

SPECIFICATION

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

Product Name : 17mm One Stage GPS Active Patch

Antenna Module with Front End SAW Filter

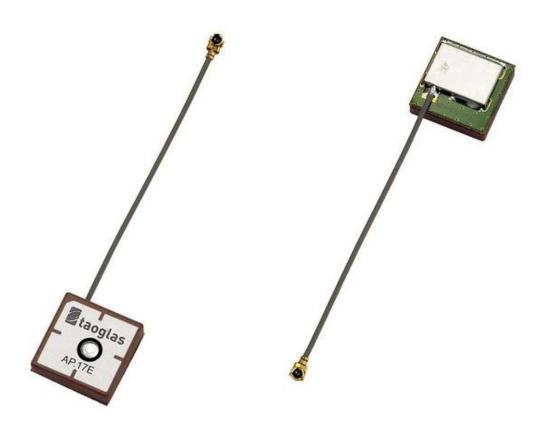
Features : 17mm*17mm*6.3mm

64mm 1.13 IPEX MHFI Wide Voltage 1.8V~5.5V

15dB LNA

Tested in Free space ROHS Compliant

Photo:



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1.0 Introduction

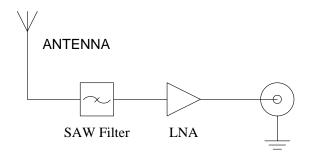
The AP.17E is a one stage 17mm active patch antenna that has been designed specifically for embedded (inside device) integration with GPS receiver modules.

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.



I-PEX +cable

2.1 Rated Environmental Conditions

No	Parameter	Specification	
2.1.1	Operation Temperature	-40°C to + 85°C	
2.1.2	Storage Temperature	-40°C to + 85°C	
2.1.3	Relative Humidity	40% to 95%	

2.2 Electrical Specifications

No Parameter		Specification		
2.2.1	Input Voltage	Min:1.8V Typ.: 3.0V Max: 5.5V		

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2.3 Electrical Specifications- Antenna 17*17*4mm

No	Parameter	Specification	
2.3.1	Frequency Range	1575.42MHz +/- 1.023 MHz	
2.3.2	Gain	-1.0dBic Typ. @zenith	
2.3.3	Polarization	RHCP	
2.3.4	Axial ratio	Max 3.0dB@zenith	

2.4 Electrical Specifications- LNA

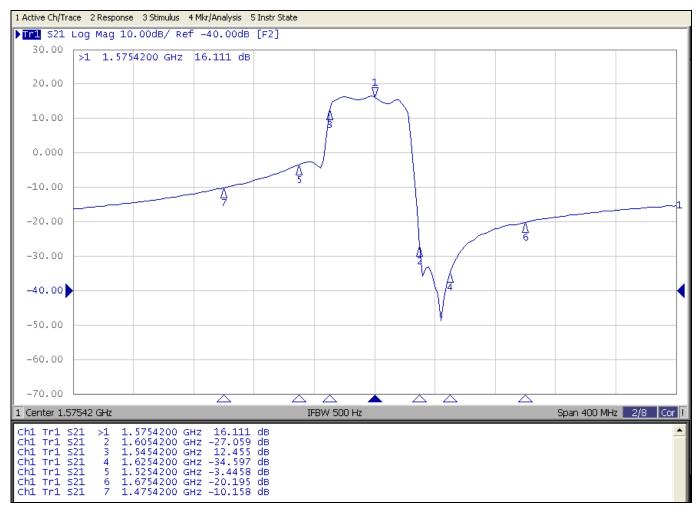
No	Parameter	Specification		
2.4.1	Frequency	1575.42 ± 1.023MHz		
	Outer Band Attenuation	F0=1575.42MHz		
2.4.2			F0±30MHz 2dB m	nin.
2.4.2			F0±50MHz 18dB m	nin.
			F0±100MHz 25dB m	nin.
2.4.3	Output Impedance	50Ω		
2.4.4	Output VSWR	2.0 Max		
2.4.5	Pout at 1dB Gain	Typ2dBm		
	Compression point	Min6dBm		
LNA Gain, Power Consumption and Noise Figure				
	Voltage	LNA Gain	Power Consumption	Noise Figure
2.4.6		(Typ)	(mA) Typ	Тур
	Min. 1.8V	13dB	1.6mA	2.5dB
	Typ. 3.0V	16dB	3.5mA	2.5dB
	Max. 5.5V	17dB	7.6mA	2.6dB

2.5 Cable & Connector

No	Parameter	Specification
2.5.1	RF Cable Ø1.13 RF Coaxial Cable L=64mm±2.5mm	
2.5.2	RF Connector	IPEX MHFI

