

# SPECIFICATION

## PATENT PENDING

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

Product Name : GPS/GLONASS/GALILEO SMT Patch Antenna

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



# 1. Introduction

This ceramic 18mm GPS/GLONASS/GALILEO 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

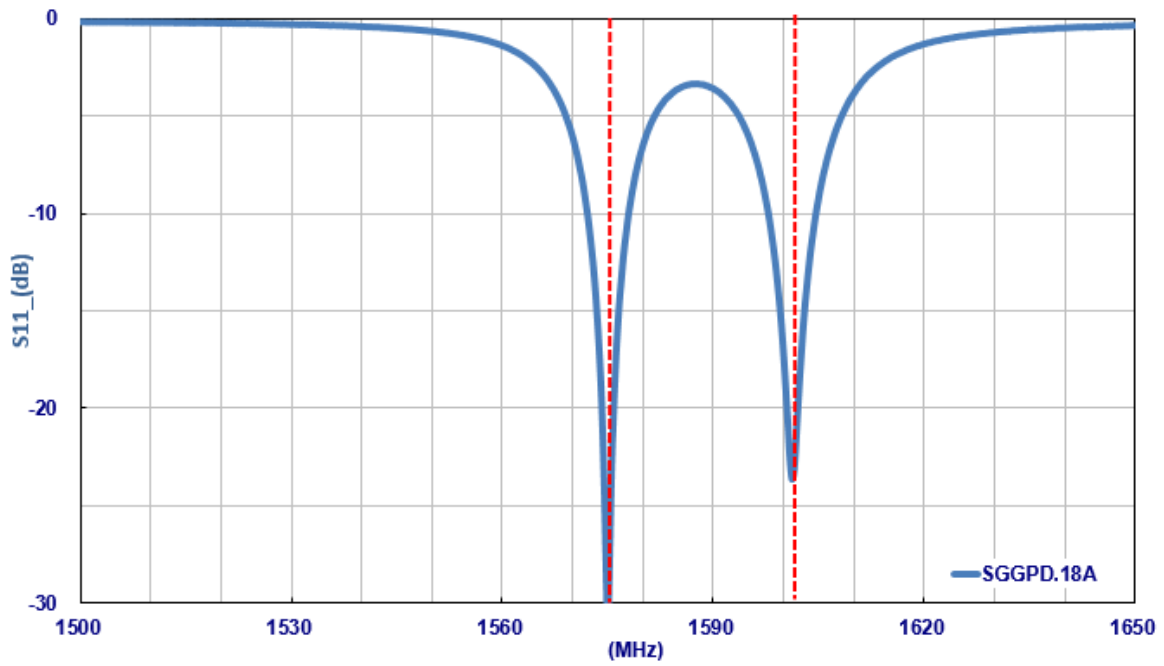
Original Patch Specification tested on 50\*50mm ground plane

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

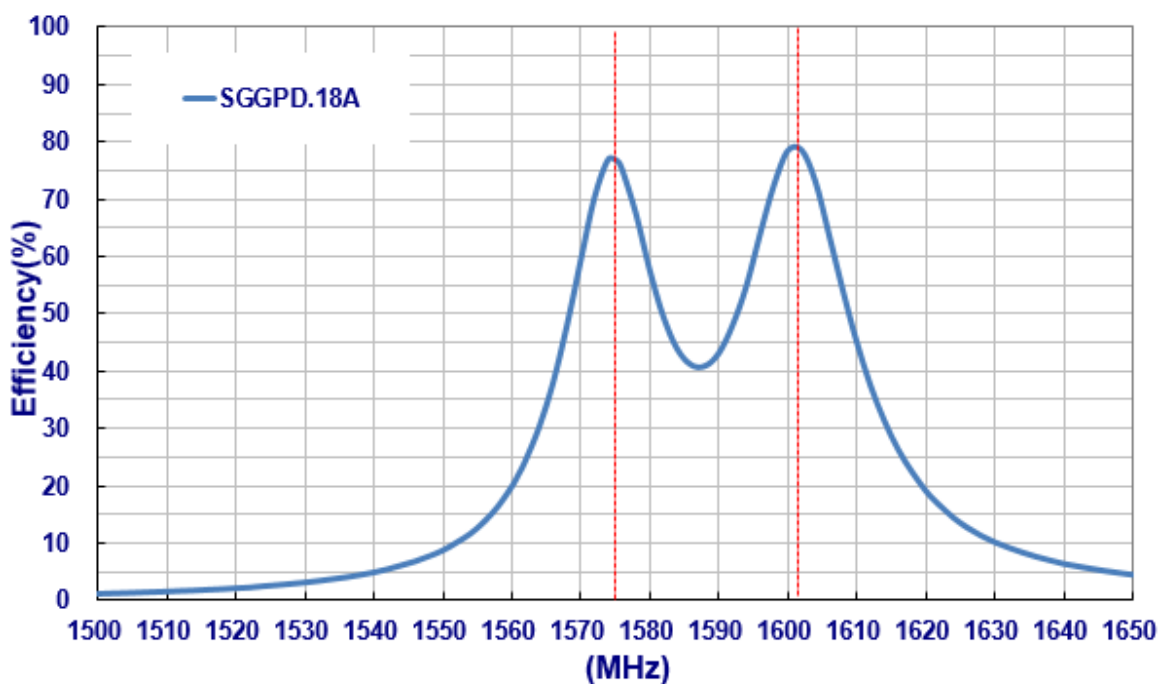
\*\*Changes in user groundplane and environment will offset centre frequency

