

Overview

The Southwest Antennas part # 1027-002 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 low noise 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 (<1.5dB) 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 TNC male 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

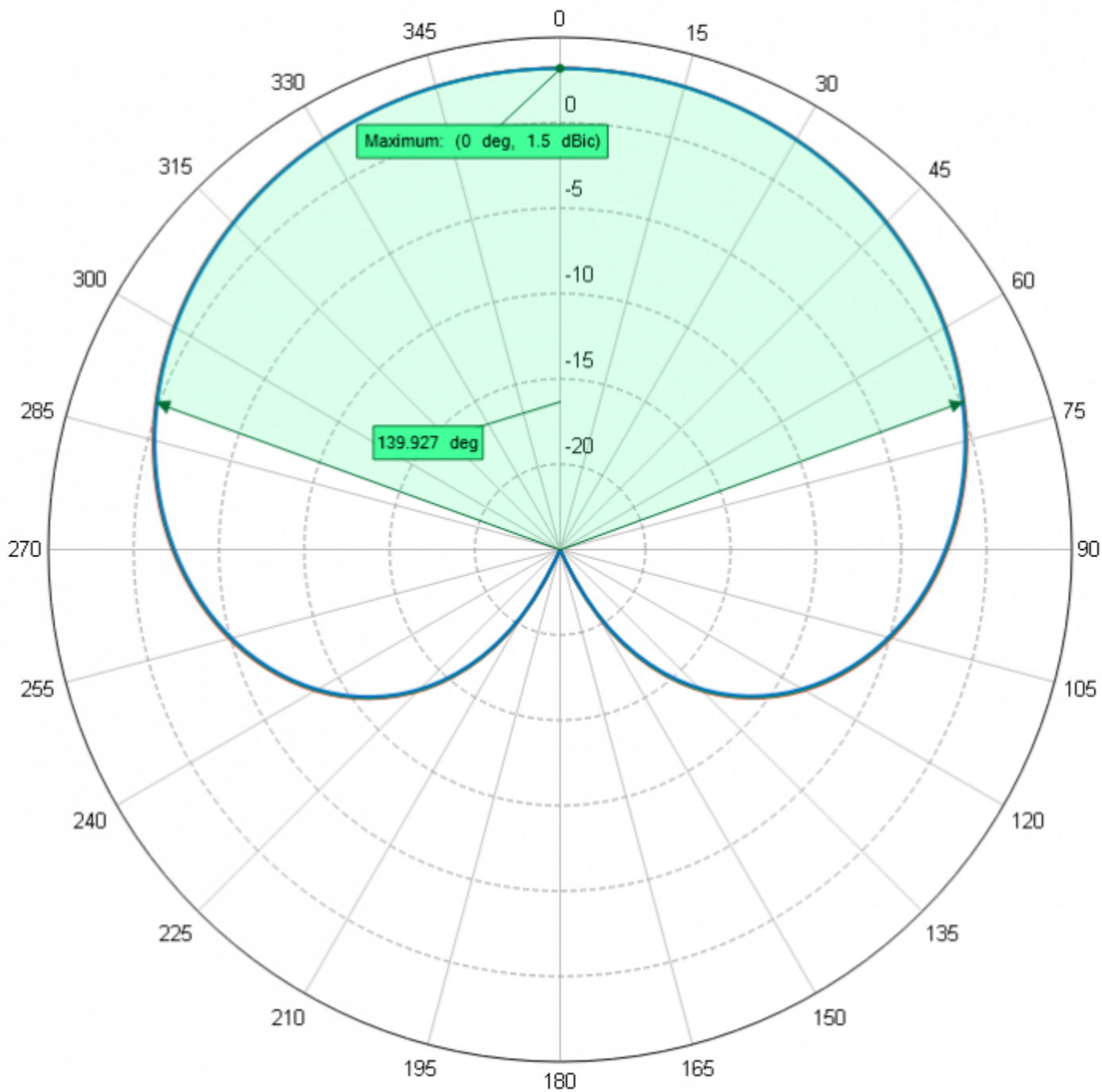
Product Specifications

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	Flat Black		
RF Connector Type	TNC(m) Non-Rotating		
IP Rating	IP67		
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	

