

Overview

The Southwest Antennas part # 1027-004 GPS Active L1 Antenna is a high-performance and ruggedized product designed for GPS receivers, manpack, hand-held, and small form factor radio systems.

The GPS L1 Active Antenna features 11 dB of active amplifier gain coupled with narrowband SAW filtering providing >30 dB out of band rejection from 38 MHz above and below the L1 center frequency and >50 dB out of band rejection from 50 MHz above and below the L1 center frequency. The integrated high linearity LNA provides both a very low noise figure (<1.5 dB) and a high input IP3 (+4.9 dBm).

Features:

- GPS L1 frequency +/- 10.23 MHz bandwidth
- Out-of-band jamming immunity
- Superior out of band rejection
- Ultra low noise figure
- Ultra low power consumption
- Active LNA & Dual SAW filter circuitry
- Small form factor
- Ultra light-weight design
- Ruggedized design
- 50 V/m jamming resistant
- Burn-out protection, in band jamming
- Ground plane independent
- Recessed SMA(m) interface
- Exceptional pattern bandwidth
- Waterproof to 20 meters (65.6 ft.)



Applications

- Navigation systems
- Military and security
- Manpack radios
- Handheld radios
- Small form factor radios
- Low profile vehicle mounts
- Unattended/ Intelligent Munitions Systems
- Dismounted soldier-level communications
- Unmanned ground vehicles
- I.E.D. recognition & destruction jamming systems
- Asset tracking
- Precision timing
- LBS & M2M applications
- Oil & gas industries
- Law enforcement
- Mobile computing
- UAV Systems

