SGGP.25A

Specification

Part No.	**SGGP.25A**
Product Name	GPS/GLONASS SMT Patch Antenna
Features	25mm*25mm*4.5mm Single Feed SMT Mount GPS: 1575MHz GLONASS: 1602MHz Patent pending RoHS

1. Introduction

This ceramic 25mm GPS/GLONASS 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 in your device can be created and supplied by Taoglas.

2. Specification

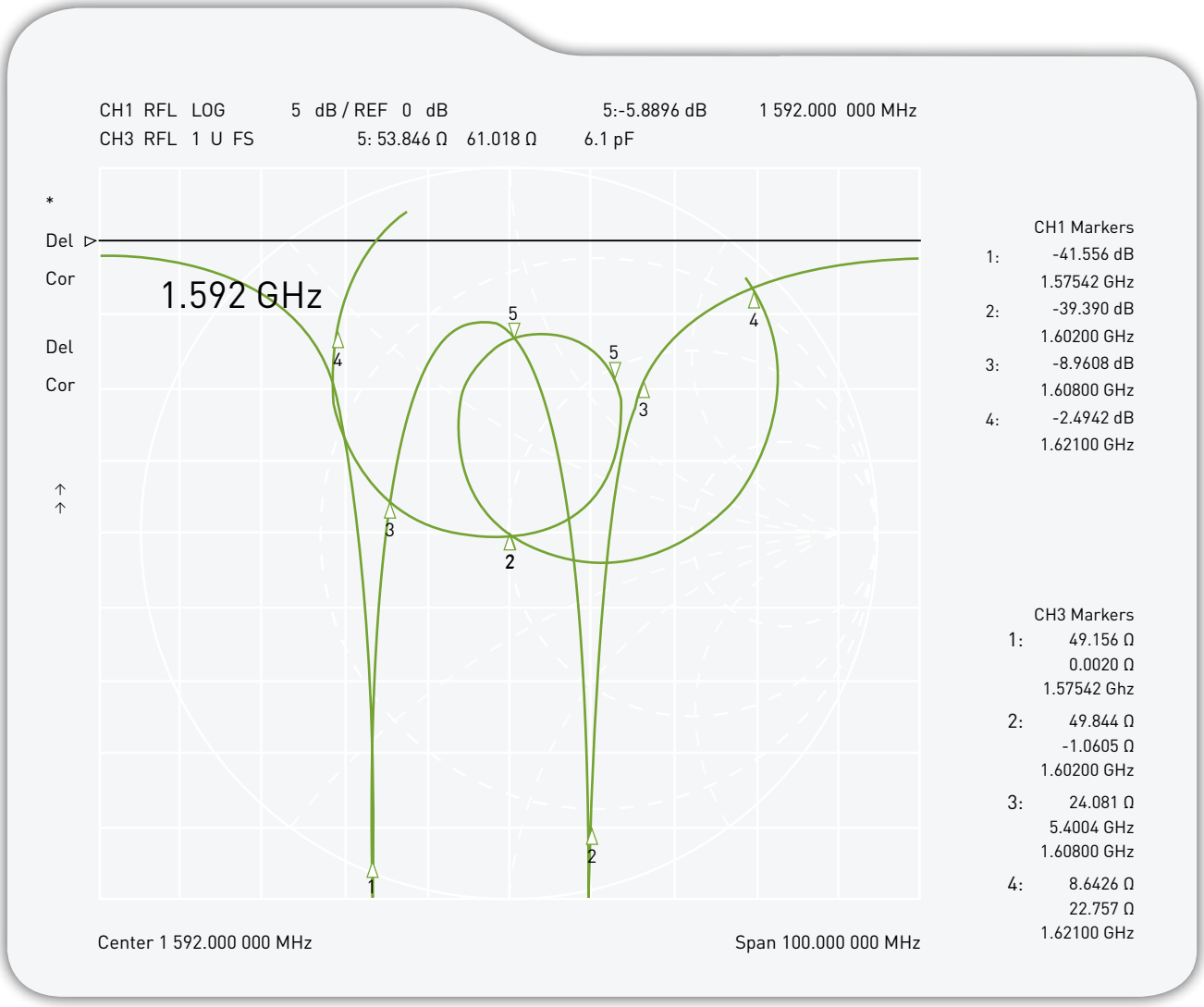
Original Patch Specification tested on 50*50mm ground plane

NO.:	PARAMETER	SPECIFICATION	NOTES
1	**Range of Receiving Frequency**	GPS:1575.42 MHz ± 1.023 MHz GLONASS: 1602± 5 MHz	
2	**Center Frequency**	1592± 3MHz	With 50*50mm ground plane
3	**Bandwidth**	8MHz min	Return Loss <-10 dB
4	**VSWR**	1.5 max	Center Frequency
5	**Gain at Zenith**	GPS: -0.14dBic typ. GLONASS: 1.75dBic typ.	
8	**Polarization**	RHCP	
9	**Impedance**	50 Ohms	
10	**Frequency Temperature Coefficient (τf)**	0 ± 20ppm / oC	-40ºC to +85ºC
11	**Operating Temperature**	-40°C to +85°C	

