

**HARRIS CORPORATION
EXPERIMENTAL LICENSE REQUEST
FILE NO. 0579-EX-PL-2011
NOVEMBER 2011**

DESCRIPTION OF EXPERIMENT

Harris Corporation ("Harris") hereby requests an experimental license¹ to allow the placement of a GPS repeater system within a laboratory located on the Palm Bay, Florida campus of Harris. The proposed installation will occur in Building 102, Room 3220 (*See Figure 1*) located at the coordinates of NL 28-01-45, WL 080-36-17.

This authorization will allow Harris to utilize the repeated GPS signal for use by its **AN/PRC-117G Wideband Tactical Radios** and **RF-7800M Multiband Networking Radios** within the laboratory as part of an internal Research and Development effort. Harris is developing software for these Army Tactical Radios that require the use of GPS time and position information. These Army Tactical Radios have an internal GPS receiver that searches for GPS satellite signals, which are not attainable inside of the laboratory due to GPS signal blockage caused by the building. The installation of a GPS repeater will retransmit the GPS signal within the laboratory so that these Army Tactical Radios will receive the repeated GPS signal. No interference with other GPS receivers either within or outside of the building is anticipated, as the building walls as well as the laboratory walls are constructed of steel reinforced concrete, coupled with the fact that the power level of the repeated GPS signal is low. A graphical depiction of the installation is attached hereto as *Figure 2*.

The maximum equivalent isotropically radiated power (EIRP) will be at or below the limit specified in NTIA manual, Sect. 8.3.28, Condition 6. Namely -140 dBm/24 MHz.

Harris acknowledges that all experimental testing conducted will be on a non-interference basis and will utilize its best efforts to avoid and minimize any potential interference. As noted above, Harris believes no interference with other GPS receivers either within or outside of the building will occur owing to the shielding of the building and laboratory walls. However, during any testing Harris will post a sign on doors to the testing area stating ***GPS re-radiator in use and GPS information may be impacted for periods of time.***

Because the equipment is technically incapable of providing station identification, Harris respectfully requests a waiver of the station identification provisions of Section 5.115 of the Commission's rules, 47 C.F.R. § 5.115.

Harris submits that a grant of this experimental license request is necessary and in the public interest because it will allow Harris to further develop and strengthen its radio products used by public safety entities and US troops.

The stop buzzer contact for this project is John Hall, Systems Engineer for Harris, mobile: 321-394-5114, e-mail: jhall@harris.com

¹ Harris filed a duplicate experimental Special Temporary Authority ("STA") request on May 24, 2011 (File No. **0340-EX-ST-2011**). Due to NTIA coordination restrictions involving temporary authorizations for GPS repeater systems, this request is being filed as a permanent experimental authorization.

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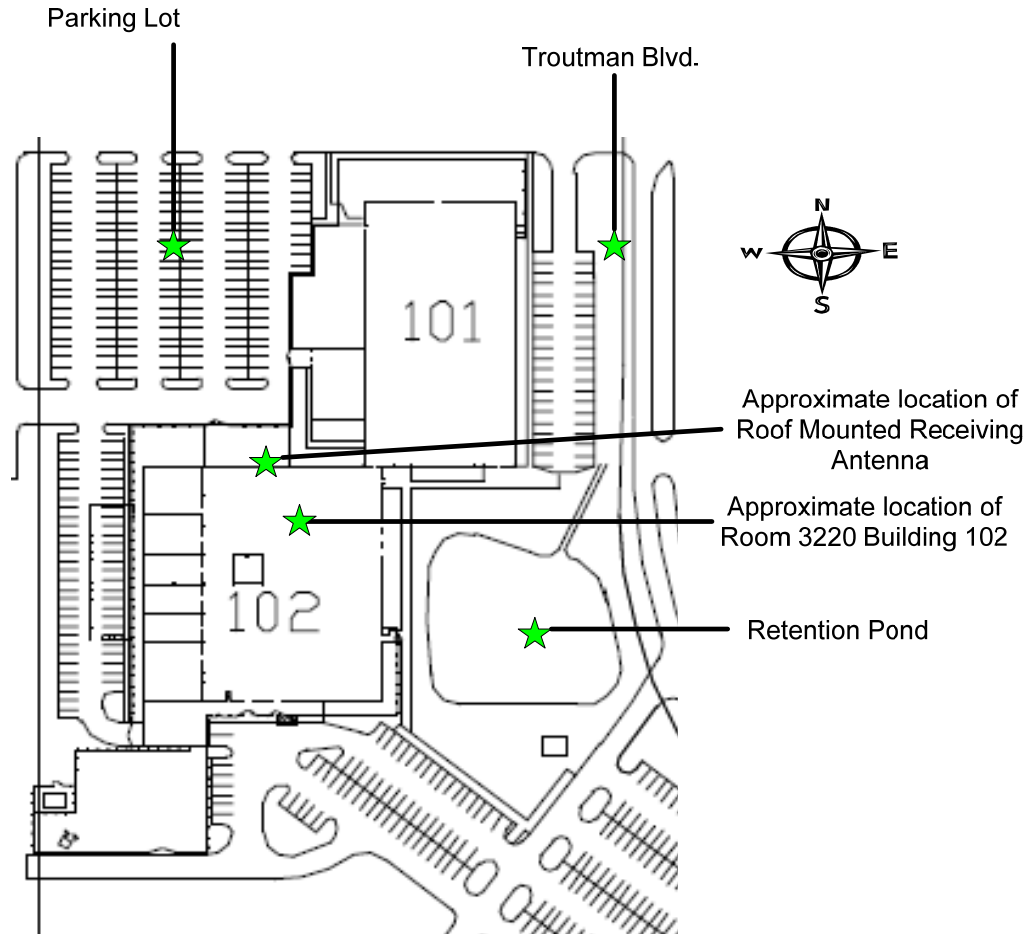


