

Antenna

YCGA005AA Datasheet

Antenna Services

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About the Document

Revision History

Version	Date	Author	Note
-	2020-08-31	Kenny YIN/ Xiaodong YANG	Creation of the document
1.0	2020-08-31	Kenny YIN/ Xiaodong YANG	First official release
1.1	2021-09-14	Junsen LI	<ol style="list-style-type: none">1. Updated the information of the product features (Chapter 2).2. Updated the picture (Chapter 5.4).

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1 Product Description

The antenna is designed for superior performance, and can be widely used for wireless applications.

We provide comprehensive antenna design support such as simulation, testing and manufacturing for custom antenna solutions to meet your specific application needs.

2 Product Features

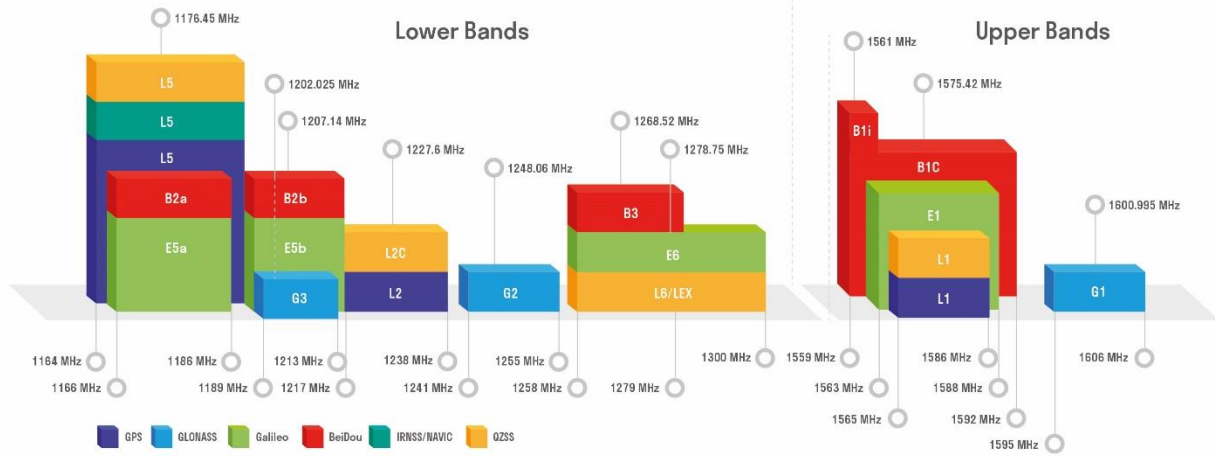
- Ceramic GPS L1; GLONASS G1
- High efficiency
- Excellent performance



3 GNSS Frequency Band Checklist

GNSS Frequency Bands (MHz)					
GPS	L1 Centre 1575.42 (1565–1586)	L2 Centre 1227.6 (1217–1238)	L5 Centre 1176.45 (1164–1189)		
	●	-	-		
GLONASS	G1/L10C/L10F Centre 1601 (1595–1606)	G2/L20C/L20F Centre 1248.06 (1241–1255)	G3/L30C Centre 1202.025 (1189–1213)		
	●	-	-		
GALILEO	E1 Centre 1575.42 (1563–1588)	E5a Centre 1176.45 (1166–1187)	E5b Centre 1207.14 (1197–1218)	E6 Centre 1278.75 (1258–1300)	
	●	-	-	-	
BEIDOU	B1I Centre 1561.098 (1559–1564)	B1C (BeiDou-3) Centre 1575.42 (1559–1592)	B2a/B2I Centre 1176.45 (1166–1187)	B2b Centre 1207.14 (1197–1217)	B3 Centre 1268.52 (1258–1279)
	-	●	-	-	-
QZSS	L1 Centre 1575.42 (1573–1578)	L2C Centre 1227.6 (1226–1229)	L5 Centre 1176.45 (1166–1187)	L6 Centre 1278.75 (1257–1300)	
	●	-	-	-	
IRNSS	L5 Centre 1176.45 (1164–1189)				
	-				

GNSS Bands and Constellations



4 Product Specifications

- The antenna is tested on a 25 mm × 25 mm PCB.

