SPECIFICATION

Part No. : **SP.1615.25.4.A.02**

Product Name : Globalstar 25mm 1615Mhz
4dBi Embedded Ceramic Patch Antenna

Features : 25mm*25mm*4mm
Globalstar Approved
Pin Mount
4dBi Peak Gain
LHCP
RoHS Compliant



1. Introduction

This miniaturized 25mm square ceramic patch antenna is mounted via pin and double-sided adhesive and is the optimal embedded antenna solution for mobile Globalstar applications.

The antenna is tuned to a reference 60mm square ground-plane. With a peak gain of 4dBi, the antenna exhibits excellent upper hemisphere radiation pattern stability. Axial ratio is less than 3 on antenna operational angles, with a minimum axial ratio of 0.54 at zenith. The SP.1615.25.4.A.02 gain and directivity characteristics have been analyzed and approved by Globalstar.

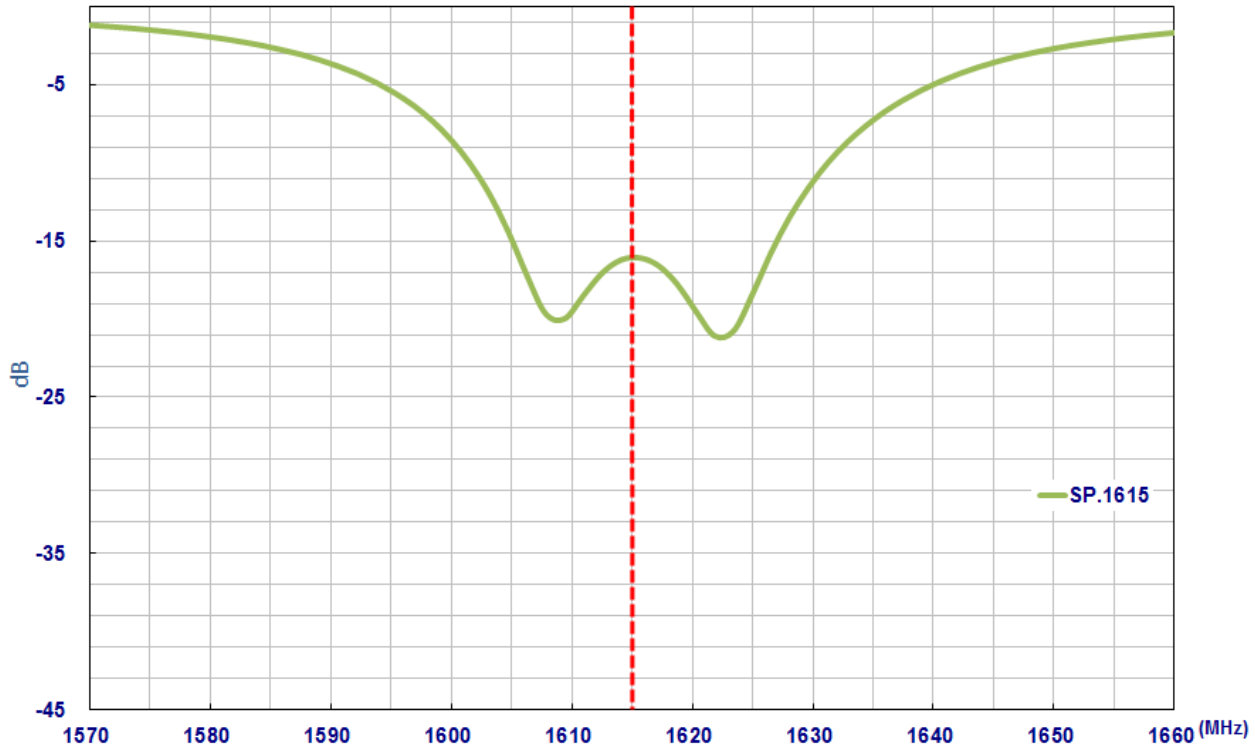
Different device ground-planes and housing environments may require a custom tuned antenna. Taoglas provides testing and support services to characterize this antenna in your device and determine whether a custom tuned solution is necessary. There is a minimum order quantity and possible NRE for a custom solution. Contact your regional Taoglas office for support.