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

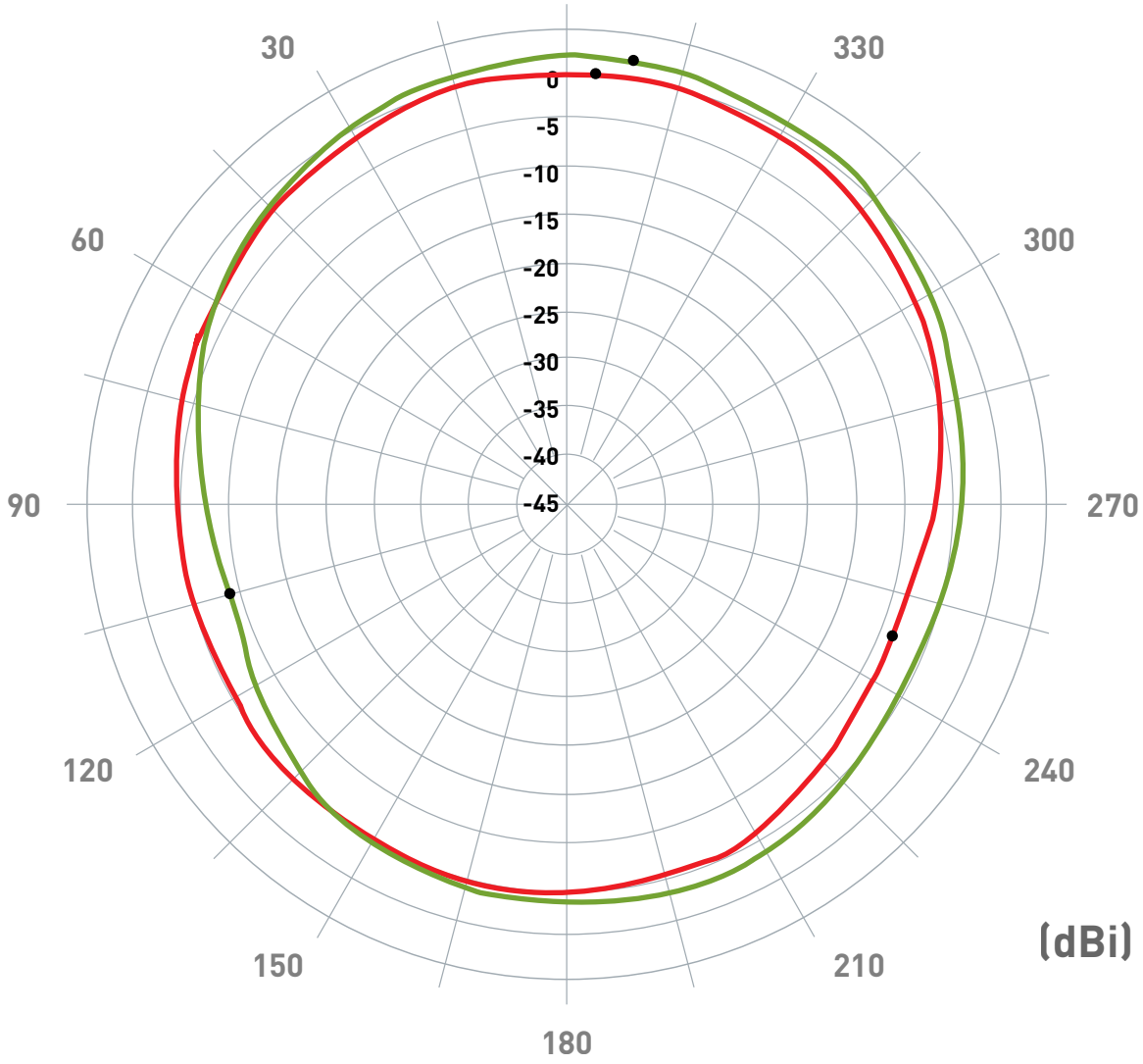
3. Electrical Specifications

3.1. Return Loss, SWR, Impedance, measured on the test fixture



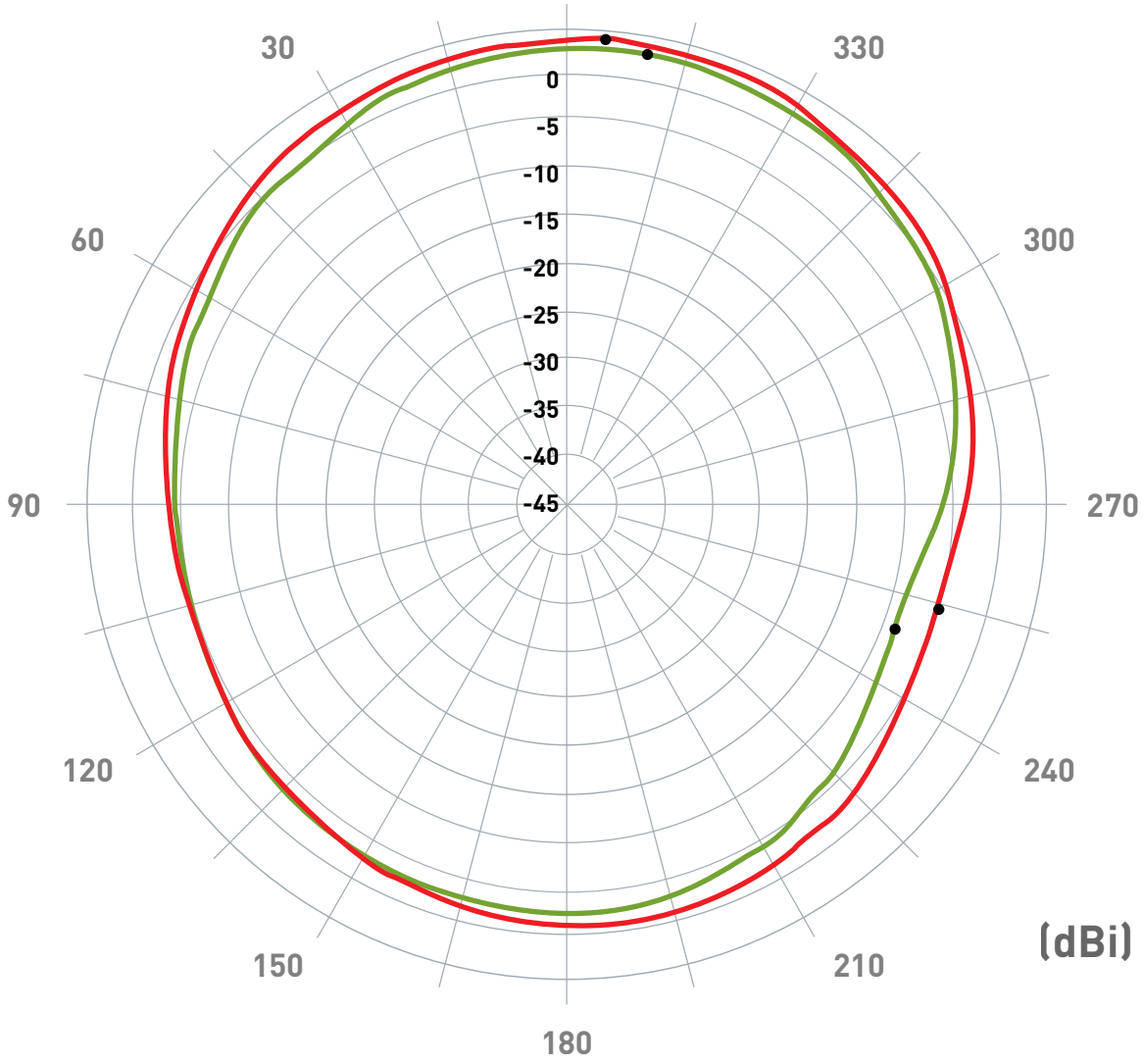
4. Radiation Patterns

4.1 1575MHz - XZ and YZ Plane



Pattern	Model No.	Test Mode	Freq (Mhz)	Max Gain (dBi)	Min Gain (dBi)	Avg. Gain (dBi)	Source Polar	Date
1	SGGP.25	XZ	1575.42	-0.36 / 356.00	-8.52 / 248.00	-3.54	V+H	2012/6/8
2	SGGP.25	YZ	1575.42	1.20 / 351.00	-9.29 / 105.00	-2.49	V+H	2012/6/8