LNA Specifications

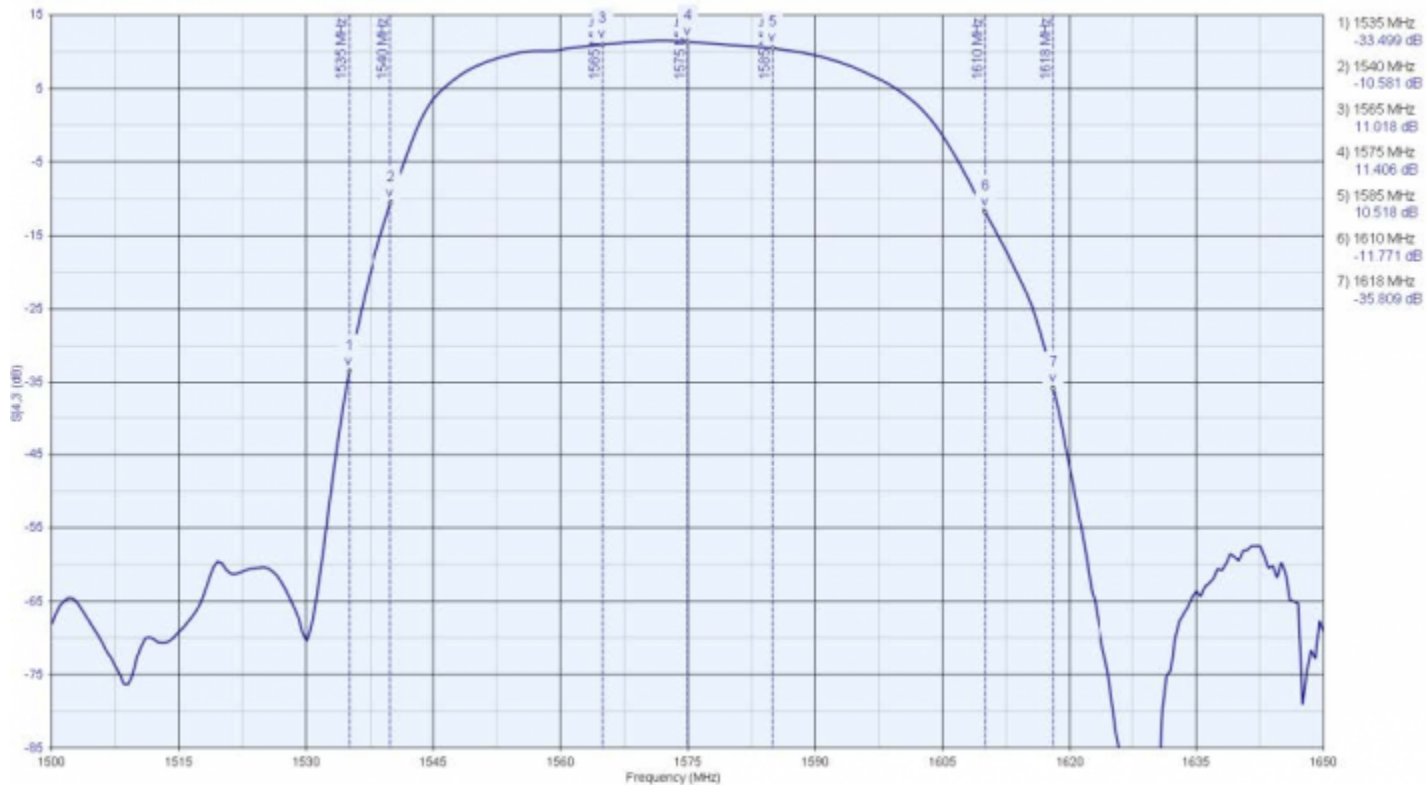
Parameter	Value	Units	Tolerance
-----------	-------	-------	-----------

