

VLG TECHNOLOGY

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B39 omnidirectional bracket antenna Specification

Customer/ Project	B39 omnidirectional bracket antenna			Band	2.4G, 5G, 6G		
VLG P/N	V2195-041-A-03			Version	R:A		
RF	LiuJunZhou	Confirm		QC	Yuhong	Confirm	
SE	Lipenggang			PM	Hefarong		
Data	2025-10-18						
customer project name item number	Client project name: B39 omnidirectional bracket antenna						
	Customer item number:						
Client confirmation							
VLG Communication Technology							
R&D project customer satisfaction survey (customers please make a comment on our R&D or PM management staff, and urge us to serve you better)							
RF Technician	☐ Satisfied		☐ Basically satisfied		☐ dissatisfied		
Structural technician	☐ Satisfied		☐ Basically satisfied		☐ dissatisfied		
Project Management (PM Manager)	☐ Satisfied		☐ Basically satisfied		☐ dissatisfied		
Description of suggested items:							
Form Number: VLG/QRF7.3-24/A4							
Storage period: 2 years							

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1 Specification

The report mainly provides the test status of various electrical performance parameters of the B39 omnidirectional bracket antenna, which operates in the 2.4G, 5G and 6G frequency bands.

2 Electrical performance

2.1 Specification standard

The antenna operates in the 2.4G, 5G and 6G frequency bands.

Standing wave ratio: less than 2.5

Directionality: Omnidirectional on the horizontal plane

2.2 Test

This antenna was debugged using the board of the frequency-shifted 1.8G antenna provided by the customer. As shown in Figure 2, the antenna is installed on the test fixture, and various electrical performance tests are conducted using this fixture.

2.3. Test of standing wave ratio

2.3.1 Test Settings

The VSWR test device is connected in sequence as follows: E5071C network analyzer → 50-ohm coaxial Cable → 120mm long copper tube → test fixture.

Handling of the test fixture: Lead out the SMA-J connector from the 50-ohm test point of the antenna on the PCB with a hard cable, connect it to the copper tube with a choke coil, and then connect other devices in sequence.

2.3.2 standing-wave ratio (SWR)

The following shows the standing wave ratio values at the edge frequency points of the operating frequency band of the frequency-shifted 1.8G antenna. The relevant waveform diagrams such as antenna efficiency, gain, standing wave ratio, isolation, and pattern obtained from the test are shown in the attachment.

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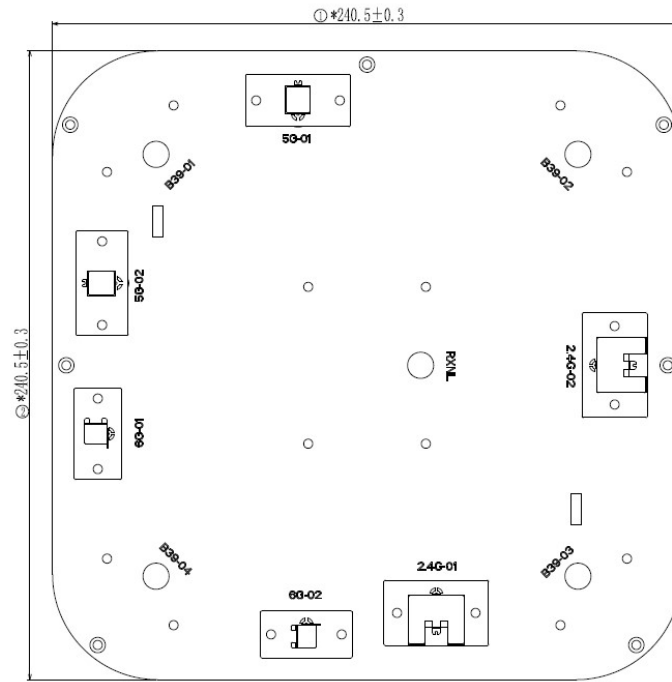


Figure 2 Test Fixture

2.4 Test of gain

2.4.1 The testing site

VLG microwave anechoic chamber: ETS-AMS8500, test frequency range 400 MHz – 7125MHz, quiet zone range 40cm circle, reflectance less than -90 dB.

2.4.2 Testing instrument

E5071C network analyzer, log-periodic antenna, computer, transmitting turntable, receiving antenna.

