

S12 SLIMLINE HOUSING

1x2 GPS Splitter

DESCRIPTION

The S12S GPS Splitter is a one-input, two-output GPS splitter device. The typical application for this splitter allows an active GPS roof antenna input which is then split evenly between two receiving GPS units. The S12S can be configured to pass the DC from an RF output (J1) to the antenna input port in order to power an active GPS antenna on that port. The second RF output (OUT2 (J2)) is DC blocked and features a 200Ω resistive load to ground to simulate an antenna current draw for any receiver connected to that port.

FEATURES

- Passes all GPS and GNSS frequencies
- Small, Lightweight, and Low-power (SWaP)
- RoHS, REACH, and WEEE Compliant
- CE Certified

OPTIONS

- Amplified, Passive, or Custom Gain
- Hermetically Sealed, EMI Shielding, and Waterproofing

The S12S GPS Splitter comes with many available options to meet specific needs. Please contact GPS Source via phone, email, or visit the website for further information on product options and specifications.



1. S12S Specifications

1.1 Electrical Specifications

Table 1-1. Operating Temperature -40°C to 85°C

Parameter		Conditions	Min	Typ	Max	Units	
Frequency Range		Ant: Out 1 (J1), Out 2 (J2) 50Ω	1		1.7	GHz	
In/Out Impedance		Ant: Out 1 (J1), Out 2 (J2)		50		Ω	
Gain ⁽²⁾	Standard	Amplified	Ant: Out 1 (J1), Out 2 (J2) 50Ω	22	24	26	dB
	Custom	Amplified	As Specified (XXdB) (0 - 23dB)	XX - 2	XX	XX + 2	
	As Specified	Amplified by port	OUT1 (J1), OUT2 (J2) XXdB (0 to 23dB) by port	XX - 2	XX	XX + 2	
Loss-Passive		Ant: Out 1 (J1), Out 2 (J2) 50Ω	-3	-4.5	-6	dB	
Input SWR		All Ports 50Ω			2:1	—	
Output SWR		All Ports 50Ω			2:1	—	
1dB Comp. Pt	Amplified	All Ports 50Ω		-32		dBm	
Input IP ₃	Amplified	All Ports 50Ω		-24		dBm	
Noise Figure	Amplified	Ant: Out 1 (J1), Out 2 (J2) 50Ω			1.8	dB	
Gain Flatness	Amplified	[L1 – L2] Ant: Out 1 (J1), Out 2 (J2) 50Ω			2	dB	
	Passive			0.5	1		
Amplified Balance		[Out 1 (J1) – Out 2 (J2)] Ant: Out 1 (J1), Out 2 (J2) 50Ω		0.5	1.0	dB	
Phase Balance		Phase (Out 1 (J1) – Out 2 (J2)) Ant: Out 1 (J1), Out 2 (J2) 50Ω			1	Degree	
Group Delay Flatness		T _{d,max} - T _{d,min} ; Out 1 (J1) (Ant)			1	ns	
Isolation ⁽²⁾	Standard	Amp/Pass	Adjacent Ports: Ant 50Ω	13		dB	
	High	Amplified		30			
Current		Current Consumption of Device (Excludes Antenna Current.)			16	mA	
Device Current (amplified)	Pass DC	Non-Powered Configuration, DC Input on Out 1 (J1)			250	mA	
Max RF Input	Amplified	Max RF Input Without Damage			0	dBm	
	Passive				30		

- Notes: 1. Performance guaranteed for N(F) connectors.
2. Decreased custom gain increases port-to-port isolation.

