SPECIFICATION

Part No. : **AP17E.07.0064A**

Product Name : 17mm One Stage GPS/GALILEO Active Patch Antenna Module with Front End SAW Filter

Features : 17mm*17mm*6.3mm

64mm 1.13 IPEX MHFI

Wide Voltage 1.8V~5.5V

15dB LNA

Tested in Free space

ROHS Compliant

1. Introduction

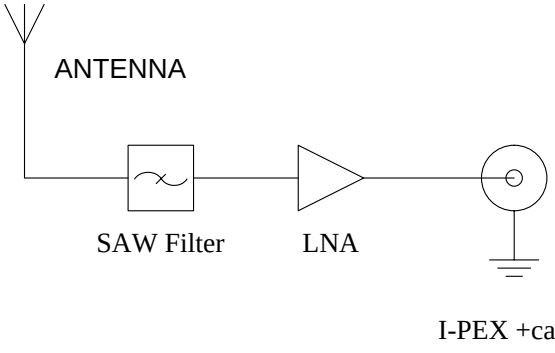
The AP.17E is a one stage 17mm active patch antenna that has been designed specifically for embedded (inside device) integration with GPS/GALILEO receiver modules.

The AP.17E combines a 17*17*4mm advanced low profile ceramic patch antenna with a one stage LNA and a front-end SAW filter with ultra thin coaxial cable. It comes with it's own integrated ground-plane. The front end SAW filter reduces the risks where there is a cellular transmitter nearby of interference from out of band frequencies which can cause LNA burn-out, saturation, or radiated spurious emissions.

The antenna can work on a wide input voltage from 1.8V to 5.5V with best in class power consumption figures.

If further tuning and optimization specific to a customer device is required Taoglas offers a custom tuned and optimized part service. Contact sales@taoglas.com for more information.

Cables and connectors can be customized according to request.