2.4.3 Test results

2.4G antenna efficiency and gain

Frequency Hz	Efficiency %	Gain dBi
2400000	66%	3.67
2410000	68%	3.63
2420000	68%	3.66

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2430000	69%	3.86
2440000	71%	4.06
2450000	74%	4.40
2460000	75%	4.60
2470000	76%	4.72
2480000	77%	4.89
2490000	80%	5.07
2500000	80%	5.06

5G antenna efficiency and gain

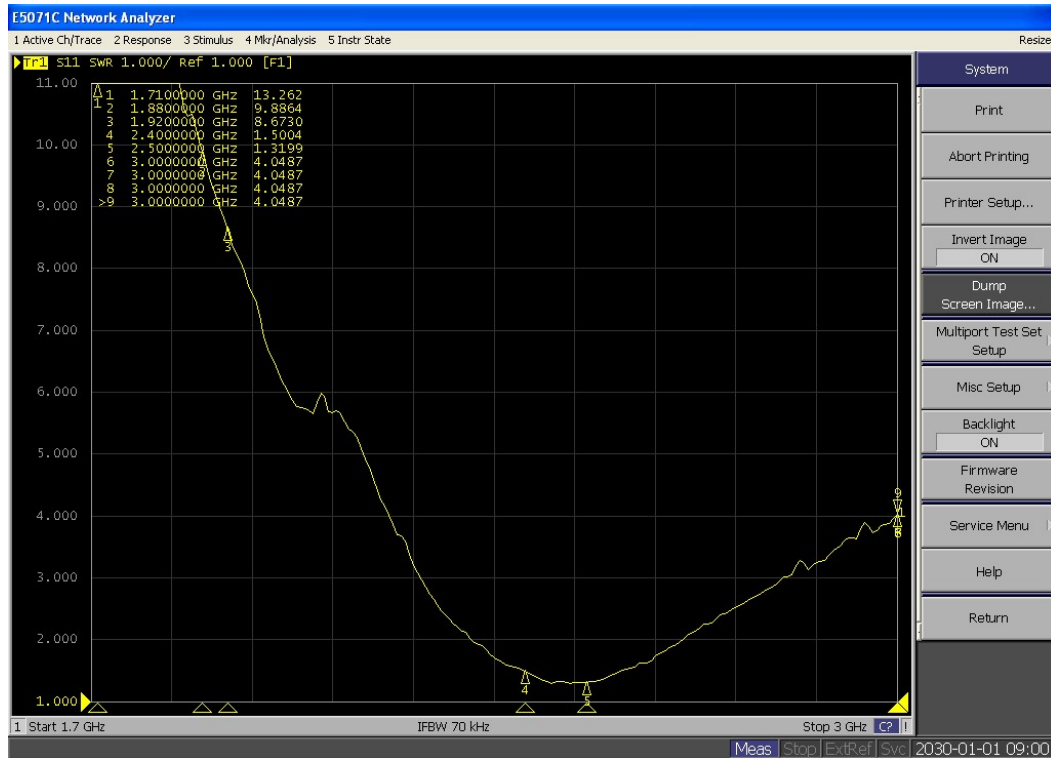
Frequency Hz	Efficiency %	Gain dBi
5150000	72%	6.00
5200000	68%	5.28
5250000	68%	4.81
5300000	68%	5.19
5350000	70%	5.57
5400000	69%	5.58
5450000	68%	5.31
5500000	69%	5.04
5550000	69%	5.00
5600000	66%	5.09
5650000	65%	5.06
5700000	67%	5.28
5750000	68%	5.79
5800000	69%	6.22
5850000	68%	6.33

