

## Specification

Part No.	:	<b>DSGP.1575.15.4.A.02</b>
Product Name	:	GPS L1 / GALILEO E1 1575MHz Ceramic SMD Patch Antenna
Features	:	2.59 dBi Peak Gain for GPS/GALILEO Band SMD Mount Ceramic Patch Antenna Dimension: 15 x 15 x 4mm Automotive IATF16949 Production and Quality Approved RoHS compliant



## 1. Introduction

The DSGP.1575.15.4.A.02 is a ceramic GPS L1 / GALILEO E1 passive patch antenna. With a footprint of 15mm square and a height of just 4mm, this antenna is perfect for applications in compact telematics devices, vehicle tracking/fleet management systems, wearables, and navigation devices.

DSGP.1575 has been tuned on a 50\*50mm ground plane, operating at 1575.42MHz with a 2.59dBi gain. The ceramic patch is mounted via SMT processes, suitable for high volume low cost assembly.

This antenna is manufactured and tested in a TS16949 first tier automotive approved facility. Taoglas can custom-tune this antenna to specific device environments, subject to NRE and MOQ.

For more details please contact your regional Taoglas sales office.



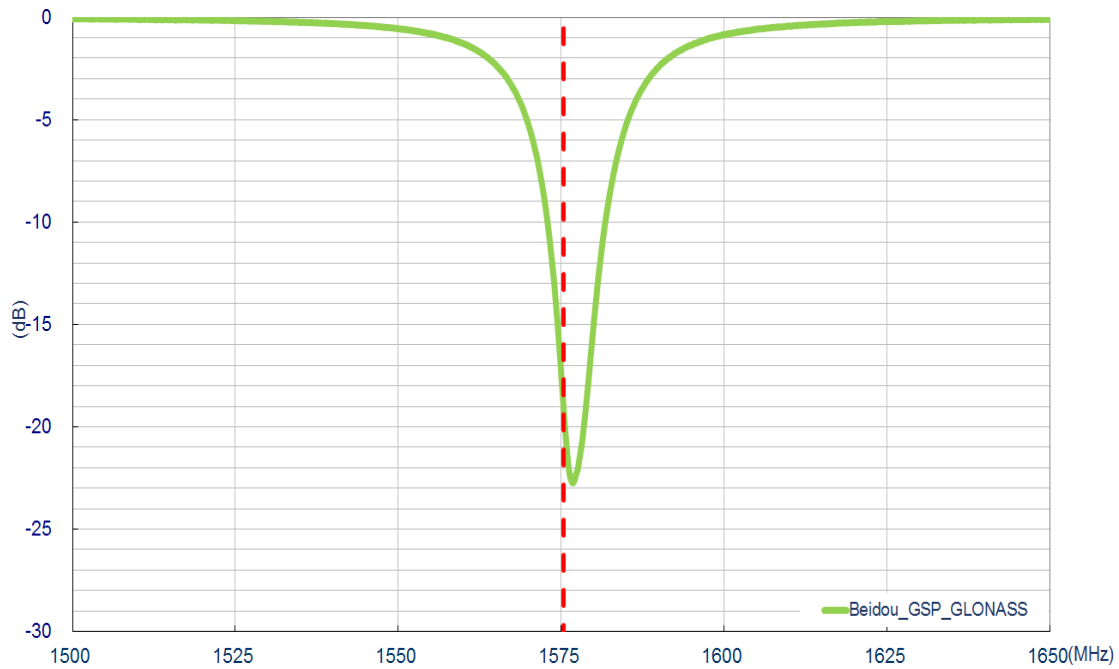
## 2. Specification

Electrical	
Application Bands	GPS L1 / GALILEO E1
Frequency	1575.42 ±1.023 MHz
Return Loss	<-10dB
Efficiency	67%
Peak Gain	2.6 dBi
Average Gain	-1.76dB
Polarization	RHCP
Impedance	50 Ω
Mechanical	
Ceramic Dimension	15 x 15 x 4 mm
Material	Ceramic
Weight	3.3 g
Environmental	
Operation Temperature	-40°C to 85°C
Storage Temperature	-40°C to 105°C
Humidity	Non-condensing 65°C 95% RH

