

Design Specifications	Typical	Units
Antenna form	FPC	
Operating frequency	700-960,1710-2690	MHz
Gain	-2.55 ~ 2.89	dBi
Antenna efficiency	24.86 ~ 64.33	%
Voltage standing wave ratio (VSWR).	<5	
Polarization mode.	Line polarization	
Axial Ratio	When the antenna is circularly polarized, note the size of the axis ratio within the operating bandwidth	N/A
Radiation direction	Omnidirectional	
Feed-in impedance	50 ohm	
Power capacity	33	dBm
Antenna Interface.	Bullet foot contact	
Antenna size	See the drawings section	
Weight	No requirements	
Operating temperature (Operatin Temp).	-30 ----- 70	°C
Storage Temp	-30 ----- 70	°C

ShenZhen VLG Wireless Technology Co.,Ltd

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# DSGW-090 4G antenna datasheet

1. **Specifications:** The report mainly provides the test status of various electrical performance parameters of DSGW-090 4G antenna. (Figure 1 below).



Figure 1 DSGW-090 4G antenna

## 2. Electrical performance

### 2.1 Specifications

The DSGW-090 4G antenna operates in **the 700-960, 1710-2690MHz bands.**

### 2.2 Antenna matching circuit

The DSGW-090 4G antenna matching motherboard comes with matching.

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## 2.3 Testing of standing wave ratio (VSWR).

### A. Setup for the test

The VSWR test rig is connected sequentially as the 8714ET Network Analyzer → 50 ohm coaxial Cable → 120mm copper tube → EUT

Handling of the test fixture: from the antenna 50 ohm test point, a cable leads out the SMA connector, connects it with a copper tube with a choke, and then connects the other devices in turn.

### B. VSWR

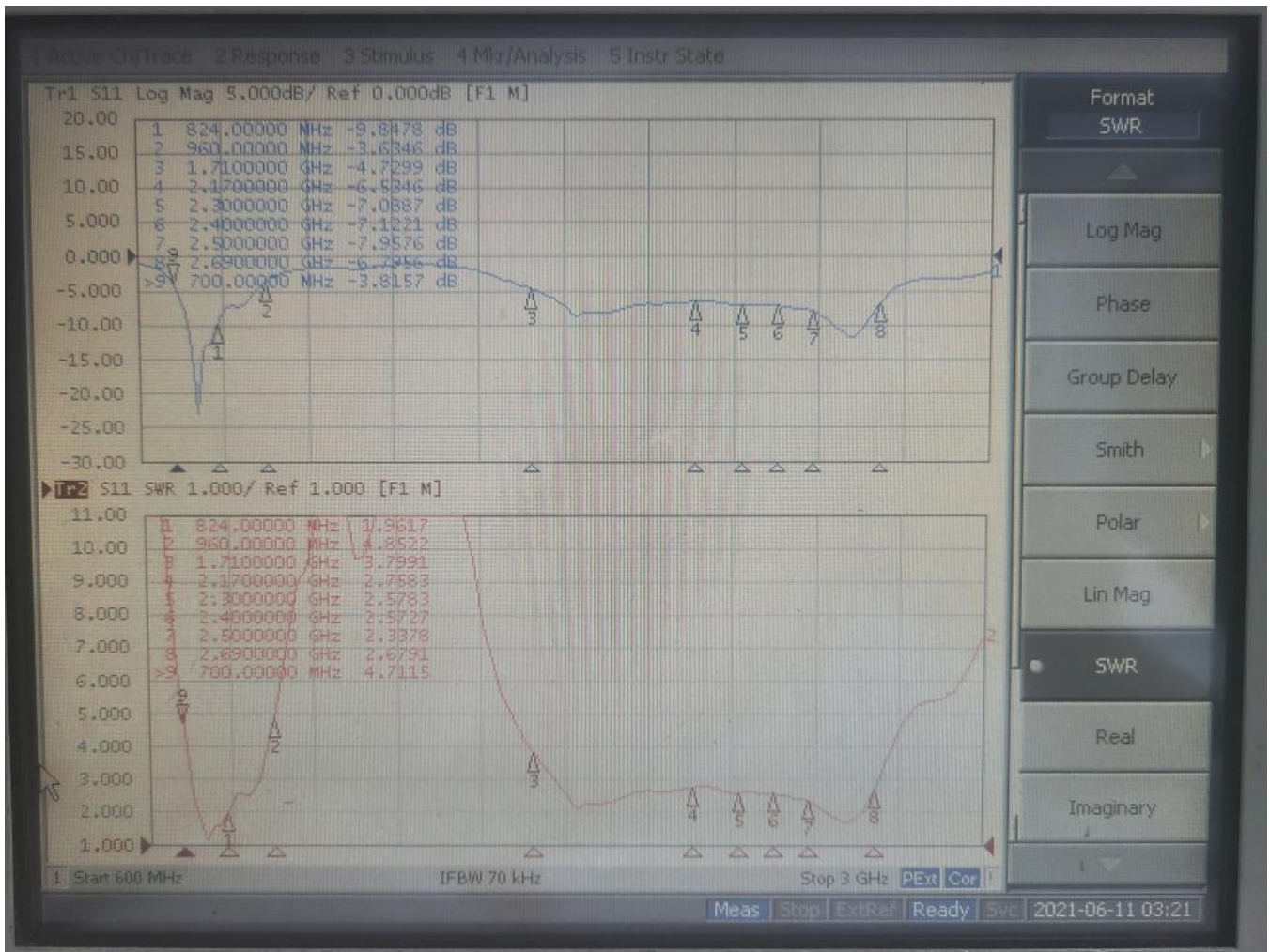
The following table shows the VSWR values for the edge frequency points in the operating band of the DSGW-090 4G antenna. The VSWR obtained from the test, the correlation waveform is shown in the annex.