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3 Attachment

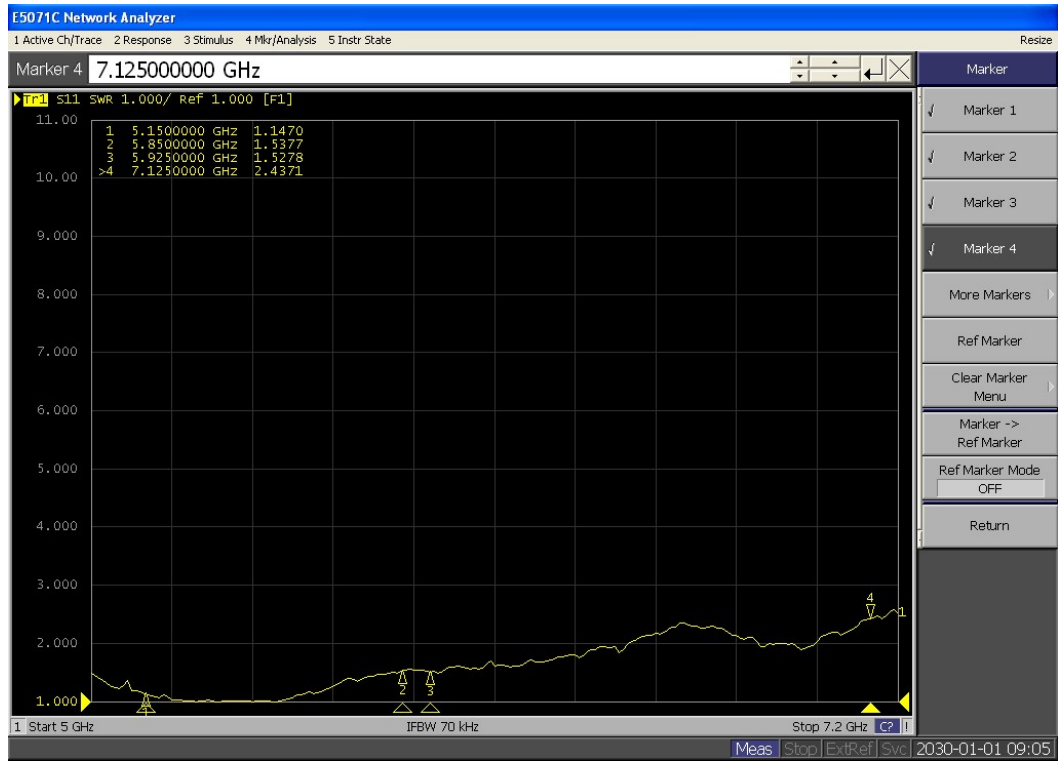
3.1 antenna standing wave ratio



2.4G antenna standing wave ratio

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5G antenna standing wave ratio



6G antenna standing wave ratio

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3.2 Antenna isolation degree



2.4G-2.4G-Degree of isolation

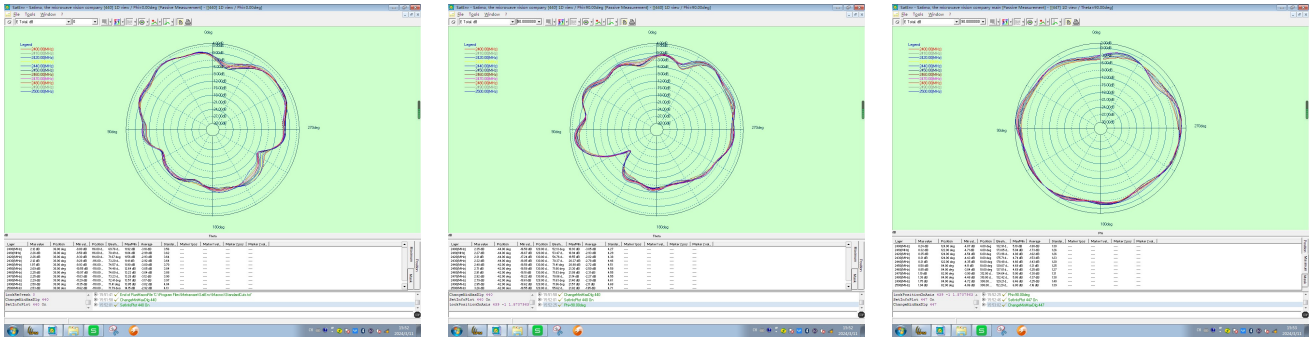


5G-6G-Degree of isolation

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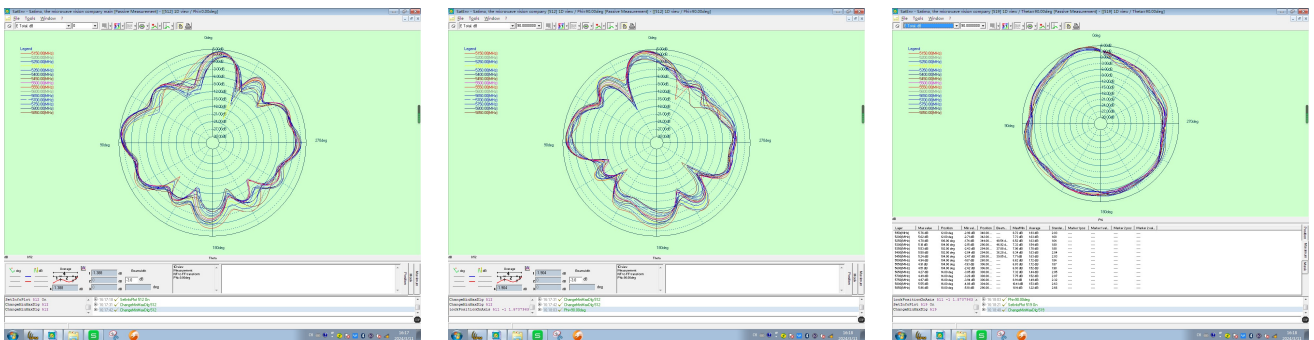
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3.3 Antenna pattern



