

## SPECIFICATION

Part No.	: <b>AP.25F.07.0078A</b>
Product Name	: 25mm Two Stage GPS/GALILEO Active Patch Antenna Module with front-end Saw Filter
Features	: Industry leading GPS antenna performance 25mm*25mm*8mm (Ground Plane) 78mm Ø1.13 I-PEX MHFI (U.FL) 28dB LNA Wide Input Voltage 1.8V to 5.5V Low Power Consumption ROHS Compliant

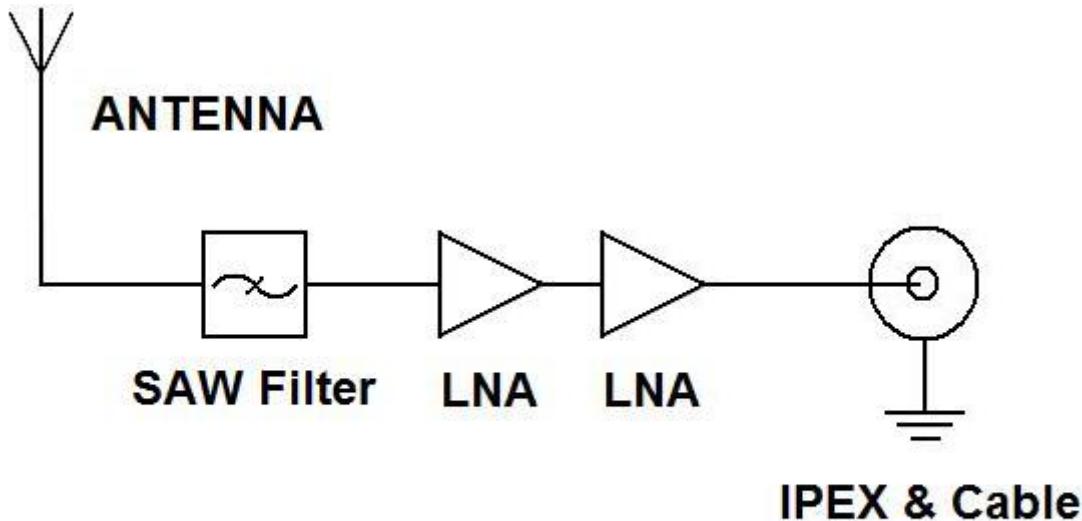


## 1. Introduction

The AP.25F has been designed specifically for embedded (inside device) integration with GPS /GALILEO receiver modules where there is a GSM transmitter nearby and risk of interference and saturation.

The AP.25F combines a 25\*25\*4mm advanced low profile ceramic patch antenna with a two stage LNA and a front-end SAW filter, with ultra thin coaxial cable.

Taoglas active antenna modules utilise XtremeGain™ technology for the highest sensitivity in the industry. The AP.25F consists of 2 functional blocks – the LNA and also the patch antenna.



The AP.25F has a SAW filter on the front of it. The main use of the AP.25F would be for small devices where the GSM transmitter is close to the GPS/GALILEO antenna, it helps avoid burn-out of the LNA or the module due to interference from the GSM transmitter at out band frequencies.

## 2. Specification

### 2.1. Patch Antenna

Parameter	Specification
Frequency	1575.42 ± 1.023MHz
Gain @ Zenith	+2.0 dBic Typ. @ Zenith
Polarization	RHCP
Axial Ratio	3.0dB max. @Zenith
Patch Dimension	25*25*4mm

### 2.2. LNA

Parameter	Specification		
Frequency	1575.42 ± 1.023MHz		
Outer Band	F0=1575.42MHz F0±30MHz 5dB min. F0±50MHz 20dB min.		
Attenuation	F0±100MHz 25dB min.		
Output Impedance	50Ω		
Output VSWR	2.0 Max		
Pout at 1dB Gain	Typ. -2dBm		
Compression point	Min. -6dBm		
LNA Gain, Power Consumption and Noise Figure			
Voltage	LNA Gain (Typ)	Power Consumption (mA) Typ	Noise Figure Typ
Min. 1.8V	23dB	Min. 3mA - Max. 10mA	2.7dB
Typ. 3.0V	28dB	Min. 8mA - Max. 20mA	3.0dB
Max. 5.5V	30dB	Min. 30mA - Max. 40mA	3.7dB

