GPSRK Repeater Kit

The GPSRK Repeater kit is an Amplifier with power and a Passive Antenna assembled on a pedestal mount for easy installation. The most common use being the input from an active GPS roof antenna is amplified and retransmitted into a room or hanger for any roaming or stationary receiving GPS devices. The GPSRK repeater kit comes with many available options for your specific needs. Please call, fax, or email us today for further information on product options, specifications, or to receive an easy to use order sheet.

30dB GPS L1 GLONASS Repeater Kit

Available options:

- **Variable Gain**
- **AC or DC Power Supply with Variable DC Out**
- **Water Proof**
- **L1 Active Roof Antenna with mount**
- **L1/L2 Retransmit Antenna**
- **L1/L2 Roof Antenna with mount**
- **DC Power Supply with MIL-C-83513 connector**
- **DC Pwr w/ MIL-C-83513 connector with Variable DC**

Currently available to Government and International Customers.
Because of FCC regulations US customers most obtain an experimental license or order with the hood option for shielding.

PRODUCT DATA

Toll Free: 866-289-4777
Telephone: 719-561-9520
Fax: 719-565-0890

sales@gpssource.com

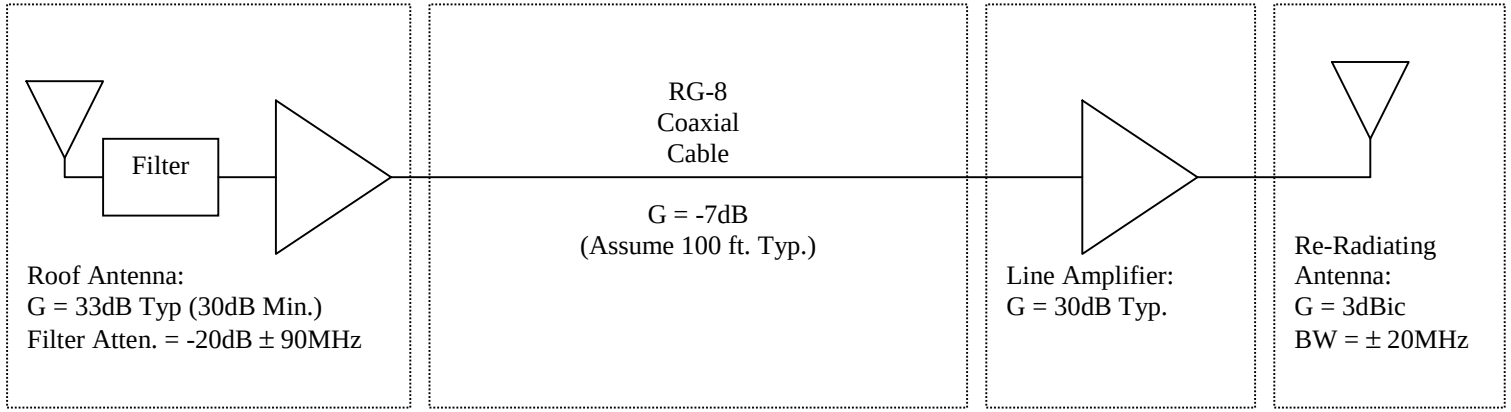
GPS Source Repeater Kits have more available options which allows you to use our products for all your GPS distribution projects. Our GPS Repeater Kits come with the choice of male/female type N, SMA, TNC, BNC, or any mix of these connectors on the input port and work with 3 VDC systems. For more options, better specifications, and quality support, we are your GPS Source.

HOME | COMPANY INFORMATION | GPS SERVICES | PRODUCTS | FAQ | DISTRIBUTOR | GPS LINKS

GPS SOURCE REPEATER KIT RADIATED POWER
(L1 Only)

P_{REC} = -157.5 dBW (average received power)
F_{REC} = 1575.42 MHz

$P_{RE\text{-}RAD}$ = -101.5 dBW
$F_{RE\text{-}RAD}$ = 1575.42 MHz



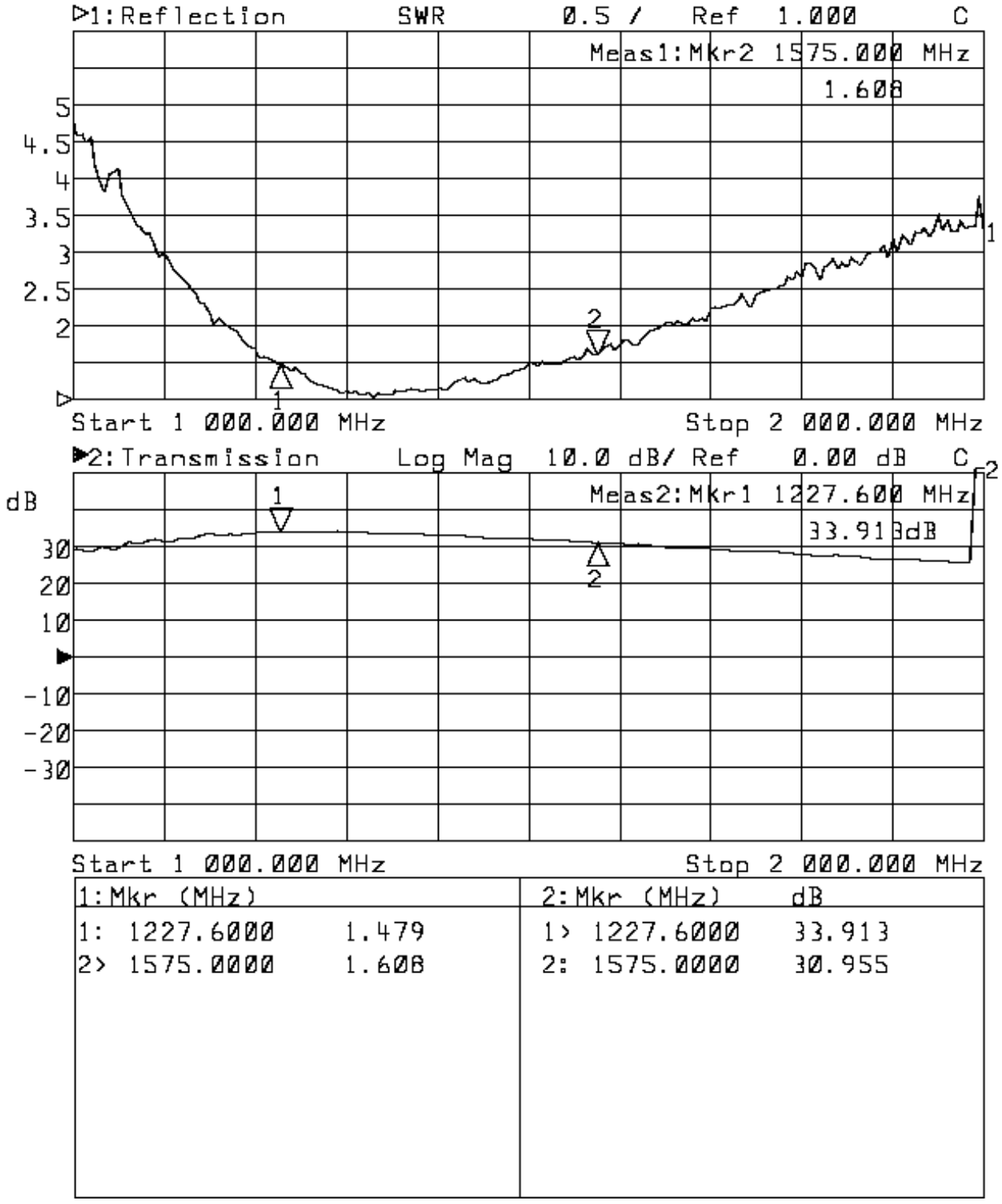
$$\mathbf{P_{dBW} = 10Log_{10}\,(P_{WATTS})}$$

$$\mathbf{P_{WATTS} = 10^{(P_{dBW}/10)}}$$

$$\mathbf{P_{RE\_RAD,WATTS} = 10^{(-101.5/10)} = \ 71\ picoWatts}$$

(Sufficient for indoor, Line-of-Sight Operation Only)

GPSTK Product Data



PRODUCTS | GPSTK

Electrical Specifications:

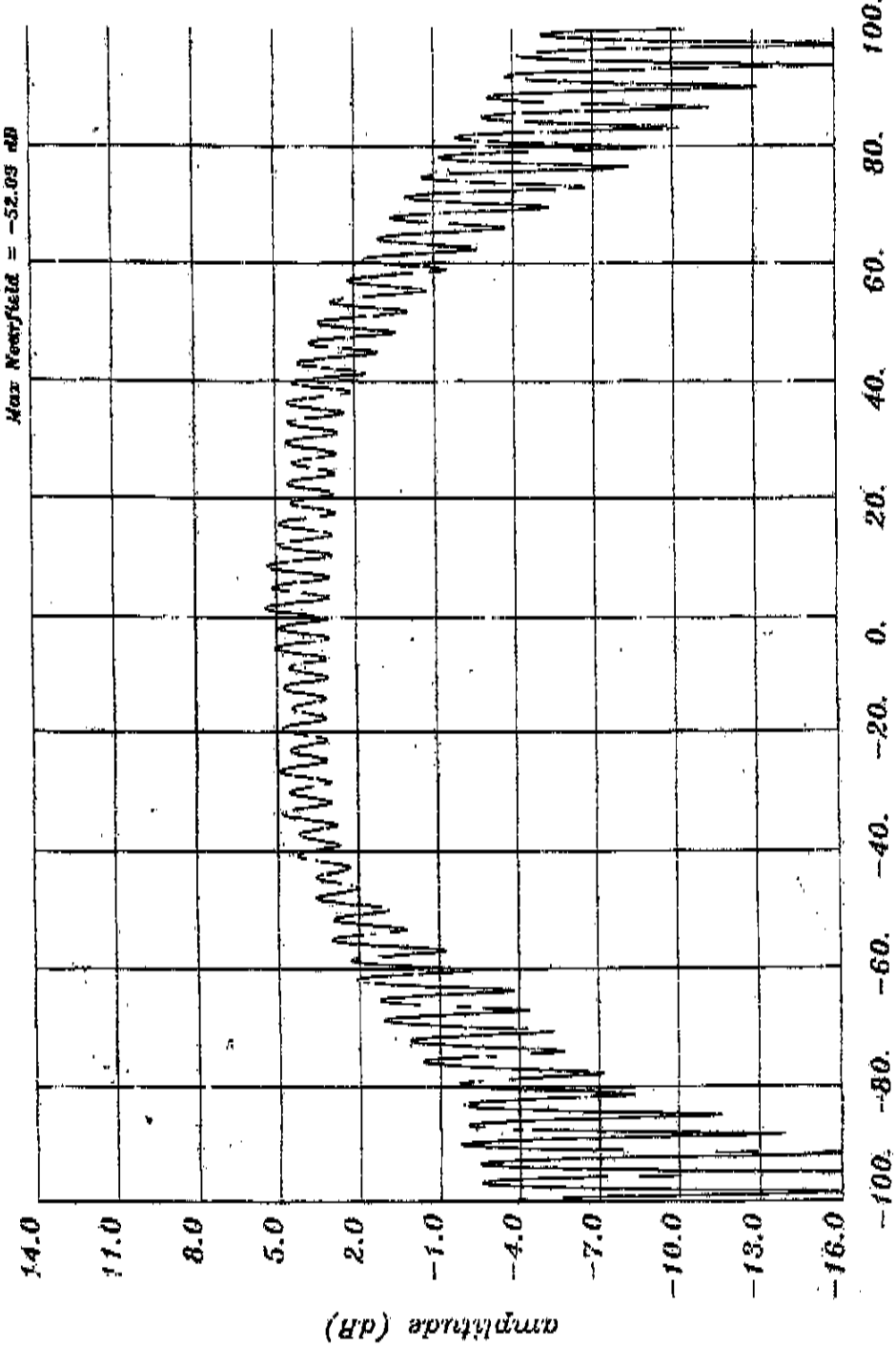
- **Frequency response for GPS L1/L2 and GLONASS**
  - **1GHz to 2GHz**
  - **Flatness less than 3.5dB**
  - **Noise figure less than 1.8dB**

- **All ports can either pass DC or block DC voltage**
  - **30dB gain**
  - **50 ohm impedance on both ports**
  - **Input & Output SWR less than 2.0:1**
  - **Reverse Isolation greater than 49dB**
  - **Required DC input 3.1 to 15VDC**
  - **Current draw less than 7mA**