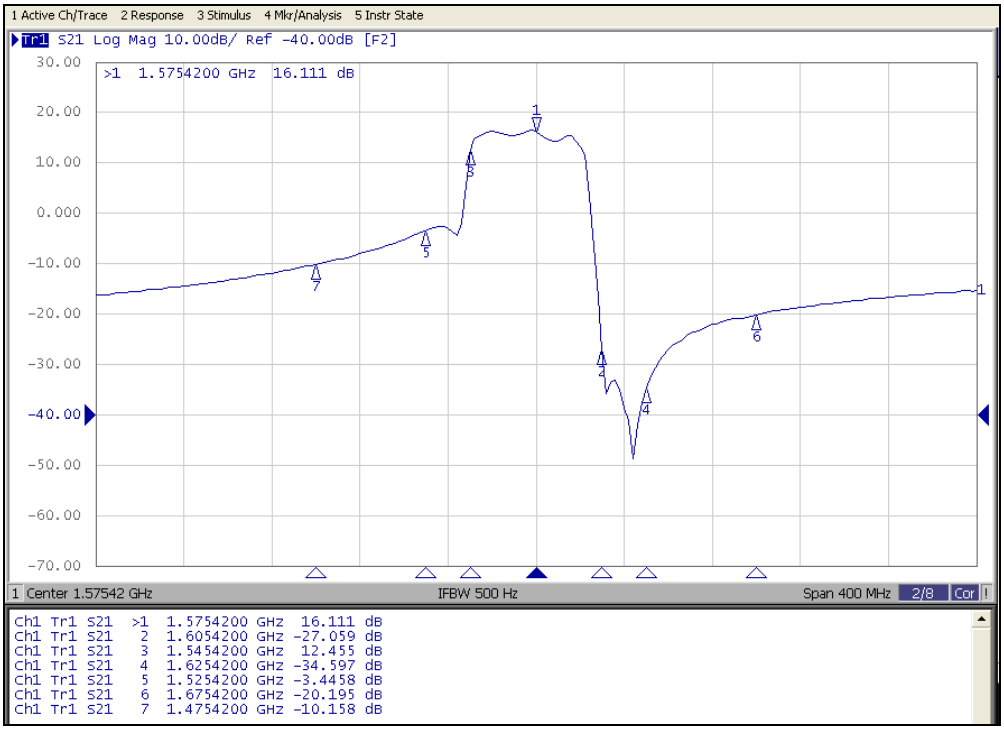


2. Specification

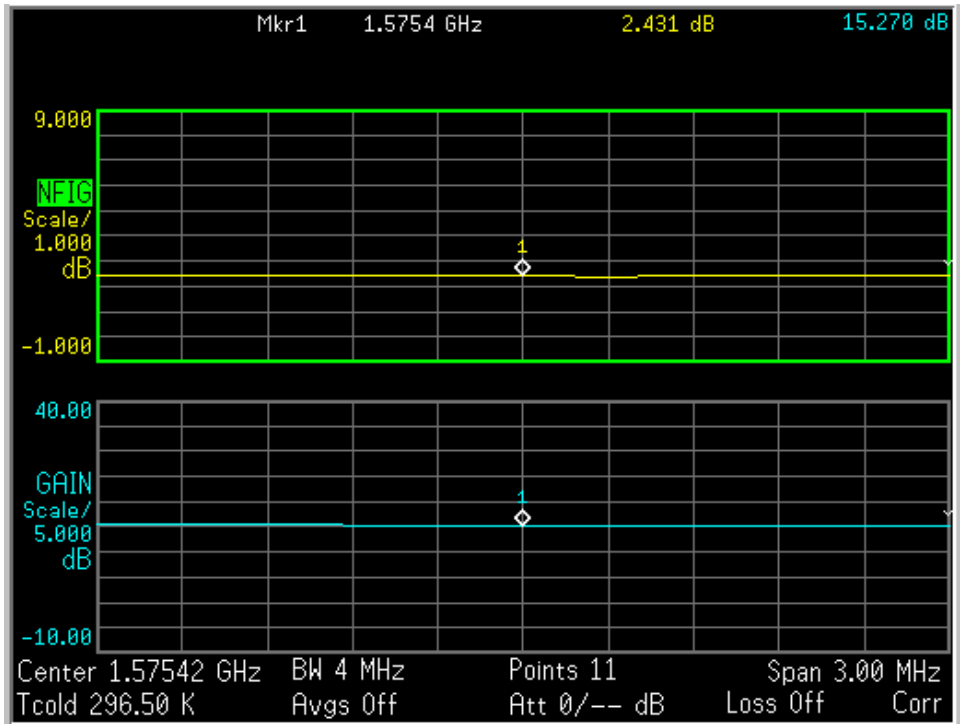
ELECTRICAL			
Input Voltage	Min:1.8V Typ.: 3.0V Max: 5.5V		
Frequency Range	1575.42MHz +/- 1.023 MHz		
Gain	-1.0dBic Typ. @zenith		
Polarization	RHCP		
Axial ratio	Max 3.0dB@zenith		
Frequency Range	1575.42MHz +/- 1.023 MHz		
Gain (With LNA)	At 90° At 5.5V 16 ± 3dBic At 3.0V 15 ± 3dBic At 1.8V 12 ± 3dBic		
Output Impedance	50Ω		
LNA			
Frequency	1575.42 ± 1.023MHz		
Outer Band Attenuation	F0=1575.42MHz		
	F0±30MHz 2dB min.		
	F0±50MHz 18dB 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 Consumption (mA) Typ	Noise Figure Typ
Min. 1.8V	13dB	1.6mA	2.5dB
Typ. 3.0V	16dB	3.5mA	2.5dB
Max. 5.5V	17dB	7.6mA	2.6dB

MECHANICAL	
Dimensions	17mm*17mm*6.3mm
RF Cable	Ø1.13 RF Coaxial Cable L=64mm±2.5mm
RF Connector	IPEX MHFI
ENVIRONMENTAL	
Operation Temperature	-40°C to + 85°C
Storage Temperature	-40°C to + 85°C
Relative Humidity	40% to 95%

2.1. LNA Gain and Out Band Rejection @3.0V

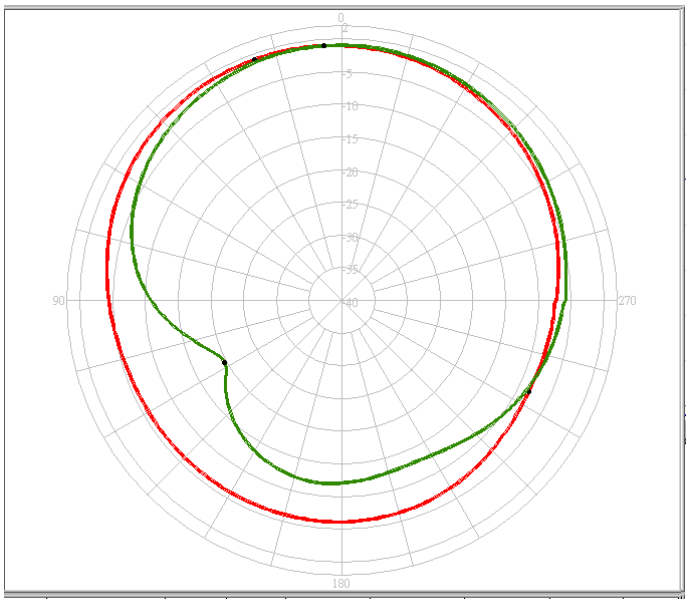


2.2. LNA Noise Figure @3.0V



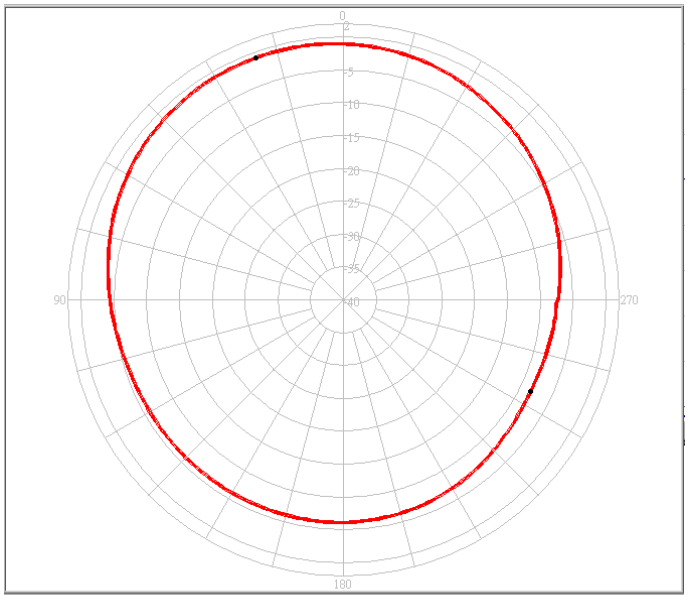
3. Radiation Patterns

XY Plane



Pattern	Model No.	Test Mode	Freq(MHz)	Max Gain(dBi)	Min Gain(dBi)	Avg. Gain(dBi)	Source Polar.	Date
1	Taoglas	XZ	1575.42	-0.88 / 20.00	-8.25 / 244.00	-4.01	RHCP	2011/9/9
2	Taoglas	YZ	1575.42	-1.01 / 4.00	-19.77 / 118.00	-5.35	RHCP	2011/9/9

XZ Plane



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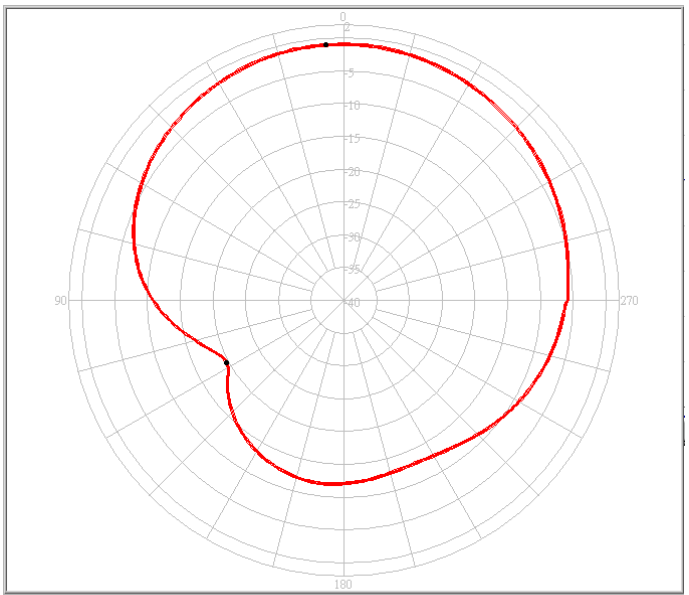
YZ Plane



