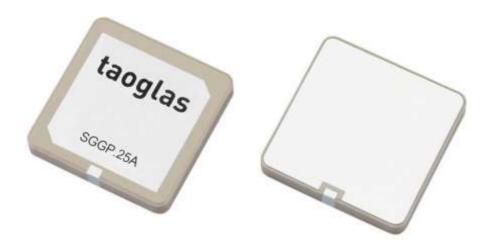


Specification

Part No.	:	SGGP.25.4.A.02
Description	:	GPS/GLONASS/GALILEO SMT Patch Antenna
Features	:	25mm*25mm*4mm
		Single Feed SMT Mount GPS/GALILEO: 1575MHz
		GLONASS: 1602MHz
		Patent pending
		RoHS Compliant





1. Introduction

This ceramic 25*25*4mm GPS/GLONASS/GALILEO patch antenna is mounted via SMT process and has been pre-tuned for a 50*50mm ground plane. Custom part no's tuned for different ground-plane or layout positions and taking into account the specific conditions of your device can be created and supplied by Taoglas.

2. Specification

Patch Specification tested on 50*50mm ground plane

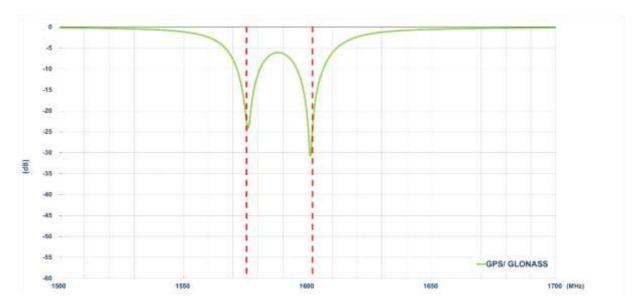
Parameter	Specification	
Operating Bands	GPS/GALILEO: 1575.42 MHz ± 1.023 MHz	
	GLONASS: 1602± 5 MHz	
VSWR	<2.5	
Return Loss in Band	<-10 dB	
Efficiency	GPS/GALILEO (1575.42 MHz): 83% GLONASS (1602 MHz): 84%	
Polarization	RHCP	
Impedance	50 Ω	
Frequency Temperature Coefficient (-40°C to +85°C)	0 ± 20ppm / °C	
Operating Temperature	-40°C to +85°C	
Moisture Sensitivity Level (MSL)	3 (168 Hours)	