### 3. Electrical Specifications

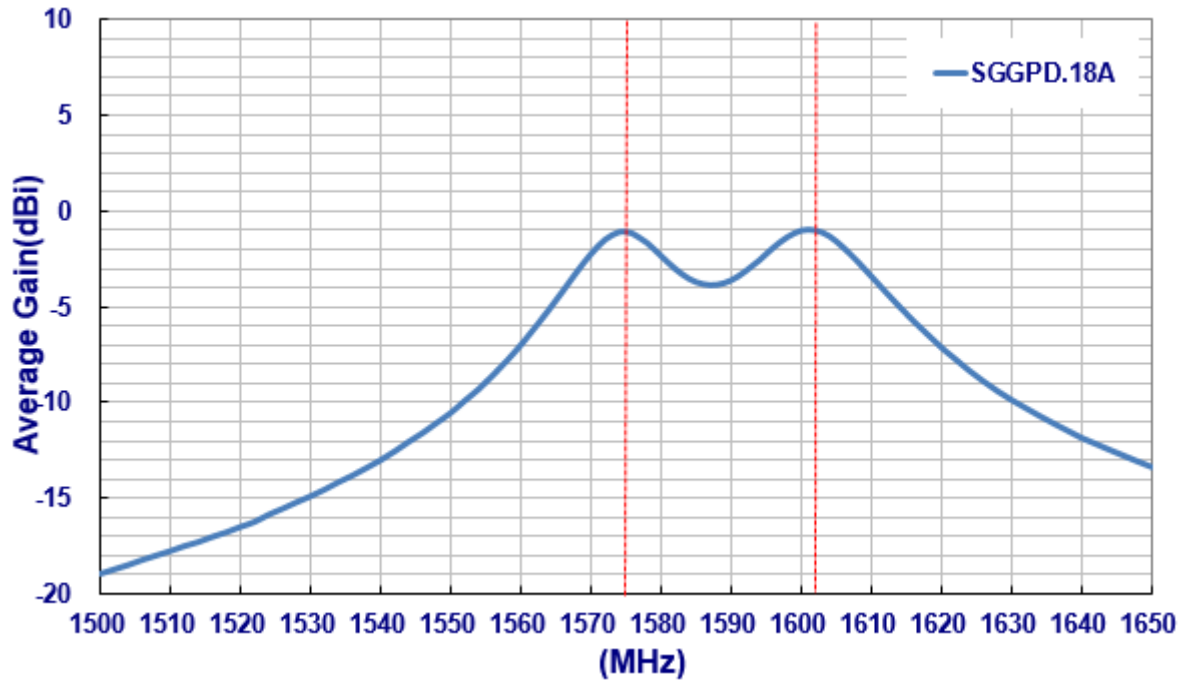
#### 3.1. Return Loss



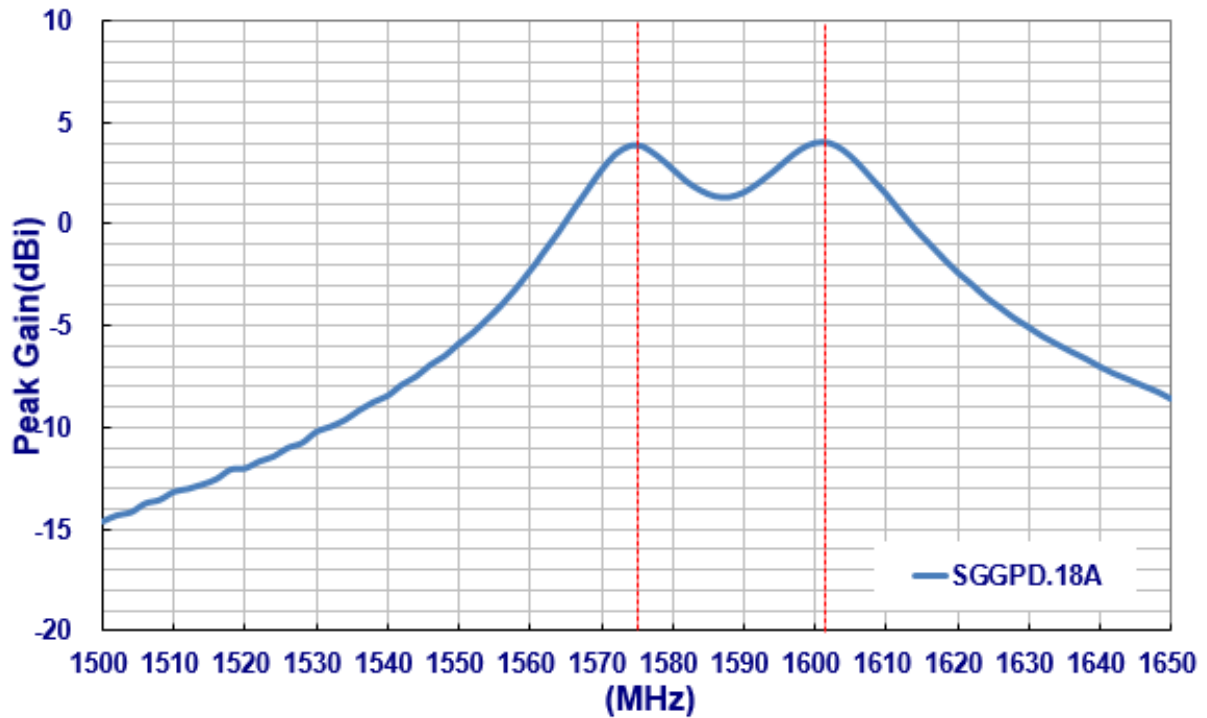
#### 3.2. Efficiency



### 3.3. Average Gain



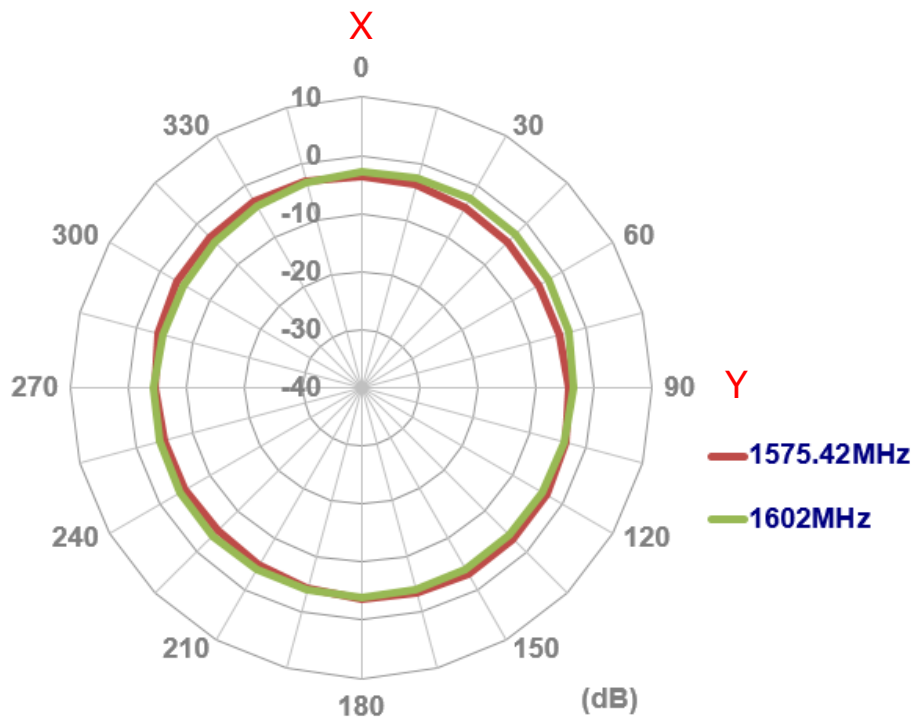