Passive Electrical Specifications

Frequency Range	1575.42 ±3 MHz, 1602 ±3 MHz
Input Impedence	50 Ω
VSWR	≤ 3.5
Gain	≤ 2.0 dBi
Polarization Type	RHCP

Mechanical Specifications

Antenna Size	25 mm × 25 mm × 4 mm
Casing	Ceramics
Working Temperature	-40 °C to +85 °C

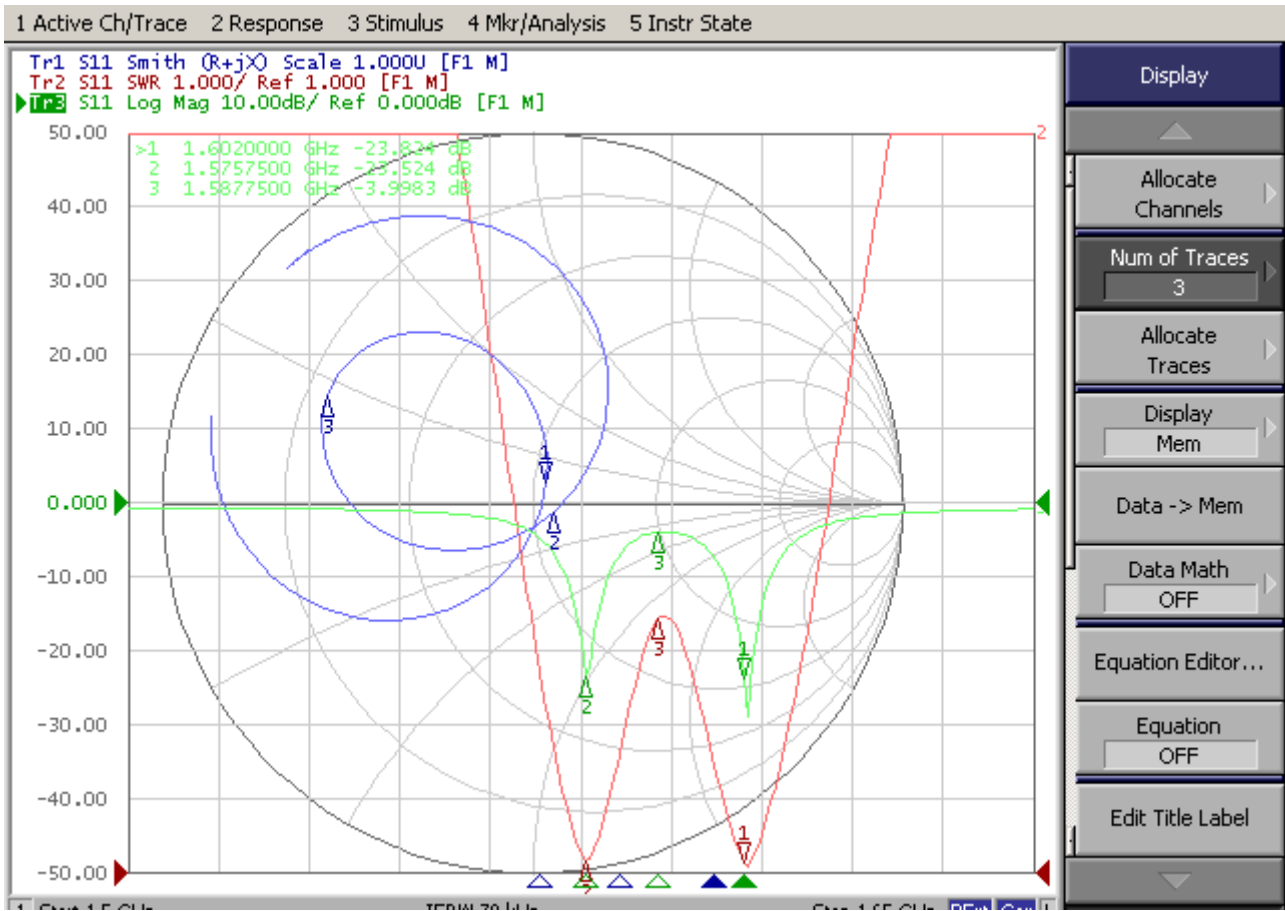
5 Overall Performance

5.1. Test Environment

- KEYSIGHT VNA Network Analyzer E5063A 100 kHz – 8.5 GHz
- RayZone® 2800 Chamber 5G (FR1) SISO/MIMO, 400 MHz – 8.0 GHz