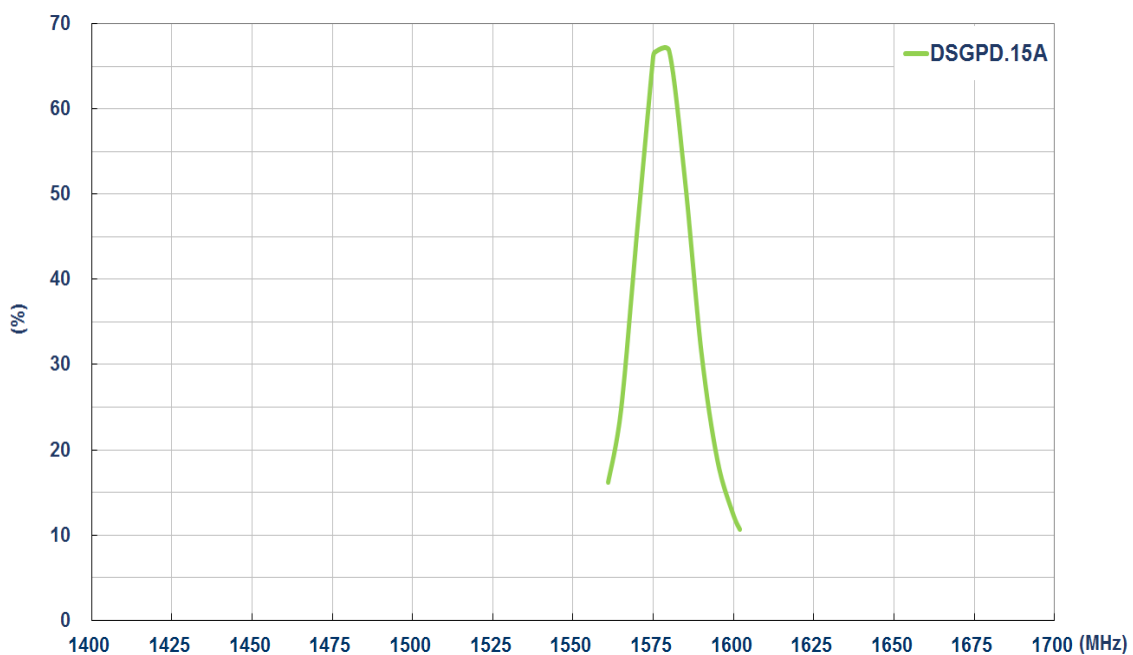
\*All tests performed on a 50\*50mm ground plane – Taoglas Part Number DSGPD.15A