### 3.4. Peak Gain



## 4. Radiation Patterns

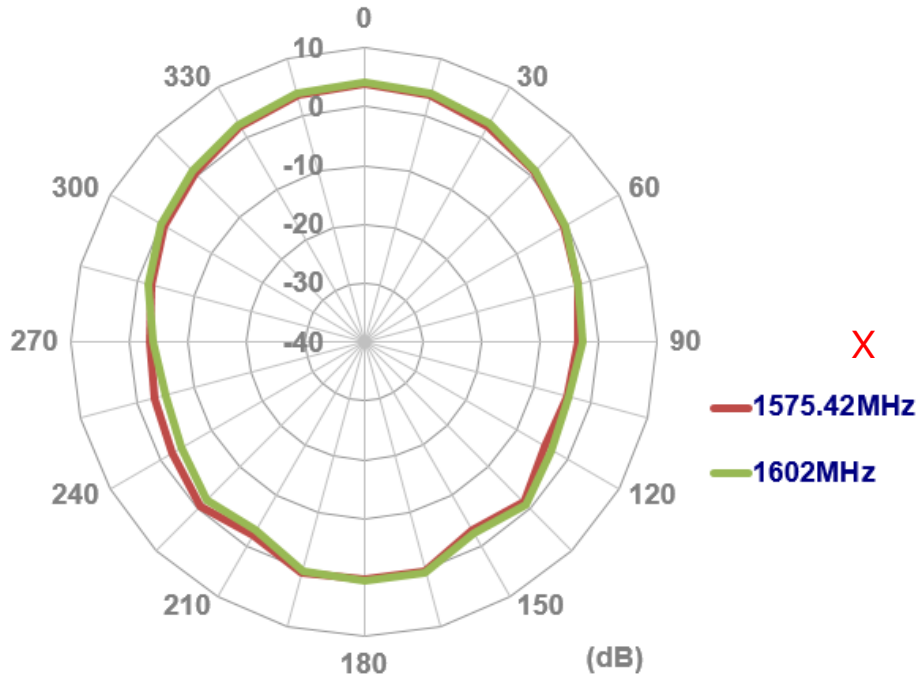


### 4.1. XY Plane



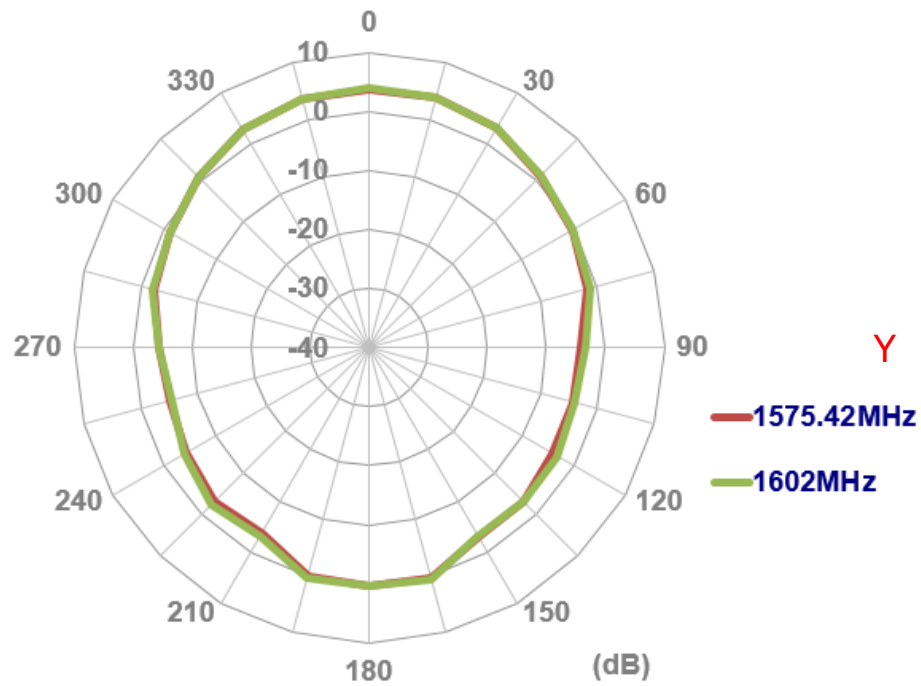
### 4.2. XZ Plane

Z

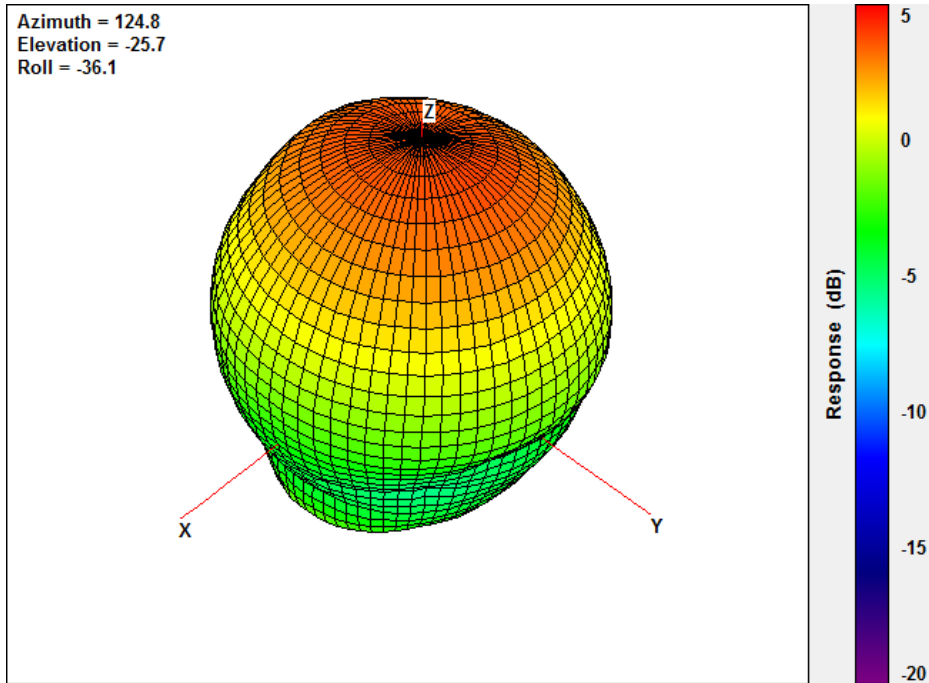