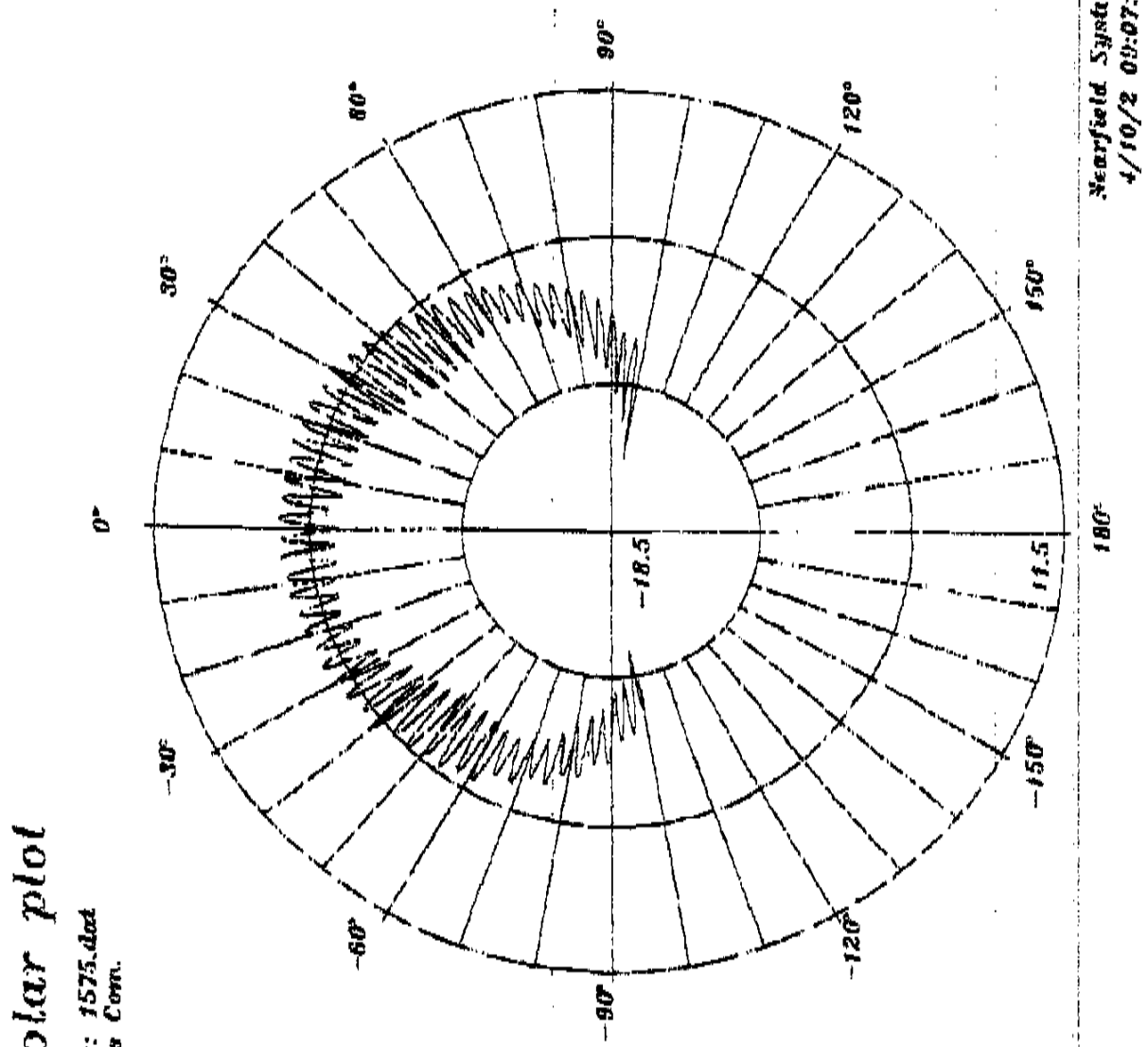
Mechanical Specifications:

- **Dimension**
  - **Length 2.5"**
  - **Width 2.5"**
  - **Height 1.25"**
  - **Base Plate 3.25"x2.5"**

- **Operating Temperature**
  - **-40 to 75 degrees C**


near-field amplitude
LITE v2.2.6d 1/10/97
pol 1 Tau=2.000
GPS-P1P
File: P2P-5.DAT 2/ 6/2 14:56:54
Frequency: 1.575 GHz
Z distance: 3.500 m , rms = 0.203 m
Max Nearfield = -52.05 dB
amplitude (dB)
14.0
11.0
8.0
5.0
2.0
-1.0
-4.0
-7.0
-10.0
-13.0
-16.0
-100. -80. -60. -40. -20. 0. 20. 40. 60. 80. 100.
Az axis (deg)

[redacted]


Nearfield Systems Inc.
4/10/2 09:07:22
Polar plot
File: 1575.dat
Ales Com.
90°
60°
120°
30°
150°
0°
180°
-30°
-150°
-60°
-120°
-90°
-18.5
11.5

Radiation Pattern of L1/L2 GPS Antenna:
E/H Elevation Cuts @ 1.575 GHz on 3.5” Dia. Ground Plane

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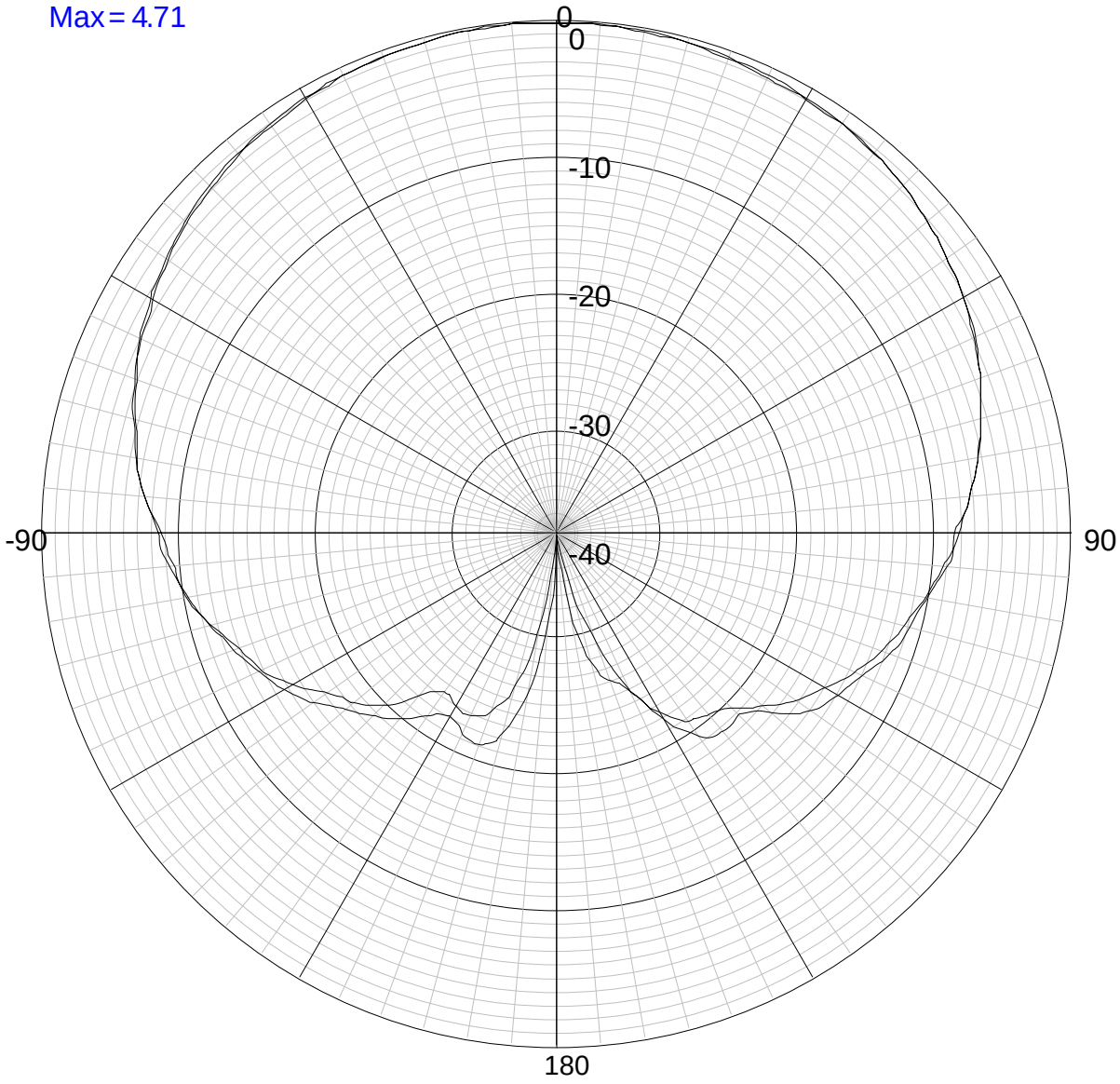
Co-Pol - Amp



Radiation Pattern of L1/L2 GPS Antenna:
Gain And Axial Ratio Elevation Cuts @ 1.575 GHz on 3.5 " Dia. Ground Plane

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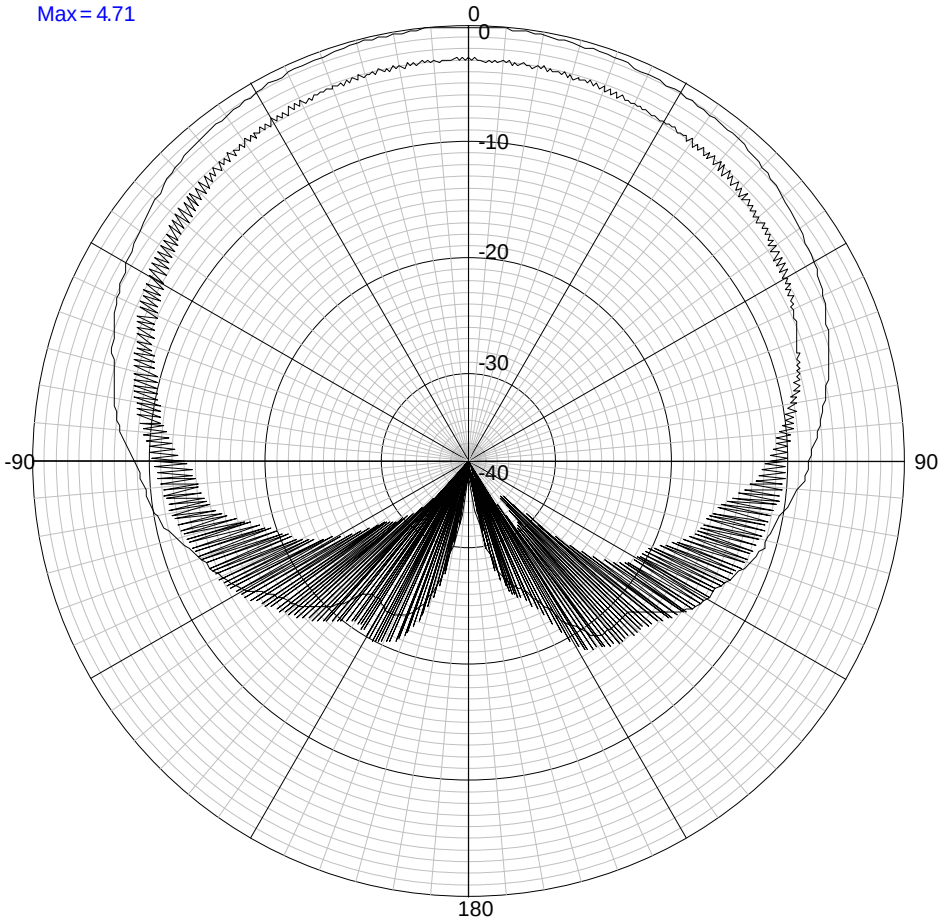
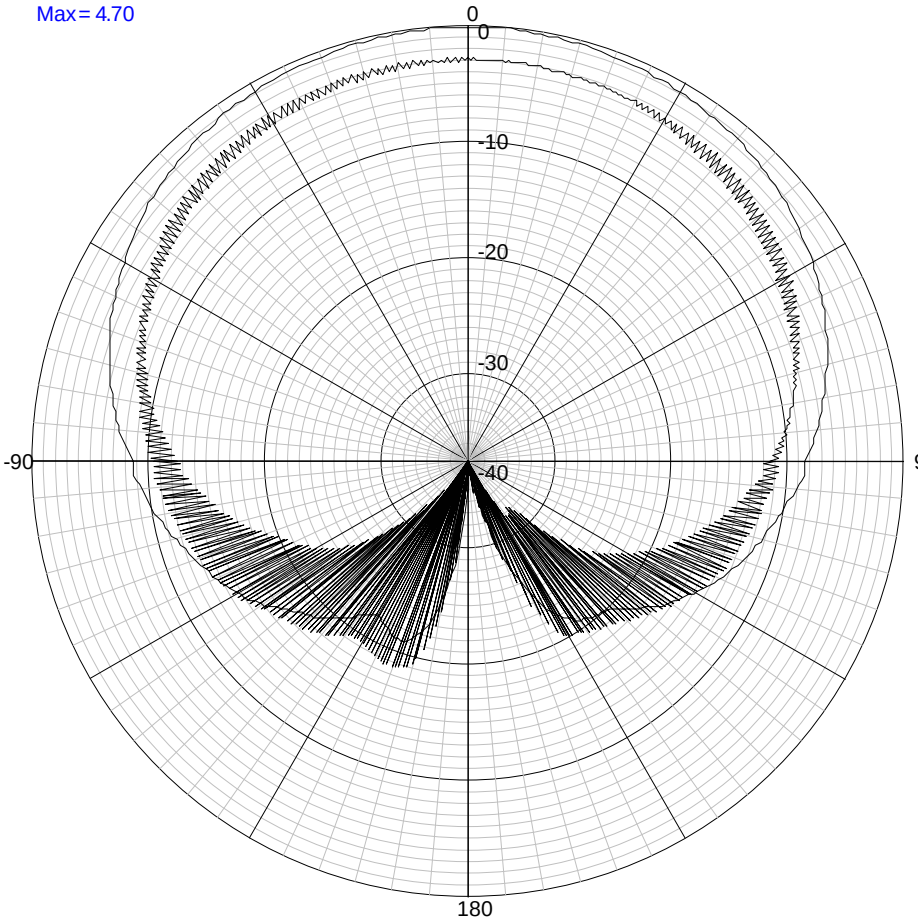
Rotating Linear (E-Cut)



Rotating Linear (H-Cut)



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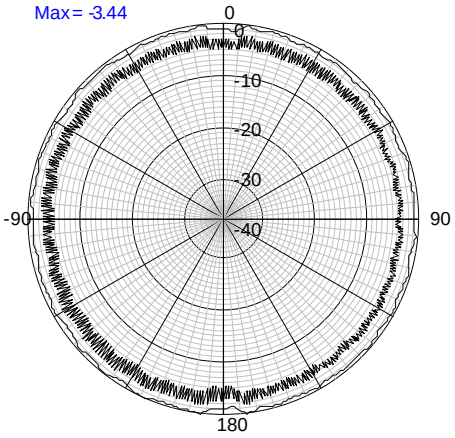
El = 0 deg



