



SPECIFICATION

Shenzhen DreamLNK Technology Co., Ltd. 深圳市骏晔科技有限公司

Blade Shape Full Band 5G Antenna

Product Specification

Client Name		Frequency Band	400Mhz-6000Mhz
Product Name	5G Antenna	Version	V1.0
Customer's Part Number		DreamLNK's Part Number	DL-J023-5GB
RF Designer	Jason Wang	RF Manager	Knight Ai
Structural Designer		Structural Design Manager	
Technical Director	Fagan Xu	Date	2023-11-15

Approved By:

Whether the product meets your requirements? ☐ Yes ☐ No

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1. Product Introduction

This full bands blade shape 5G antenna is an external omnidirectional antenna, which can be mainly used for wireless router, or IoT gateway solutions. It is compatible with full band network equipment, such as LET/DUT/4G/5G/GSM/GPRS/NB IoT, with a frequency range from 400MHz to 6000MHz.

Its waterproof ABS cover is made of high-grade shielding material, which is eco-friendly and durable; and its pure copper gold-plated SMA connectors are resistant to oxidation with stable transmission; while the inside part of the antenna is a precision circuit board, which has higher gain, better transmission efficiency, and stronger anti-interference ability.

With all these above features, it can transmit/receive stable & strong signal, with high receiving sensitivity, strong wireless penetration ability, and wider coverage. It can be widely used for Smart Home, Power Monitoring, Network Communication, Vehicle Navigation, Rail Transit, Smart Traffic, Smart Power, Smart Vending Machines, Meteorological Monitoring, etc.