### 4.3. YZ Plane

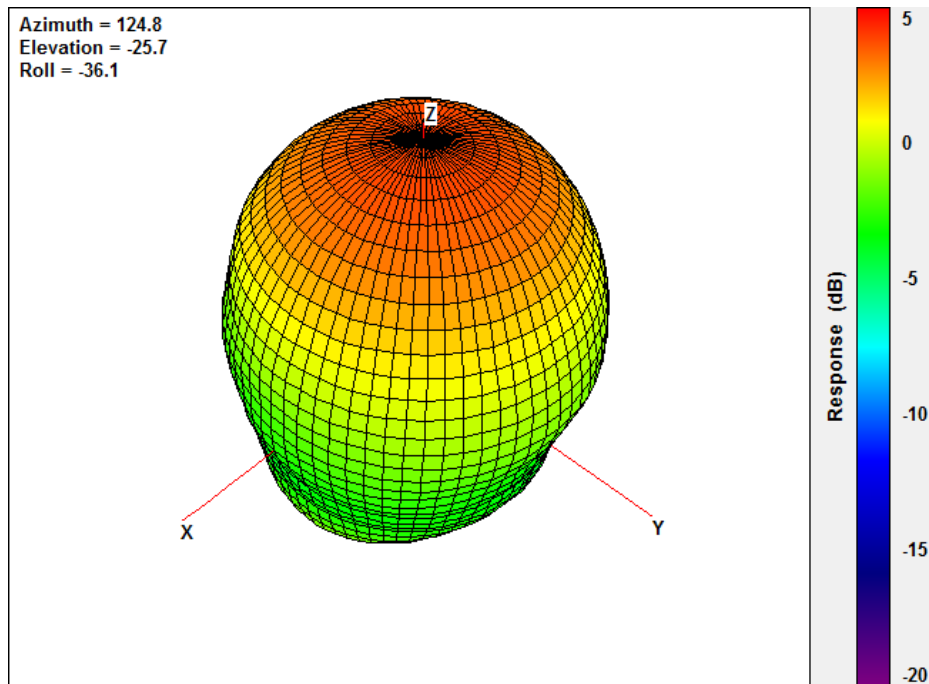
Z



### 4.4. 3D Radiation Pattern



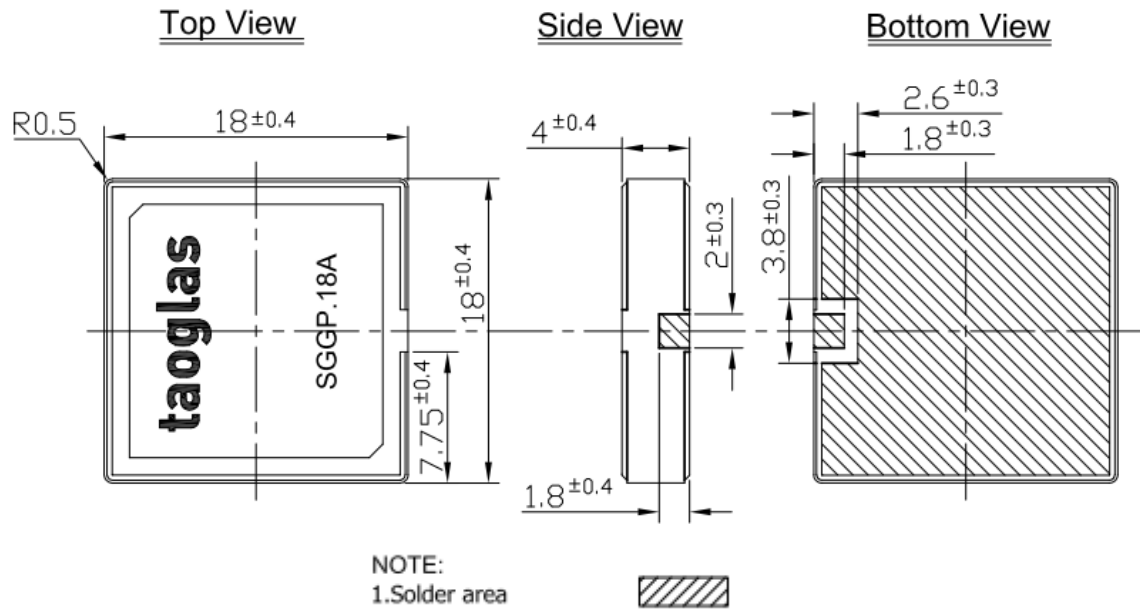
@ 1575.42MHz



@ 1602MHz

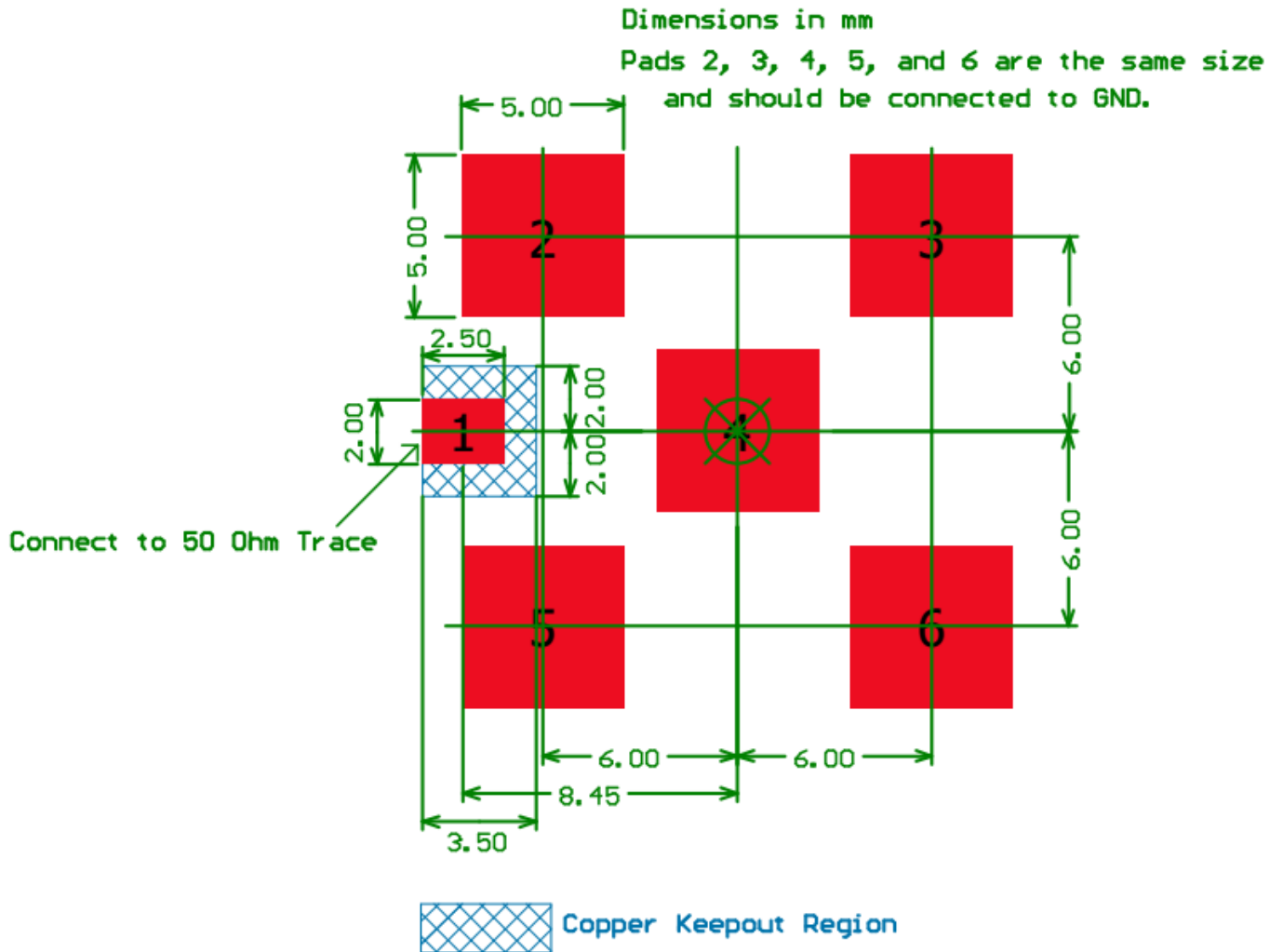