2. Performance Data

2.1 S12S Amplified - Standard

Figure 2-1. Amplified 00dB: Gain vs. Frequency

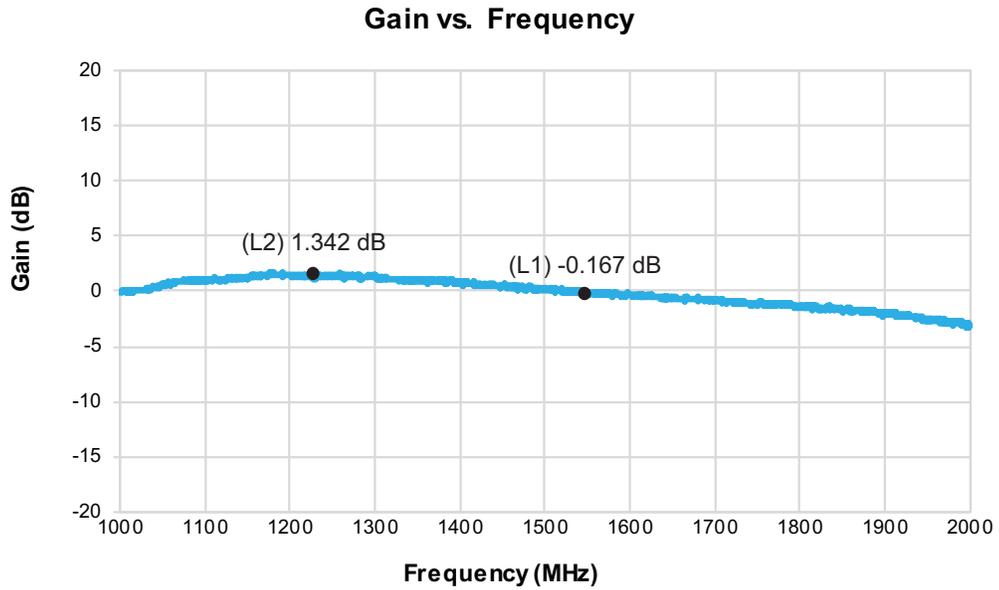
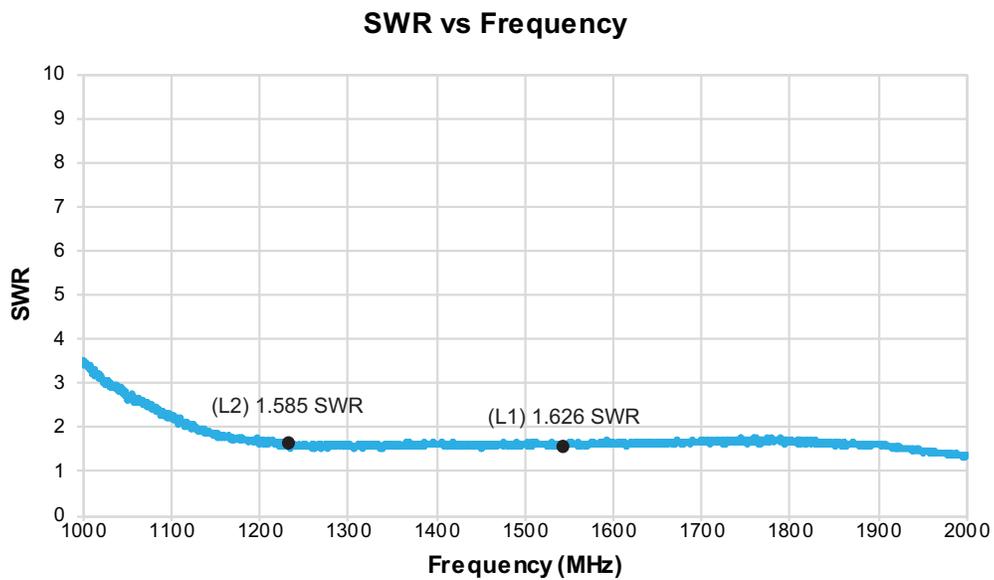


