SPECIFICATION

Part No.	:	AP.10F.07.0039B
Product Name	:	2 Stage 25dB 10mm Active GPS/GALILEO Ceramic Patch Antenna 39mm 0.81 Micro Coax with IPEX MHFI (U.FL compatible) with Front End SAW Filter
Feature	:	Small form factor GPS active patch 10mm*10mm*4mm, Wide Voltage 1.8V~5.5V 25dB LNA High performance Ultra Low Power Consumption RoHS Compliant

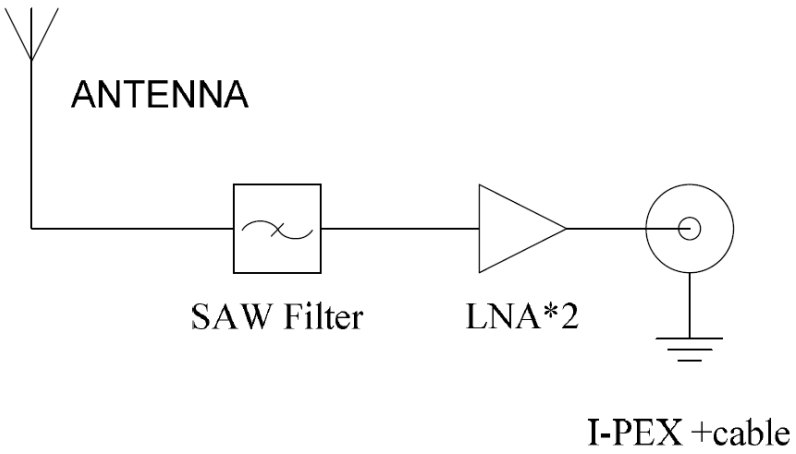
1. Introduction

The AP.10F active GPS/GALILEO patch antenna is the smallest GPS/GALILEO high performance antenna currently available in the world. It uses an extremely sensitive high dielectric constant powder formulation and tight process control and patented circular polarized side stripe design the 10*10*4mm patch antenna. 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.

This product is suited to small form factor mobile devices such as GPS Smartphones, Personal Location, Medical devices, Telematic devices and Automotive navigation and tracking. Custom gain, connector and cable versions are available.

Custom tuning is available for specific customer device environments and is dependent on a minimum order quantity and NRE in some cases. Please contact regional sales office for details.

The AP.10E consists of 2 functional blocks – the LNA and also the patch antenna.



2. Specification

ANTENNA	
Frequency	1575.42 ± 1.023MHz
Gain @ Zenith	-10dBic Typ. @ Zenith
Polarization	RHCP
Axial Ratio	4.0dB max. @Zenith
Patch Dimension	10*10*4.0mm

