

S12 Splitter

Technical Product Data

Features

- **Amplified & Passive Versions Available**
- **Passes GPS, Galileo & GLONASS L1/L2**
- **Excellent Gain Flatness**
Gain | L1 - L2 | < 2 dB
- **Waterproof / EMI Sealed Option**
- **Mil Spec 1275B Spike & Surge Protection Option**



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.

The S12 splitter comes with many available options to meet your specific needs. Please call, fax, email (sales@gpssource.com), or visit our website (www.gpssource.com) for further information on product options and specifications.

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 -Amplified (Custom)	Ant – J1, J2-50Ω or Ant – J2, J1-50Ω	0		24	dB
Loss-Passive	Ant – J1, J2-50Ω or Ant – J2, J1-50Ω	4	4.5	5	dB
Input SWR	All Ports 50Ω			2.0:1	-
Output SWR	All Ports 50Ω			2.0:1	-
Noise Figure- Amplified	Ant – J1, J2-50Ω or Ant – J2, J1-50Ω			1.8	dB
Gain Flatness -Amplified: -Passive:	[L1 - L2], Ant – J1, J2-50Ω; Ant – J2, J1-50Ω			2 1	dB
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 -Amp/Pass(Norm) -Amplified (Hi Iso.)	Adjacent Ports: Ant - 50Ω	16 30			dB
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 -Amplified -Passive	3		16 16	VDC
	Powered	3 ⁽¹⁾	28 ⁽²⁾	32 ⁽²⁾	VDC
Current(I _{internal})	Current Consumption of device, excludes Ant. Cur.			14 ⁽⁴⁾	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 -Amplified -Passive	Max RF input without damage			0 30	dBm

Notes:




1. DC IN for powered option must be 3V greater than desired DC Voltage Out
2. By design 1275B spike & surge protection assumes a 28 volt system, 33.3 V or greater will trigger over voltage protection circuitry.
3. Maximum DC total current draw out all port[s] of the device is a function of the DC input voltage and the output voltage where the power dissipation must be less than 1 watt @ 25C:

$$(V_{DC\ IN} - V_{DC\ OUT} - 1.2) * (I_{out} + I_{internal}) \leq 1W @ 25C$$

See for more information.

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

4. Amplified version, passive version does not use any internal current
5. Available Powered Connectors

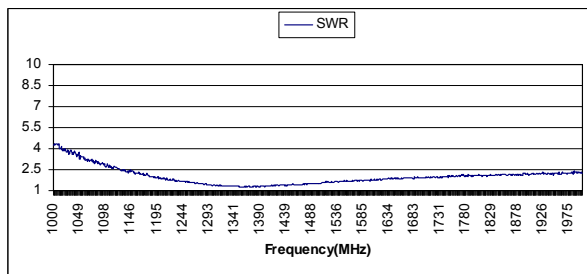
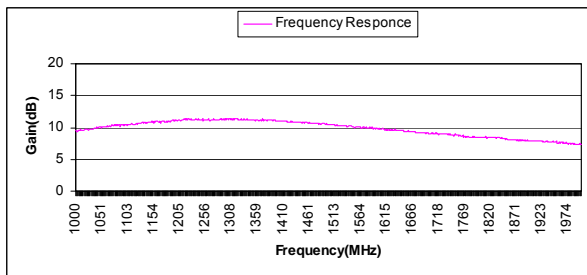
MS3102E10SL-4P			
PM38999 PMS38999 (1275B rated)			
Quick Connects (Power pole 15Amp contacts)			

1275B Spike and Surge Power Option

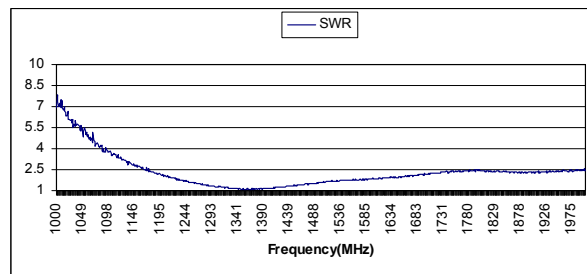
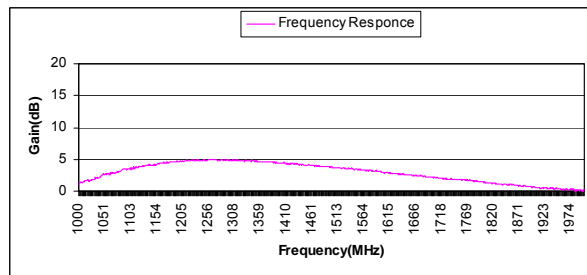
The Mil-Standard 1275 is a specification that defines the conditioning of 28VDC power in military vehicles. Obviously a splitter is not designed to condition the power for a vehicle. The 1275B spike and surge option will protect the internal circuits of our device from the same spikes and surges called out in the specification but this is not to be confused with a power conditioning circuit that conditions power for a whole vehicle.