Figure 2-2. Amplified 00dB: SWR vs. Frequency



2.2 S12S Passive

Figure 2-3. Passive: Gain vs. Frequency

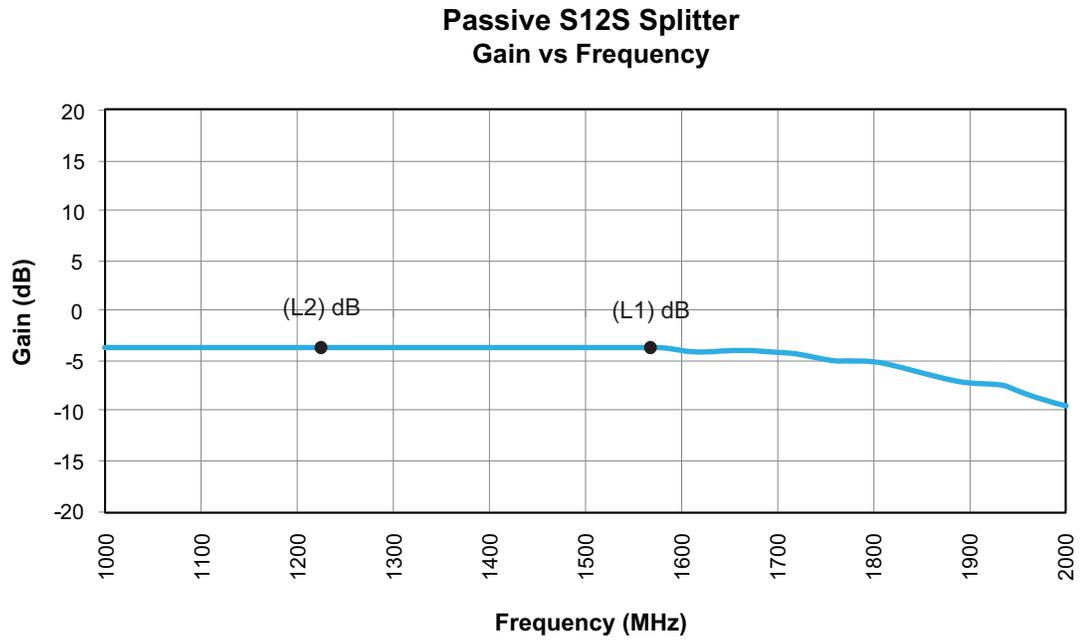
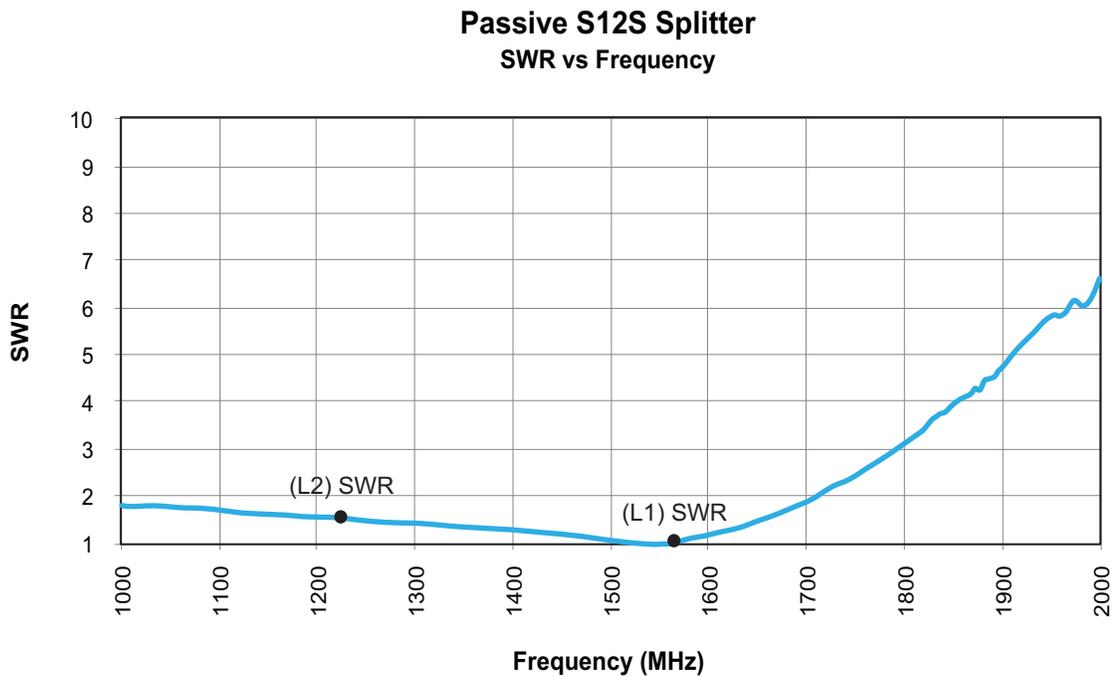