**Changes in user groundplane and environment will offset centre frequenc

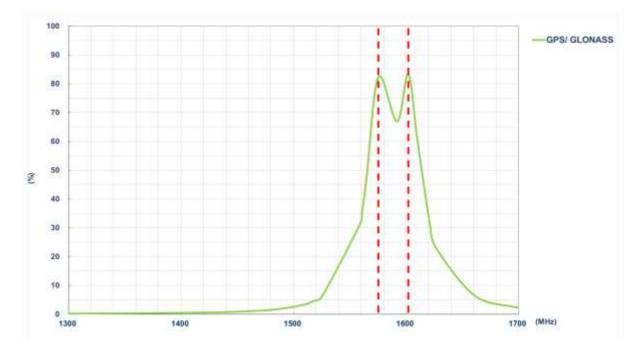


3. Electrical Specifications

3.1. Return Loss

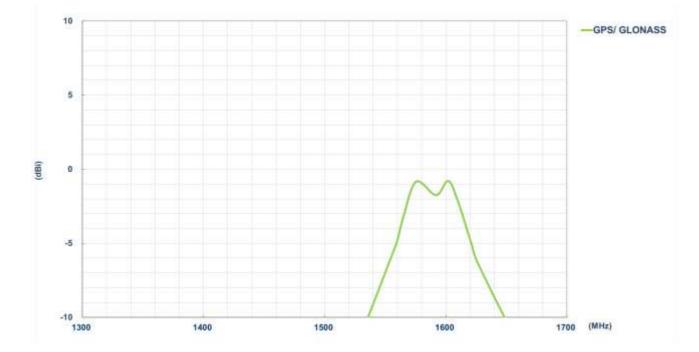


3.2. Efficiency

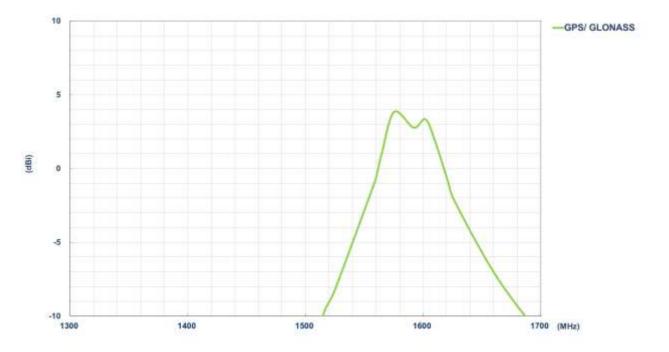




3.3. Average Gain



3.4. Peak Gain



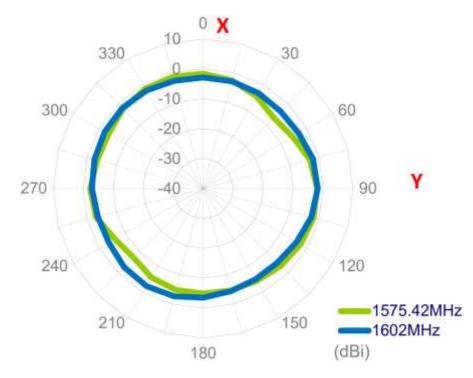


4. Radiation Patterns

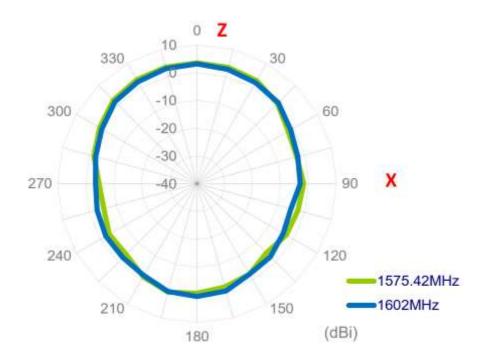
4.1. Chamber Test Setup

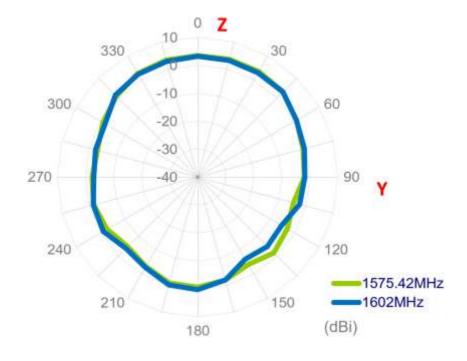