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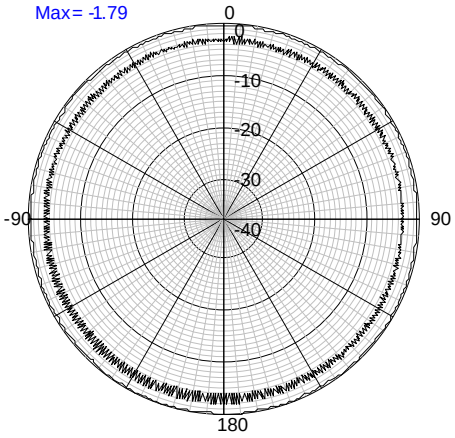
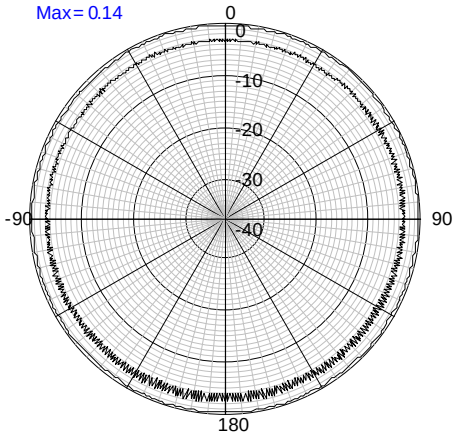


El = 20 deg



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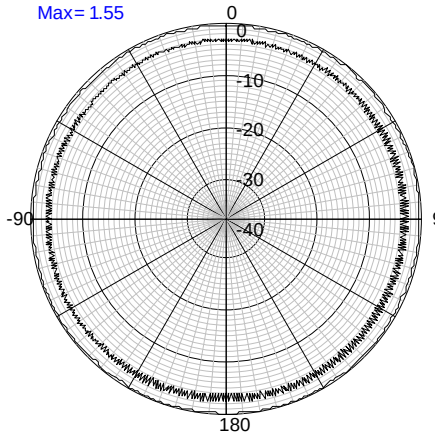
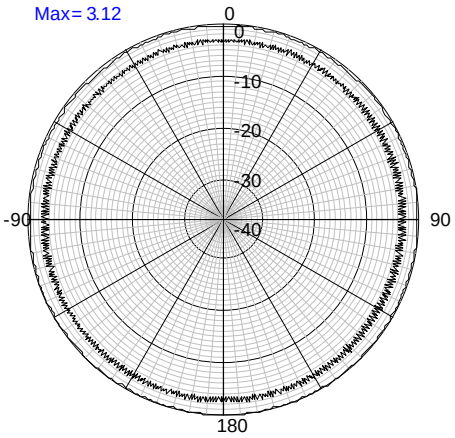
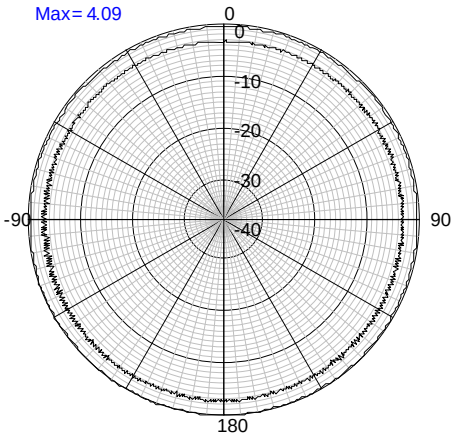


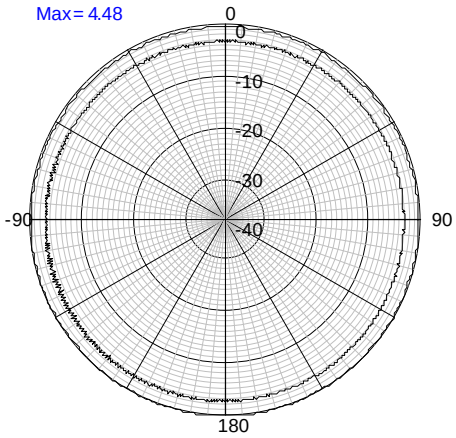
El = 45 deg



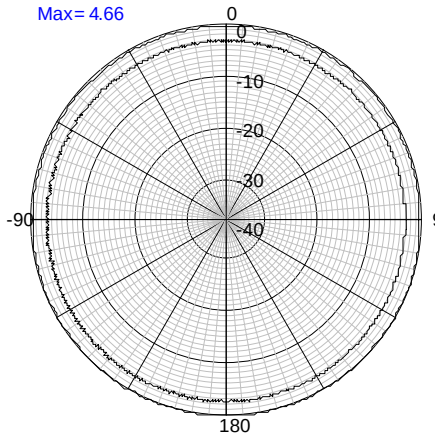
El = 60 deg



El = 70 deg



El = 80 deg



Radiation Pattern of L1/L2 GPS Antenna:
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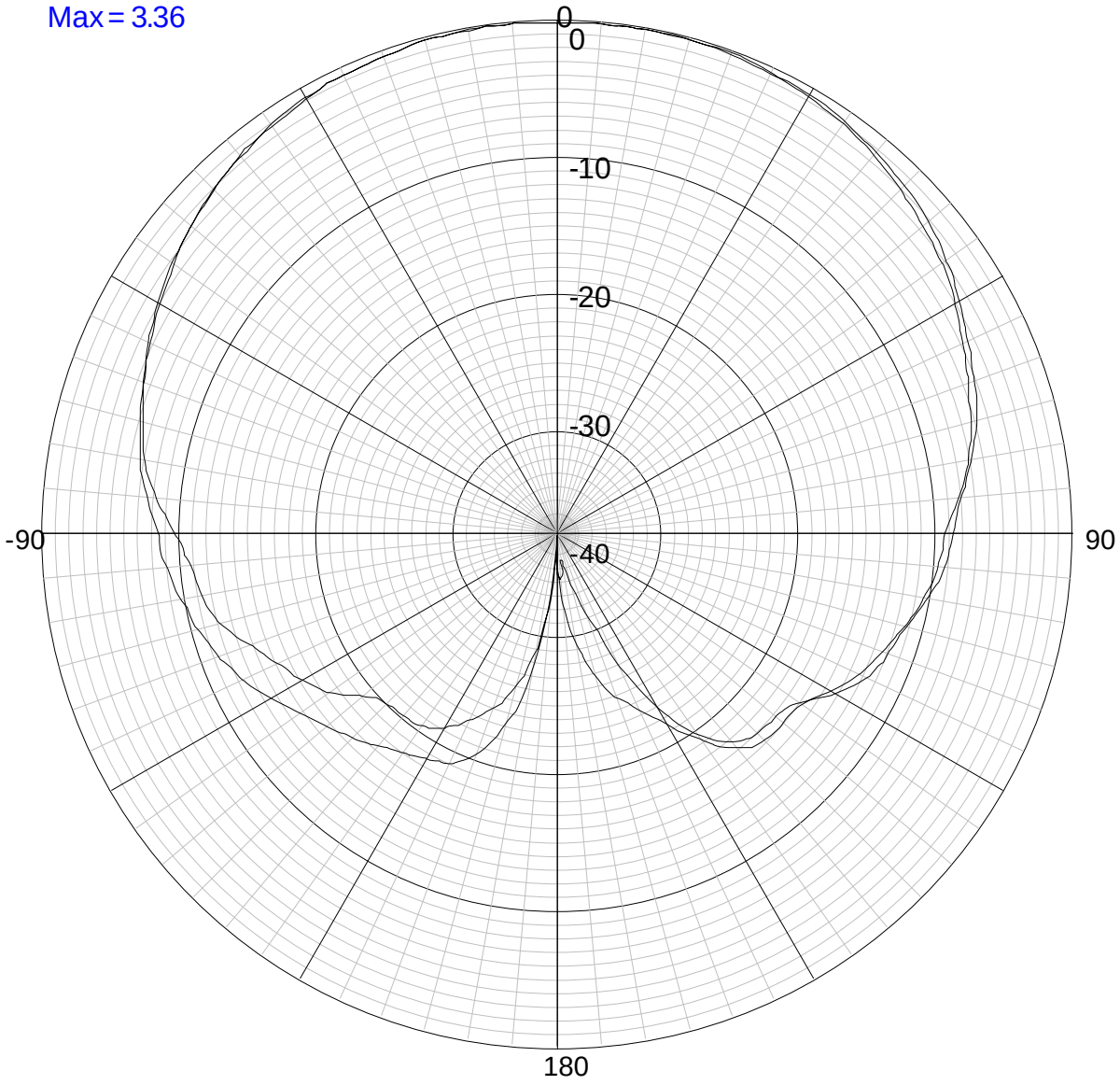
Co-Pol - Amp



Radiation Pattern of L1/L2 GPS Antenna:
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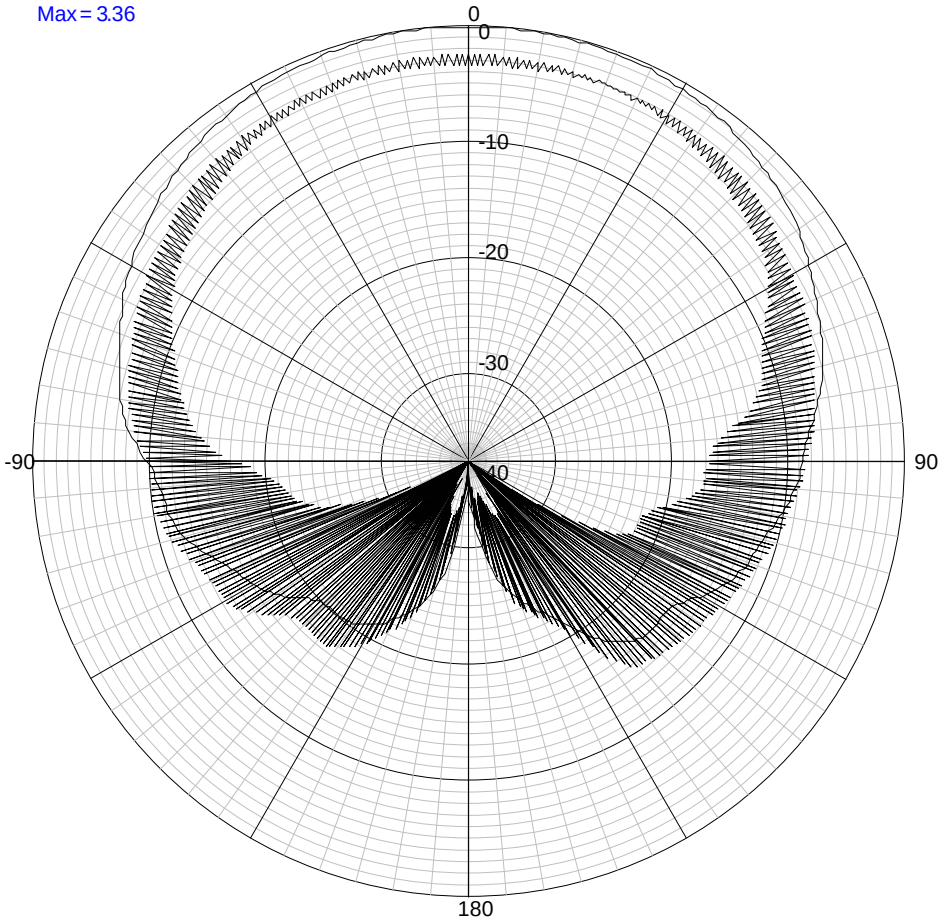
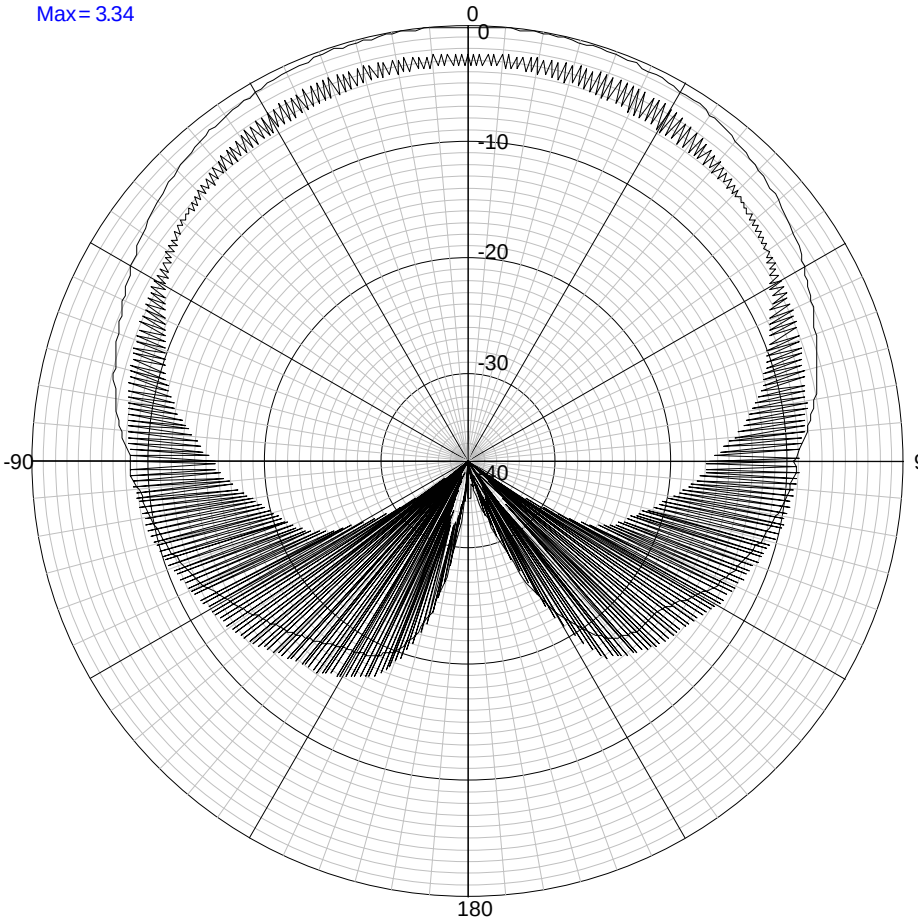
Rotating Linear (E-Cut)



Rotating Linear (H-Cut)



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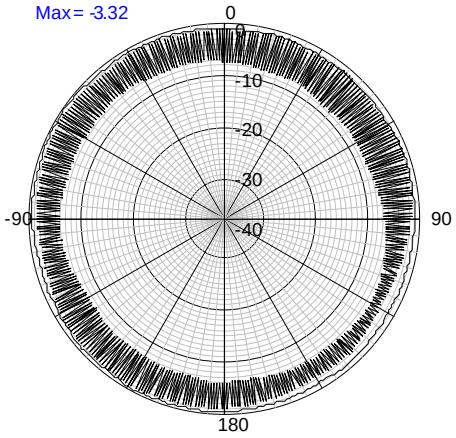
El = 10 deg