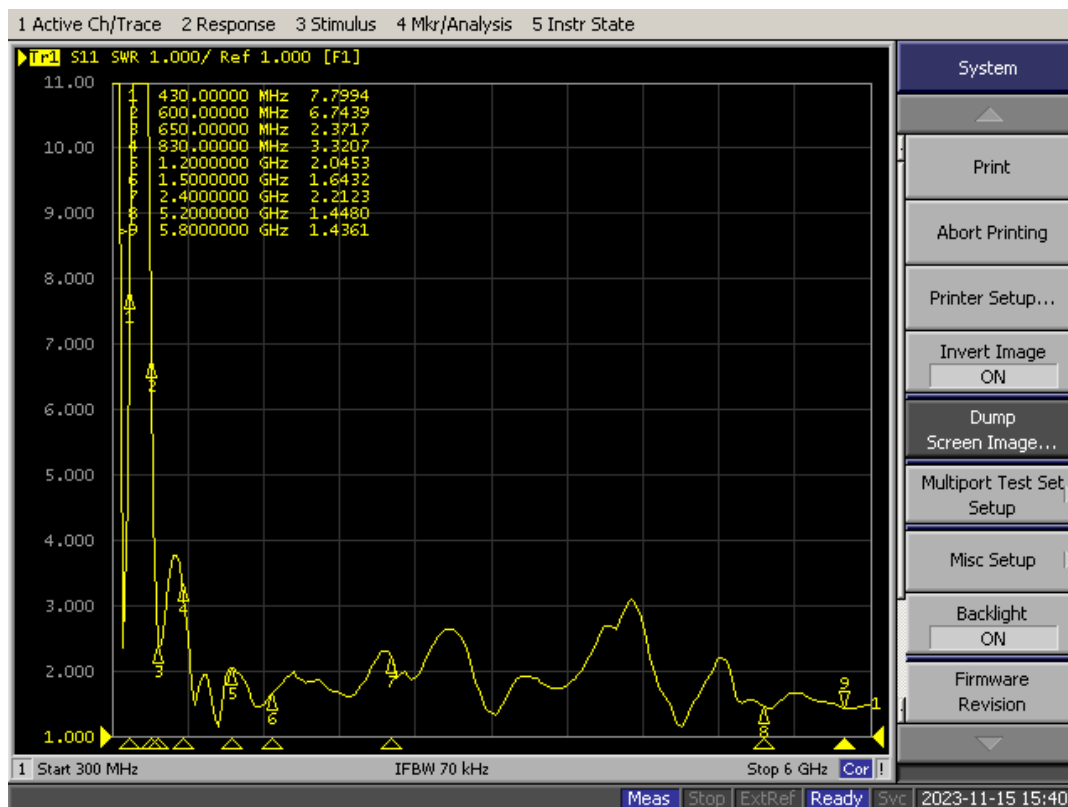
2. Parameters

Test Parameters			
Product Name	5G Blade Antenna	Model No	DL-J023-5GB
Electrical Specifications			
Frequency Range	400-6000MHZ	Polarization	Linear, Vertical
Input Impedance	50 Ω	Radiation direction	Omni-directional
VSWR	≤ 2.0	Power Capacity	5W
Gain	5dBi (no-load gain)	Continuity Test	Path testing
Mechanical Specifications			
Dimensions	220*27.4*13.8mm	Color	Black
Connector Type	SMA-J (as picture shown)	Storage Temperature	-40℃ ~ 70℃
Shell Material	ABS	Working Temperature	-35℃ ~ 75℃

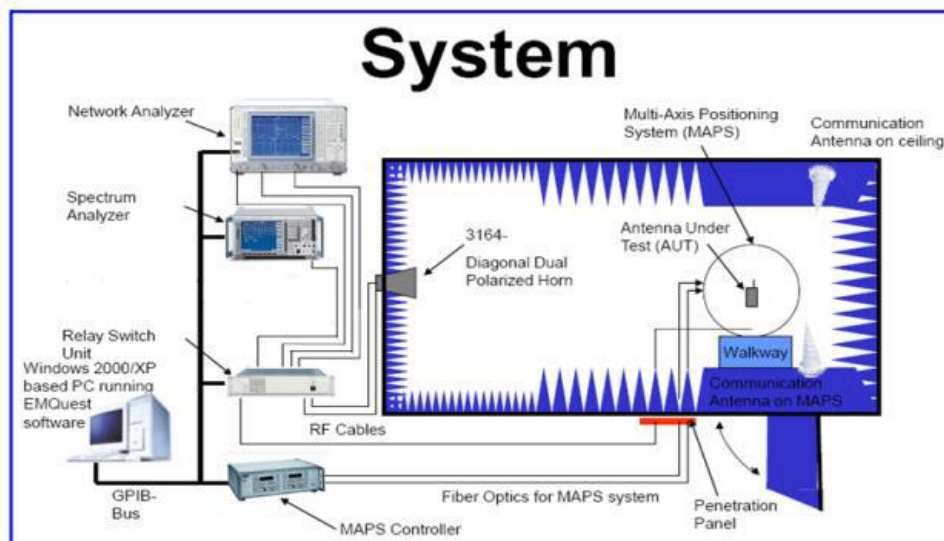
3. Product Photo



4. S11 Data (Test Report)



Testing Principle:



Testing Equipment:

Network Analyzers: Agilent 8753D 5071B

Communications Test Set: Agilent E5515C

3D Chamber Test System

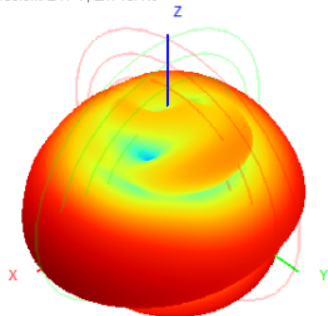
Antenna Efficiency & Gain

Frequency (MHz)	Efficiency (%)	Peak GAIN (dBi)
430	13.38	-4.11
600	15.67	-5.61
650	49.64	0.62
830	42.67	2.21
960	41.85	2.4
1700	60.97	1.45
2700	47.21	0.40
3300	56.92	2.90
3800	48.61	2.29
4400	22.40	-0.58
5000	51.45	4.41

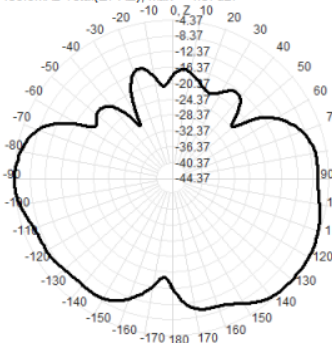
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2D&3D Radiation Pattern

