

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

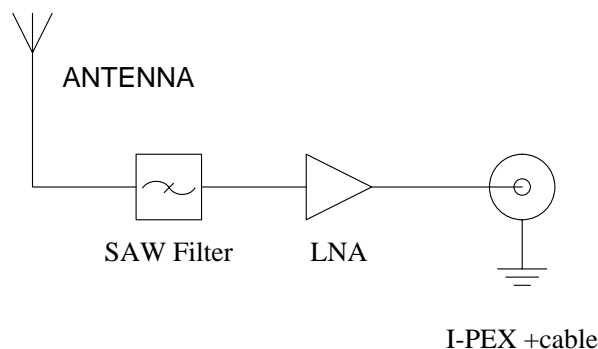
The AP.17E is a one stage 17mm active patch antenna that has been designed specifically for embedded (inside device) integration with GPS/GALILEO receiver modules.

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.

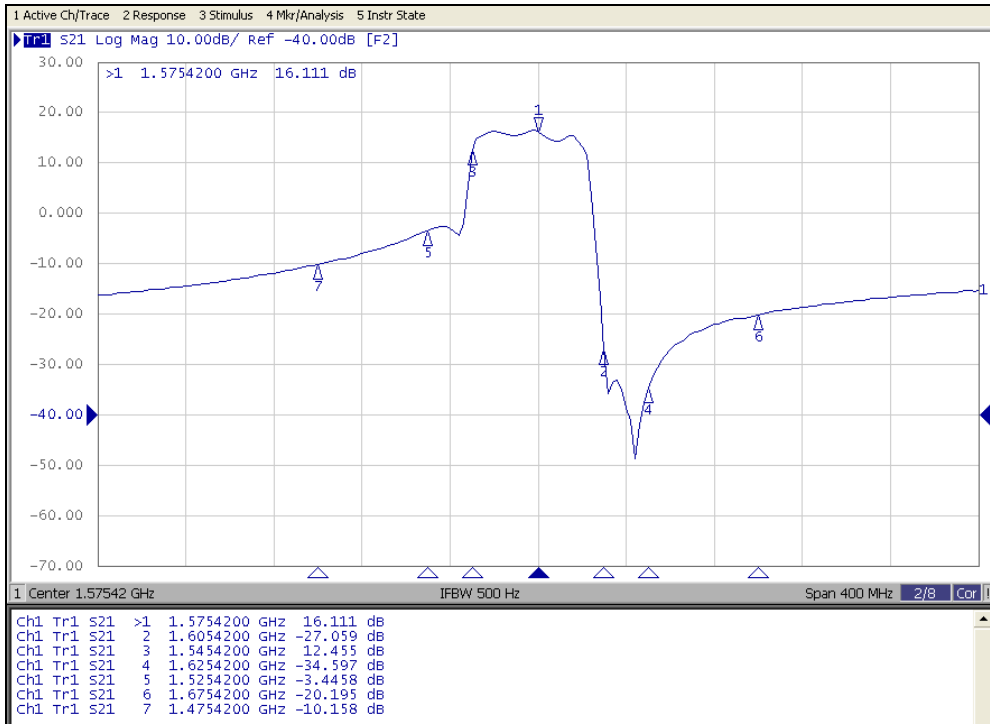


2. Specification

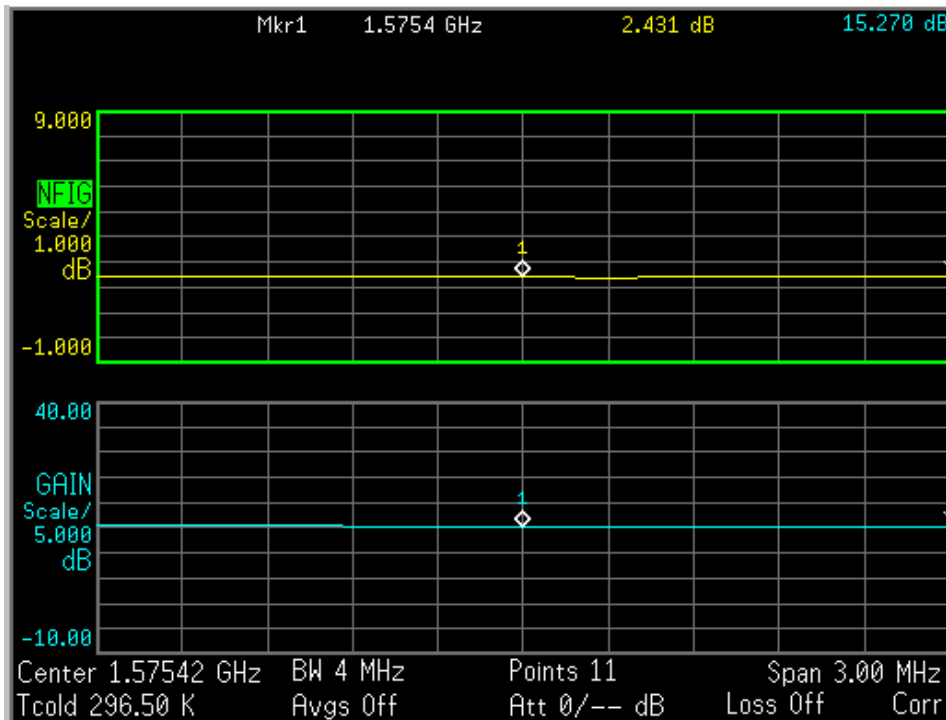
| ELECTRICAL | | | | |
|--|-------------------------------|-------------------|------------|---------------------|
| Input Voltage | Min:1.8V Typ.: 3.0V Max: 5.5V | | | |
| Frequency Range | 1575.42MHz +/- 1.023 MHz | | | |
| Gain | -1.0dBic Typ. @zenith | | | |
| Polarization | RHCP | | | |
| Axial 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 | Typ. -2dBm | | | |
| Compression point | Min. -6dBm | | | |
| LNA Gain, Power Consumption and Noise Figure | | | | |
| Voltage | LNA Gain (Typ) | Power Consumption | | Noise Figure Typ |
| | | (mA) 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