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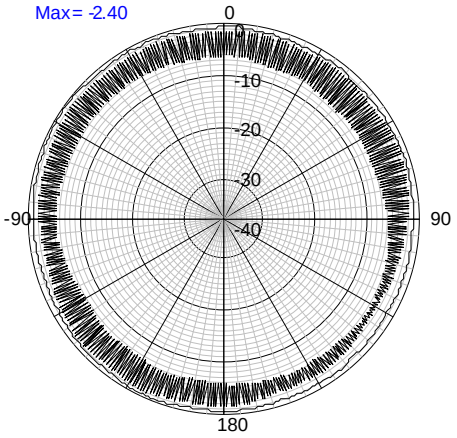

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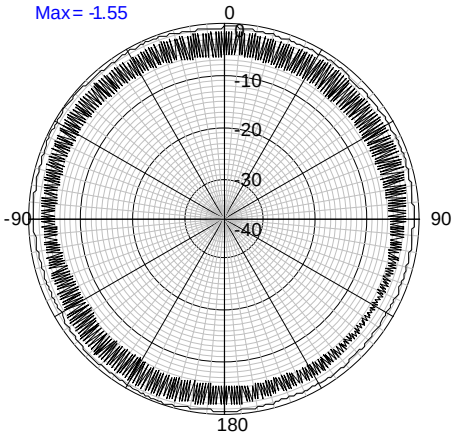

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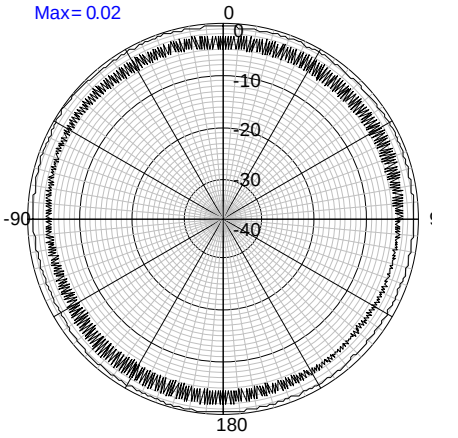

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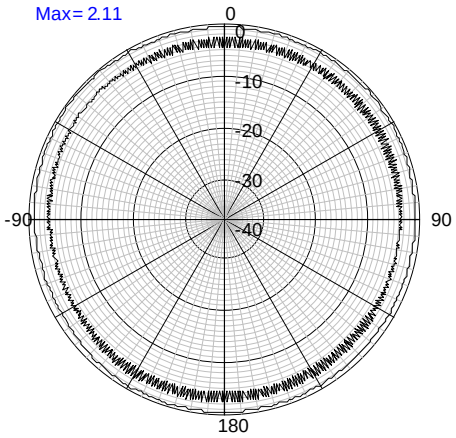

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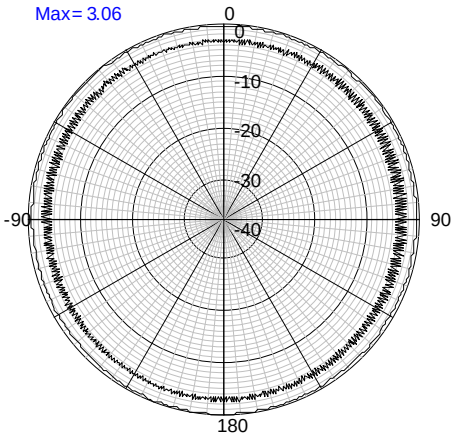

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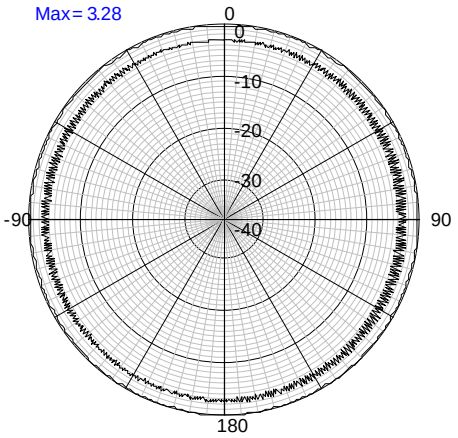

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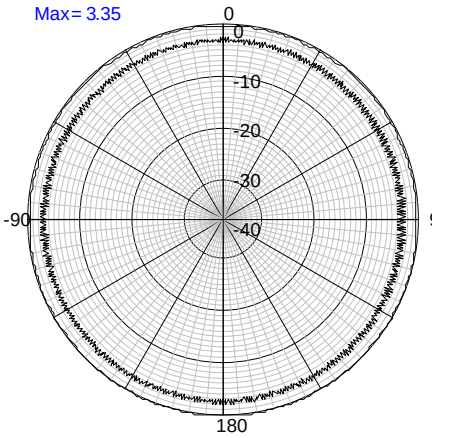

Radiation Pattern of L1/L2 GPS Antenna:
E/H Elevation Cuts @ 1.575 GHz on 16” Dia. Ground Plane

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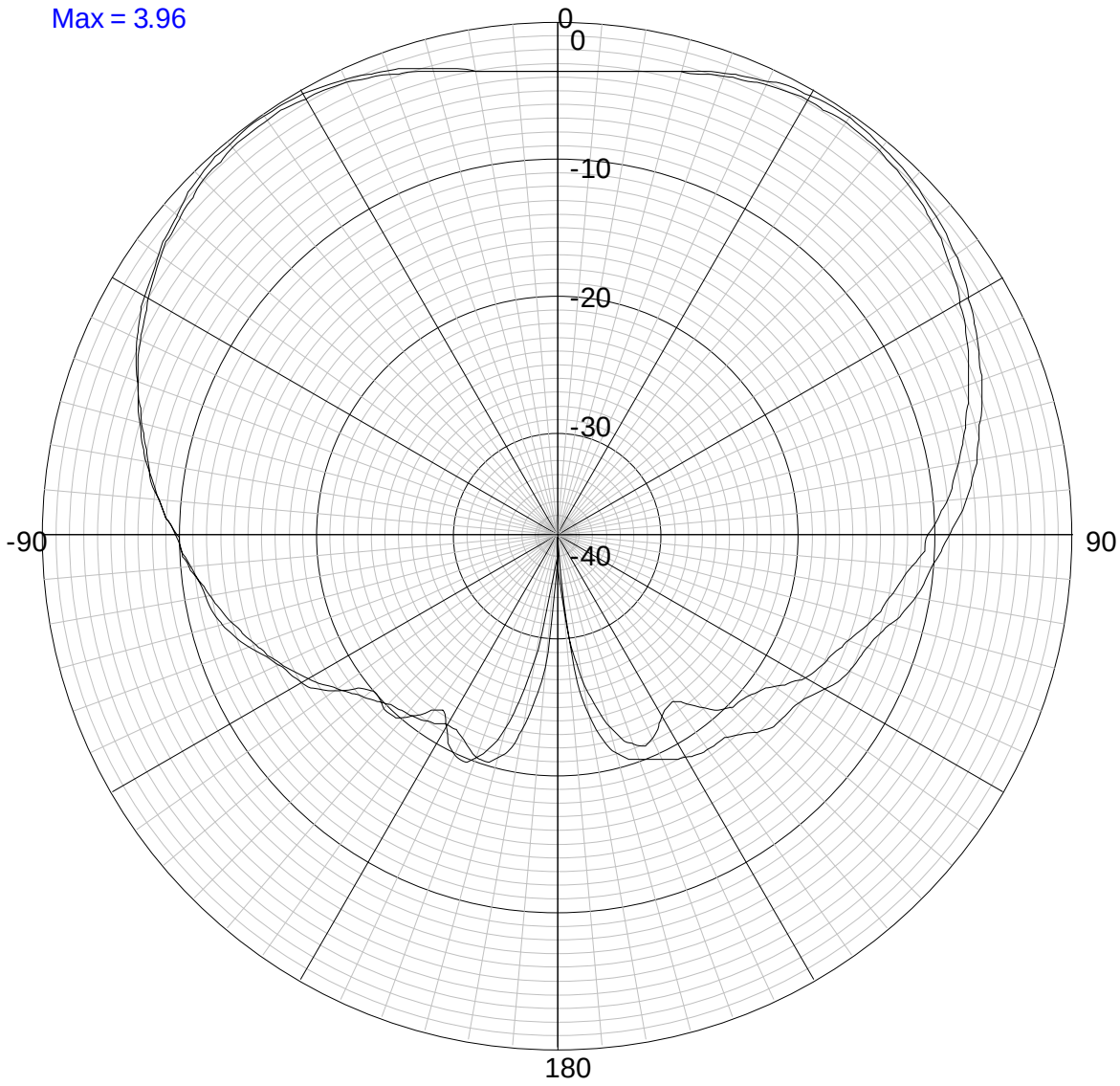
Co-Pol - Amp



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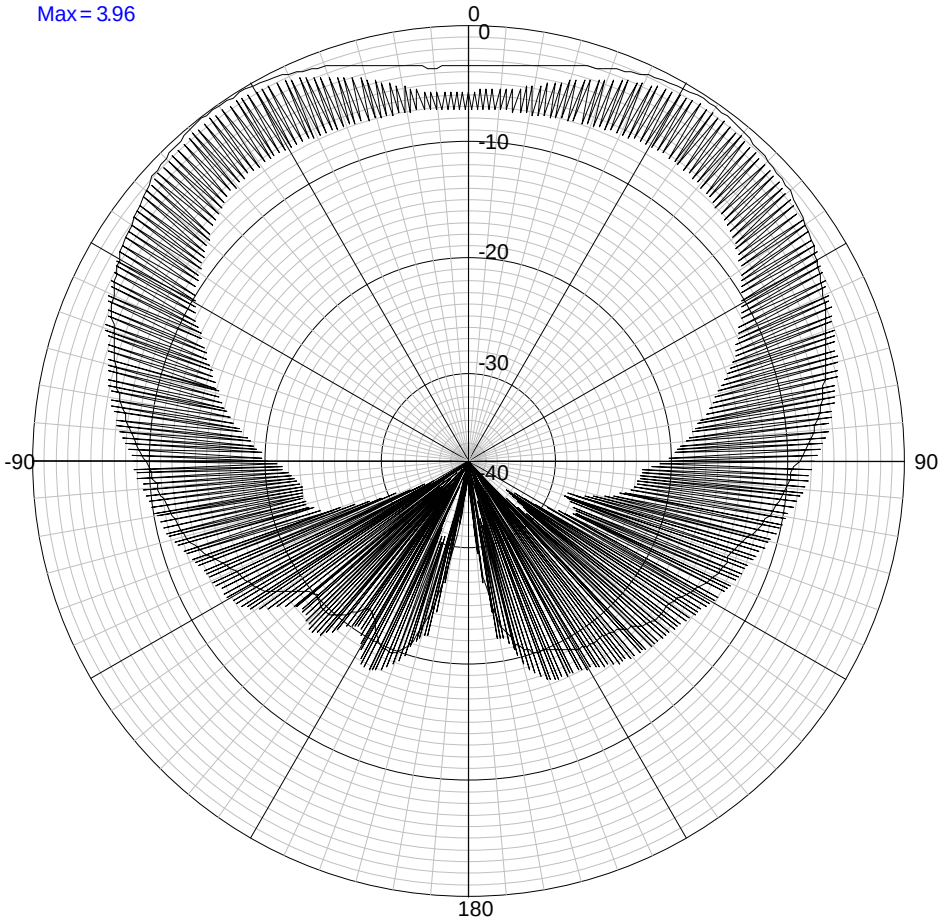
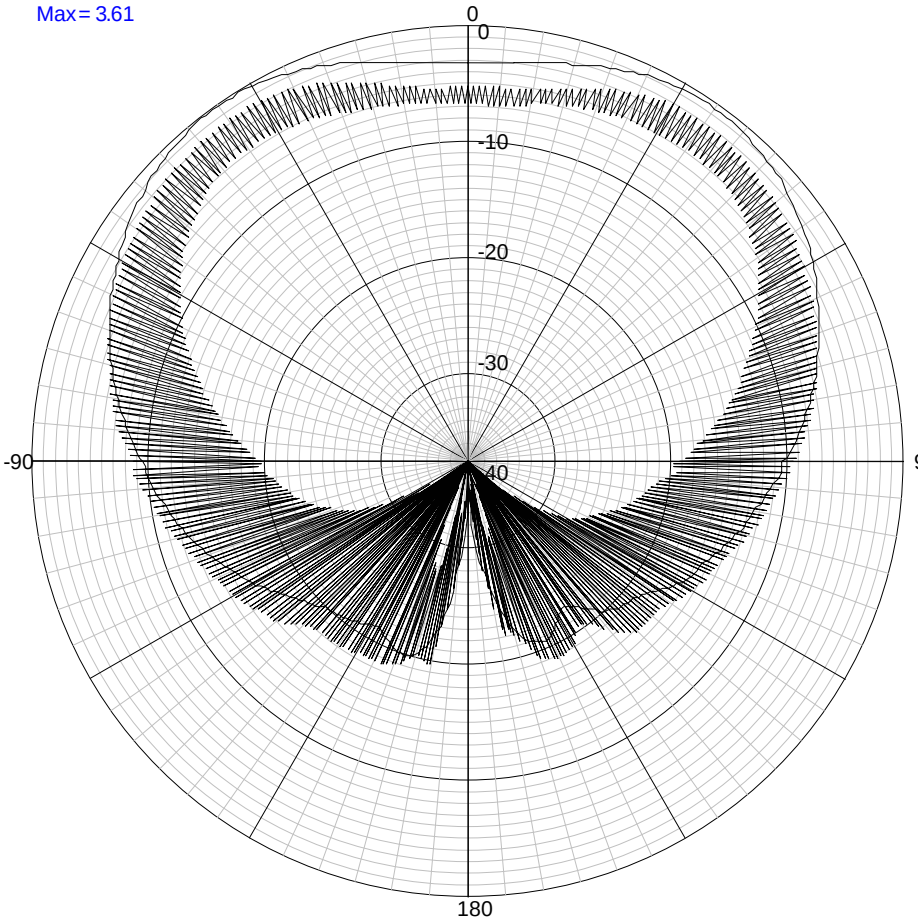
Rotating Linear (E-Cut)