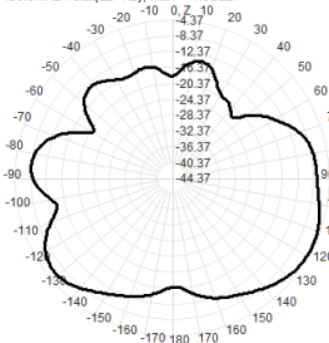
430.0MHz H+V, Eff: 13.4%



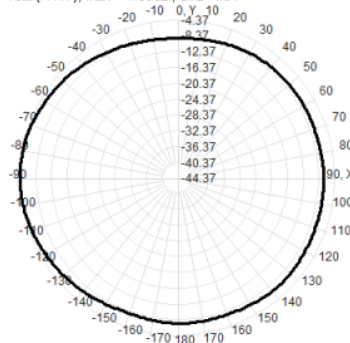
430.0MHz Total(E1-XZ), Max=-4.37dBi



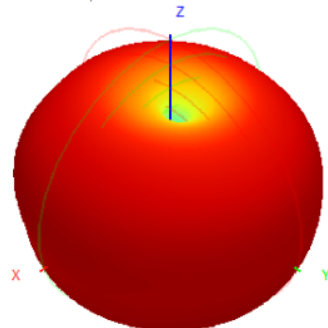
430.0MHz Total(E2-YZ), Max=-4.92dBi



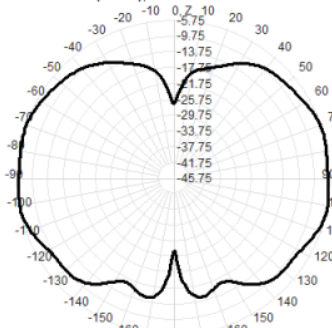
Total(H+V), Max=-4.38dBi, CirD=4.64



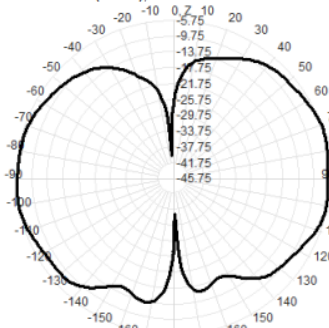
600.0MHz H+V, Eff: 15.7%



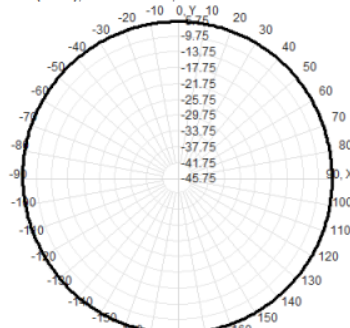
600.0MHz Total(E1-XZ), Max=-5.98dBi



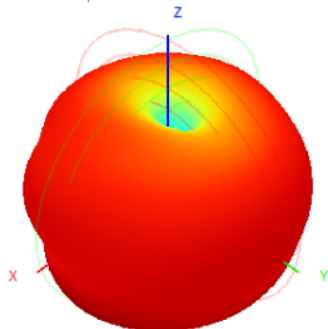
600.0MHz Total(E2-YZ), Max=-5.75dBi



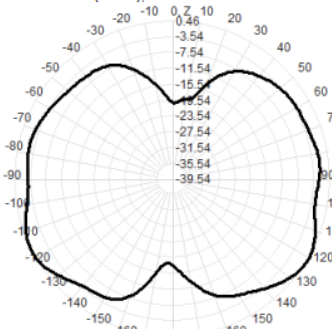
Total(H+V), Max=-6.13dBi, CirD=0.48



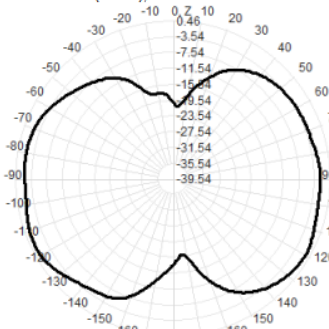
650.0MHz H+V, Eff: 49.6%