### 3. Antenna Characteristics

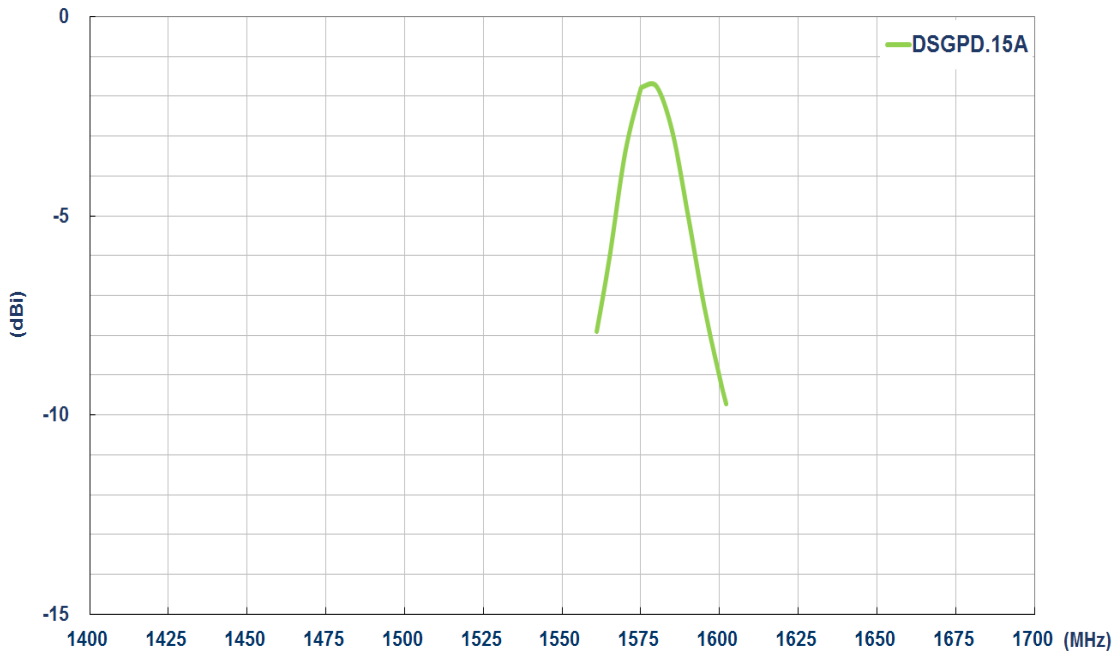
#### 3.1 Return Loss



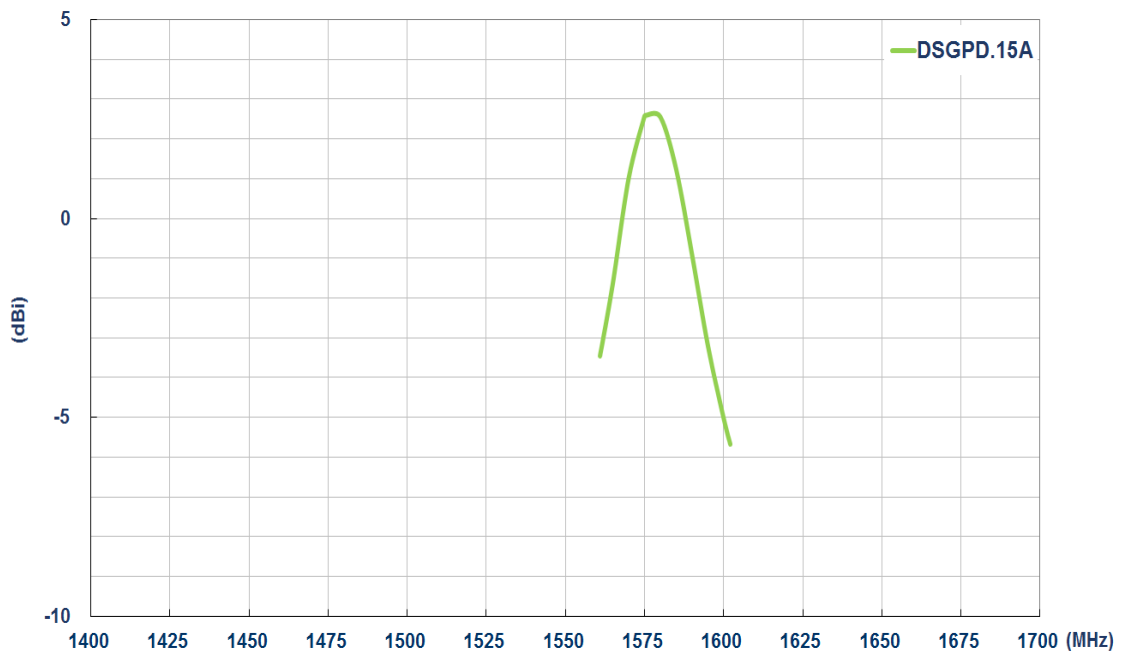
#### 3.2 Efficiency



### 3.3 Average Gain

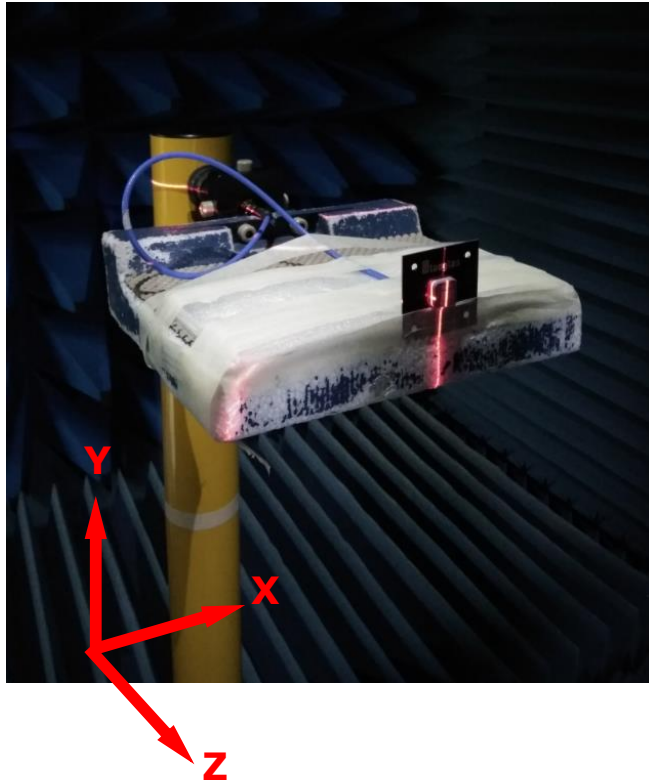


### 3.4 Peak Gain



## 4. Antenna Radiation Patterns

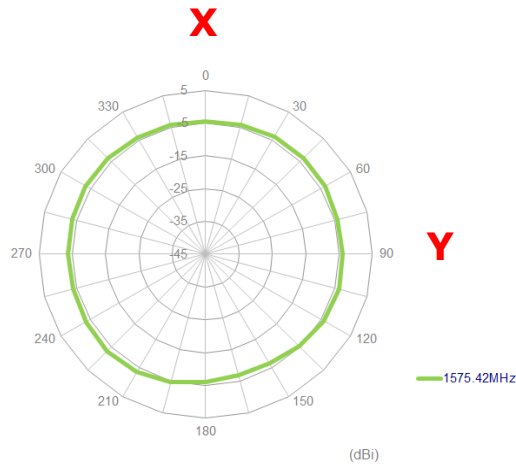
### 4.1 Antenna Setup (Antenna Test Setup in Anechoic Chamber)



