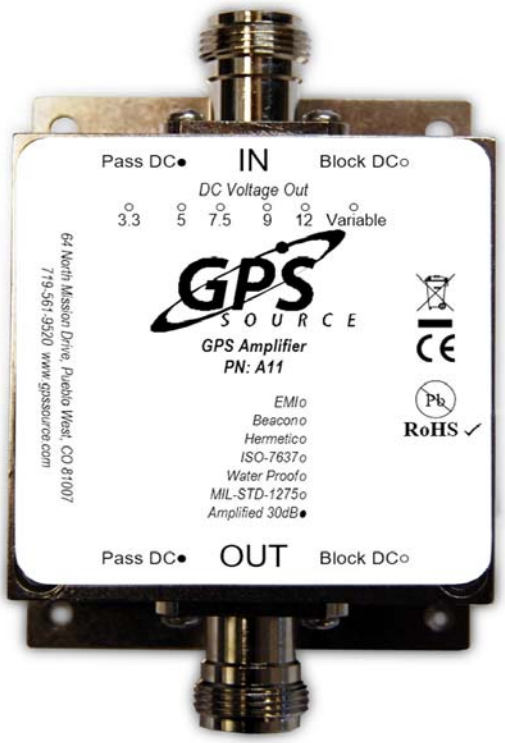
A11

Amplifier

DESCRIPTION

The A11 Amplifier is a single stage gain block which covers the GPS, Galileo, and GLONASS frequencies. It has been designed with the thin link margins of satellite navigation systems in mind.

The A11 features 30dB of gain, and a noise figure of less than 1.8dB. It can be powered externally with an AC input voltage option, a DC input option, or, since the product consumes less than 16mA, it may be powered by the GPS receiver's in-line antenna voltage. Regardless of the input power configuration, the A11 can provide a DC voltage output to power an active GPS antenna.



FEATURES

- Excellent Noise Figure: F < 1.8dB
- Excellent Gain: G = 30dB
- Passes GPS L1/L2/L5 and GNSS frequencies
- Variable Gain Option Available: 0dB to 30dB

OPTIONS

The A11 Amplifier can be custom configured. Please contact GPS Source for further information on product options and specifications.

1 A11 Electrical Specifications

Table 1-1. Electrical Specifications

Operating Temperature -40°C to 85°C

Parameter		Conditions			Min	Typ	Max	Units
Frequency Range		IN – OUT, IN/OUT 50Ω			1.1		1.7	GHz
In/Out Impedance		IN, OUT				50		Ω
Gain (Standard)		IN – OUT, IN/OUT 50Ω			30	32	33	dB
Gain (Custom) -AXX (0 - 29dB)					XX - 1	XX	XX + 1	
Variable Gain (0 - 30dB)		IN – OUT, IN/OUT 50Ω	1575MHz	Min	-2	0	1	dB
				Max	28	30	32	
Input SWR		OUT Port 50Ω					2:1	—
Output SWR		IN Port 50Ω					2:1	—
Noise Figure [3]		IN – OUT, IN/OUT 50Ω					1.8	dB
Gain Flatness		[L1 – L2] IN – OUT, IN/OUT 50Ω					2	dB
Group Delay Flatness		$T_{d,max} – T_{d,min}$, IN – OUT					1	ns
Reverse Isolation		OUT – IN			30			dB
AC IN	110	Wall Mount Transformer				110		VAC
	230	Wall Mount Transformer (Various Intl. plug types available)				230		
DC IN	Pass DC	Non-Powered Configuration, DC Input on OUT port			3		16	VDC
	External Powered	Powered, Mil. Conn. or tinned leads			3[1]		28[2]	
Device Current		Current Consumption of Device (Excludes antenna current draw)					16	mA
Ant/Thru Current	Pass DC	Non-Powered Configuration, DC Input on OUT port					250	mA
	Powered	Powered, Mil. Conn. or Tinned Lead						
Max RF Input		Max RF Input Without Damage					10	dBm

Notes:
1. DC IN for powered option *must* be 2V greater than desired DC voltage out.
2. Maximum DC IN is 35V when 1275 powered option is included.
3. Does not apply to variable gain option at any setting other than maximum gain.