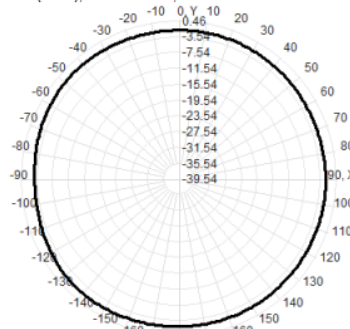
650.0MHz Total(E1-XZ), Max=0.46dBi



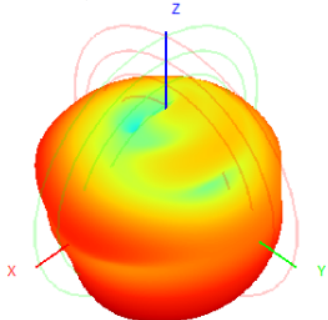
650.0MHz Total(E2-YZ), Max=-0.70dBi



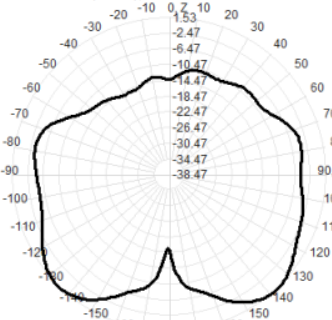
Total(H+V), Max=-1.78dBi, CirD=1.22



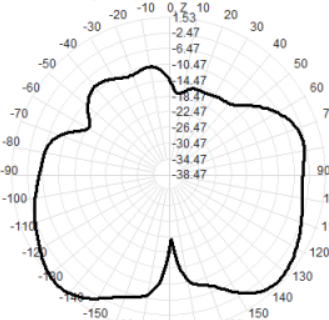
830.0MHz H+V, Eff: 42.7%



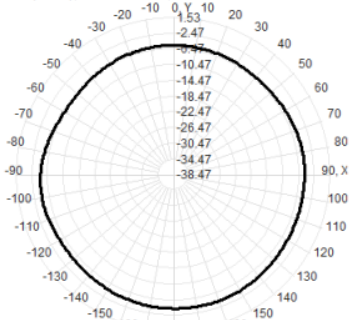
830.0MHz Total(E1-XZ), Max=1.53dBi



830.0MHz Total(E2-YZ), Max=1.35dBi

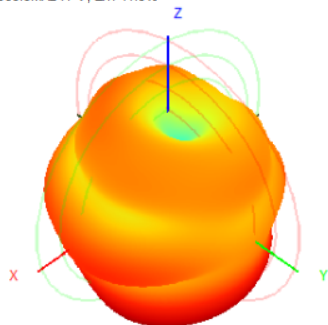


Total(H+V), Max=-4.38dBi, CirD=2.34

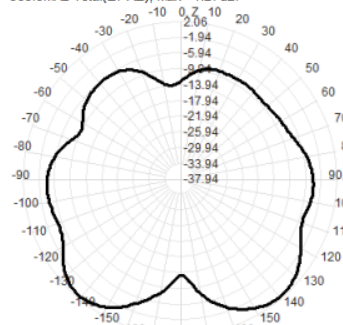


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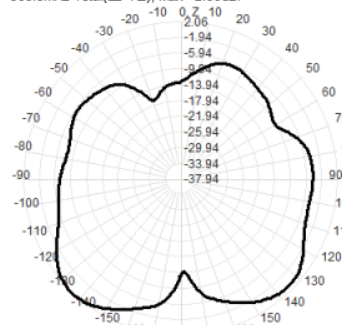
960.0MHz H+V, Eff: 41.9%