## 5. Mechanical Specifications

### 5.1. Antenna Dimensions and Drawing

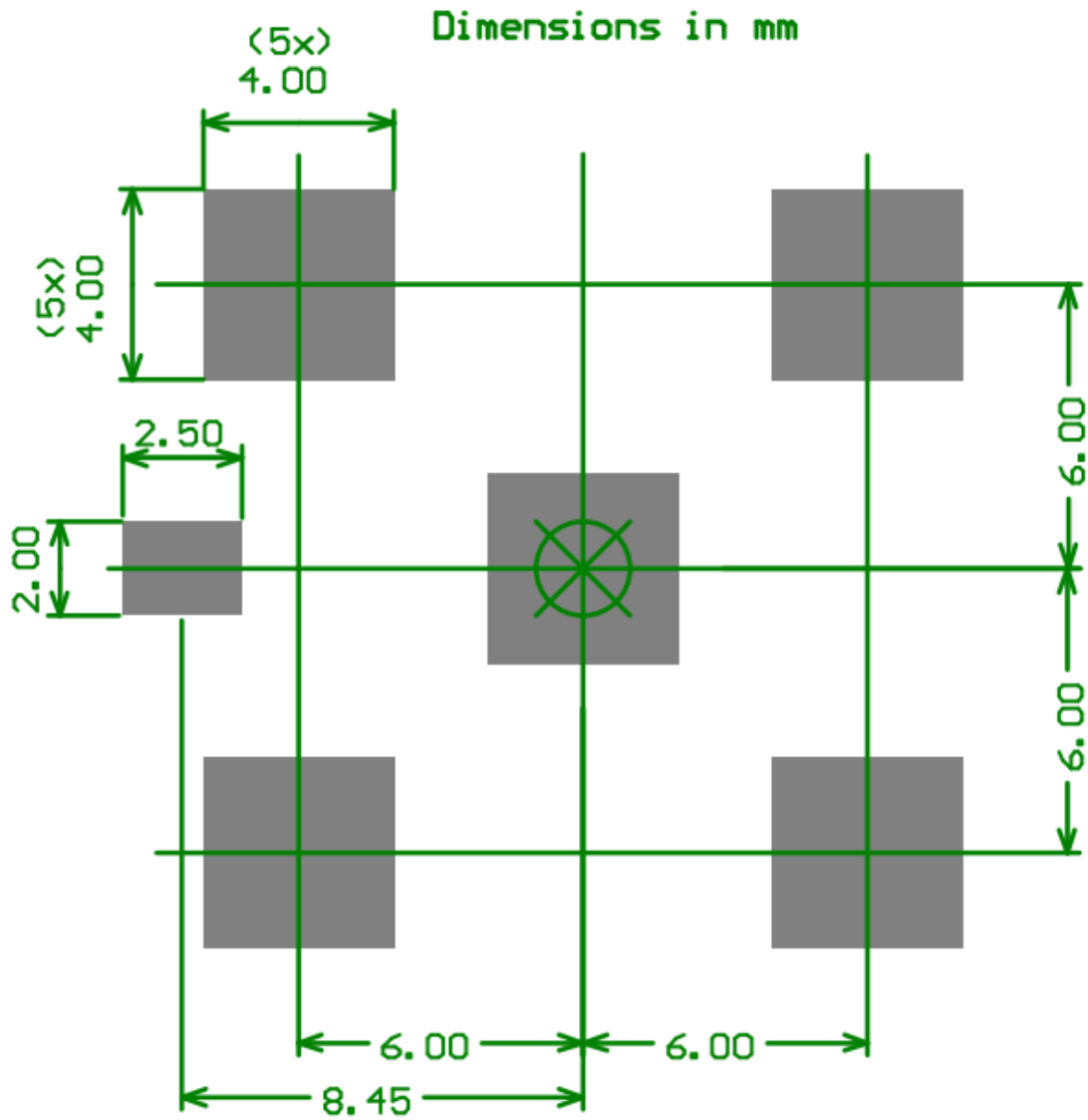




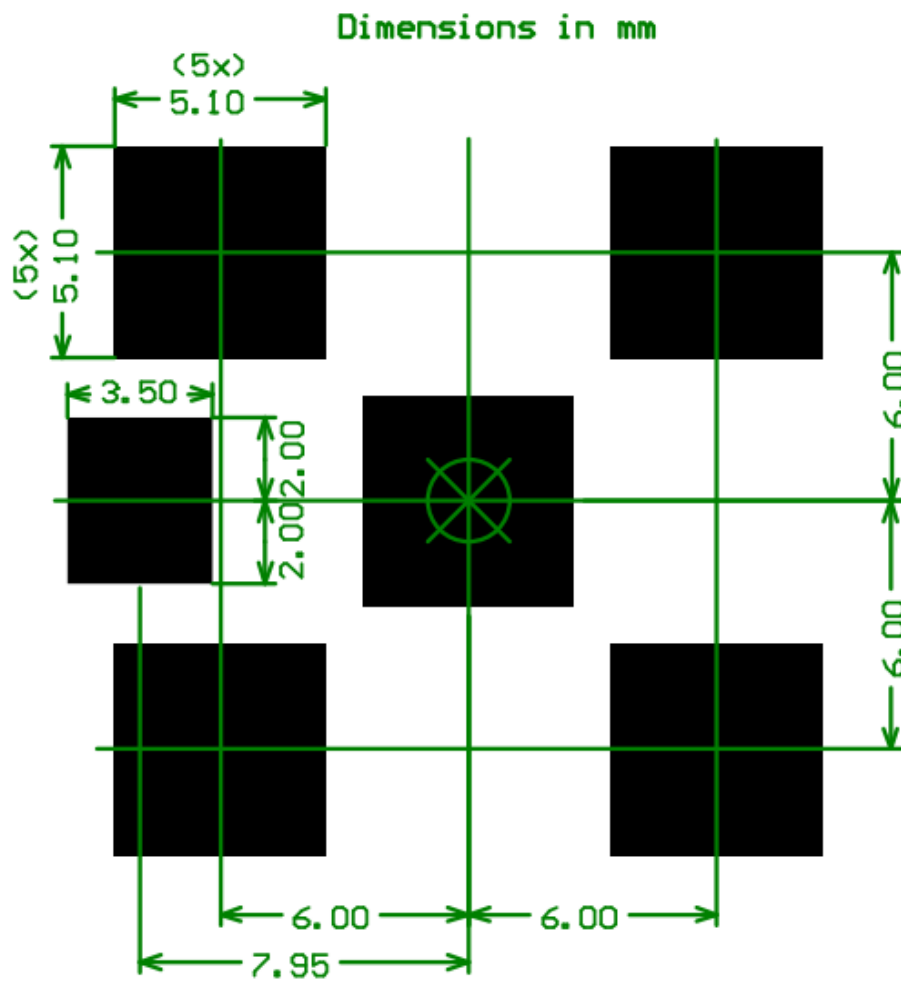
## 5.2. Top Copper and Copper Keepout



### 