

A114T

Tiny Amplifier

Description

The A114T Tiny Amplifier is a single stage line amplifier covering the GPS, Galileo, and GLONASS frequencies designed with the thin link margins of satellite navigation systems in mind. The A114T features 40dB of gain, and a noise figure of less than 2dB. Since the A114T consumes less than 20mA, it is easily powered by any GPS receiver's antenna voltage. The A114T is an inline device designed to strengthen the signal to more enable distribution of L-band signals to a multitude of downstream devices.

Features

- Passes GPS L 1/L2/L5, Galileo, GLONASS, BeiDou (entire L-band)
- RoHS, CE and WEEE Compliant

Options

- Filtered Option Available
- Variable Gain Option Available: -2dB to 38dB
- EMI shielding, waterproofing, hermetically sealed

NOTE: The A114T Tiny Amplifier can be custom configured. Please contact GPS Source for further information on product options and specifications.



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1. Electrical Specifications

Operating Temperature -40°C to 85°C

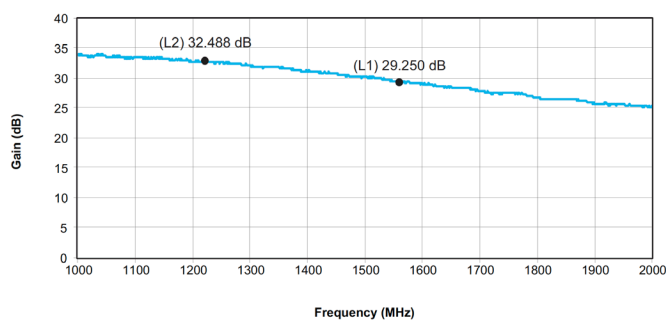
Parameter	Conditions	Min	Typical	Max	Units
Frequency Range	IN – OUT, IN/OUT 50 Ω	1.1		1.7	GHz
In/Out Impedance	IN, OUT		50		Ω
Gain (Standard)	IN – OUT, IN/OUT 50 Ω	38	40	42	dB
Gain (Custom) -AXX (1 - 39 dB)		XX-2	XX	XX+2	
Variable Gain Option	IN – OUT, IN/OUT 50 Ω	-4	-2	0	dB
		35	36	38	
Filtered Option ⁽¹⁾	IN – OUT, IN/OUT 50 Ω	36	38	40	dB
		Reject (-50MHz)	-30		
		Reject (+50MHz)	-42		
Input 1dB Comp.	IN – OUT, IN/OUT 50 Ω	-41			dB
Input IP ₃	IN – OUT, IN/OUT 50 Ω	-33			dB
Input SWR	OUT Port 50 Ω			2.5:1	dB
Output SWR	IN Port 50 Ω			2.5:1	dB
Noise Figure ⁽²⁾	Antenna Any Port, Unused Ports 50 Ω			2	dB
Gain Flatness	[L1 – L2] Antenna Any Port, Unused Ports 50 Ω			2	dB
Group Delay Flatness	$\tau_{d,max} - \tau_{d,min}$, IN - OUT			3	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 antenna current draw)			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. Rejection figures are relative to passband.
2. Does not apply to variable gain option at any setting other than maximum gain.