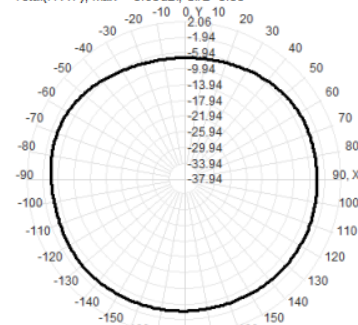
960.0MHz Total(E1-XZ), Max= 1.27dBi



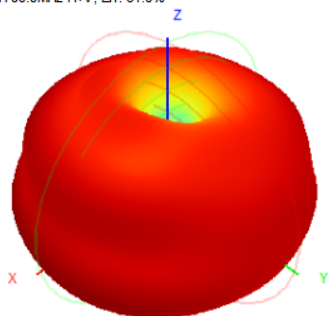
960.0MHz Total(E2-YZ), Max= 2.06dBi



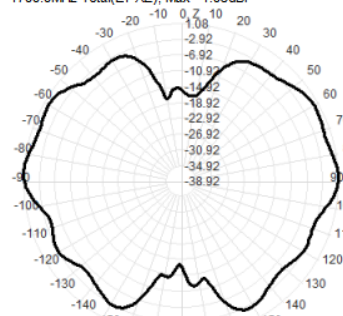
Total(H-XY), Max= -3.63dBi, CirD=3.55



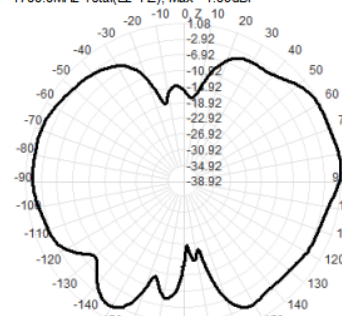
1700.0MHz H+V, Eff: 61.0%



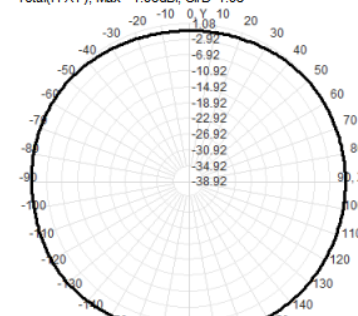
1700.0MHz Total(E1-XZ), Max= 1.03dBi



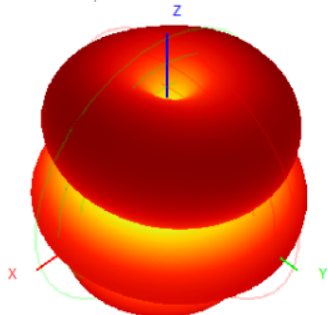
1700.0MHz Total(E2-YZ), Max= 1.08dBi



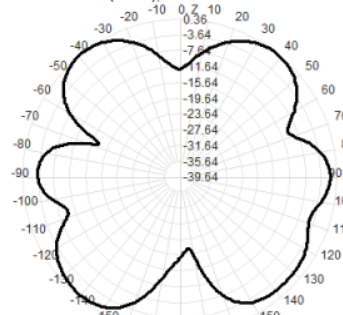
Total(H-XY), Max= 1.06dBi, CirD=1.85



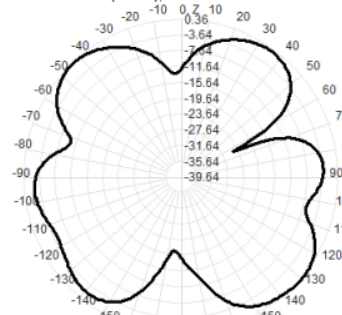
2700.0MHz H+V, Eff: 47.2%



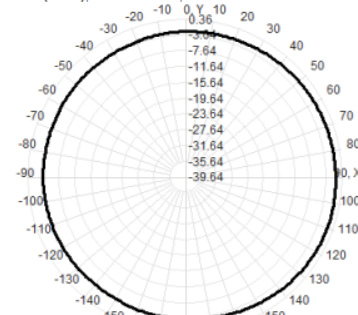