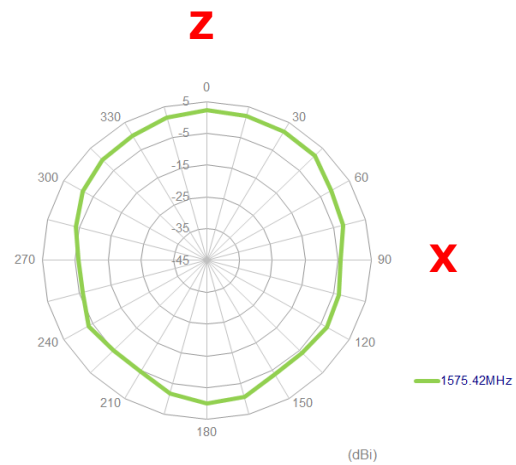
## 4.2 2D Radiation Patterns

### 4.2.1 GPS

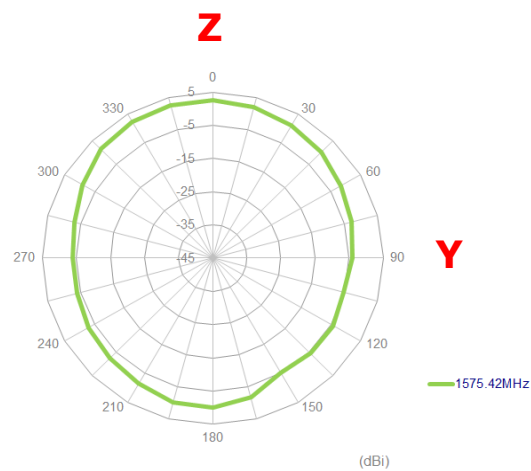
#### XY Plane



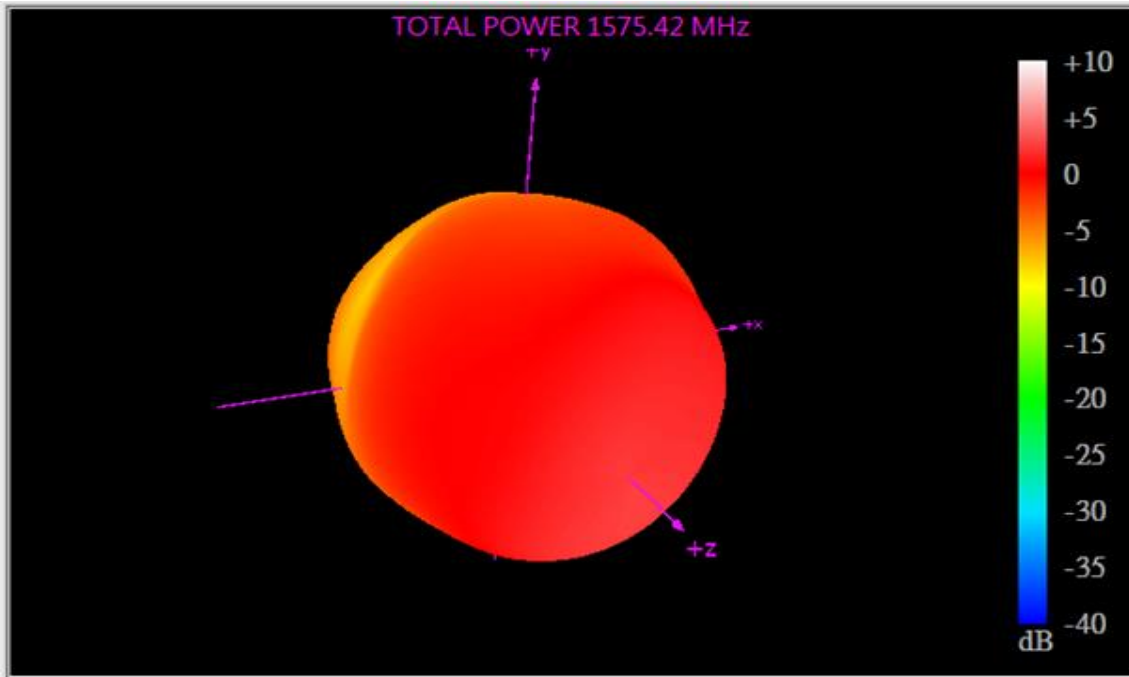
#### XZ Plane



#### YZ Plane

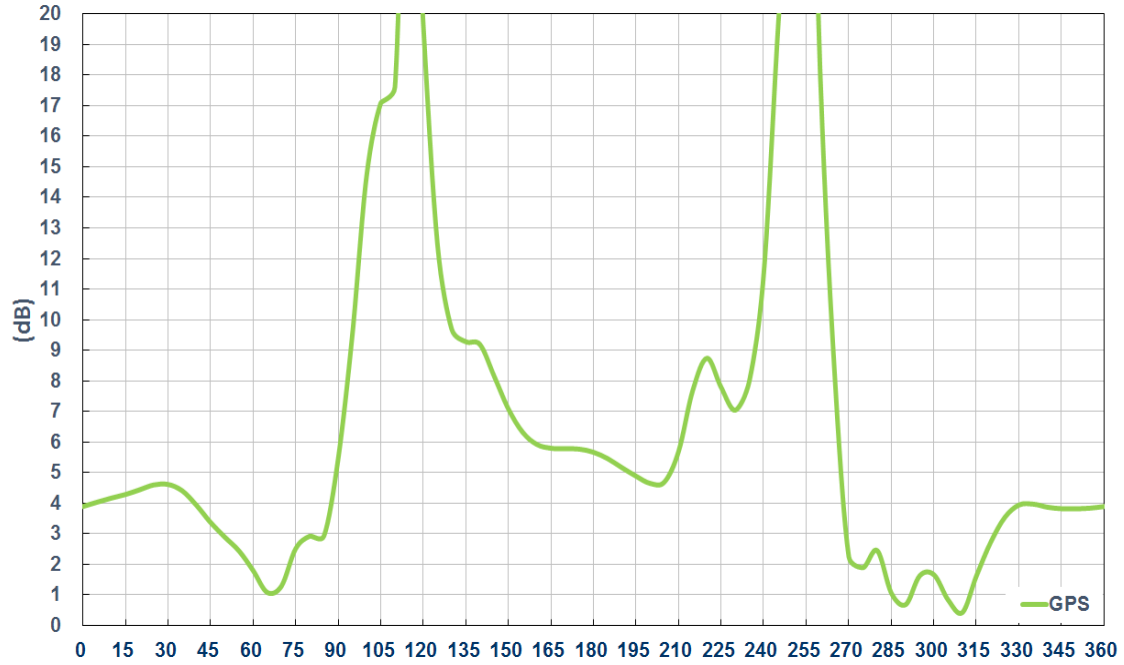