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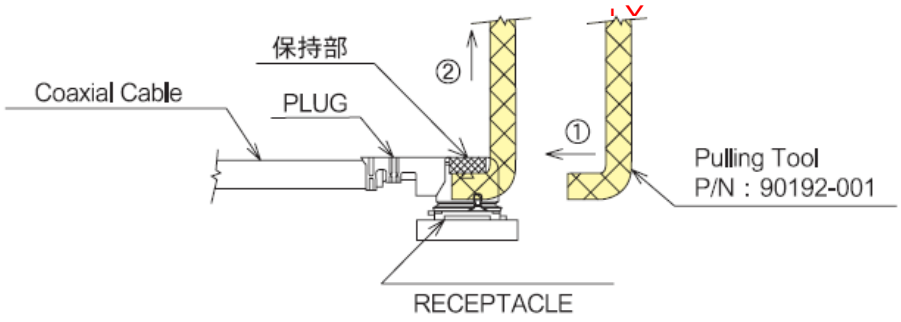
4. Plugs Usage Precautions

4.1. Mating / Unmating

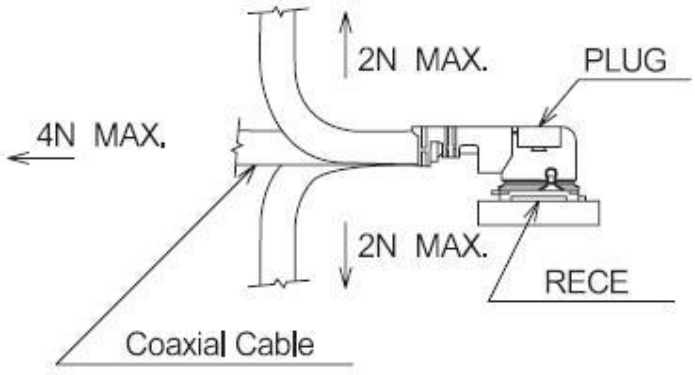
(1) To disconnect connectors, insert the end portion of I-PEX under the connector flanges and pull off vertically, in the direction of the connector mating axis.

(2) To mate the connectors, the mating axes of both connectors must be aligned and the connectors can be mated. The "click" will confirm fully mated connection. Do not attempt to insert on an extreme angle.