Rotating Linear (H-Cut)



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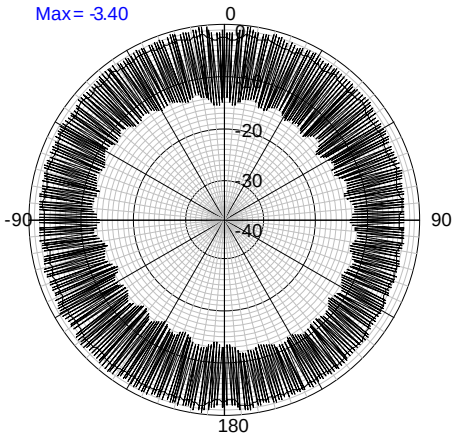
El = 0 deg



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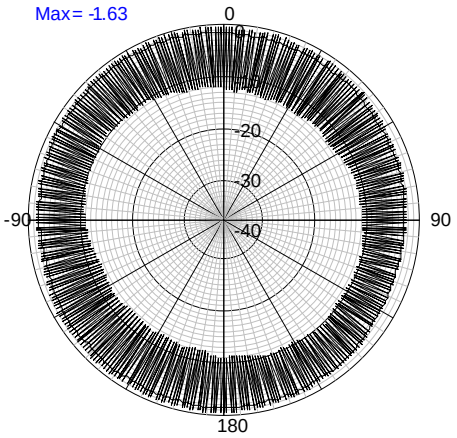

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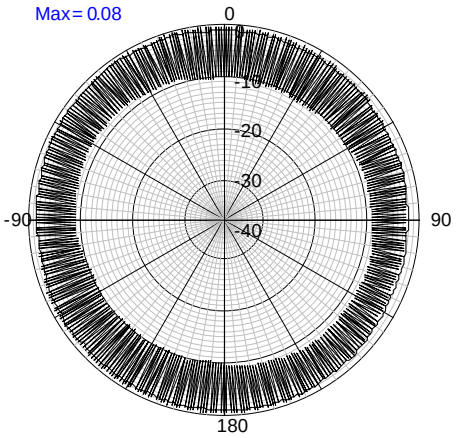

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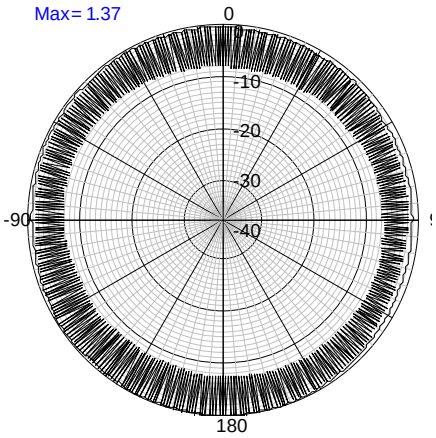

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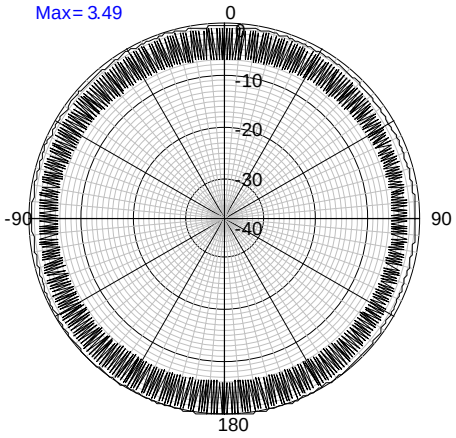

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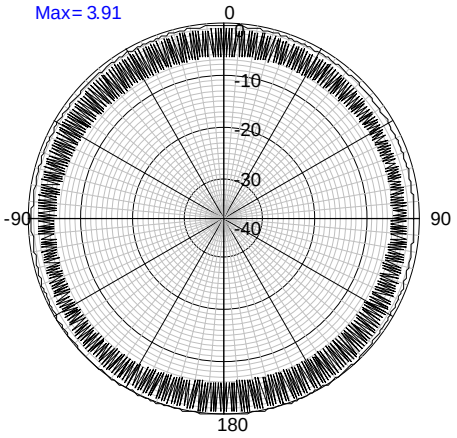

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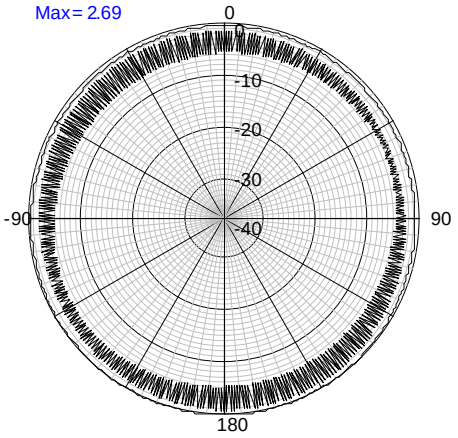

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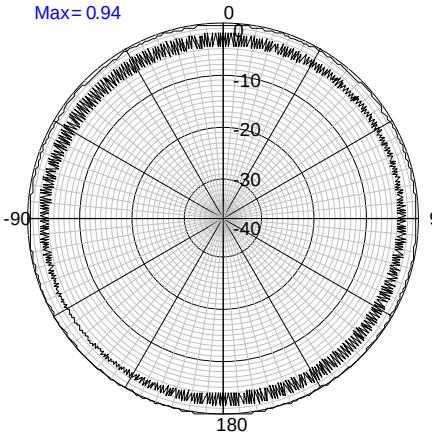

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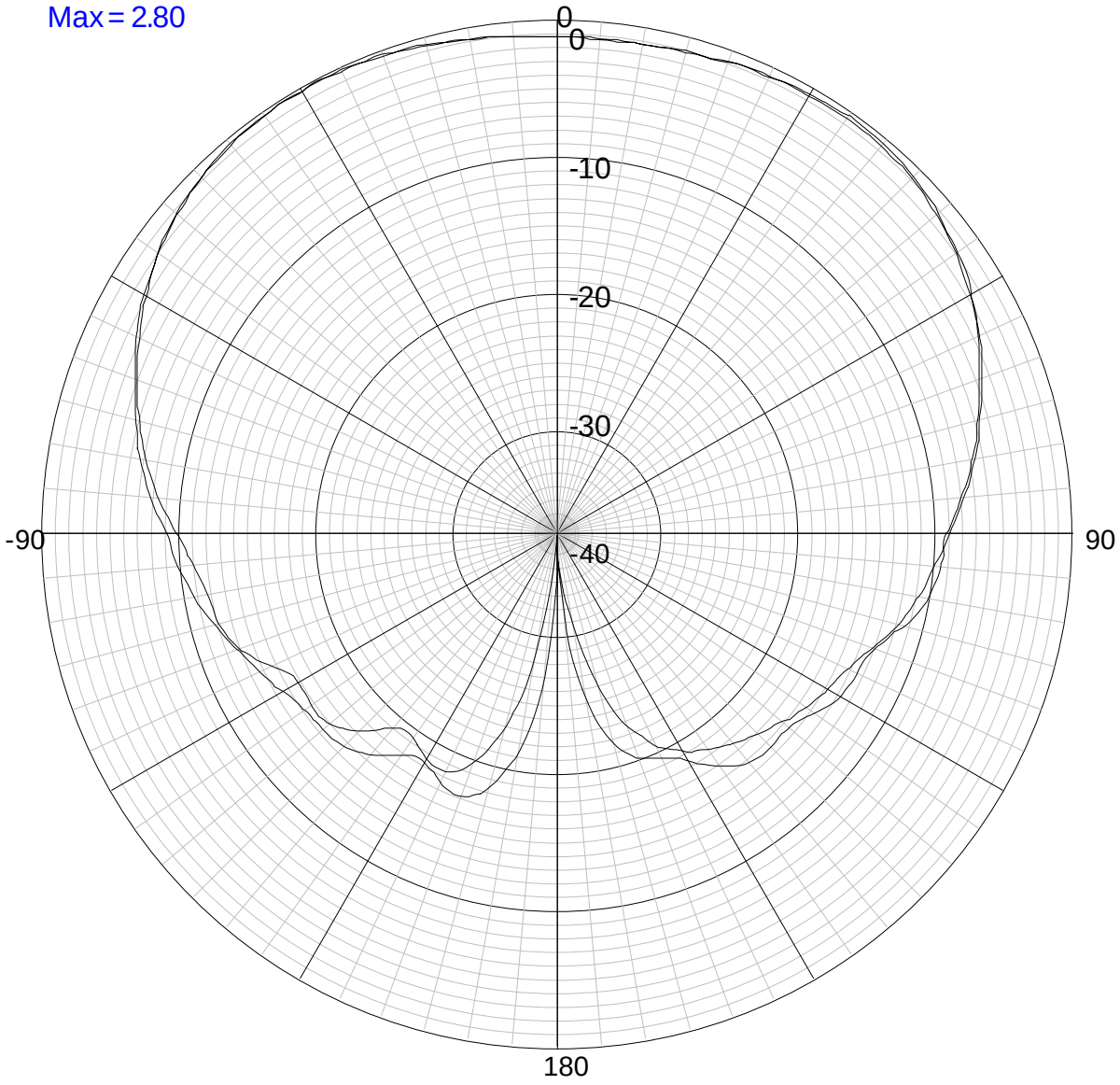
Co-Pol - Amp



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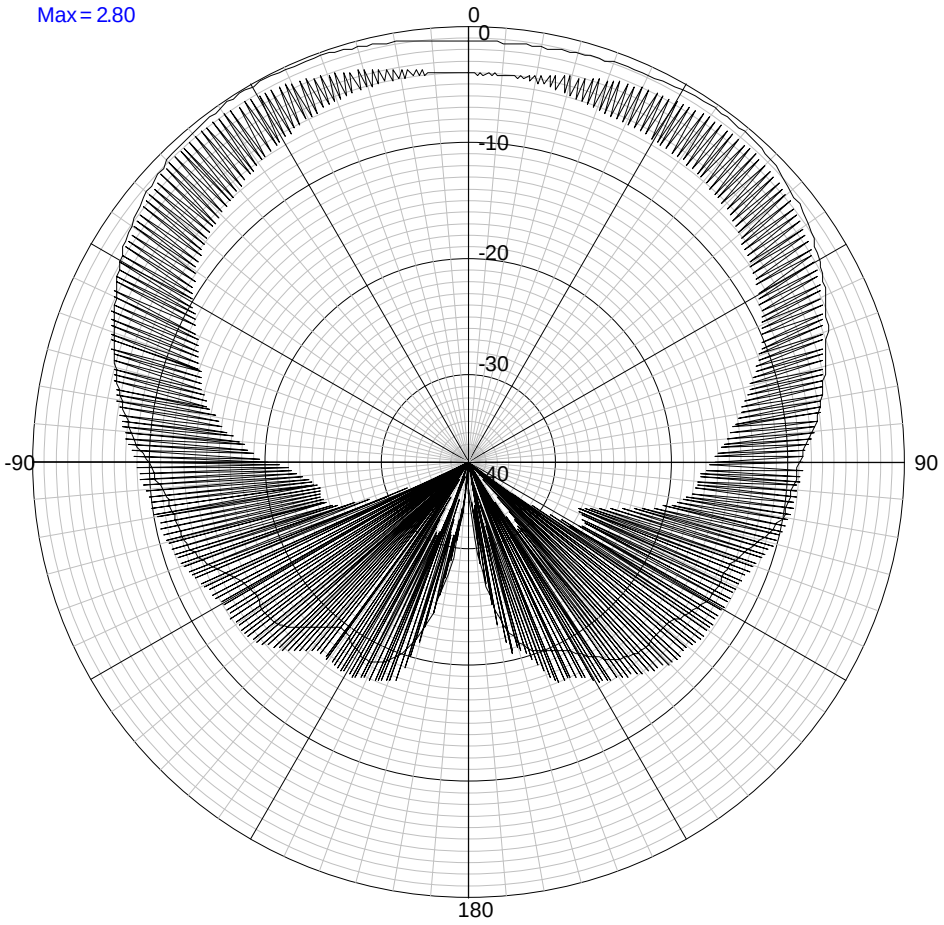
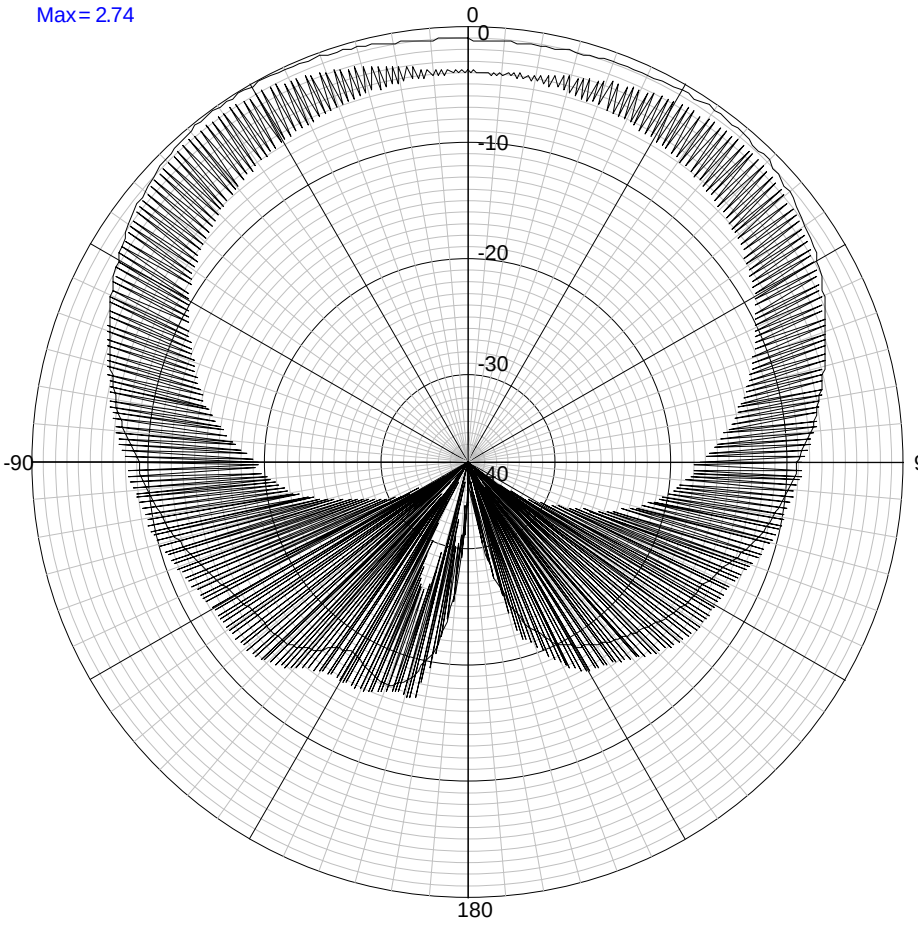
Rotating Linear (E-Cut)



Rotating Linear (H-Cut)



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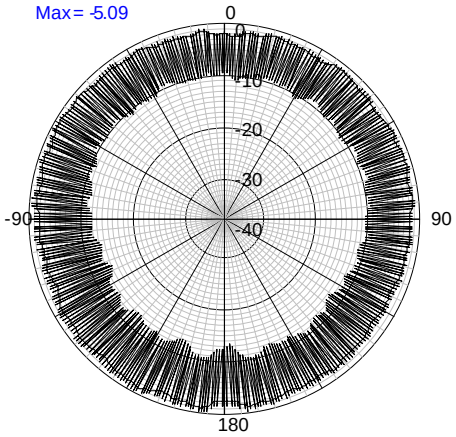
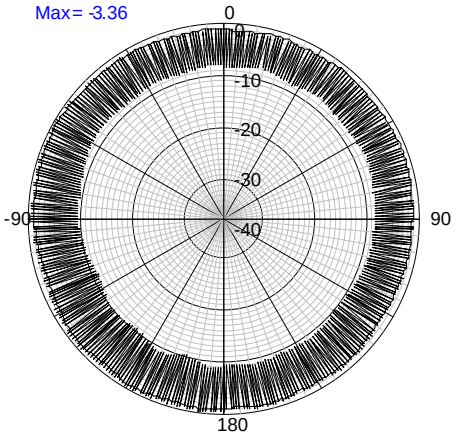
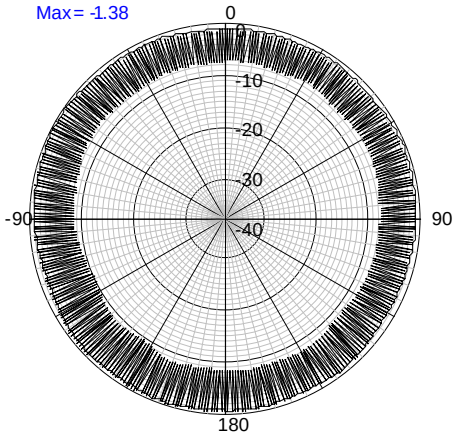
El = 0 deg



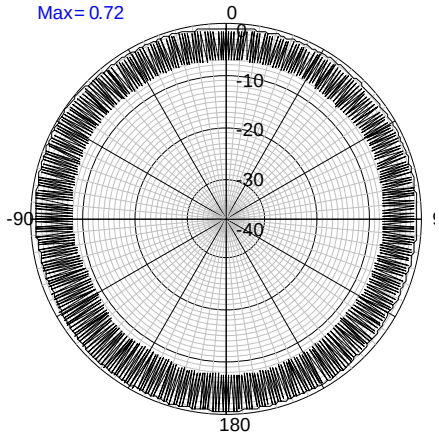
El = 10 deg



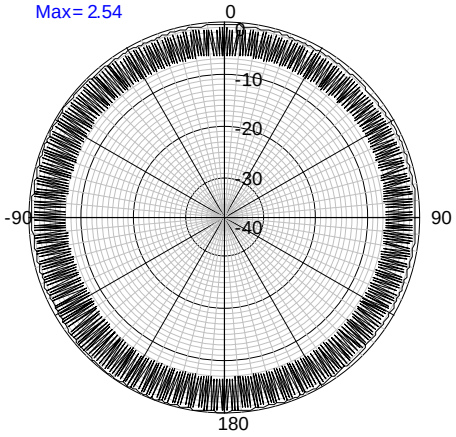
El = 20 deg



El = 30 deg



El = 45 deg



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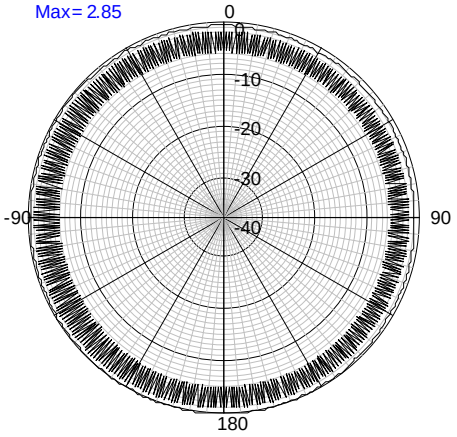
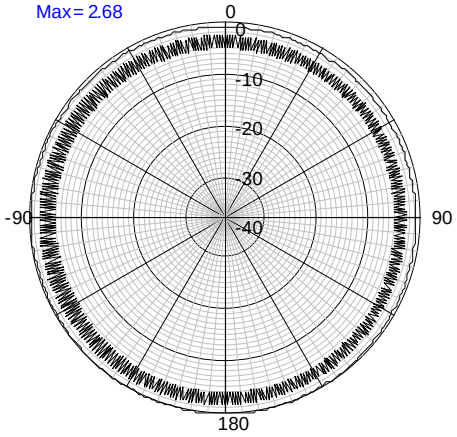


El = 70 deg



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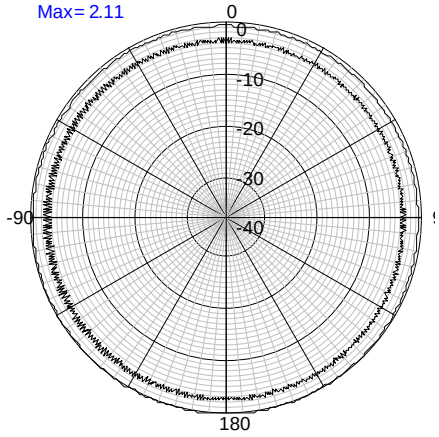

Radiation Pattern of L1/L2 GPS Antenna:
E/H Elevation Cuts @ 1.575 GHz on 4 ft Dia. Ground Plane

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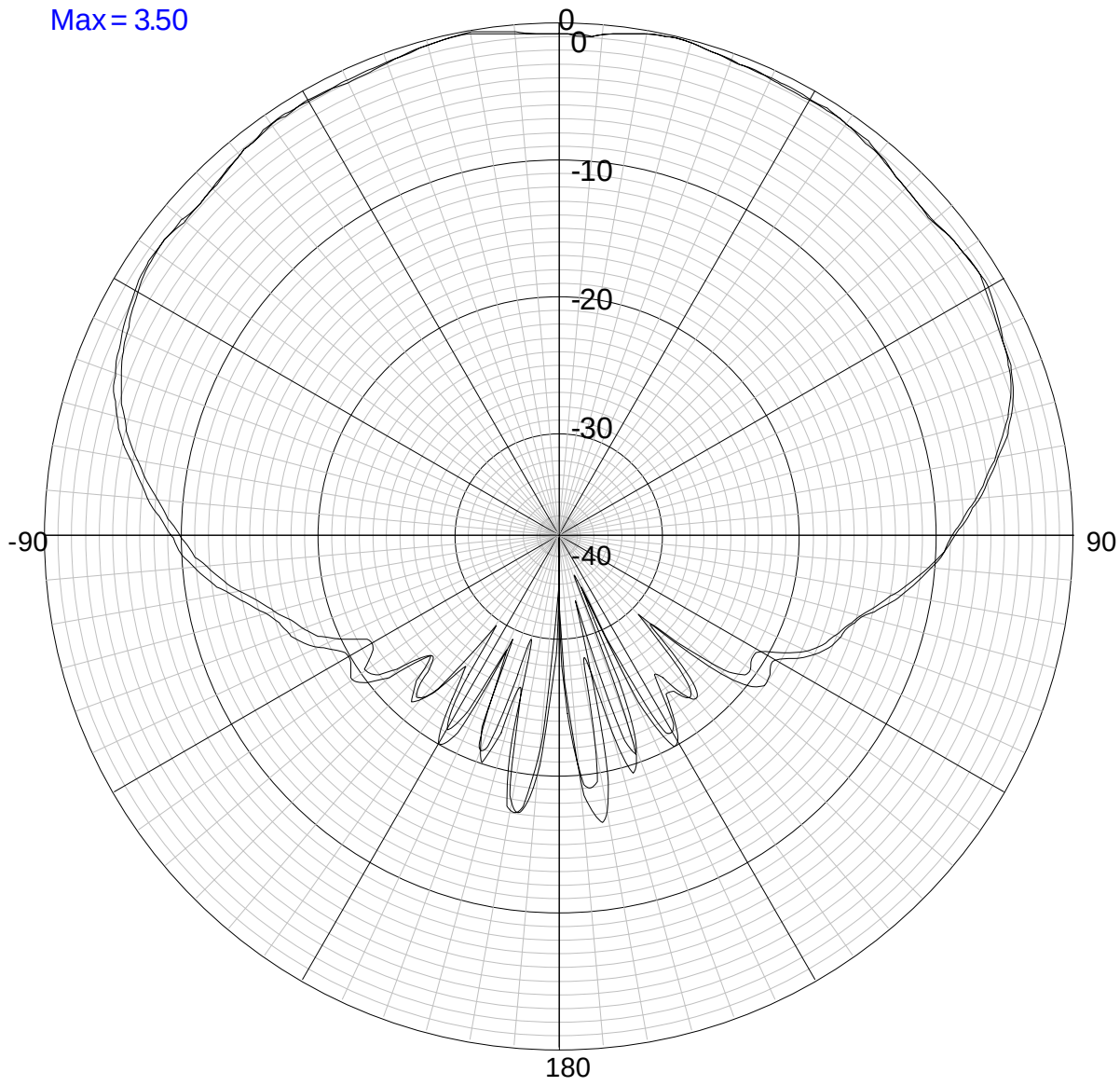
Co-Pol - Amp



Radiation Pattern of L1/L2 GPS Antenna:
Gain And Axial Ratio Elevation Cuts @ 1.575 GHz on 4 ft Dia. Ground Plane

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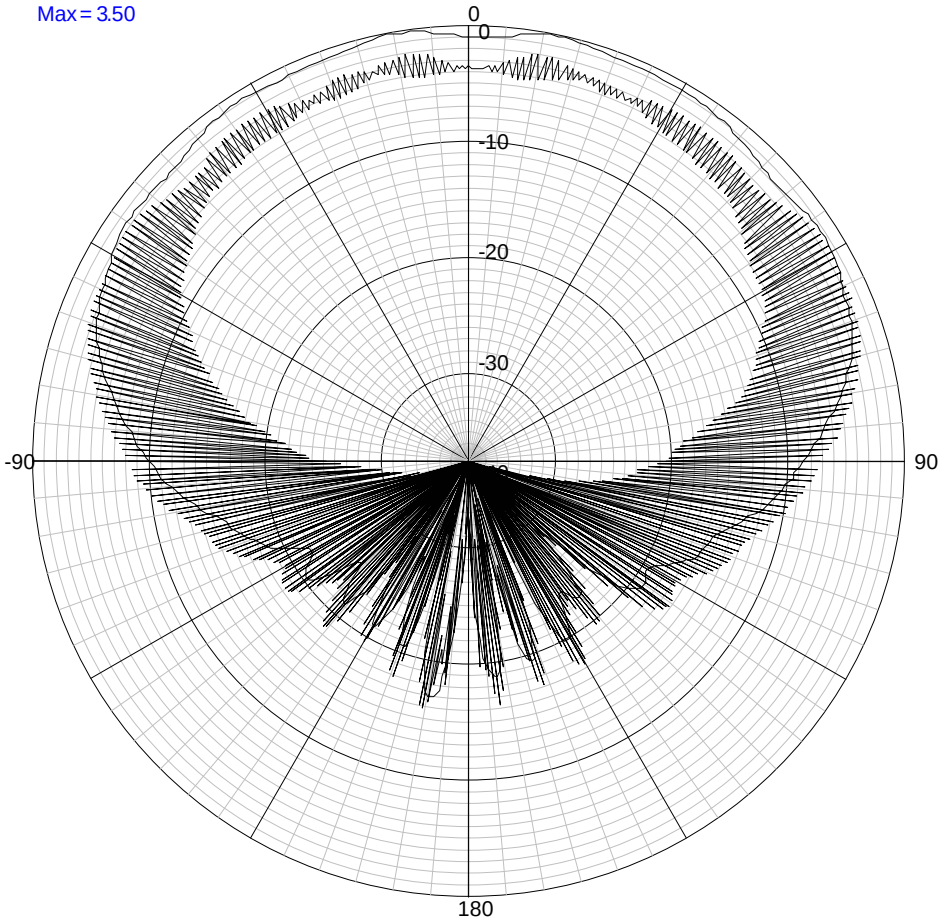
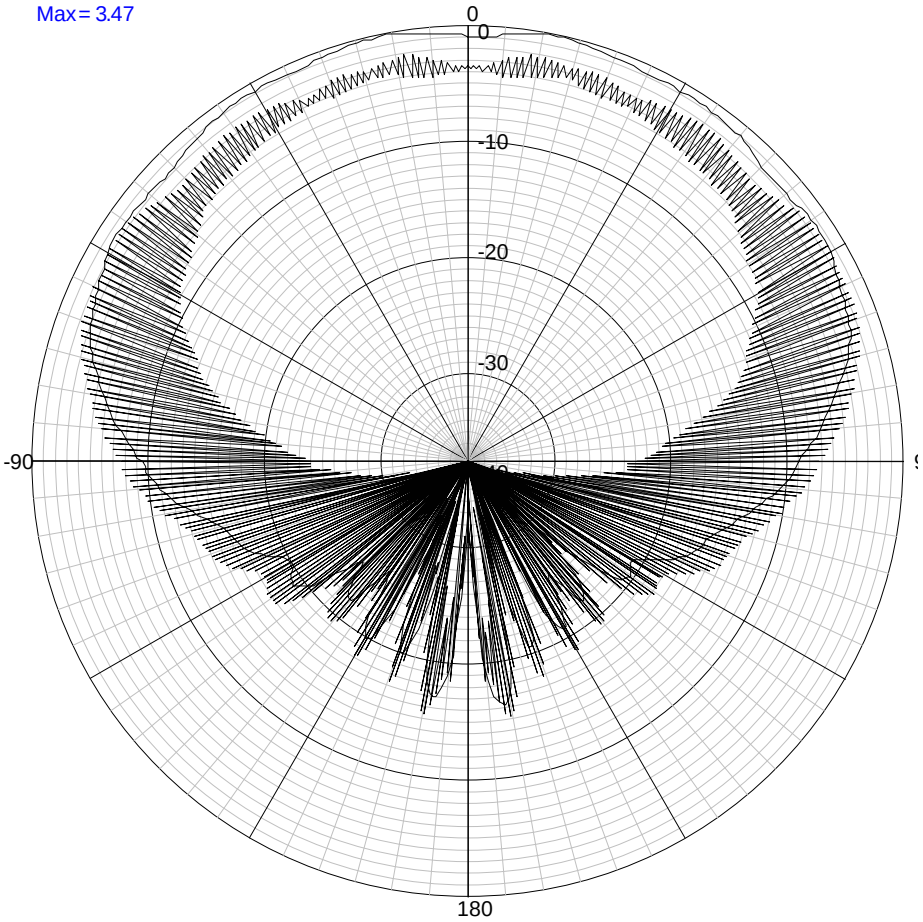
Rotating Linear (E-Cut)



