



GPS LIVE INSIDE

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.

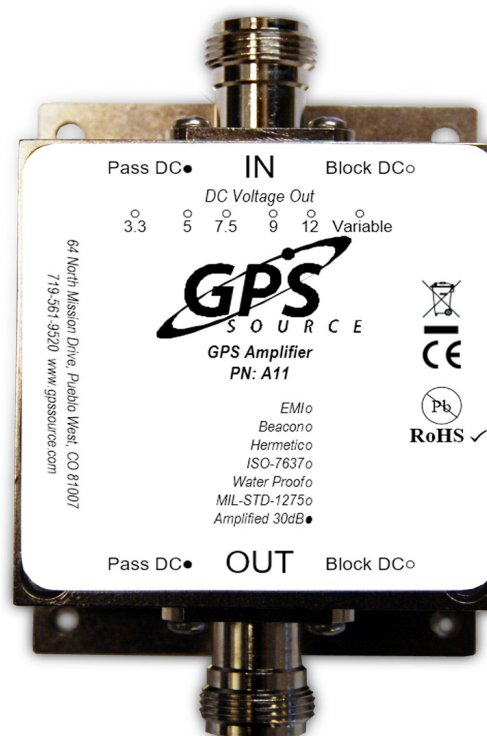
The A11 features 30dB of Gain, and a noise figure of less than 1.8dB. It can be powered externally with an AC input voltage option, a DC input option, or, since the product consumes less than 16mA, it may be powered by the GPS receiver's antenna voltage output. Regardless of the input power configuration,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

## FEATURES

- Excellent Noise Figure:  $F < 1.8\text{dB}$
- Excellent Gain:  $G = 30\text{dB}$
- Passes GPS L1/L2/L5, Galileo, GLONASS L1/L2, and Compass
- 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.



## A11 Amplifier Data Sheet

059-FAM-AAA-AAX-BBZ-004

03/10/2016

www.gpssource.com

AS9100C:2009 and ISO 9001:2008 Compliant Company

# 1 A11 Electrical Specifications

**Table 1-1. Electrical Specifications**

Operating Temperature -40°C to 85°C

Parameter		Conditions	Min	Typ	Max	Units		
<b>Frequency Range</b>		IN – OUT, IN/OUT 50Ω	1		2	GHz		
<b>In/Out Impedance</b>		IN, OUT		50		Ω		
<b>Gain</b>		IN – OUT, IN/OUT 50Ω						
		1227MHz	30	32	33	dB		
		1575MHz	30	32	33			
<b>Variable Gain</b>	<b>Option</b>	IN – OUT, IN/OUT 50Ω	1227MHz	Min	-4	-3	-1	dB
				Max	28	30	32	
			1575MHz	Min	-2	0	1	
				Max	28	30	32	
<b>Input SWR</b>		OUT Port 50Ω			2:1	—		
<b>Output SWR</b>		IN Port 50Ω			2:1	—		
<b>Noise Figure</b> <sup>(4)</sup>		IN – OUT, IN/OUT 50Ω			1.8	dB		
<b>Gain Flatness</b>		[L1 – L2] IN – OUT, IN/OUT 50Ω			2	dB		
<b>Group Delay Flatness</b>		T <sub>d,max</sub> – T <sub>d,min</sub> , IN – OUT			1	ns		
<b>Reverse Isolation</b>		OUT – IN	30			dB		
<b>AC IN</b>	110	Wall Mount Transformer <sup>(3)</sup>		110		VAC		
	220/240	Wall Mount Transformer (Various Intl. plug types available) <sup>(3)</sup>		230				
<b>DC IN</b>	Pass DC	Non-Powered Configuration, DC Input on OUT port	3		16	VDC		
	Powered	Powered, Mil. Conn. Or Quick Connect Option	3 <sup>(1)</sup>		28 <sup>(2)</sup>			
<b>Device Current</b>		Current Consumption of Device (excludes Ant. Cur.)			16	mA		
<b>Ant/Thru Current</b>	Pass DC	Non-Powered Configuration, DC Input on OUT port			250	mA		
	Powered	Powered, Mil. Conn. or Tinned Lead			(3)			
<b>Max RF Input</b>		Max RF Input Without Damage			10	dBm		