LNA Gain	+11	dB	± 1 dB
LNA NF	<1.5	dB	
LNA DC Voltage Range	2.0 - 3.6	VDC	
LNA DC Current	8	mA	
Input IP3	-2.0	dBm	
Input P1dB	6.1	dBm	
Filtering	>50 dB @ ±50 MHz of CF		
ESD Protection	Protection Diode		

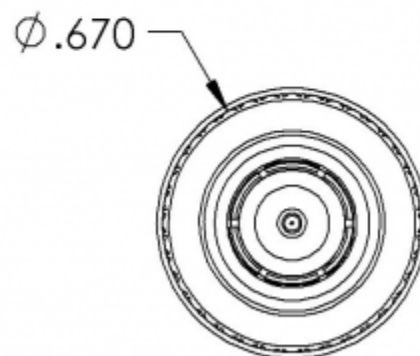
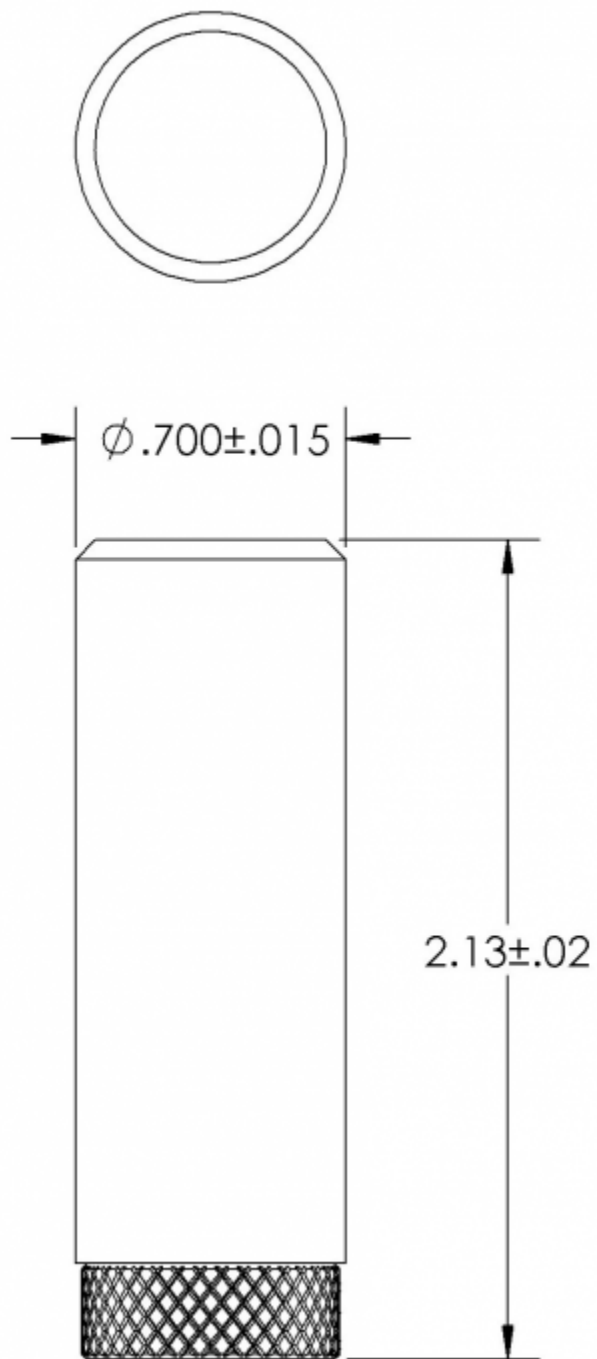


Elevation Pattern

RHCP Gain referenced to +5 dBic



Saw Filter Rejection Plot



BOTTOM VIEW

Engineering Drawing

All dimensions are in inches