

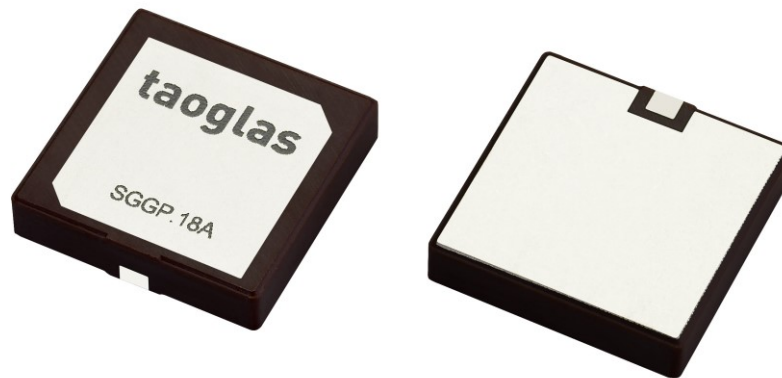
## SPECIFICATION

Model No. : **SGGP.18A**

Product Name : **GPS/GLONASS SMT Patch Antenna**

Features : Single Feed SMT  
GPS: 1575MHz  
GLONASS: 1602MHz  
Dims: 18\*18\*4mm  
Patent pending  
**RoHS Compliant**

Photo :



## 1. Introduction

This ceramic 18mm GPS/GLONASS patch antenna is mounted via SMT process and has been pre-tuned for a 50\*50mm ground plane. Custom part numbers tuned for different ground-plane or layout positions and taking into account the specific conditions in your device can be created and supplied by Taoglas.

## 2. Specification

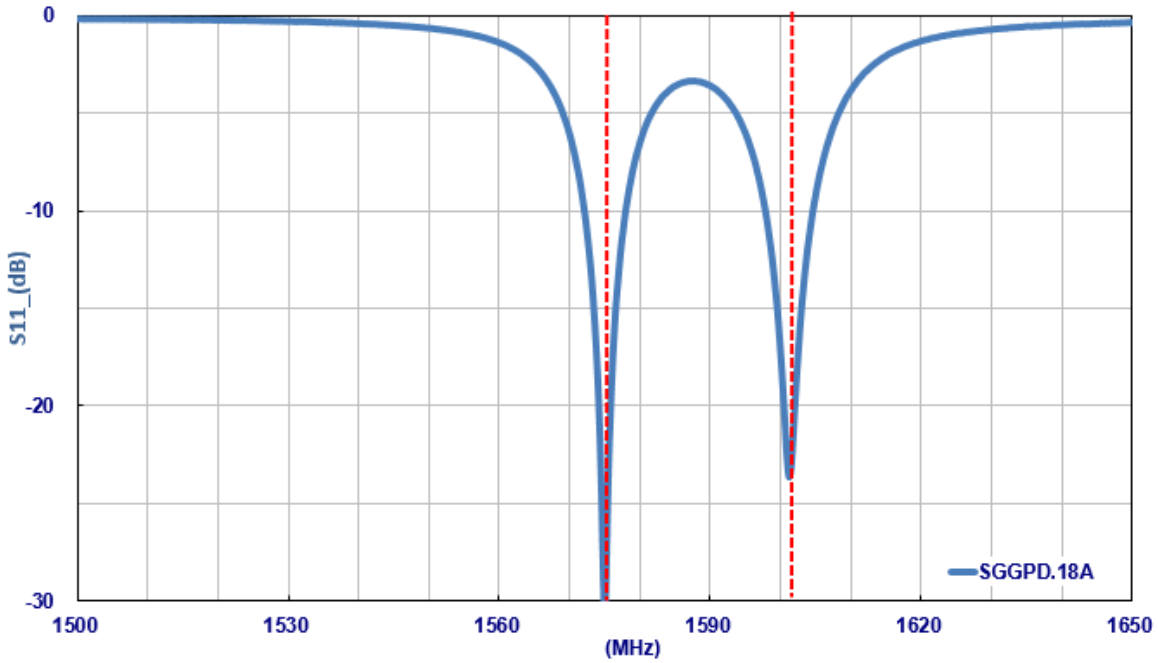
### Original Patch Specification tested on 50\*50mm ground plane

No	Parameter	Specification	Notes
1	Range of Receiving Frequency	GPS: 1575.42 MHz $\pm$ 1.023 MHz GLONASS: 1602 $\pm$ 5 MHz	
2	Return Loss	< -10dB	Center Frequency
3	Gain at Zenith	GPS: 3.88dBi GLONASS: 4.03 dBi	
4	Efficiency	GPS: 76.54% GLONASS: 78.59%	
5	Impedance	50 Ohms	
7	Frequency Temperature Coefficient ( $\tau_f$ )	0 $\pm$ 20ppm / $^{\circ}$ C	-40 $^{\circ}$ C to +85 $^{\circ}$ C
8	Operating Temperature	-40 $^{\circ}$ C to +85 $^{\circ}$ C	

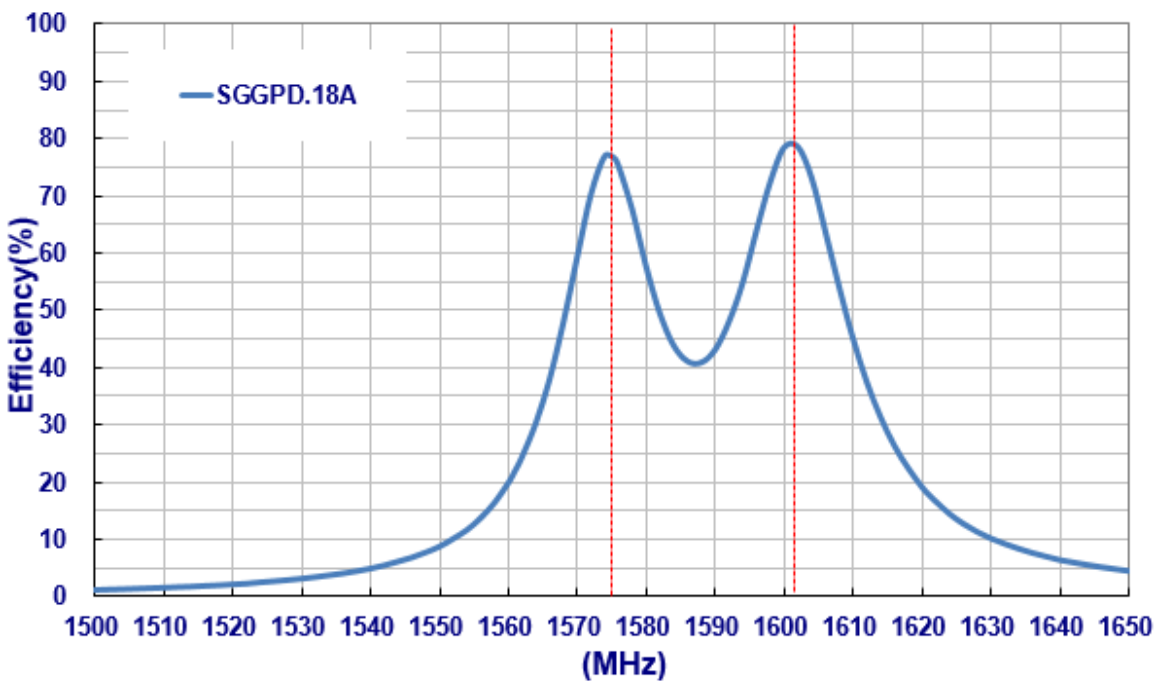
\*\*Changes in user groundplane and environment will offset centre frequency