- Notes:
- DC IN for powered option *must* be 2V greater than desired DC Voltage Out.
  - Maximum DC IN is 35V when 1275B powered option is included.
  - Maximum combined DC current draw out all ports of the device is a function of the DC input voltage and desired DC output voltage according to the following:  

$$I_{out} \leq 1.4 / (V_{DC\ IN} - V_{DC\ OUT}) - 0.007A.$$
For powered option with a wall mount transformer: (Voltage Input = 110/220/240VAC), V<sub>DC IN</sub> is 9V.
  - Does not apply to variable gain option at any setting other than maximum gain.

## 2 Performance Data

### 2.1 A11

Figure 2-1. Gain vs Frequency

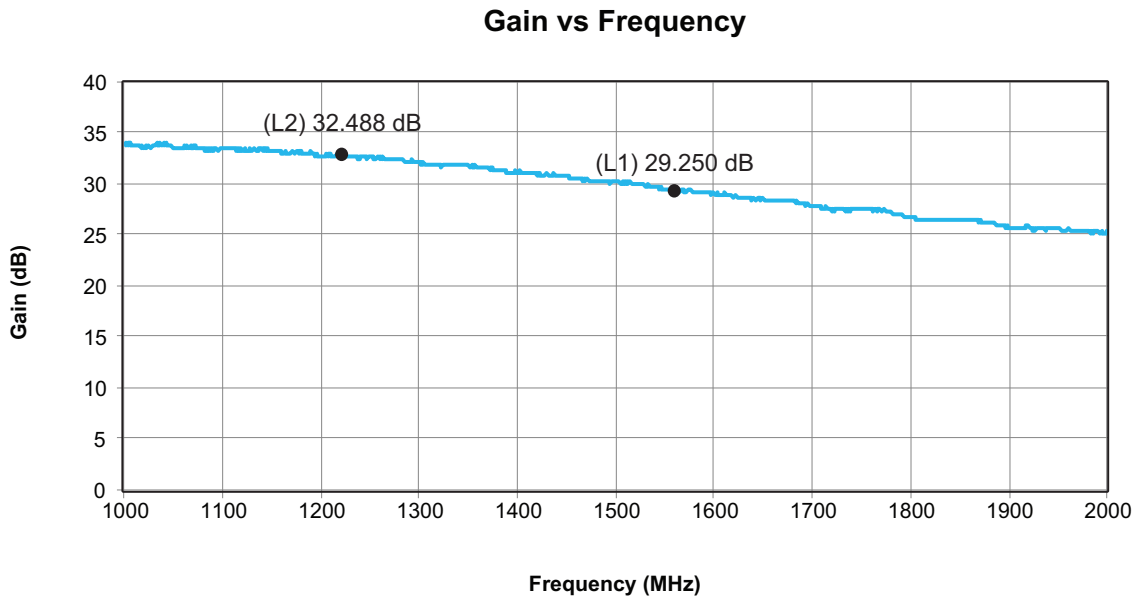
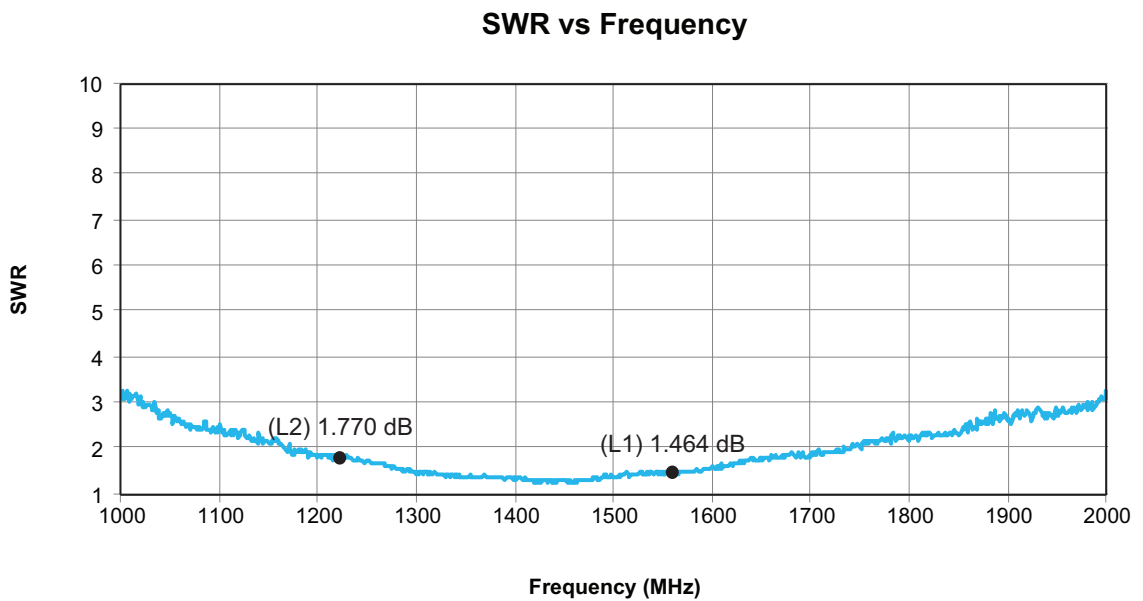


Figure 2-2. SWR vs Frequency



### 3 Product Options

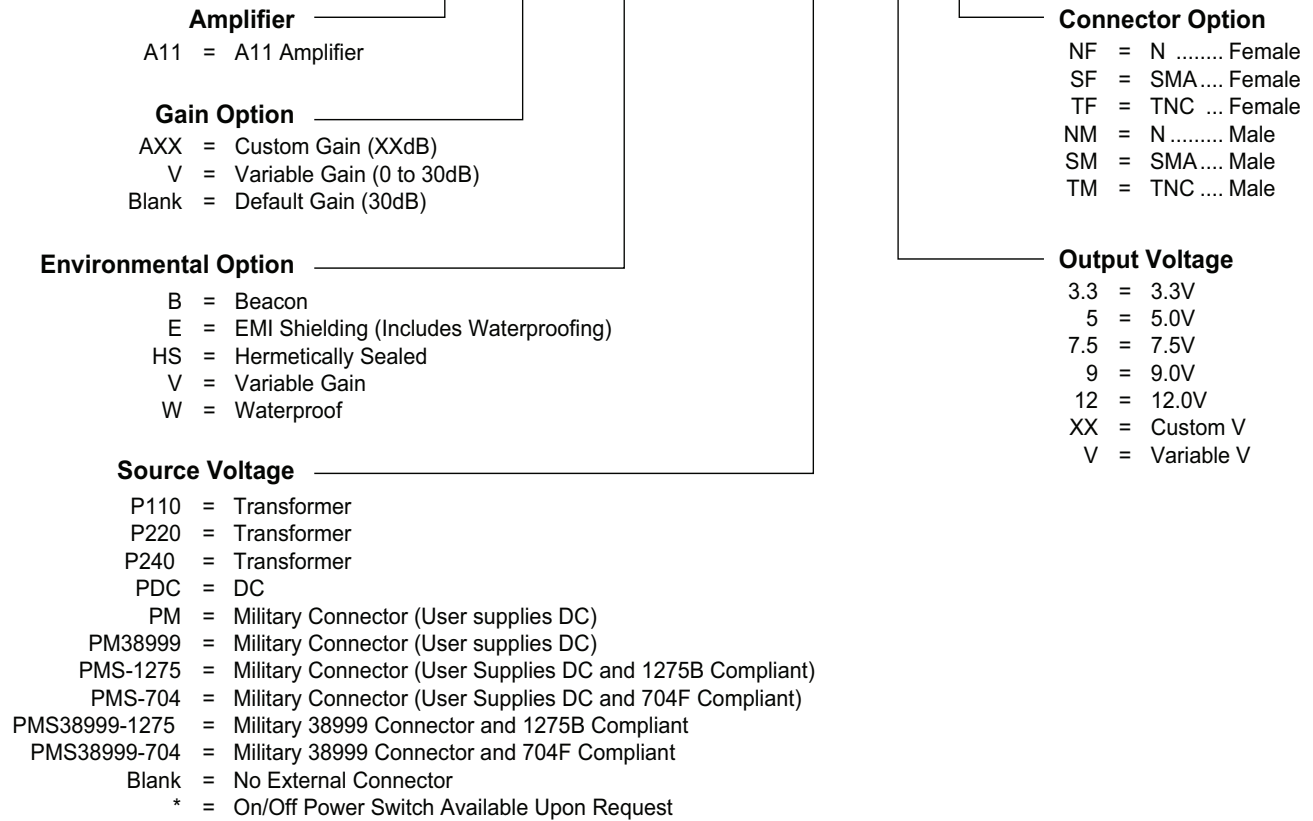
Table 3-1. A11 Available Options

Power Supply		
Source Voltage	Voltage Input	Type
	110VAC	Wall Mount Transformer
	220VAC	Wall Mount Transformer
	240VAC (U.K.)	Wall Mount Transformer
	PDC 5VDC to 28VDC or PM	Military Style Connector or Tinned Leads
Output Voltage <sup>(1)</sup>	DC Voltage Out	
	3.3	
	5.0	
	7.5	
	9.0	
	12.0	
	Variable (3V to 12V)	
	Custom	
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 <sup>(1)</sup>		
Configuration	Standard	Pass DC Input and Output
	Special	Block DC Input or Block DC Output (Cannot Block Both)

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

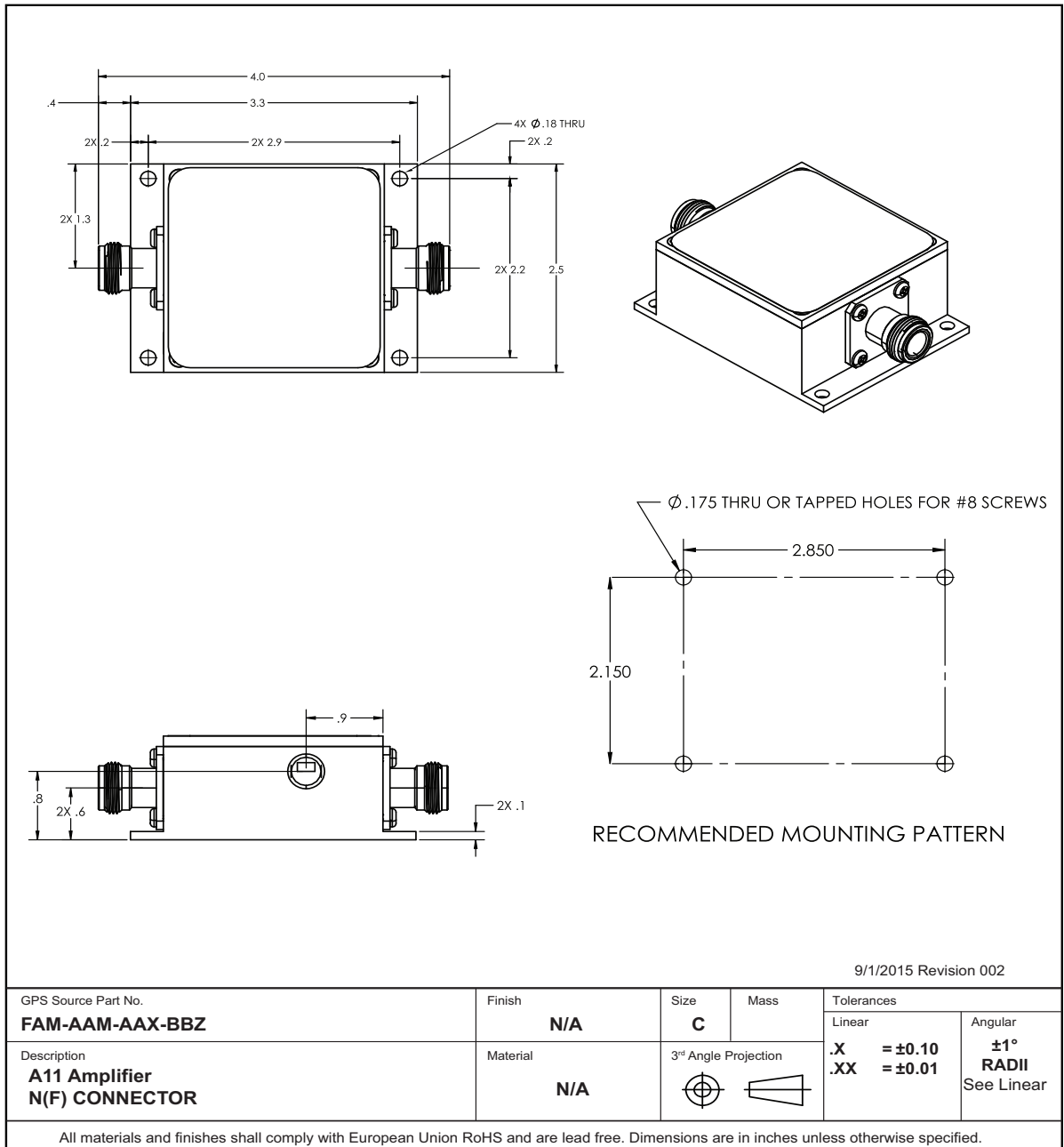
## 4 Product Code Decoder

**A 1 1 - A - X - X - X - X - P 1 1 0 / 5 - S F**



# 5 Mechanical Drawing

## A11 Amplifier — FAM-AAA-AAX-BBZ





**GPS LIVE INSIDE**

**A11 Amplifier Data Sheet**

059-FAM-AAA-AAX-BBZ-004

Page 7 of 7, 03/10/2016

64 N. Mission Drive  
Pueblo West, CO 81007  
Phone: (+1)(719) 561.9520  
Fax: (+1)(719) 565.0890  
[techsales@gpssource.com](mailto:techsales@gpssource.com)  
[www.gpssource.com](http://www.gpssource.com)

AS9100C:2009 and ISO 9001:2008 Compliant Company



© 2014 GPS Source, Inc. All rights reserved.

GPS Source, Inc., GPS Live Inside, GPS Source logo, and other GPS Source, Inc. products, brands, and trademarks mentioned in this document are property of GPS Source, Inc. and/or its affiliates in the United States and/or other countries. Other products, brands, and trademarks are property of their respective owners/companies. Any rights not expressly granted herein are reserved.

DISCLAIMER: The materials in this document could include inaccuracies or typographical errors and are subject to change at any time. The materials are provided "as is" without warranty of any kind. To the maximum extent permitted by applicable law, GPS Source, Inc. and its suppliers hereby disclaim all warranties, either expressed or implied, and conditions with respect to the materials, their quality, performance, suitability, merchantability, fitness for a particular purpose, title, and non-infringement. LIMITATION OF LIABILITY: IN NO EVENT WILL GPS SOURCE, INC. AND ITS SUPPLIERS BE LIABLE FOR INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, WHETHER IN AN ACTION OF CONTRACT OR TORT, ARISING OUT OF THE USE OR INABILITY TO USE THE MATERIALS AVAILABLE IN THIS DOCUMENT, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. IN PARTICULAR AND WITHOUT LIMITATION, GPS SOURCE, INC. SHALL HAVE NO LIABILITY FOR ANY LOSS OF USE, DATA, INCLUDING THE COSTS OF RECOVERING SUCH DATA, OR PROFITS.