2. Performance Data

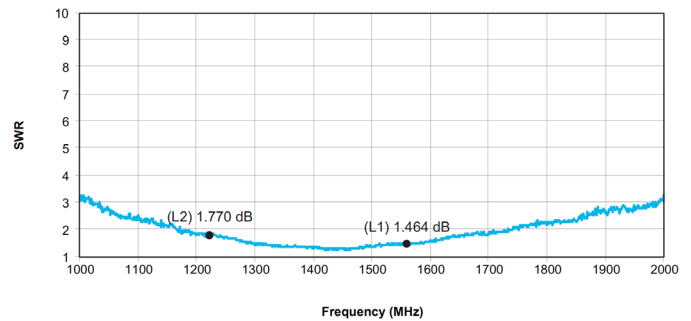
2.1 Unfiltered

■ Gain vs. Frequency



2.1 Unfiltered SWR

■ SWR vs. Frequency



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2.2 Filtered Option

Figure 2-3. Filtered Frequency Response

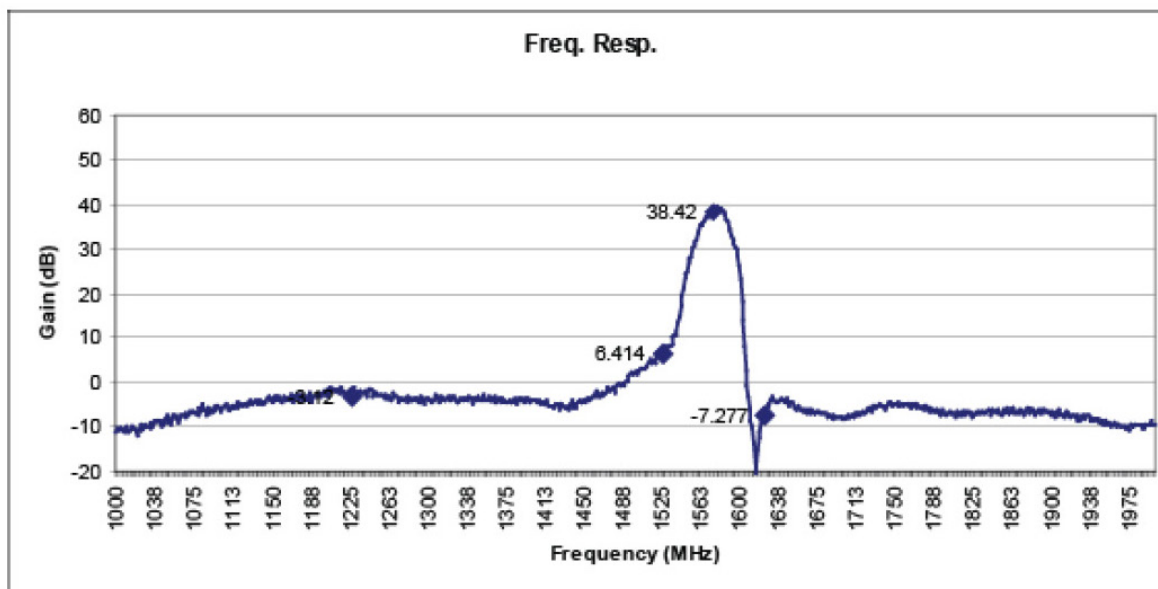
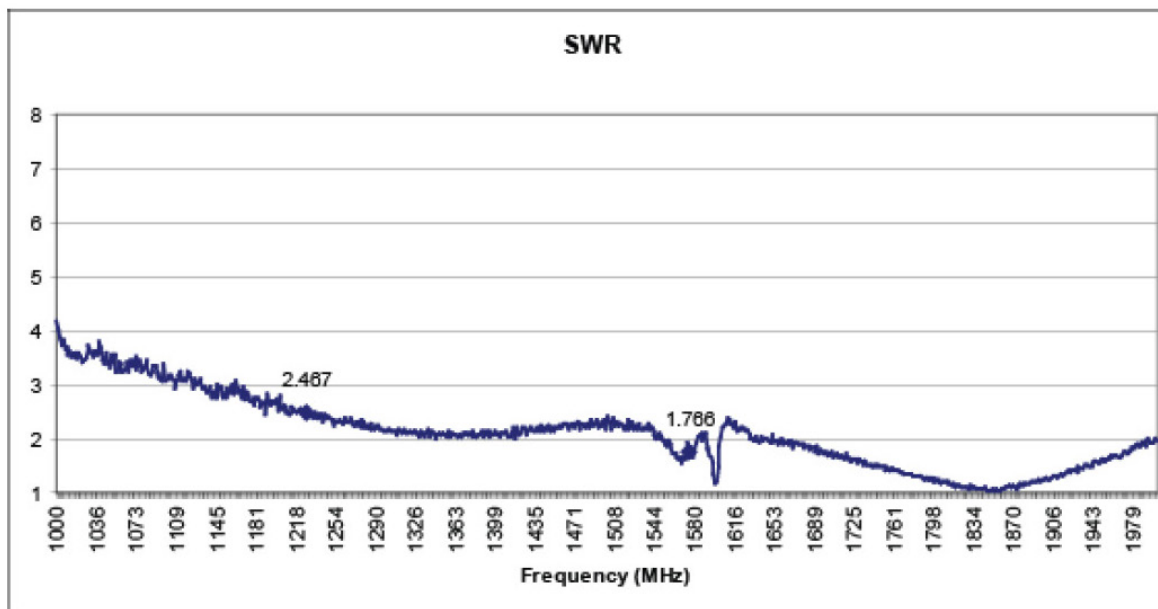


