

# S14 Splitter

## Features

- ❖ Amplified & Passive Versions Available
- ❖ Passes GPS, Galileo & GLONASS L1/L2
- ❖ Excellent Gain Flatness
- ❖ Gain | L1 - L2 | < 2 dB
- ❖ RoHS/WEEE Compliant
- ❖ Designed to Mil. Std. 810



## Description

The S14 GPS Splitter is a one-input, four-output GPS device. This product typically finds application where an input from an active GPS roof antenna is split evenly between four receiving GPS units. In this scenario, the S14 can be configured to pass DC from an RF output (J1) to the antenna input port in order to power an active GPS antenna on that port. The second, third and fourth RF outputs (J2, J3, & J4) would feature a 200 Ohm DC load to simulate an antenna DC current draw for any receiver connected to those ports.

The S14 splitter comes with many available options to meet your specific needs. Please call, fax, email ([sales@gpssource.com](mailto:sales@gpssource.com)), or visit our website ([www.gpssource.com](http://www.gpssource.com)) for further information on product options, specifications, or to receive an easy to use order sheet.

## S14 Splitter

### Electrical Specifications, Operating Temperature -40 to 85 °C

Parameter		Conditions	Min	Typ	Max	Units
Freq. Range		Ant – Any Port, Unused Ports - 50 Ω	1		2	GHz
In/Out Imped.		Ant, J1, J2, J3, J4		50		Ω
Gain <sup>(4)(5)</sup>		Ant – Any Port, Unused Ports - 50 Ω				
-Amplified (Norm)			20	21	22	dB
-Amplified (Cust Gain)		As Specified (XdB)	X-1	X	X+1	
Loss-Passive <sup>(5)</sup>		Ant – Any Port, Unused Ports - 50 Ω	6.5	7.5	8.5	dB
Input SWR <sup>(5)</sup>		All Ports 50Ω			2.0:1	-
Output SWR <sup>(5)</sup>		All Ports 50Ω			2.0:1	-
1dB Comp. Pt. (Ampl.)		All Ports 50Ω		-32		dBm
Input IP <sub>3</sub> (Ampl.)		All Ports 50Ω		-24		dBm
Noise Figure-Amplified		Ant – Any Port, Unused Ports - 50 Ω			1.8	dB
Gain Flatness <sup>(5)</sup>		L1 - L2 , Ant – Any Port, Unused Ports - 50 Ω			2	dB
-Amplified:					1	
-Passive:						
Amp. Balance		J1 - J2 , Ant – Any Port, Unused Ports - 50 Ω			0.5	dB
Phase Balance		Phase (J1 - J2), Ant – Any Port, Unused Ports - 50 Ω			1.0	deg
Group Delay Flatness		T <sub>d,max</sub> - T <sub>d,min</sub> , Ant – Any Port			1	ns
Isolation						
-Amp/Pass (Norm)		Adjacent Ports: Ant - 50Ω	13			dB
		Opposite Ports: Ant - 50Ω	21			dB
-Amplified (Hi Iso.)		Adjacent Ports: Ant - 50Ω	30			dB
		Opposite Ports: Ant - 50Ω	40			dB
AC IN	110	Wall Mount Transformer <sup>(3)</sup>		110		VAC
	220/240	Wall Mount Transformer (Various Intl. plug types available) <sup>(3)</sup>		230		VAC
DC IN	DC Blk	Any DC Blocked Port with a 200 Ω Load			14	VDC
	Pass DC	Non-Powered Configuration, DC Input on J1	3		16	VDC
	-Amplified				16	
-Passive	Powered, Mil. Conn. or Quick Connect Option	3 <sup>(1)</sup>		28 <sup>(2)</sup>	VDC	
Device Current		Current Consumption of device, excludes Ant. Cur.			16	mA
Ant/Thru Current	Pass DC	Non-Powered Configuration, DC Input on J1			250	mA
	Powered	Powered, Mil. Conn. or Quick Connect Option			Note 3	mA
Max RF Input		Max RF input without damage			0	dBm
-Amplified					30	
-Passive						