2. Specification Table

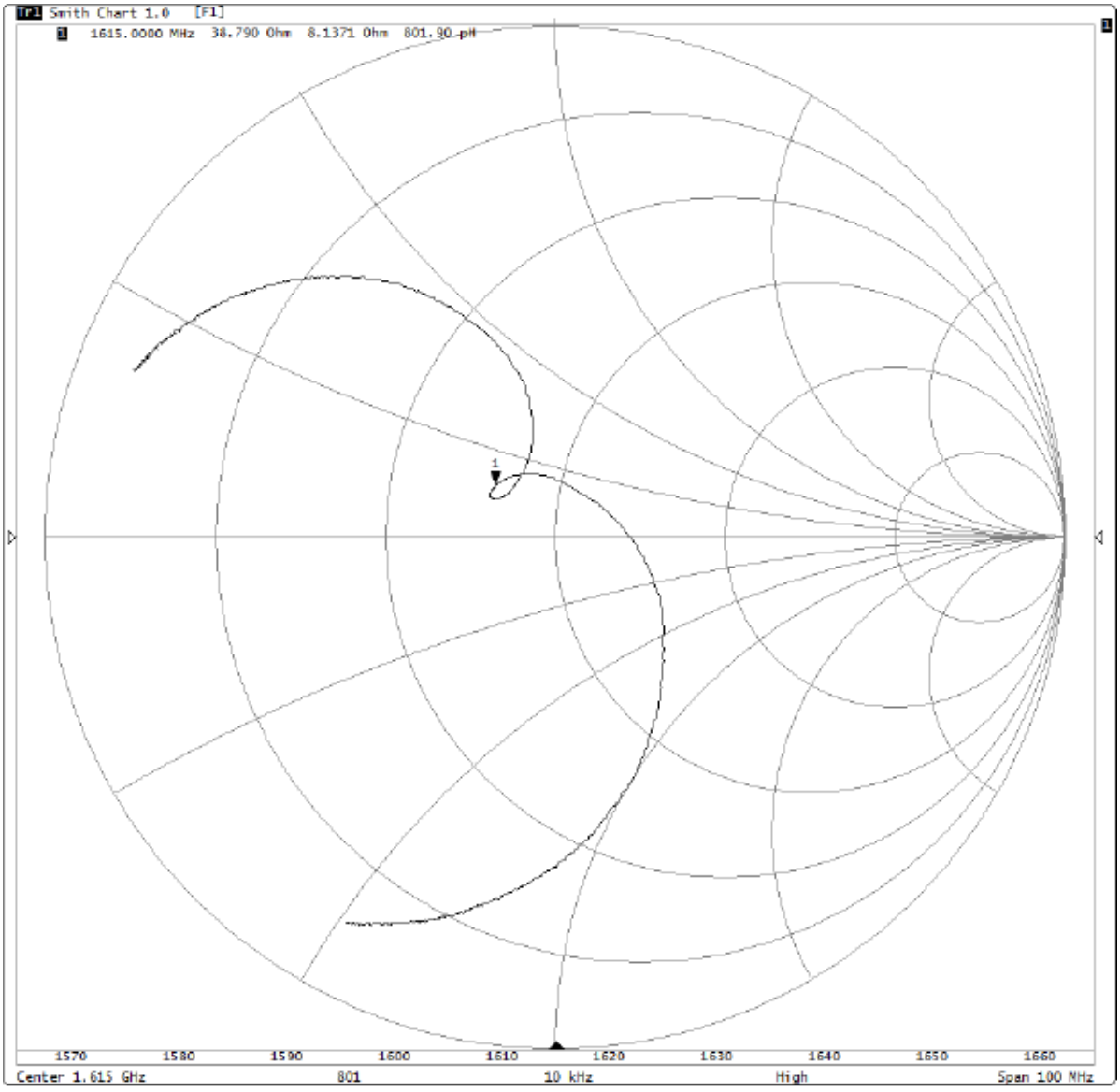
Parameter	Specification	**Notes**
Range Of Receiving Frequency	1615.68 ± 4.1 MHz	
Center Frequency	1615 MHz ± 3 MHz	With 60×60mm GND Plane
Bandwidth	26 MHz min	Return Loss@-10 dB
VSWR	1.5 max	Center Frequency
Gain at Zenith	4 dBi typ.	
Polarization	LHCP	Left Hand Circular Polarization
Axial Ratio	3 Max. @ Zenith	
Impedance	50 Ohm	
Weight	5g	
Frequency Temperature Coefficient（τf）	-40°C to +105°C	0± 20ppm / °C
Operating Temperature	-40°C to +105°C	

