



## Specification

## SPECIFICATION

Model No. : **SGP.25c**

Part No. : **SGP.1575.25.4.C.02**

Specification No : **SP03AB15753-0040(03A28B600011120) (SMA1575A)V03**

Product Name : **GPS SMT Patch Antenna**

Features : 25mm\*25mm\*4.5mm  
1575MHz Centre Frequency  
Patent pending

**RoHS** ✓

Photo :



## REVISION STATUS

Version	Date	Page	Revision Description	Prepared	Approved
01	17 <sup>th</sup> July 2008	All	New format	TW Product Centre	Ronan Quinlan
02	23 <sup>rd</sup> July 2009	All	New Solder Pads	TW Product Centre	Ronan Quinlan

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Taoglas Limited, Unit 7 Peare Campus, Moyne Business Park, Enniscorthy, Co. Wexford, Ireland  
info@taoglas.com

+353 53 9169500

www.taoglas.com



## Specification

## 1.0 Introduction

This ceramic GPS patch antenna is based on smart **XtremeGain™** technology. It is mounted via SMT process and has been selected as optimal solution for the 45\*45mm ground plane.

## 2.0 Key Antenna Performance Indicators

### Original Patch Specification tested on 45mm ground plane

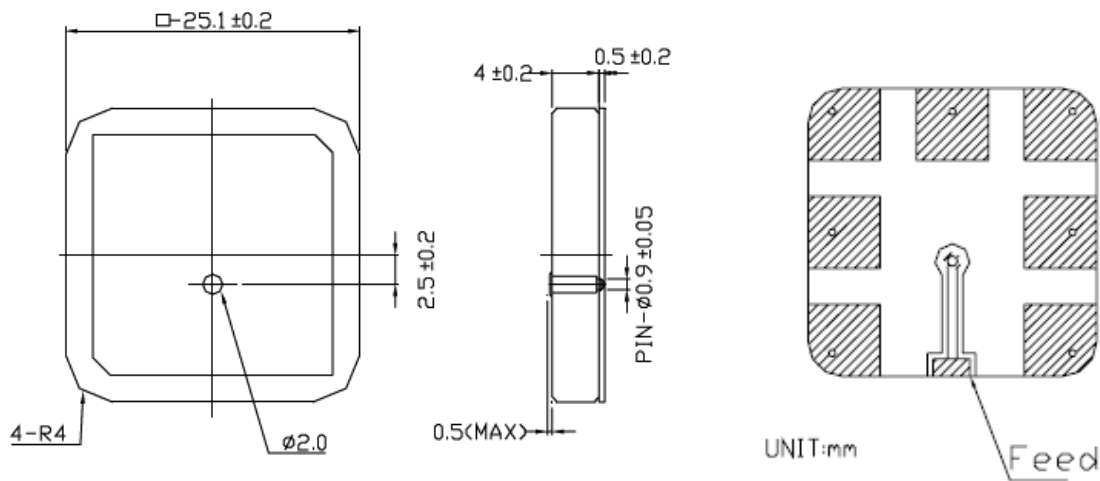
No	Parameter	Specification	Notes
1	Range of Receiving Frequency	1575.42 MHz $\pm$ 1.023 MHz	
2	Center Frequency	1575.42 $\pm$ 3MHz	With 45mm <sup>2</sup> ground plane
3	Bandwidth	5MHz min	Return Loss $\leq$ -10 dB
4	VSWR	1.5 max	
5	Gain at Zenith	+2.0 dBic typ.	
6	Gain at 10°elevation	-3.0 dBic typ.	
7	Axial Ratio	3 dB max	
8	Polarization	RHCP	
9	Impedance	50 Ohms	
10	Frequency Temperature Coefficient ( $\tau_f$ )	0 $\pm$ 20ppm / °C	-40°C to +85°C
11	Operating Temperature	-40°C to +85°C	

