SPECIFICATION

Part No. : **AP.25F.07.0078A**

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

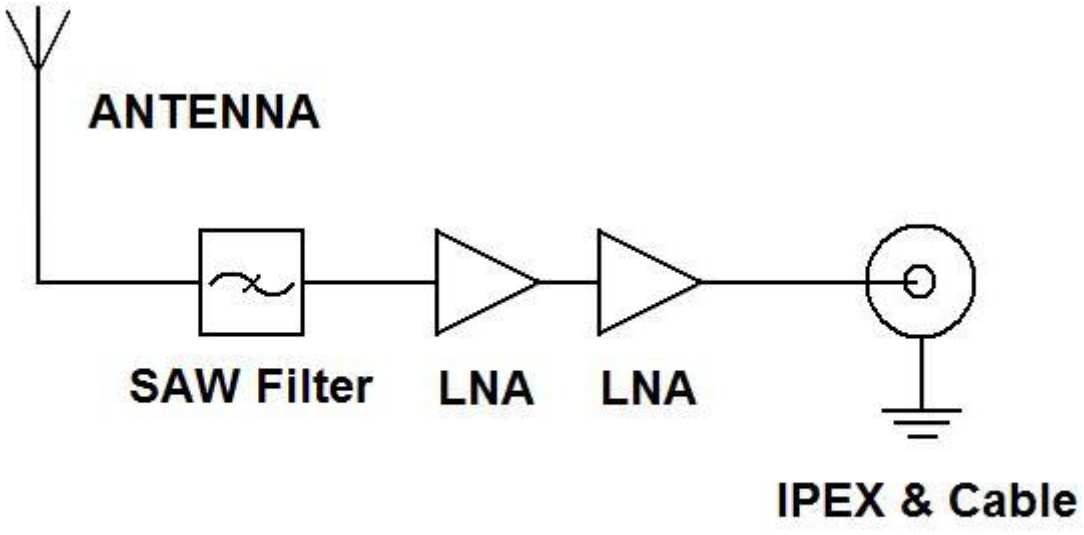


1. Introduction

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 Attenuation	F0=1575.42MHz F0±30MHz 5dB min. F0±50MHz 20dB min. F0±100MHz 25dB min.		
Output Impedance	50Ω		
Output VSWR	2.0 Max		
Pout at 1dB Gain Compression point	Typ. -2dBm Min. -6dBm		
LNA Gain, Power Consumption and Noise Figure			
Voltage	LNA Gain (Typ)	Power Consumptio (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