4.2. 2D Radiation Patterns

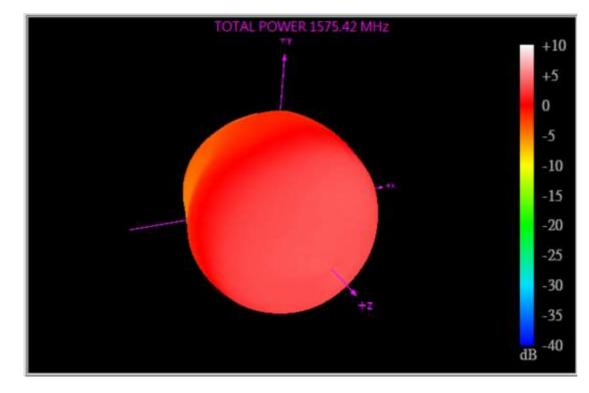




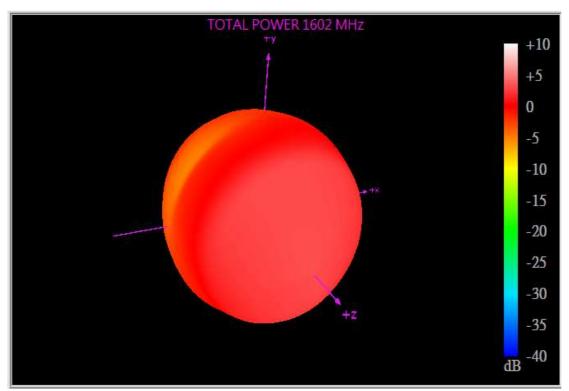








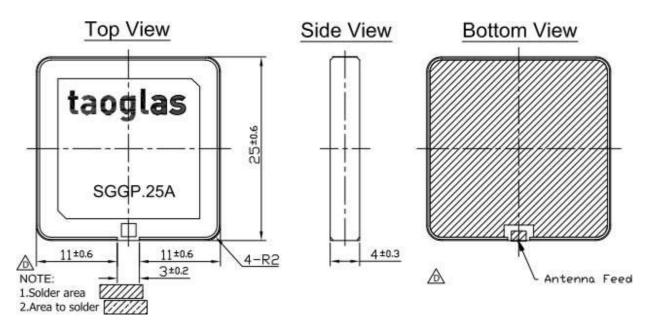
4.2. 3D Radiation Patterns





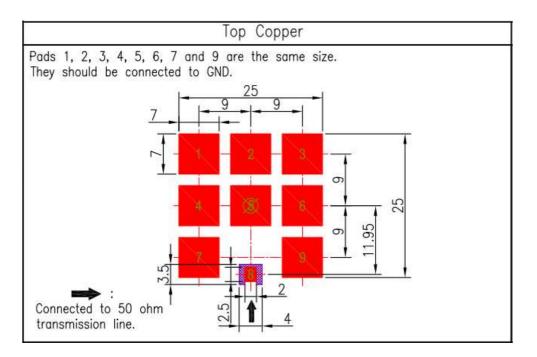
5. Mechanical Specifications

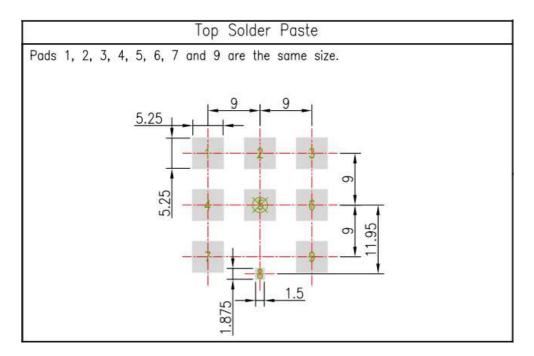
5.1. Antenna Dimensions and Drawing (Unit: mm)



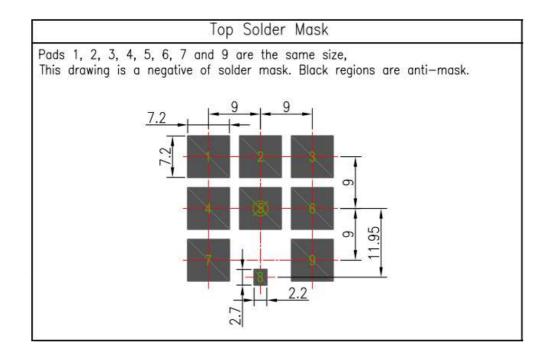


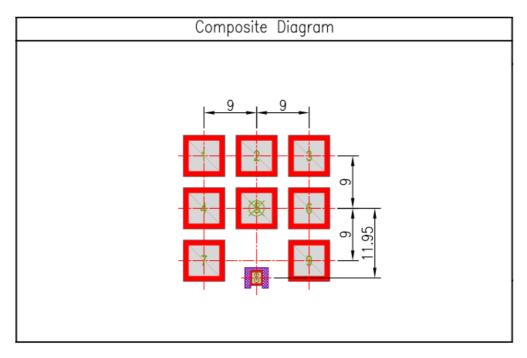
5.2. PCB Footprint Recommendation (Unit: mm)











NOTE:

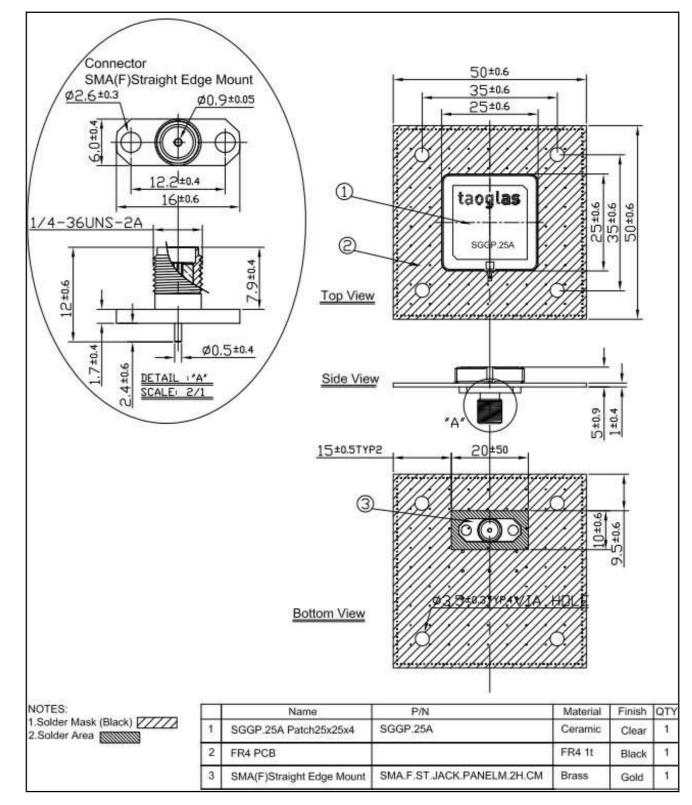
- 1. Ag Plated area 2. Solder Mask area
- Solder Mask area
 Copper area

4. Paste 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.
- 5. Copper Keepout Area
- 8. The dimension tolerances should follow standard PCB manufacturing guidelines





5.3. Test Jig and Dimension SGGPD.25A



5.4. SGGP.25A On Evaluation Board



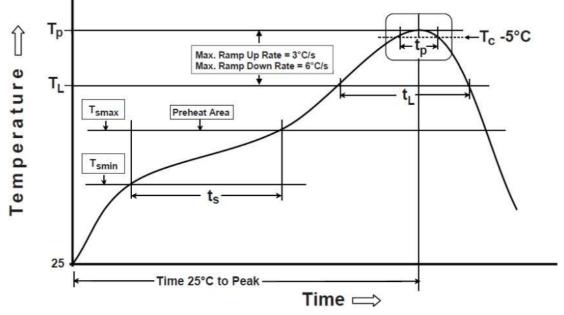


6. Recommended Reflow Soldering Profile

SGGP.25A can be assembled following Pb-free assembly. According to the Standard IPC/JEDEC J-STD-020C, the temperature profile suggested is as follow:

Phase	Profile Features	Pb-Free Assembly (SnAgCu)
PREHEAT	Temperature Min(Tsmin)	150°C
	Temperature Max(Tsmax)	200°C
	Time(ts) from (Tsmin to Tsmax)	60-120 seconds
RAMP-UP	Avg. Ramp-up Rate (Tsmax to TP)	3°C/second(max)
REFLOW	Temperature(TL)	217°C
	Total Time above TL (tL)	30-100 seconds
PEAK	Temperature(TP)	260°C
	Time(tp)	2-5 seconds
RAMP-DOWN	Rate	3°C/second(max)
	Time from 25°C to Peak Temperature	8 minutes max.
	Composition of solder paste	96.5Sn/3Ag/0.5Cu
	Solder Paste Model	SHENMAO PF606-P26

The graphic shows temperature profile for component assembly process in reflow ovens



Soldering Iron condition: Soldering iron temperature 270°C±10°C.

Apply preheating at 120°C for 2-3 minutes. Finish soldering for each terminal within 3 seconds, if soldering iron temperature over270°C±10°C or 3 seconds, it will make cause component surface peeling or damage.