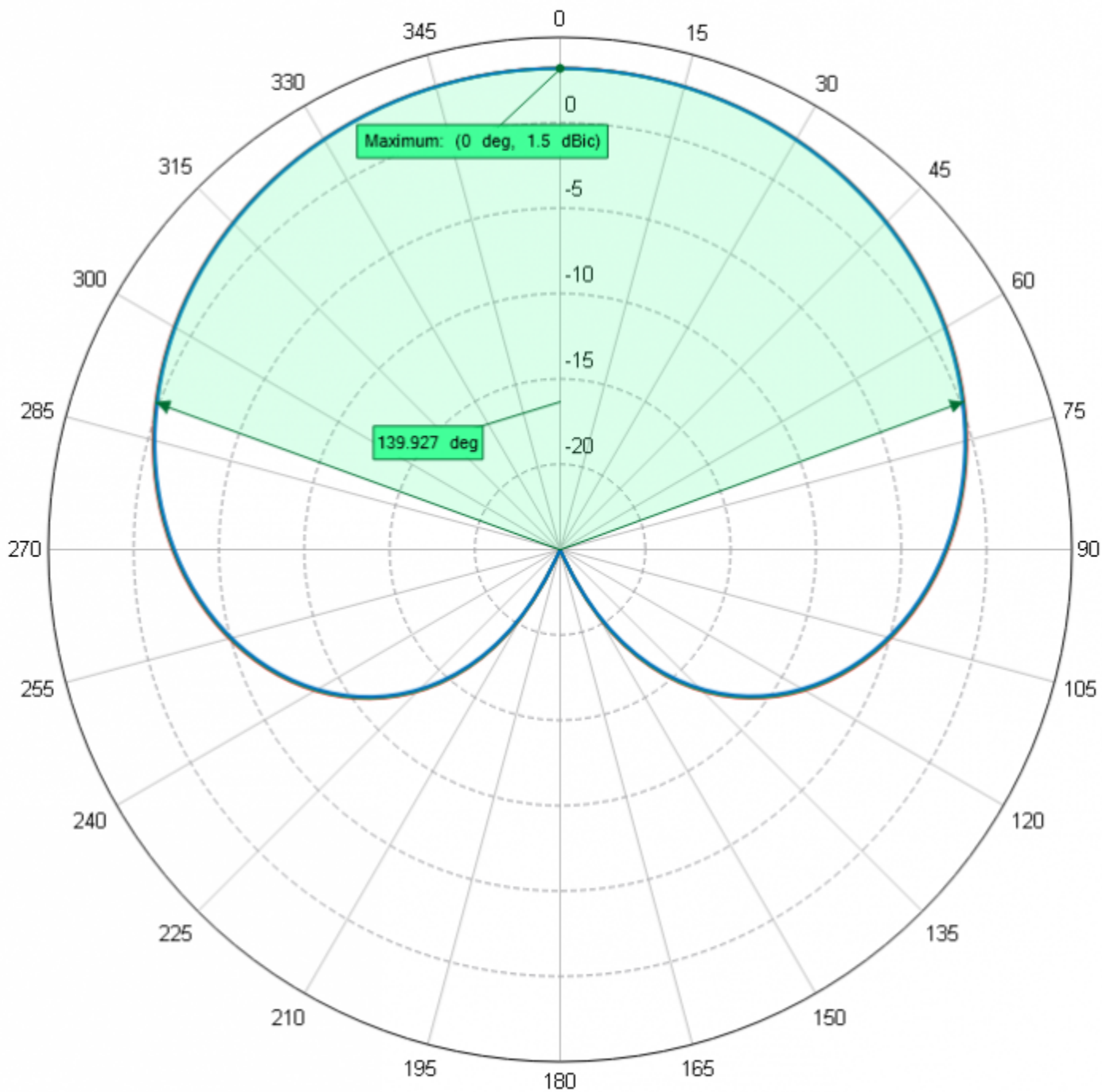
Product Specifications

Parameter	Value	Units	Tolerance
Antenna Pattern	Hemispherical Antenna		
Frequency Band	GPS L1		
Impedance	50	Ohms	
Minimum Frequency	1.565 / 1,565	GHz / MHz	
Maximum Frequency	1.585 / 1,585	GHz / MHz	
Frequency Bandwidth	0.02 / 20	GHz / MHz	
Maximum VSWR	2.0:1		
Maximum Gain	1.50	dBic	± 0.5dB
Axial Ratio	1.0	dB	
Polarization	RHCP		
Horizontal (AZ) Beamwidth	140	Degrees	
Vertical (EL) Beamwidth	140	Degrees	
Radome Material	Delrin 527 UV stable		
Color	Black		
RF Connector Type	SMA(m) Non-Rotating		
IP Rating	IP67 (mated and unmated)		
Product Height	2.13 / 54.10	inches / mm	± .02
Product Diameter	0.70 / 17.78	inches / mm	
Product Weight	1.1 / 31.2	oz / grams	Oz

LNA Specifications

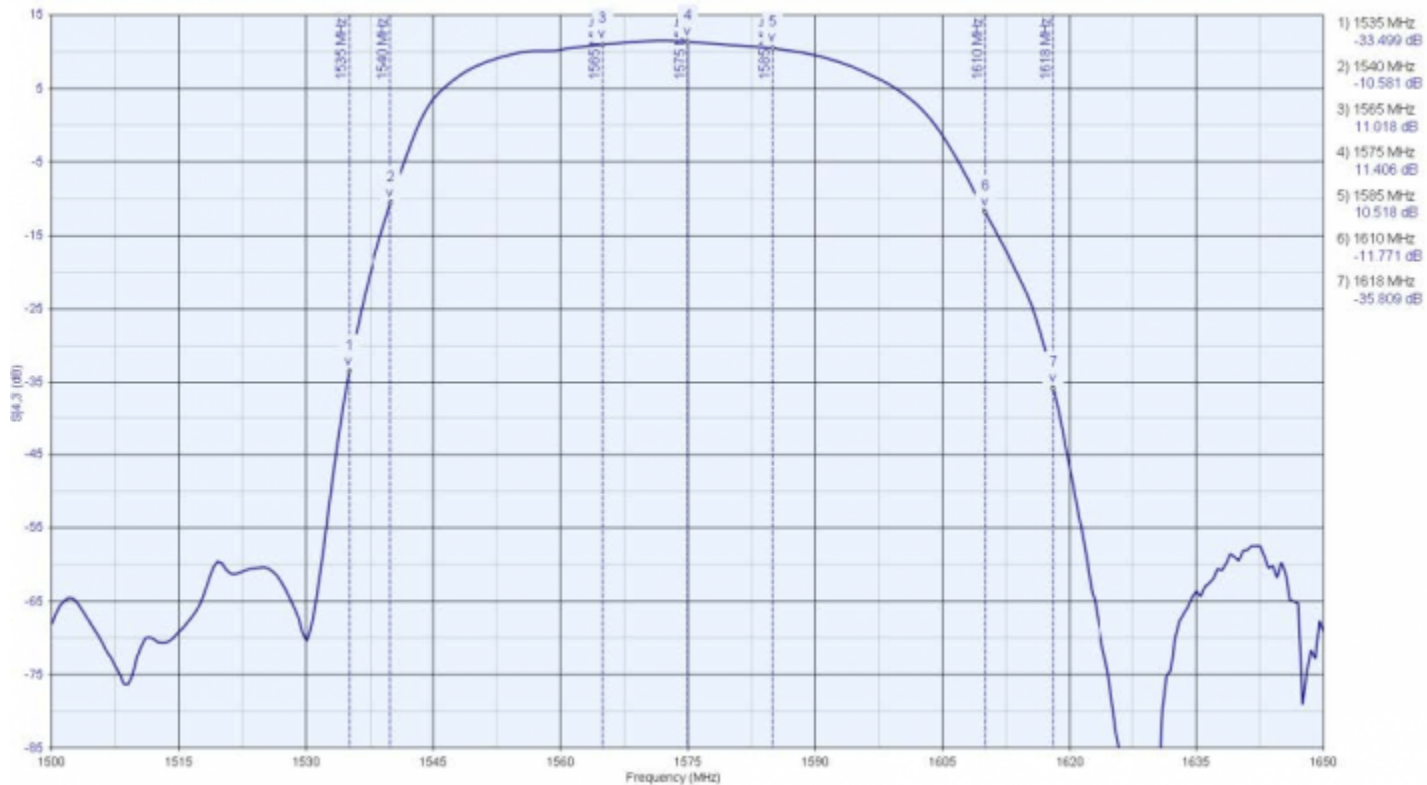
Parameter	Value	Units	Tolerance
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LNA Gain	+11	dB	± 1 dB
LNA NF	<1.5	dB	
LNA DC Voltage Range	2.0 - 3.6	VDC	
Input IP3	-2.0	dBm	
Input P1dB	6.1	dBm	
Filtering	>30 dB @ ±38 MHz of CF, >50 dB @ 50 MHz of CF		
ESD Protection	Protection Diode		