Rotating Linear (H-Cut)



Radiation Pattern of L1/L2 GPS Antenna:
Gain And Axial Ratio Azimuth Cuts @ 1.575 GHz on 4 ft Dia. Ground Plane

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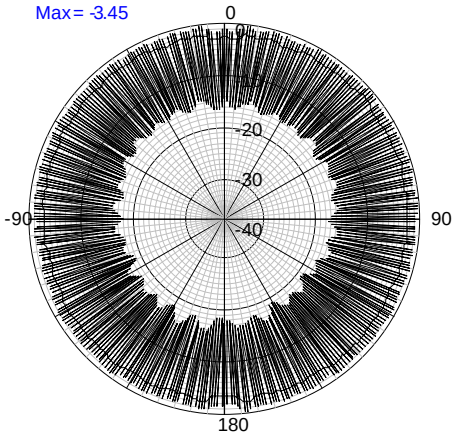
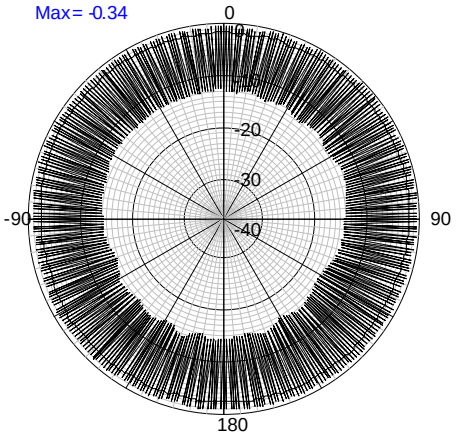
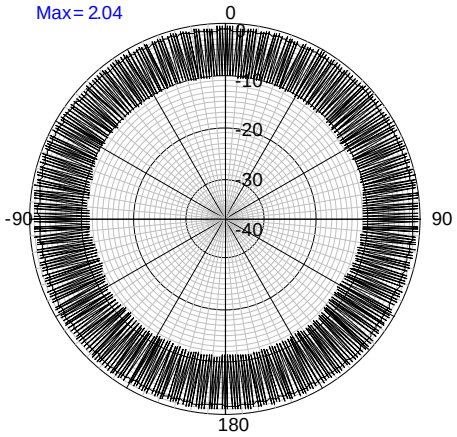
El = 0 deg



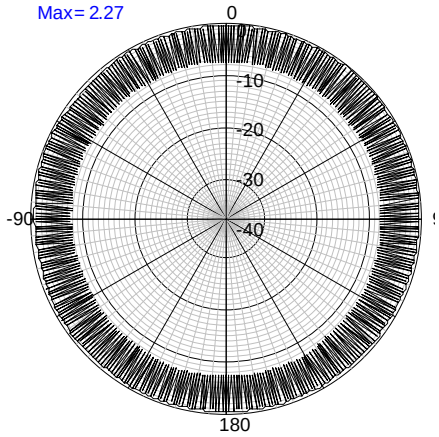
El = 10 deg



El = 20 deg



El = 30 deg



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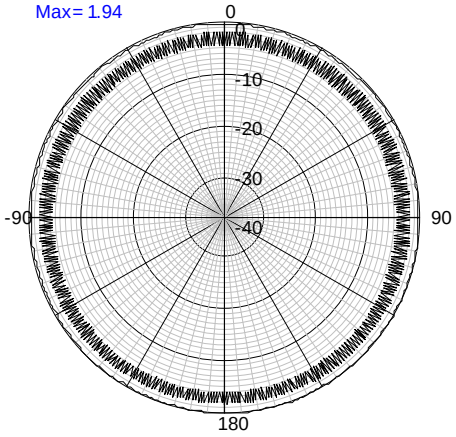
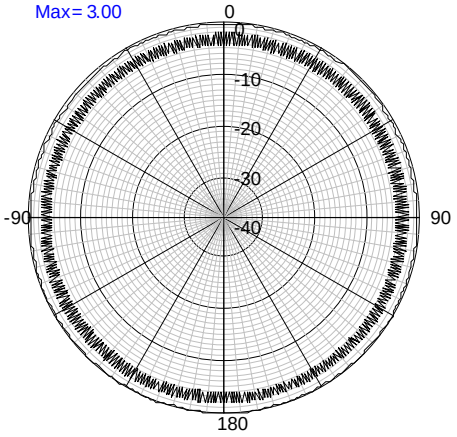
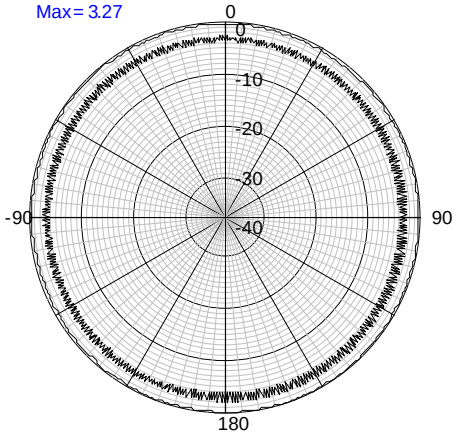


El = 60 deg



El = 70 deg



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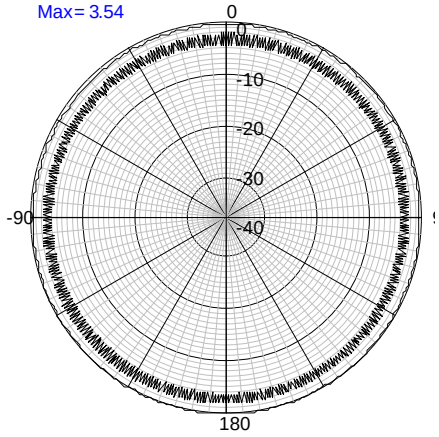

Radiation Pattern of L1/L2 GPS Antenna:
E/H Elevation Cuts @ 1.227 GHz on 4 ft Dia. Ground Plane

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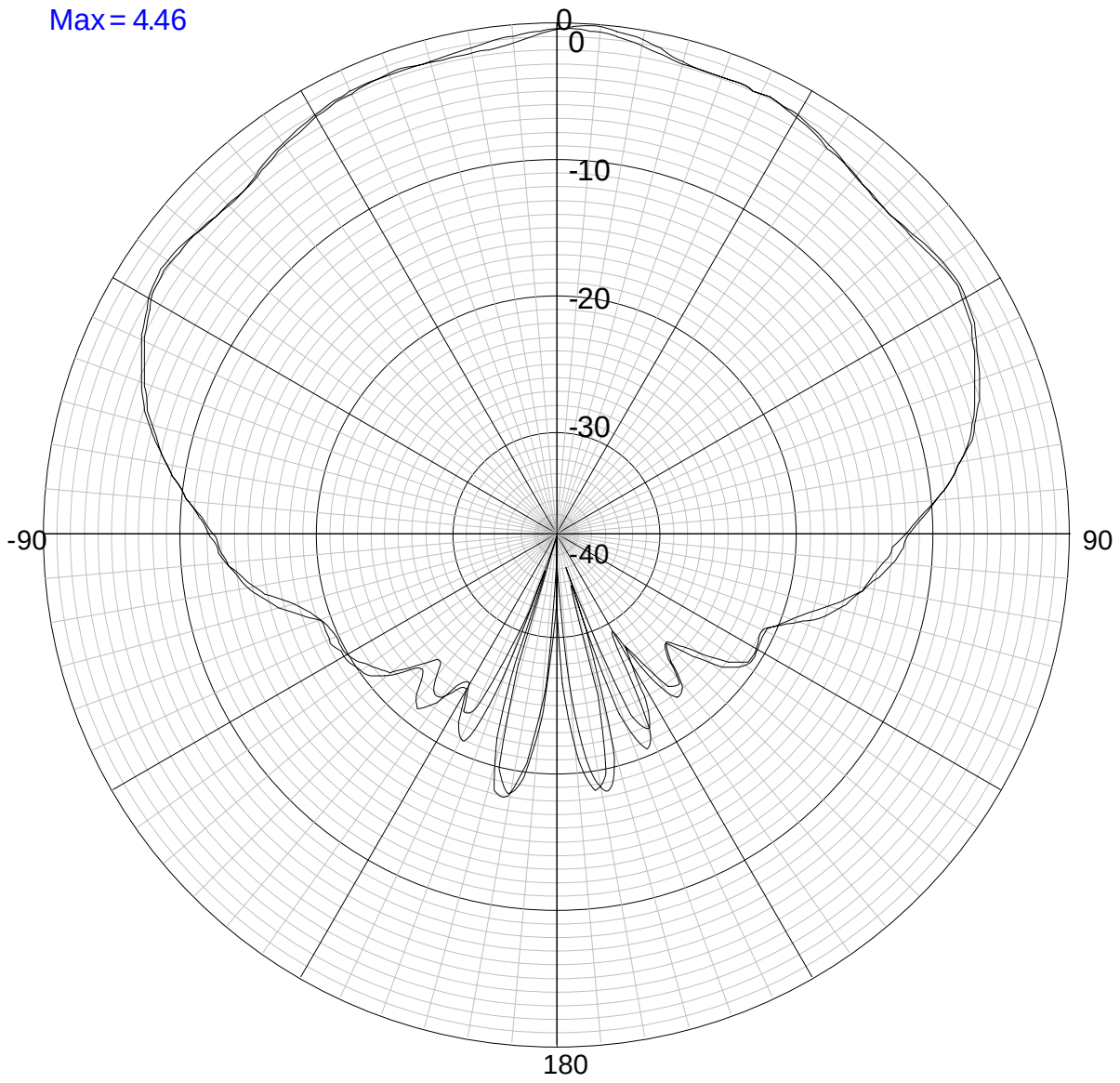
Co-Pol - Amp



Radiation Pattern of L1/L2 GPS Antenna:
Gain And Axial Ratio Elevation Cuts @ 1.227 GHz on 4 ft Dia. Ground Plane