Figure 1 - Building 102 Location Diagram Palm Bay, FL

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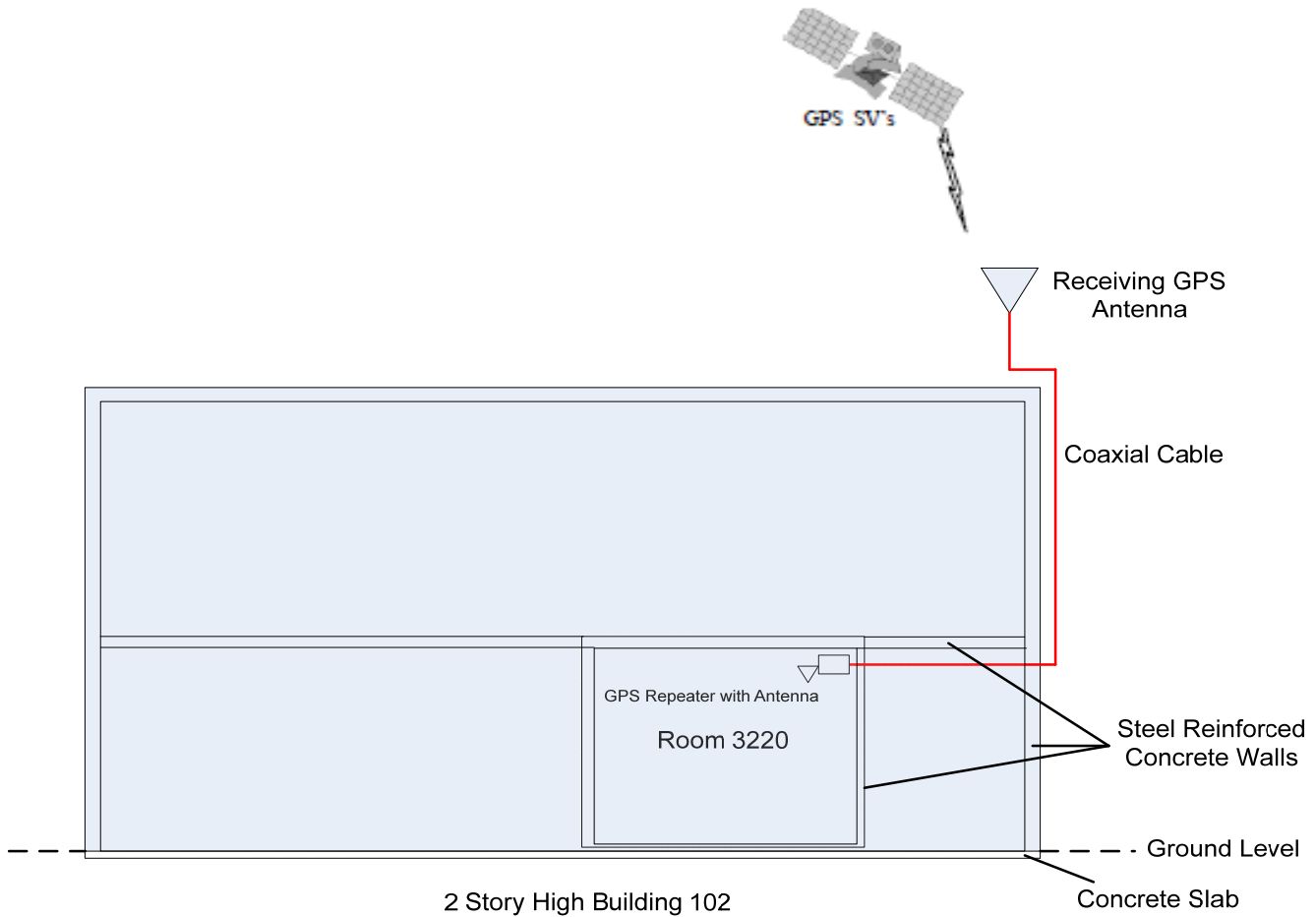