3. Electrical Specifications

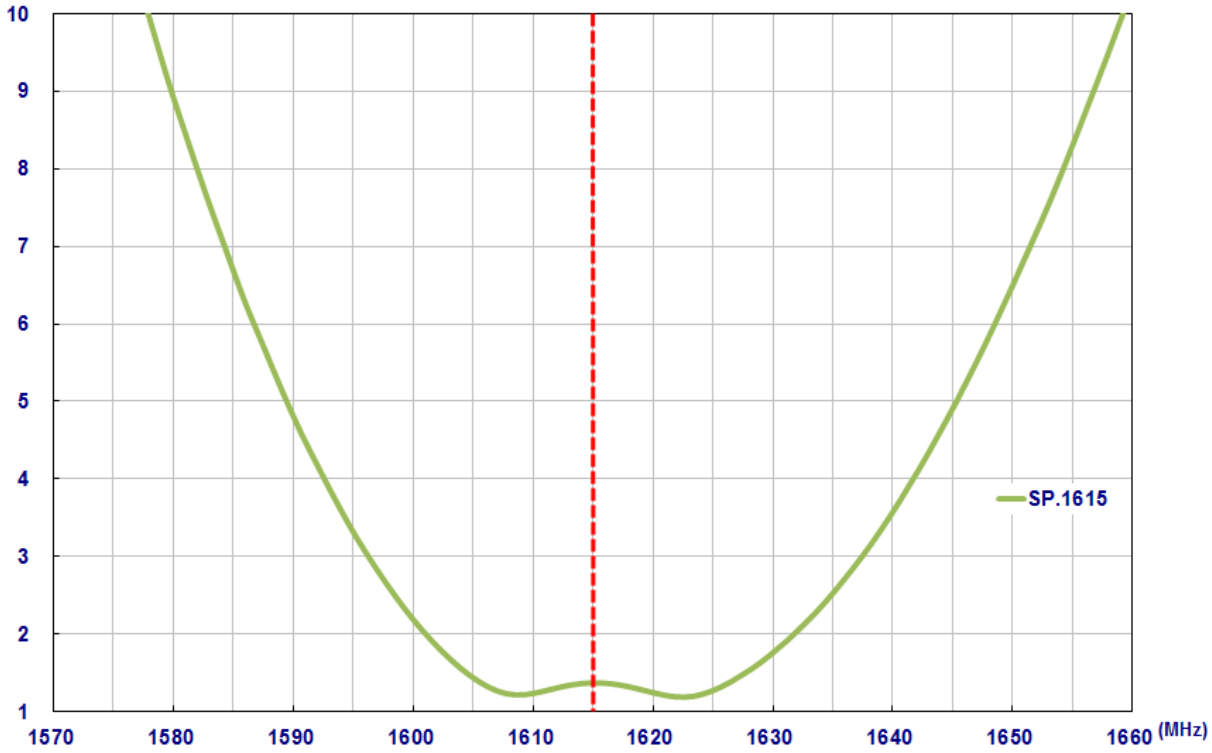
3.1 Return Loss



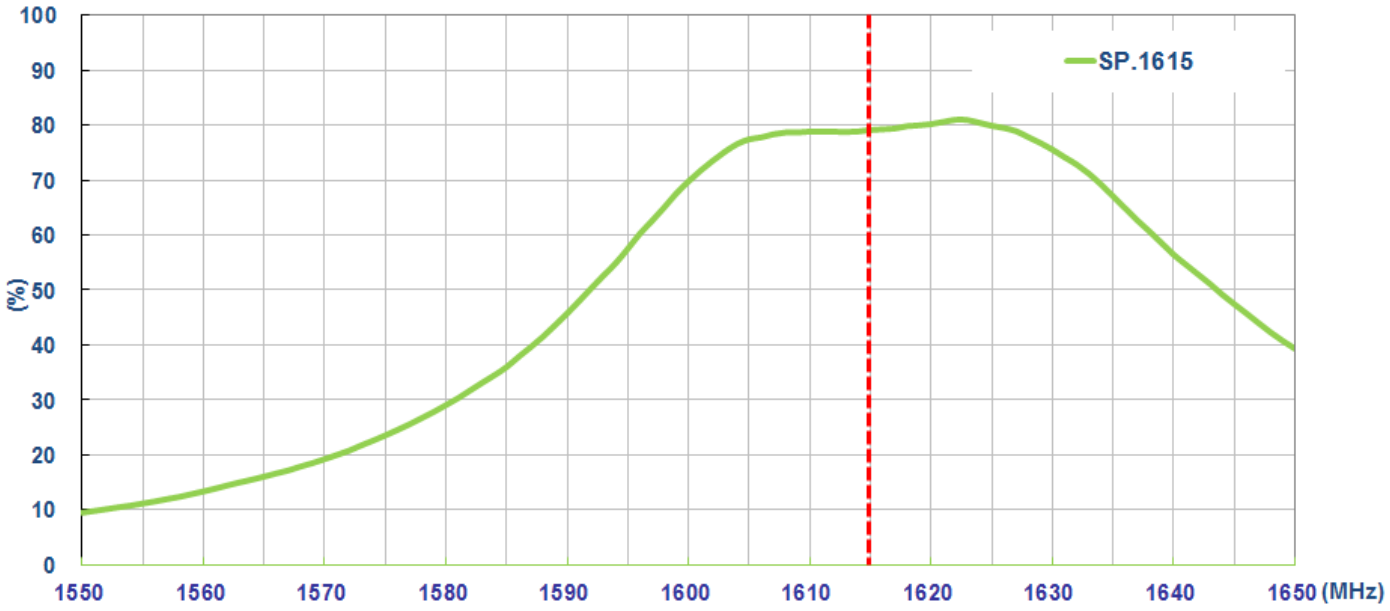
3.2 Smith Chart



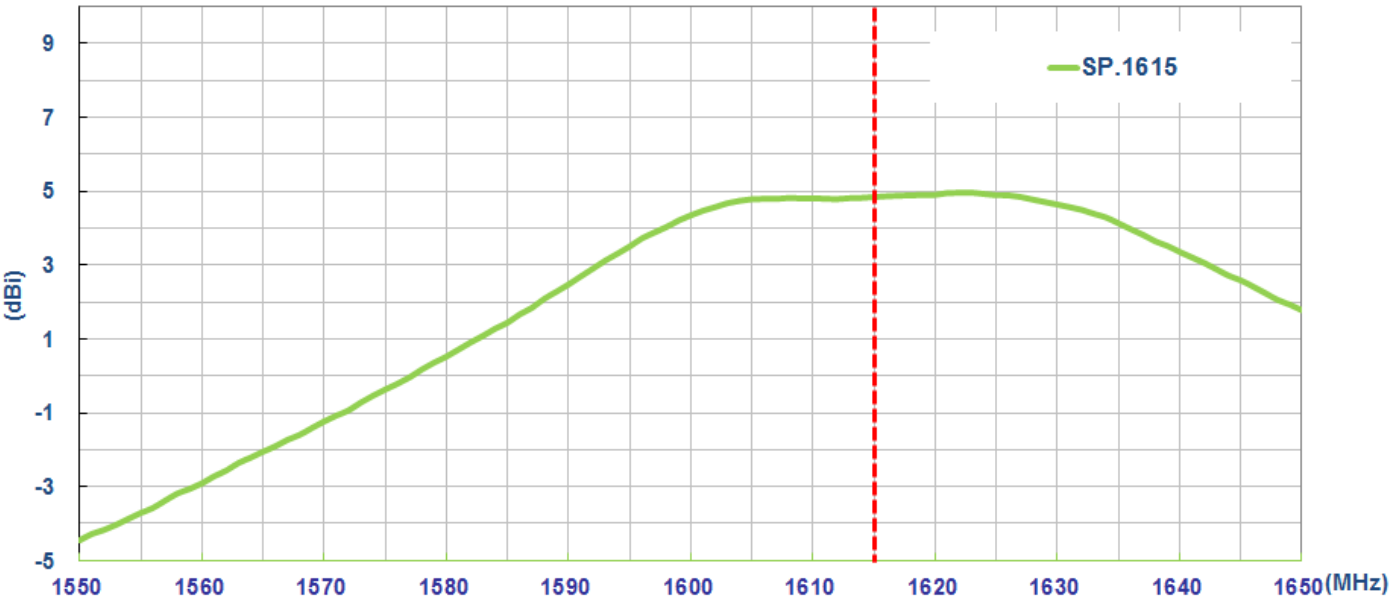
3.3 VSWR


10
9
8
7
6
5
4
3
2
1
1570
1580
1590
1600
1610
1620
1630
1640
1650
1660
(MHz)
SP.1615

