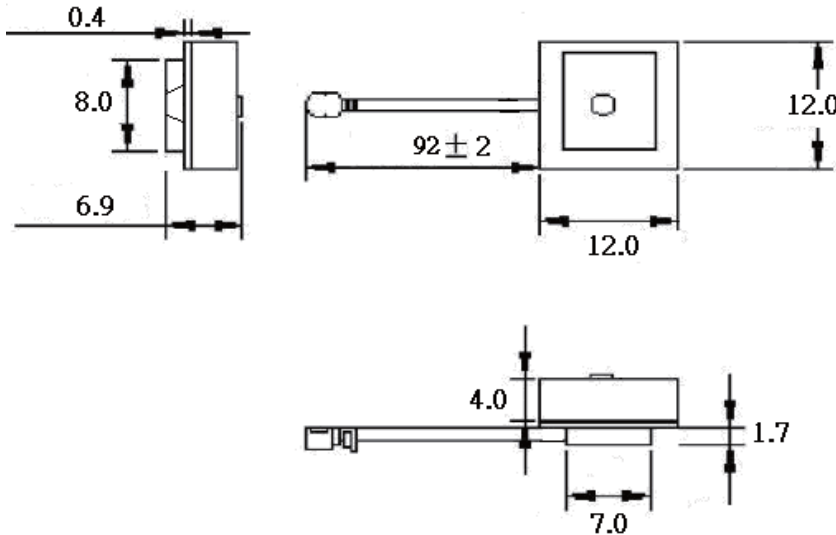


AE026 GPS Module Antenna

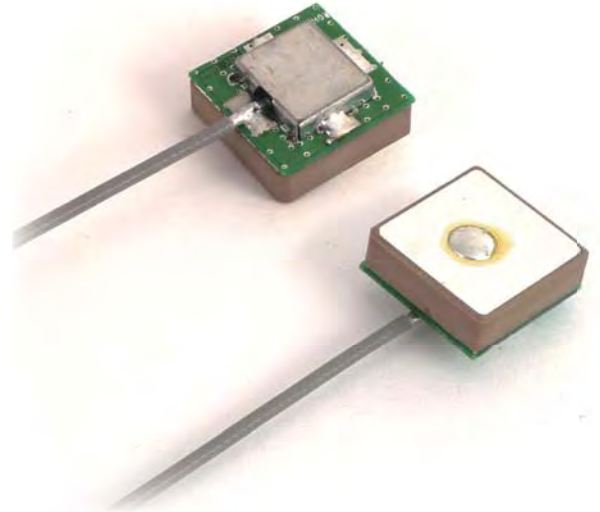
Active Patch Antenna with Embedded LNA Module

Product No. AE02653GPS000

Dimensions (unit: mm)



Tolerances on X.X=+/-0.1, X.XX=+/- 0.05



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	12 x 12 x 7.1mm
Weight	4 ± 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 when covered with a housing and measured by 12x12mm ground plane
Bandwidth (under 10dB return loss)	9 MHz Min.
Impedance	50 Ω
Gain at Zenith	-2 dBic Max.
Gain at 10° elevation	-8.0 dBic typ.
Polarization	R.H.C.P
Axial Ratio	3.0 dB typ.
Patch size	12 x 12 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)
Output V.S.W.R	2.0 Max.
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.

Active antenna ESD test(working): > 8kv (contact discharge with housing)