### 3. Electrical Specifications

#### 3.1 Return Loss

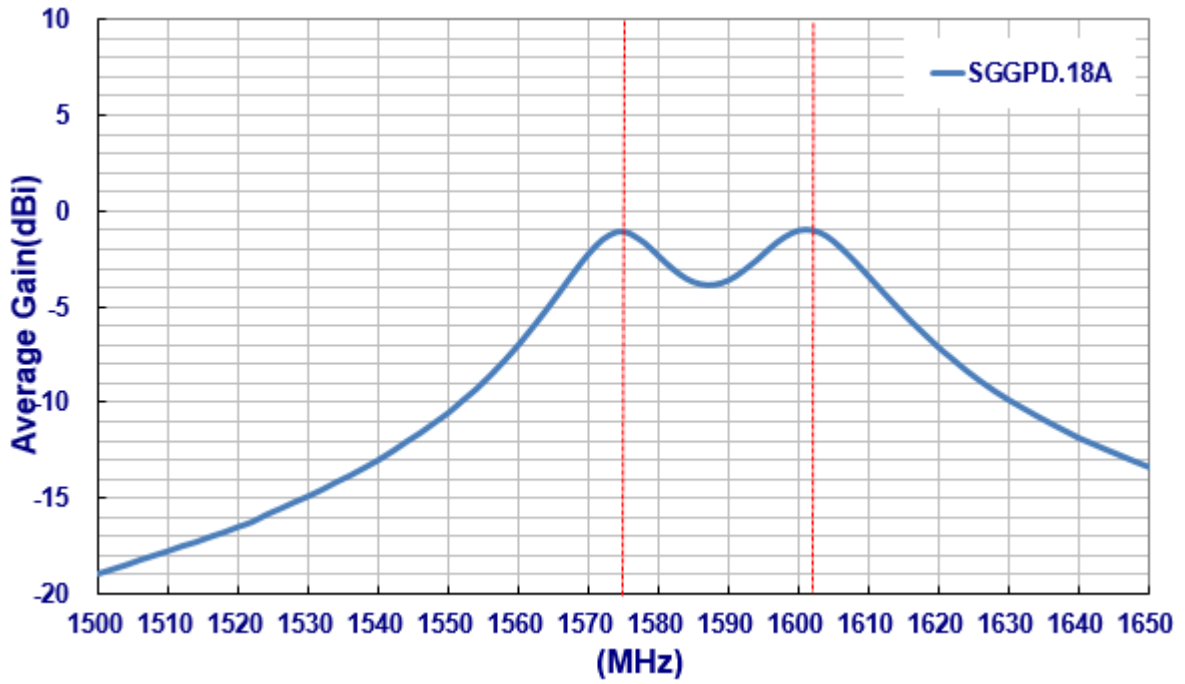


#### 3.2 Efficiency

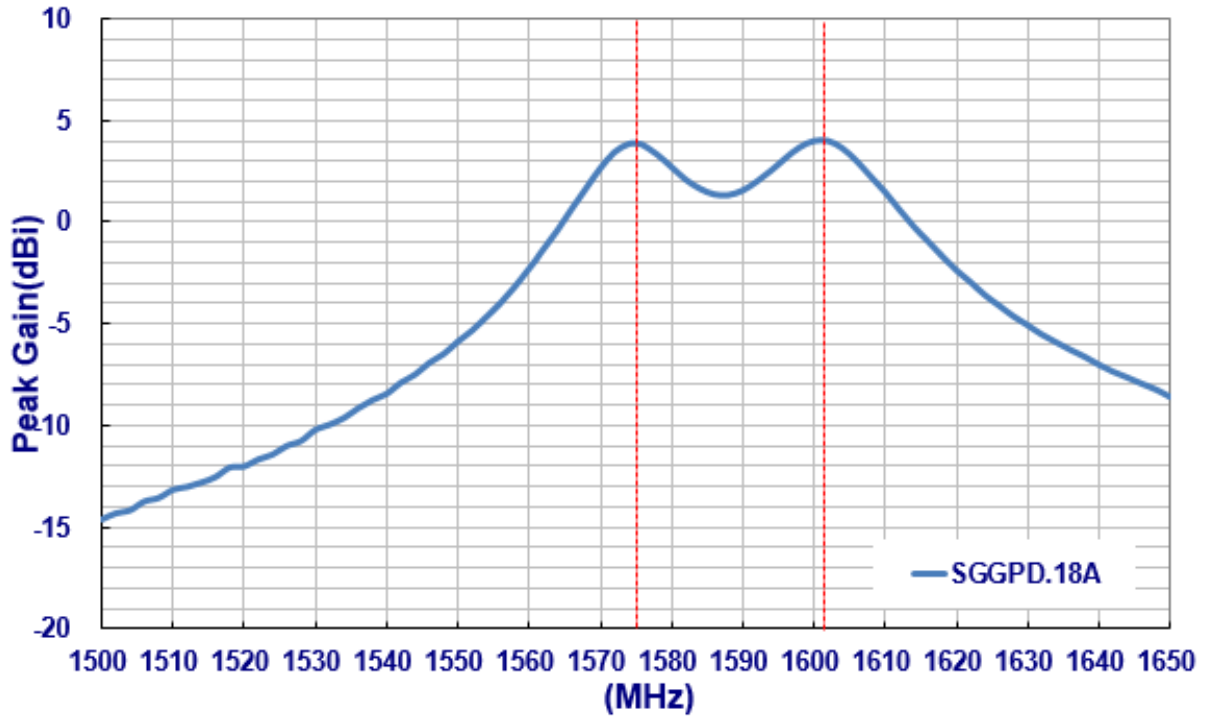


#### 3.3

## Average Gain



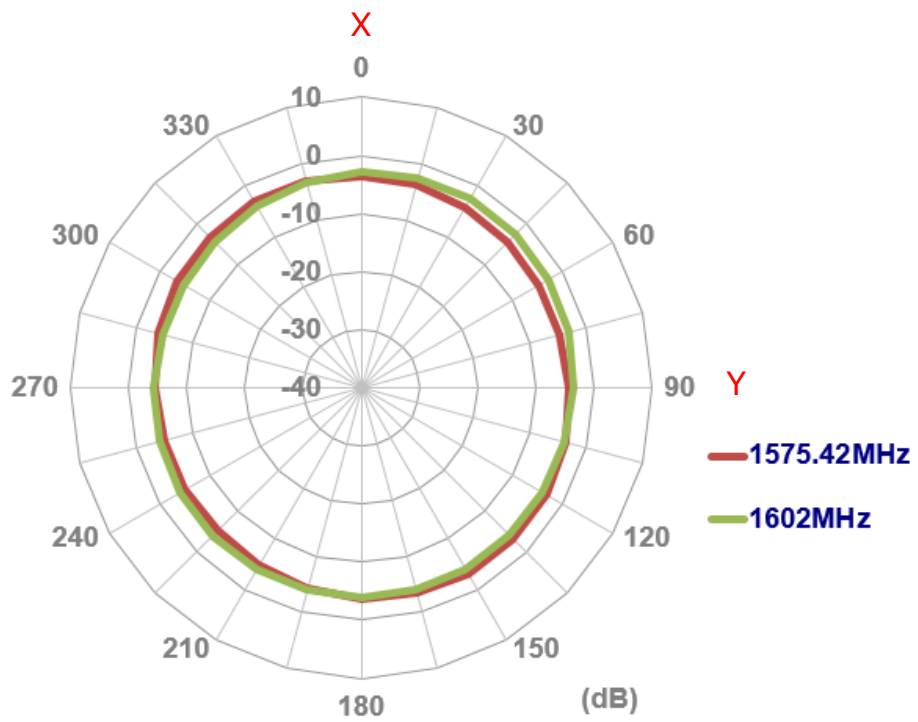