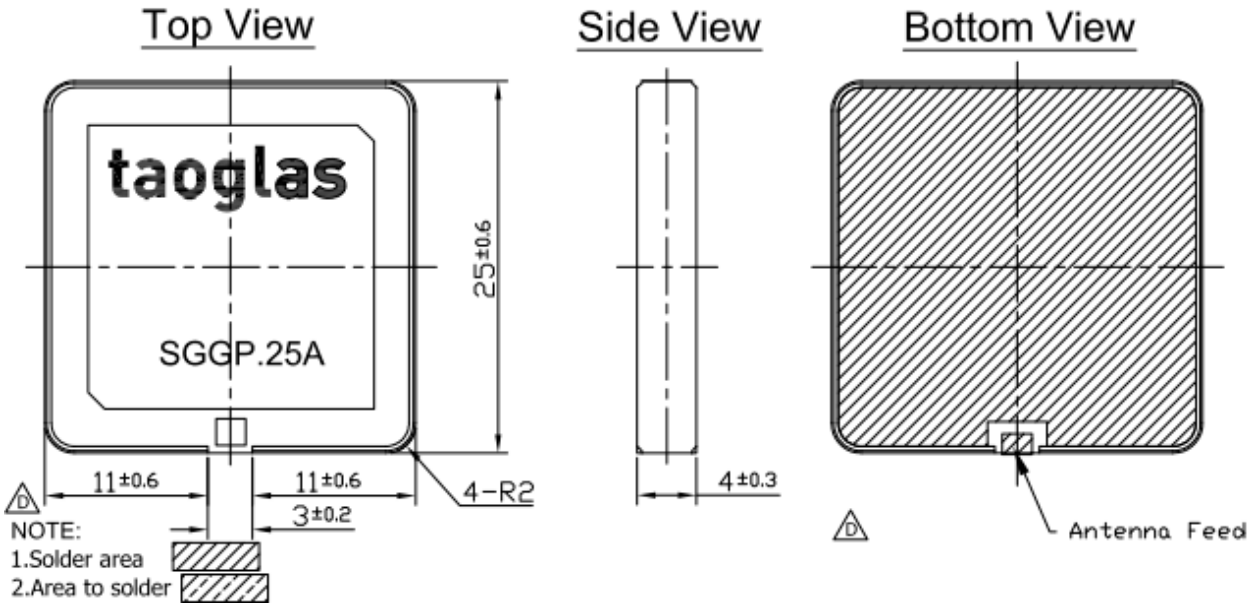
4.2 1602MHz - XZ and YZ Plane



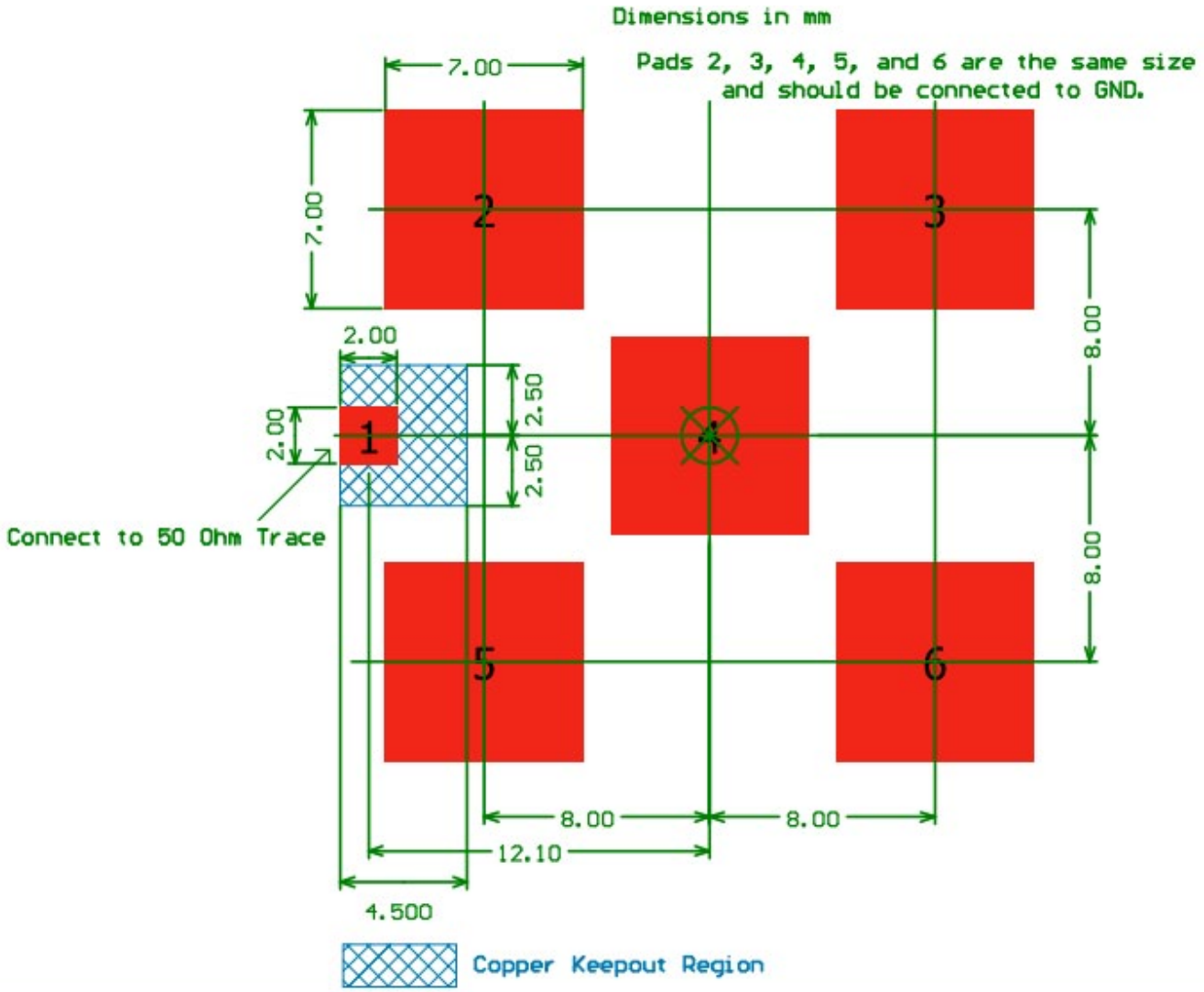
Pattern	Model No.	Test Mode	Freq (Mhz)	Max Gain (dBi)	Min Gain (dBi)	Avg. Gain (dBi)	Source Polar	Date
1	SGGP.25	XZ	1602.00	2.88 / 355.00	-5.41 / 254.00	-0.65	V+H	2012/6/8
2	SGGP.25	YZ	1602.00	1.95 / 350.00	-8.76 / 249.00	-1.83	V+H	2012/6/8

5. Mechanical Specifications

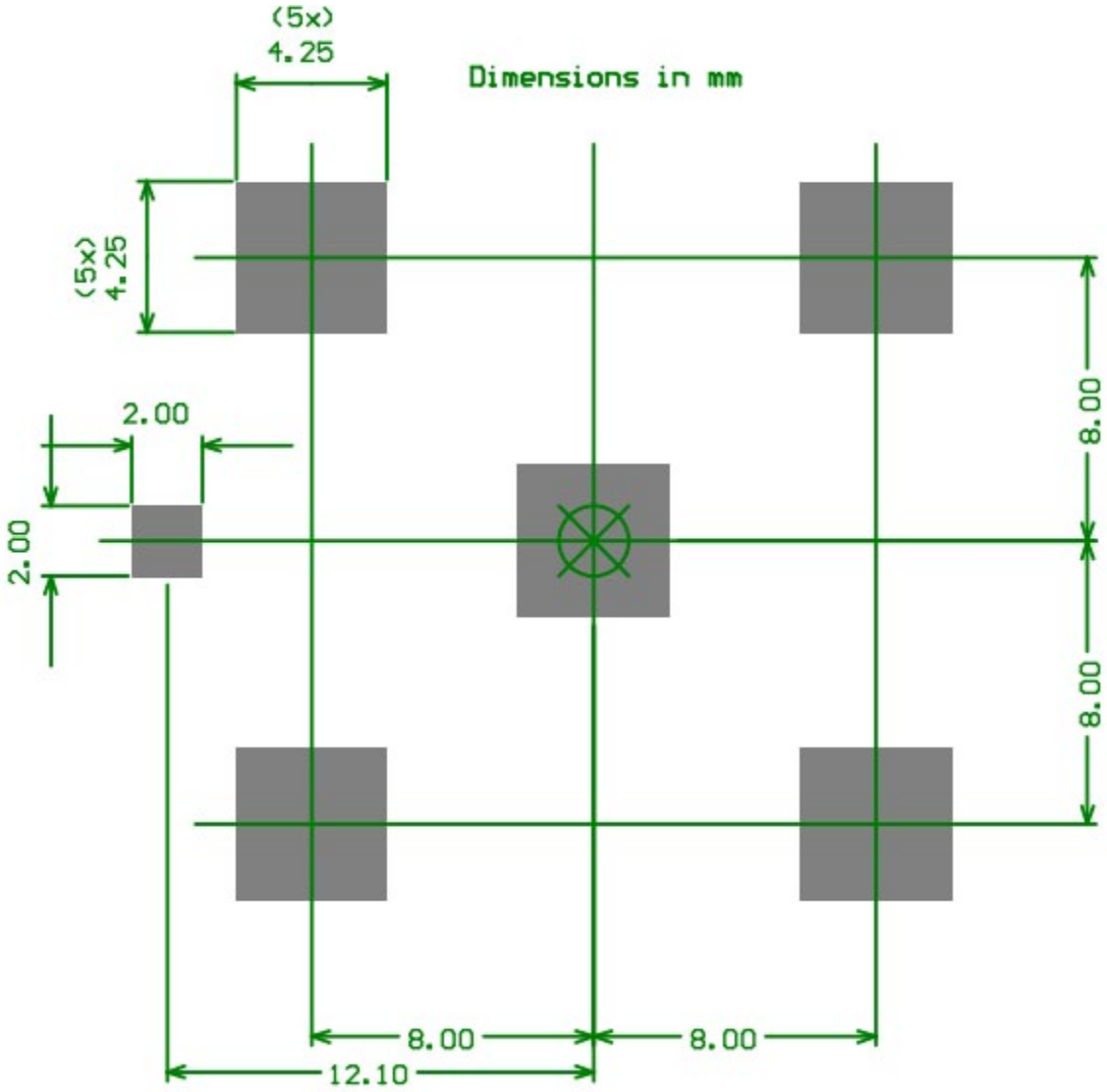
5.1 Antenna Dimensions and Drawing



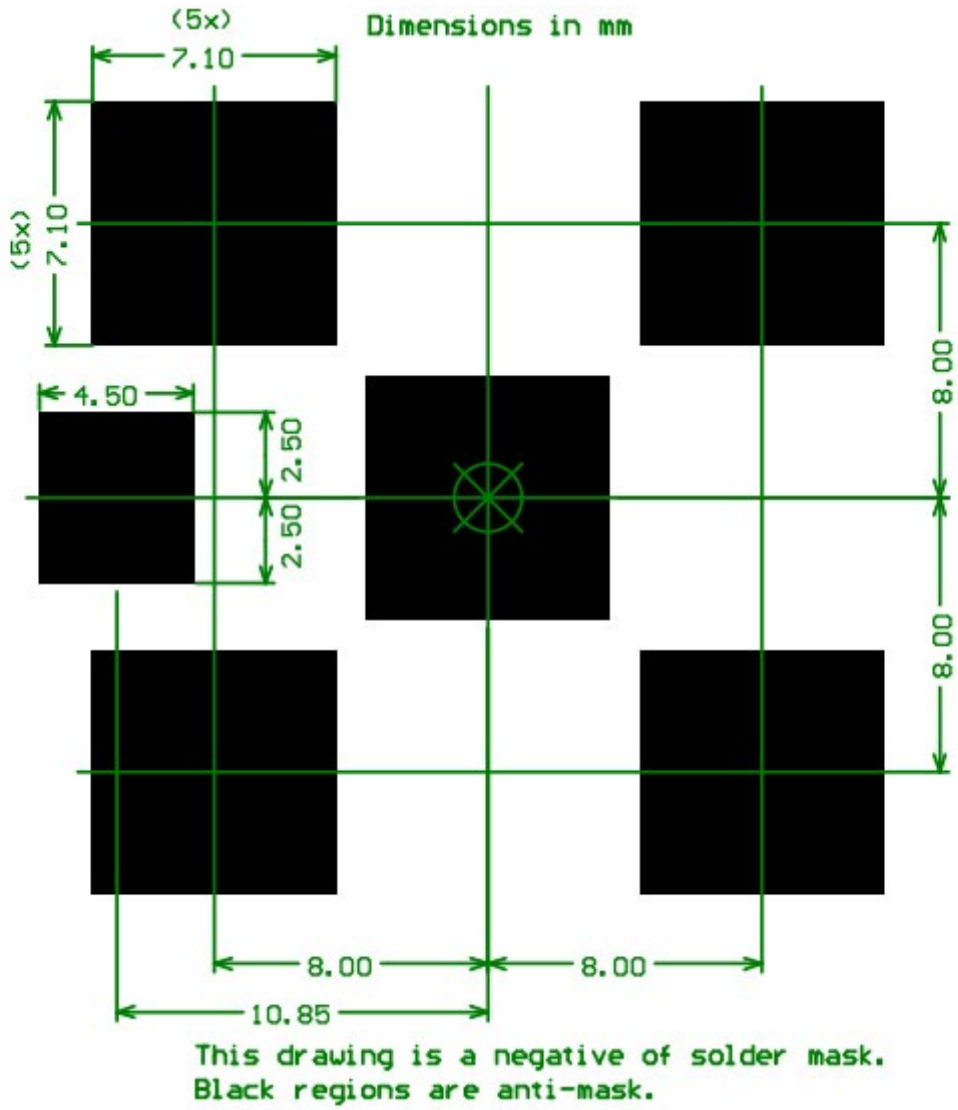
5.1.1 Footprint Copper Keepout Area



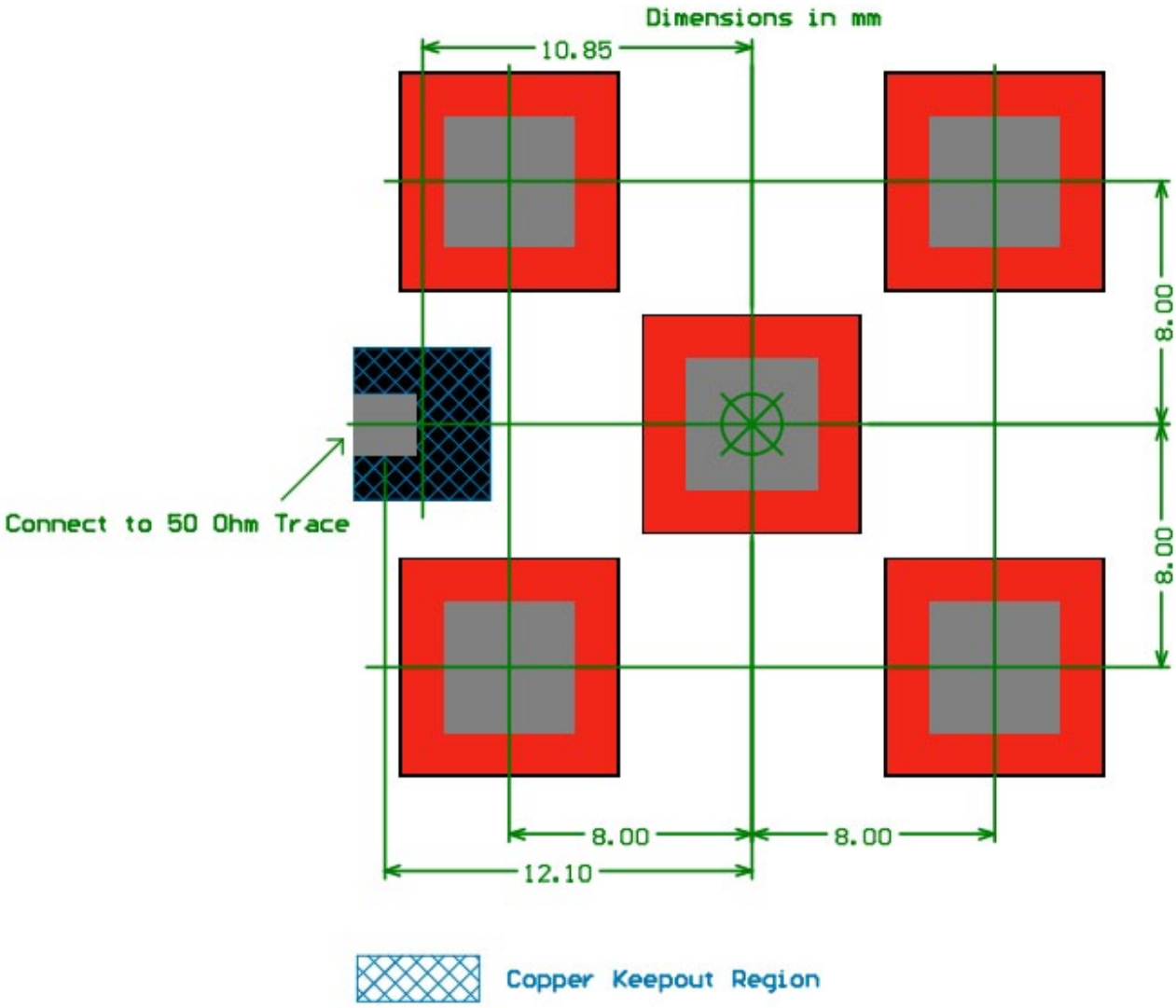
