

SPECIFICATION

- Part No. : **AP.10E.07.0039B**
- Product Name : AP.10E 1 Stage 15dB 39mm 0.81 with IPEX MHFI (U.FL compatible)
- Feature : World smallest GPS/GALILEO active patch High performance Ultra low power consumption RoHS Compliant

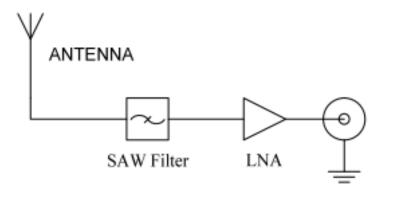




1. Introduction

AP.10E active GPS/GALILEO patch antenna is the smallest GPS high performance antenna currently available in the world. Using extremely sensitive high dielectric constant powder formulation and tight process control the 10*10*4mm patch antenna is accurately tuned to have its frequency band right at 1575.42MHz for GPS systems. With an ultra low power consumption one stage LNA, this small active patch has the performance of an ordinary active patch, but at only a quarter of the size.

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



I-PEX +cable



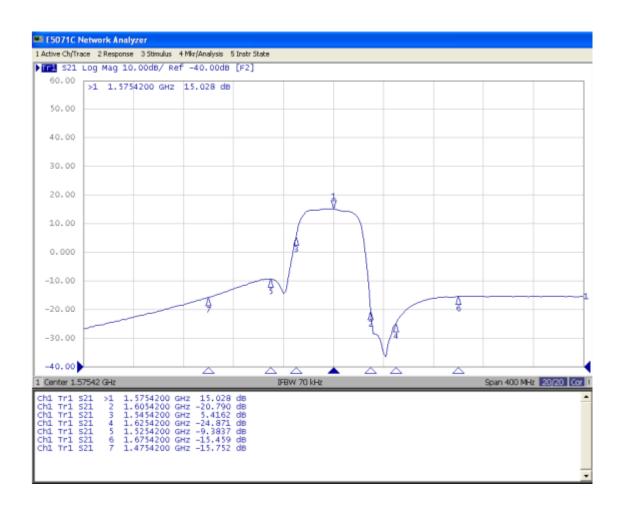
2. Specification

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		ELECT	RICAL									
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 9dB min.										
		F0±50MHz 20dB min.										
		F0±100MHz 25dB min.										
Output Impedance		50Ω										
Output VSWR		2.0 Max										
Pout at 1dB Gain		Typ2dBm										
Compression point		Min6dBm										
LNA Gain, Power Consumption and Noise Figure												
Voltage	LI	NA Gain (Typ)	Power Consumption(mA) Ty	p Noise Figure Typ								
Min. 1.8V		14dB	3mA	2.5dB								
Typ. 3.0V		15dB	3mA	2.5dB								
Max. 5.5V		15dB	2.6dB									
		MECHA	ANICAL									
Dimensions		10*10*4.0mm										
RF Cable		Coaxial Cable Ø0.81 \pm 0.1mm, length 39 \pm 2.0mm										
Connector	Connector IPEX MHFI (U.FL)											
		ANTENNA	WITH LNA									
Frequency		1575.42 ± 1.023MHz										
Gain		At 3V: 5 ± 4dBi@90°										
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:5.5V										
Antenna 10*10*5.9mm												



3. LNA Gain and Out Band Rejection @3.0V





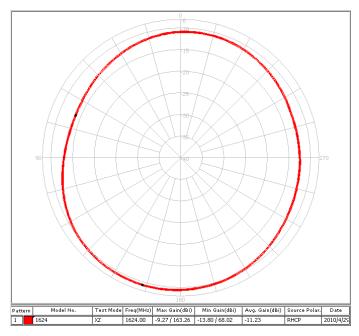
	Mkr1	1.5754	GHz		2.546	dB	15	5.359 dB
9.000								
NFIG								
Scale/ 1.000								
dB				>				
-1.000								
40.00								
GAIN								
Scale/				<u> </u>				
5.000 dB								
ав								
-10.00								
Center 1.57542	GHz BW	4 MHz	P	oints 1	1	S	pan 3.0)0 MHz
Tcold 296.50 K	Avg				– dB		Off	Corr