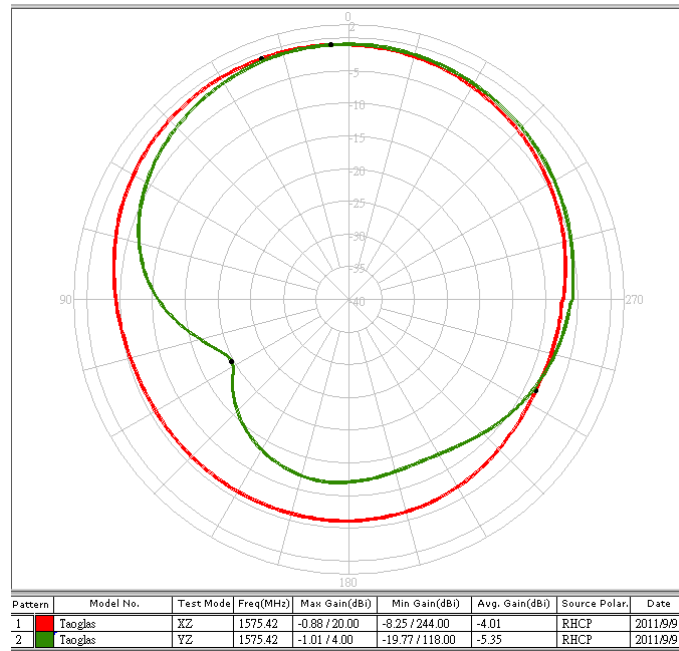


2.2. LNA Noise Figure @3.0V

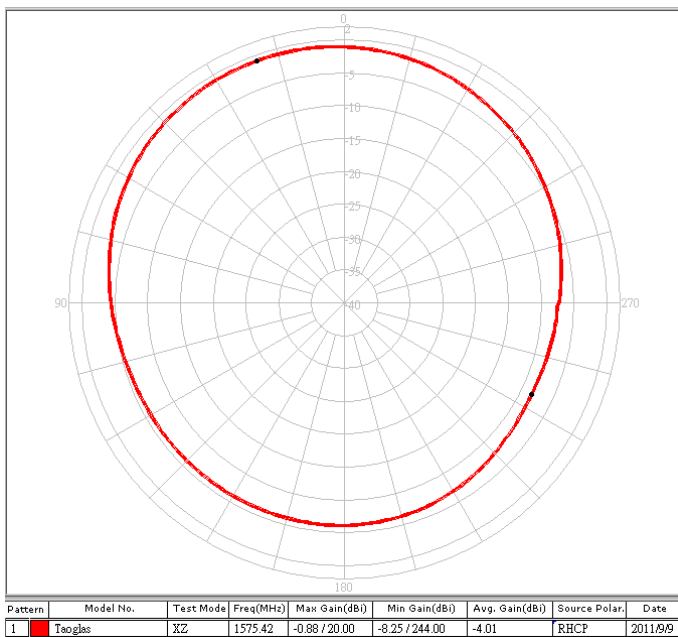


3. Radiation Patterns

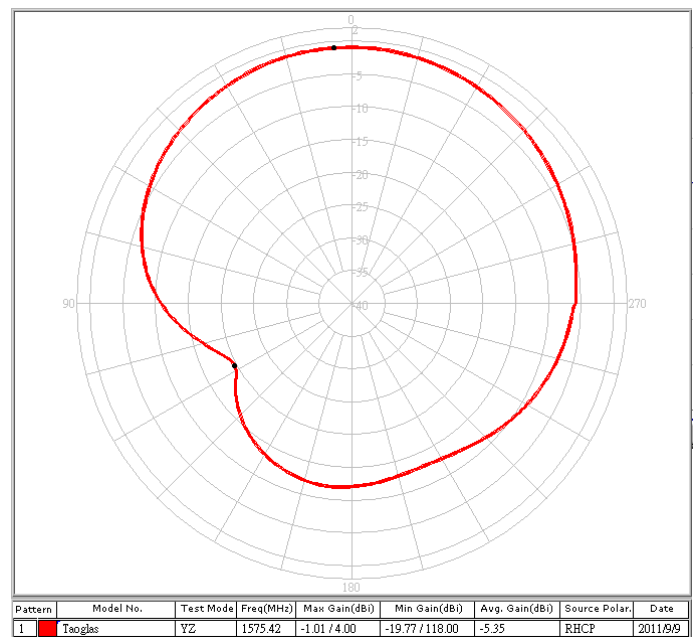
XY Plane



XZ Plane



YZ Plane

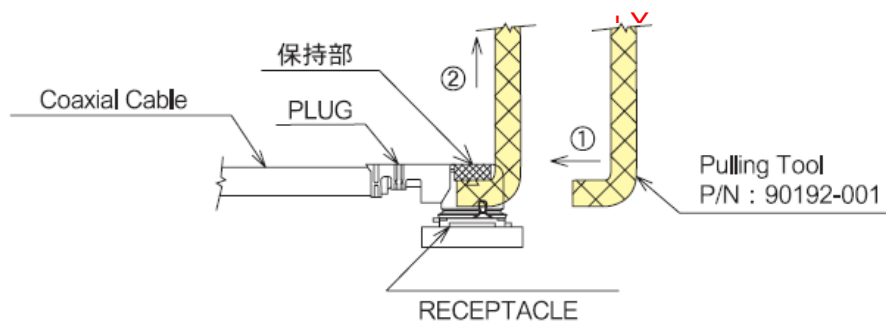


4. Plugs Usage Precautions

4.1. Mating / Unmating

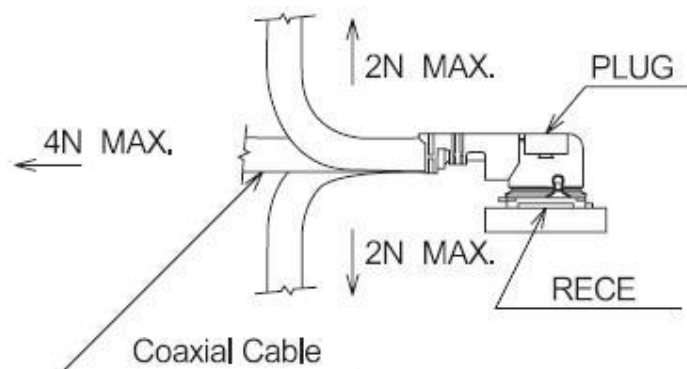
(1) To disconnect connectors, insert the end portion of I-PEX under the connector flanges and pull off vertically, in the direction of the connector mating axis.

(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.