Figure 2-4. Passive: SWR vs. Frequency



2.3 S12S Active — High Isolation

Figure 2-5. Amplified High Isolation: Gain vs. Frequency

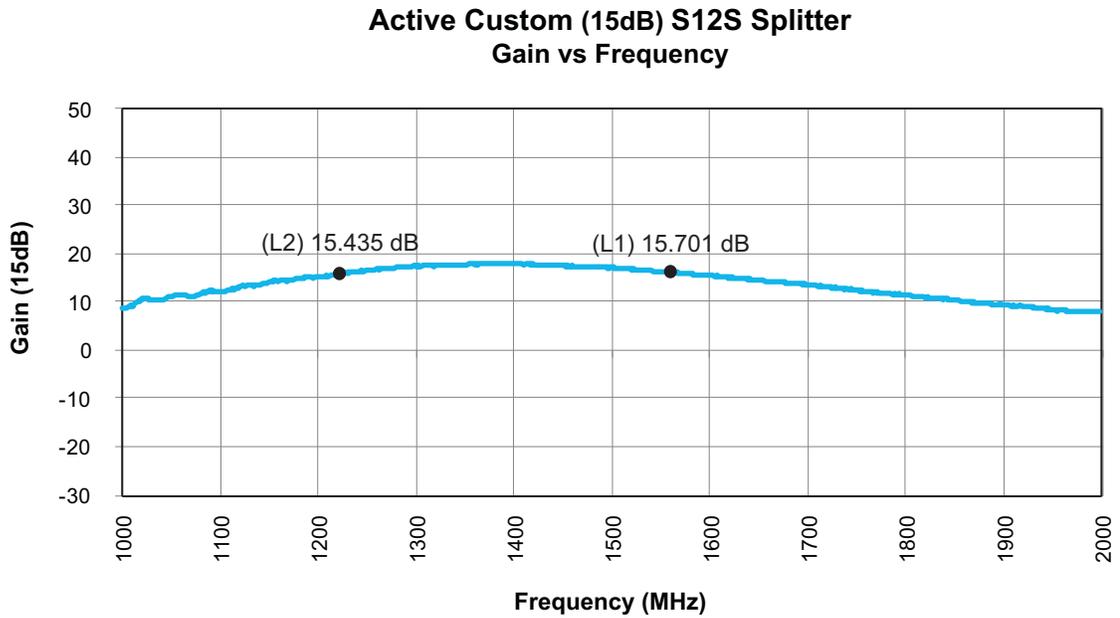
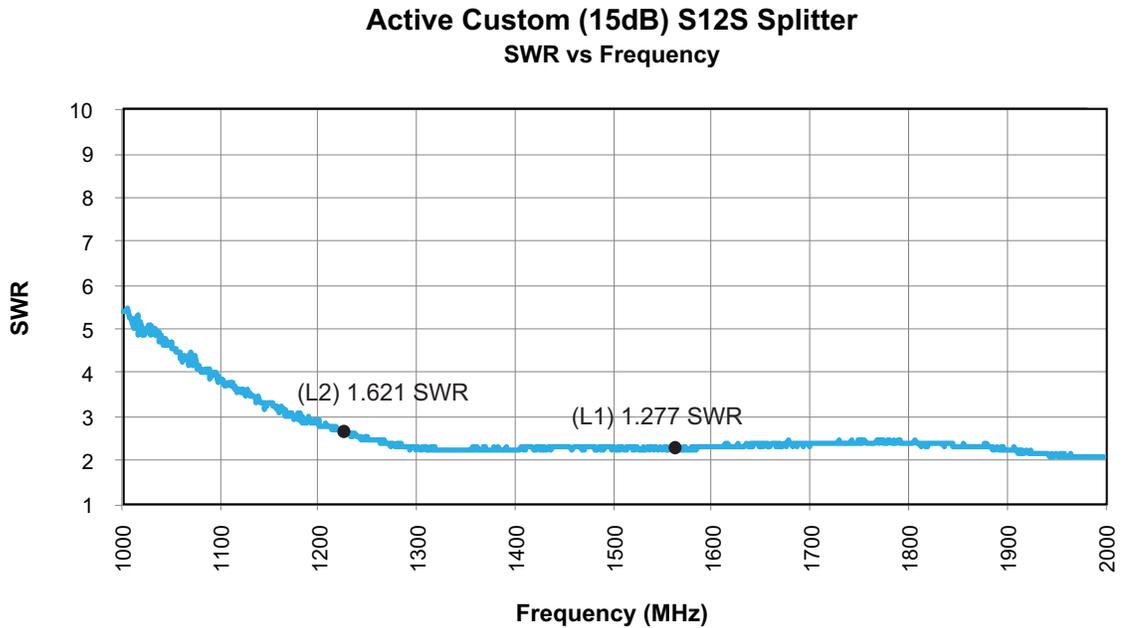