2700.0MHz Total(E1-XZ), Max= 0.34dBi



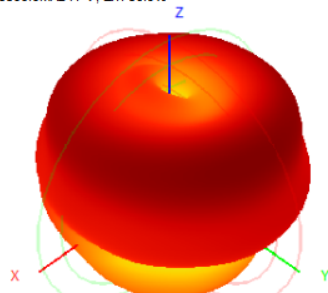
2700.0MHz Total(E2-YZ), Max= 0.36dBi



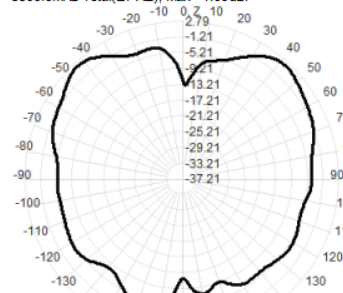
Total(H-XY), Max= -1.37dBi, CirD=2.85



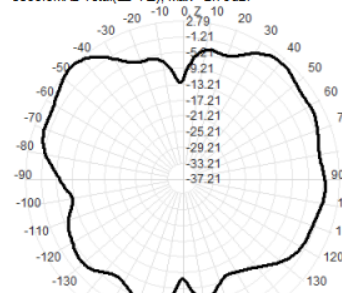
3300.0MHz H+V, Eff: 56.9%



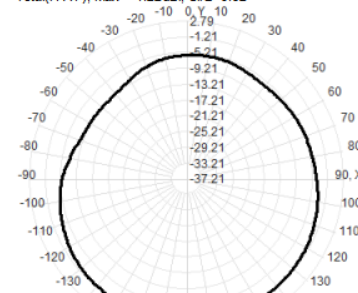
3300.0MHz Total(E1-XZ), Max= 1.69dBi



3300.0MHz Total(E2-YZ), Max= 2.79dBi

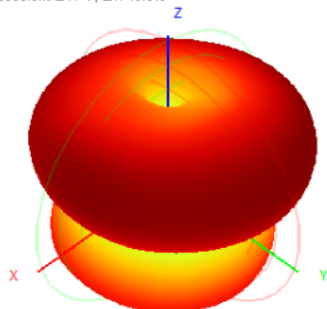


Total(H-XY), Max= -1.22dBi, CirD=8.02

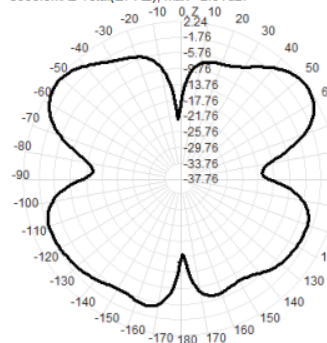


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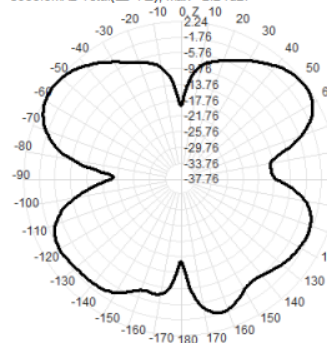
3800.0MHz H+V, Eff: 48.6%



