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S12 Splitter

Technical Product Data

Features

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



Description

The S12 GPS Splitter is a one-input, two-output GPS device. This product typically finds application where an input from an active GPS roof antenna is split evenly between two receiving GPS units. In this scenario, the S12 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 RF output would feature a 200 Ohm DC load to simulate an antenna DC current draw for any receiver connected to that port.

Electrical Specifications, Operating Temperature -40 to 85°C

Parameter		Conditions	Min	Typ	Max	Units
Freq. Range		Ant – J1, J2-50Ω or Ant – J2, J1-50Ω	1		2	GHz
In/Out Imped.		Ant, J1, J2		50		Ω
Gain ⁽⁴⁾⁽⁵⁾		Ant – J1, J2-50Ω or Ant – J2, J1-50Ω				
-Amplified (Norm)			23	24	25	dB
-Amplified (Cust. Gain)		As Specified (XdB)	X-1	X	X+1	
Loss-Passive ⁽⁵⁾		Ant – J1, J2-50Ω or Ant – J2, J1-50Ω	4	4.5	5	dB
Input SWR ⁽⁵⁾		All Ports 50Ω			2.0:1	-
Output SWR ⁽⁵⁾		All Ports 50Ω			2.0:1	-
1dB Comp. Pt. (Ampl.)		All Ports 50Ω		-32		dBm
Input IP ₃ (Ampl.)		All Ports 50Ω		-24		dBm
Noise Figure- Amplified		Ant – J1, J2-50Ω or Ant – J2, J1-50Ω			1.8	dB
Gain Flatness ⁽⁵⁾		L1 - L2 , Ant – J1, J2-50Ω; Ant – J2, J1-50Ω			2	dB
-Amplified:					1	
-Passive:						
Amp. Balance		J1 - J2 , Ant – J1, J2-50Ω; Ant – J2, J1-50Ω			0.5	dB
Phase Balance		Phase (J1 - J2), Ant – J1, J2-50Ω; Ant – J2, J1-50Ω			1.0	Deg
Group Delay Flatness		$\tau_{d,max} - \tau_{d,min}$, J1 - Ant			1	ns
Isolation ⁽⁴⁾		Adjacent Ports: Ant - 50Ω	13			dB
-Amp/Pass(Norm)			30			
-Amplified (Hi Iso.)						
AC IN	110	Wall Mount Transformer ⁽³⁾		110		VAC
	220/240	Wall Mount Transformer (Various Intl. plug types available) ⁽³⁾		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				28 ⁽²⁾	VDC	
	Powered	Powered, Mil. Conn. or Quick Connect Option	3 ⁽¹⁾			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						

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:

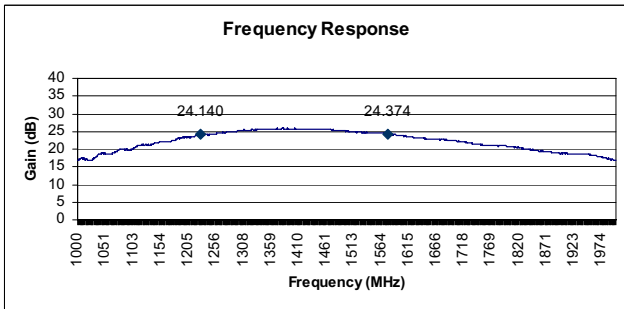
$$I_{out} \leq 1.4 / (V_{DC IN} - V_{DC OUT}) - 0.016 \text{ Amps}$$

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

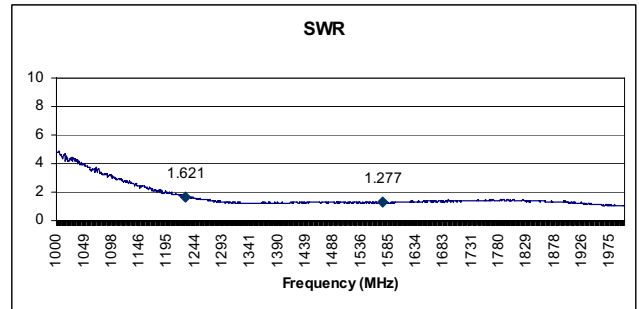
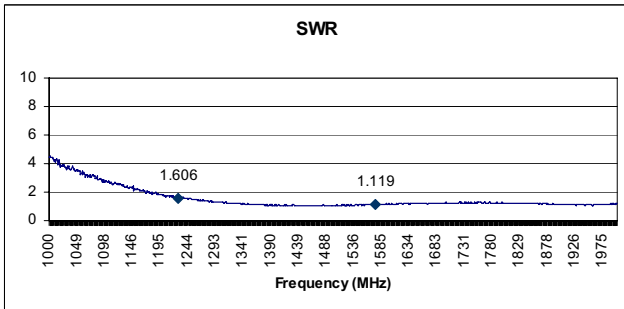
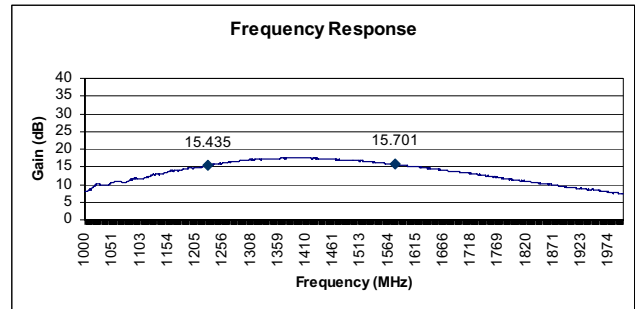
- Choose Custom Gain Option to increase port-to-port isolation
- Performance guaranteed for N(F) connectors