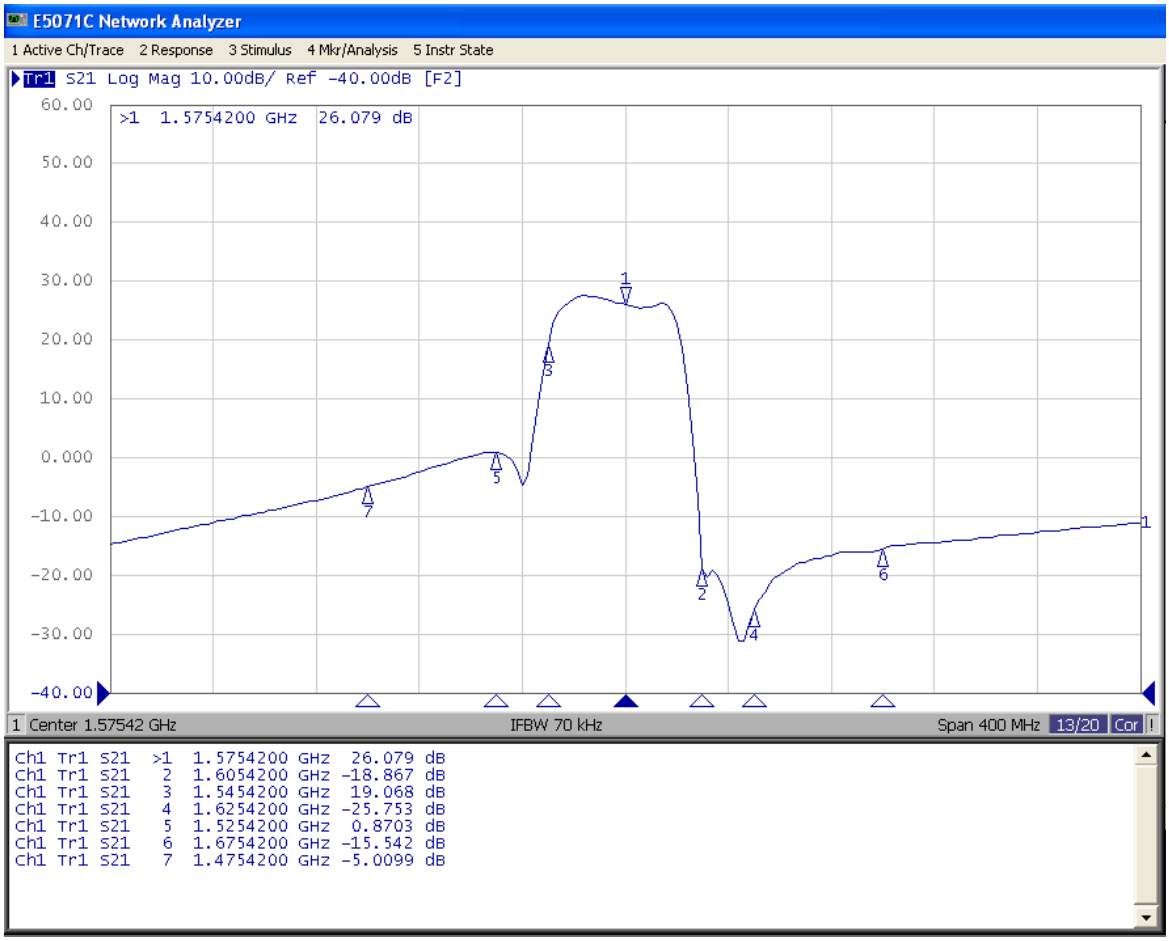
LNA	
Frequency	1575.42 ± 1.023MHz F0=1575.42MHz
Outer Band Attenuation	F0±30MHz 5dB min. F0±50MHz 20dB min. F0±100MHz 25dB min.
Output Impedance	50Ω
Output VSWR	2.0 Max
Pout at 1dB Gain Compression point	Typ. 11 dBm Min. 8 dBm