Band	Frequency (MHz)	VSWR
4G	700	4.71
	824	3.41
	960	4.07
	1710	3.45
	2690	3.57

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### 2.3.1 S11 parameters



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## 2.3.2 Passive antenna efficiency

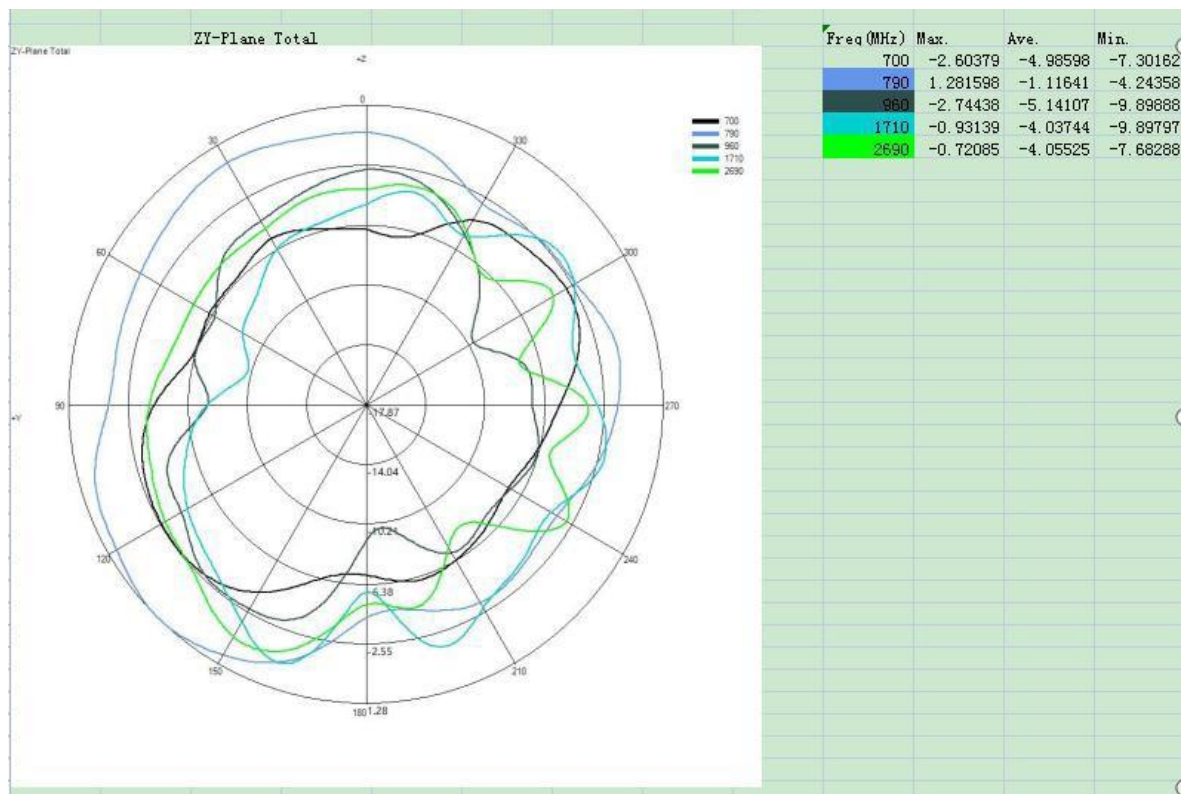
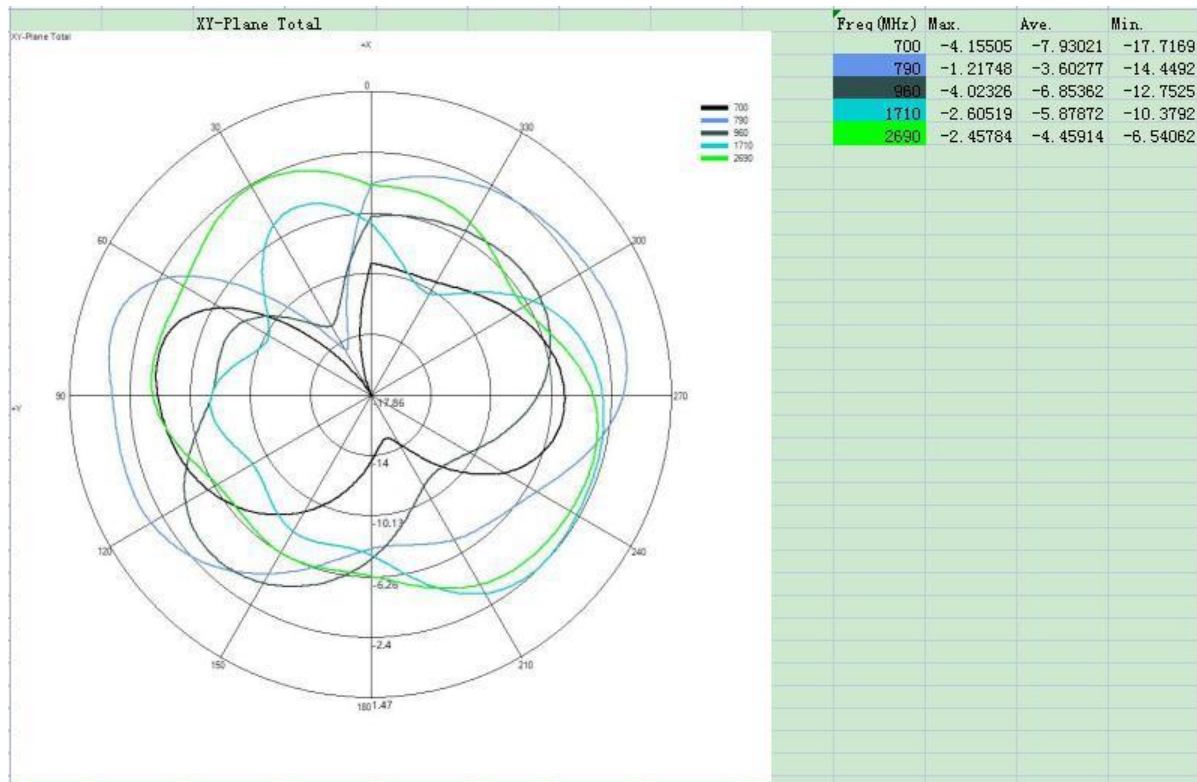
Freq(MHz)	Gain(dBi)	Efficiency(dB)	Efficiency(%)	Freq(MHz)	Gain(dBi)	Efficiency(dB)	Efficiency(%)
700	-1.86	-6.05	24.88	1710	0.68	-4.84	32.80
710	-0.87	-5.06	31.16	1745	1.56	-3.81	41.59
720	0.21	-4.18	38.21	1780	1.92	-3.31	46.71
730	0.61	-3.71	42.56	1815	2.59	-2.89	51.39
740	1.05	-3.21	47.79	1850	2.55	-2.73	53.32
750	1.40	-2.75	53.07	1885	2.68	-2.55	55.56
760	1.76	-2.39	57.69	1920	2.89	-2.31	58.71
770	1.95	-2.12	61.41	1955	2.61	-2.22	60.04
780	1.93	-1.92	64.33	1990	2.21	-2.40	57.56