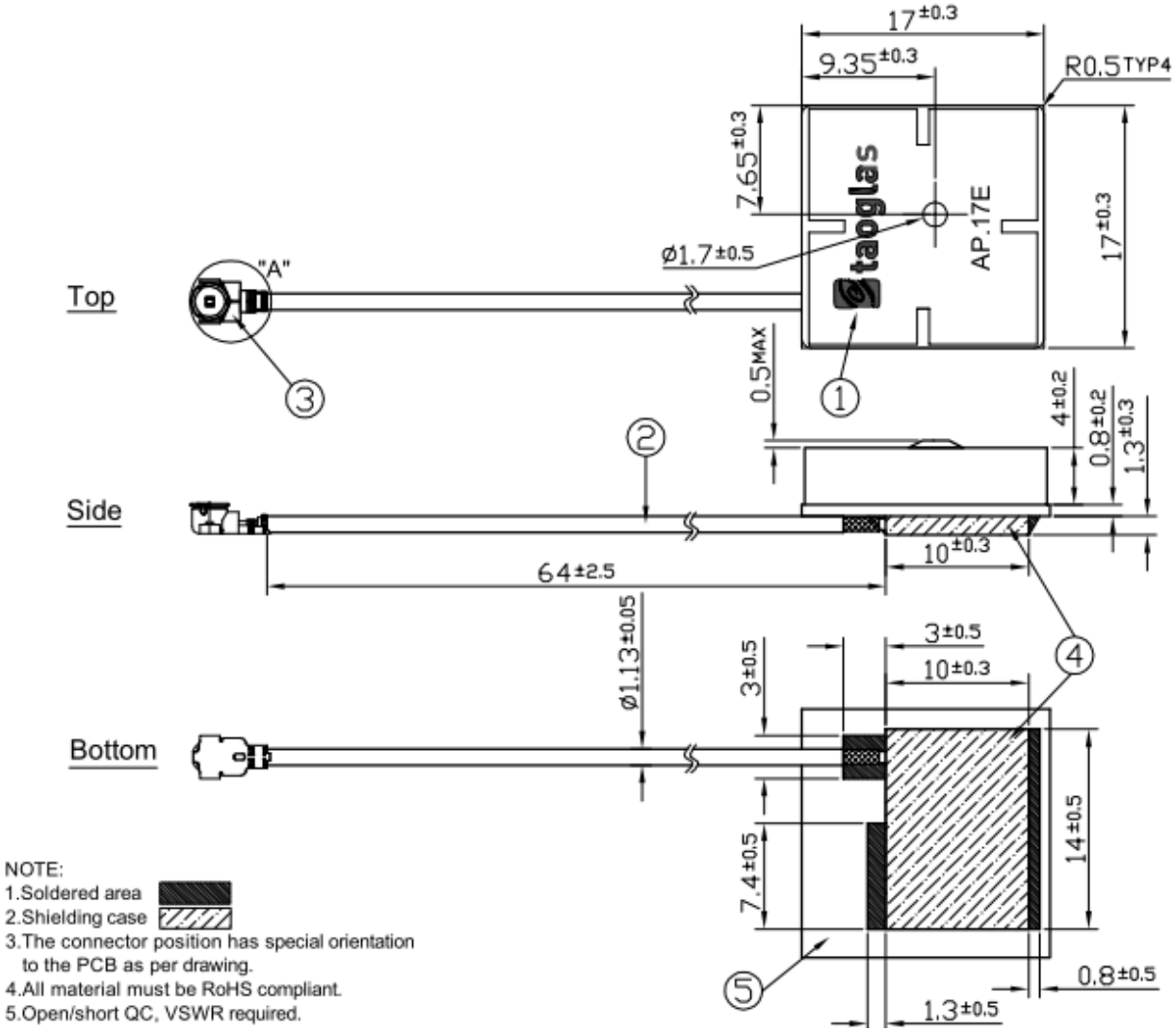


4.2. Pull forces on the cable after connectors are mated

After the connectors are mated, do not apply a load to the cable in excess of the values indicated in the diagram below.

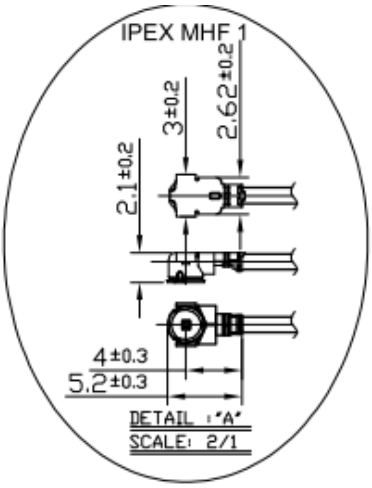


5. Mechanical Drawing (Unit: mm)



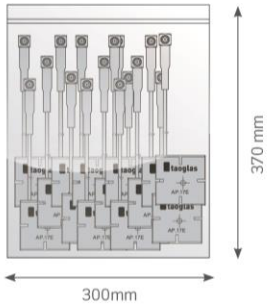
NOTE:
1.Soldered area
2.Shielding case
3.The connector position has special orientation to the PCB as per drawing.
4.All material must be RoHS compliant.
5.Open/short QC, VSWR required.

	Name	P/N	Material	Finish	QTY
1	AP.17E Patch (17*17*4mm)	AP.17E	Ceramic	Clear	1
2	1.13 Coaxial Cable	OD.113.J	FEP	Gray	1
3	IPEX MHF1 Connector	IPEX.MHFI.113	Brass	Gold Plated	1
4	Shielding Case		Tin (SPTE)	Tin Plated	1
5	PCB		FR4 0.8t	Green	1

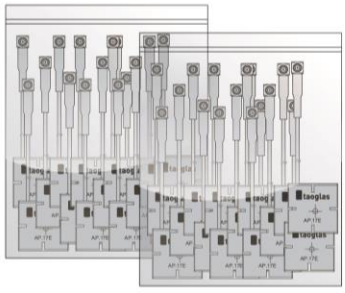


6. Packaging

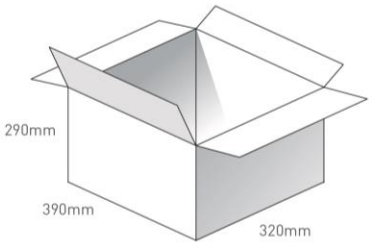
60 pc AP.17E.07.0064A in Vacuum Bag
Dimensions - 370*300mm
Weight - 534Kg



Batch of 2, 120pc AP.17E.07.0064A in Vacuum Bags
Dimensions - 370*300mm
Weight - 1.1Kg



10 Vacuum Bags
600 pcs in one carton
Carton Dimensions - 390*320*290mm
Weight - 6.3Kg



Pallet Dimensions 1200*1000*1360mm
36 Cartons per Pallet
9 Cartons per layer
4 Layers