3.4 Efficiency

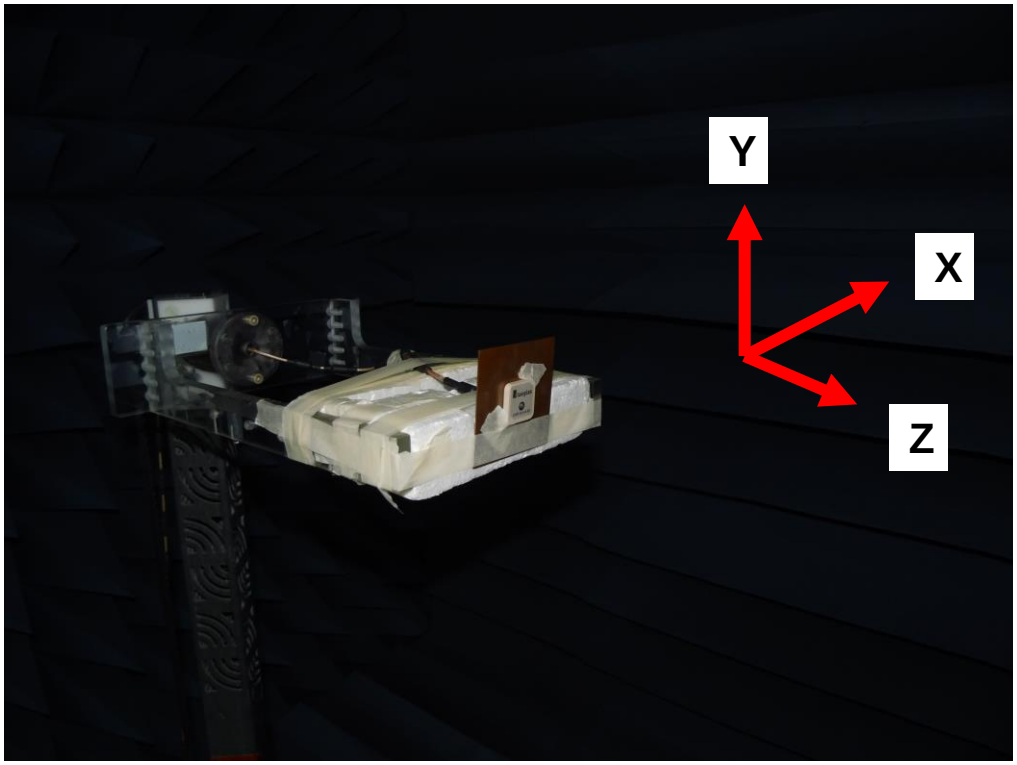


3.5 Peak Gain

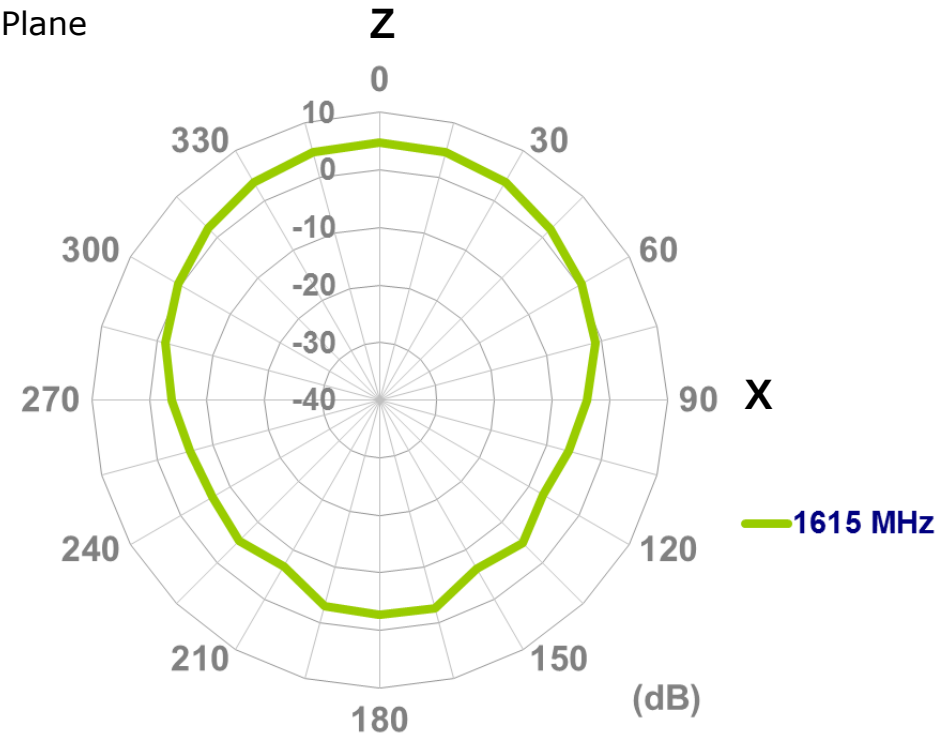


3.6 Radiation Pattern

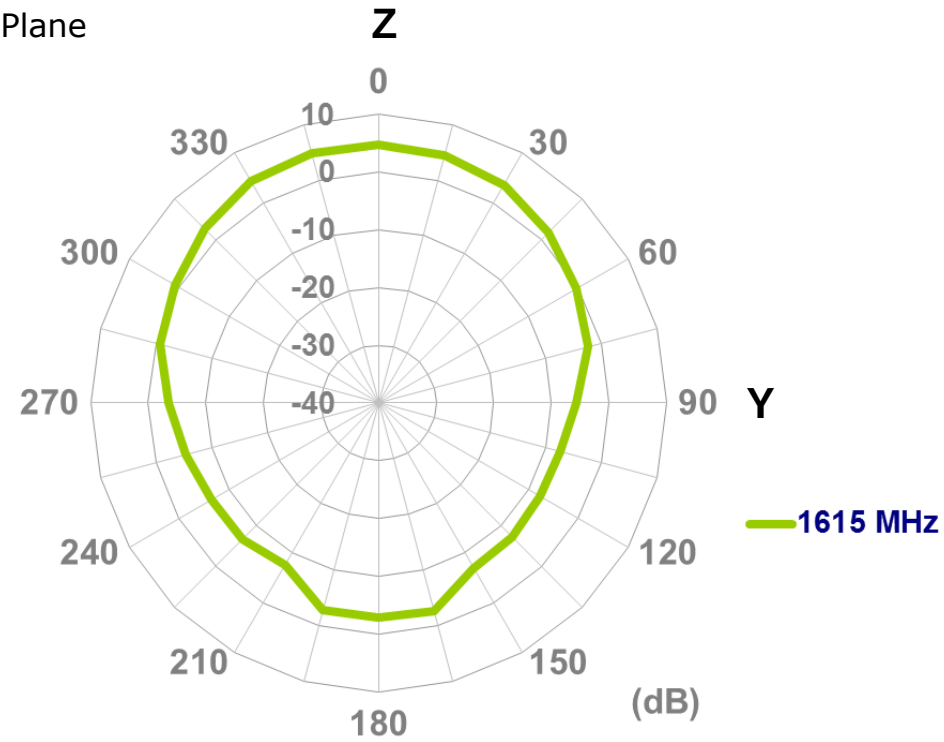
The antenna was test in a ceritified ETS Anochoic Chamber, the setup is as below,