## 3.4 Peak Gain



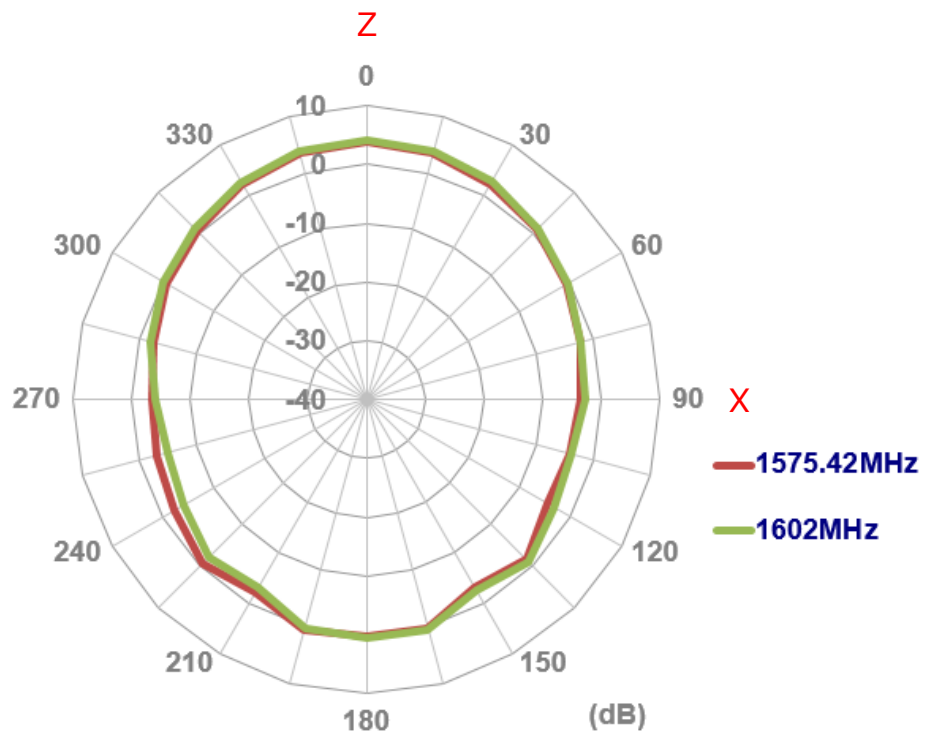
## 4. Radiation Patterns



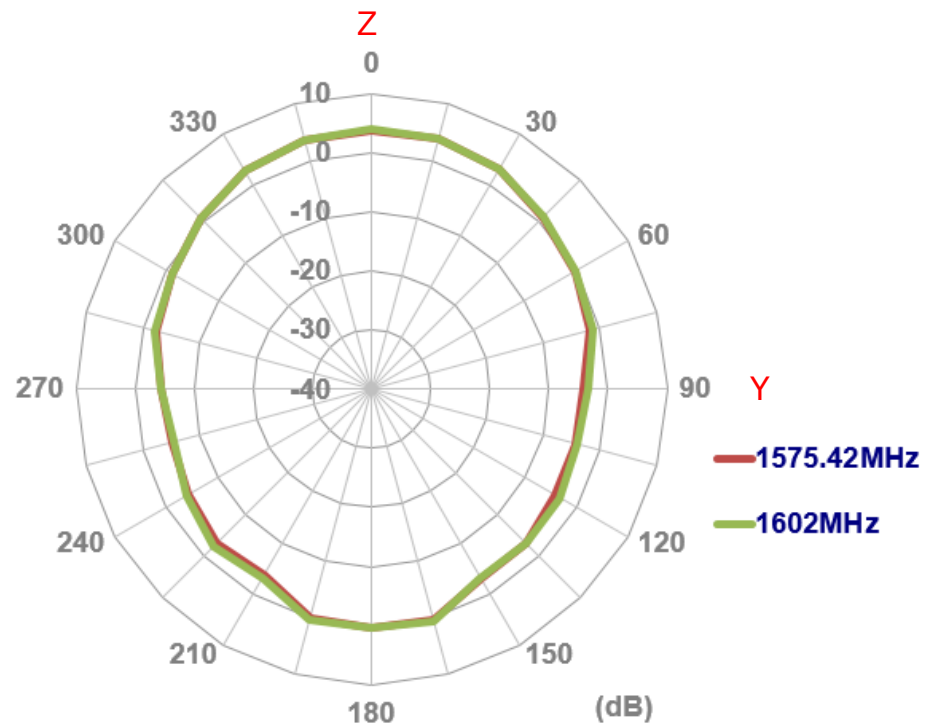
### 4.1 XY Plane



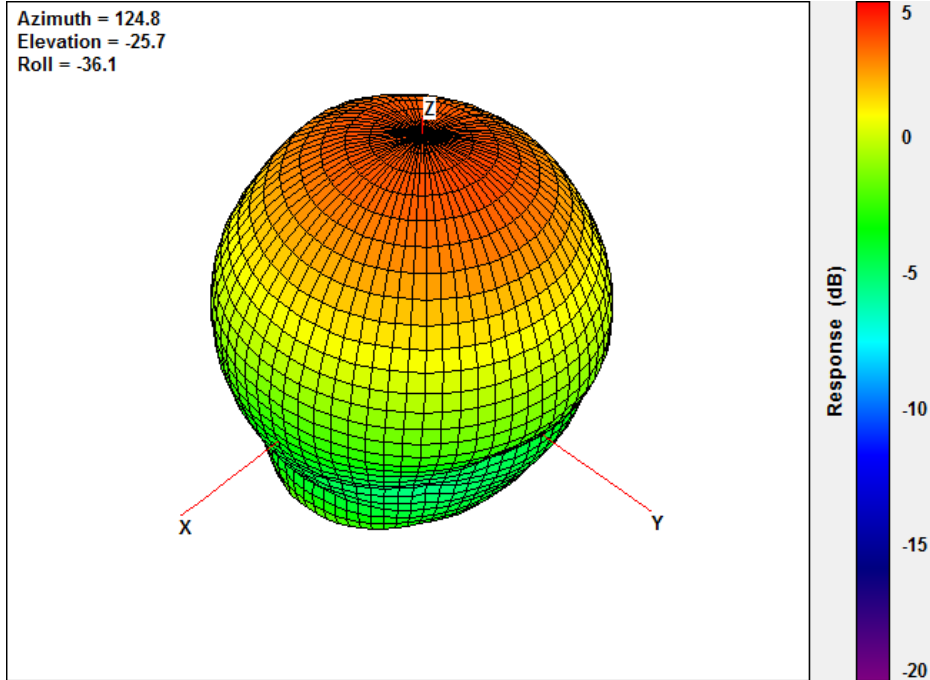
### 4.2 XZ Plane



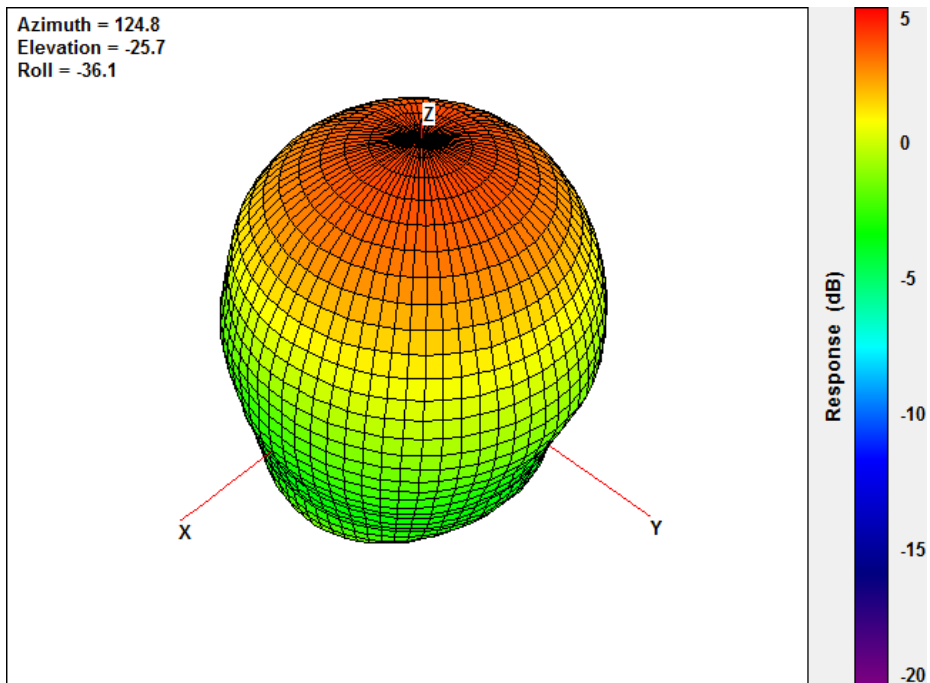