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2 Performance Data

2.1 A11

Figure 2-1. Gain vs Frequency

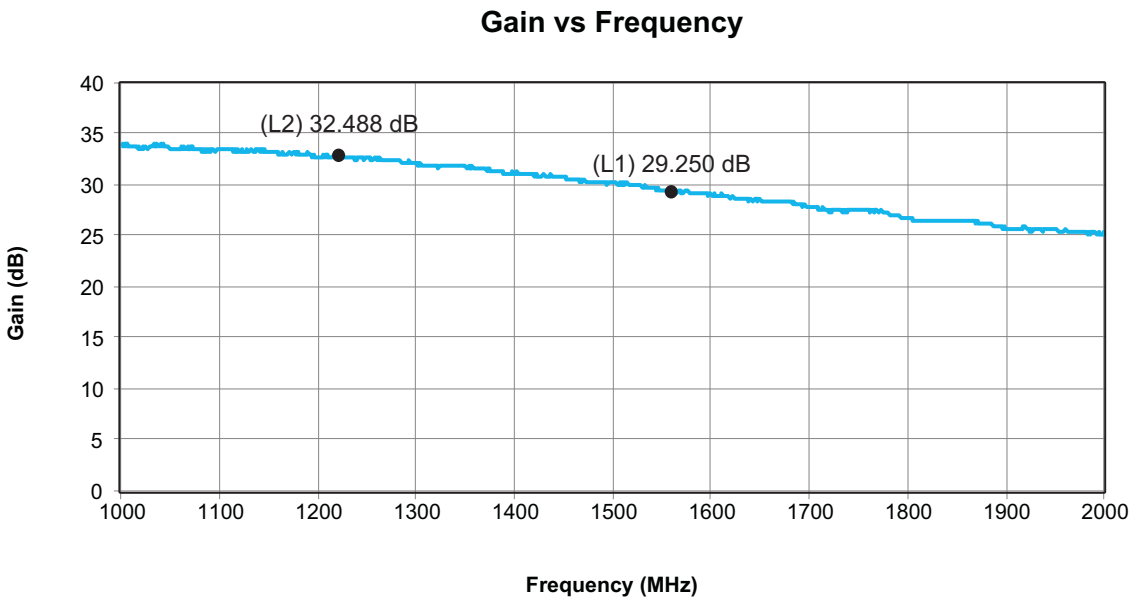
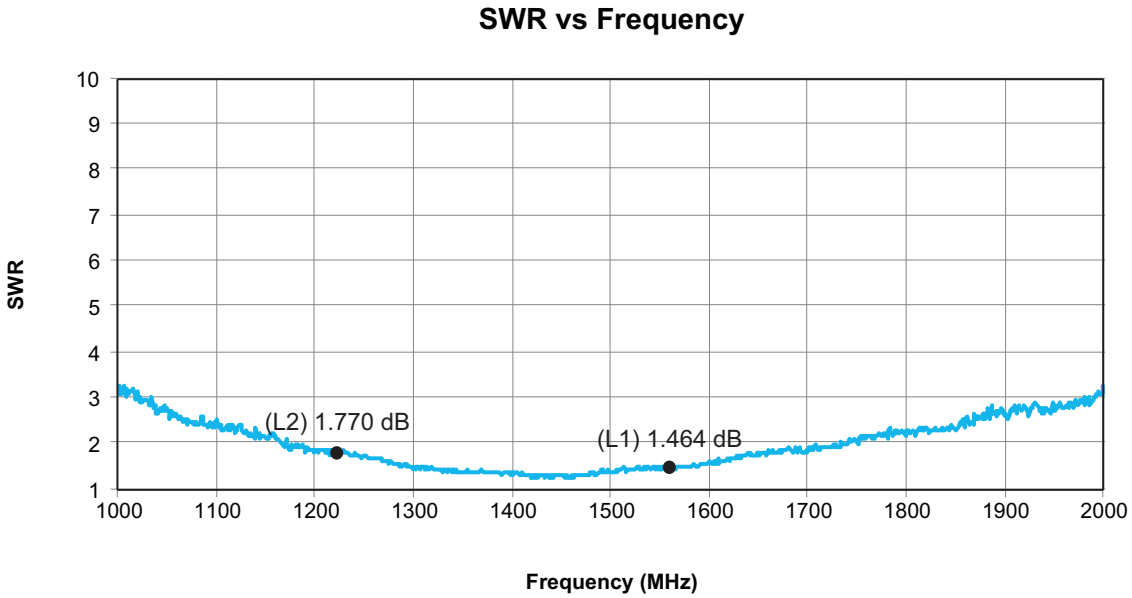