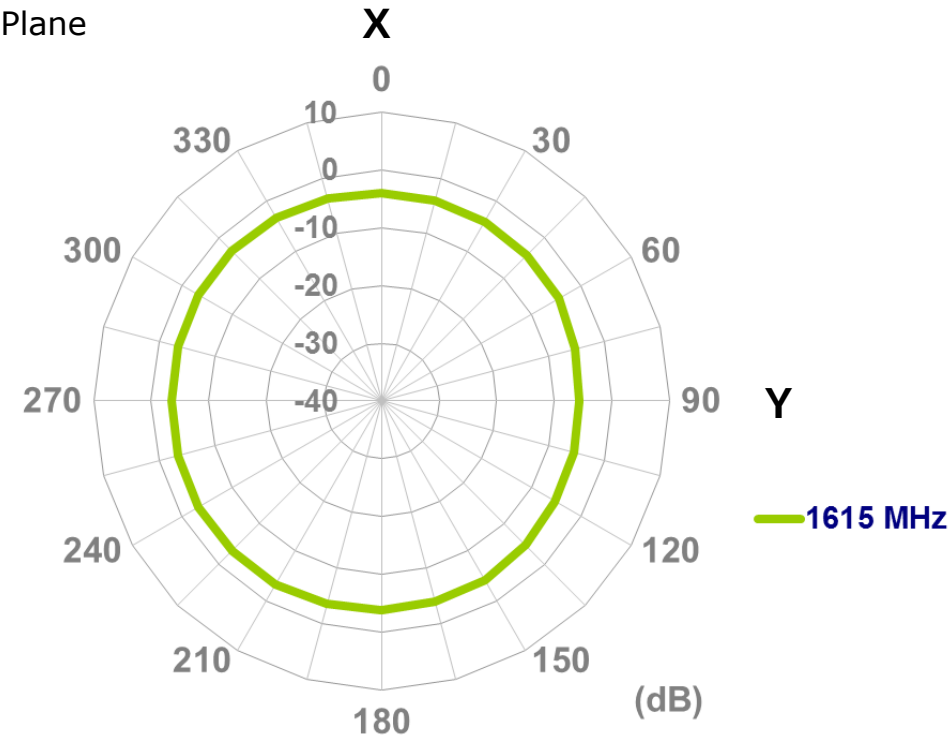
3.4.1 XZ-Plane



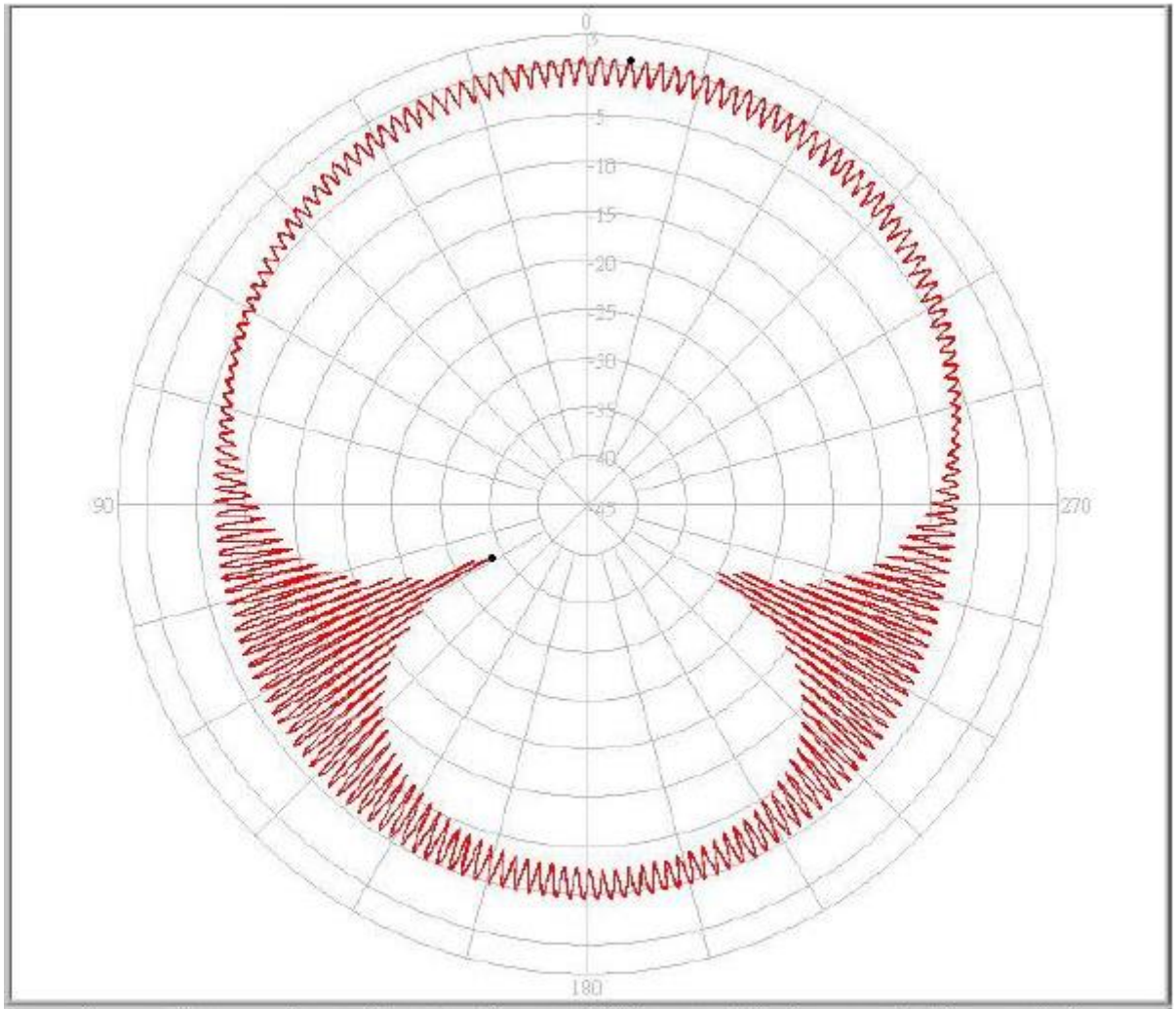
3.4.2 YZ-Plane



3.4.3 XY-Plane


X
0
30
60
90
120
150
180
210
240
270
300
330
10
0
-10
-20
-30
-40
Y
1615 MHz
(dB)