5.3. Solder Paste Area

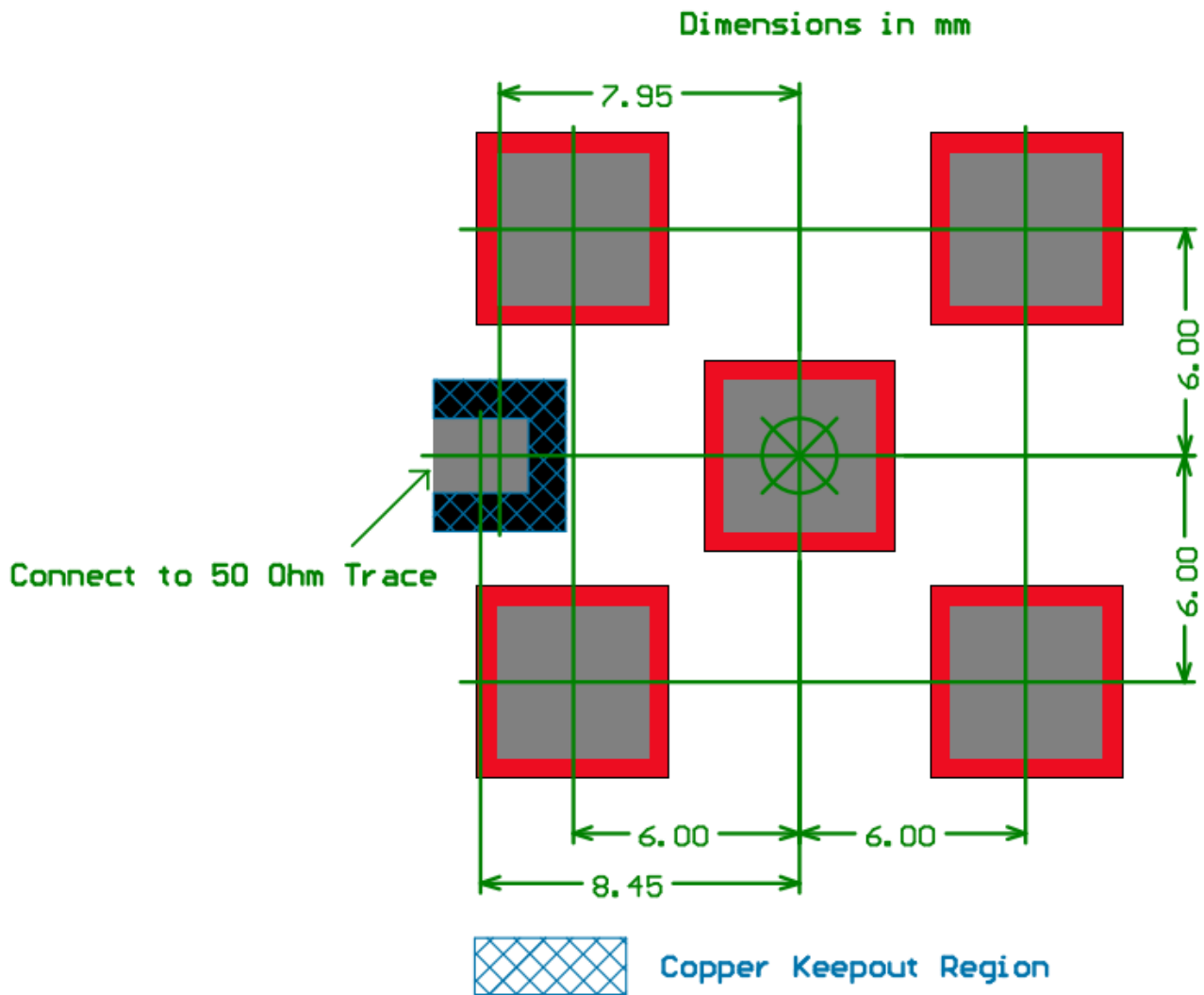


### 5.4. Solder Mask (Negative)

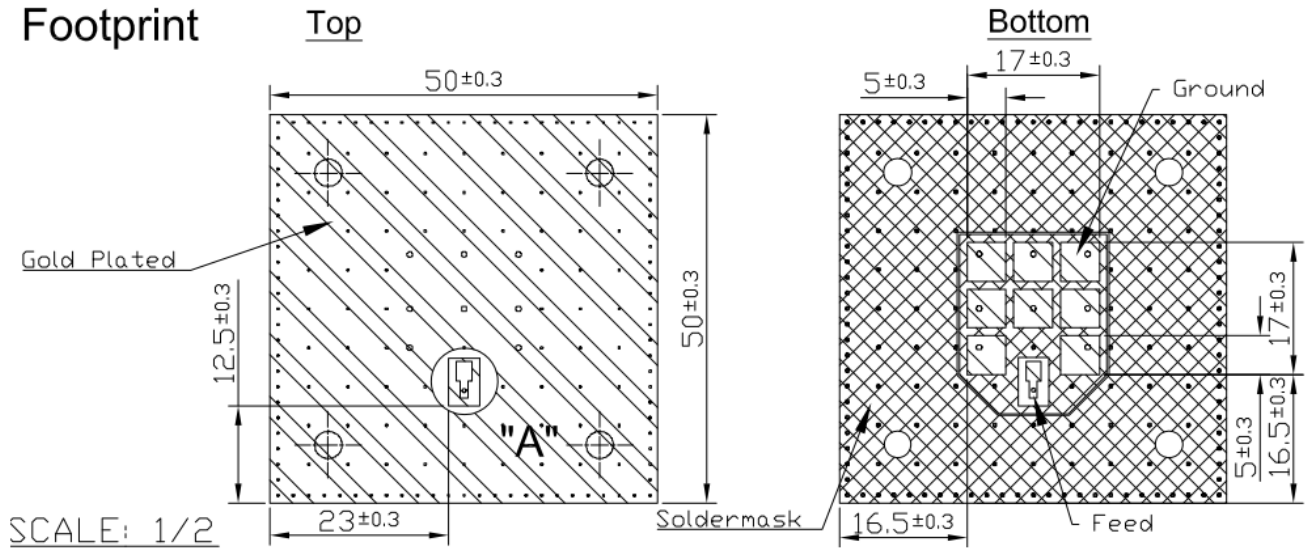


This drawing is a negative of solder mask.  
Black regions are anti-mask.

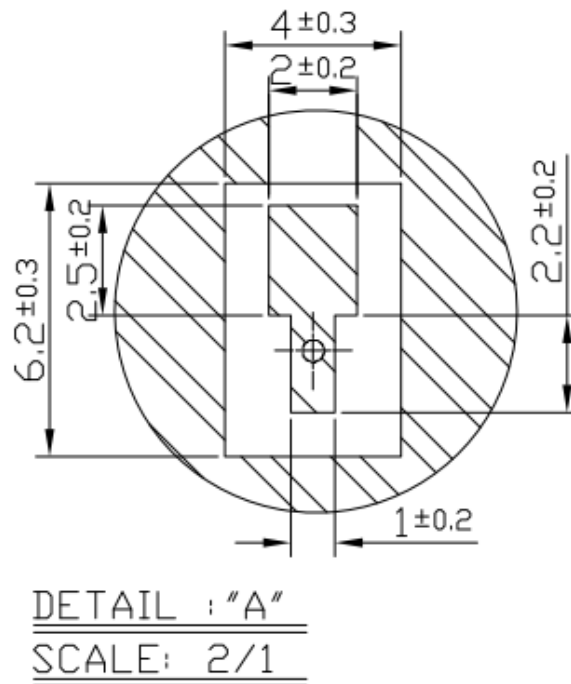
## 5.5. Footprint Composite



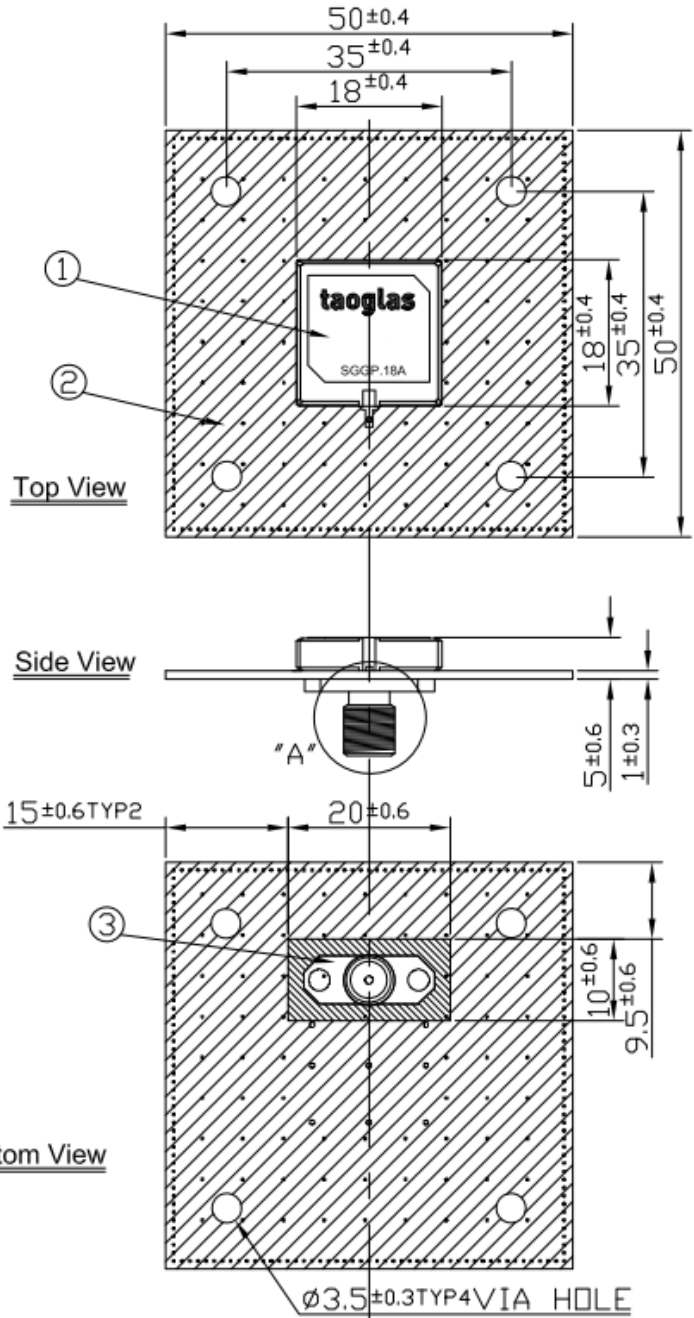
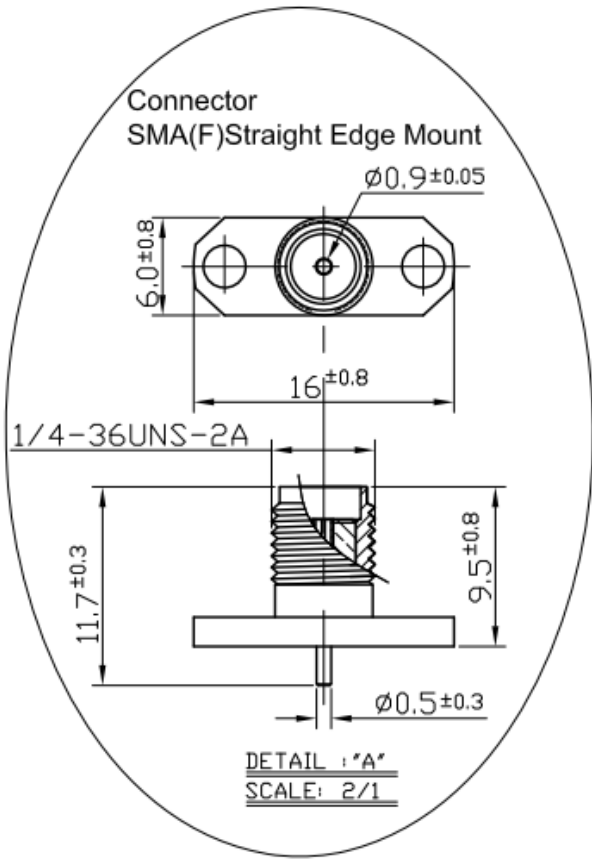
## 5.6. Evaluation Board




## 5.7. Feed



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

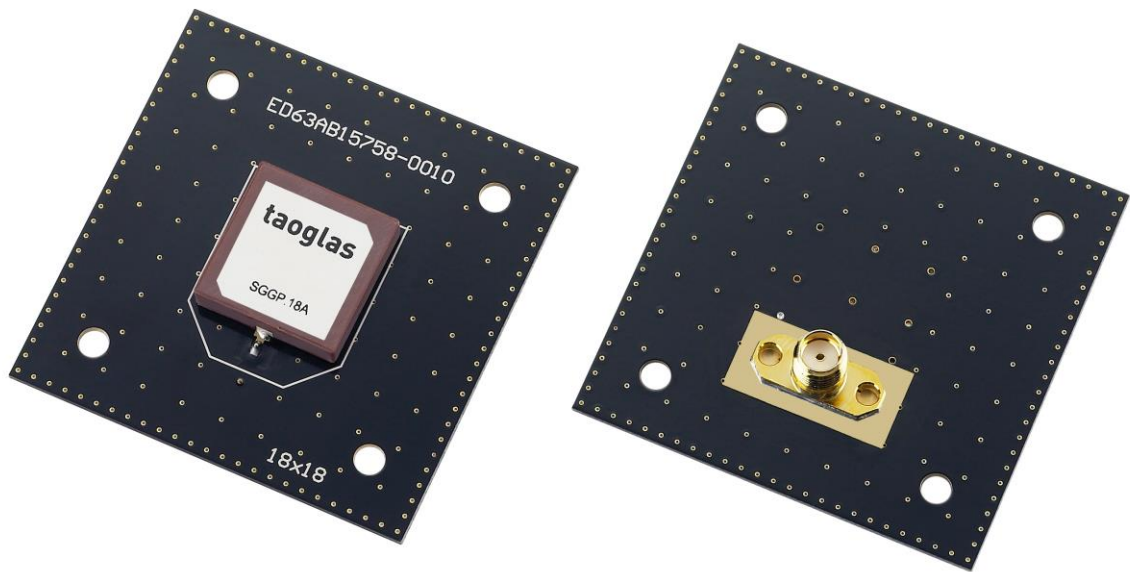


NOTES:

- 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



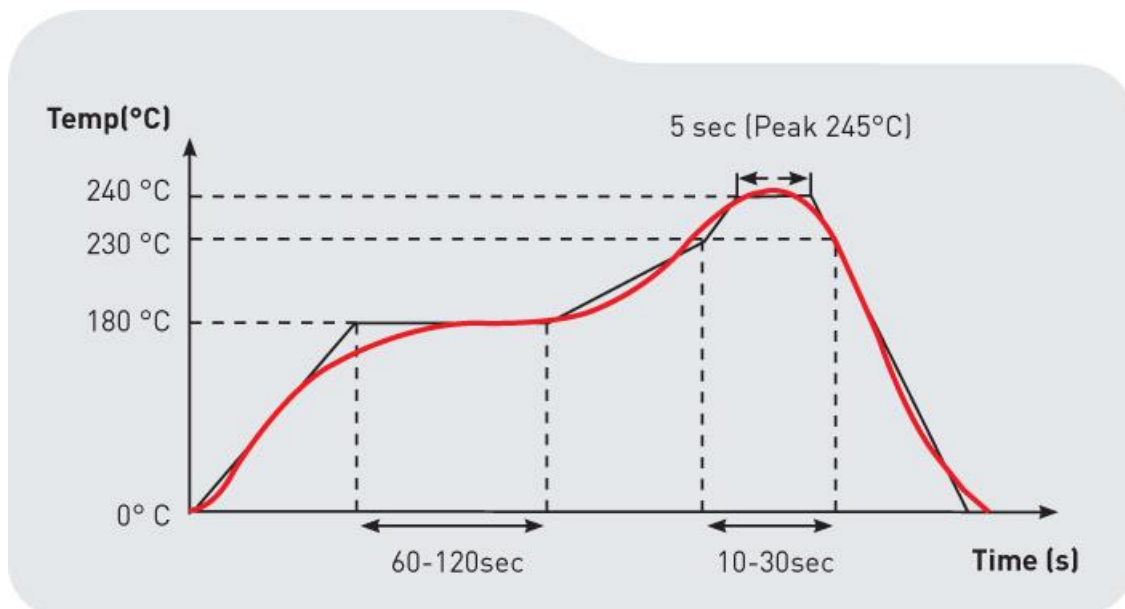
## 6. Antenna Recommended Soldering Conditions

### 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.





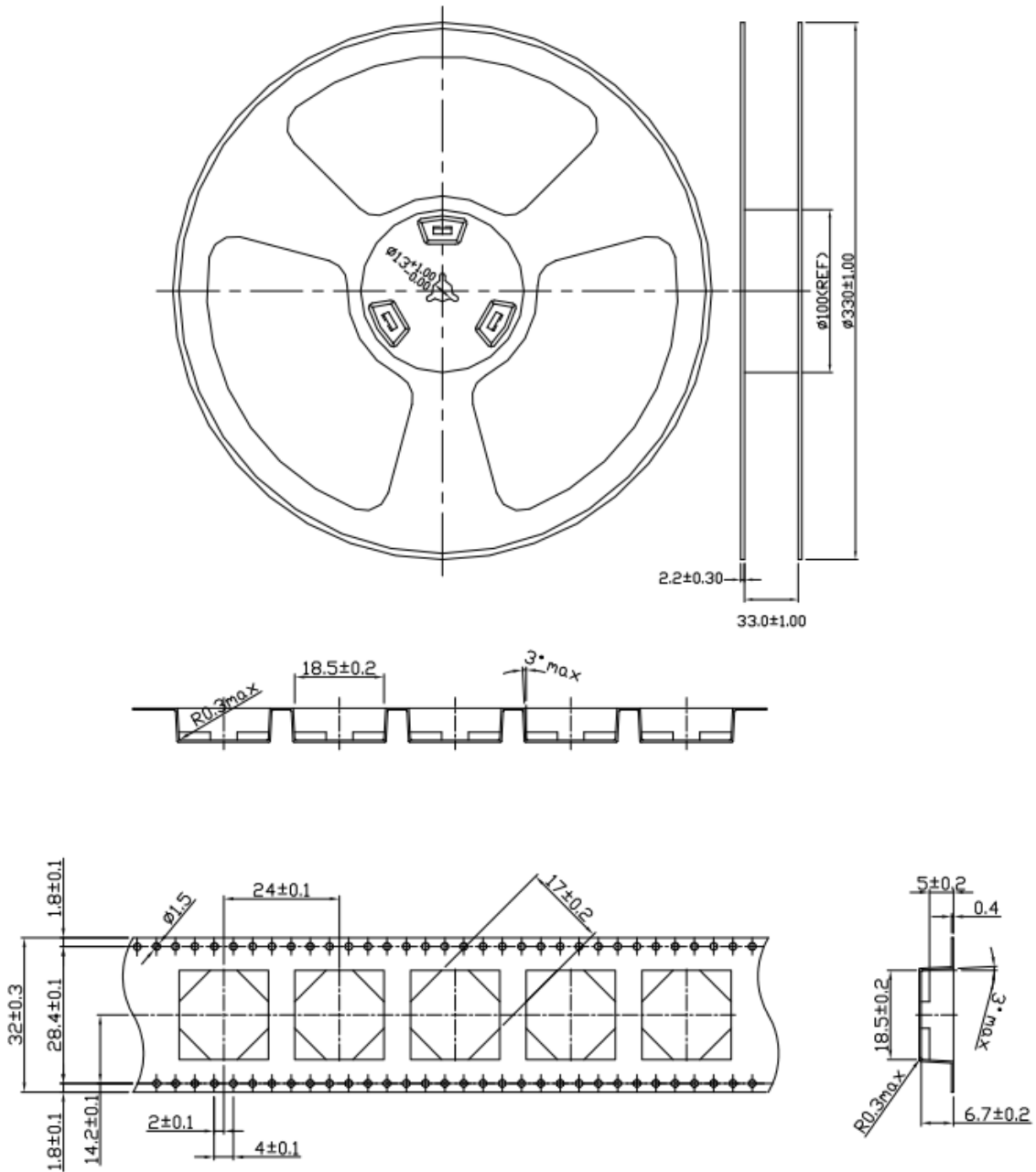
### 6.3. Reworking with soldering iron

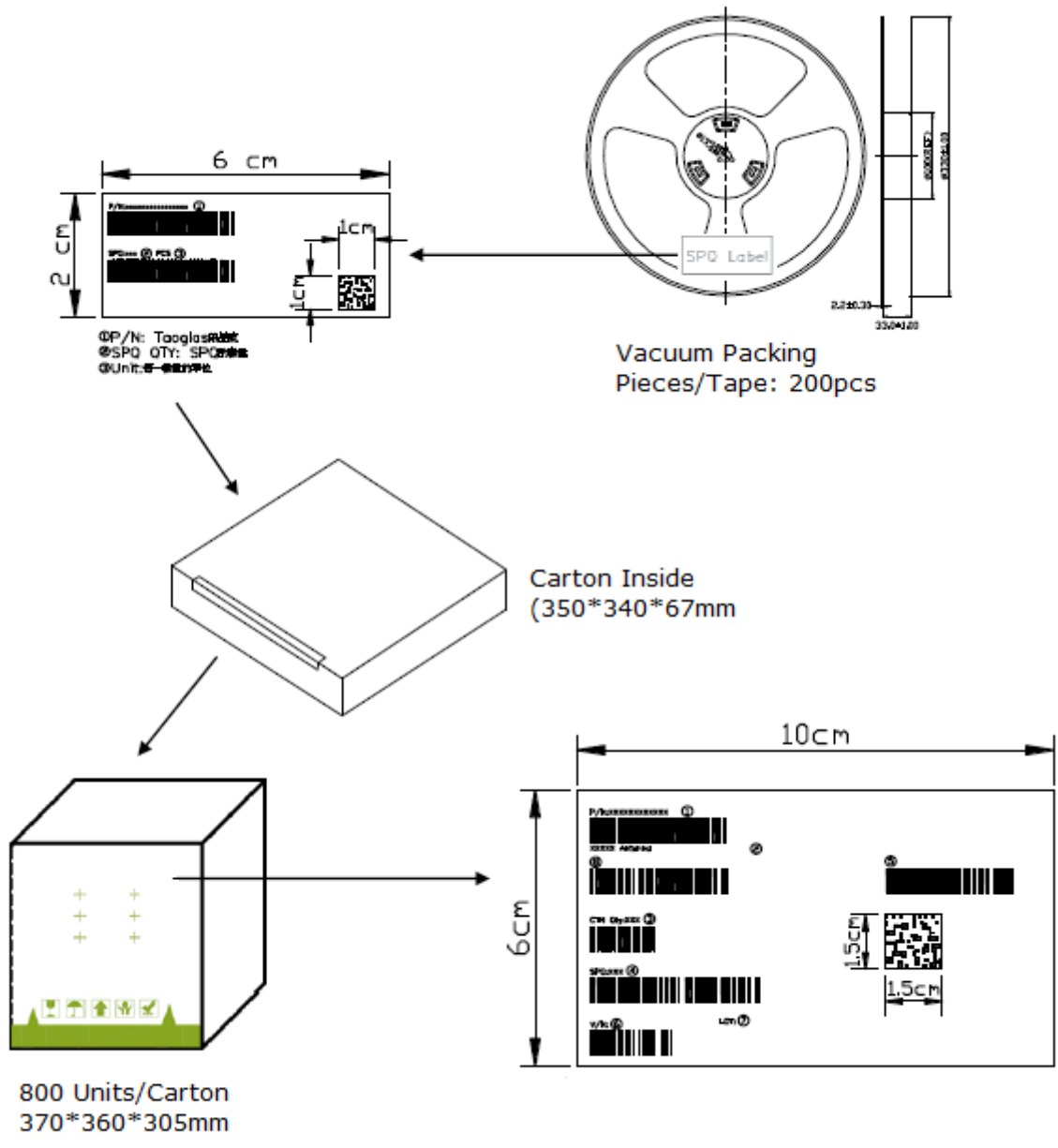
- The following conditions must be strictly followed when using a soldering iron.

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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