

## SPECIFICATION

Part No. : **AP.25J.01.10000D**

Product Name : 25mm Three Stage Active GPS/GALILEO Patch  
Antenna

Features : Highest Gain 40 dB GPS/GALILEO active patch  
High performance  
Low power consumption  
**RoHS Compliant**



## 1. Introduction

The AP.25J active GPS/GALILEO patch antenna is the highest gain GPS/GALILEO high performance antenna currently available in the world. A 25mm GPS/GALILEO patch antenna with three stage LNA delivers 40dB of gain. This product is suited for applications such as timing applications for base stations or out-building installations which need long cable lengths to the receiver, typically over lengths exceeding 5M at RG174 and over 30M using low loss cable as CFD200 or LMR200.

## 2. Specification

### 2.1. Antenna

Parameter	Specification
Frequency	1575.42 ± 4MHz
Gain	Typ. 4dBic @ Zenith (for 70mm*70mm ground)
Impedance	50Ω
Polarization	RHCP
Axial Ratio	Max 3.0dB @ Zenith (for 70mm*70mm ground)
Dimension	25mm x 25mm x 8.5mm {Patch 25*25*4mm}

### 2.2. LNA

Parameter	Specification
Frequency	1575.42 ± 10MHz
Gain	Typ. 34dB (at 1.8V) Min. 38dB, Typ. 40dB (at 3.0V) Min. 38dB, Typ. 40dB (at 5.0V)
Noise Figure	Max. 1.5dB @ 25oC ± 5oC
Output Impedance	50Ω
Output VSWR	Max. 2.0
Outer Band Attenuation	F0=1575.42MHz F0±50MHz 20dB min F0±100MHz 25dB min

### 2.3. Cable \*& Connector

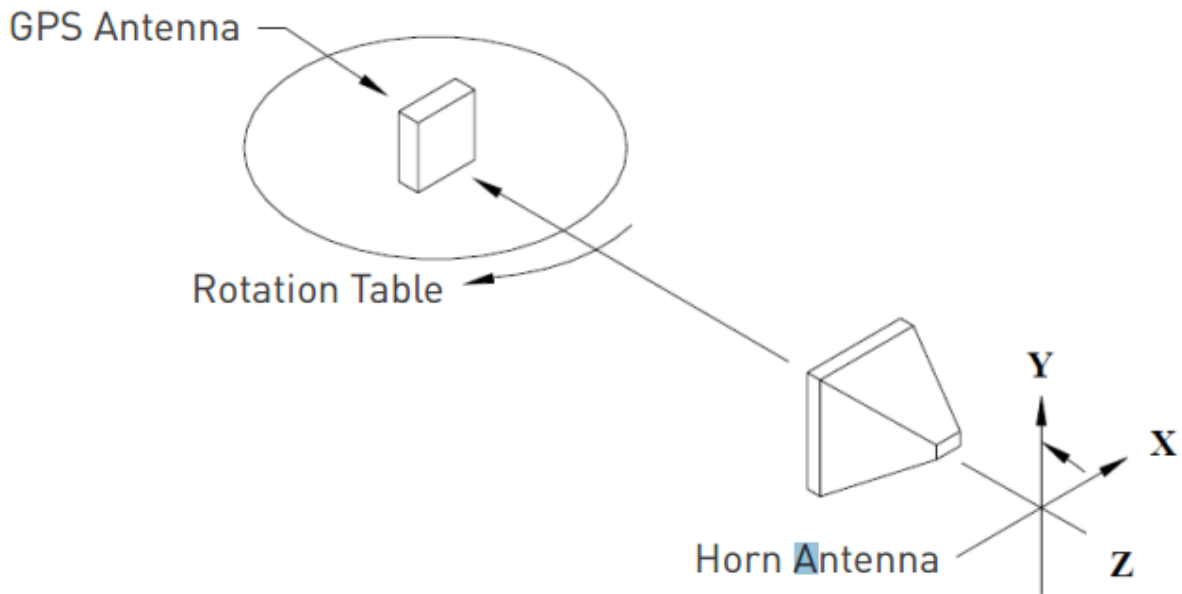
Parameter	Specification
RF Cable	RG174 , ψ2.7 ± 0.2mm , Black, Cable Length 10M±5cm
Connector	SMA(M)