### 4.3 YZ Plane



### 4.4 3D Radiation Pattern



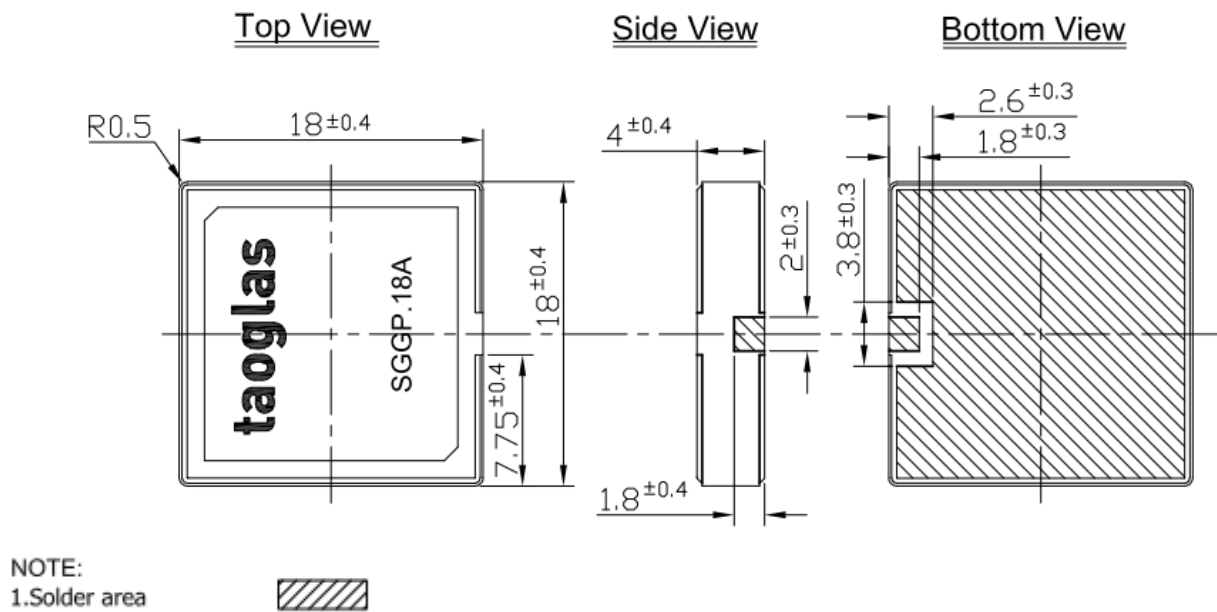
**@ 1575.42MHz**



**@ 1602MHz**

## 5. Mechanical Specifications

### 5.1 Antenna Dimensions and Drawing

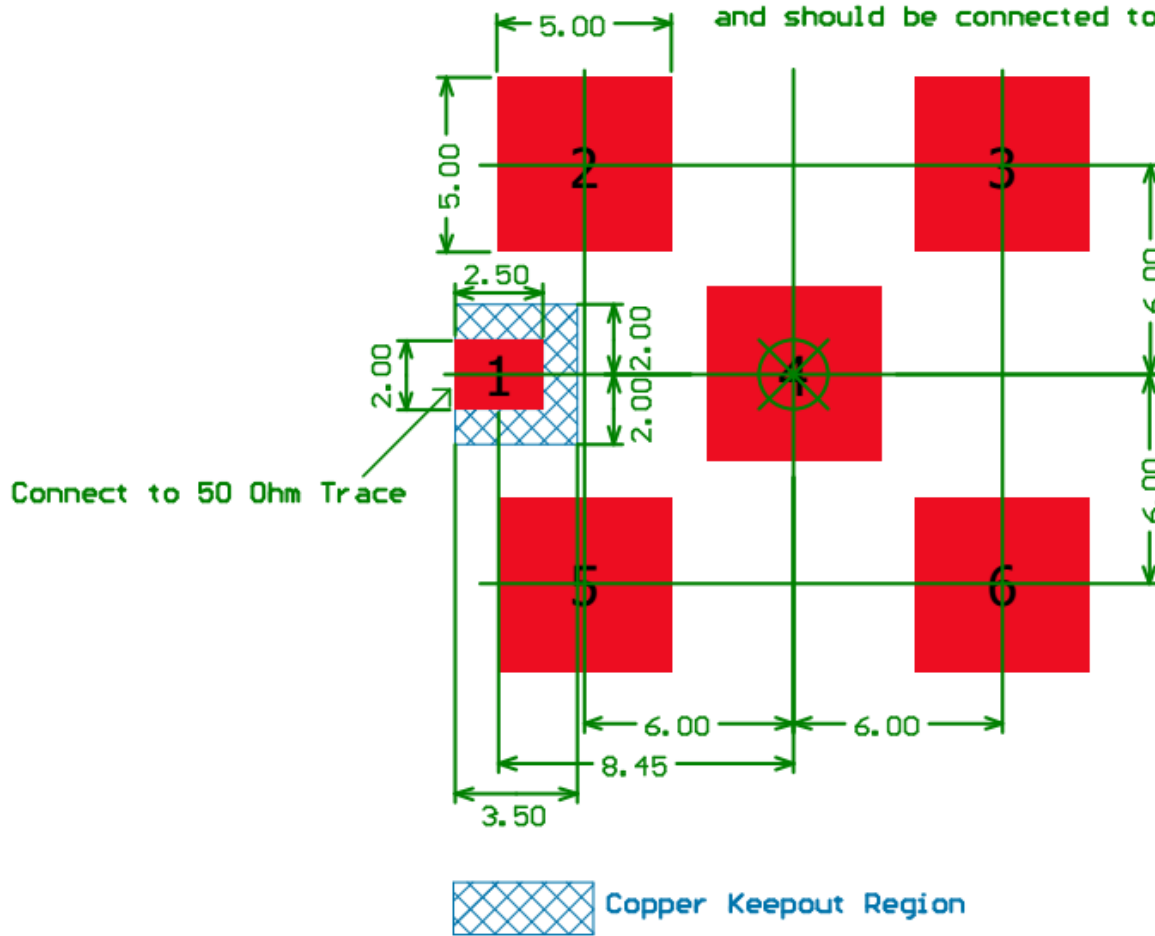