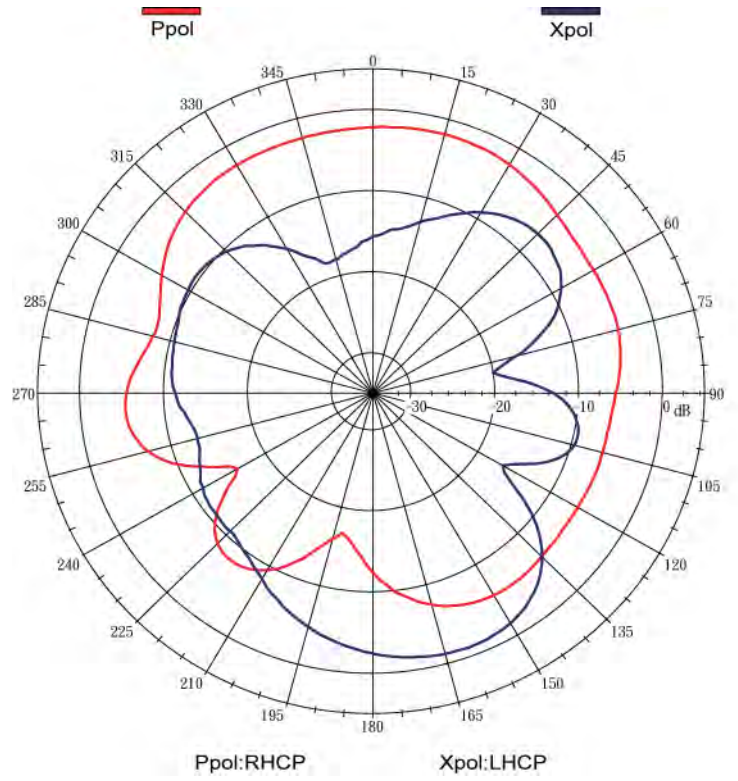


Performance testing and results

Radiation Pattern (exclude LNA Gain)

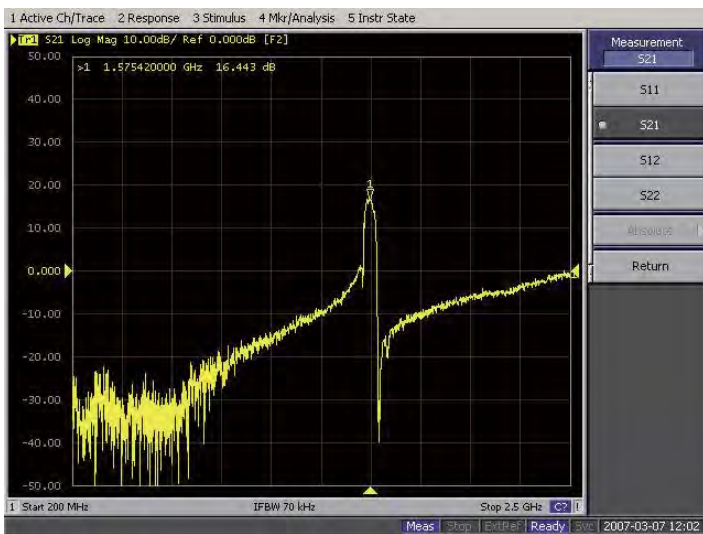


Measurement method

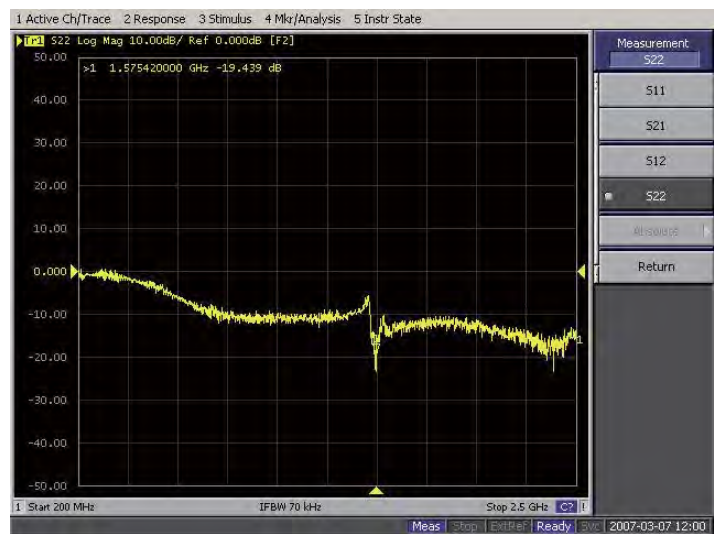


Ps : Total Gain = Radiation Pattern (exclude LNA Gain) + LNA Gain - cable loss(1.1dB/m)

