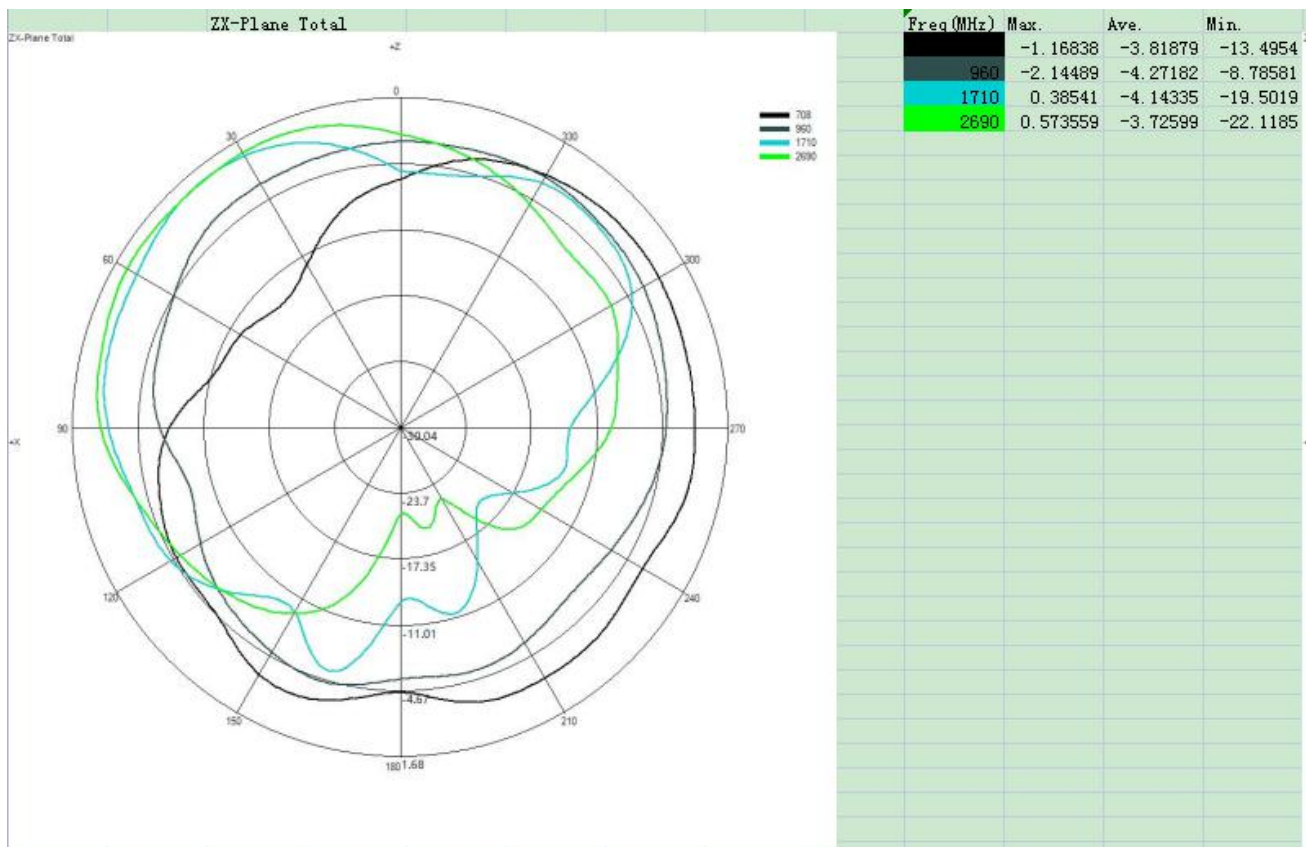
2.3.3 Pattern

4G Antenna:



www.vlg.com.cn

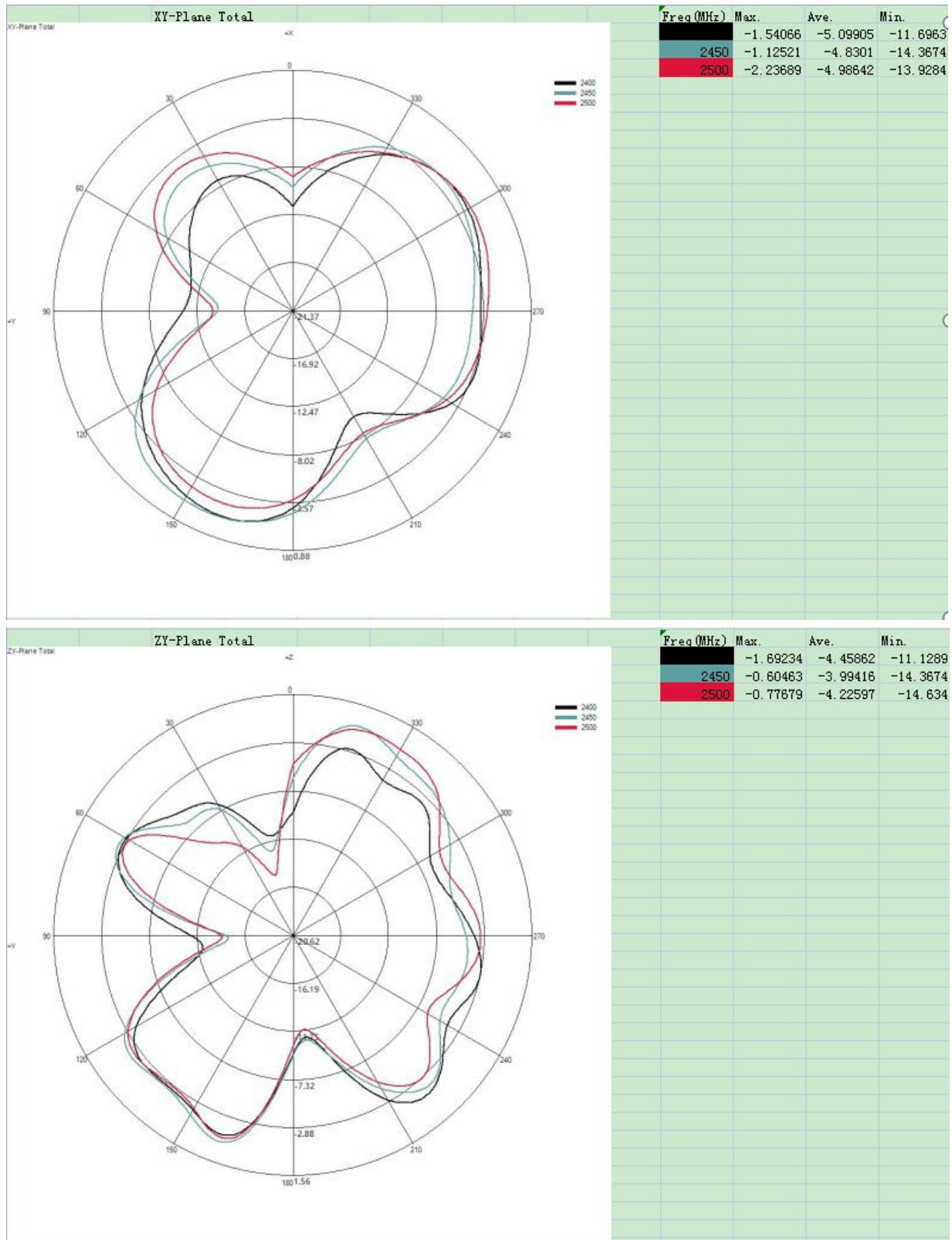
VLG Communication has possession of proprietary information provided in this report and this proprietary information shall be kept in strict confidence and not disclosed to any person or firm without the prior written consent of VLG Communication Technology.