Vertical plane 0-degree radiation pattern Vertical plane 90-degree radiation pattern horizontal radiation pattern

2.4G antenna pattern



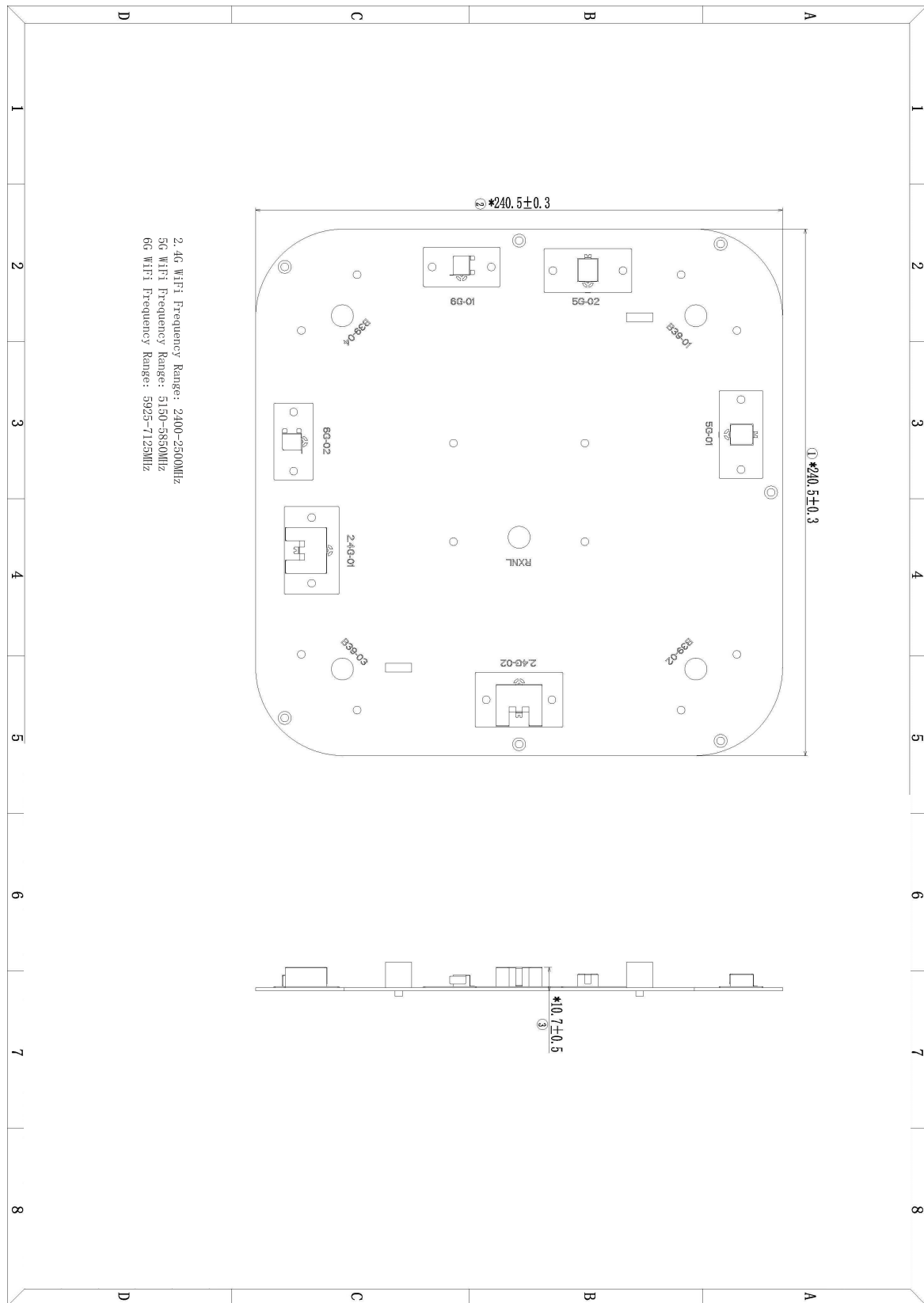
Vertical plane 0-degree radiation pattern Vertical plane 90-degree radiation pattern horizontal radiation pattern

5G antenna pattern

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4. Antenna drawing



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