790	1.28	-2.42	57.27	2025	1.75	-2.78	52.74
800	-0.43	-4.28	37.32	2060	1.32	-3.17	48.22
810	0.13	-3.61	43.53	2095	1.20	-3.38	45.94
820	1.13	-2.66	54.25	2130	1.00	-3.29	46.86
830	1.49	-2.48	56.45	2165	0.89	-3.15	48.37
840	1.63	-2.45	56.85	2200	1.30	-3.23	47.58
850	1.49	-2.69	53.84	2235	2.06	-3.08	49.19
860	1.18	-2.97	50.41	2270	2.40	-3.01	50.04
870	0.56	-3.55	44.14	2305	1.97	-3.16	48.35
880	-0.53	-4.30	37.15	2340	2.01	-3.11	48.92
890	-1.43	-4.90	32.38	2375	2.19	-3.01	49.96
900	-1.85	-5.11	30.85	2410	1.65	-3.02	49.90
910	-1.46	-4.68	34.03	2445	1.60	-2.72	53.51
920	-1.48	-4.82	32.95	2480	2.14	-2.16	60.86
930	-1.72	-4.97	31.85	2515	1.65	-2.11	61.46
940	-1.99	-5.19	30.30	2550	1.30	-2.66	54.19
950	-2.47	-5.59	27.58	2585	1.47	-3.00	50.16
960	-2.55	-5.72	26.76	2620	1.05	-3.30	46.75
				2655	0.38	-3.66	43.04
				2690	-0.03	-4.25	37.56