Figure 2 – Laboratory Layout

L1A GPS Antenna

Technical Product Data

Features

- **Outstanding Noise Figure, < 1dB**
- **Excellent Gain, 33dB typ.**
- **Wide Voltage Range, 3-16VDC**
- **Tiny Current Draw, < 20mA**
- **Multiple Connector Options**



Description

The L1A is a high performance L1 GPS antenna that is ideally suited for many applications requiring low noise and excellent gain. The product functions to specifications over the entire operational voltage and temperature range at a minimal current draw. The product includes high frequency selectivity to avoid interference with other nearby transmitters.

The L1A is also available with various common RF connector options in order to meet your specific needs. Please call, fax, email (sales@gpssource.com), or visit our website (www.gpssource.com) for further information on product options, specifications, or to receive an easy to use order sheet.

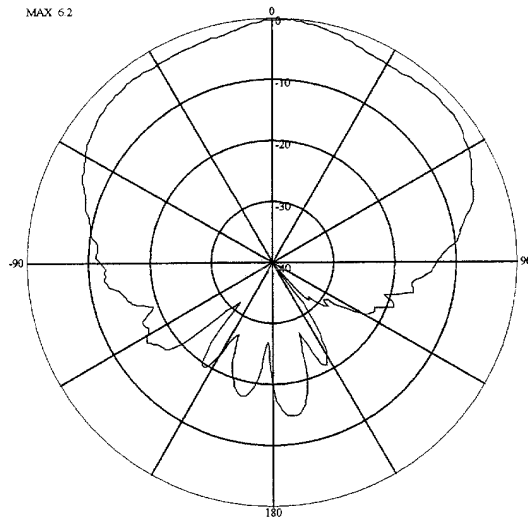
Electrical Specifications, Operating Temperature -40 to 85⁰ C

Parameter	Conditions	Min	Typ	Max	Units
Frequency Range: (Passband)	Ant – Output, VDC = 3 to 16V, Output = 50Ω	1570	1575	1580	MHz
Out Imped.			50		Ω
Gain Element: LNA	Ant Element LNA, VDC = 3 to 16V, Output = 50Ω	32	3 33	3.5 35	dBiC dB
Output SWR	VDC = 3 to 16V, Output = 50Ω			2.5:1	-
Noise Figure	VDC = 3 to 16V, Output = 50Ω		0.8	1.0	dB
Selectivity +/- 50MHz +/- 100MHz	Ant – Output, VDC = 3 to 16V, Output = 50Ω	-22 -34	-24 -35	-25 -37	dB
Req. DC Input V.	DC Input on RF Output Center Conductor	3		16	VDC
Current-Amplified	Amplifier Current Draw, DC Input		17	20	mA
Polarization	Right Hand Circular				

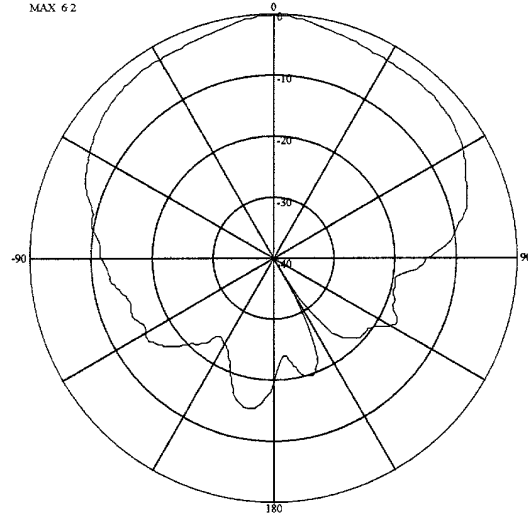
Performance Data:

Far Field Patterns – 1575 MHz

Rotating Linear – (E Cut)

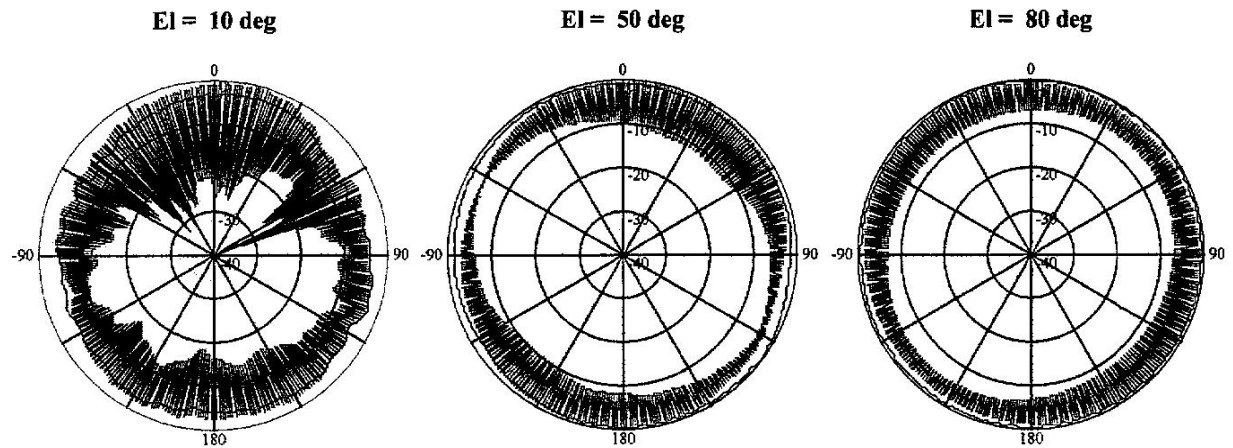


Rotating Linear – (H Cut)

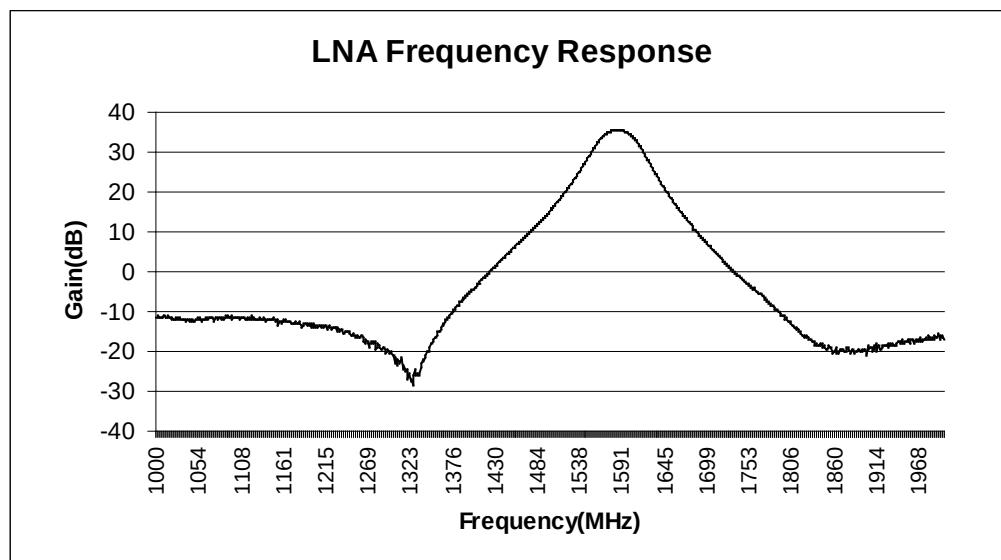


Far Field Patterns – 1575 MHz

Azimuth Cuts:



LNA Frequency Response



Notes:

Frequency selectivity of antenna element adds additional out of band rejection.