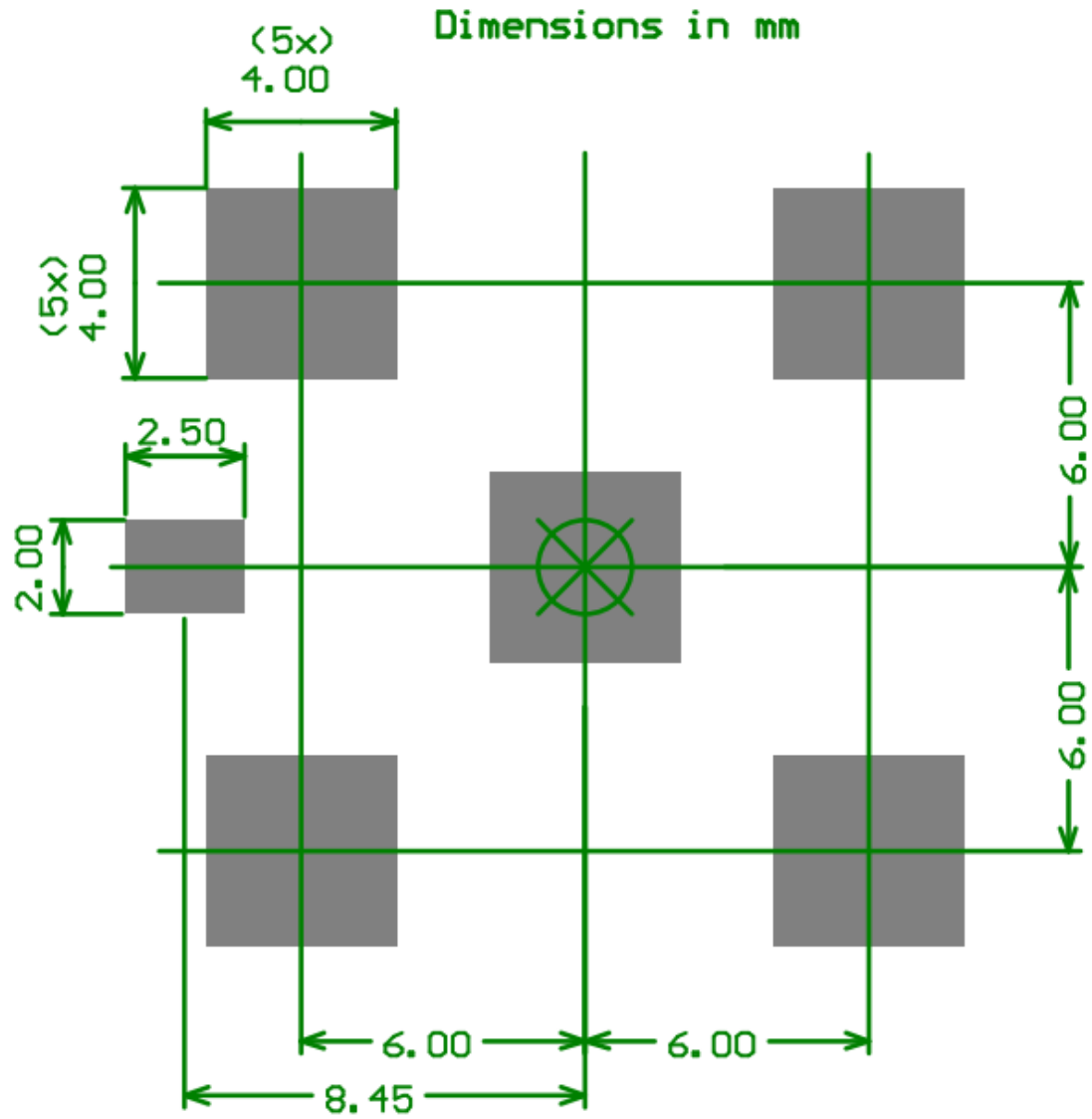
## 5.2 Top Copper and Copper Keepout

Dimensions in mm

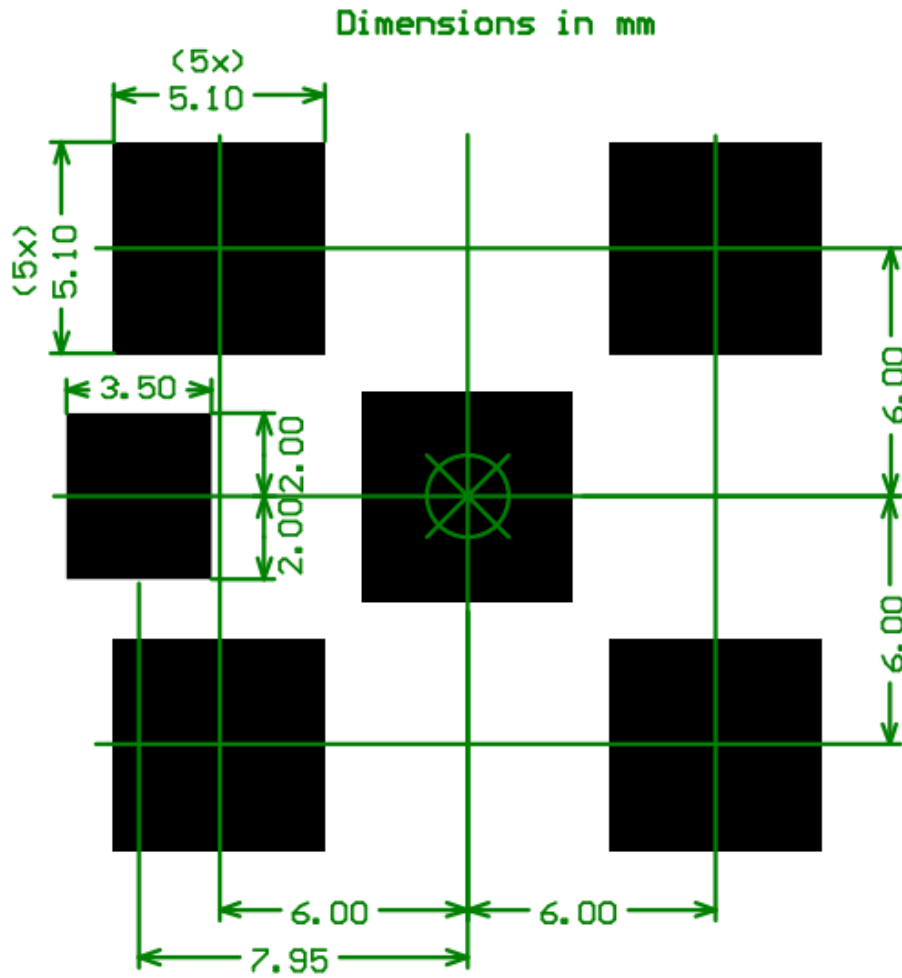
Pads 2, 3, 4, 5, and 6 are the same size and should be connected to GND.