Figure 2-6. Amplified High Isolation: SWR vs. Frequency

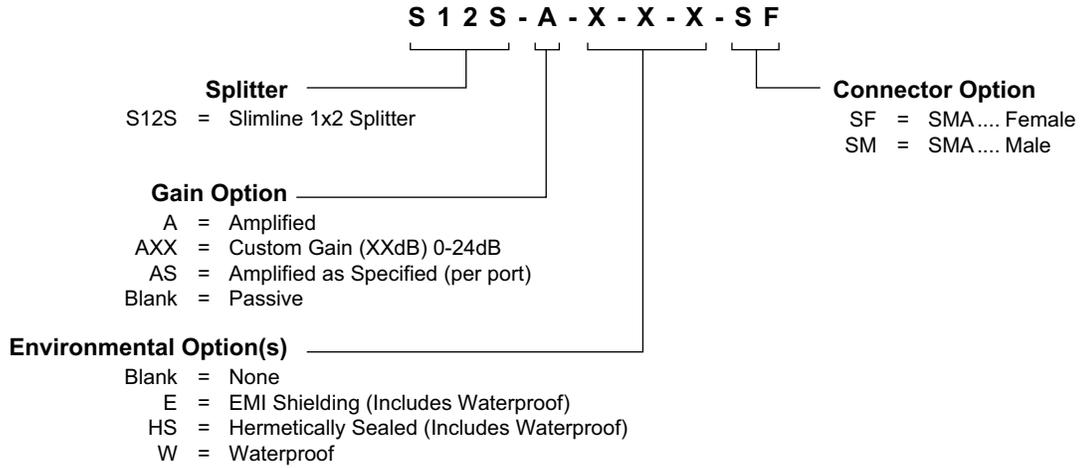


3. Product Options

Table 3-1. S12S Available Options

RF Connector			
		Connector Type	Limitations
Connector		SMA (Female/Male)	N/A
Housing			
		Housing Type	Limitations
Housings		Slimline	Powered option not available. Connectors not available: N, TNC
Output Options (standard)			
Inline Voltage (Amplified/Passive)	Pass DC	Non-Powered Configuration, Pass DC Input on Out 1 (J1)	
	DC Blocked	Out 2 (J2) is DC Blocked and with 200Ω Load	
Gain Options			
Gain	Amplified (-A)	Standard amplification is 24dB	All ports are the same gain
	Custom Gain (-AXX)	Custom gain range is 0 - 23dB	All ports are the same gain
	Amplified as Specified (-AS)	Provide gain for each port	Contact GPS Source for assistance configuring product code.
	Passive		