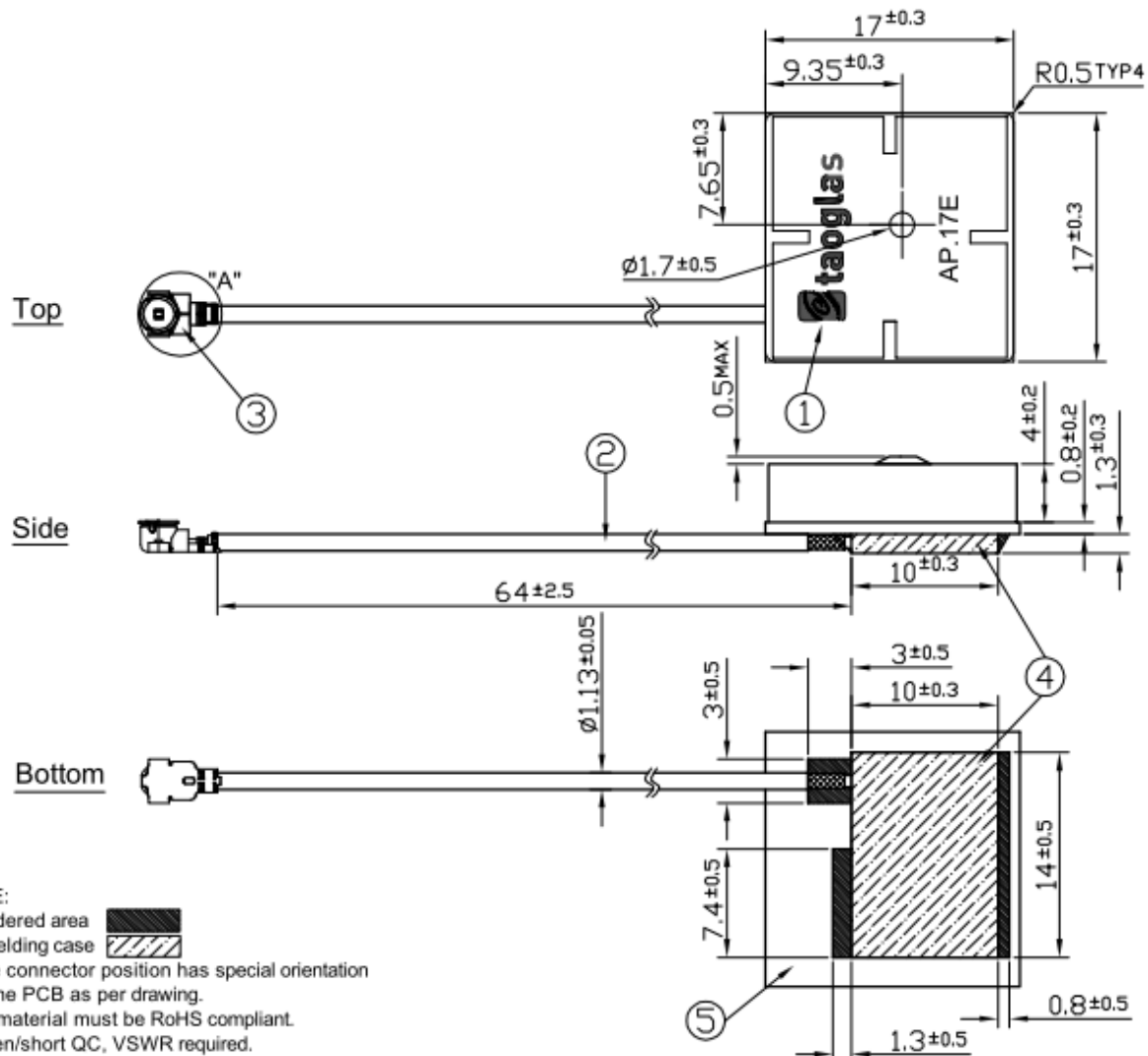




4.2. Pull forces on the cable after connectors are mated

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

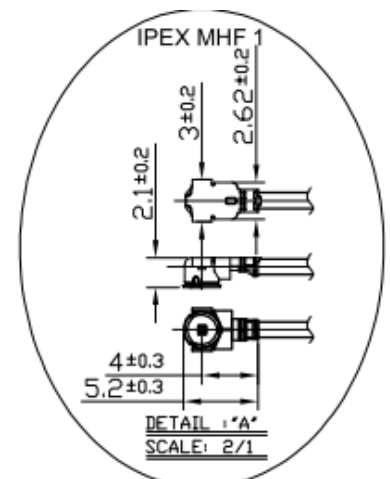


5. Mechanical Drawing (Unit: mm)



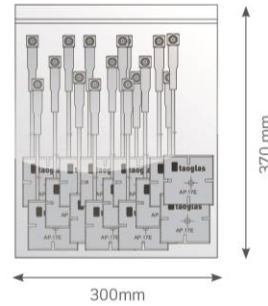
- NOTE:
1. Soldered area 
 2. Shielding case 
 3. The connector position has special orientation to the PCB as per drawing.
 4. All material must be RoHS compliant.
 5. Open/short QC, VSWR required.

| | 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.MHF1.113 | Brass | Gold Plated | 1 |