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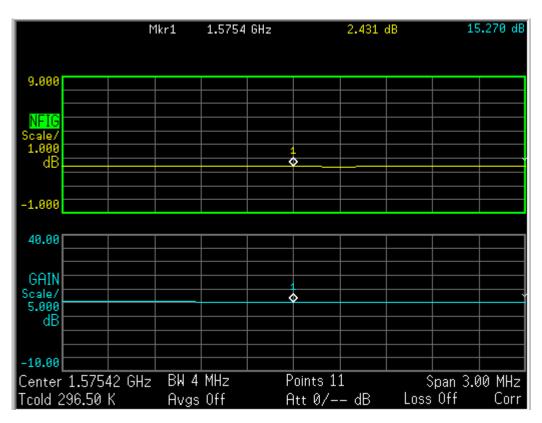




LNA Gain and Out Band Rejection @3.0V

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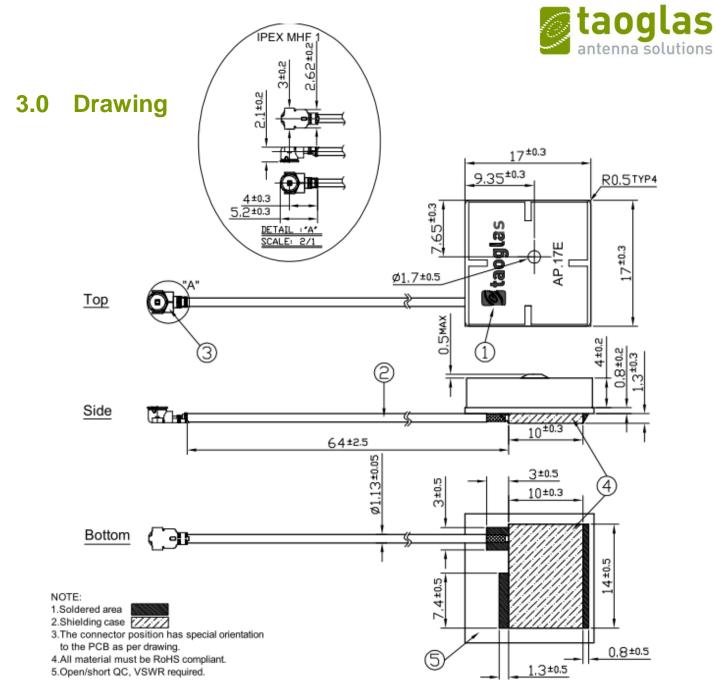


LNA Noise Figure @3.0V

2.6 Electrical Specifications- Overall

No	Parameter	Specification		
2.6.1	Frequency Range	1575.42MHz +/- 1.023 MHz		
2.6.2	Gain	At 90° At 5.5V $16 \pm 3 \text{dBic}$ At 3.0V $15 \pm 3 \text{dBic}$ At 1.8V $12 \pm 3 \text{dBic}$		
2.6.3	Output Impedance	50Ω		

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UNIT: mm

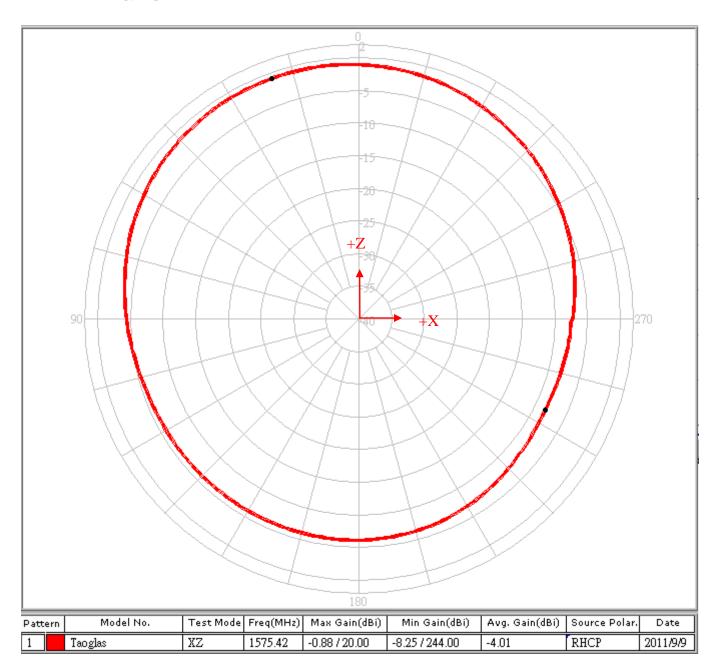
	Name	P/N	Material	Finish	QTY
1	AP.17E Patch (17*17*4mm)	AP.17E	Ceramic	Clear	1
2	1.13 Coaxial Cable	OD.113.J	FEP	Gray	1
3	IPEX MHF1 Connector	IPEX.MHFI.113	Brass	Gold Plated	1
4	Shielding Case		Tin (SPTE)	Tin Plated	1
5	PCB		FR4 0.8t	Green	1