LNA Gain, Power Consumption and Noise Figure

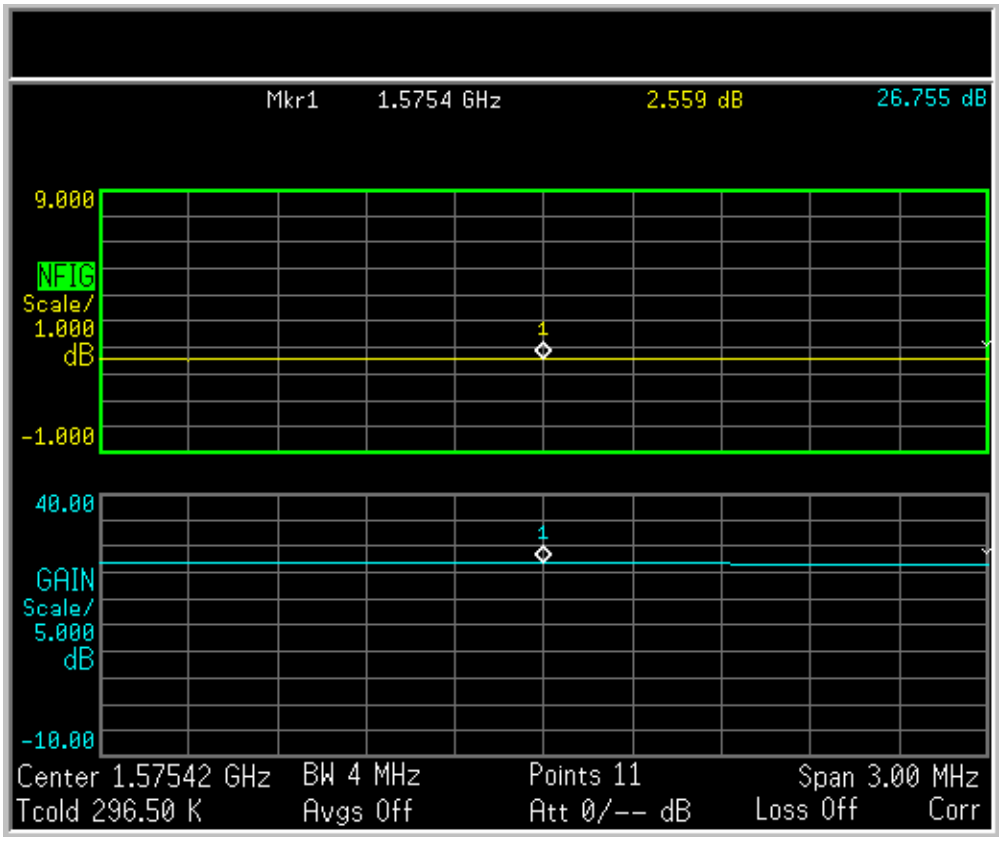
Voltage	LNA Gain (Typ)	Power Consumption(mA) Typ	Noise Figure Typ
Min. 1.8V	20dB	5mA	2.7dB
Typ. 3.0V	25dB	10mA	2.5dB
Max. 5.5V	25dB	23mA	2.7dB

CABLE AND CONNECTOR	
RF Cable	Coaxial Cable ø0.81 ± 0.1mm, length 39 ± 2.0mm
Connector	IPEX MHFI (U.FL)
ANTENNA, LNA, CABLE AND CONNECTOR	
Frequency	1575.42 ± 1.023MHz
Gain	At 3V: 15 ± 4dBic@90°
Output Impedance	50Ω
Polarization	RHCP
Output VSWR	Max 2.0
Operation Temperature	-40°C to + 85°C
Storage Temperature	-40°C to + 105°C
Relative Humidity	40% to 95%
Input Voltage	Min:1.8V Typ. 3.0V Max:5.5V
Antenna	10*10*4mm

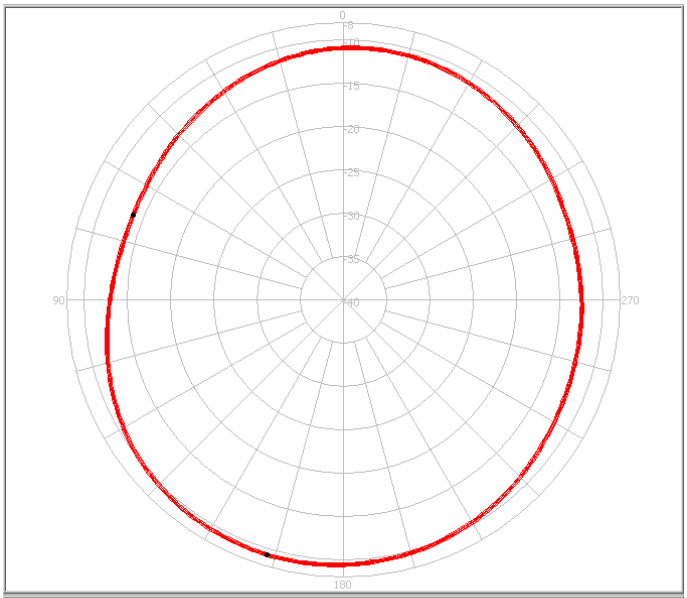
3. LNA Gain and Out Band Rejection @3.0V