### 4.3 3D Radiation Patterns





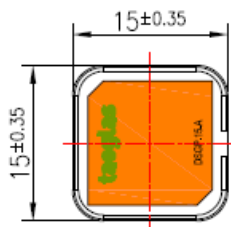
## 4.4 Axial Ratio



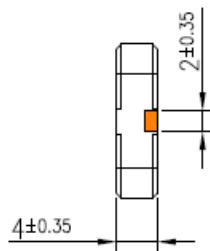
Note: Z axis indicates zenith

## 5. Mechanical Drawing (Unit: mm)

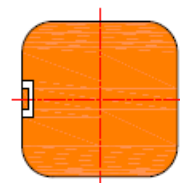
Top View



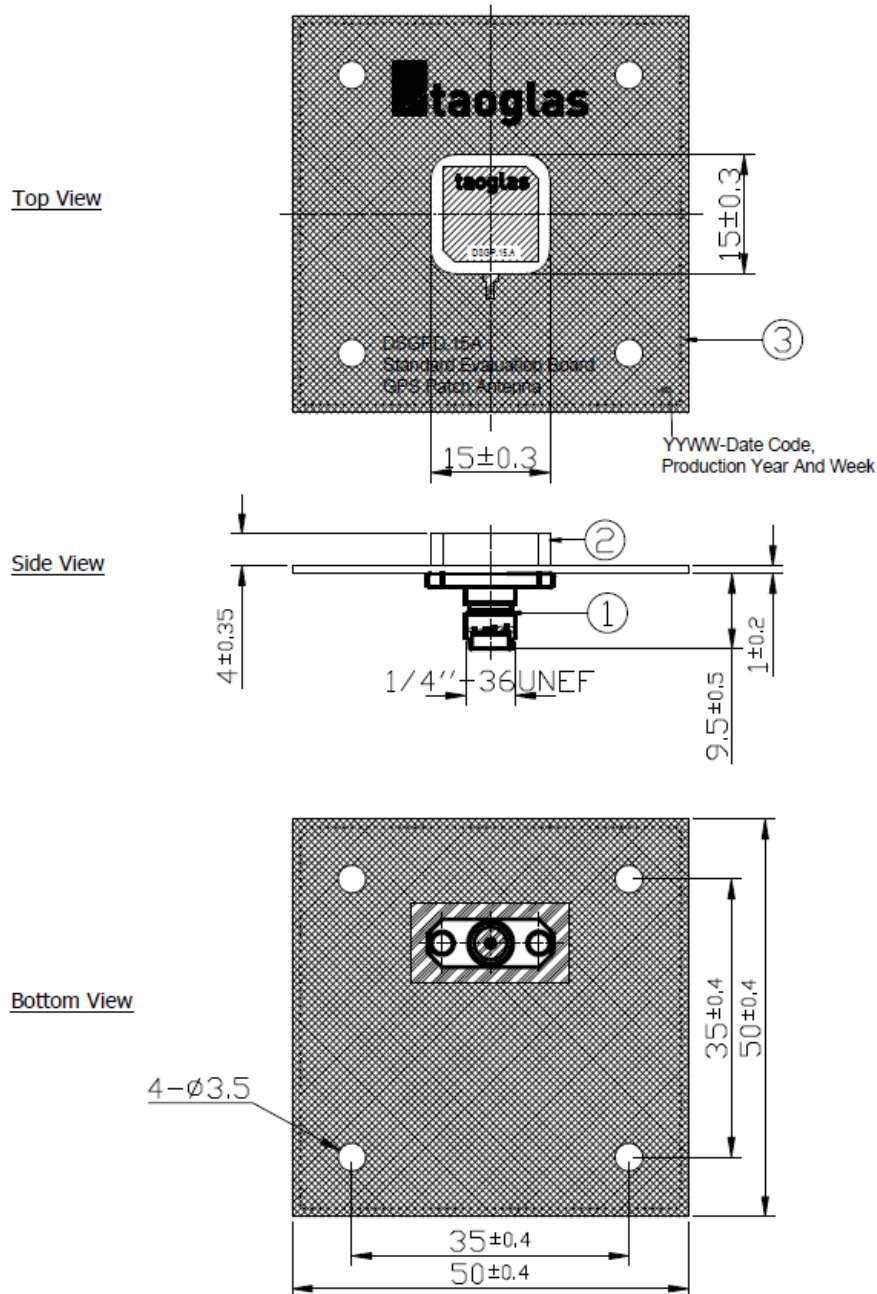
Side View



Bottom View



## 6. Evaluation Board DSGPD.15A (Unit: mm)



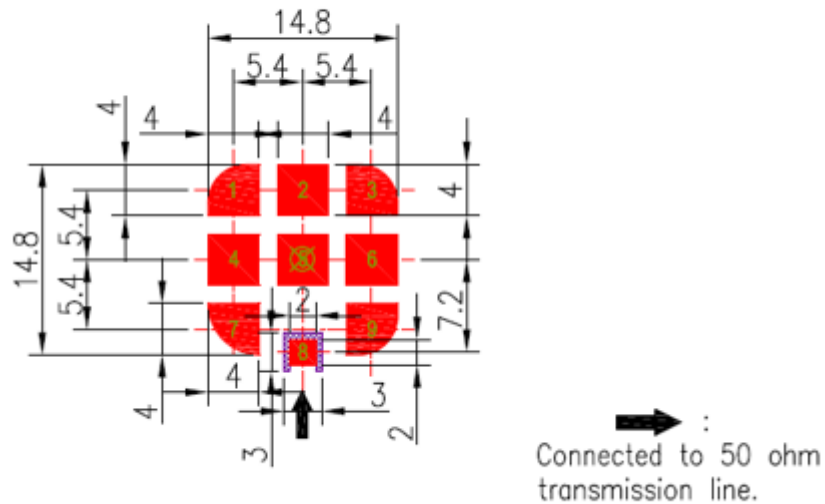
	Name	Material	Finish	QTY
1	PCB SMA(F) ST	Brass	Gold	1
2	DSGP.1575.15.4.A.02 Antenna	Ceramic	Clear	1
3	PCB (50x50x1mm)	FR4 1.0t	Black	1