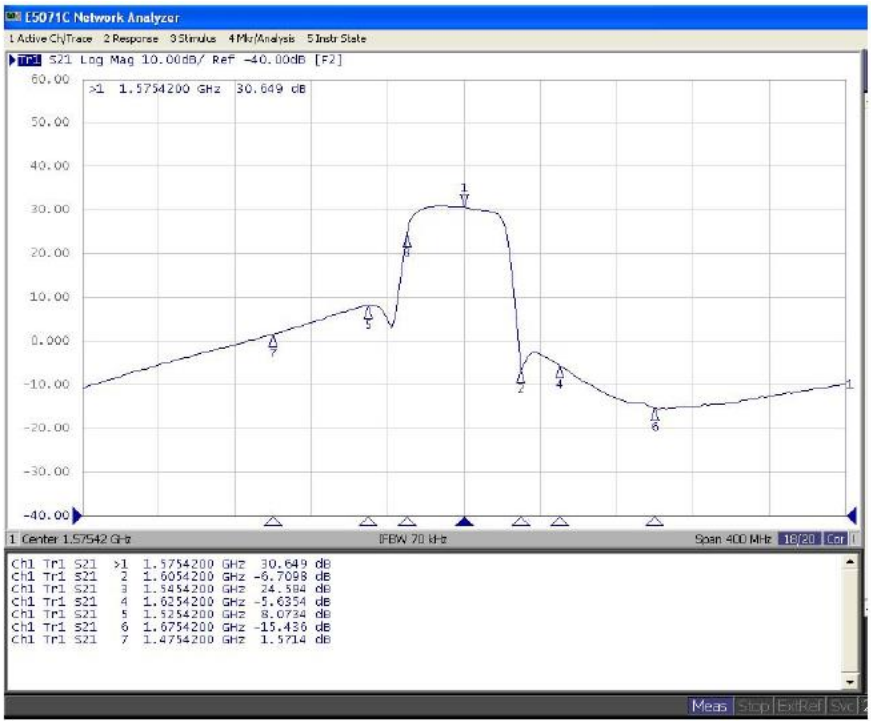
2.3. Cable* & Connector

Parameter	Specification
RF Cable	Coaxial Cable Ø1.13 ± 0.1mm, length 80 ± 2.0mm
Connector	IPEX MHFI (U.FL)

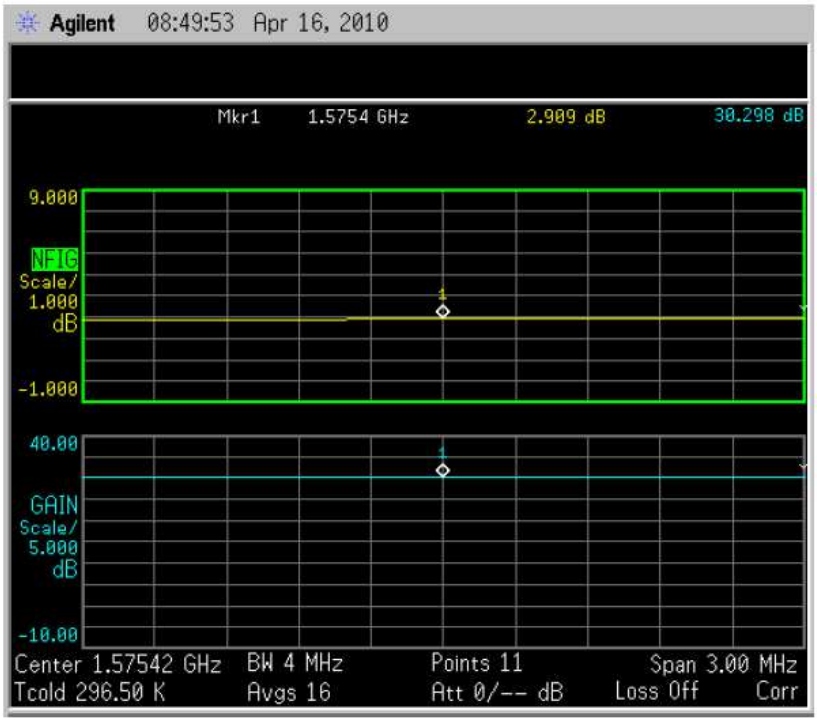
2.4. Total Specification (through Antenna, LNA, Cable and Connector)

Parameter	Specification
Frequency	1575.42 ± 1.023MHz
Gain	At 3V: 30 ± 3dBi
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
Antenna	25*25*8mm

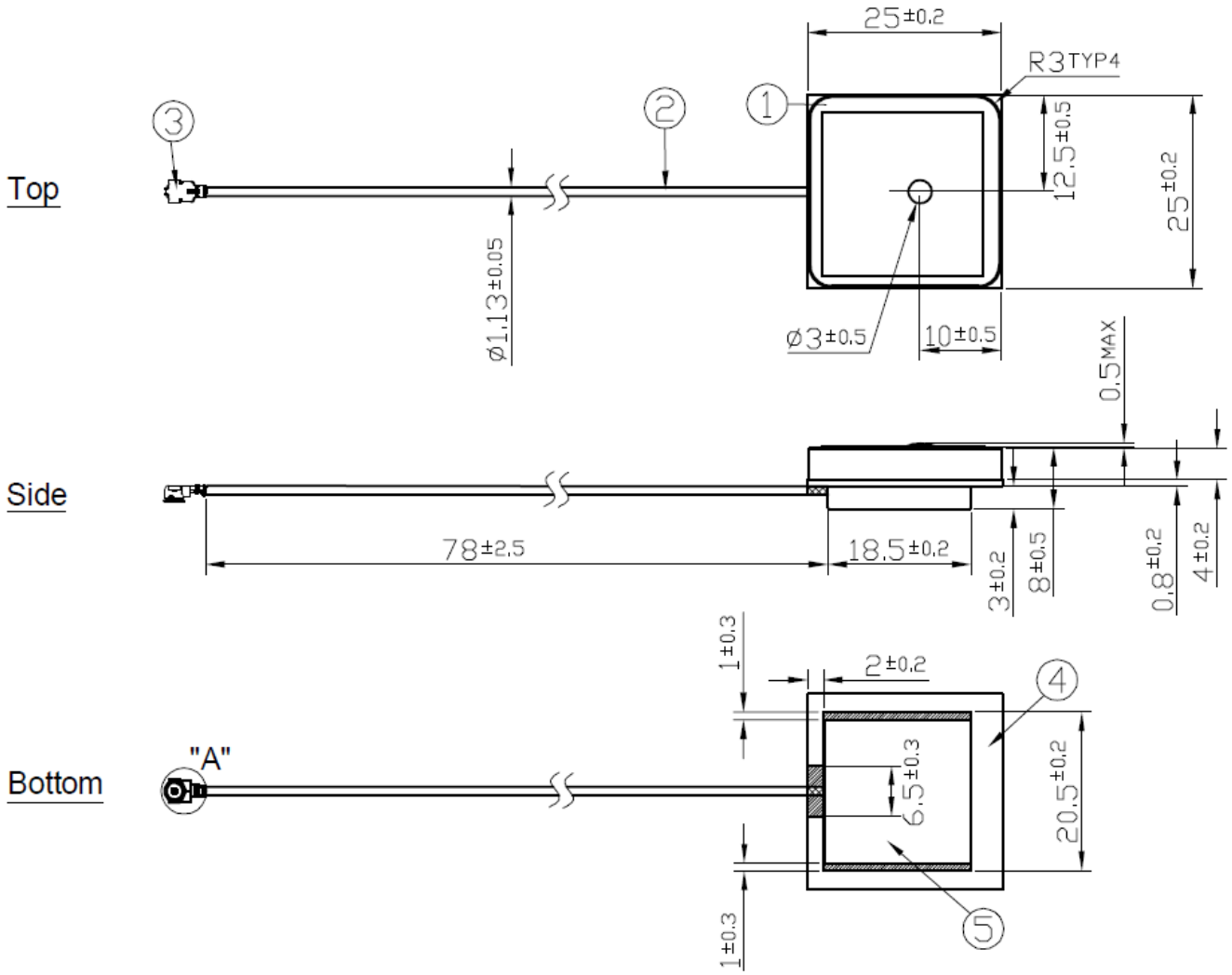
3. LNA Gain and Out Band Rejection @3.0V