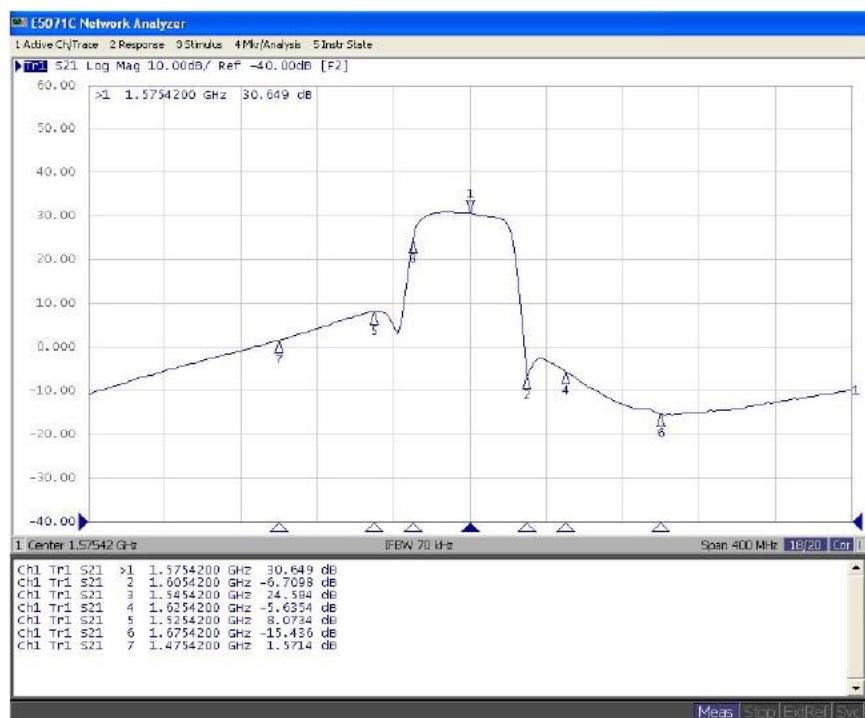
## 2.3. Cable\* & Connector

Parameter	Specification
RF Cable	Coaxial Cable $\varnothing 1.13 \pm 0.1\text{mm}$ , length $80 \pm 2.0\text{mm}$
Connector	IPEX MHFI (U.FL)

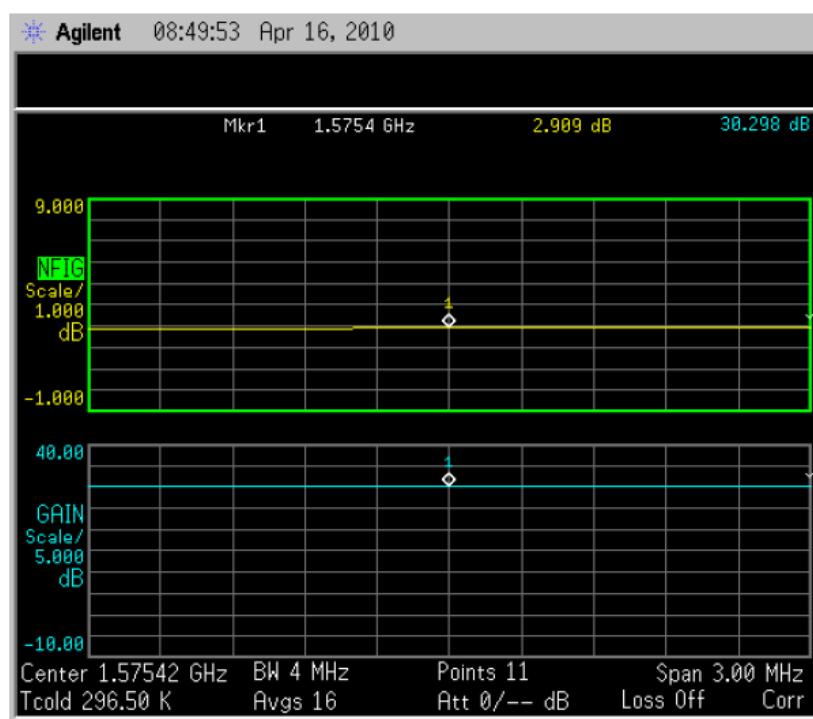
## 2.4. Total Specification (through Antenna, LNA, Cable and Connector)

Parameter	Specification
Frequency	$1575.42 \pm 1.023\text{MHz}$
Gain	At 3V: $30 \pm 3\text{dBi}$
Output Impedance	$50\Omega$
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
Antenna	25*25*8mm

