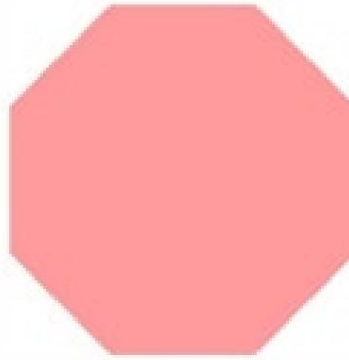


10G octagonal antenna

Specification V1.0



APPROVAL

L G K

2024/03/15



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Manufacturer: Shenzhen Qianhai Homerun Smart Technology Co., Ltd.
Address: Room 201, Building A, No.1 Qianwan 1st Road, Qianhai Shenzhen-
Hong Kong Cooperation Zone, Shenzhen, Guangdong Province, China



1 Technical specifications

project	Specification
Frequency bandwidth	10.3GHz~11GHz
Return loss	-11dB
peak gain	4.8dBi
impedance	50Ω

2 Electrical specifications

S11

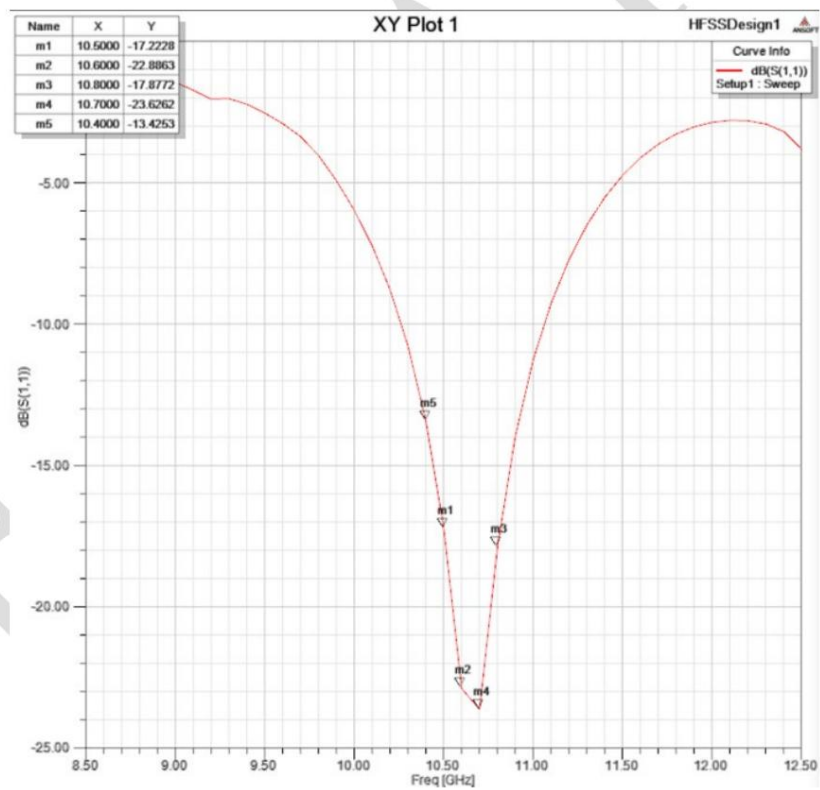


Figure 1 S11 simulation diagram



Model: 10G Octagonal Antenna

3D Gain

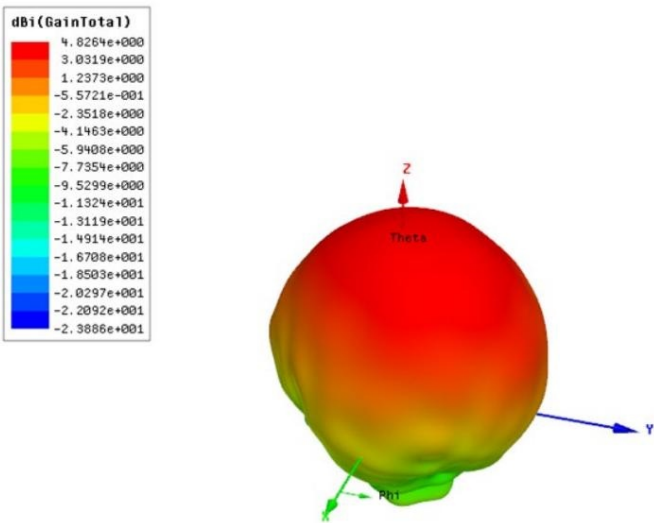