### 5.3 Solder Paste Area

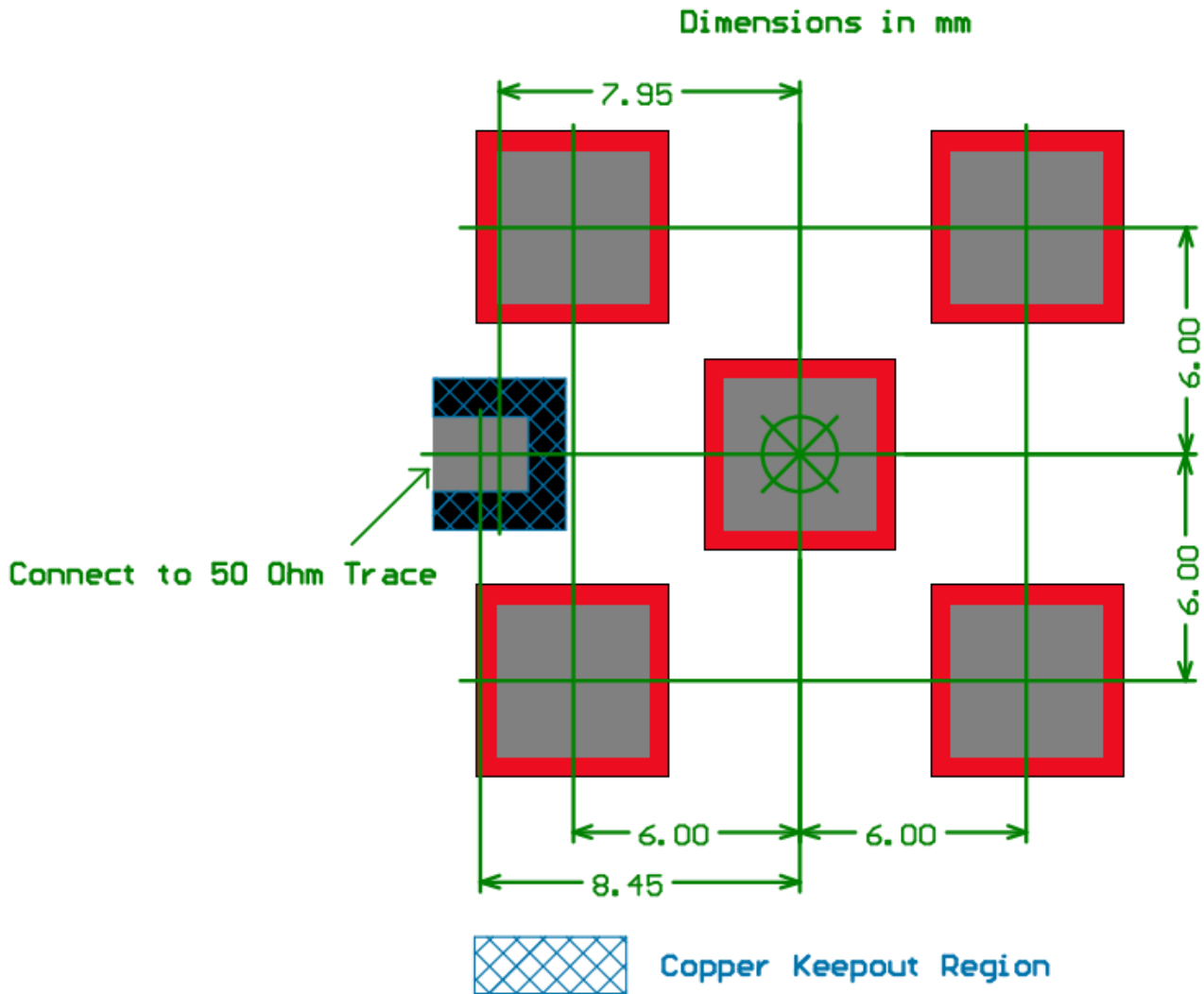


## 5.4 Solder Mask (Negative)

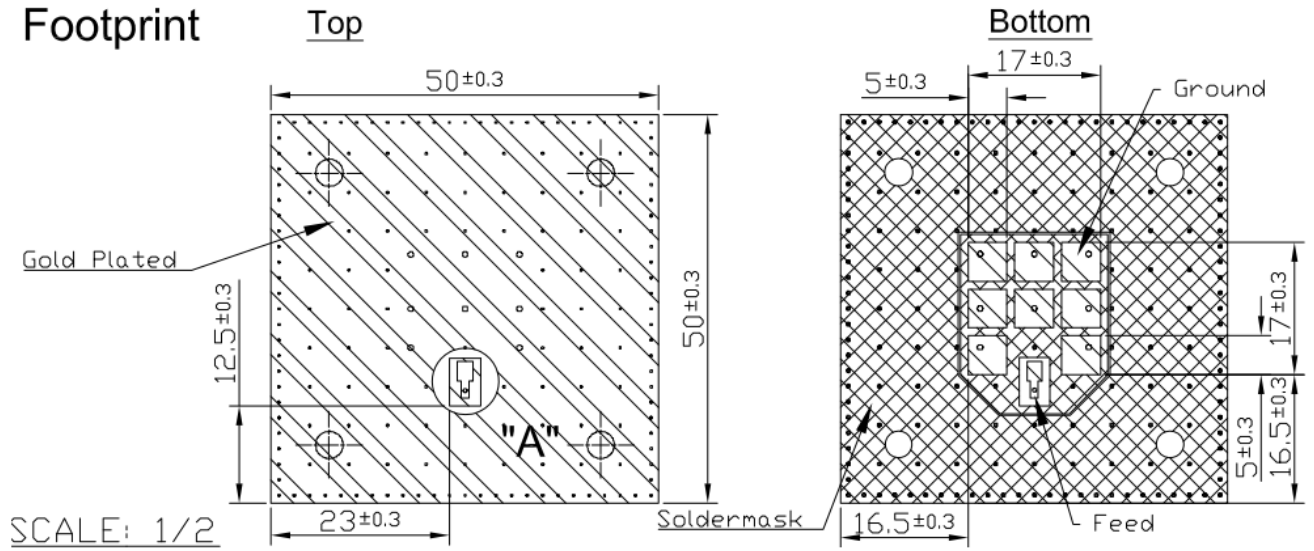


This drawing is a negative of solder mask.  
Black regions are anti-mask.

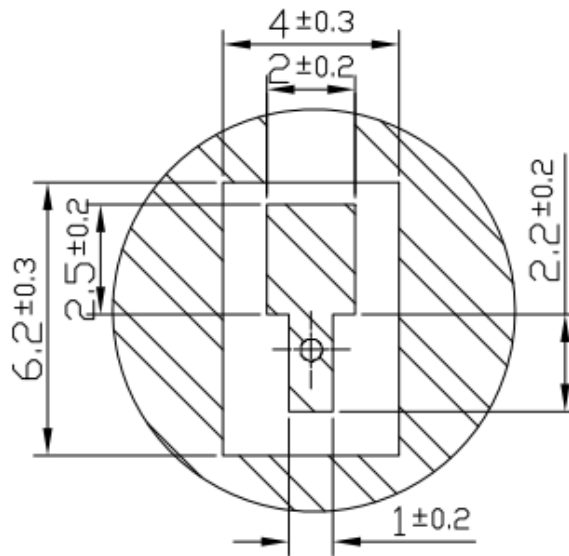
## 5.5 Footprint Composite



## 5.6 Evaluation Board

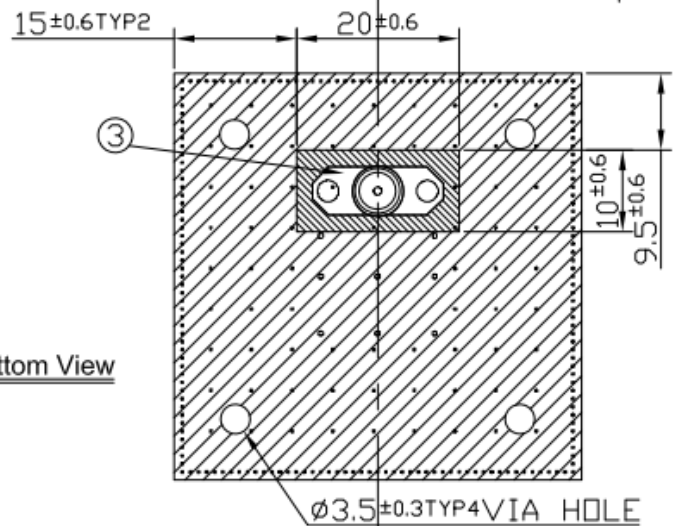
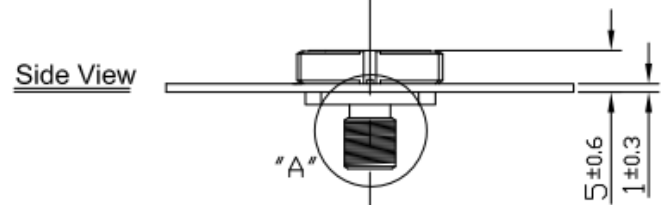
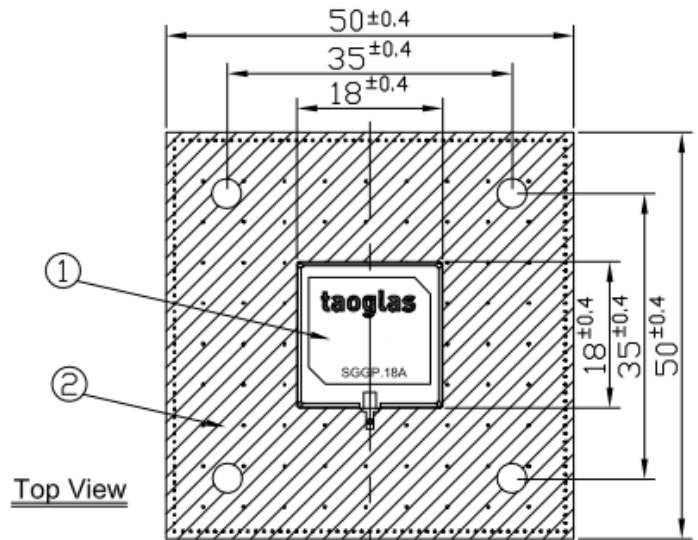
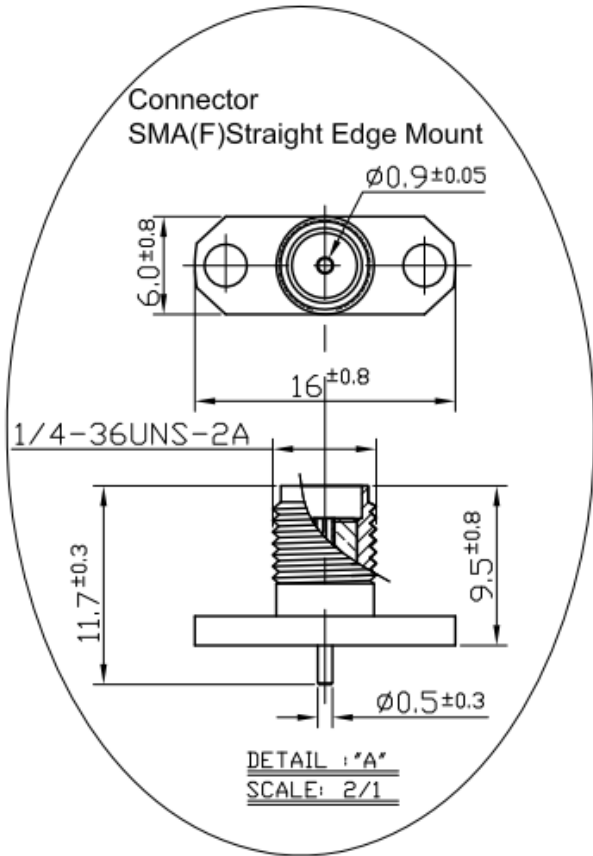


## 5.7 Feed





DETAIL : "A"  
SCALE: 2/1

## 5.8 Test Jig and Dimension – SGGP.18A

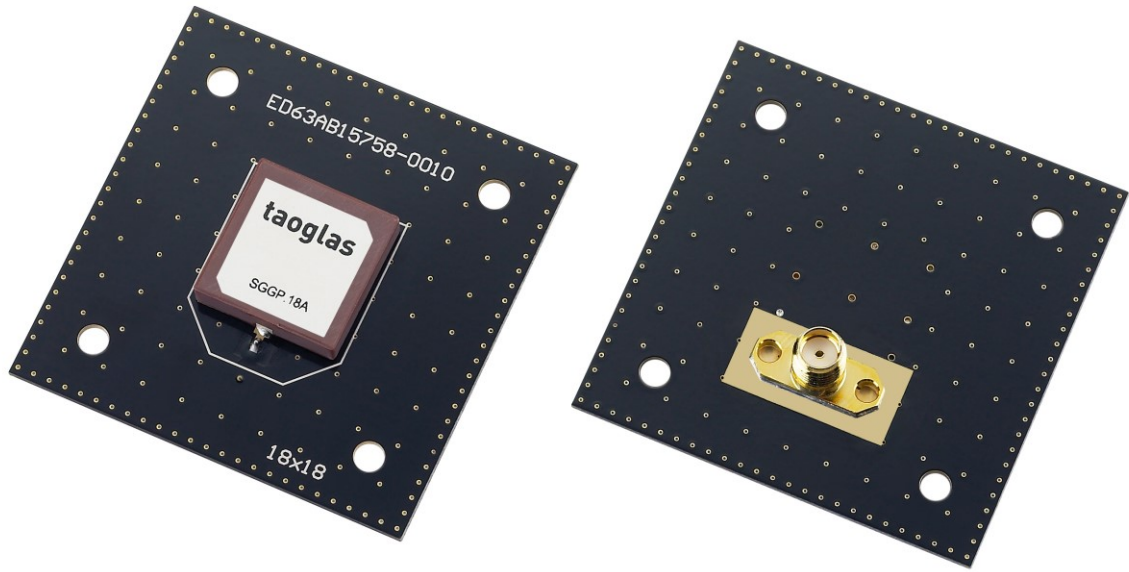


### NOTES:

1. Solder Mask (Black) 
2. Solder Area 

	Name	Material	Finish	QTY
1	SGGP.18A Patch18x18x4	Ceramic	Clear	1
2	FR4 PCB	FR4 1t	Black	1
3	SMA(F)Straight Edge Mount	Brass	Gold	1

## 5.9 SGGPD.18A



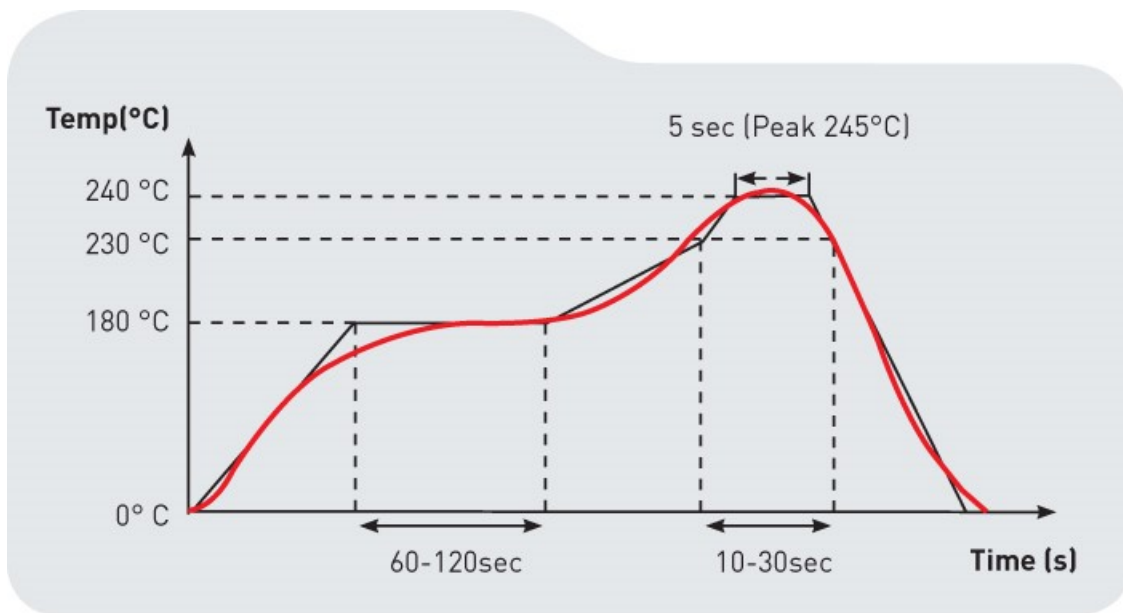
## 6. Antenna Recommended Soldering Conditions

### 6.1 Flux, Solder

- Use rosin-based flux. Don't use highly acidic flux with halide content exceeding 0.2wt%(chlorine conversion value).
- Use Sn solder.

### 6.2 Reflow soldering conditions

- Pre-heating should be in such a way that the temperature difference between solder and product surface is limited to 150°C max. Cooling into solvent after soldering also should be in such a way that temperature difference is limited to 100°C max. Unwrought pre-heating may cause cracks on the product, resulting in the deterioration of products quality.