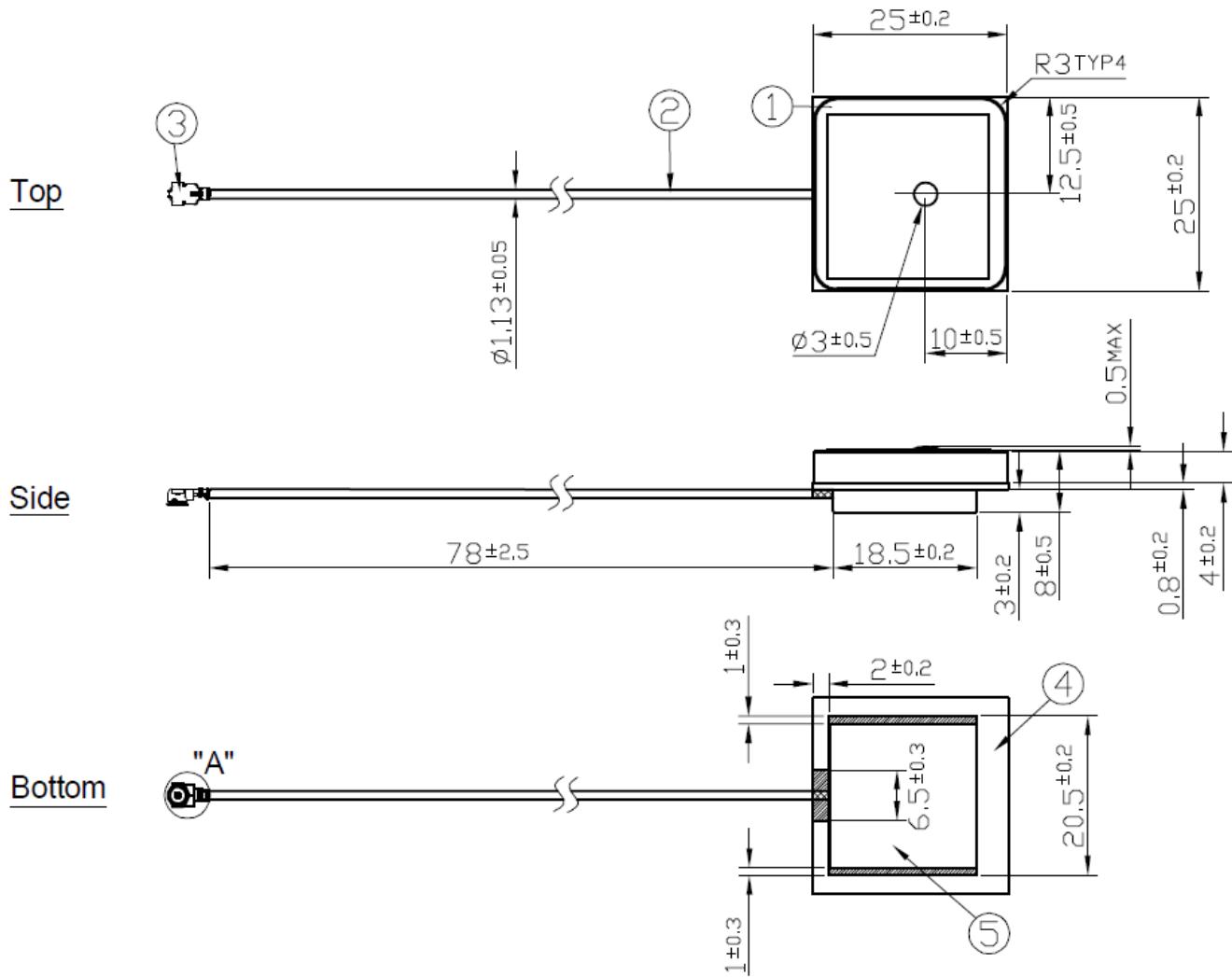
### 3. LNA Gain and Out Band Rejection @3.0V