3.5 Axial Ratio

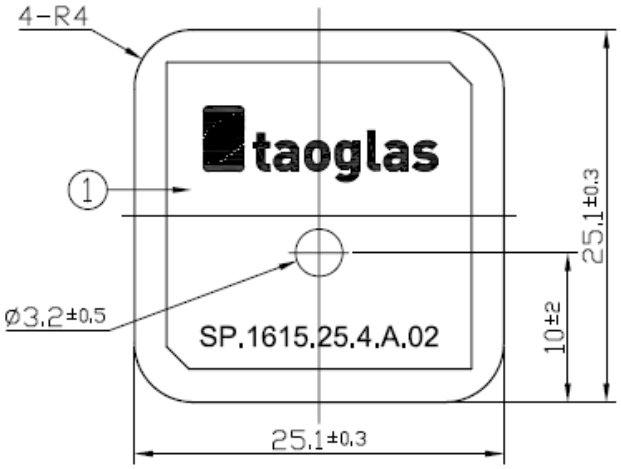


Pattern	Model No.	Test Mode	Freq(MHz)	Max Gain(dBi)	Min Gain(dBi)	Avg. Gain(dBi)	Source Polar.	Date
1	SP.1615.25.4.A.02	Axial Ratio	1615.00	0.65 / 354.48	-33.75 / 118.43	-4.65	CP	2014/5/12