| 4 | Shielding Case | | Tin (SPTE) | Tin Plated | 1 |
| 5 | PCB | | FR4 0.8t | Green | 1 |

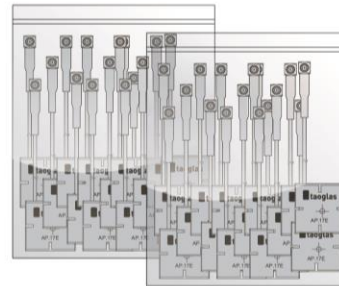


6. Packaging

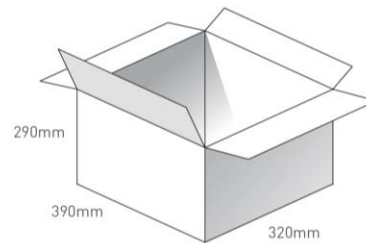
60 pc AP.17E.07.0064A in Vacuum Bag
 Dimensions - 370*300mm
 Weight - 534Kg



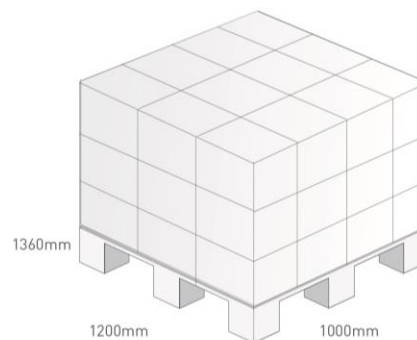
Batch of 2, 120pc AP.17E.07.0064A in Vacuum Bags
 Dimensions - 370*300mm
 Weight - 1.1Kg



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



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