Figure 2 3D Gain simulation diagram

2D Gain
YZ plane

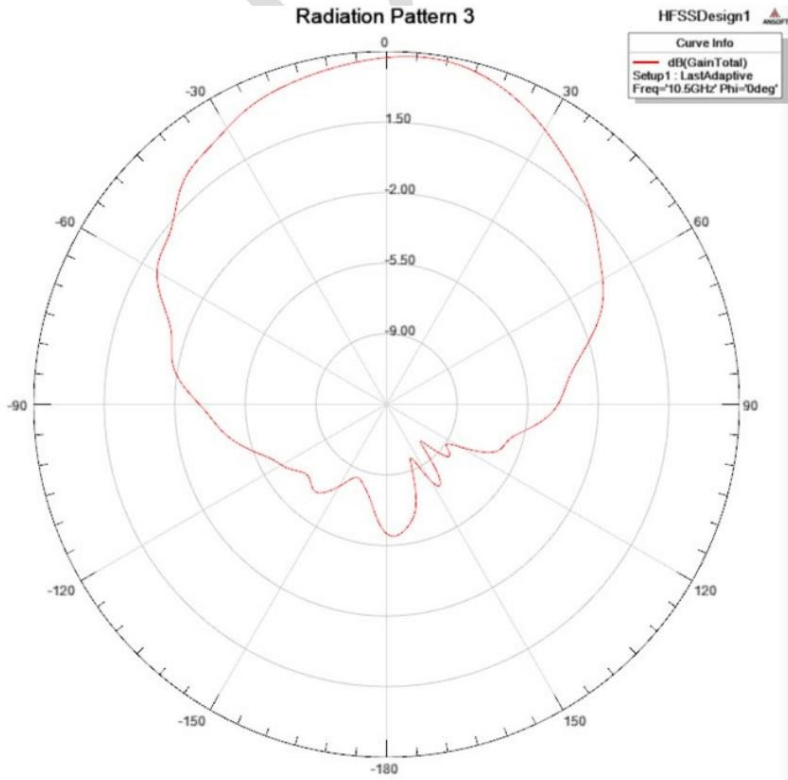


Figure 3 YZ plane Gain simulation diagram

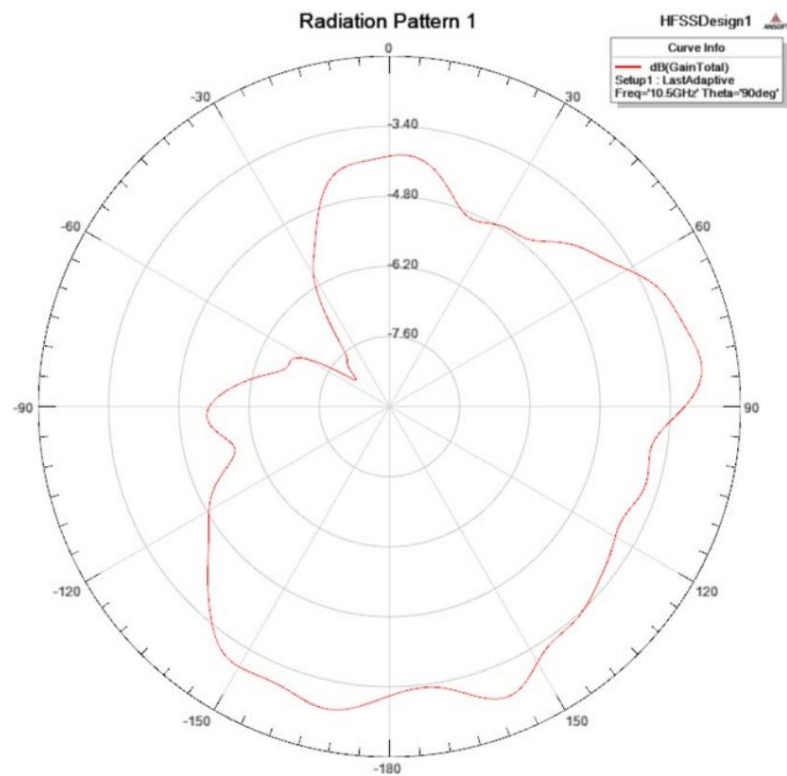


Figure 4 XY plane Gain simulation diagram

3 size design

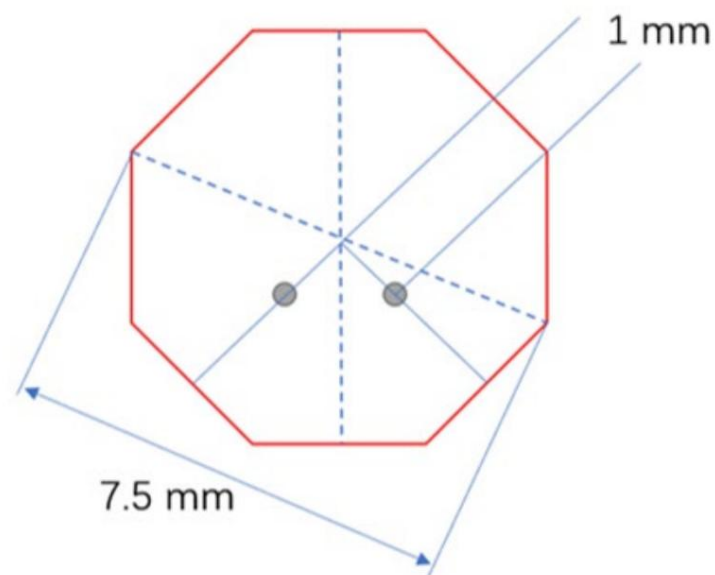


Figure 5 Antenna size diagram



4 Reference Design

1. The highlighted components in Figure 6 are impedance matching components with 0402 package specifications and require the use of high-precision components. Figure 7 Highlighted Line

The circuit is a feeder and needs to be designed according to 50 Ω .

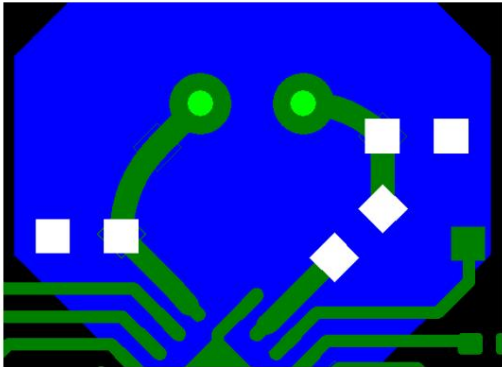


Figure 6

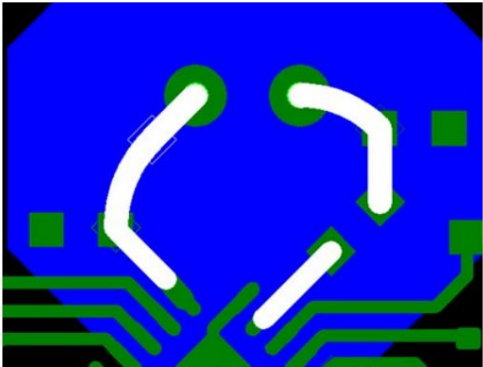


Figure 7

2. The reference plate structure is shown in Figure 8.

板子层数: 4 板子厚度: 1.2mm 内层铜厚: 0.5oz 外层铜厚: 1oz

JLC04121H-7628 (通用推荐) JLC04121H-1080 JLC04121H-3313

编号	层别	叠层	各介质厚度	
JLC04121H-7628 (通用推荐)	顶层线路		0.0350mm	
	压合PP (Prepreg)	7628*1	0.2104mm	
	中间线路1		0.0152mm	0.7mm H/HOZ 不含铜
	芯板	core	0.7000mm	
	中间线路2		0.0152mm	
	压合PP (Prepreg)	7628*1	0.2104mm	
	底层线路		0.0350mm	

Figure 8 Reference plate lamination

When drawing the antenna on the top layer, the middle line 1 needs to be hollowed out, the middle line 2 is used as the reference ground plane, and the transmission line is located on the bottom layer.



Model: 10G octagonal antenna

5 historical versions

Version	creation date	overview	Editor
V1.0	2024-3-14	First edition	Wanshun

EARDATEK