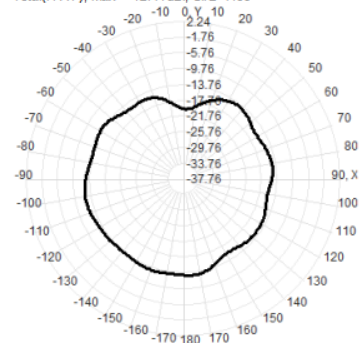
3800.0MHz Total(E1-XZ), Max= 2.01dBi



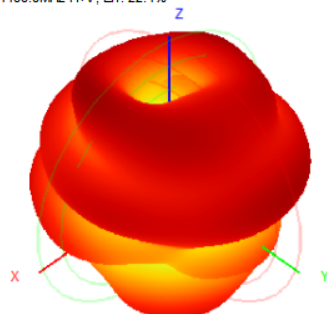
3800.0MHz Total(E2-YZ), Max= 2.24dBi



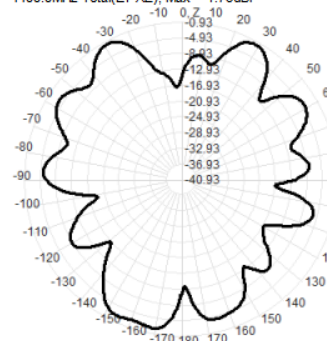
Total(H-XY), Max= -12.41dBi, CirD=7.60



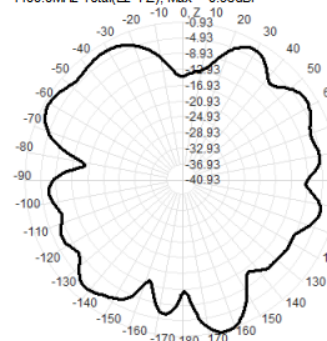
4400.0MHz H+V, Eff: 22.4%



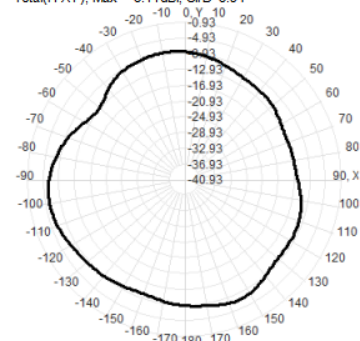
4400.0MHz Total(E1-XZ), Max= -1.76dBi



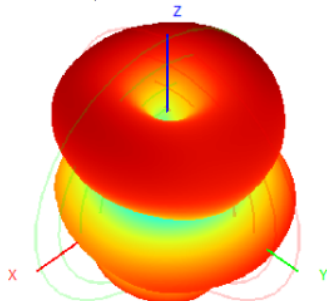
4400.0MHz Total(E2-YZ), Max= -0.93dBi



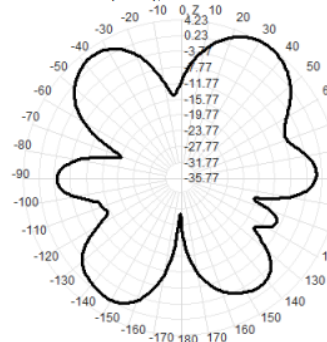
Total(H-XY), Max= -6.11dBi, CirD=6.94



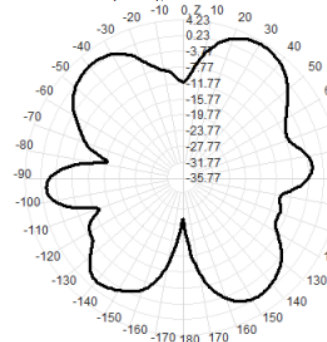
5000.0MHz H+V, Eff: 51.5%



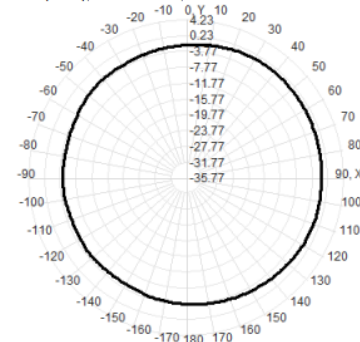
5000.0MHz Total(E1-XZ), Max= 4.23dBi



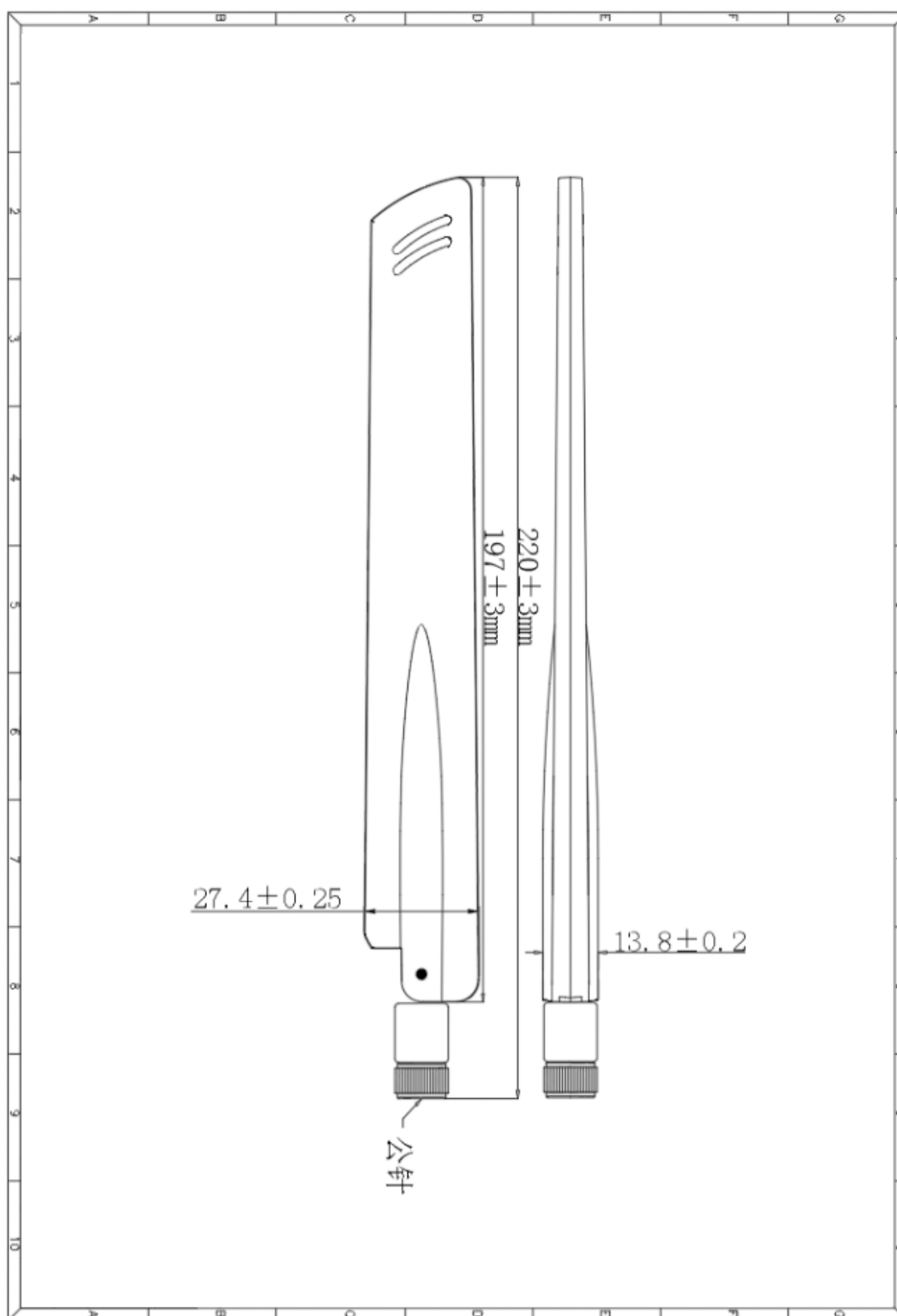
5000.0MHz Total(E2-YZ), Max= 3.40dBi



Total(H-XY), Max= -0.94dBi, CirD=4.03



5. Structure diagram



Structure diagram

6. Environmental reliability experiment report

Item	Test condition	Specification
Storage environment	Tested temperature, humidity and air pressure as following without specifying: 1. The temperature is $-30\text{ }^{\circ}\text{C} \sim +80\text{ }^{\circ}\text{C}$ 2. Relative humidity is 45% -85% 3. The air pressure is 86kpa-106kpa	The electrical mechanical performance is normal