Figure 2-4. Filtered SWR



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2.3 Variable Gain Option

Figure 2-5. Variable Gain Frequency Response

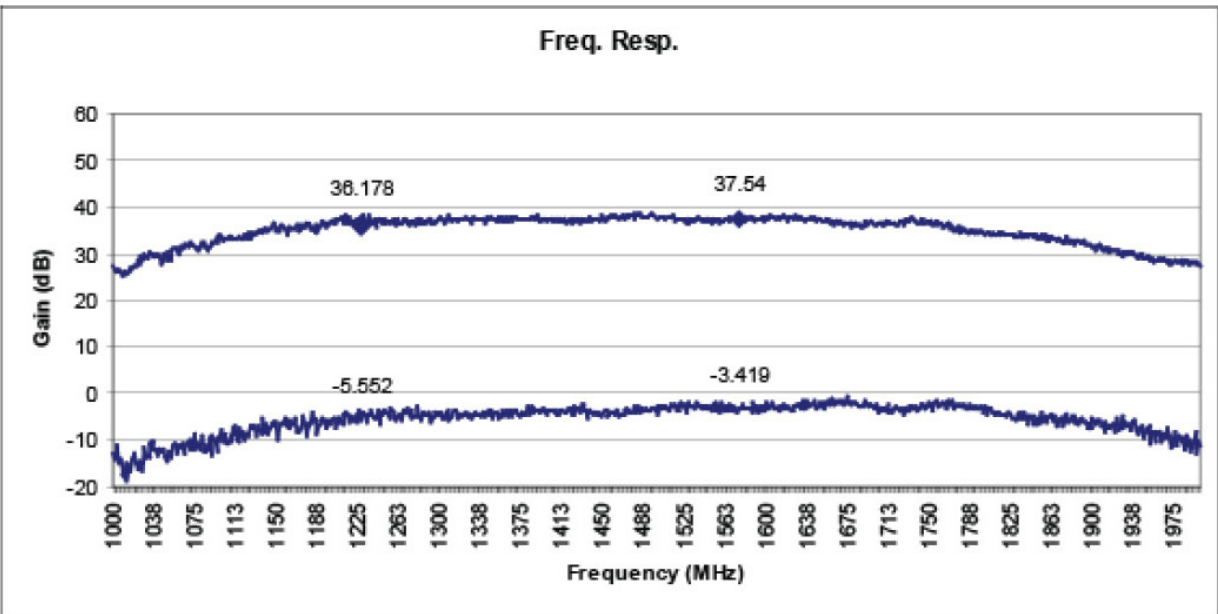
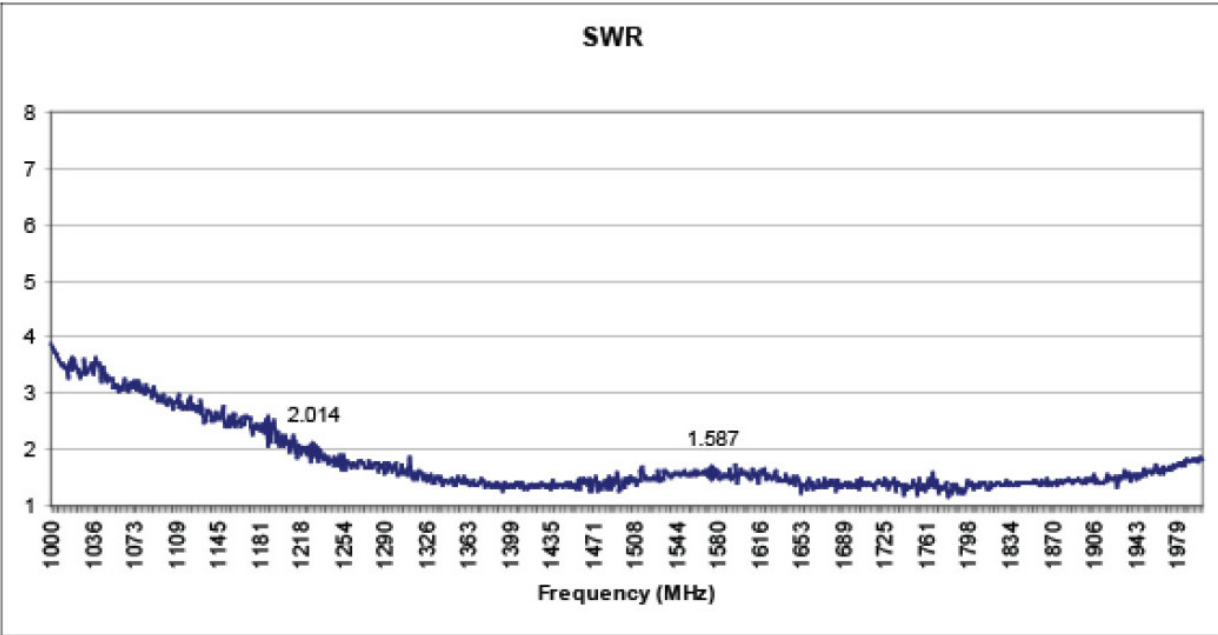


Figure 2-6. Variable Gain SWR



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3. Product Options

Table 3-1. A114T Available Options

RF Connector		
Connector	Connector Type	Limitations
	SMA (Female/Male)	N/A
Housing		
Housing	Housing Type	Limitations
	Tiny	None
Port		
Configuration	Standard Configuration	Input and Output Passes DC
	Non-Standard Configuration (-S)	DC Blocked
Amplification		
Gain	Standard	40dB
	Custom	1-39dB

4. Product Code Decoder