Performance Data:

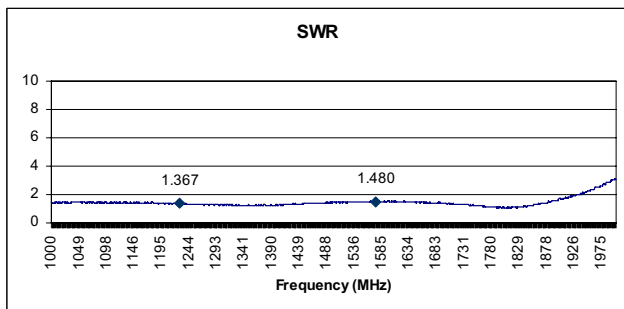
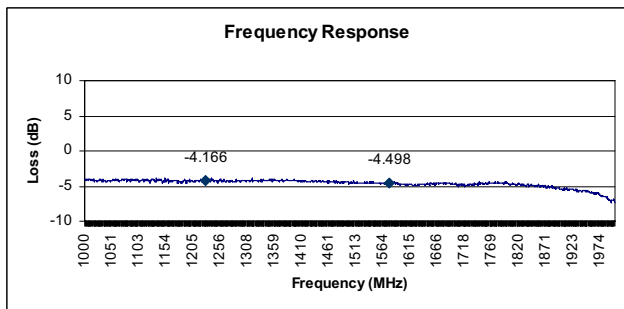
S12 Active – Normal



S12 Active – Cust. Gain (15dB)



S12 – Passive





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 ⁽¹⁾	DC Voltage Out ⁽²⁾	
	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)	
	SMB (Female)	
	SMC (Female)	
	MCX (Female)	
	BNC (Male & Female)	Performance Not Guaranteed
Housing Options:		
Housings	Housing Type	Limitations
	Standard	None
	Slimline	Powered Option Not Ava. Connectors Not Available: N, TNC, BNC
Port Options:		
Pass DC ⁽¹⁾	All Ports Pass DC	
DC Blocked ⁽¹⁾	J2 is DC Blocked & 200Ω Load, 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.



Part Number:

S12 - A - P110 / 5 - SF

Product:

Standard 1x2 Splitter
(Pass DC J1-Ant, J2 Blk.)

Gain Option:

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

Source Voltage:

P110 – Transformer,
P220 – Transformer,
P240 – Transformer,
PDC – DC w/Quick Connects
PM – Military Connector (User supplies DC)
PMS – 1275B Surge Suppression STD

Output Voltage:

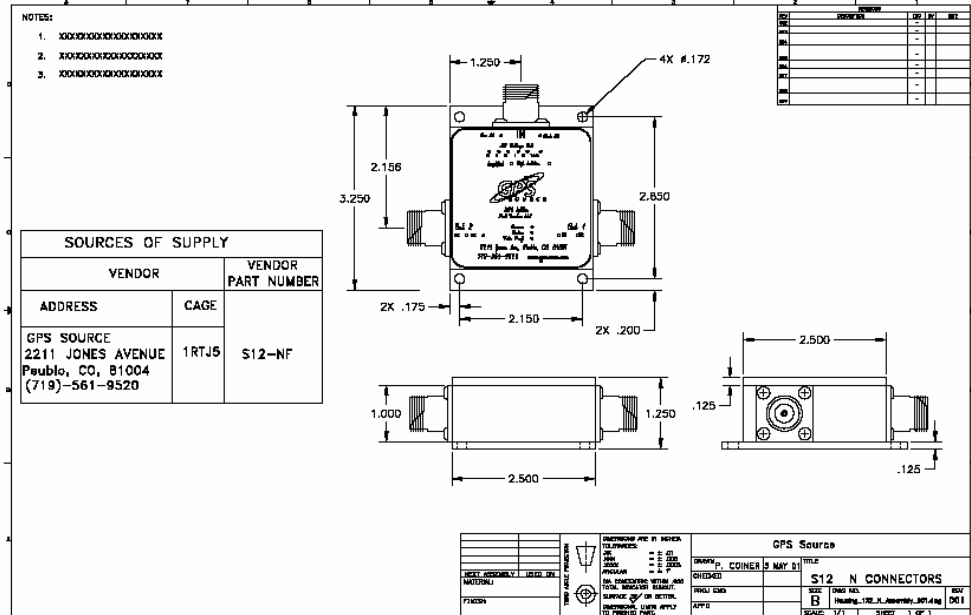
3.3, 5, 7.5, 9, 12, XX, V – Denotes Output Voltage
(XX – custom output voltage, V – variable)

Connector Options:

NM – N, Male
NF – N, Female
SM – SMA, Male
SF – SMA, Female
TM – TNC, Male
TF – TNC, Female
BM – BNC, Male
BF – BNC, Female
SB – SMB Jack, Female
SC – SMC Jack, Female
MX – MCX Jack, Female

Mechanical:

Standard Housing:



Slimline Housing:

