

## SPECIFICATION

- Part No.** : **CGGP.18.2.A.02**
- Description** : GPS/GLONASS Dual-Band Ceramic Patch  
Embedded Antenna 18x18x2mm
- Features** : Wide-band Operation 1575-1610MHz  
3.23dBi Peak Gain for GPS Band  
3.53dBi Peak Gain for GLONASS Band  
Low profile – 2mm Height  
Through-hole Mounting Pin type  
Automotive TS16949 Production and Quality  
Approved  
RoHS compliant



## 1. Introduction

The CGGP.18.2.A.02 is a 18mm ceramic GPS/Glonass embedded passive patch antenna, with a 2mm low profile. It is designed for vehicle telematic applications as well as other M2M/IoT devices. Typical applicable industries are transportation, defense, marine, agriculture, and navigation.

The antenna has been tuned and tested on a 70 x 70 mm ground plane, working at GPS 1575.42MHz and GLONASS 1602MHz, with 3.23dBi gain and 3.53dBi gain, respectively. The low profile design makes this antenna perfect for applications where space is limited. It can be easily through-hole mounted on PCB via pin. Double sided adhesive on the bottom of the patch helps to keep it in place while undergoing mounting. The CGGP.18.2.A.02 is manufactured and tested in a TS16949 first tier automotive approved facility.

Like all antennas, at least some detuning will occur when placed in a different device environment or on a different ground-plane.

For large volume GPS/GLONASS projects where performance is paramount, tuning for customer specific device environment and ground-plane size is needed, so custom tuned patch antennas should always be used. Taoglas can also provide different pin length for these antennas, all subject to potential NRE and MOQ. For more details please contact [your regional Taoglas sales office.](#)

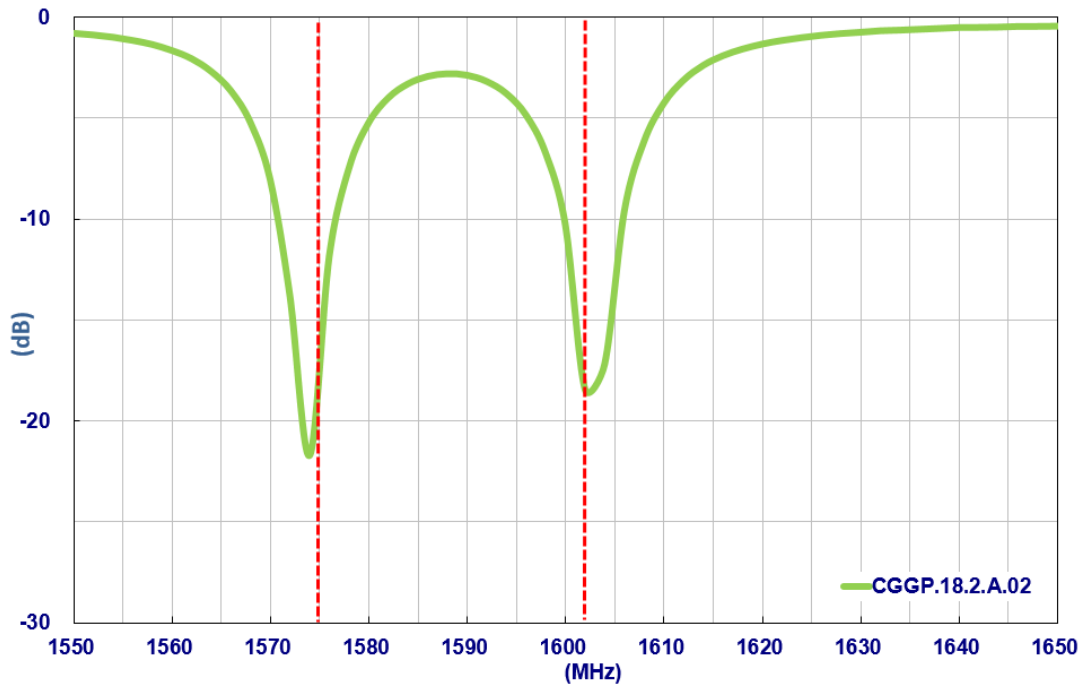
## 2. Specification

ELECTRICAL		
Application Bands	GPS	GLONASS
Operation Frequency (MHz)	1575.42 ±1.023	1602±5
Return Loss (dB)	-10 max.	
Gain at Zenith (dBi)	3.23	3.53
Efficiency (%)	54.88	59.52
Impedance	50 ohms	
MECHANICAL		
Ceramic Dimension (mm)	18 x 18 x 2	
Pin Diameter (mm)	0.9	
Pin Length (mm)	2.25	
Weight (g)	2.5	
ENVIRONMENTAL		
Operation Temperature	-40°C to 85°C	
Humidity	Non-condensing 65°C 95% RH	