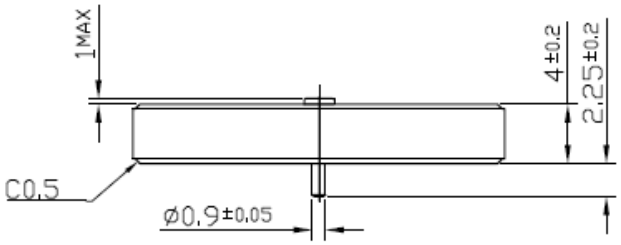
4. Mechanical Drawing

4.1 Antenna

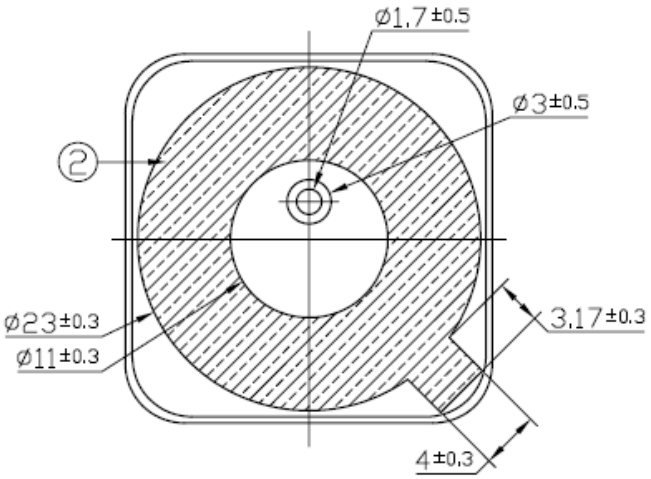
Top View



Side View

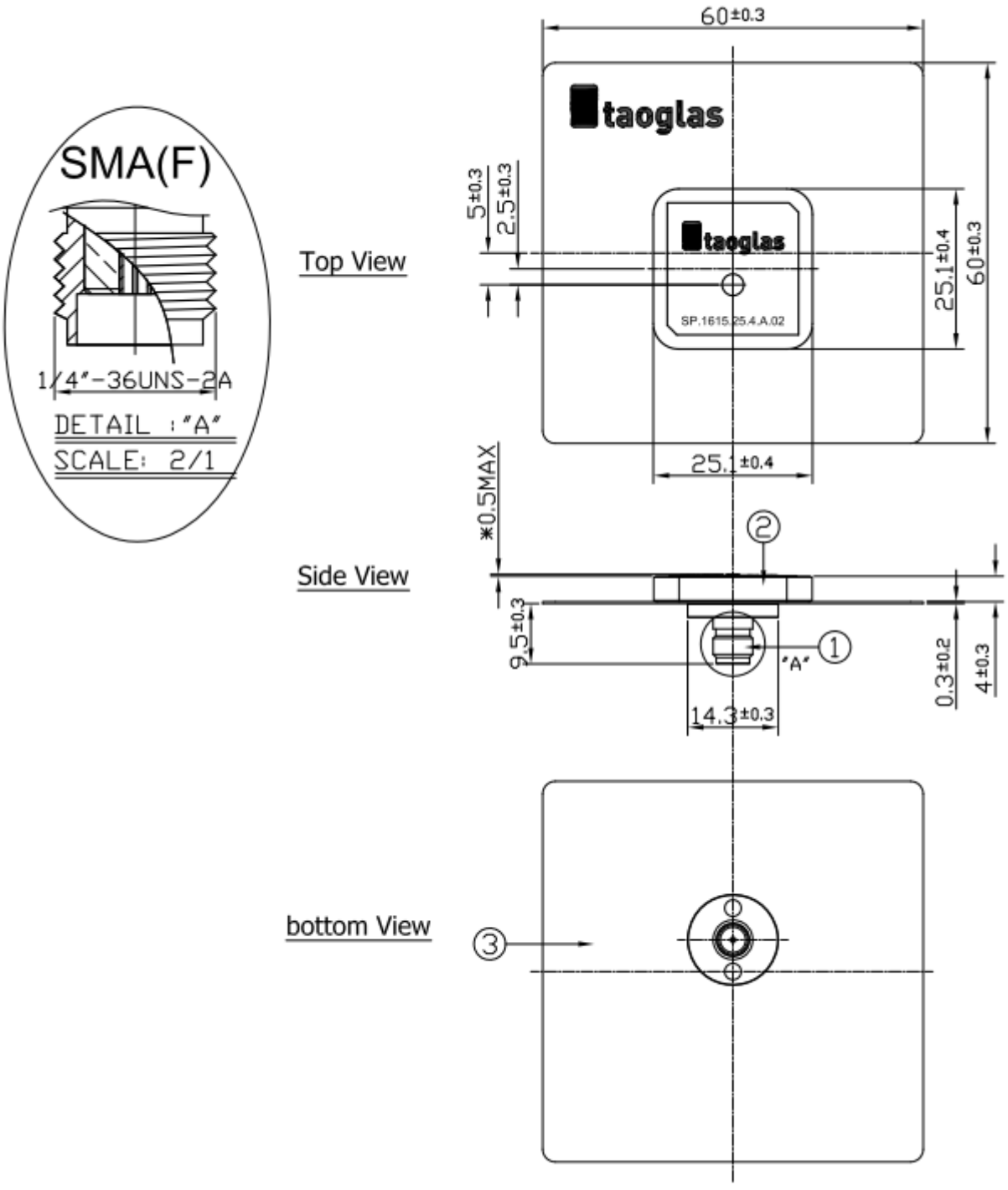


Bottom View

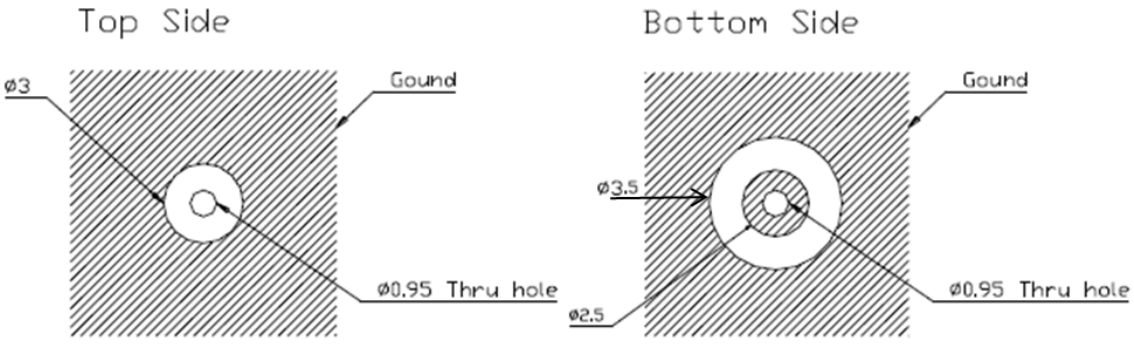


	Name	Material	Finish	QTY
1	SP.1615.25 Patch 25x25x4	Ceramic	Clear	1
2	Double sided Adhesive	NITTO 5015	White Liner	1

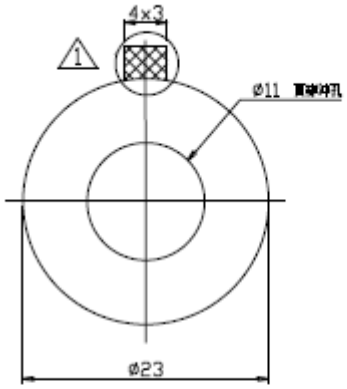
4.2 SPD.25A Evaluation Board



4.3 PCB Footprint Recommendation

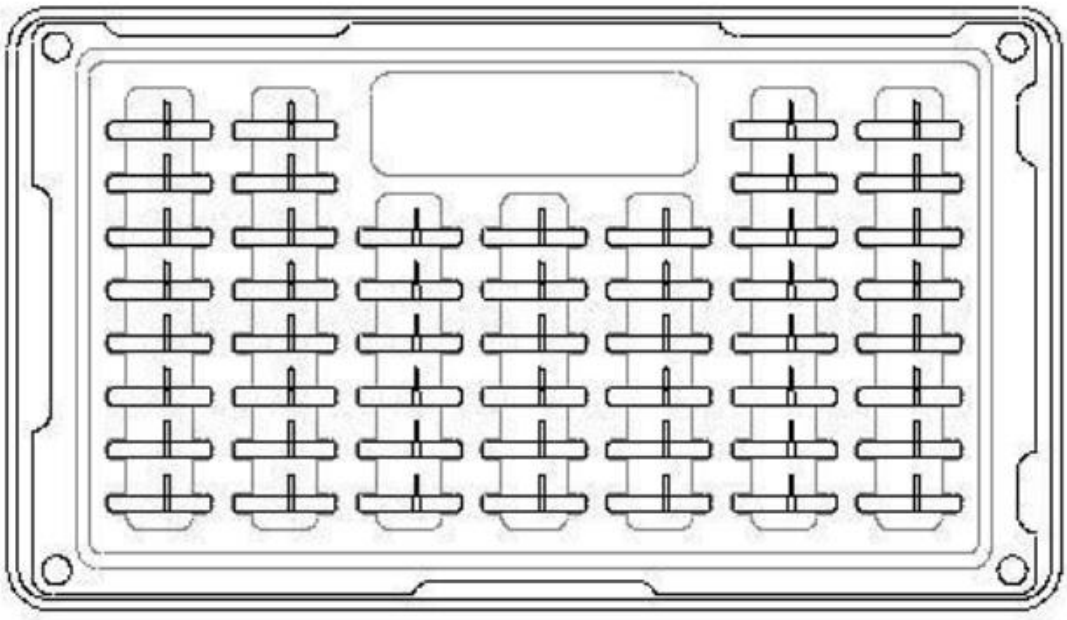


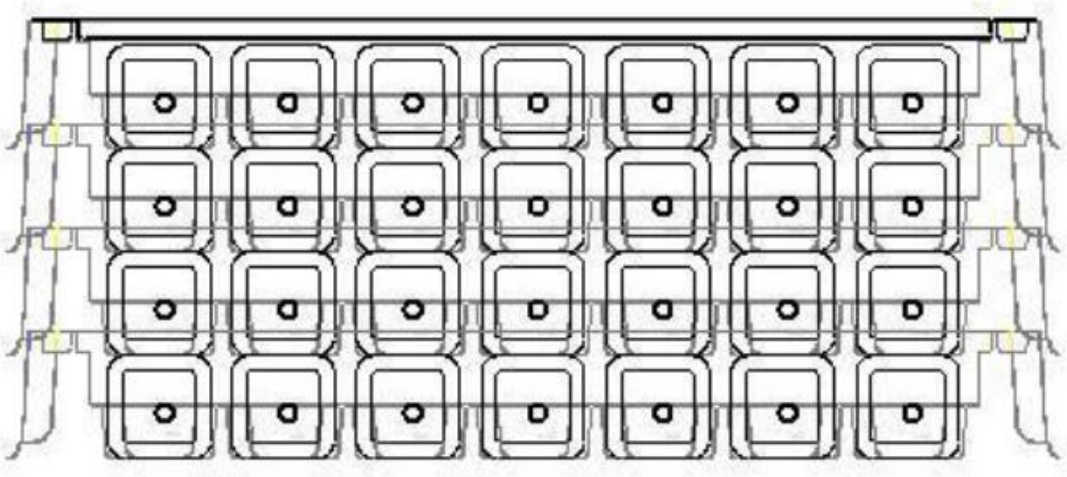
TOL:±0.20
UNIT:mm



:1.NITTO :NO.5015
2.Double-coated adhesive tape
for industrial use
3.Thickness :0.12mm

