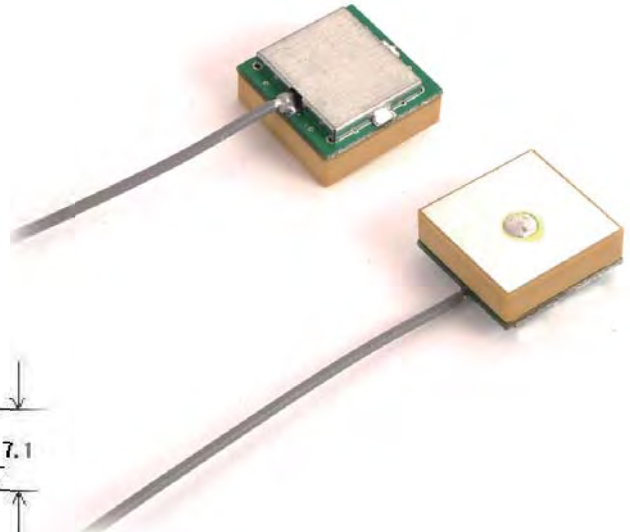
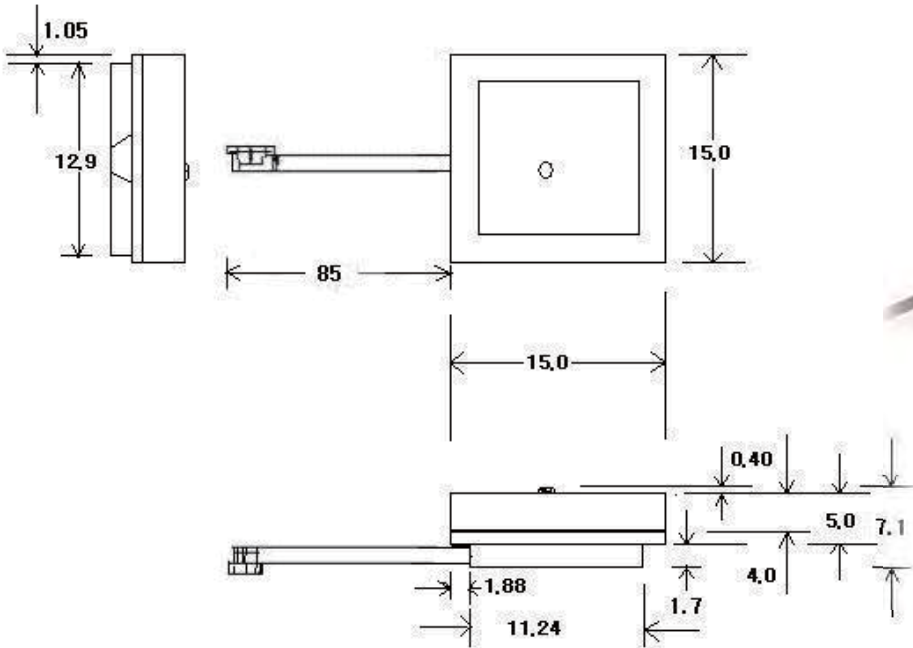


AE027 GPS Module Antenna

Active Patch Antenna with Embedded LNA Module

Product No. AE02753GPS000

Dimensions (unit: mm)



Application

- Navigation systems or position tracking systems
- Hand-held devices when GPS function is needed, e.g., PDA, Smart phone, PND.

Features

- Stable and reliable in performances
- Low temperature coefficient of frequency
- Compact size
- RoHS compliance

Physical Specification

Dimensions	15 x 15 x 7.1mm
Weight	5.8 ± 0.5 g (typ)
Operating Condition	Temperature -40 °C ~ +85 °C
	Humidity 10 ~ 95% RH
Storage Condition	Temperature -40 °C ~ +90 °C
	Humidity 10 ~ 95% RH

Electrical Specification

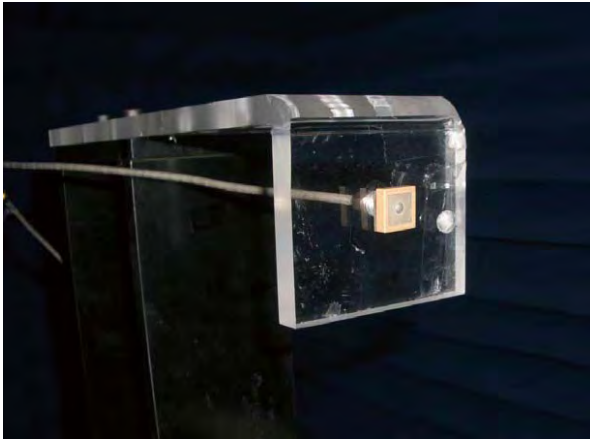
Patch antenna	
Center Frequency	1575.42 ± 1.023 MHz <small>When covered with a radome and measured on LNA ground plane.</small>
Bandwidth (under 10dB return loss)	11 MHz typ.
Impedance	50 Ω
Gain at Zenith	1 dBic typ.
Gain at 10° elevation	-4.0 dBic typ.
Polarization	R.H.C.P
Axial Ratio	3.0 dB typ.
Patch size	15 x 15 x 4 mm
LNA	
Center Frequency	1575.42 ± 1.023 MHz
Gain	16 dB at 3V
Noise Figure	1.2 dB at 3V
Filter (Out of band attenuation)	Saw filter
	40dB typ. fo±50MHz
	45dB Min. fo±100MHz (fo=1575.42MHz)
Input Voltage	DC = 3.0±0.5V
Current	DC =13mA at 3V

All value are defined at 25±15 °C ,65±20 % RH, power handling 1 μw, air pressure 960 ±100 HPA unless otherwise noted.

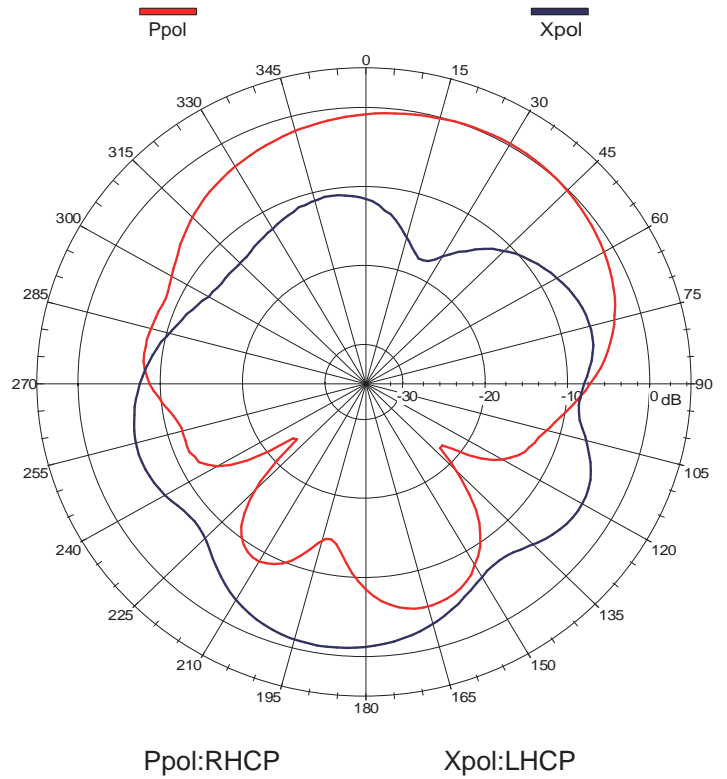


Performance testing and results

Radiation Pattern (exclude LNA Gain)