4. LNA Noise Figure @3.0V

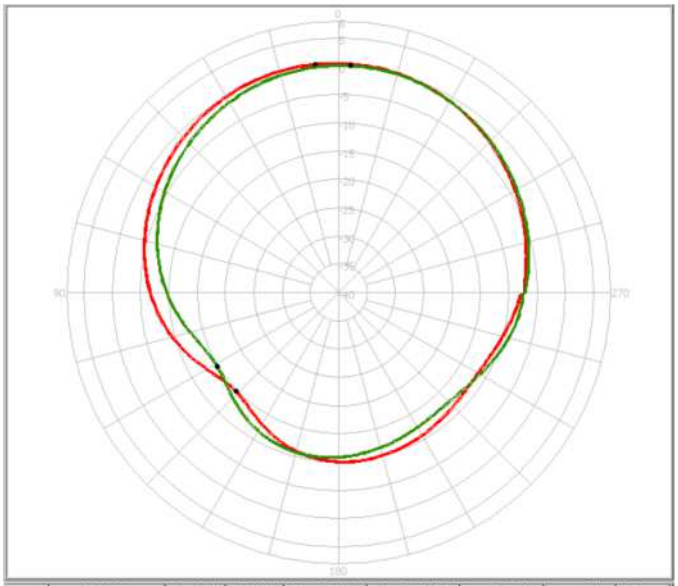


5. Mechanical Drawing (Unit: mm)



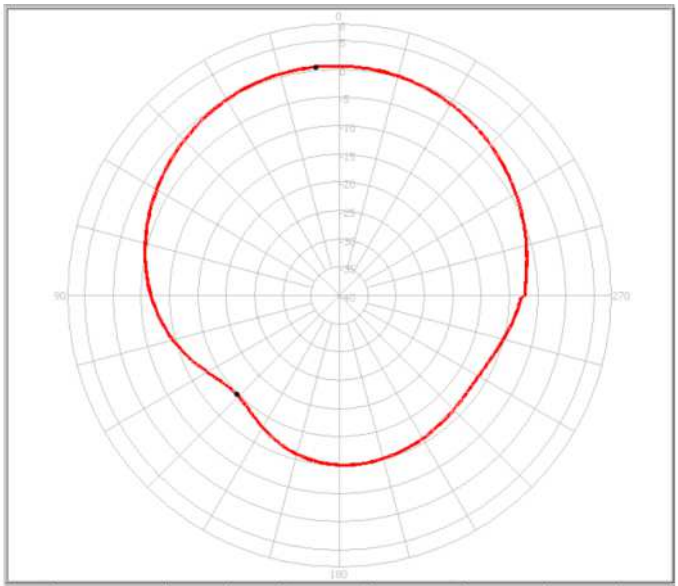
6. Radiation Patterns

XY Plane



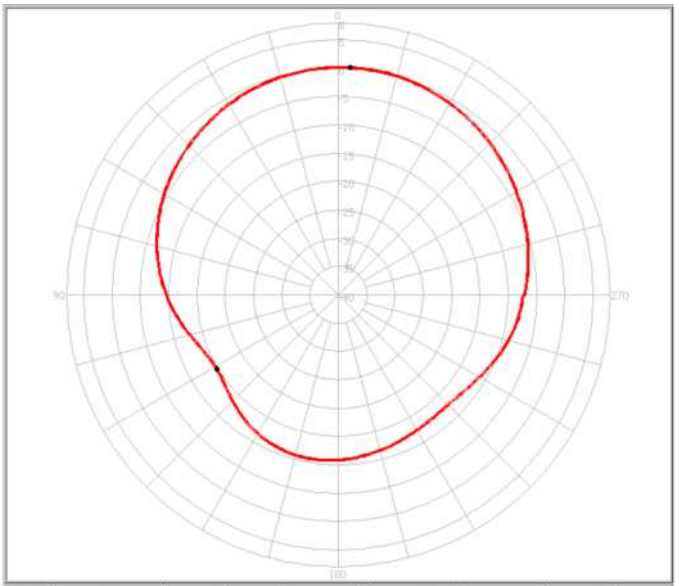
Pattern	Model No.	Test Mode	Freq(MHz)	Max Gain(dBi)	Min Gain(dBi)	Avg. Gain(dBi)	Source Polar.	Date
1	DA1610C	XZ	1610.00	0.59 / 6.00	-14.77 / 134.00	-4.16	RHCP	2010/4/19
2	DA1610C	YZ	1610.00	0.17 / 356.97	-14.85 / 121.35	-4.75	RHCP	2010/4/19

XZ 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	2010/4/19

YZ Plane



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	2010/4/19

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