Figure 2-2. SWR vs Frequency



3 Product Options

Table 3-1. A11 Available Options

Power Supply		
External AC Power	**Voltage Input**	**Type**
	110VAC	Wall Mount Transformer
	230/240 VAC	Wall Mount Transformer
External DC Power	PDC	Tinned Leads
	PM/PMS	Military Style Connector or Tinned Leads
	PMS38999	Military Style Connector or Tinned Leads
Output Voltage [1]	**DC Voltage Out**	
	3.3	
	5.0	
	12.0	
	BDC (Blocked DC)	
RF Connector		
Connector	**Connector Type**	**Limitations**
	N (Female/Male)	N/A
	SMA (Female/Male)	N/A
	TNC (Female/Male)	N/A
Housing		
Housing	**Housing Type**	**Limitations**
	Standard	None
Port [1]		
Configuration	Standard	Pass DC Input and Output
	Special	Block DC Input and/or Block DC Output
Amplification		
Gain	Standard	30dB
	Custom	1-29dB

Note: 1. Powered Option: Any or all RF ports (input or output) can be DC blocked or can pass the powered DC voltage.

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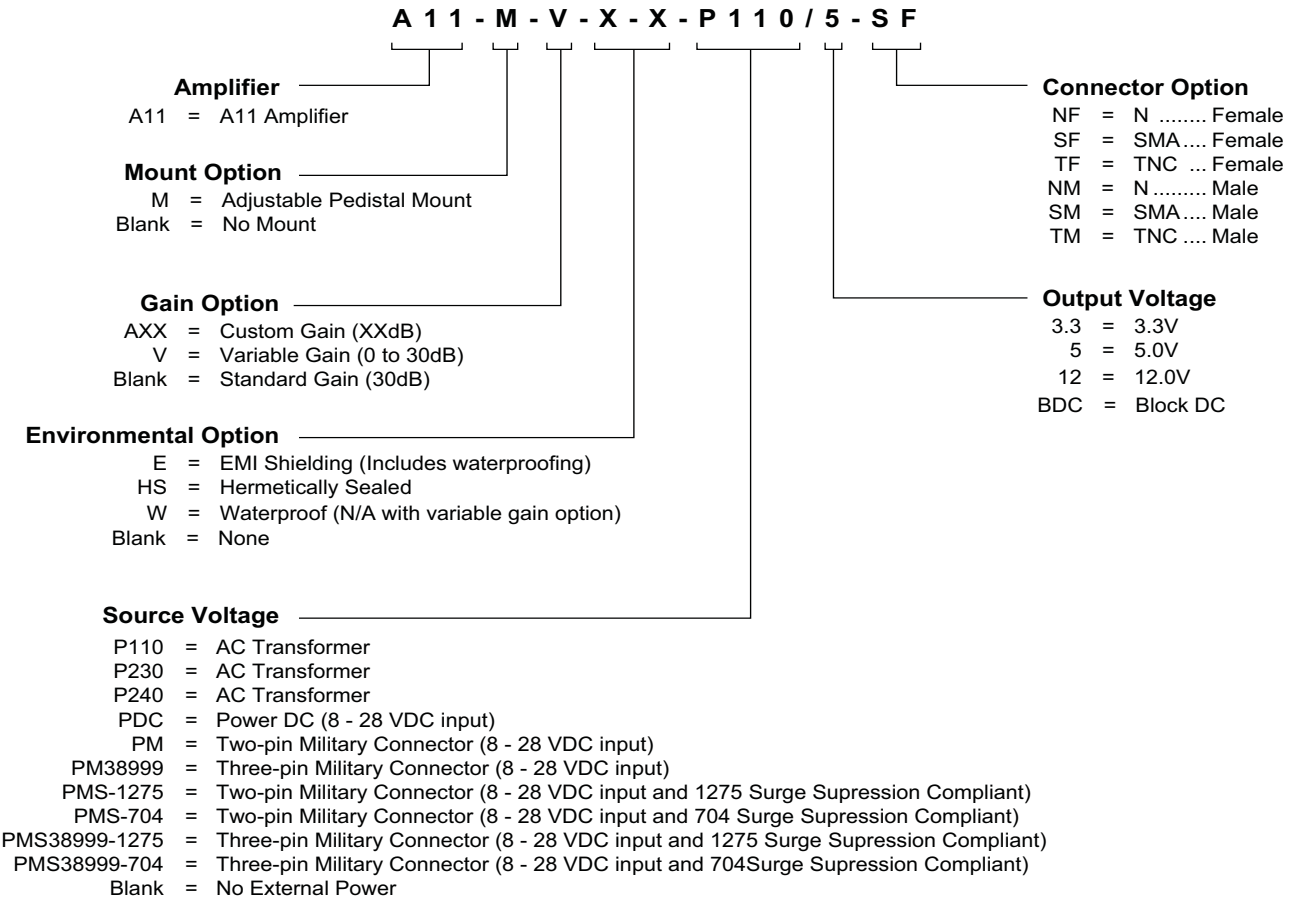
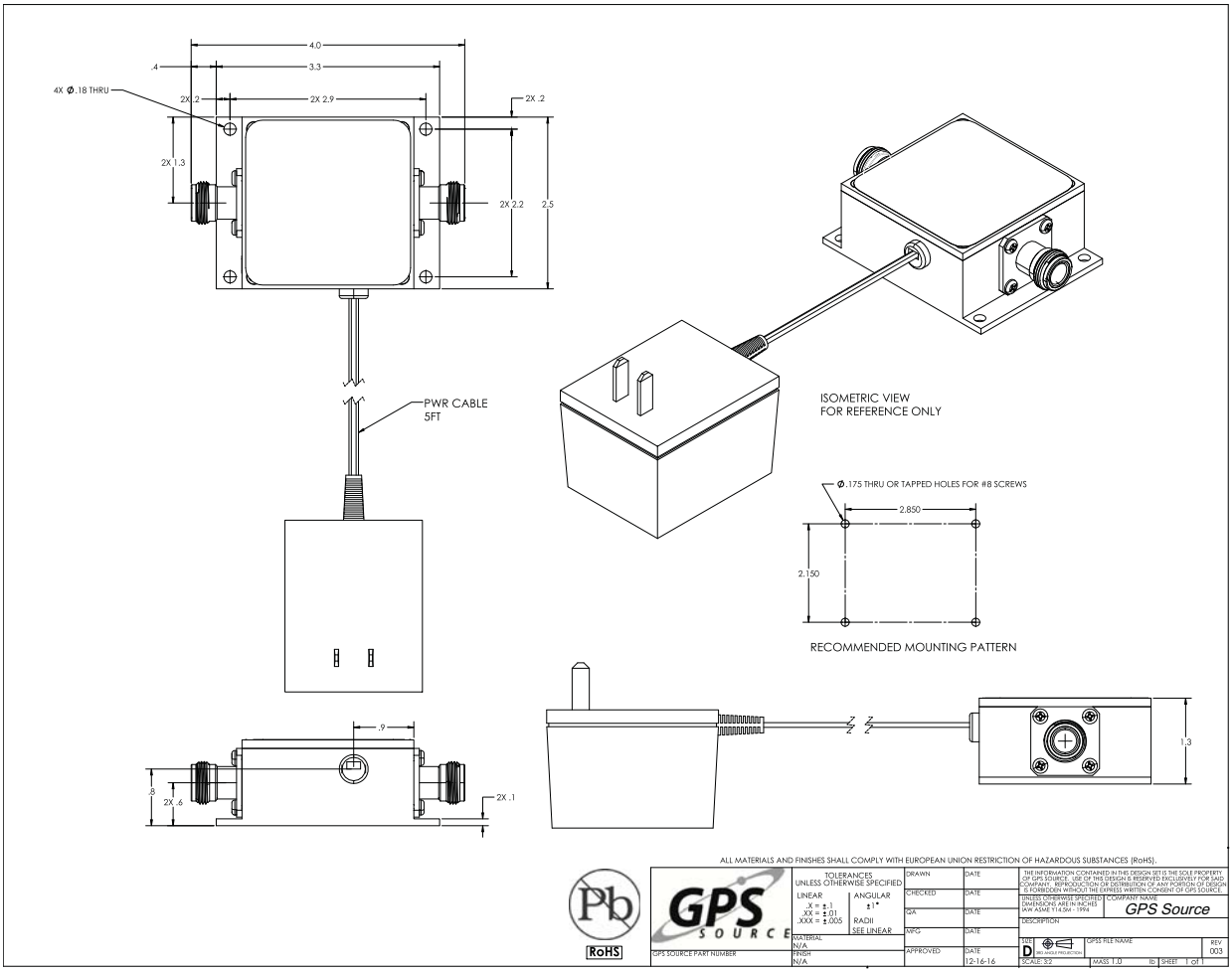
4 Product Code Decoder



1. Waterproof option is not available with variable gain option or AC power option/DC power option (PDC)
2. Waterproof, EMI Shielding and Hermetically Sealed Options are only available with the Power Mil DC power option.

5 Mechanical Drawing

A11 Amplifier — FAM-AAA-AAX-BBZ



Note: 1. Power supply is a standard option for use with repeater or repeater assembly. When used as a line amplifier (no external power) consider the GPS Source amplifier with mini housing, A11M.

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