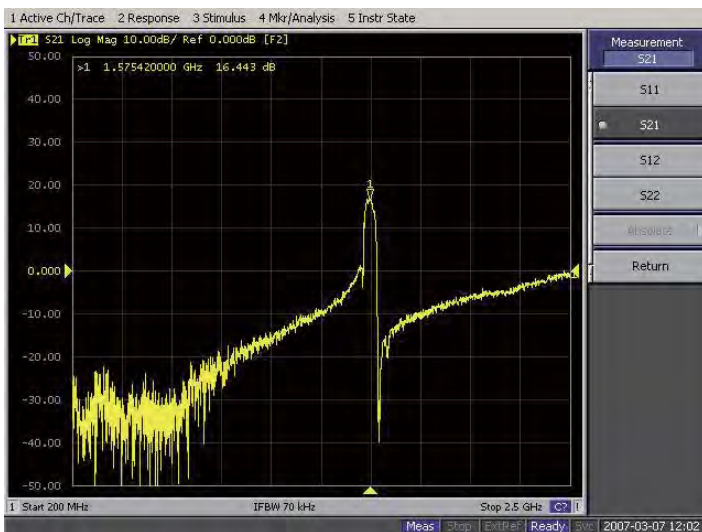
Measurement method



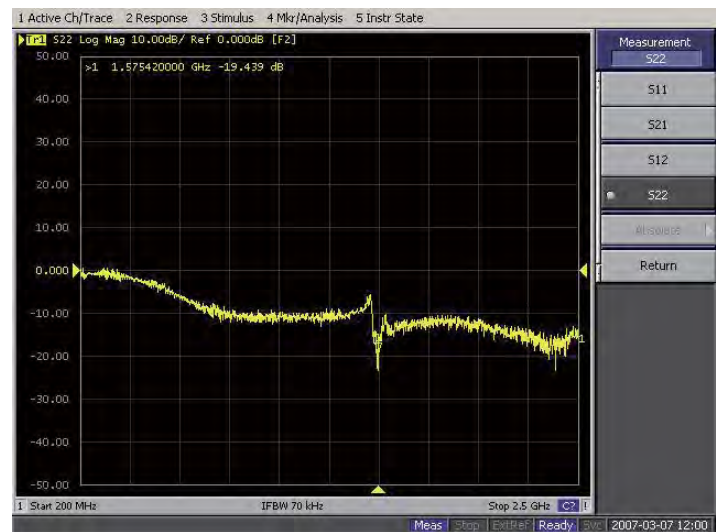
$$Ps : \text{Total Gain} = \text{Radiation Pattern (exclude LNA Gain)} + \text{LNA Gain} - \text{cable loss}(1.1\text{dB/m})$$

Measured value LNA

S21(network analyzer input power is -40dBm)

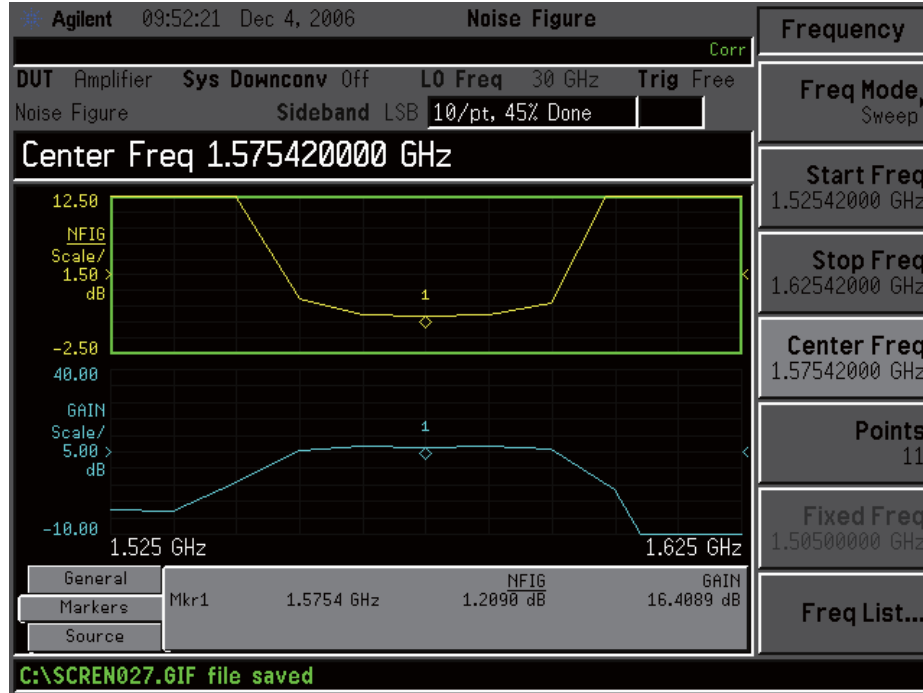


S22(network analyzer input power is -40dBm)



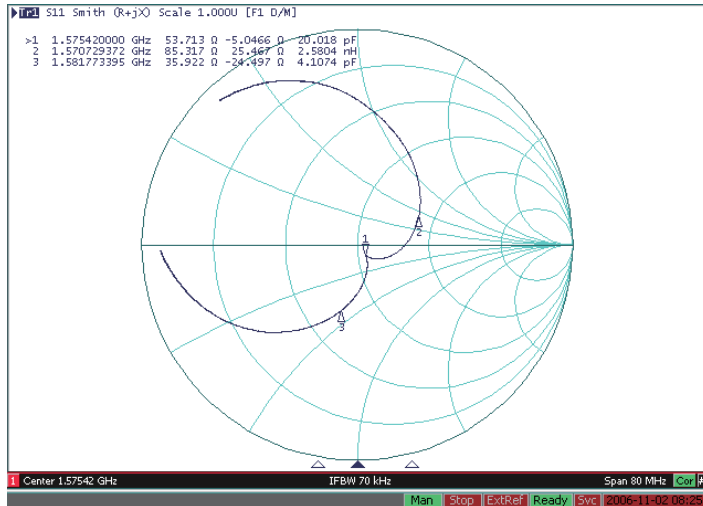


Noise figure value (noise meter)



Measured value Patch

S11



Return loss & Bandwidth (S11<-10dB)