www.vlg.com.cn

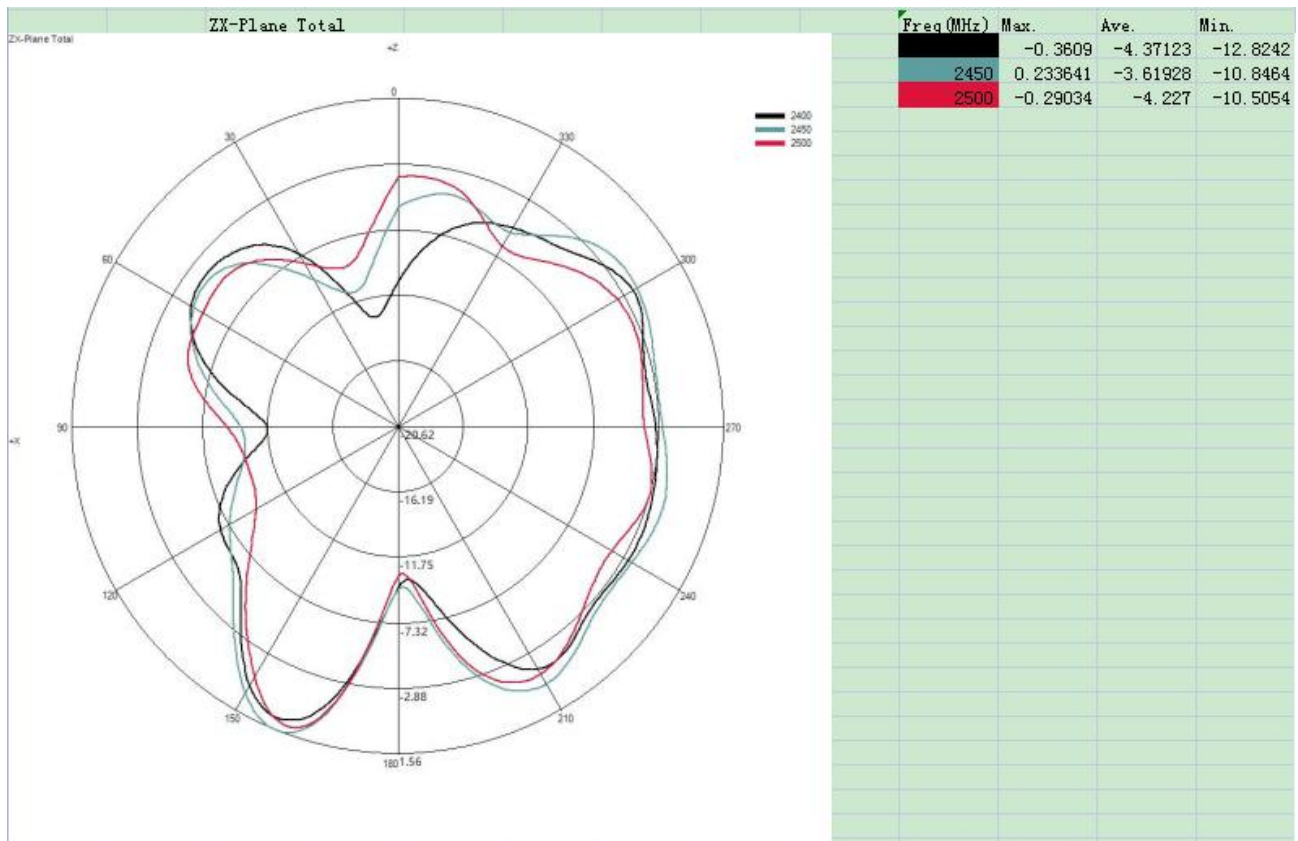
VLG Communication has possession of proprietary information provided in this report and this proprietary information shall be kept in strict confidence and not disclosed to any person or firm without the prior written consent of VLG Communication Technology.

BT Antenna:



www.vlg.com.cn

VLG Communication has possession of proprietary information provided in this report and this proprietary information shall be kept in strict confidence and not disclosed to any person or firm without the prior written consent of VLG Communication Technology.



3、Suggestion And Solution

This report is according to the customer provide S90 Intelligent Horseshoe Lock LDS Antenna the final version of the electrical performance of antenna.

As can be seen from the above test data, this antenna provides better electrical performance.

We are looking forward to your confirmation. Thank you for your cooperation!

4、Appearance Drawing

www.vlg.com.cn

VLG Communication has possession of proprietary information provided in this report and this proprietary information shall be kept in strict confidence and not disclosed to any person or firm without the prior written consent of VLG Communication Technology.

1 2 3 4 5 6 7 8

A

B

C

D

1

2

3

4

5

6

7

8

★127.40±0.3

★52.22±0.25

★7.2±0.20

Spray ink area with including sides

Non-ink spraying area

Glue in the area:

RF 1 Plug+RG113/Black

★40±2

Con up

RF 4 Plug+0.81/Cable/Black

Glue in the area

Painting requirements:
1、2 spray and 2 bake/Black/Cover Ant
2、Paint brand: KX5567-series

Technical requirements:
1.★ is Important dimension,
3.In the processing process can not appear scratches,
bumps, scratches on the workpiece surface and four sides;
4.No tolerance reference zone is noted
5.Products comply with rohs 2.0 requirements

ShenZhen VLG Wireless Technology Co., Ltd

The third Angle		Project	S90 Intelligent Horeseshoe Lock		Date	2022.12.19	1/1
			Description	Antenna drawing	Draw	RF Review	
0~10	±0.10	○	0.02	0.03	P/N	V2055-002-A-01	Review
10~20	±0.15	◎	0.03	0.02	Material		ME Review
20~40	±0.20	⊥	0.02	0.04	Surface treatment		
> 40	±0.25	∠	0.02	0.02	Outlook treatment		
					Unit	mm	Scale
							Version
							R:A

Painting requirements:

- 1, 2 spray and 2 bake/Black/Cover Ant
2, Paint brand: KX5567-series