4. LNA Noise Figure @3.0V

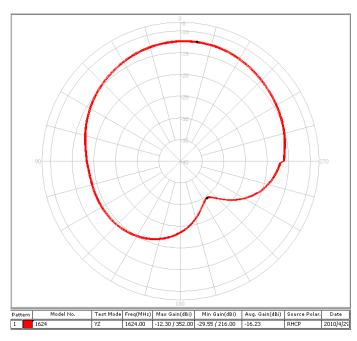


5. Radiation Pattern

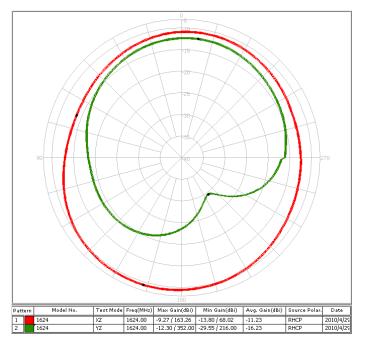
XZ Plane Radiation



YZ Plane Radiation

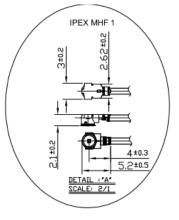


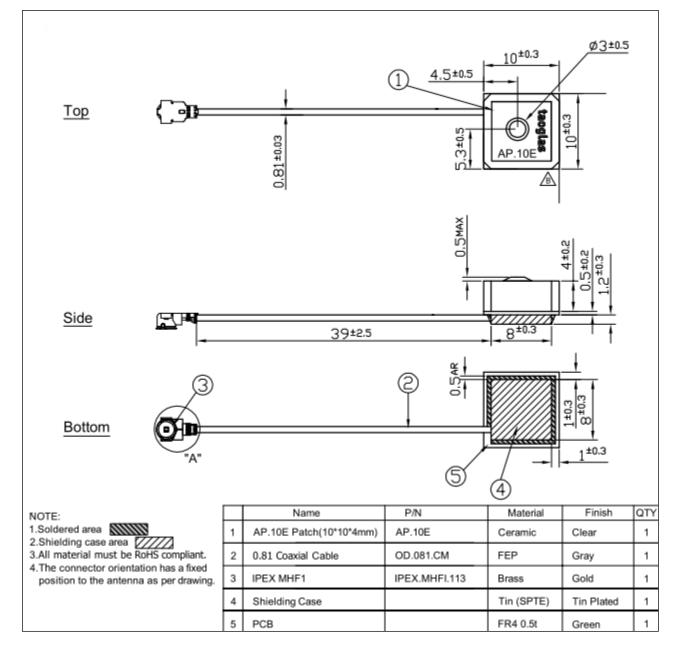
XY Plane Radiation





6. Antenna Drawing





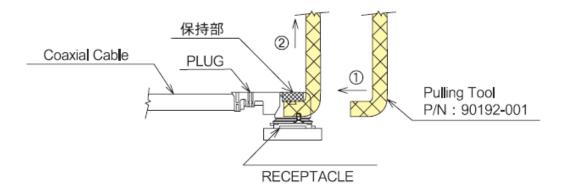


7. Plugs Usage Precautions

7.1. Mating / Unmating

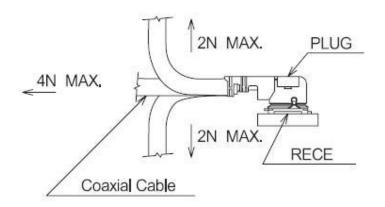
(1) To disconnect connectors, insert the end portion of I-PEX under the connector flanges and pull off vertically, in the direction of the connector mating axis.

(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.



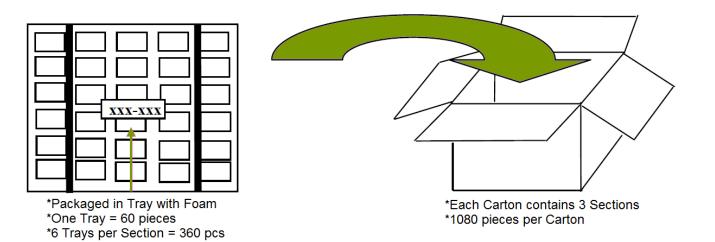
7.2. Pull forces on the cable after connectors are mated

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





8. Packaging



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