Note 1: Cable Loss = -1.3 dB/M

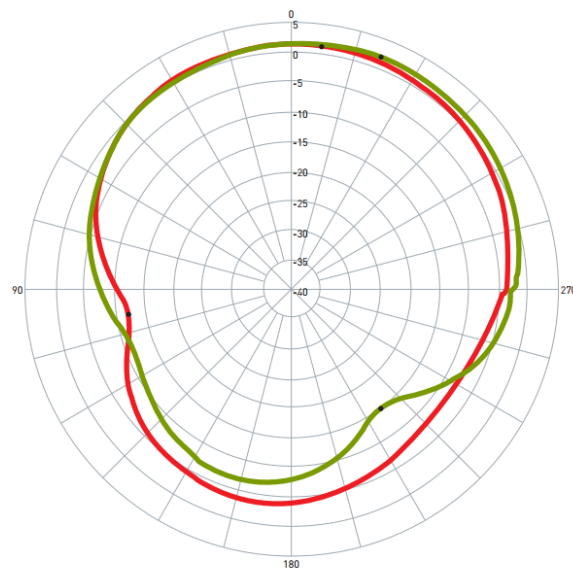
## 2.4 Total Specification

Parameter	Specification
Frequency	1575.42 ± 1.023MHz
Gain	44 ± 3dBic @ 90°
Output Impedance	50Ω
Polarization	RHCP
Output VSWR	Max 2.0
Operation Temperature	-40°C to + 85°C
Storage Temperature	-40°C to + 85°C
Relative Humidity	40% to 95%
Input Voltage	Min. 1.8V, Typ. 3.0V, Max. 5V
Current	At 1.8V Max. 8mA At 3.0V Max. 10mA At 5.0V Max. 12mA

### 3. Performance Measurements

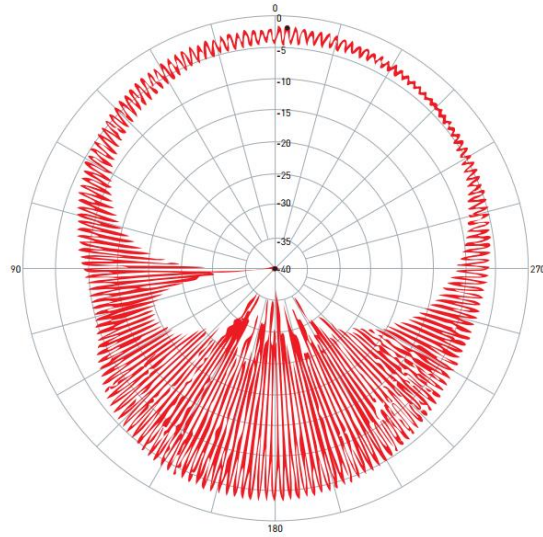


#### 3.1. Radiation Pattern – XY Pattern



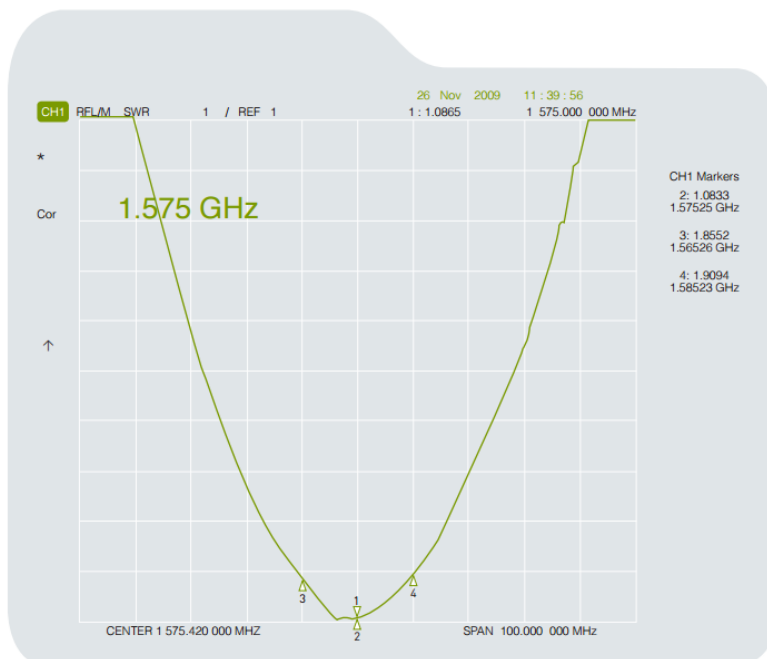
Pattern	Model No.	Test Mode	Freq [MHz]	Max Gain(dBi)	Min Gain(dBi)	Avg. Gain(dBi)	Source Polar.	Date
1	AP.25J.01.10000D	XZ	1575.42	1.36 / 353.00	-12.30 / 99.00	-2.46	RHCP	2009/11/2
2	AP.25J.01.10000D	YZ	1575.42	1.81 / 339.00	-14.85 / 217.00	-2.35	RHCP	2009/11/2