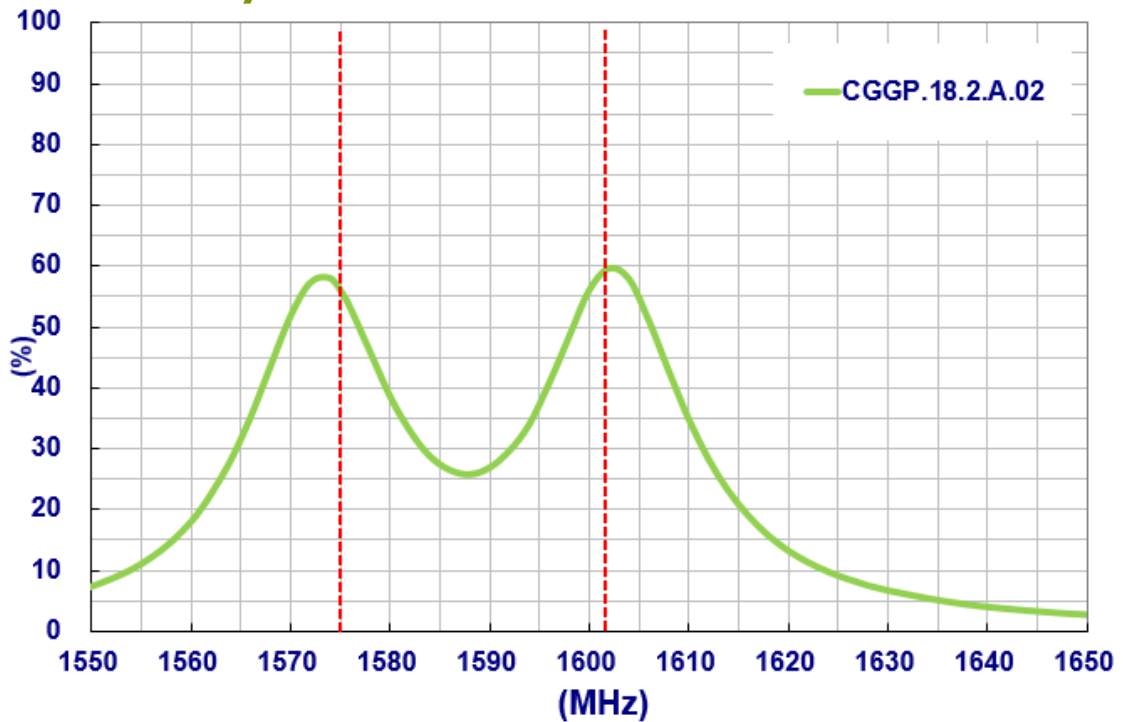
\* Antenna properties were measured with the antenna mounted on 70\*70mm Ground Plane  
Taoglas Part # CGGPD.18.D

### 3. Antenna Characteristics

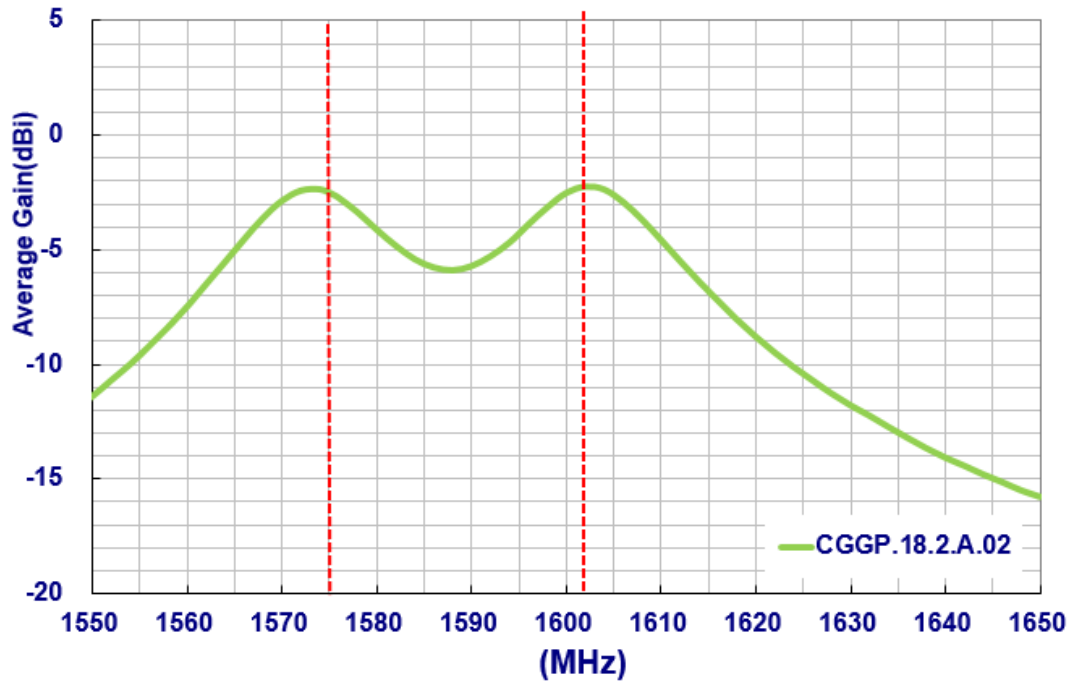
#### 3.1 Return Loss



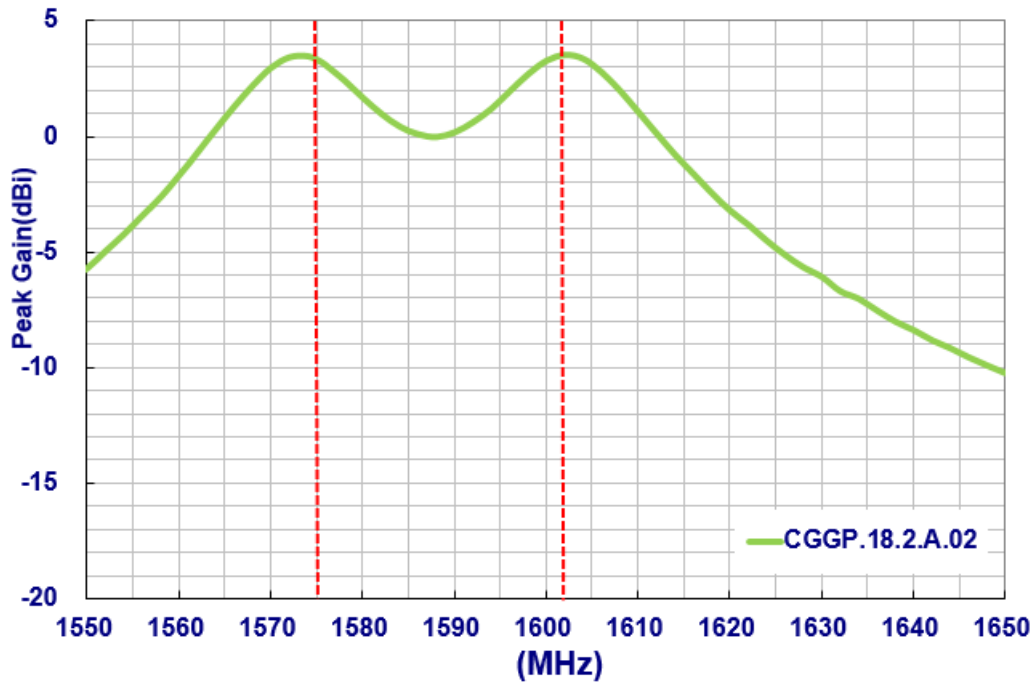
#### 3.2 Efficiency



### 3.3 Average Gain



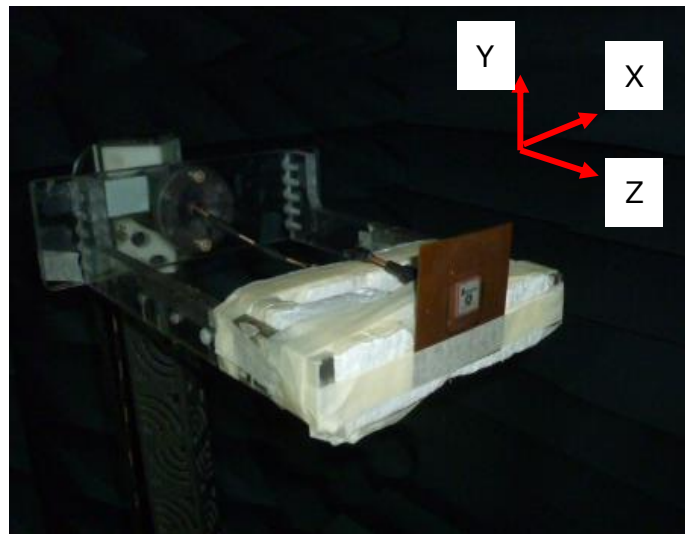
### 3.4 Peak Gain



## 4. Antenna Radiation Pattern

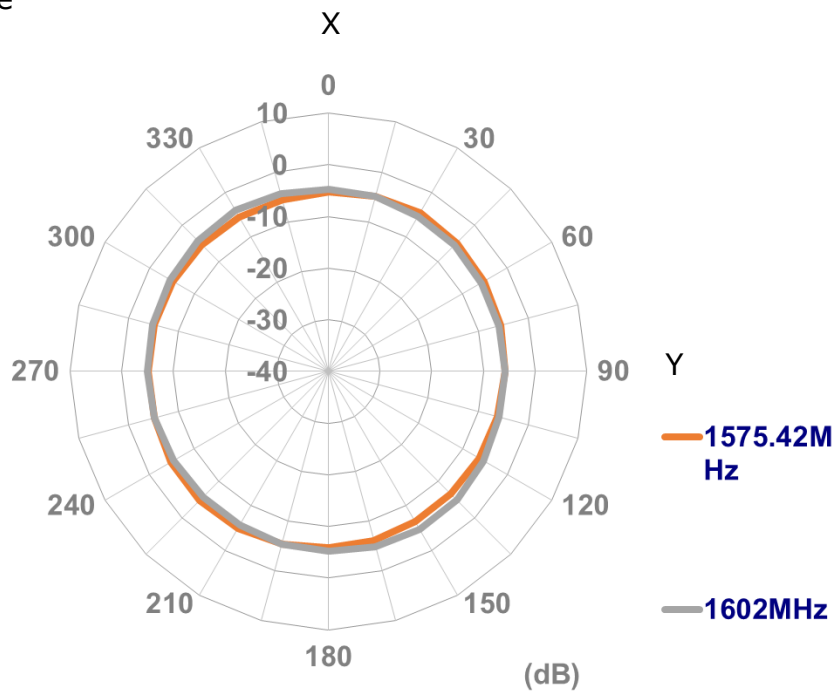
### 4.1. Measurement Setup

The CGGP.18.2.A.02 antenna is tested in free-space on a 70mm\*70mm ground plane in a CTIA certified ETS-Lindgren Anechoic Chamber. The test setup is shown below.

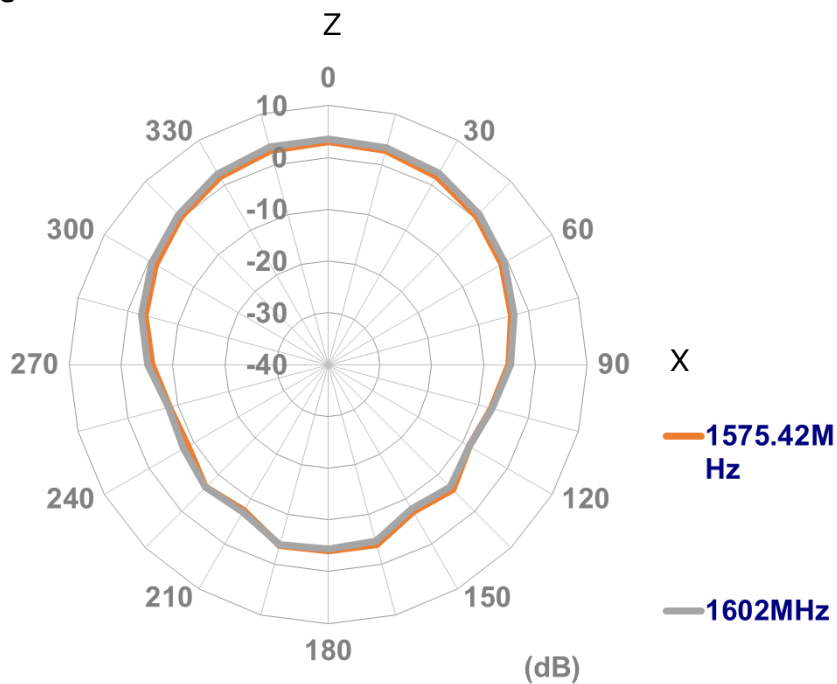


## 4.2. 2D Radiation Pattern

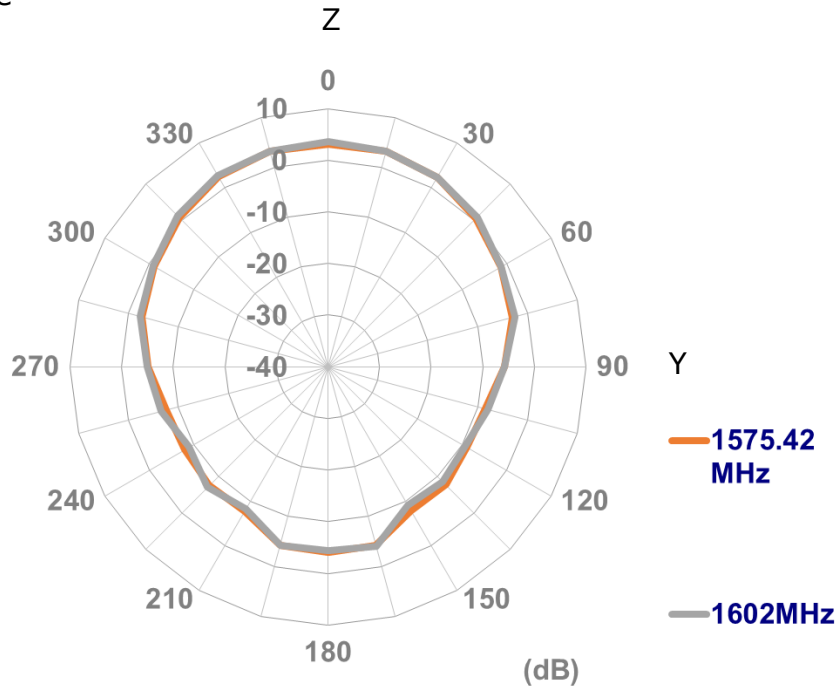
XY Plane



XZ Plane



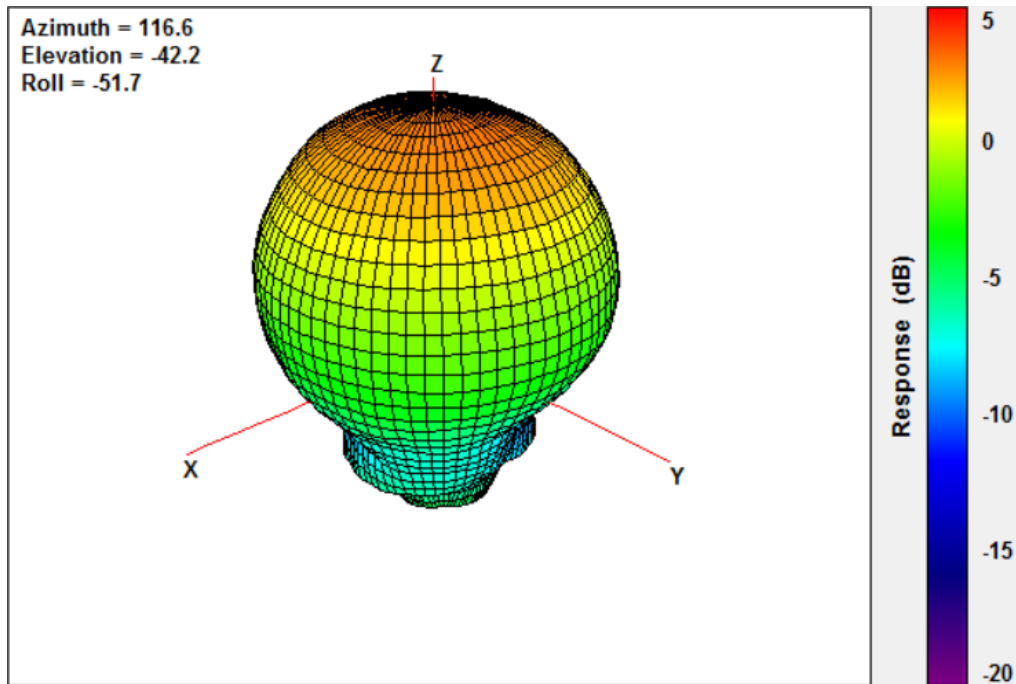
YZ Plane



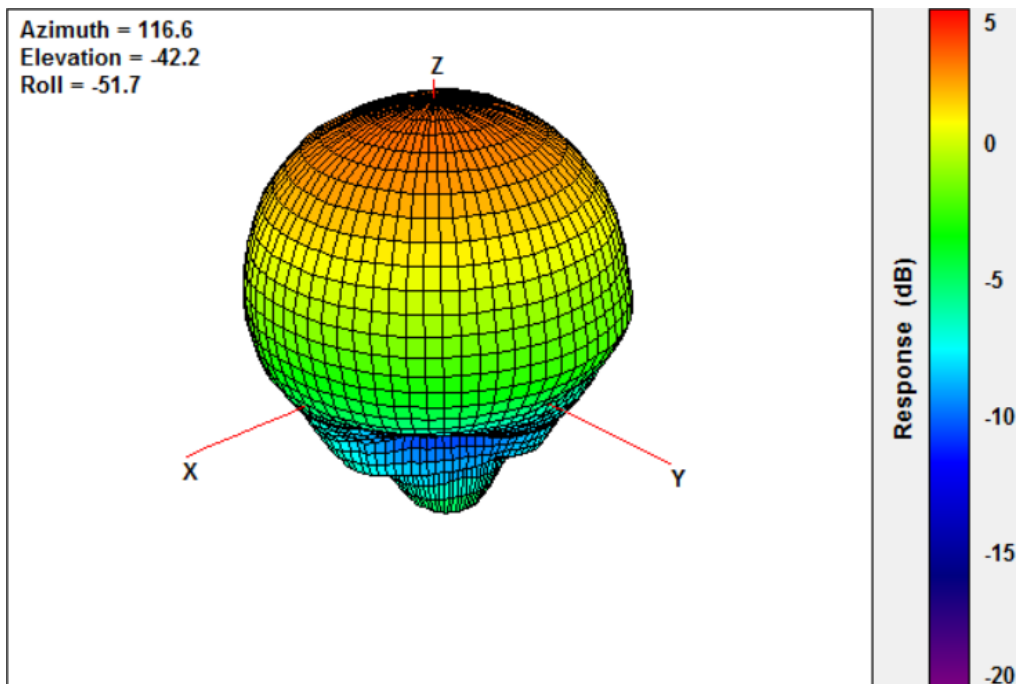


### 4.3. 3D Radiation Pattern

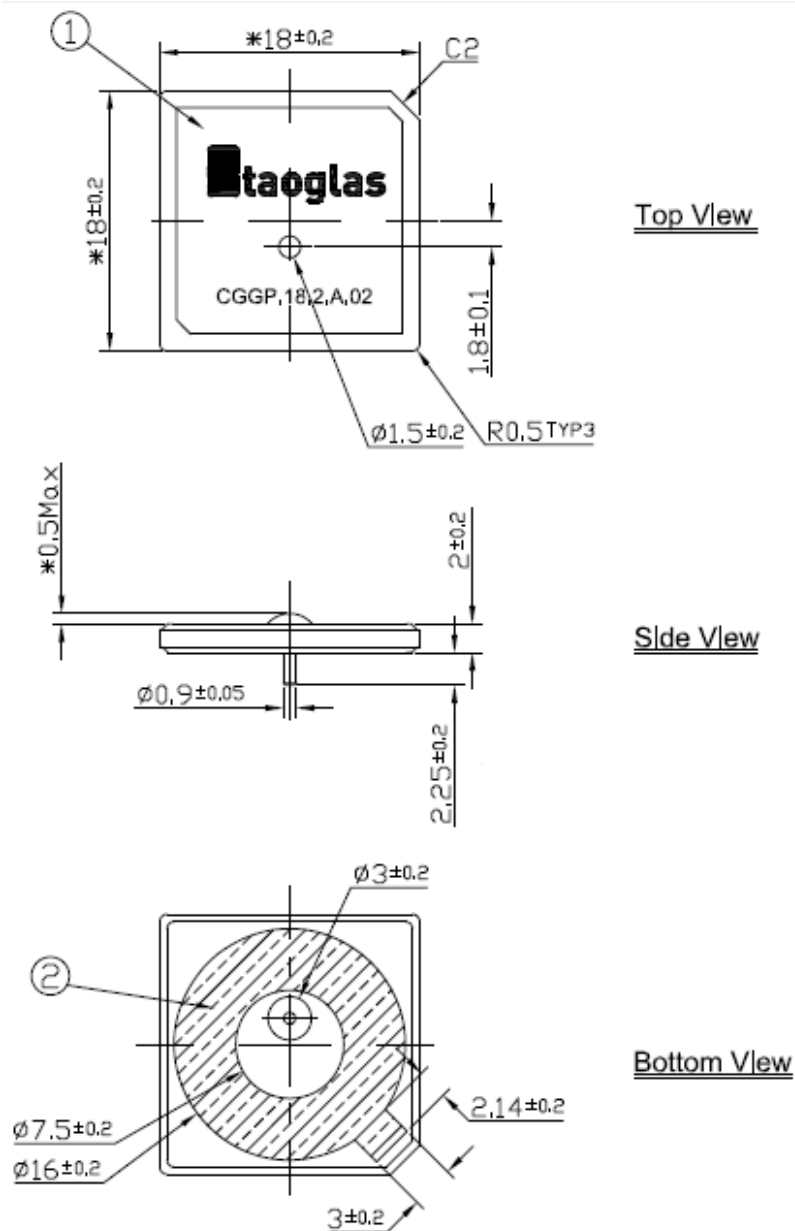
1575.42MHz




1602MHz



## 5. Mechanical Drawing



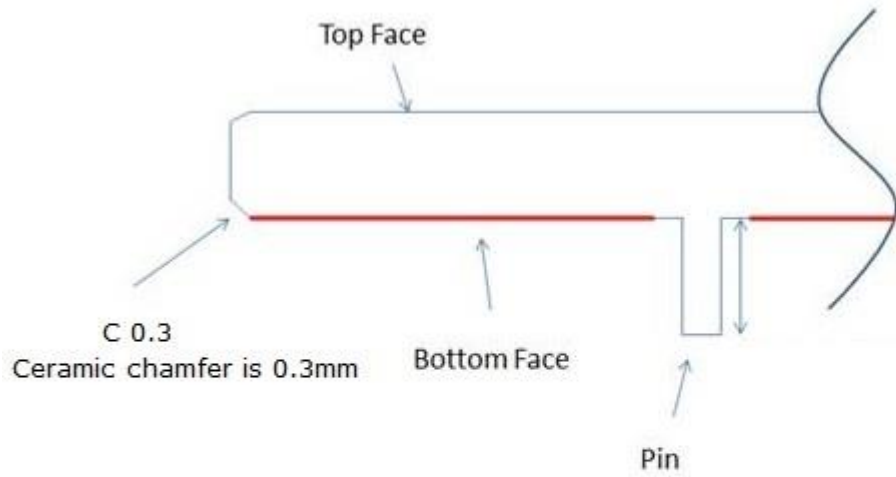
**NOTES:**

1. Double sided adhesive area 

	Name	P/N	Material	Finish	QTY
1	Patch 18x18x2	001513C110007A	Ceramic	Clear	1
2	Double sided Adhesive	001013C050007A	NITTO 5015	White Liner	1

Unit:mm

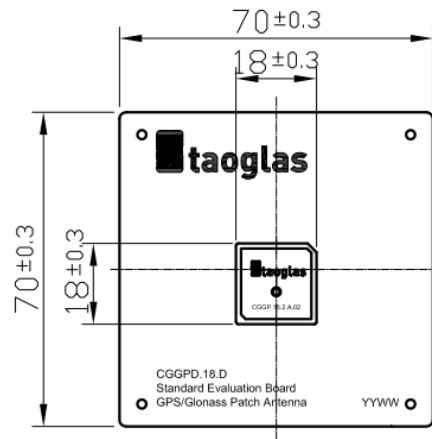
## 5.1 Adhesive Thickness



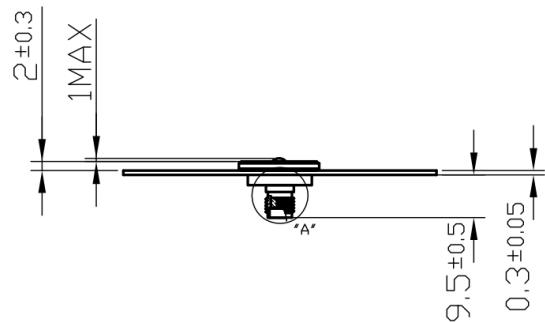
**Red Line** shows the adhesive without Liner - thickness 0.08~0.1mm

## 6. Evaluation Board (CGGPD.18.D)

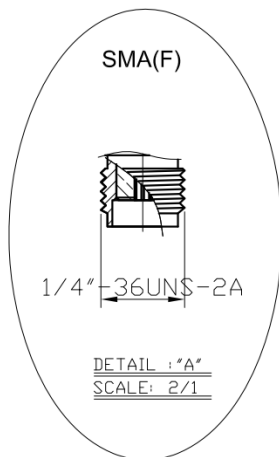
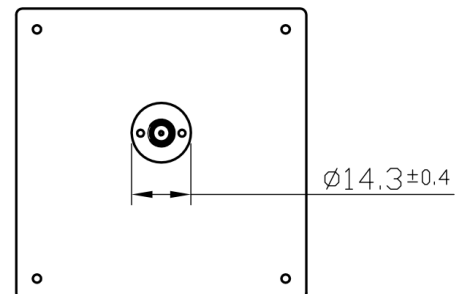
Top View