5.1.2 Paste Area



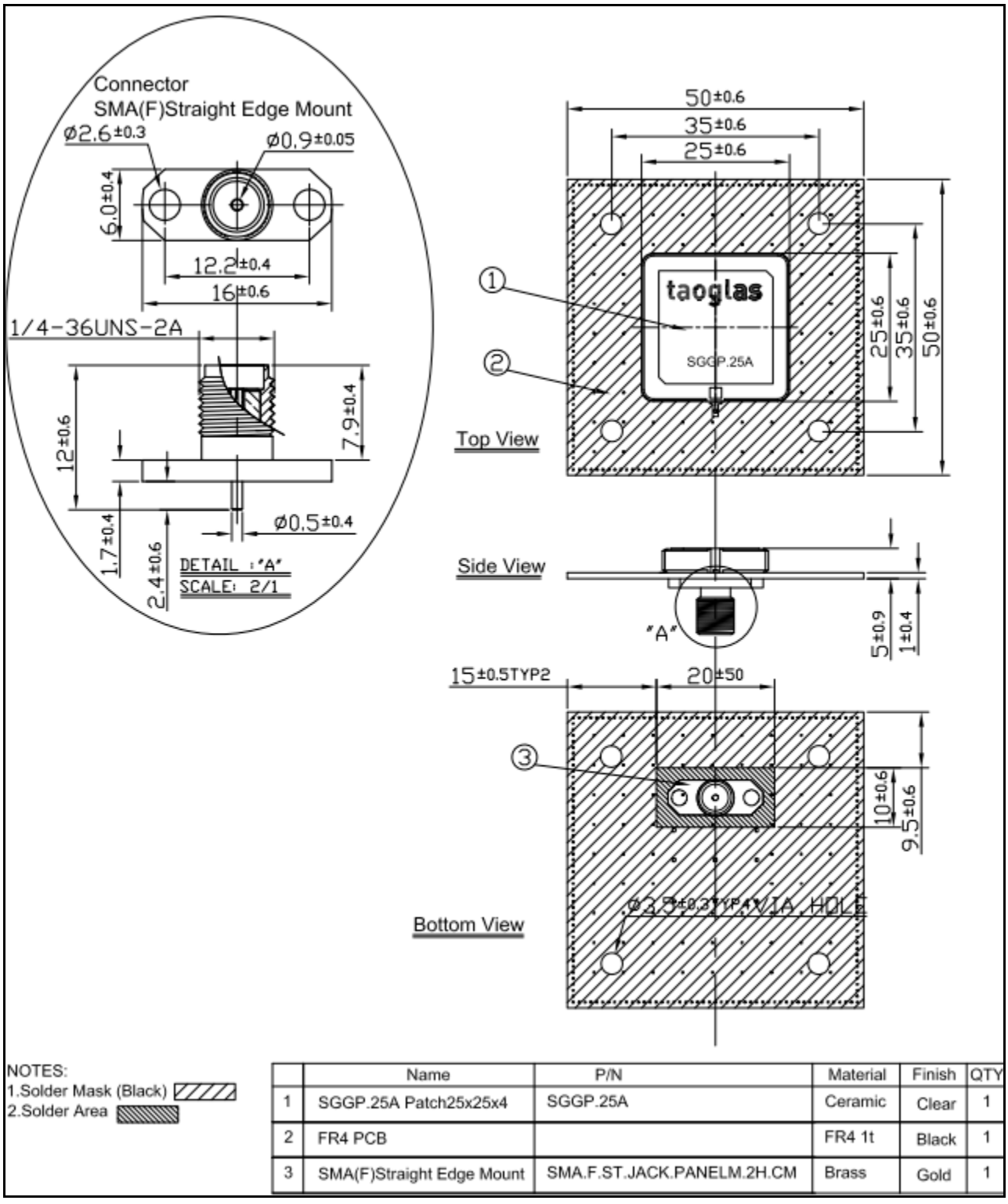
5.1.3 Soder Mask (Negative)