## 7. PCB Footprint Recommendation

### 7.1 Footprint Copper Keepout Area (Unit: mm)

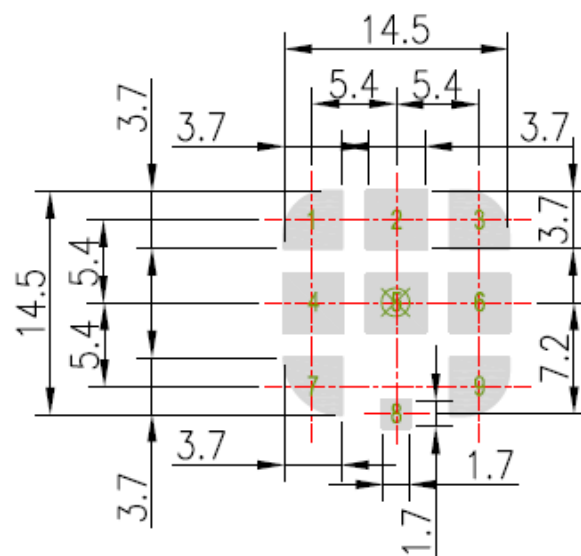
Pads 2, 4, 5, 6 are the same size

Pads 1, 2, 3, 4, 5, 6, 7 and 9 should be connected to GND.



### 7.2 Paste Area (Unit: mm)

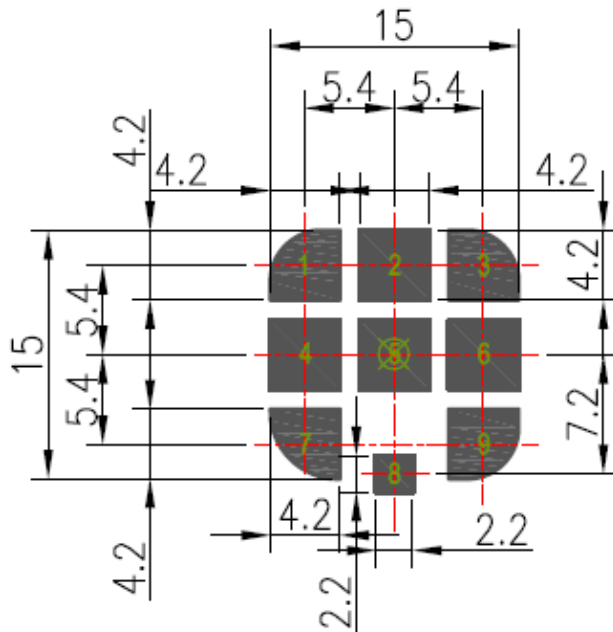
Pads 2, 4, 5, 6, are the same size.



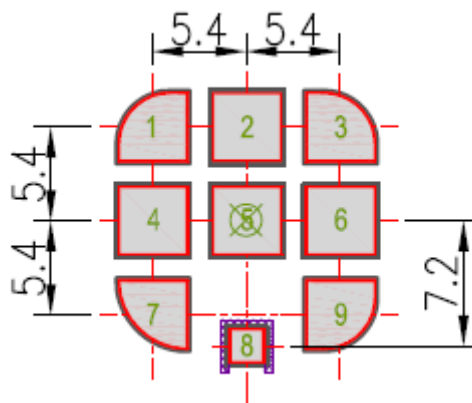
### 7.3 Top Solder Mask (Unit: mm)

Pads 2, 4, 5, 6, are the same size.

This drawing is a negative of solder mask. Black regions are anti-mask.



### 7.4 Composite Diagram (Unit: mm)



NOTE:

- 1. Ag Plated area
- 2. Solder Mask area
- 3. Copper area
- 4. Paste area
- 5. Copper Keepout Area