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4.0 Radiation Patterns

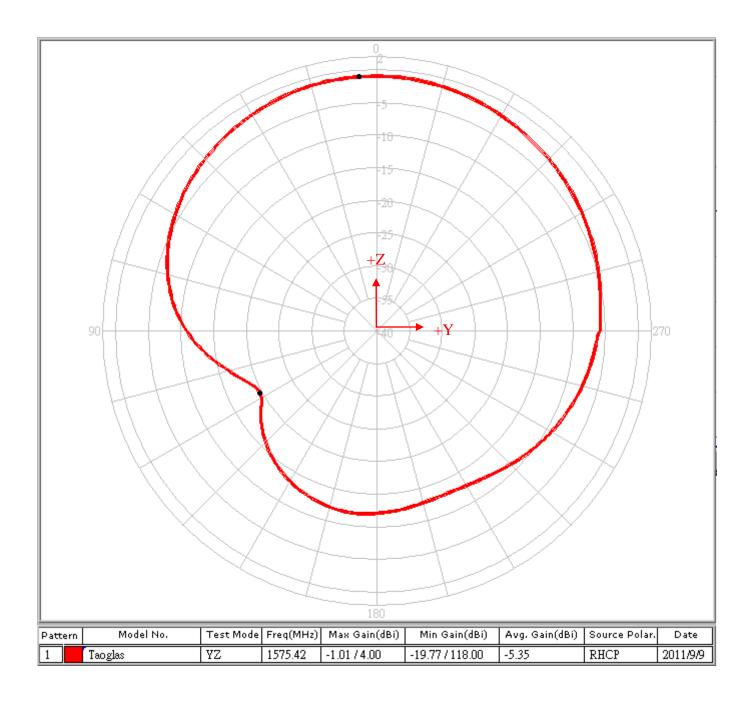
4.1 XZ-Plane



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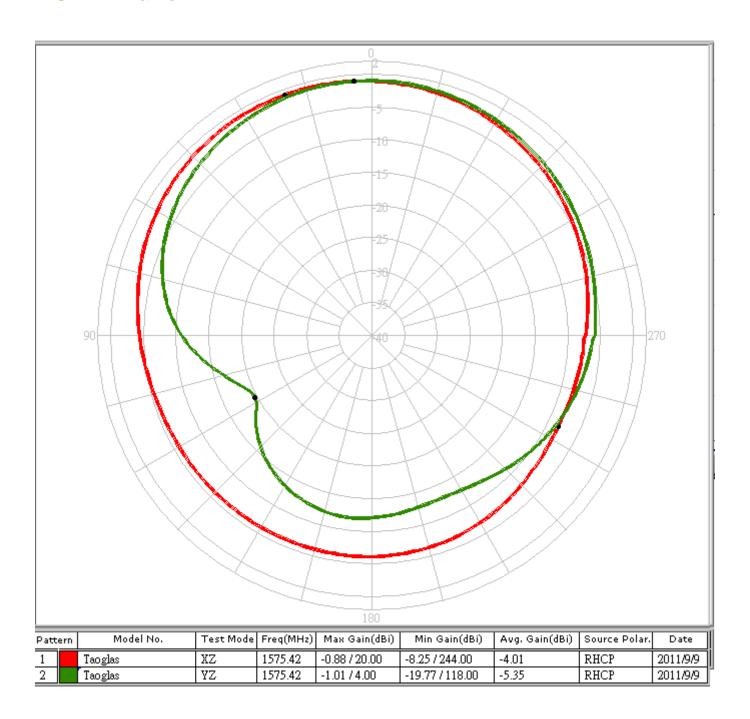
4.2 YZ-Plane



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4.3 XY-Plane



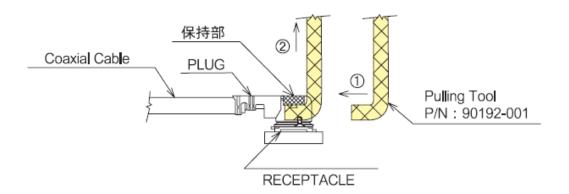
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5.0 Plugs Usage Precautions

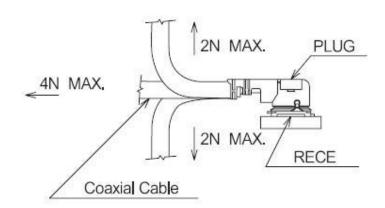
5.1 Mating / unmating

- (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.



5.2 Pull forces on the cable after connectors are mated

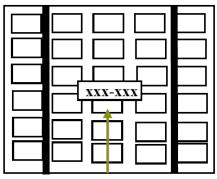
After the connectors are mated, do not apply a load to the cable in excess of the values indicated in the diagram below.

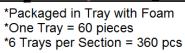


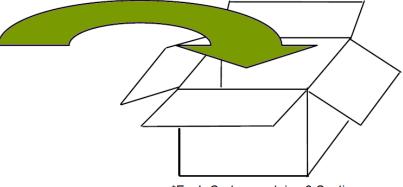
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6.0 Packaging







*Each Carton contains 3 Sections *1080 pieces per Carton