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### Notes:

1. DC IN for powered option must be 2V greater than desired DC Voltage Out
2. Maximum DC IN is 35V when 1275B Powered option is included
3. 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:

$$I_{out} \leq 1.4 / (V_{DC\ IN} - V_{DC\ OUT}) - 0.016 \quad \text{Amps}$$

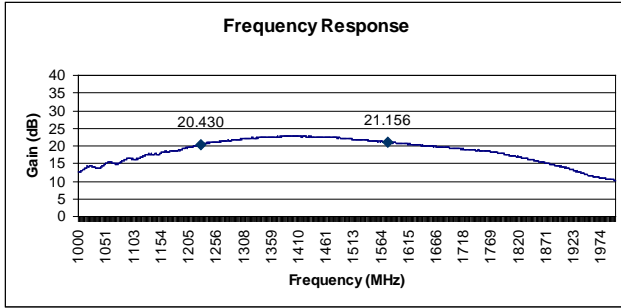
For powered option with a wall mount transformer (Voltage Input = 110/220/240 VAC),  $V_{DC\ IN}$  is 9V.

4. Choose Custom Gain Option for improved port-to-port isolation
5. Performance guaranteed for N(F) connectors

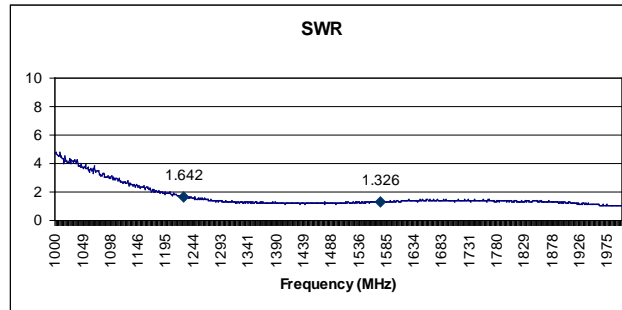
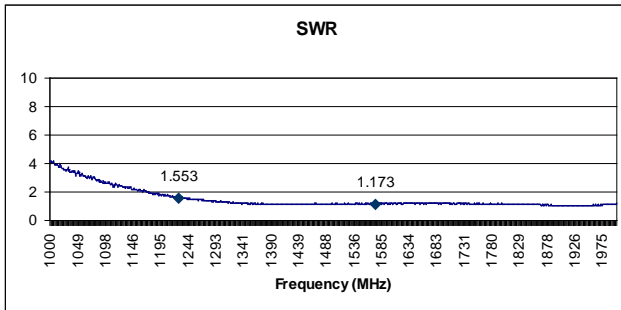
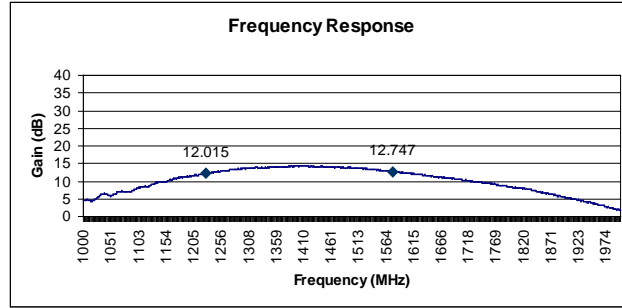
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Performance Data:

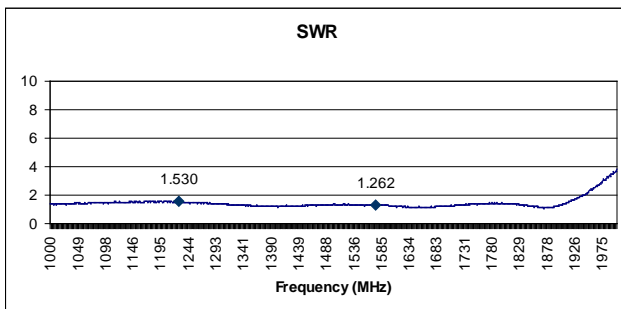
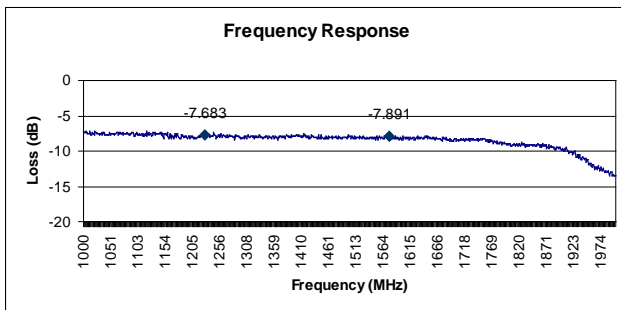
S14 Active - Normal



S14 Active - Hi Isolation



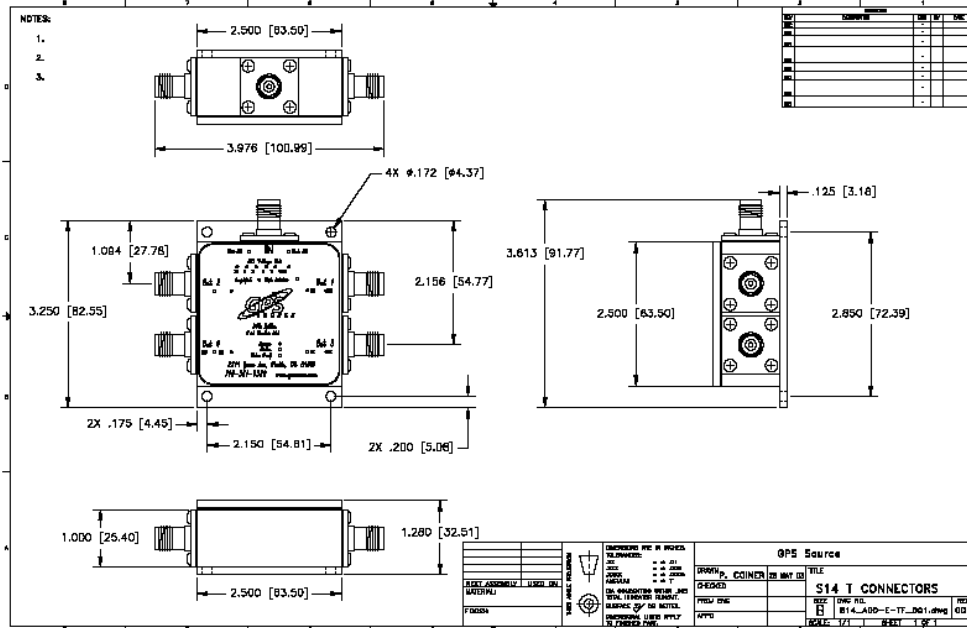
S14 - Passive



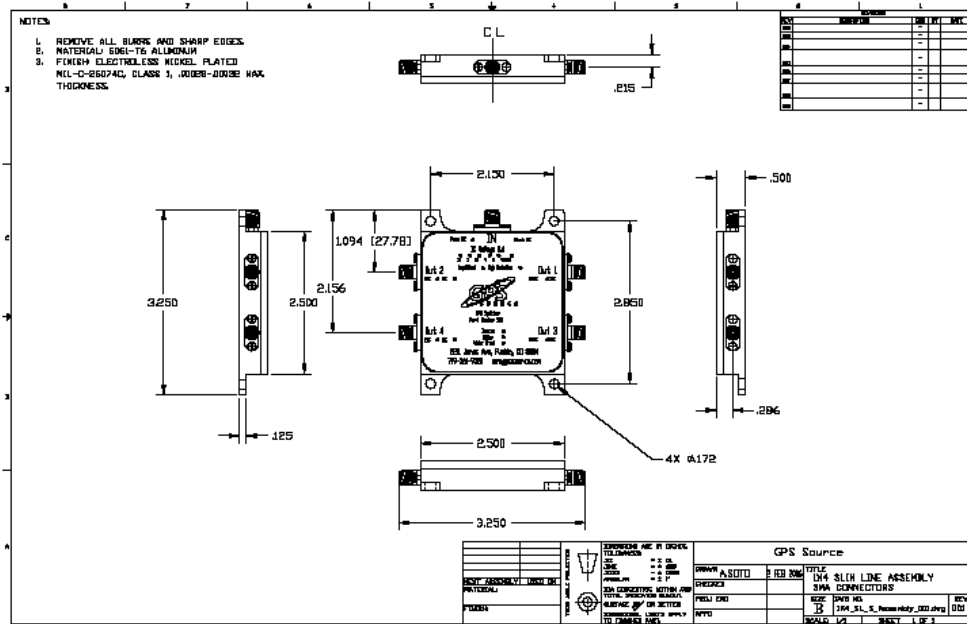
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## Mechanical:

### Standard Housing:



### Slimline Housing:



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## Available Options:

Power Supply Options:		
Source Voltage Options	Voltage Input	Type
	110 VAC	Wall Mount Transformer
	220 VAC	Wall Mount Transformer
	240 VAC (U.K.)	Wall Mount Transformer
	DC 5-28 VDC	Military Style Connector or w/Quick Connects
Output Voltage Options <sup>(1)</sup>	DC Voltage Out <sup>(2)</sup>	
	3.3	
	5	
	7.5	
	9	
	12	
	Variable (3-12V)	
Custom		
RF Connector Options:		
Connector Options	Connector Type	Limitations
	N (Male & Female)	
	SMA (Male & Female)	
TNC (Male & Female)		
Housing Options:		
Housings	Housing Type	Limitations
	Standard	None
	Slimline	Powered Option Not Ava. Connectors Not Available: N, TNC
Port Options:		
Pass DC <sup>(1)</sup>	All Ports Pass DC	
DC Blocked <sup>(1)</sup>	J2,J3,J4 are DC Blocked & 200Ω Loaded, DC is passed J1 to ANT	

### Notes:

1. With Powered Option, any or all RF ports (input or output) can be DC Blocked or can pass the powered DC voltage
2. 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:

$$I_{out} \leq 1.4 / (V_{DC IN} - V_{DC OUT}) - 0.016 \quad \text{Amps (or 250mA max)}$$

For powered option with a wall mount transformer (Voltage Input = 110/220/240 VAC),  $V_{DC IN}$  is 9V.

## S14 Splitter

**Part Number:** **S14 – A – X-X-X-X - P110 / 5 – SF**

**Product:**

Standard 1x4 Splitter  
(Pass DC J1-Ant, J2 Blk.)

**Gain Option:**

A – Amplified  
Blank – Passive  
AXX – Custom Gain, XXdB

**Environmental Option(s):**

X = (Any or All of Following):  
B - Beacon  
E - EMI Shielding  
HS - Hermetically Sealed  
W - Waterproof

**Source Voltage:**

P110 – Transformer  
P220 – Transformer  
P240 – Transformer  
PDC – DC w/Quick Connects  
PM – Military Connector (User supplies DC)  
PM38999 - Military Connector (User supplies DC)  
PMS-1275 – Military Connector (User supplies DC & 1275B Compliant)  
PMS-704 – Military Connector (User supplies DC & 704F Compliant)  
PMS38999-1275 - Military 38999 Connector & 1275B Compliant  
PMS38999-704 – Military 38999 Connector & 704F Compliant  
Blank – Pass DC Ant (J1), Block DC- J2 thru J4

**Output Voltage:**

3.3, 5, 7.5, 9, 12, XX, V – Denotes Output Voltage  
(XX – custom output voltage, V – variable)

**Connector Options:**

NM – N, Male  
NF – N, Female  
SM – SMA, Male  
SF – SMA, Female  
TM – TNC, Male  
TF – TNC, Female

For help in creating the part number to meet your exact needs, contact us at [Sales@gpssource.com](mailto:Sales@gpssource.com) or visit our website at [www.gpssource.com](http://www.gpssource.com).