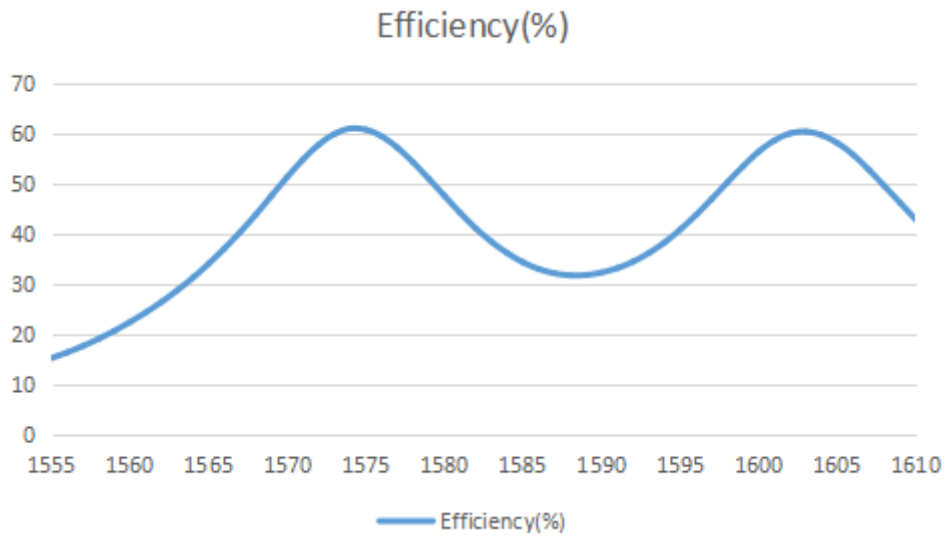


5.2. VSWR



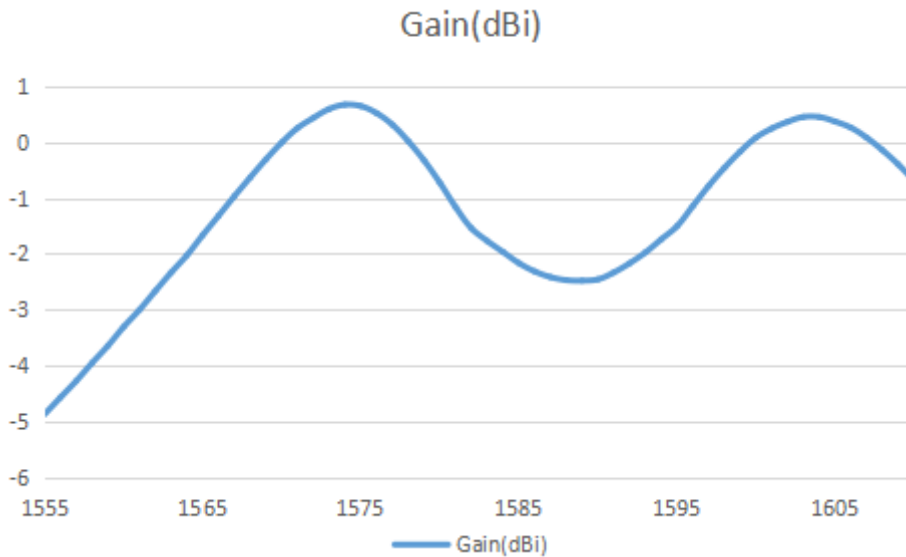
Frequency (MHz)	1575	1602
RL	-23.52	-23.82
VSWR	1.1	1.1