Side View



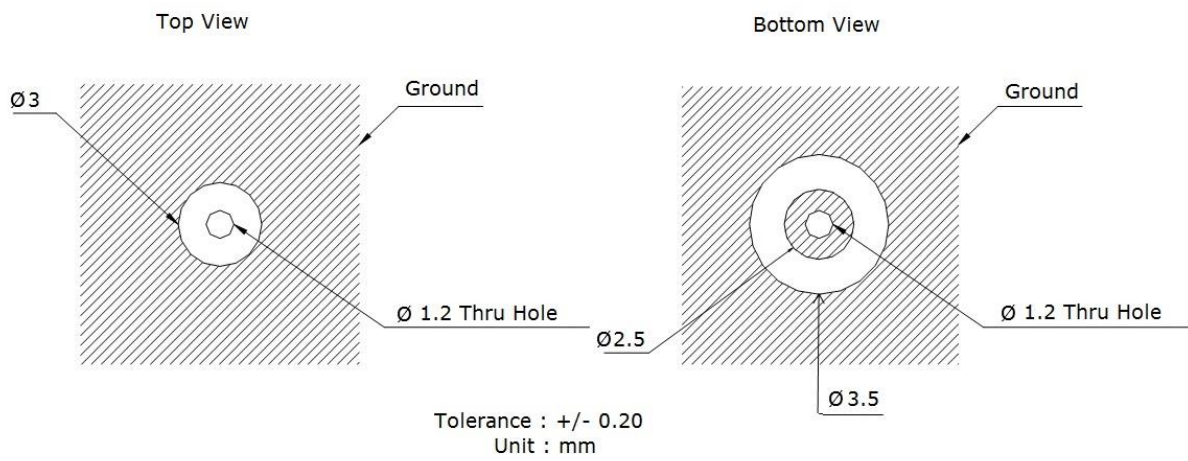
Bottom View



Unit:mm

	Name	Material	Finish	QTY
1	Patch(18x18x4mm)	Ceramic	Clear	1
2	Ground-Plane(70x70x0.3mm)	Brass	Silver	1
3	SMA(F) ST	Brass	Gold	1

## 7. PCB Footprint Recommendation



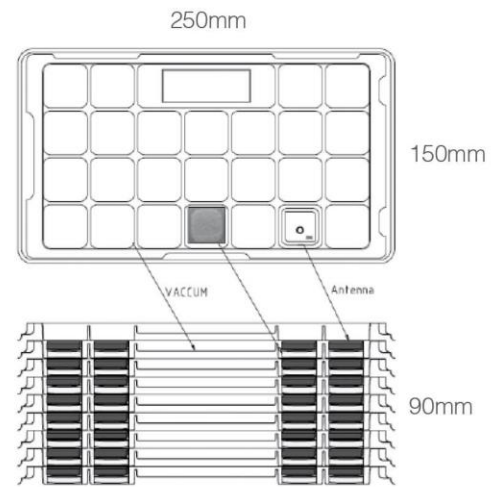
## 8. Packaging

### 8.1. Inner Tray & Inner Carton

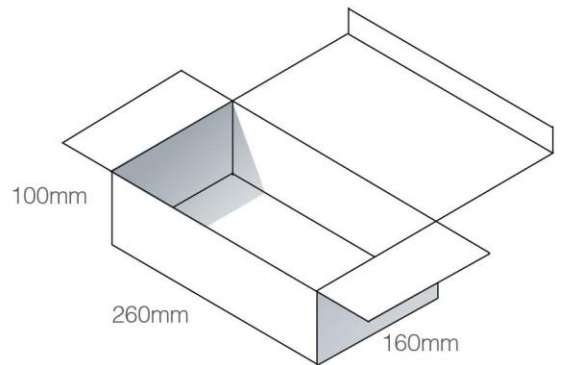
#### CGGP.18.2.A.02

#### Packaging Specifications

25 pcs per tray  
 Tray Dimensions - 250\*150\*11mm

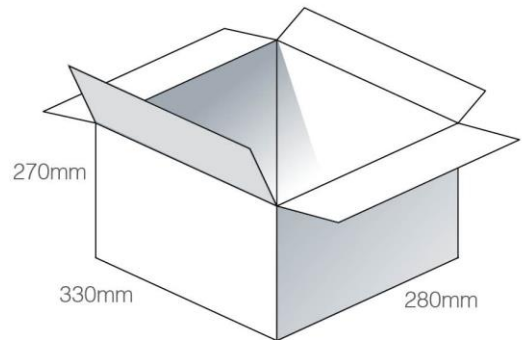


8 Trays per inner box  
 200 pcs CGGP.18.2.A.02  
 Dimensions - 260\*160\*100mm



## 8.2. Carton

4 inner boxes per outer carton  
800 Pieces CGGP.18.2.A.02 per carton  
Carton Dimensions - 330\*280\*270mm



Pallet Dimensions 1100\*1100\*1500mm  
60 Cartons per Pallet  
12 Cartons per layer  
5 Layers