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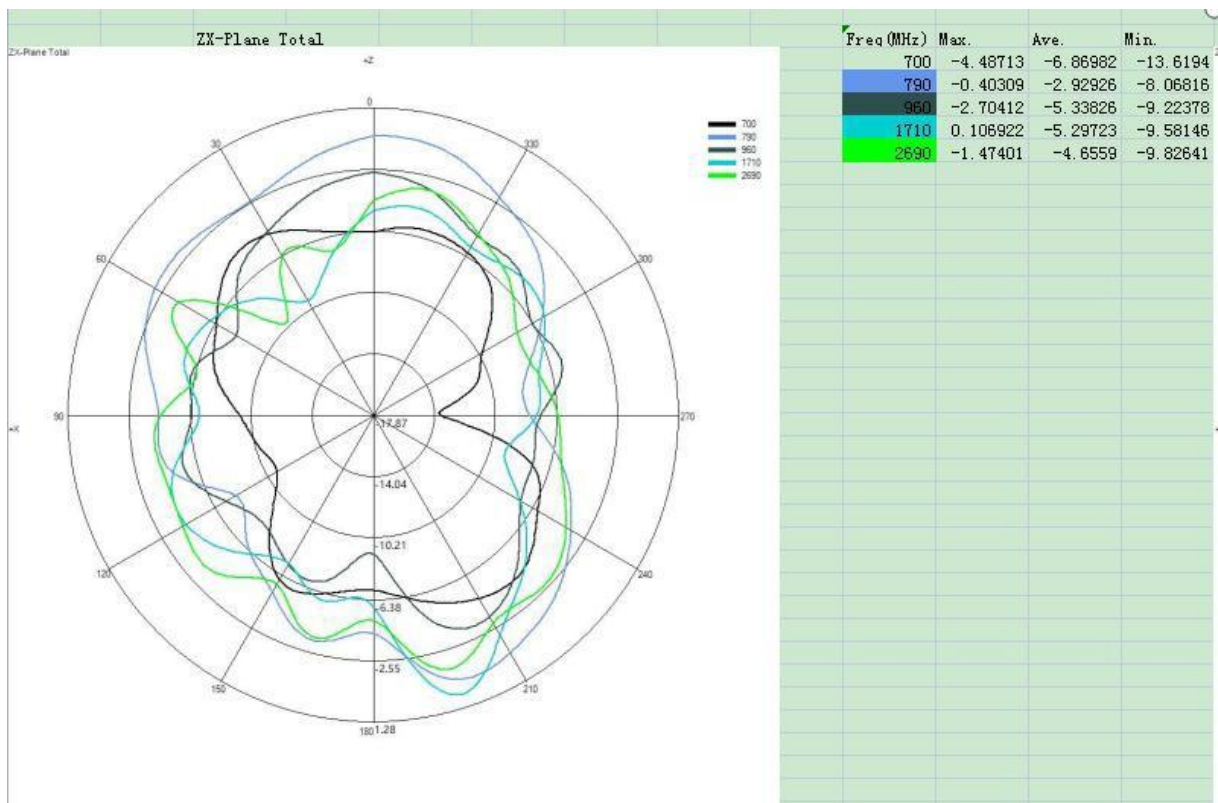