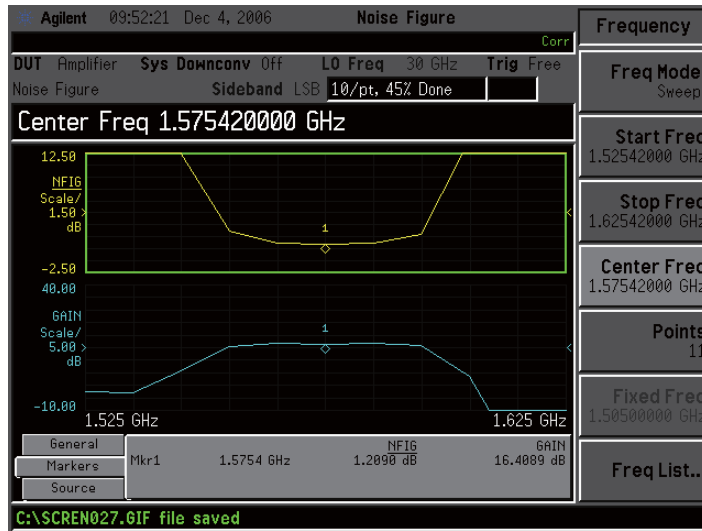
LNA Measured value



S21(network analyzer input power is -40dBm)

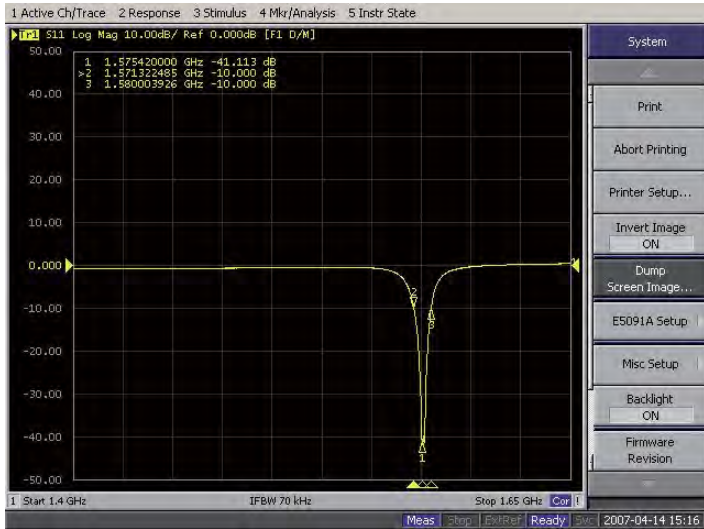


S22(network analyzer input power is -40dBm)

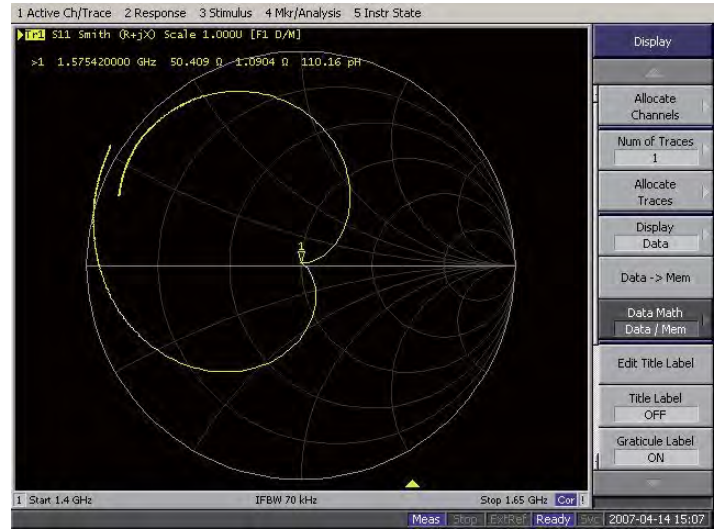


Noise figure value (noise meter)

Patch Measured value



S11



Return loss & Bandwidth (S11<-10dB)