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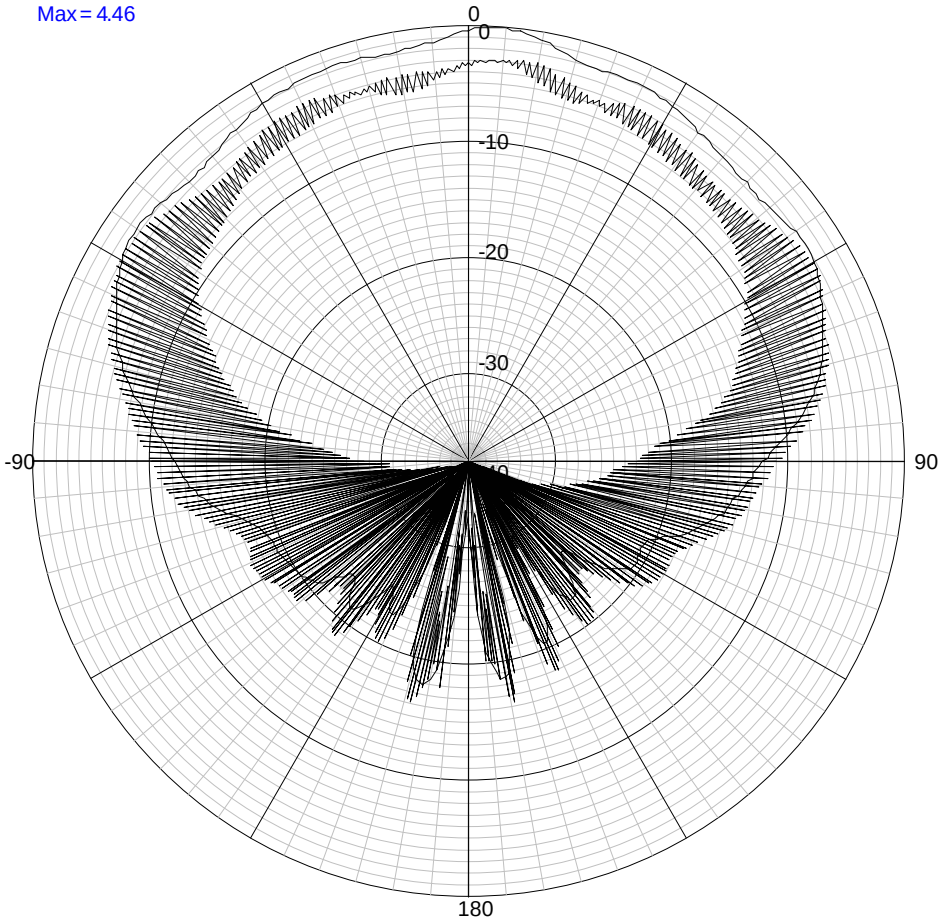
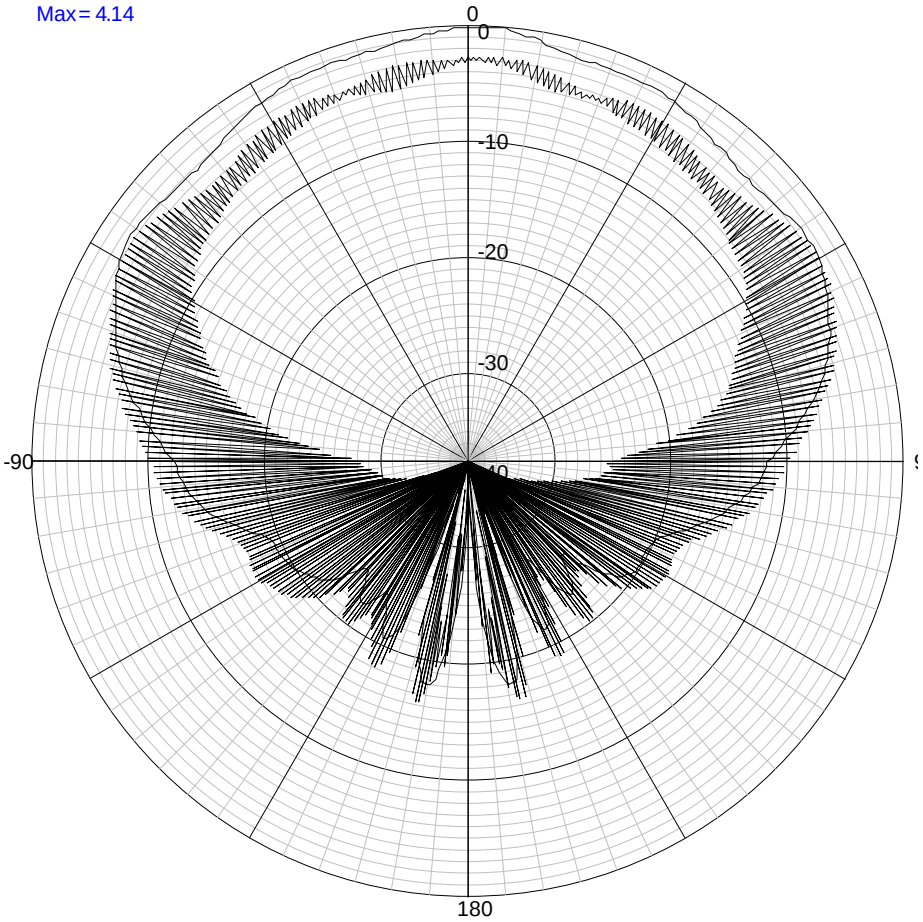
Rotating Linear (E-Cut)



Rotating Linear (H-Cut)



Radiation Pattern of L1/L2 GPS Antenna:
Gain And Axial Ratio Azimuth Cuts @ 1.227 GHz on 4 ft Dia. Ground Plane

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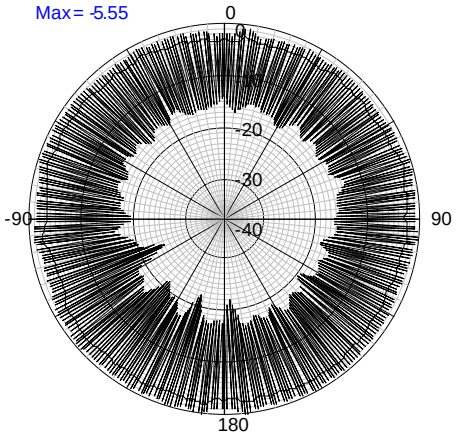
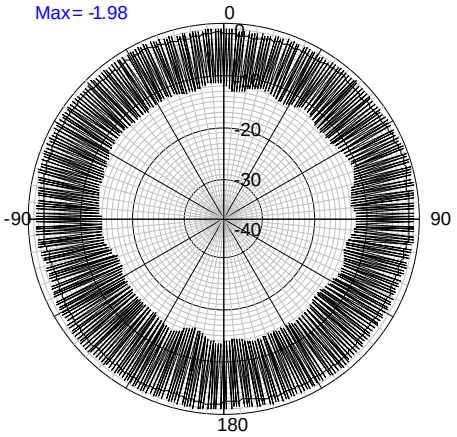
El = 0 deg



El = 10 deg



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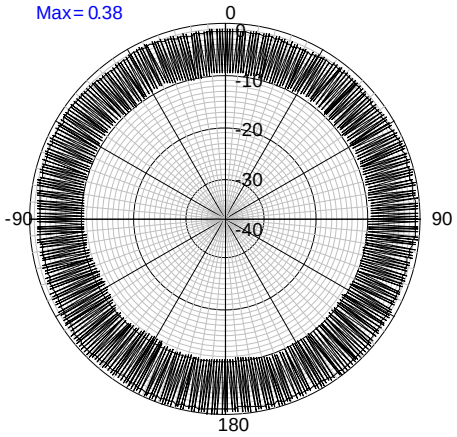

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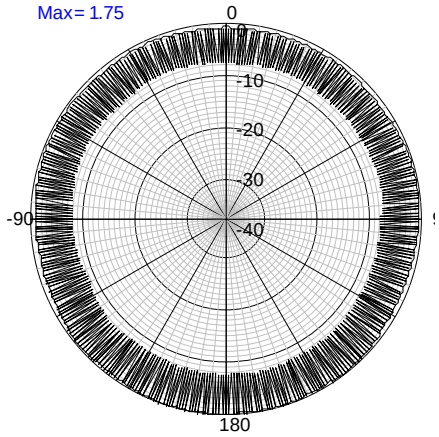

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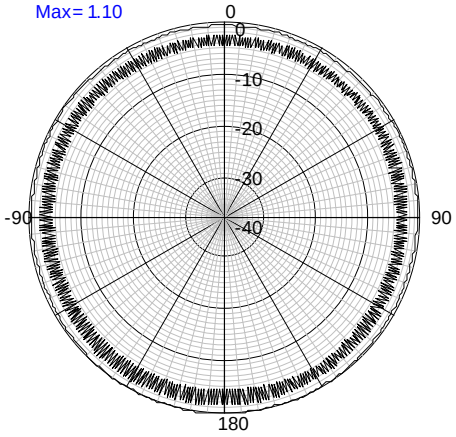
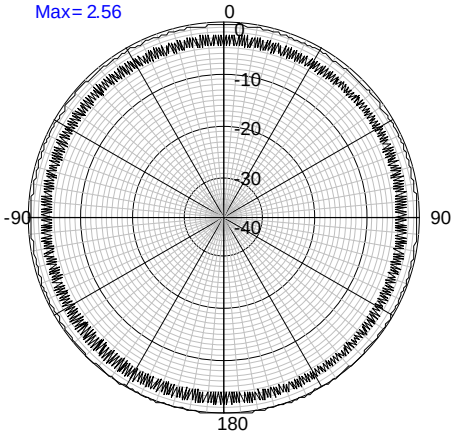
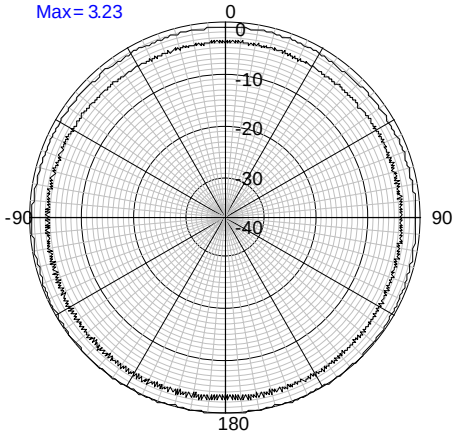


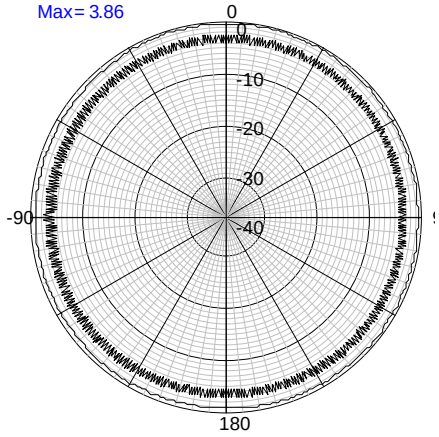
El = 60 deg



El = 70 deg



El = 80 deg



HNRR KIT

Technical Product Data

Features

- **Roof Amplified Antenna**
  Gain ≥ 35dB
- **Re-Radiating Amplifier with Power Supply**
  Gain ≥ 20dB
- **Optional Mounting Kit Hardware**
  Roof Antenna Mount & Re-Radiating Amp Mount
- **Variable Gain Option Available**
  Re-Radiating Amp Gain Varies from –7 to +20 dB

Description

The GPS Hanger Re-Radiating Kit (HNRR KIT) is a complete re-radiating system that allows re-radiation of the GPS L1 signal indoors. The HNRR KIT consists of an active roof antenna, a re-radiating amplifier with a wall mount plug-in transformer that powers the entire system, and a passive re-radiating antenna. The GPS L1 signal from the roof antenna is amplified and radiated indoors. Thus, if a receiver has line of sight with the re-radiating antenna, it can receive the GPS signal indoors up to 100 feet away.

Roof Antenna

Electrical Specifications, $T_A = 25^0C$

Parameter	Conditions	Min	Typ	Max	Units
Frequency	L1		1.575		GHz
Bandwidth			50		MHz
Out Imped. (1)			50		Ω
Pre-Amp Gain			35		dB
Noise Figure			2.75		dB
Output SWR				2.0:1	-
Filtering	1626 MHz	-20			dB
	1500 MHz	-10			dB
Req. DC Input V.		4.5		5.5	Vdc

Current			22		mA

(1). 50Ω output with supplied coaxial adapter for some roof antenna.

Re-Radiating Amplifier

Electrical Specifications, $T_A = 25^0C$

Parameter	Conditions	Min	Typ	Max	Units
Freq. Range	Ant – J1	1.1		1.7	GHz
In/Out Imped. (1)	Ant, J1		50		Ω
Gain (2)	Ant – J1, Normal Configuration	20	24.5	26	dB
	Variable Gain Option	-6		20	dB
Input SWR (2)	J1 - 50Ω			1.8:1	-
Output SWR	Ant - 50Ω			1.8:1	-
Noise Figure	Ant – J1		3.3	3.5	dB
Gain Flatness	| L1 – L2 | ; Ant – J1		0.5	1	dB
Reverse Isolation	J1 – Ant	35			dB
Group delay Flatness	$\tau_{d,max} - \tau_{d,min}$: Ant – J1			1	ns

(1). Input/Output Impedance = 75Ω for 75Ω connector option.
(2). For performance plots, see LA20RPDC Data Sheet

Re-Radiating Antenna

Electrical Specifications, $T_A = 25^0C$

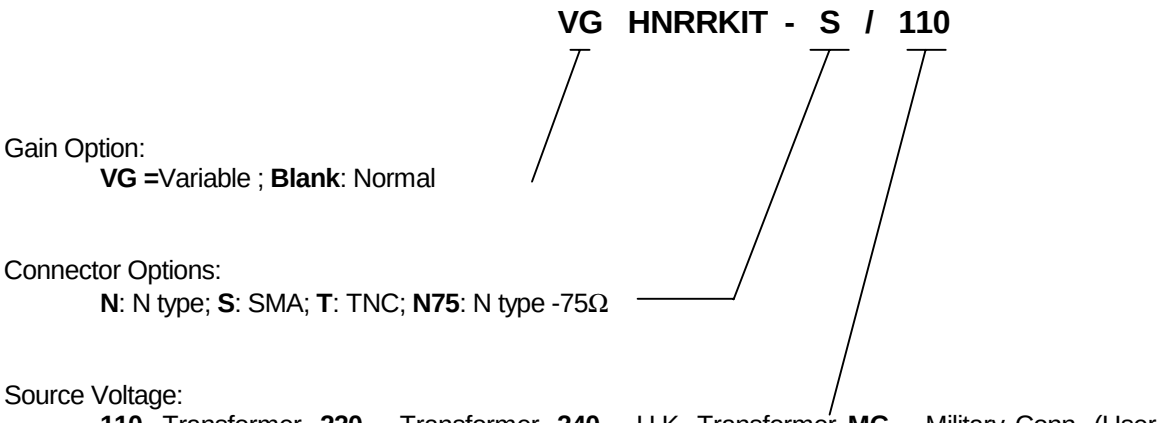
Parameter	Conditions	Min	Typ	Max	Units
Frequency	L1		1.575		GHz
Bandwidth				20	MHz
Impedance			50		Ω
Peak Gain			3		dBic
Output SWR				1.5:1	-
Polarization			RHCP		-

Available Options

Re-Radiating Amp System Power Supply Options		
Source Voltage Options	VOLTAGE INPUT	STYLE
	110VAC	Transformer (Wall Mount)
	220 VAC	Transformer (Wall Mount)
	240 VAC (United Kingdom)	Transformer (Wall Mount)
	Customer Supplied DC 8-28 VDC	Military Style Connector
Re-Radiating Amp Gain Control Options		
Normal Gain	Gain ≥ 20 dB	
Variable Gain	-6 ≤ Gain ≤ 20dB	
Re-Radiating Amp RF Connector Options		
Connector Options	CONNECTOR STYLE	CHARGE
	Type N	NC

	Type SMA	NC
	Type TNC	NC
	Type N - 75Ω	Contact Sales Agent

Part Number



Gain Option:

VG =Variable ; **Blank**: Normal

Connector Options:

N: N type; **S**: SMA; **T**: TNC; **N75**: N type -75Ω

Source Voltage:

110 -Transformer, **220** – Transformer, **240** – U.K. Transformer **MC** – Military Conn. (User supplies DV Voltage)