4. LNA Noise Figure @3.0V

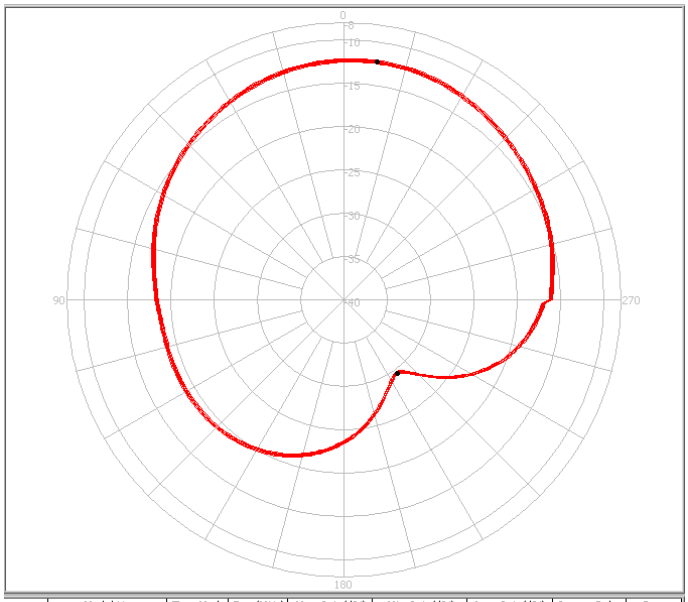


XZ Plane Radiation



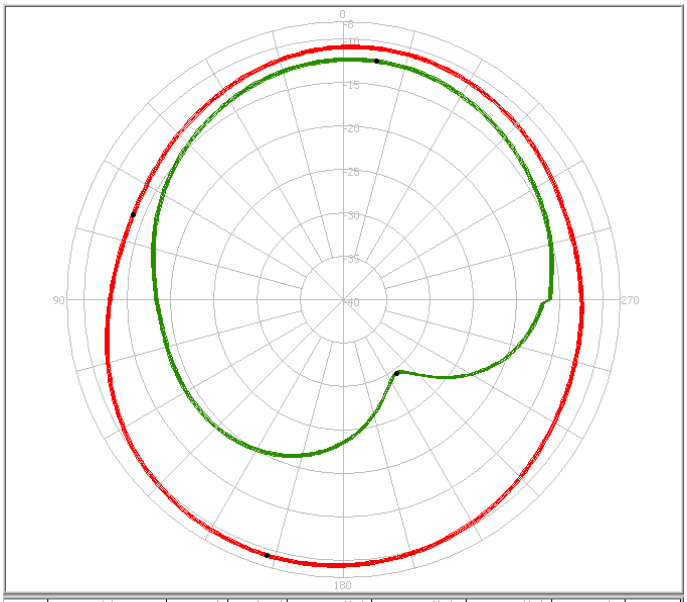
Pattern	Model No.	Test Mode	Freq(MHz)	Max Gain(dBi)	Min Gain(dBi)	Avg. Gain(dBi)	Source Polar.	Date
1	1624	XZ	1624.00	-9.27 / 163.26	-13.80 / 68.02	-11.23	RHCP	2010/4/29

YZ Plane Radiation



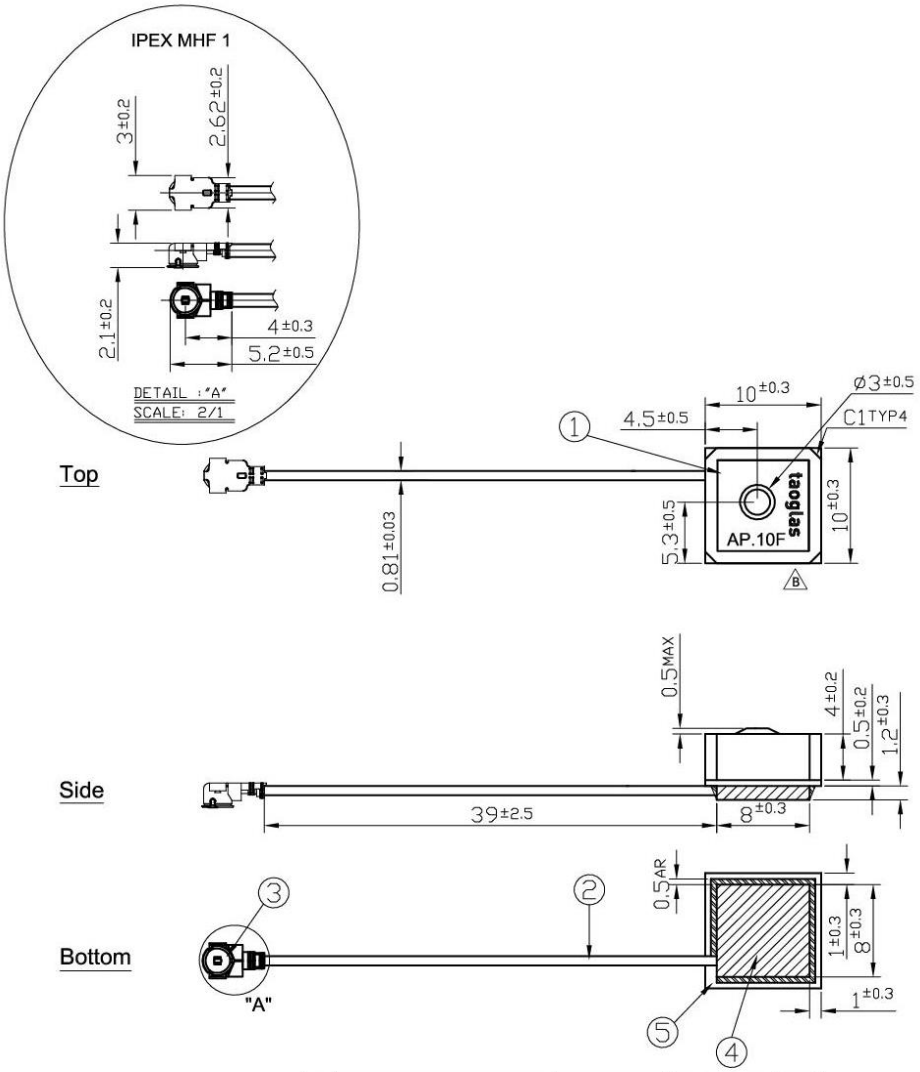
Pattern	Model No.	Test Mode	Freq(MHz)	Max Gain(dBi)	Min Gain(dBi)	Avg. Gain(dBi)	Source Polar.	Date
1	1624	YZ	1624.00	-12.30 / 352.00	-29.55 / 216.00	-16.23	RHCP	2010/4/29

XY Plane Radiation



Pattern	Model No.	Test Mode	Freq(MHz)	Max Gain(dBi)	Min Gain(dBi)	Avg. Gain(dBi)	Source Polar.	Date
1	1624	XZ	1624.00	-9.27 / 163.26	-13.80 / 68.02	-11.23	RHCP	2010/4/29
2	1624	YZ	1624.00	-12.30 / 352.00	-29.55 / 216.00	-16.23	RHCP	2010/4/29