### 6.3 Reworking with soldering iron

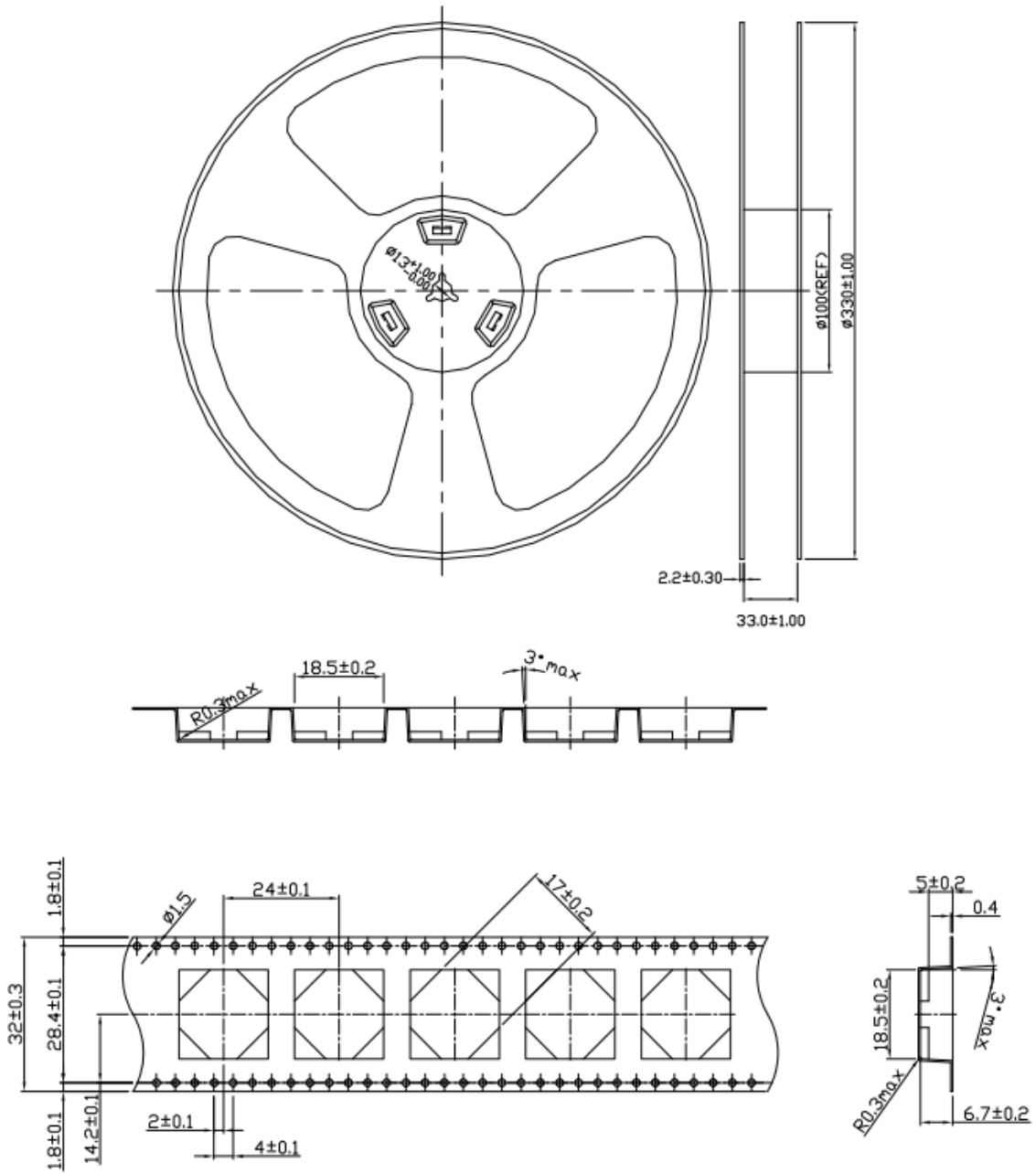
- The following conditions must be strictly followed when using a soldering iron.

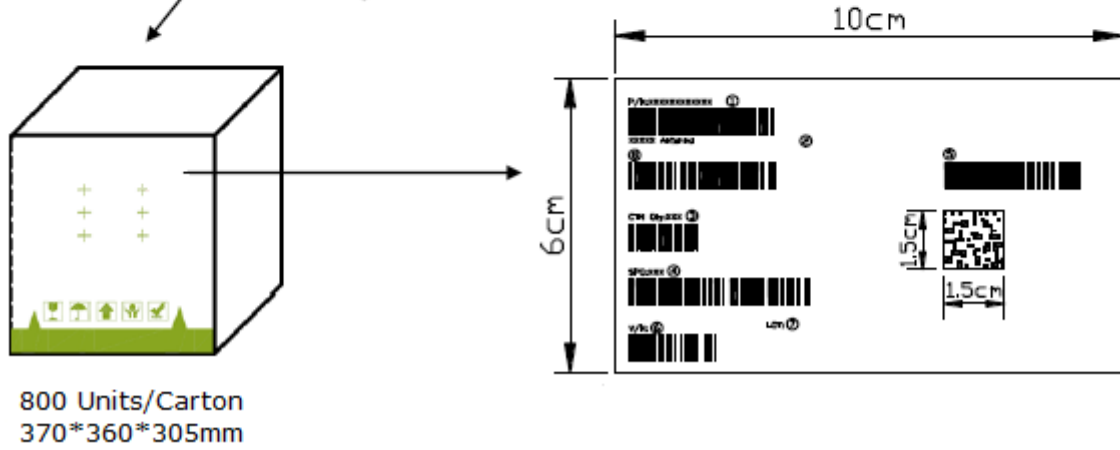
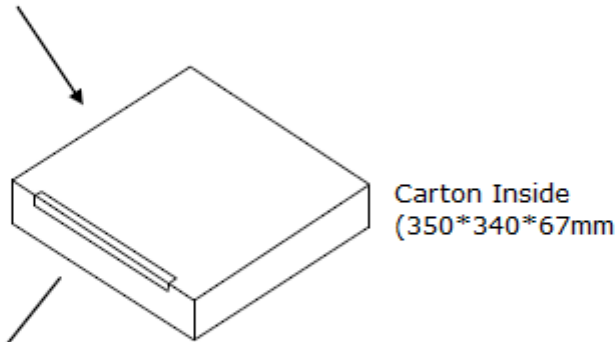
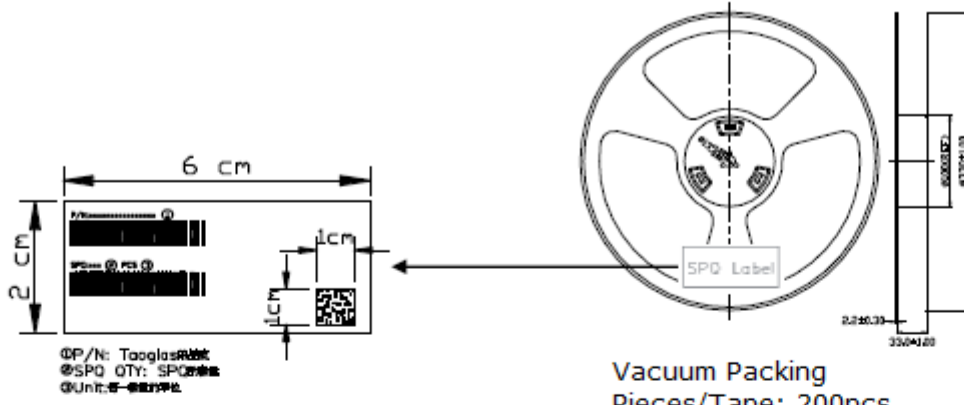
Pre-heating	150°C, 1 min
Tip temperature	290°C max
Soldering iron output	30w max
Soldering time	3 second max



# 7. Packaging

200 pcs/Reel/Inner Carton







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