### 2.3.3 Directional diagram



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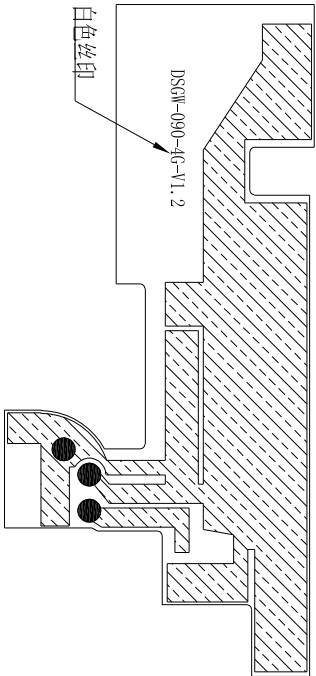
### 3. Recommendations and conclusions

This report is provided by customers DSGW-090 4G. The electrical performance of the antenna measured in the final version of the antenna. As can be seen from the above test data, this antenna provides good electrical performance. Weili Valley R&D looks forward to your confirmation, thank you for your cooperation!

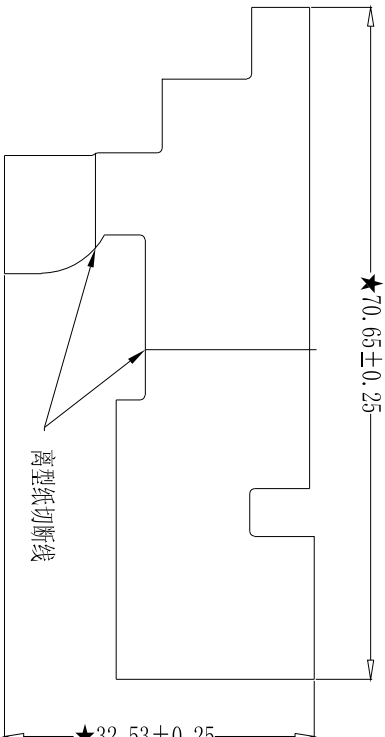
4. See attached file for drawing samples and appearance

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正面走线面



反面背胶面

- 备注:
- 打“★”为严格控制尺寸(必测等级A)
  - 产品形状刀模尺寸要严格控制;
  - 表面无油污,杂质,毛刺等。
  - 不经过VLG公司确认,材料不能随意更改;
  - 包装以及品质标准分别参考VLG包装规范和VLG品质标准;
  - 产品必须符合EU DIRECTIVE 2002/95/EC (ROHS) 的要求。

- 技术要求:
- FPC材料:电解铜(18um),PI—对半材质(25um),背胶: 3M9471LE(0.05mm),使用单面板, FPC厚度小于0.15mm
  - 镀点处理: 镀金  
镀镍厚度: 2—6um 镀金厚度: 0.025—0.075um
  - 油墨颜色: 哑光黑色 / 丝印字体: 白色
  - 包装方式: 整版

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序号	修 改	内 容	日 期	设 计	备 注		
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深圳市维力谷无线技术股份有限公司 ShenZhen VLG Wireless Technology Co., Ltd			
第三视角	机 种	品 名	日期
0~10	DSGW-090	4G天线	2022.05.28
10~20		料 号	RF确认
20~40		V2183-004-A-01	
> 40		材 质	品质审核
角 度		PI+电解铜	结构审核
±0.10			批准
±0.15			
±0.20			
±0.25			
±0.5°			
请勿实测图纸位置	外观处理	单位	比例
		mm	版本 R.A