5. Antenna Drawing

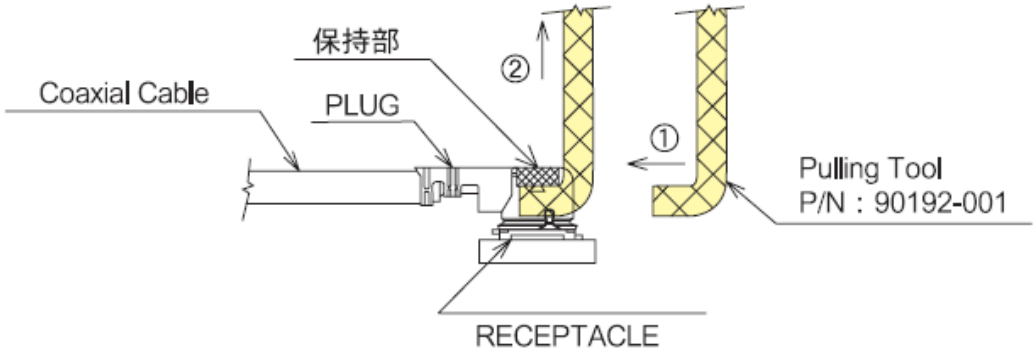


	Name	Material	Finish	QTY
1	AP.10F Patch(10*10*4mm)	Ceramic	Clear	1
2	0.81 Coaxial Cable	FEP	Gray	1
3	IPEX MHF1	Brass	Gold	1
4	Shielding Case	Tin (SPTE)	Tin Plated	1
5	PCB	FR4 0.5t	Green	1

6. Plugs Usage Precautions

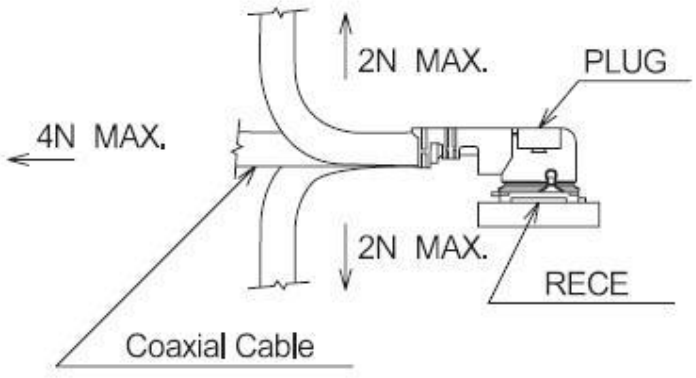
6.1. Mating / unmating

(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.

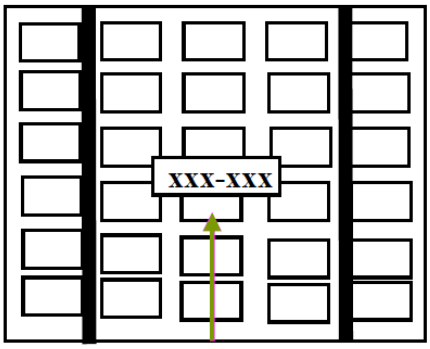


6.2. Pull forces on the cable after connectors are mated

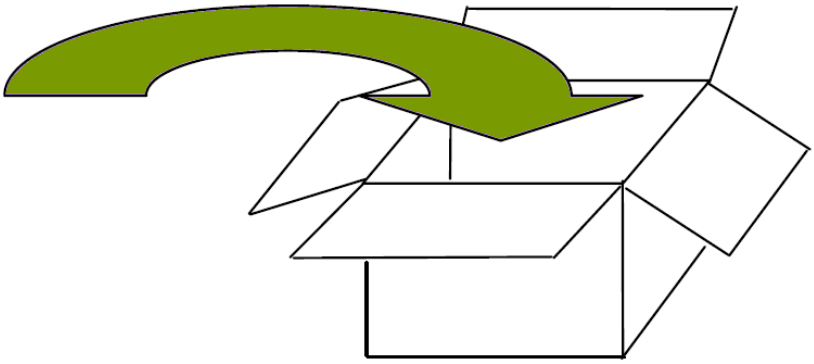
After the connectors are mated, do not apply a load to the cable in excess of the values indicated in the diagram below.



7. Packaging



*Packaged in Tray with Foam
*One Tray = 60 pieces
*6 Trays per Section = 360 pcs



*Each Carton contains 3 Sections
*1080 pieces per Carton

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Taoglas:

AP.10F.07.0039B