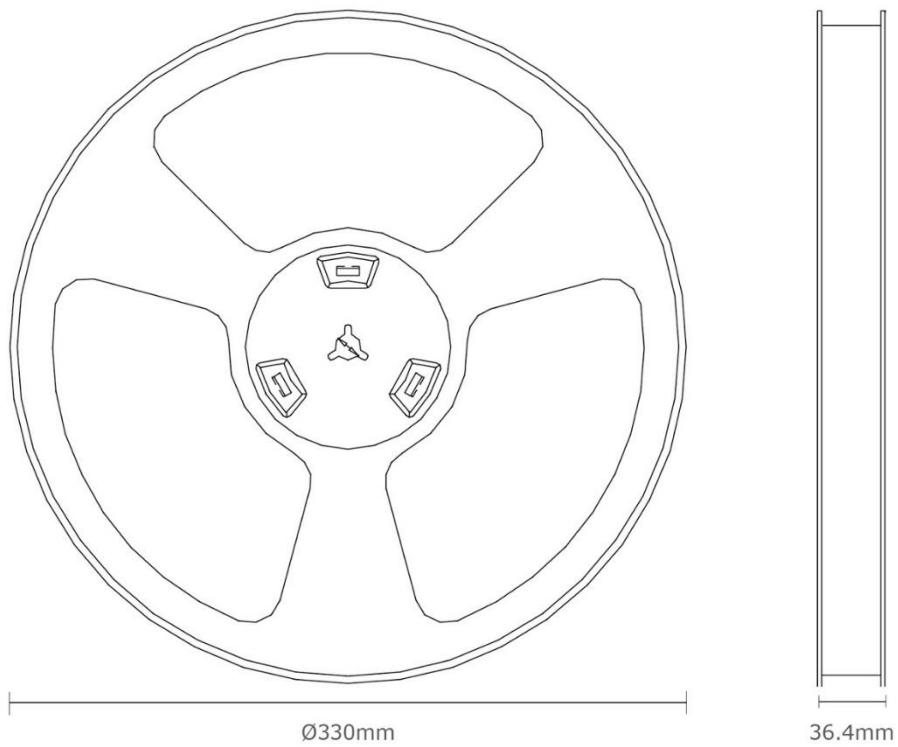
6. Copper keepout should extend through all PCB layers.

7. Any vias in pads should be either filled or tented to prevent solder from wicking away from the pad during reflow.

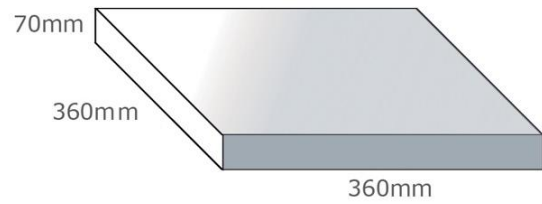
8. The dimension tolerances should follow standard PCB manufacturing guidelines

## 8. Packaging

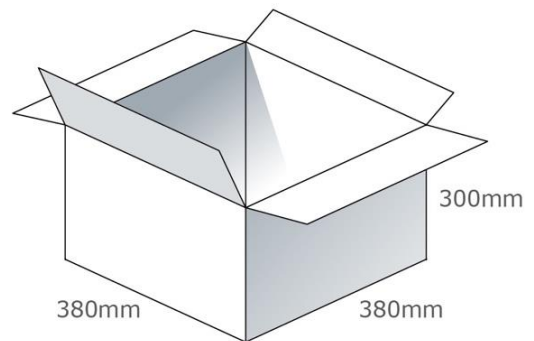
200 pc DSGP.1575.15.4.A.02 per reel  
Dimensions - Ø330\*36.4mm  
Weight - 1.34Kg



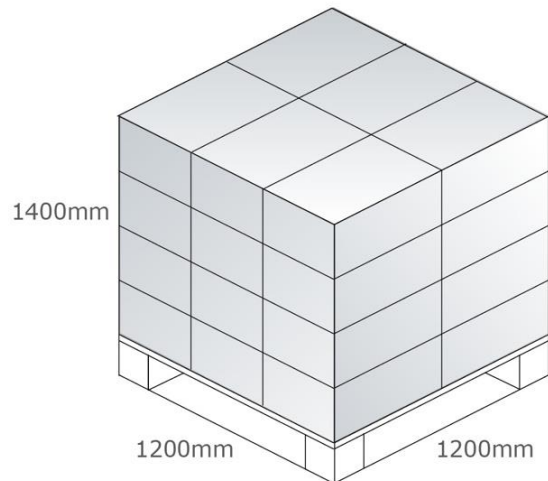
1 pc reel Per Small Inner Carton  
Dimensions - 360\*360\*70mm  
Weight - 1.6Kg



4 Reels / 800 pcs in one carton  
Carton Dimensions - 380\*380\*300mm  
Weight - 7.5Kg



Pallet Dimensions 1100\*1100\*1270mm  
24 Cartons per Pallet  
6 Cartons per layer  
4 Layers



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- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



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