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



## 3.0 Mechanical Specifications

### 3.1 Dimensions and Drawing

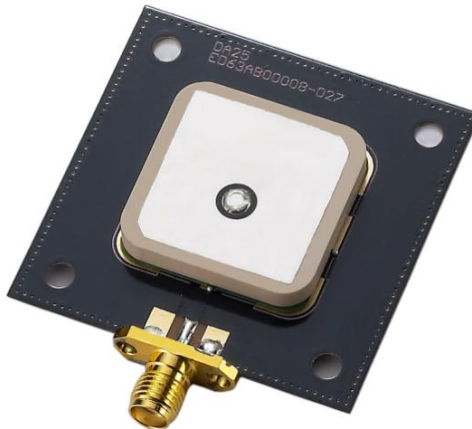
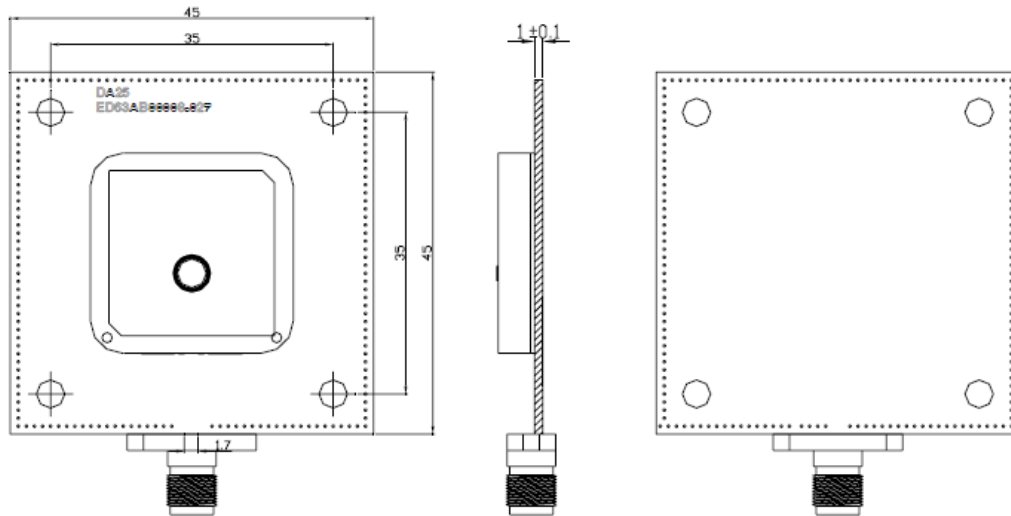






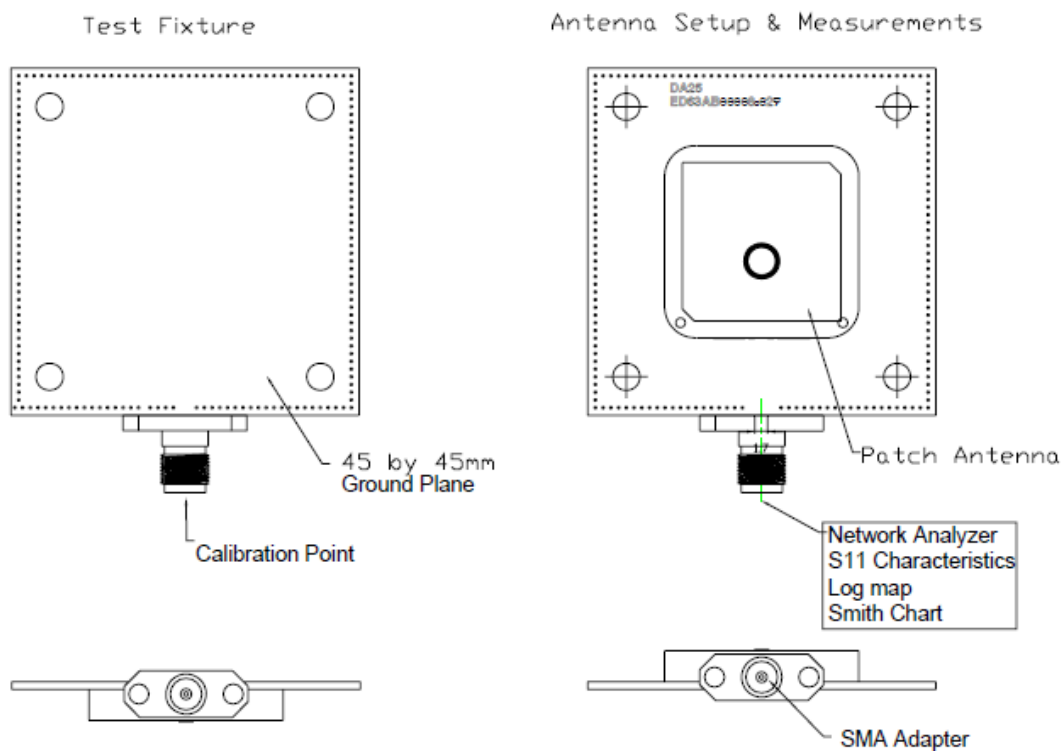
Specification

### 3.3 Test Jig and Dimension





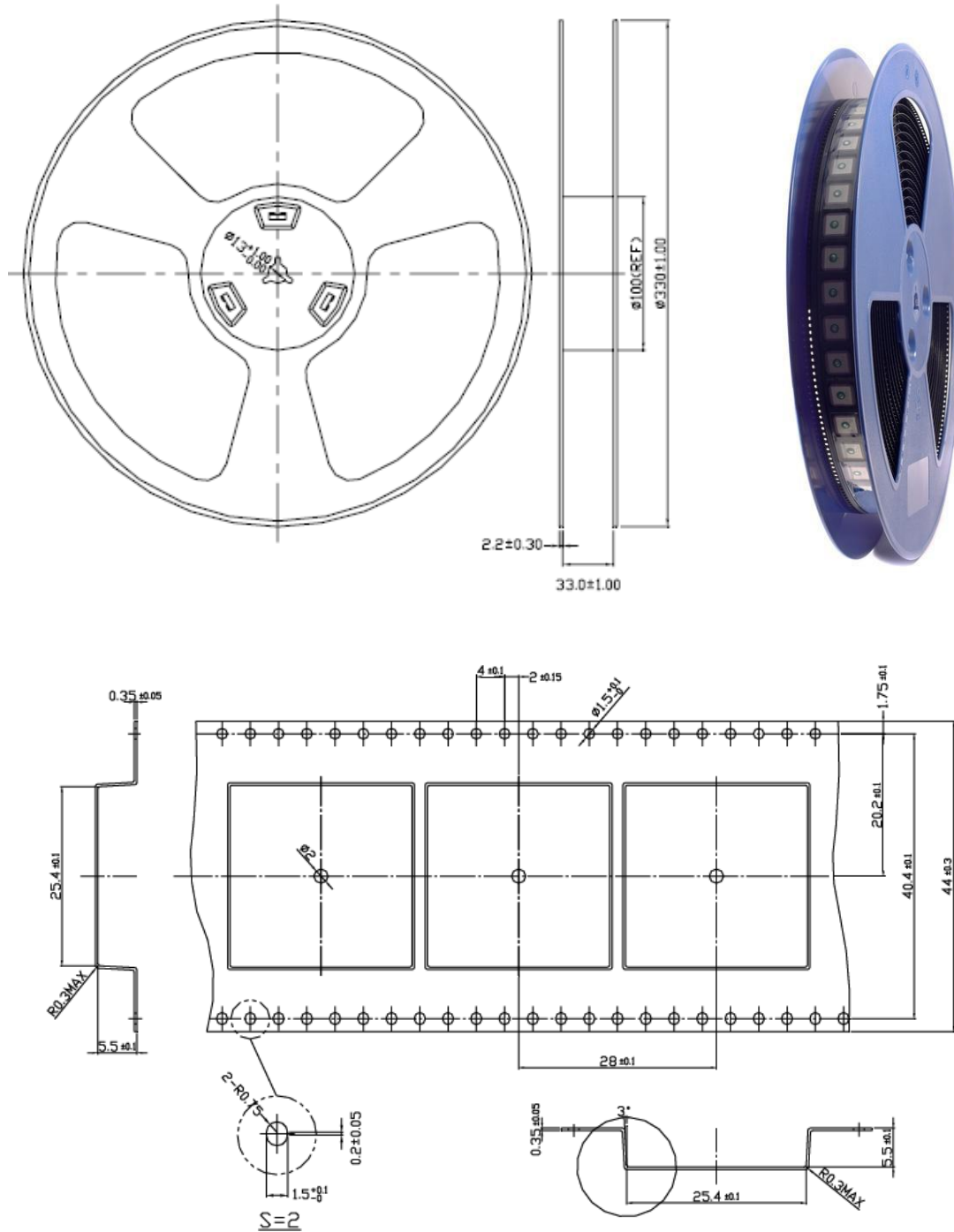
### 3.4 Test Fixture set up and measurements





## Specification

### 3.5 Delivery Mode



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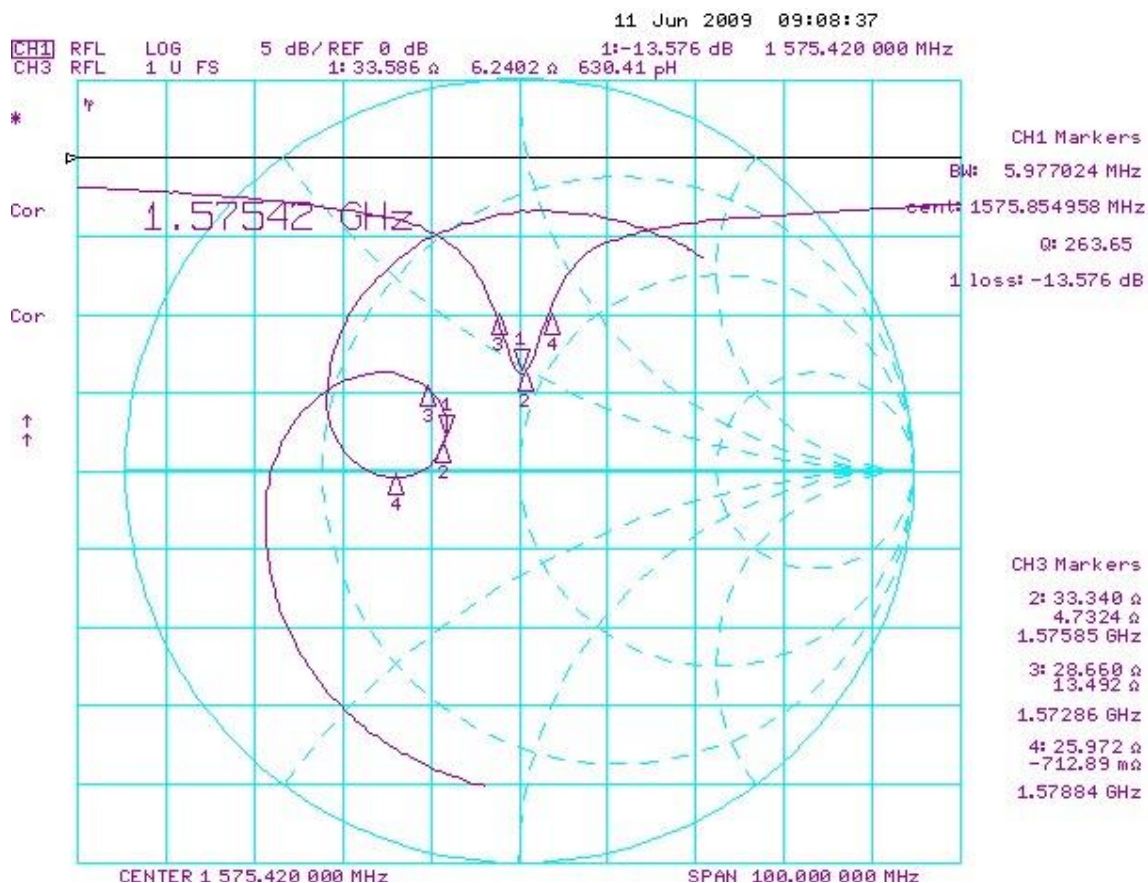
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## 4.0 Electrical Specifications

### 4.1 Smith Chart





## 5.0 Recommended Reflow Temperature Profile

The SGP.25c can be assembled following either Sn-Pb or Pb-Free assembly processes. The recommended soldering temperatures are as follows:

Phase	Profile Features	Sn-Pb Assembly	Pb-Free Assembly (SnAgCu)
Ramp-Up	Avg Ramp-Up Rate ( $T_{smax}$ to $T_p$ )	3°C/second (max)	3°C/second (max)
Preheat	Temperature Min ( $T_{smin}$ )	100°	100°
	Temperature Max ( $T_{smax}$ )	150°	150°
	Time ( $t_{smin}$ to $t_{smax}$ )	60-120 seconds	60-120 seconds
Reflow	Temperature ( $T_L$ )	183°C	217°C
	Total Time Above $T_L$ ( $t_L$ )	60-150 seconds	60-150 seconds
Peak	Temperature ( $T_p$ )	235°C	260°C
	Time ( $t_p$ )	10-30 seconds	20-40 seconds
Ramp-Down	Rate	6°C/second (max)	6°C/second (max)
Time from 25°C to peak Temperature		6 minutes max	8 minutes max