5.1.4 Footprint Composite

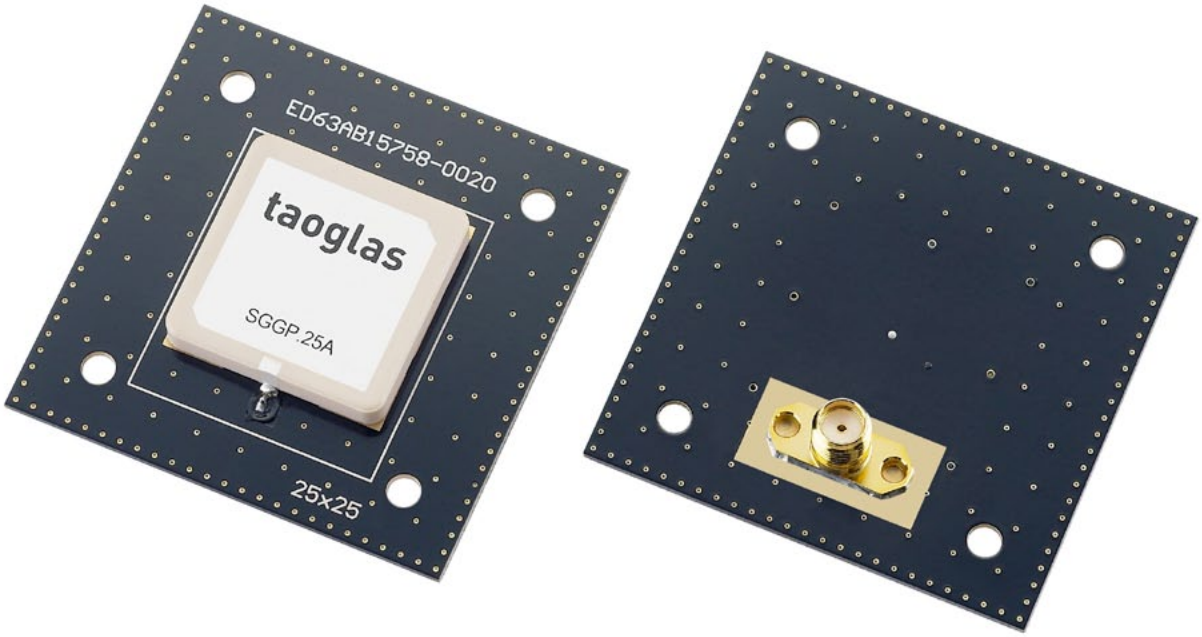


5.2 Test Jig and Dimension SGGPD.25A



	Name	P/N	Material	Finish	QTY
1	SGGP.25A Patch25x25x4	SGGP.25A	Ceramic	Clear	1
2	FR4 PCB		FR4 1t	Black	1
3	SMA(F)Straight Edge Mount	SMA.F.ST.JACK.PANELM.2H.CM	Brass	Gold	1

5.3 SGGPD.25A

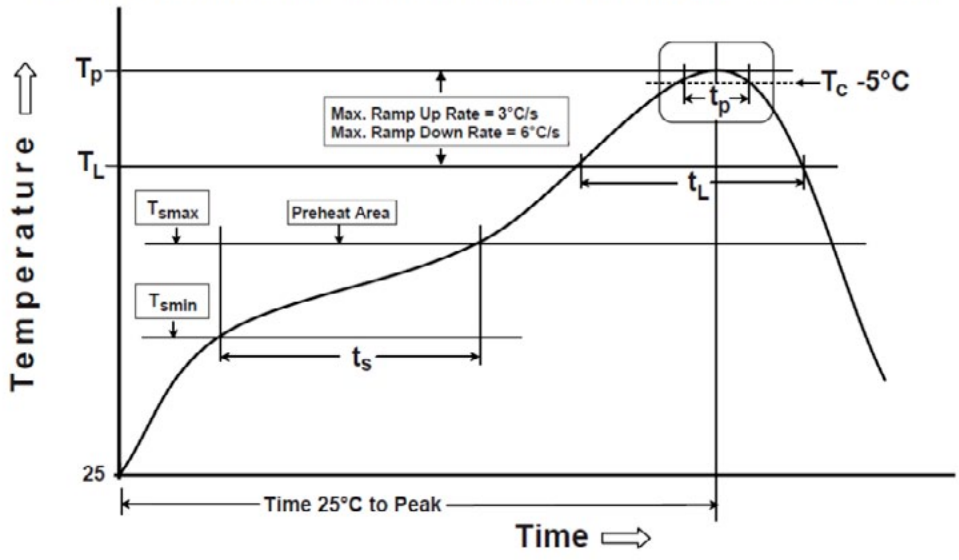


6. Recommended Reflow Soldering Profile

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

Phase	Profile Features	Pb-Free Assembly (SnAgCu)
PREHEAT	Temperature Min(Tsmin) Temperature Max(Tsmax) Time(ts) from (Tsmin to Tsmax)	150°C 200°C 60-120 seconds
RAMP-UP	Avg. Ramp-up Rate (Tsmax to TP)	3°C/second(max)
REFLOW	Temperature(TL) Total Time above TL (tL)	217°C 30-100 seconds
PEAK	Temperature(TP) Time(tp)	260°C 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.

7. Packaging

200 pcs / reel / inner carton
4 reels in an outer carton (800)