### 4. LNA Noise Figure @3.0V

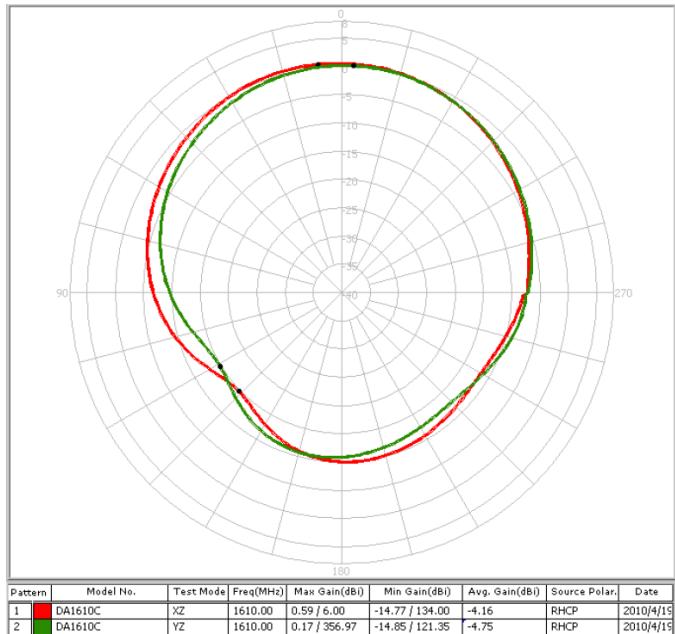


## 5. Mechanical Drawing (Unit: mm)

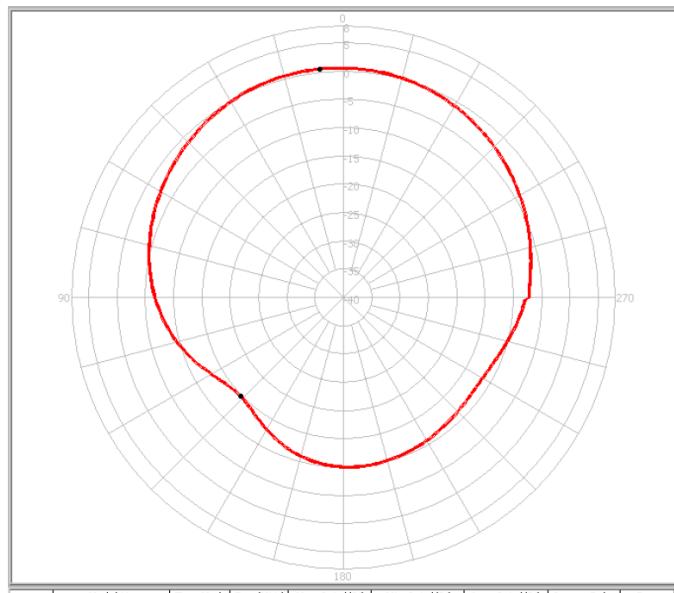


## 6. Radiation Patterns

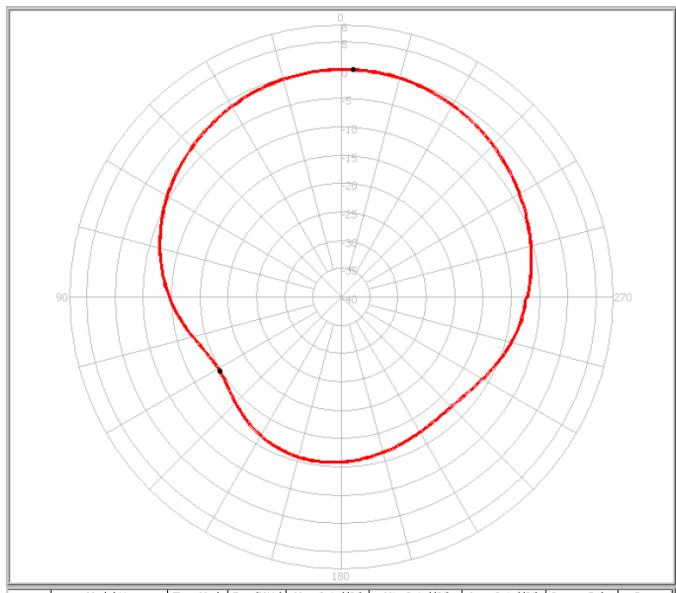
XY Plane



XZ Plane



YZ Plane



Pattern	Model No.	Test Mode	Freq(MHz)	Max Gain(dBi)	Min Gain(dBi)	Avg. Gain(dBi)	Source Polar.	Date
1	DA1610C	XZ	1610.00	0.59 / 6.00	-14.77 / 134.00	-4.16	RHCP	2010/4/15

Pattern	Model No.	Test Mode	Freq(MHz)	Max Gain(dBi)	Min Gain(dBi)	Avg. Gain(dBi)	Source Polar.	Date
1	DA1610C	YZ	1610.00	0.17 / 356.97	-14.85 / 121.35	-4.75	RHCP	2010/4/15

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