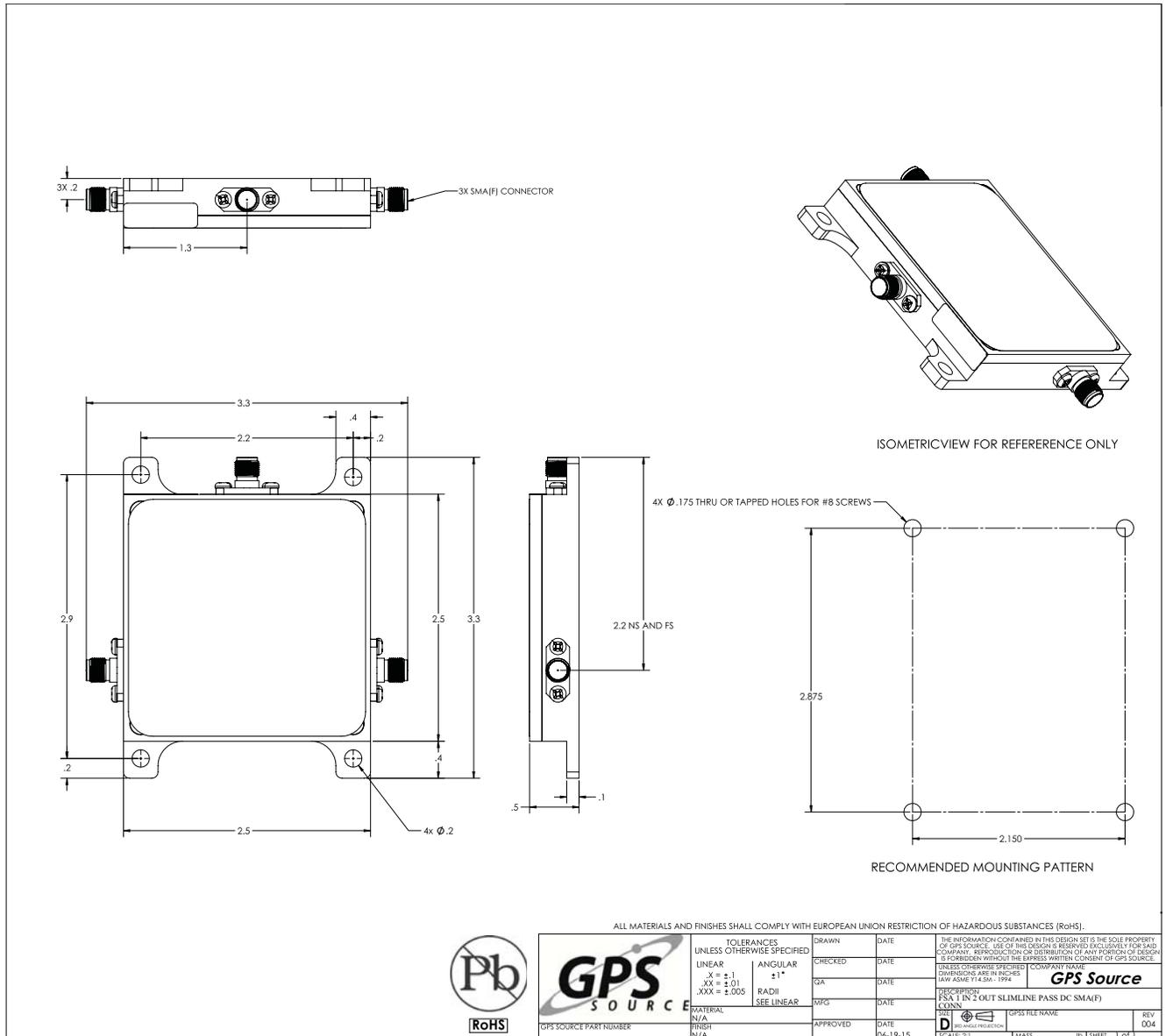
4. Product Code Decoder



Note: To have product/part codes customized to meet exact needs, contact GPS Source at GPSS-Sales@gd-ms.com or visit the website at www.gpssource.com.

5. Mechanical Drawing

S12 Slimline Housing — FSA-ACQ-CCX-AGZ





S12 Slimline Housing Data Sheet

059-FSA-ACQ-CCX-AGZ-006
04/17/2020

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