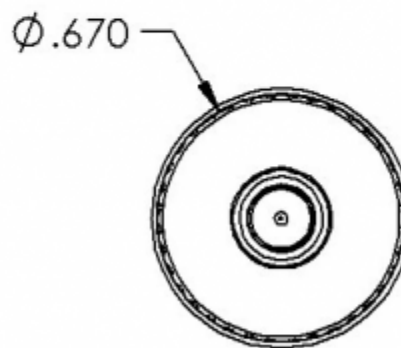
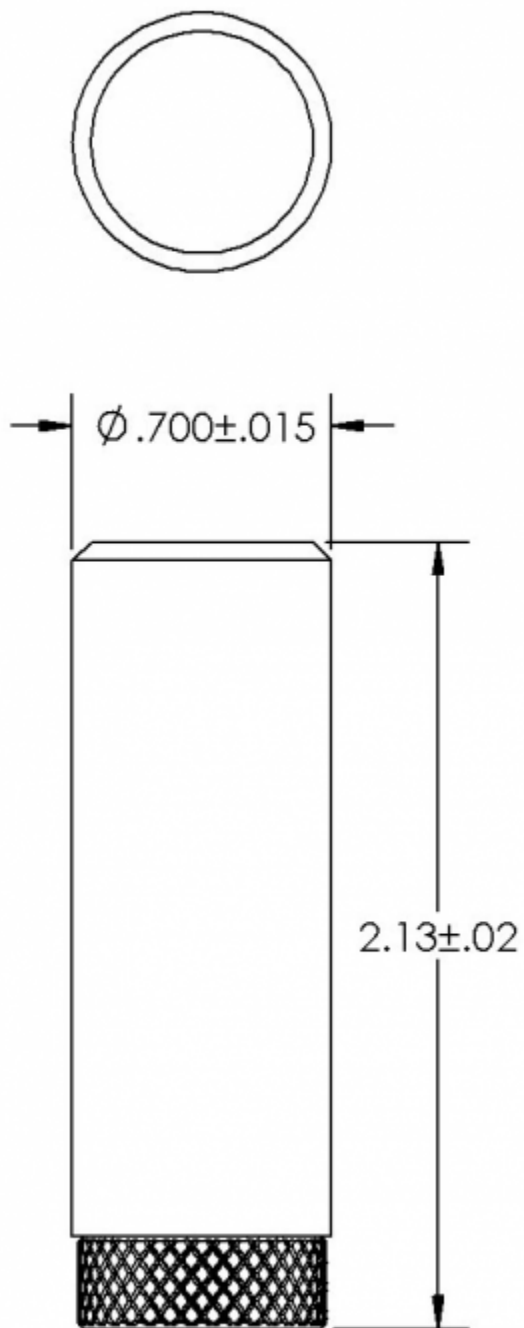


Elevation Pattern

RHCP Gain referenced to +5 dBic



Saw Filter Rejection Plot



BOTTOM VIEW

Engineering Drawing

All dimensions are in inches