5.3. Efficiency



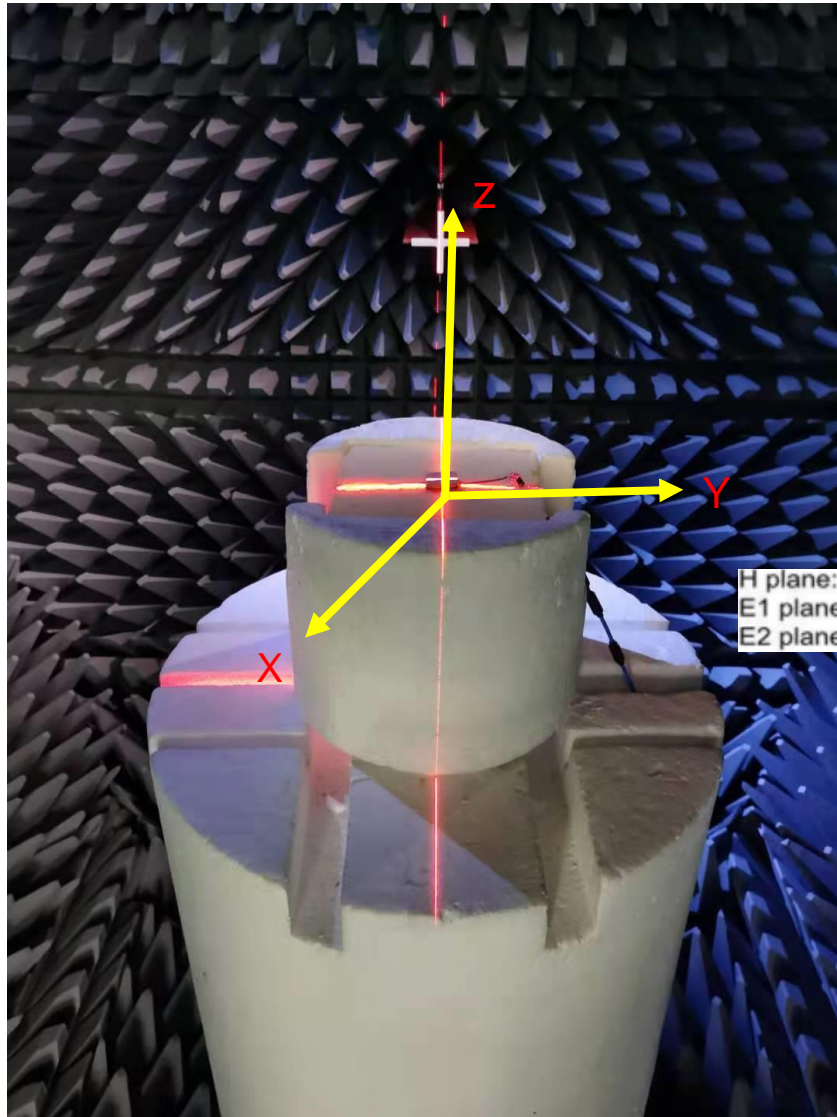
Frequency (MHz)	1575	1602
Efficiency (%)	60.87	60.11

5.4. Gain



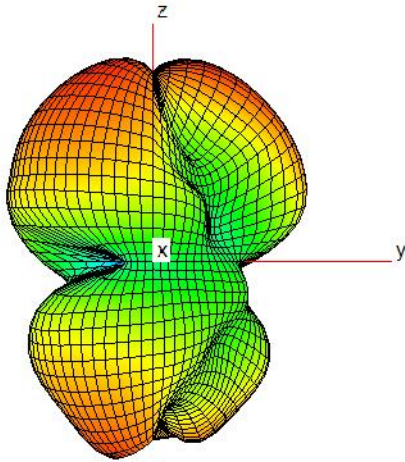
Frequency (MHz)	1575	1602
Gain (dBi)	0.64	0.36