5. Packaging

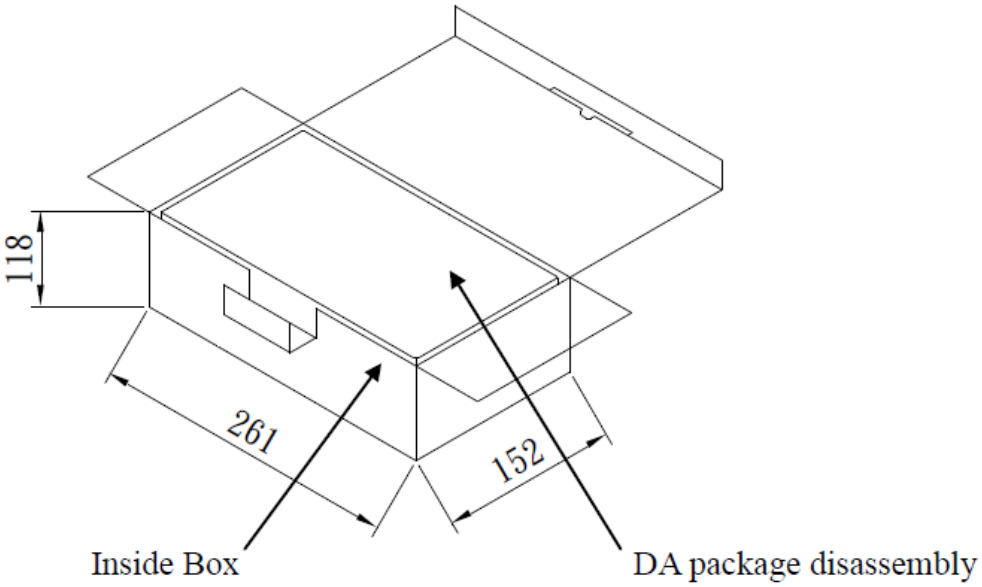


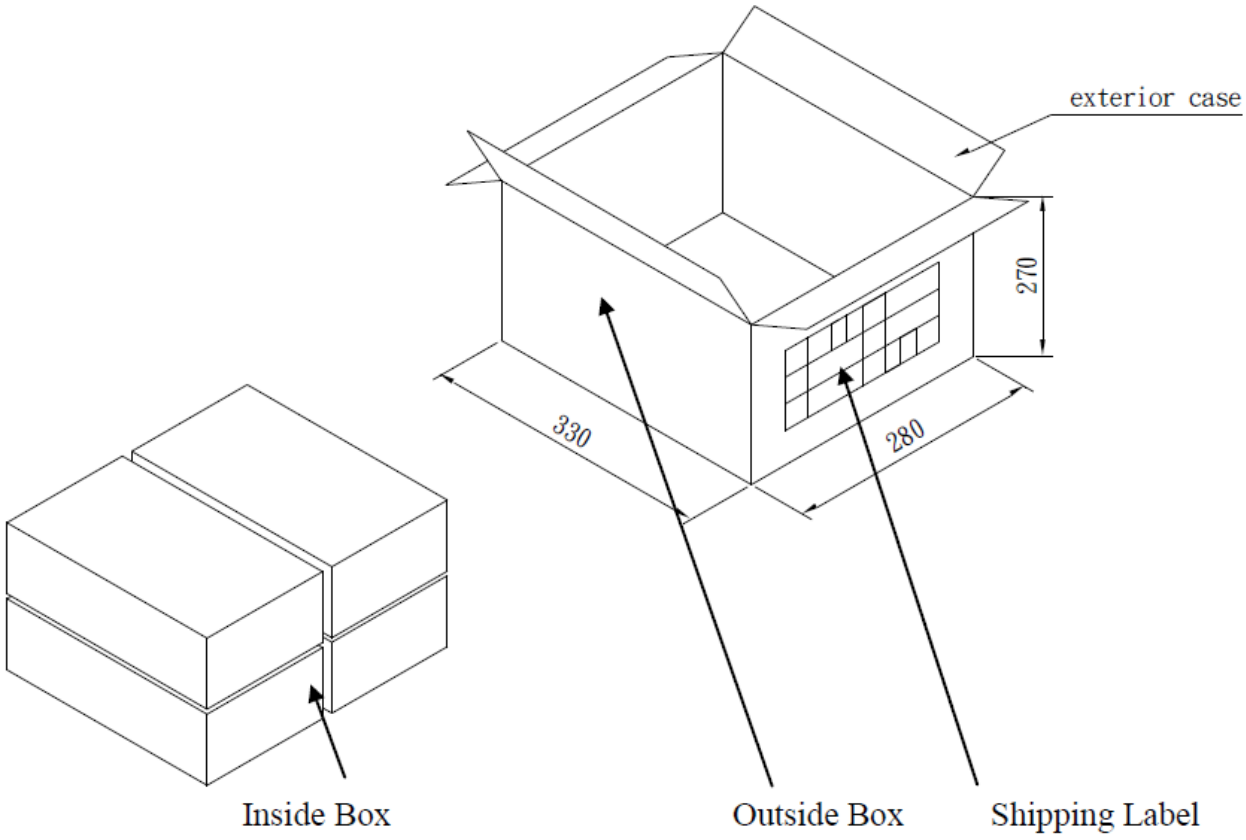


50 pieces per tray

200 pieces per inner carton

800 pieces per outer carton


118
261
152
Inside Box
DA package disassembly


exterior case
270
330
280
Inside Box
Outside Box
Shipping Label