High and low temperature test	Perform 5 cycles between $70\text{ }^{\circ}\text{C}$ and $40\text{ }^{\circ}\text{C}$, then check the appearance quality, under normal conditions 1-2H	The size should meet the requirements for mechanical and electrical performance
Resistant to constant heat and humidity	Test Relative humidity: $95 \pm 3\%$, Test temperature: $40\text{ }^{\circ}\text{C}$. After continuous 2H running, take out the sample, and measure its electrical properties within 5 minutes, put the sample in a normal condition for another 1-2H, check the appearance quality	The size should meet the standard, and meet for mechanical and electrical performance
Vibration test	Vibration frequency range 10-55HZ, displacement amplitude: 0.35MM, acceleration amplitude: 50.0M / S, frequency of sweeping cycle: 30 times	Normal electrical and mechanical performance
Drop test	1M high-altitude free fall 3 times, in the direction of mutually perpendicular axes	Normal electrical and mechanical performance

7. Contact us

Shenzhen DreamLnk Technology Co., Ltd

★ Data collection, Smart home, Internet of Things applications, Wireless remote-control technology, Remote active RFID, Antennas ★

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Factory Add.: Huazhi Innovation Valley, No. 7 Yuhua Street, 138 Industrial Zone, Tangxia Town, Dongguan, Guangdong Province, China