5.5. Radiation Pattern

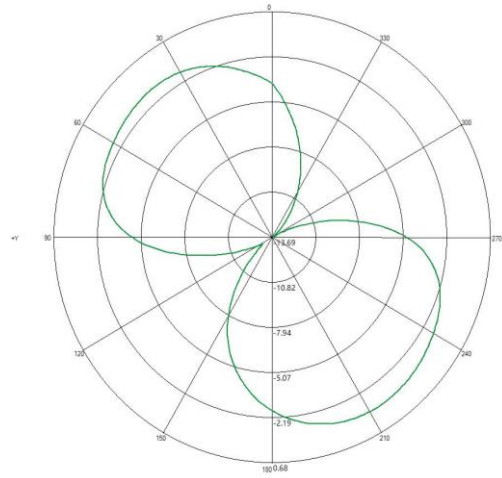


H plane: the tangent of XY
E1 plane: the tangent of XZ
E2 plane: the tangent of YZ

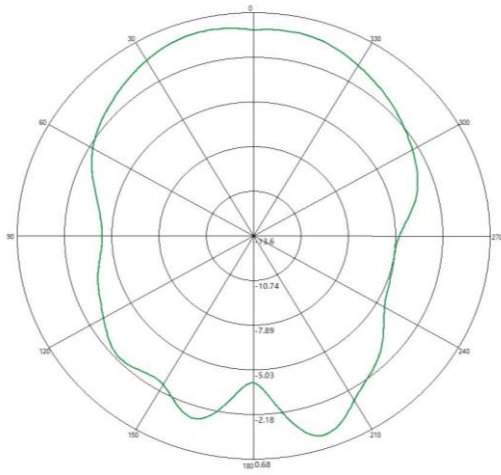
5.5.1. 1575 MHz



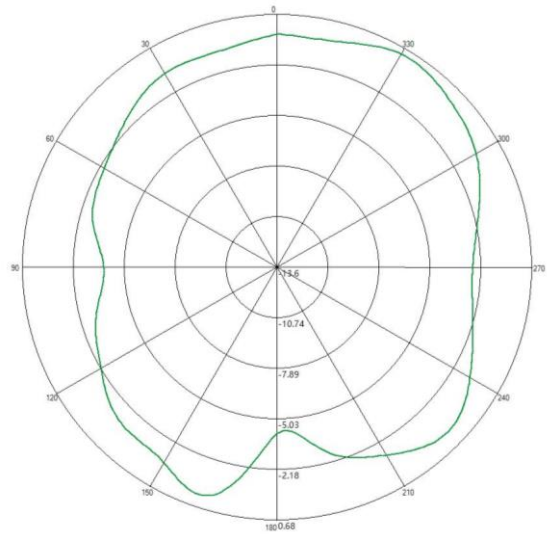
H



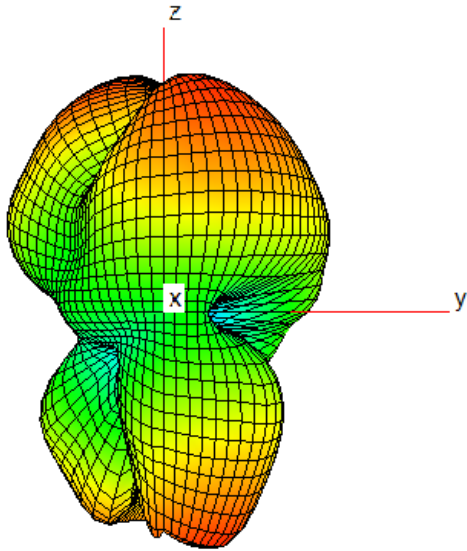
E1



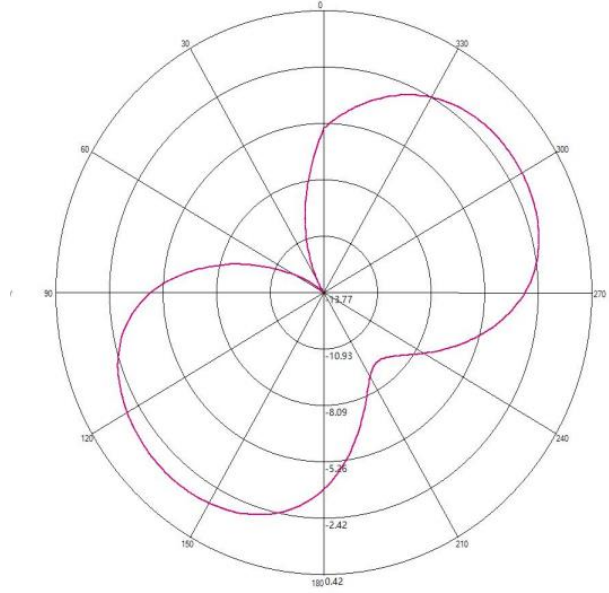
E2



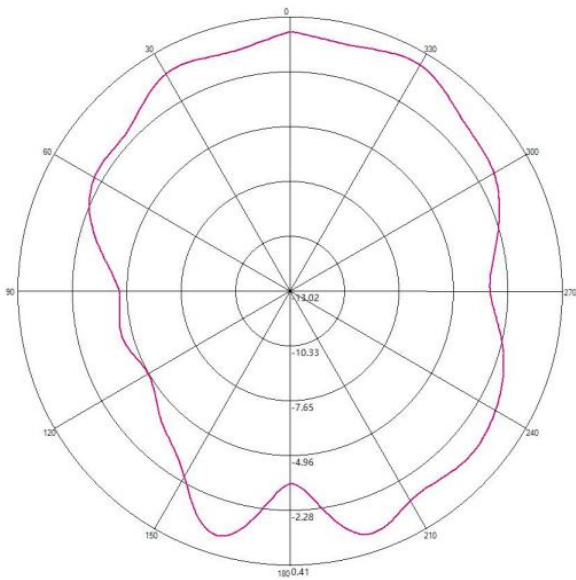
5.5.2. 1602 MHz



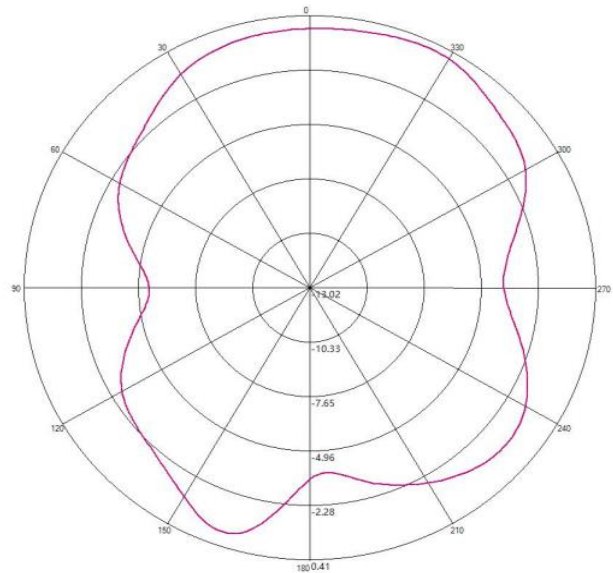
H



E1

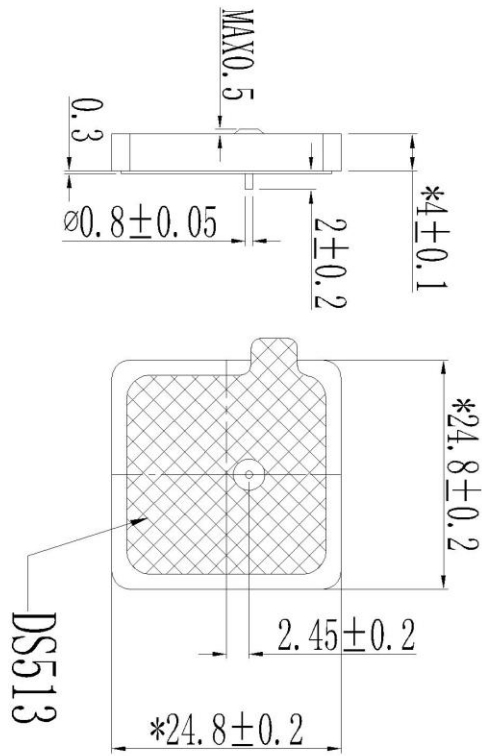
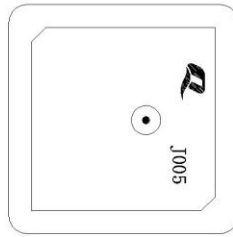


E2



6 Product Size

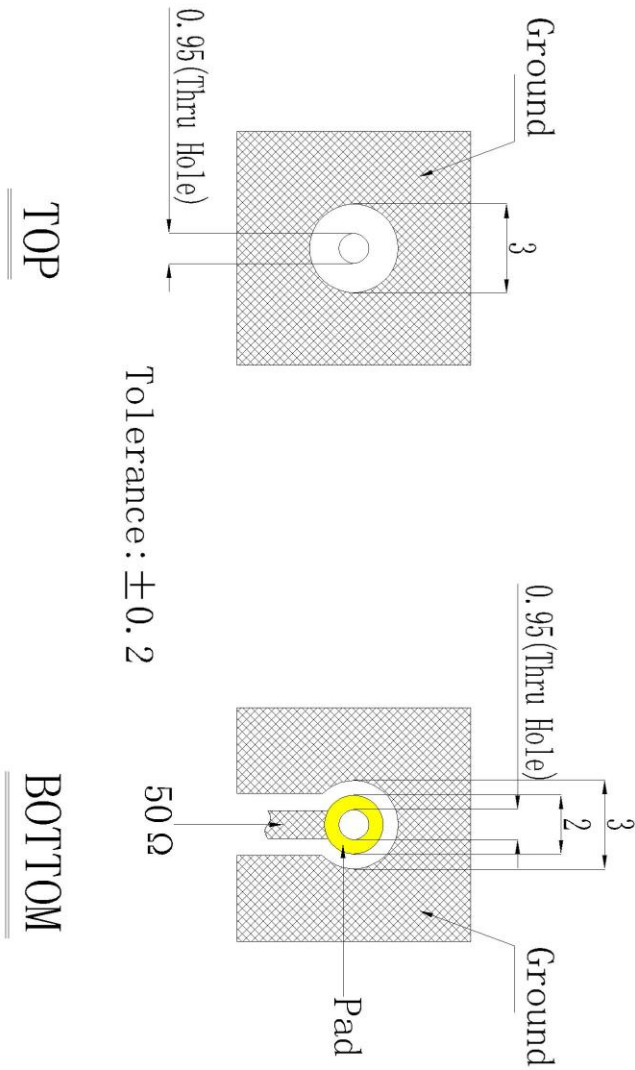
RoHS



Unit : mm

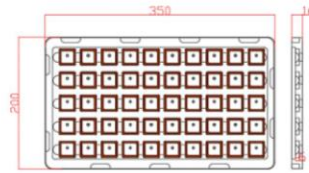
7 PCB Footprint Recommendation

RoHS

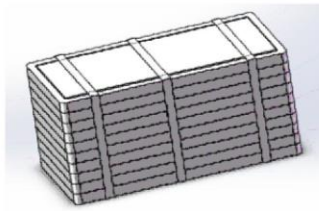


Unit: mm

8 Packaging

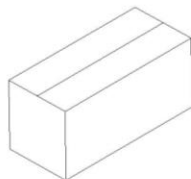


Tray:L*W=350X200mm
50pcs antenna per tray.

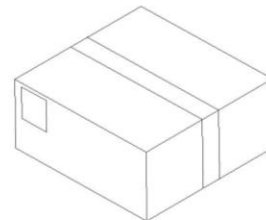
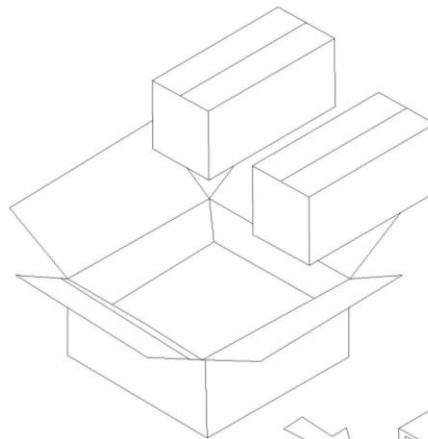


10 trays Bundled with strapping tape
before vacuumizing
10 trays per vacuum bag.
500pcs antenna per vacuum bag.

Vacuumizing



Inner Carton Box:L*W*H=355X205X125mm
500 in a box



CARTON BOX:L*W*H=425X365X145mm
1000 in a box