### 3.2. Axial ratio

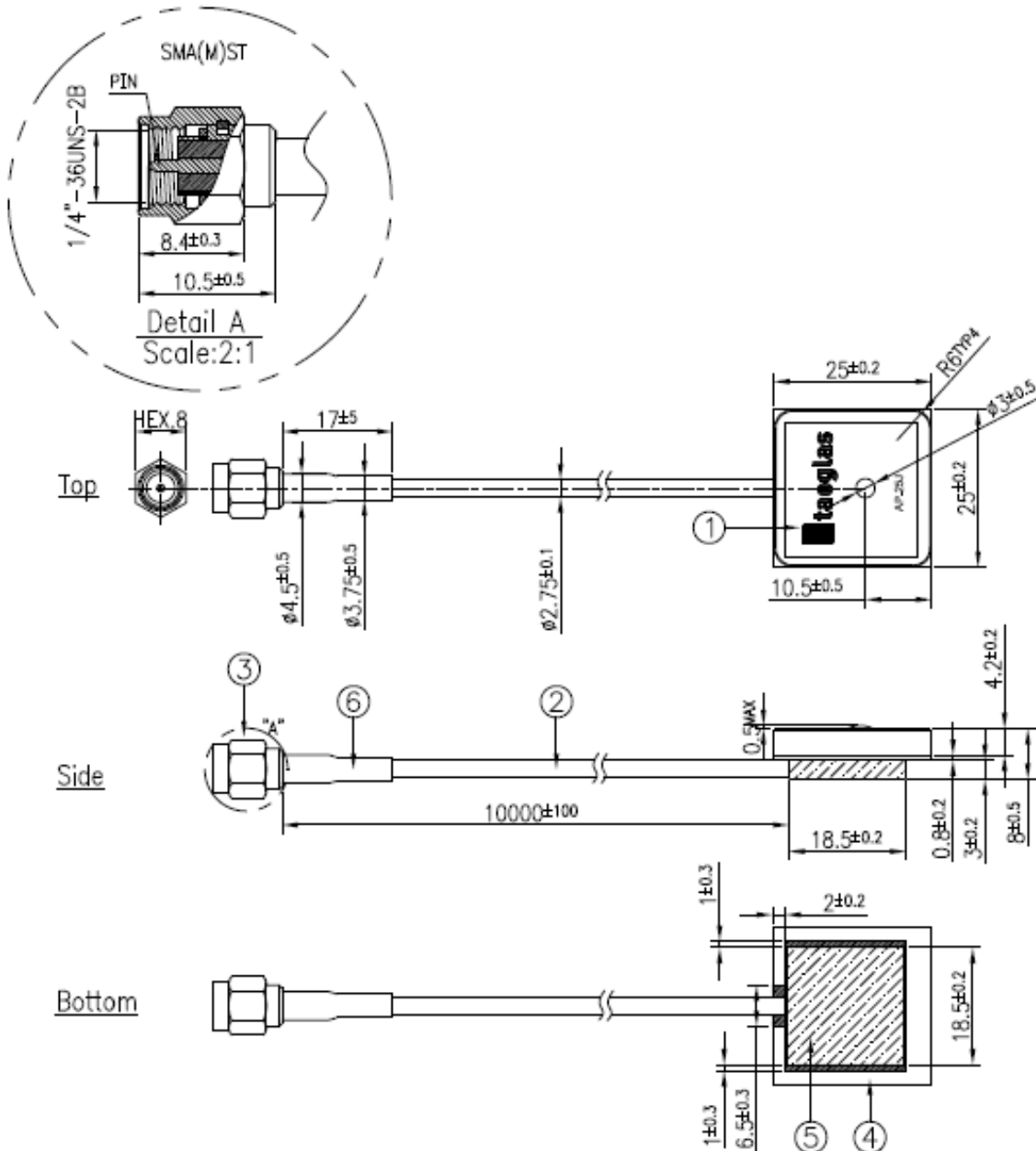


Pattern	Model No.	Test Mode	Freq (MHz)	Max Gain(dBi)	Min Gain(dBi)	Avg. Gain(dBi)	Source Polar.	Date
1	AP.25J.01.10000D	Axial Ratio	1575.42	-1.80 / 357.09	-43.93 / 93.46	-6.27	CP	2009/11/2