Available Options:

Power Supply Options:		
Source Voltage Options	Voltage Input	Type
	DC 3-16 VDC	Input on Center pin of RF Connector.
RF Connector Options:		
Connector Options	Connector Type	Limitations
	N (Female)	
	SMA (Male & Female)	
	TNC (Female)	
	SMB (Female)	Future – not ava. at this time
	SMC (Female)	Future – not ava. at this time
	MCX (Female)	Future – not ava. at this time
Mounting Option:		
	“L” Bracket Pole Mount HW	See Figure below

Notes: None

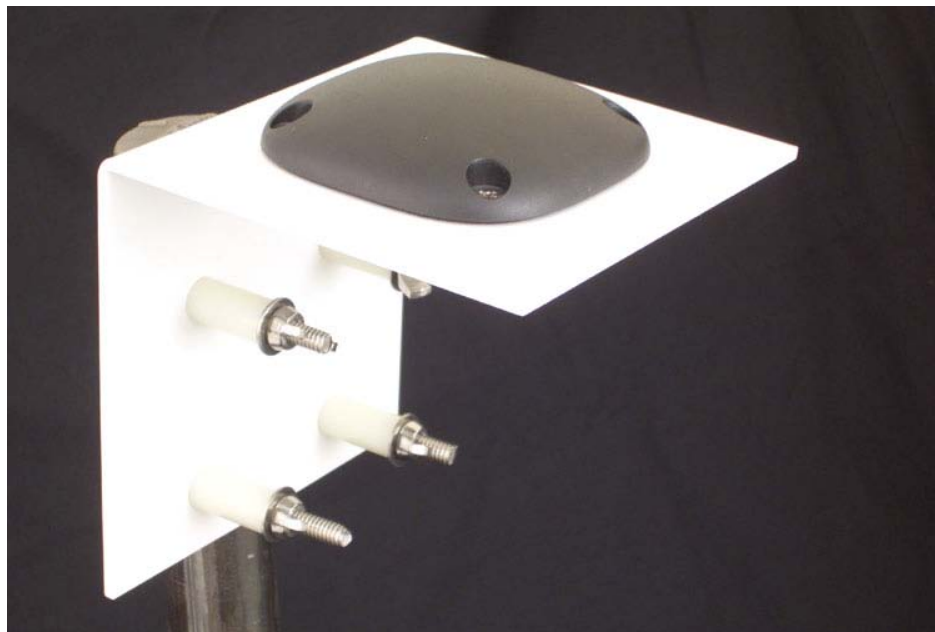


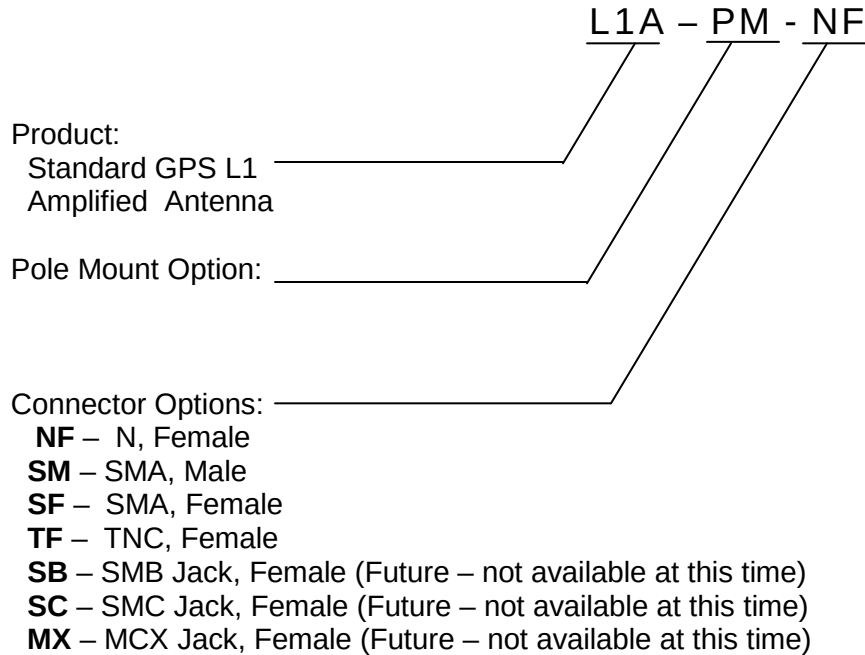
Figure 1. “L” Bracket Pole Mount HW



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Page 5 of 6

Part Number:



For help in creating the part number to meet your exact needs, contact us at Sales@gpssource.com or visit our website at www.gpssource.com .

Mechanical:

