



GPS LIVE INSIDE

A114M

Mini Amplifier

DESCRIPTION

The A114M Mini Amplifier is a single stage gain block which covers the GPS, Galileo, and GLONASS frequencies. It is designed with the thin link margins of satellite navigation systems in mind.

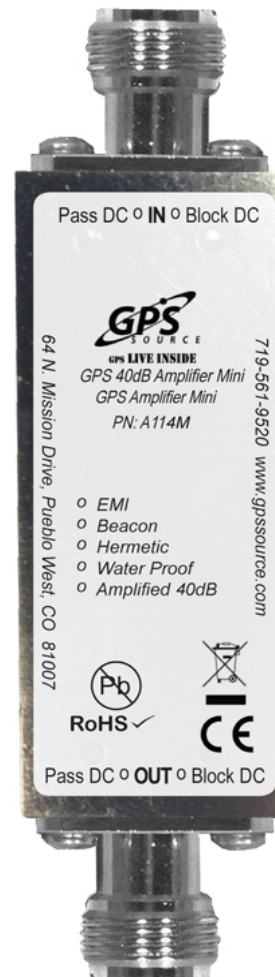
The A114M features 40dB of gain, and a noise figure of less than 2dB. Since it consumes less than 20mA, it can be powered by the GPS receiver's antenna voltage output.

FEATURES

- Excellent Gain: 40dB
- Passes GPS, Galileo, GLONASS L1/L2
- Variable Gain Option Available: 0dB to 40dB

OPTIONS

The A114M Mini Amplifier can be custom configured. Please contact GPS Source for further information on product options and specifications.



1 A114M 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 | | 2 | GHz | | |
| In/Out Impedance | IN, OUT | | 50 | | Ω | | |
| Gain | IN – OUT, IN/OUT 50Ω | 1227MHz | 38 | 40 | 42 | dB | |
| | | 1575MHz | 30 | 40 | 42 | | |
| Variable Gain Option⁽¹⁾ | IN – OUT, IN/OUT 50Ω | 1227MHz | Min | -7 | -5 | -3 | dB |
| | | | Max | 37 | 38 | 39 | |
| | | 1575MHz | Min | -7 | -5 | -3 | |
| | | | Max | 37 | 38 | 39 | |
| Input 1dB Comp. | IN – OUT, IN/OUT 50Ω | -41 | | | dB | | |
| Input IP₃ | IN – OUT, IN/OUT 50Ω | -33 | | | dB | | |
| Input SWR⁽¹⁾ | OUT Port 50Ω | | | 2.5:1 | — | | |
| Output SWR⁽¹⁾ | IN Port 50Ω | | | 2.5:1 | — | | |
| Noise Figure⁽²⁾ | IN – OUT, IN/OUT 50Ω | | | 2 | dB | | |
| Gain Flatness | [L1 – L2] IN – OUT, IN/OUT 50Ω | | | 4 | dB | | |
| Group Delay Flatness | T _{d,max} – T _{d,min} , IN – OUT | | | 1 | ns | | |
| Reverse Isolation | OUT – IN | 40 | | | dB | | |
| DC IN | DC Input on IN/OUT port | 3 | | 16 | VDC | | |
| Device Current | Current Consumption of Device (excludes Ant. Cur.) | | | 20 | mA | | |
| Ant/Thru Current | Non-Powered Configuration, DC Input on OUT port | | | 250 | mA | | |
| Max RF Input | Max RF Input Without Damage | | | 10 | dBm | | |

- Notes: 1. Performance guaranteed for N(F) connectors.
 2. Does not apply to variable gain option at any setting other than maximum gain.

2 Performance Data

2.1 Default

Figure 2-1. Frequency Response

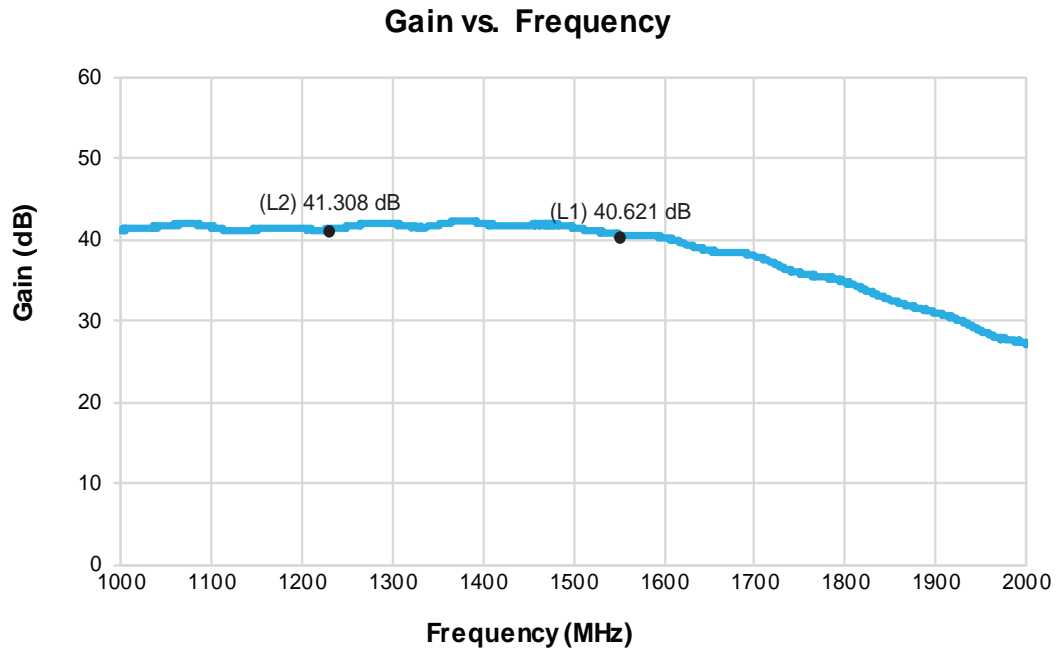
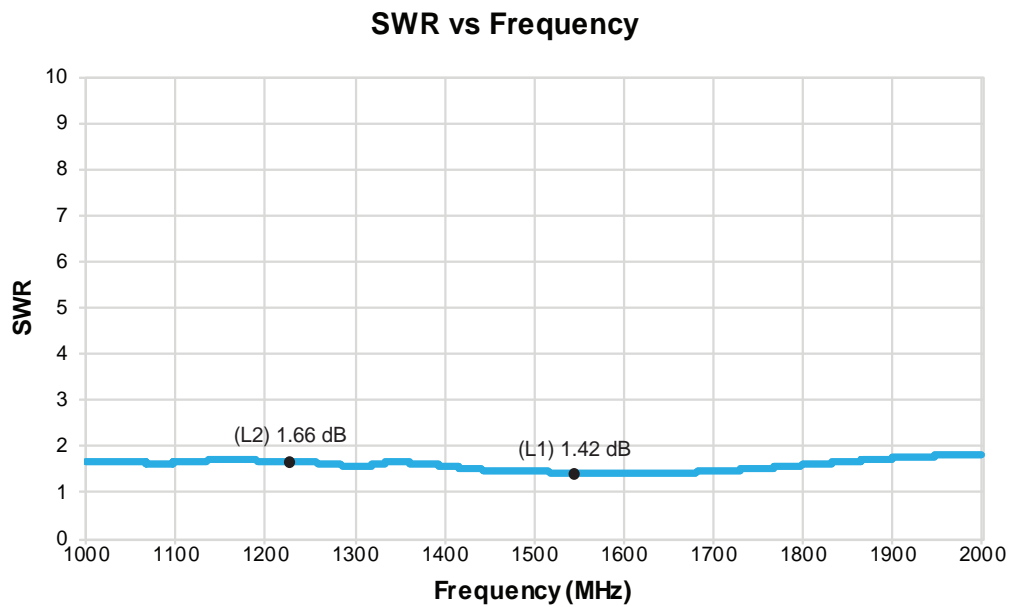


Figure 2-2. SWR



2.2 Variable Gain Option

Figure 2-3. Variable Gain Frequency Response

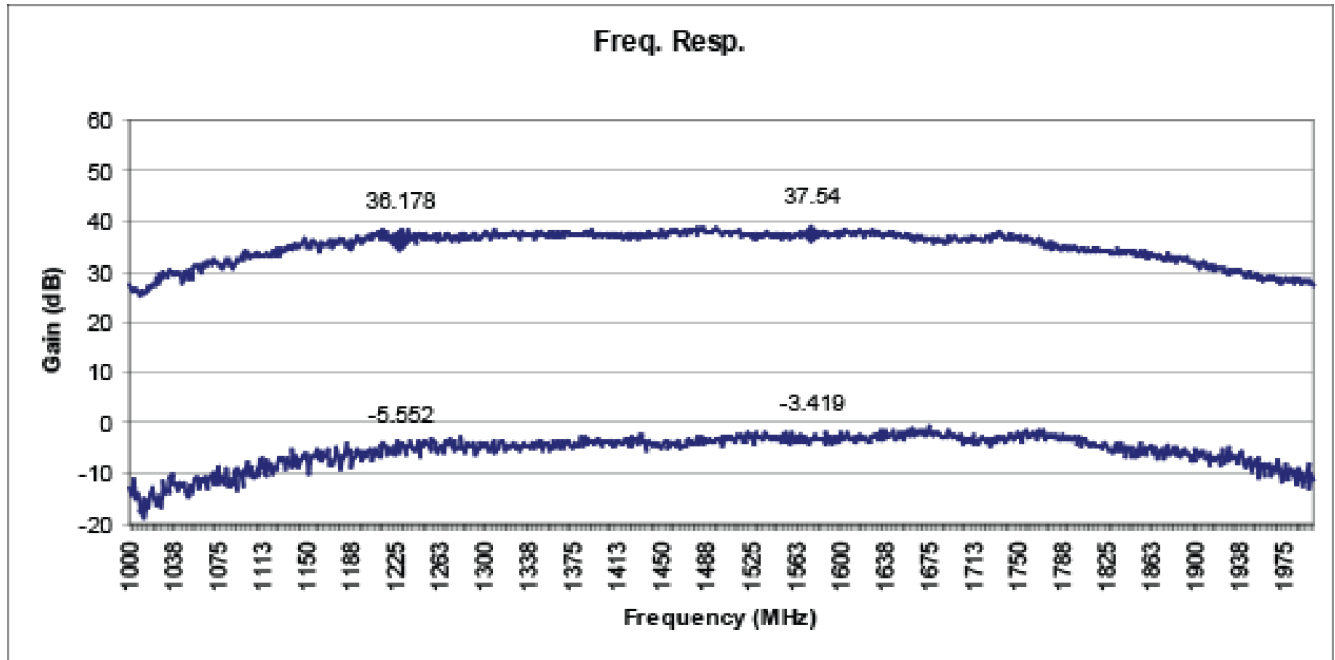
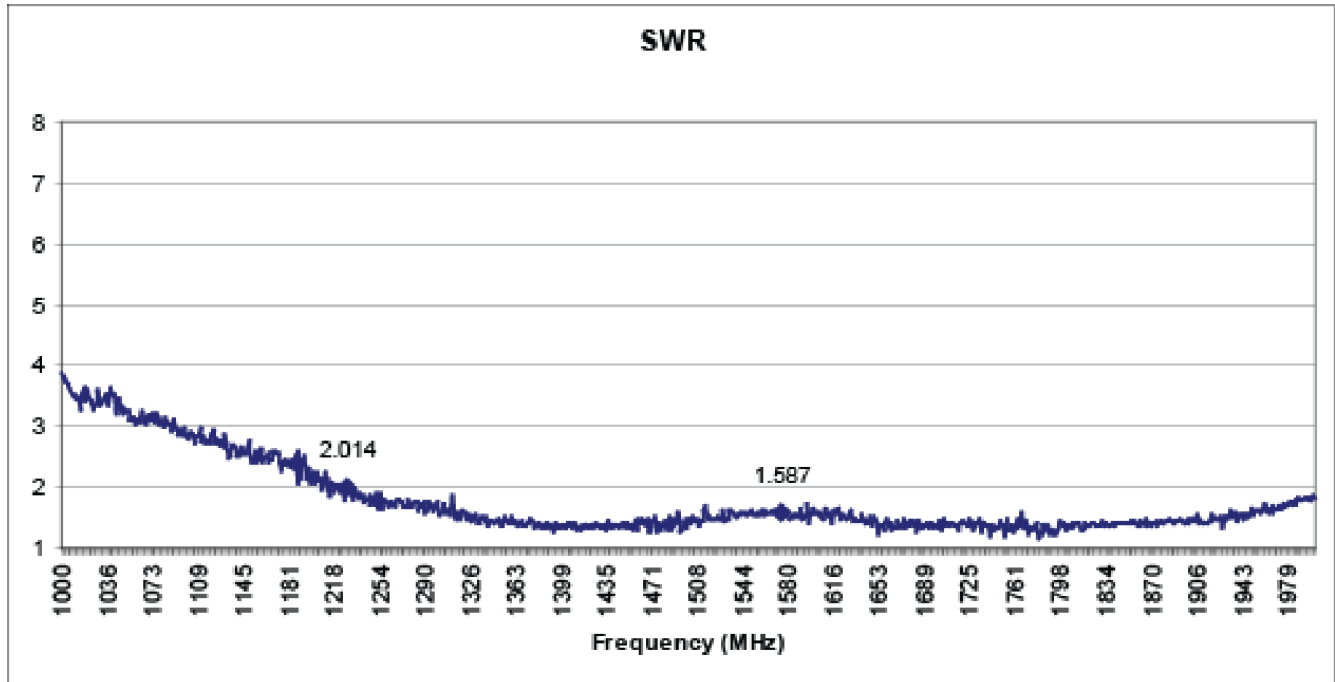


Figure 2-4. Variable Gain SWR

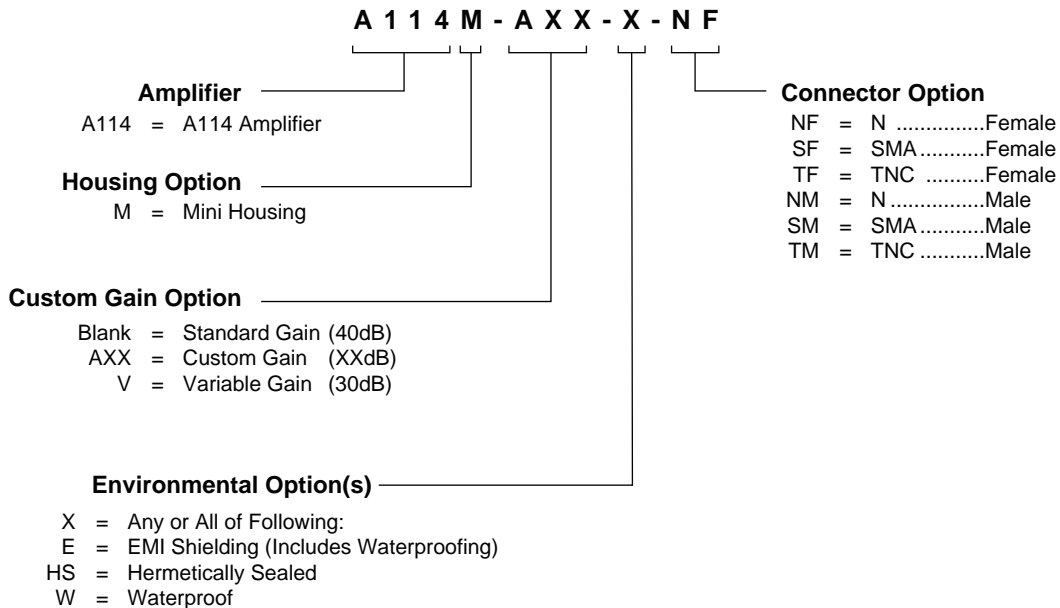


3 Product Options

Table 3-1. A114M Available Options

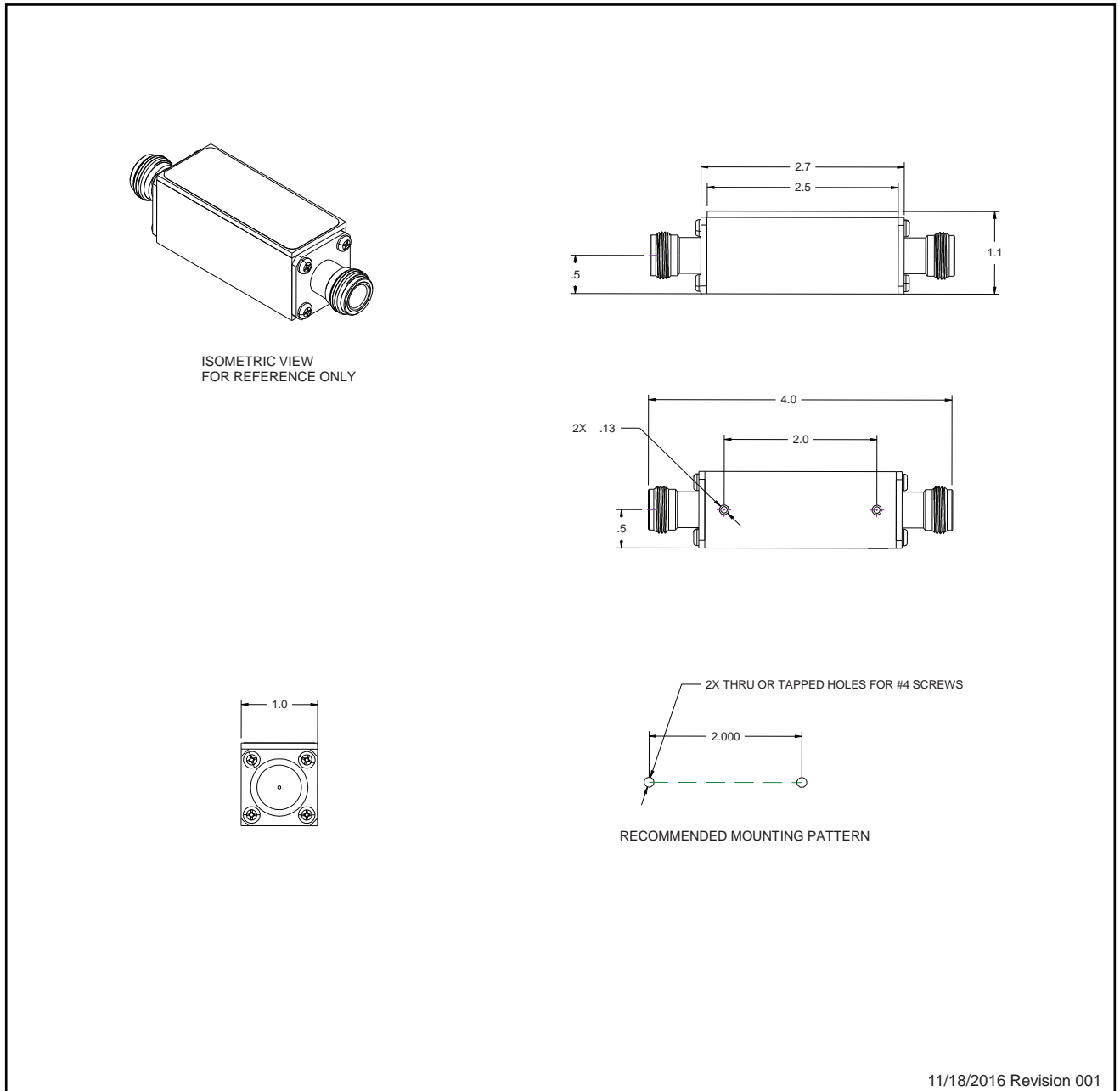
| RF Connector | | |
|------------------------|-------------------|--|
| Connector | Connector Type | Limitations |
| | N (Female/Male) | N/A |
| | SMA (Female/Male) | N/A |
| | TNC (Female/Male) | N/A |
| Housing | | |
| Housing | Housing Type | Limitations |
| | Mini | None |
| | Tiny | SMA Only |
| Ports | | |
| Standard Configuration | Pass DC | OUT Port Passes DC to Pass DC IN Port |
| Special Configuration | DC Blocked | OUT Port Passes DC to DC Blocked IN Port |

4 Product Code Decoder



5 Mechanical Drawing

A114M Mini Amplifier — FAM-ABM-AAX-AGZ



| | | | | | |
|--|------------------------|--------------------------------------|------|---|---|
| GPS Source Part No. FAM-ABM-AAX-AGZ | Finish N/A | Size C | Mass | Tolerances | |
| Description A114M Standard Mini Amplifier | Material N/A | 3 rd Angle Projection | | Linear .X = ± 0.100 .XX = ± 0.010 | Angular $\pm 1^\circ$ RADII See Linear |
| All materials and finishes shall comply with European Union RoHS and are lead free. Dimensions are in inches unless otherwise specified. | | | | | |





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A114M Mini Amplifier Data Sheet

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