### 3.3. VSWR



## 4. Technical Drawing

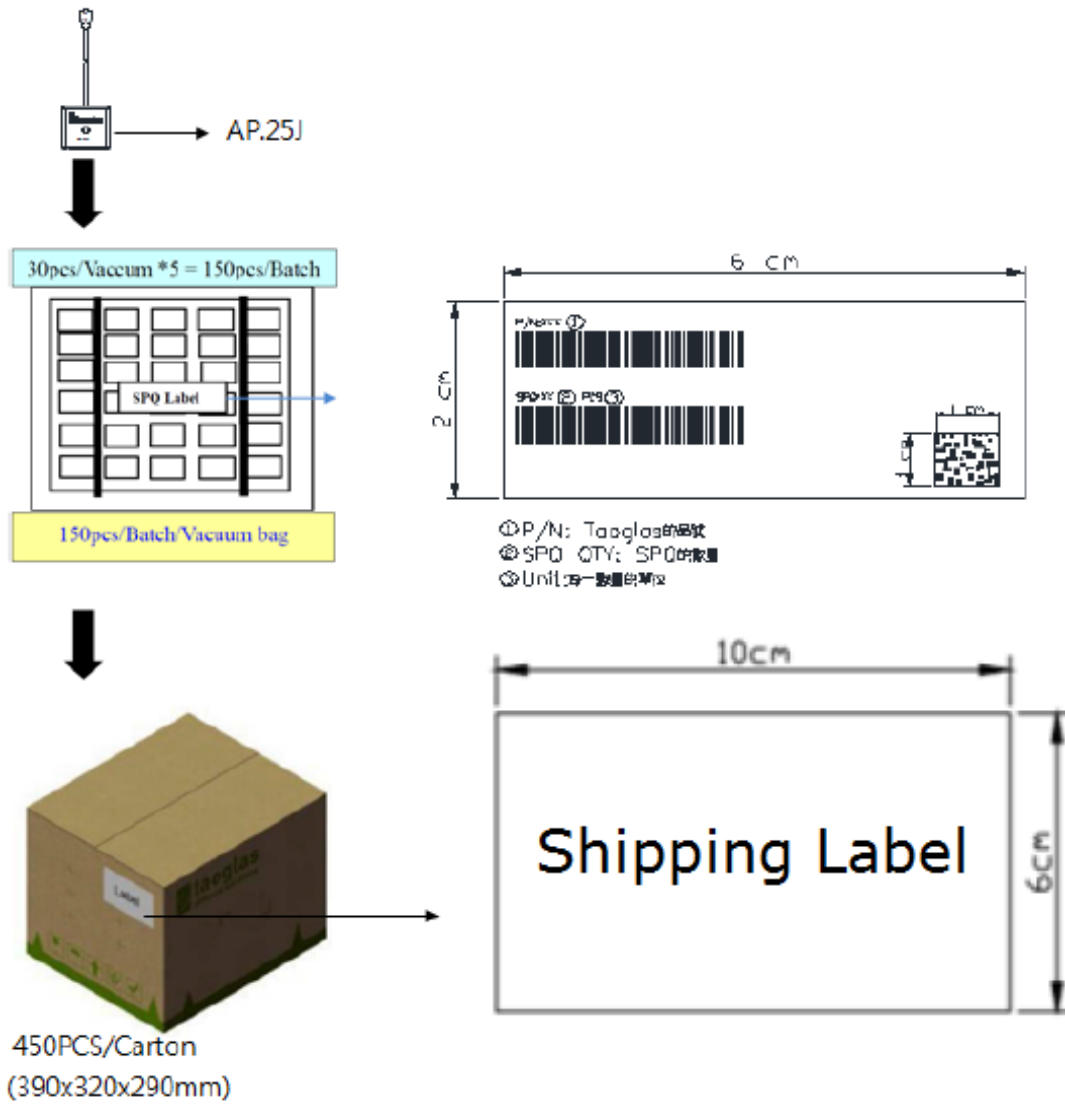


**NOTES:**

1. Soldered area 
2. Shielding case 
3. The connector position has special orientation to the PCB as per drawing.
4. All material must be RoHS compliant.
5. Open/short QC, VSWR required.

	Name	P/N	Material	Finish	QTY
1	Patch(25*25*4mm)	001513B100007A	Ceramic	Clear	1
2	RG174 Coaxial Cable	301313A000007A	PVC	Black	1
3	SMA(M)ST	201212G000007A	Brass	Au Plated	1
4	PCB	100213B080007A	FR4 0.8t	Green	1
5	Shielding Case	000513B050007A	SPTE	Tn Plated	1
6	Heat Shrink Tube	001311F000007A	PE	Black	1

## 5. Packaging



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