Performance Data:

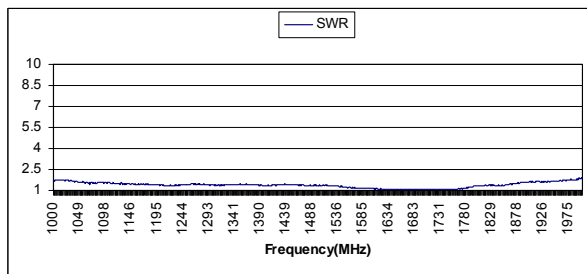
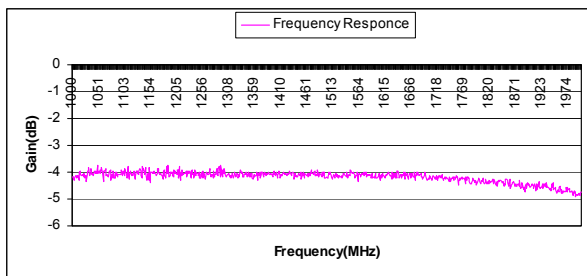
S12 Active - Normal



S12 Active - Hi Isolation



S12 Active - 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	
	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	

More Notes:

1. With Source voltage option, any or all RF ports (input or output) can be DC Blocked or can pass the powered DC voltage



Part Number:

S12 - A - E - P110 / 5 - SF

Product:

Standard 1x2 Splitter
(Pass DC J1-Ant, J2 Blk.)
S12S (Slim Line housing)

Gain Option:

A – Amplified
AS – Amplified Custom Gain
Blank – Passive

Housing Option:

E – EMI Shielding
HS – Hermetically Sealed
W – Water Proof

Source Voltage:

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

Output Voltage:

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

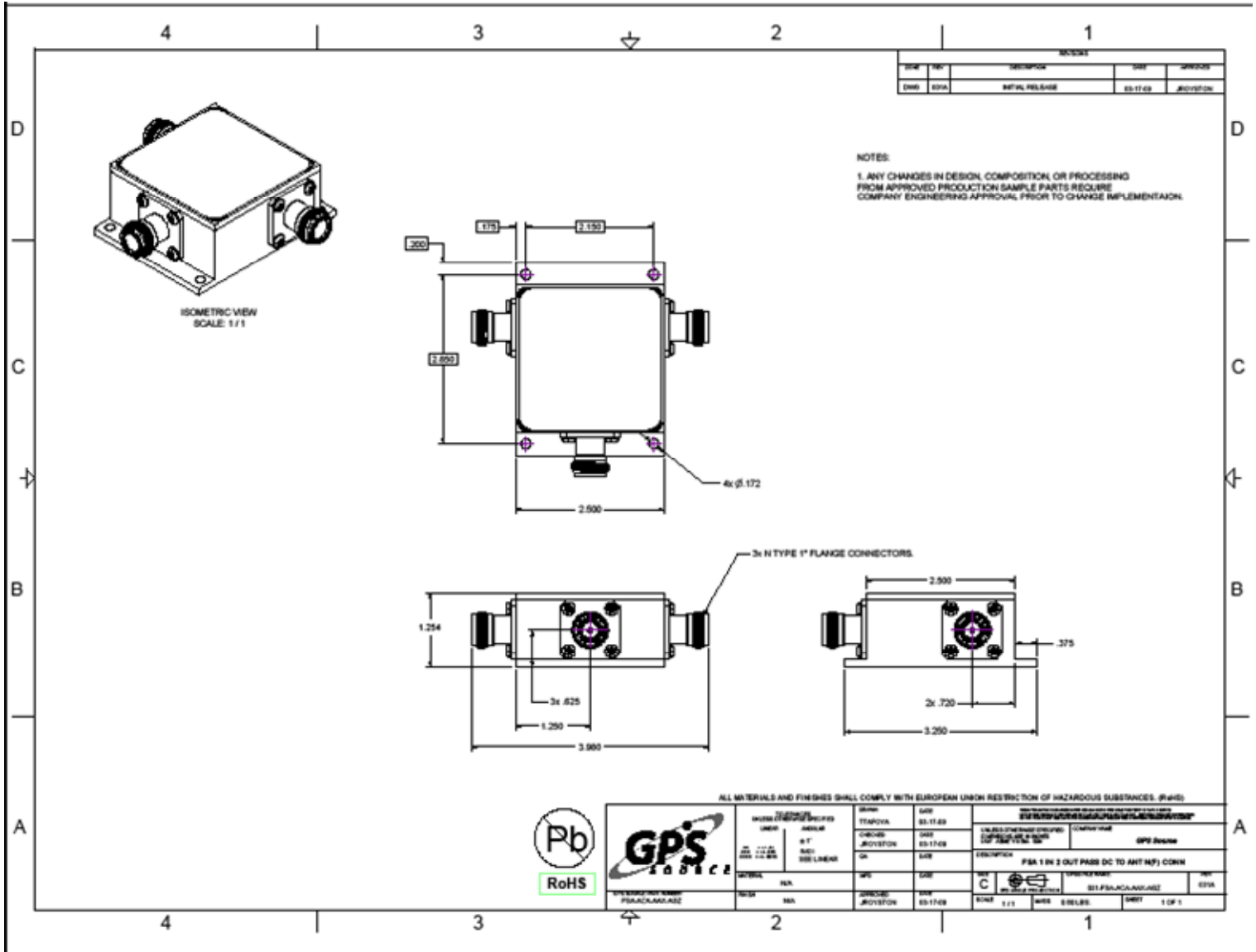
Connector Options:

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

For help in creating the part number to meet your exact needs, contact us at Sales@gpssource.com or visit our website at www.gpssource.com.

Mechanical:

Standard Housing:



Slimline Housing:

ZONE	REV	DESCRIPTION	DATE	APPROVED

NOTES:

- ANY CHANGES IN DESIGN, COMPOSITION, OR PROCESSING FROM APPROVED PRODUCTION SAMPLE PARTS REQUIRE COMPANY ENGINEERING APPROVAL PRIOR TO CHANGE IMPLEMENTATION.
- THE LABELS TEXT ISNT VISIBLE, TO SEE THE TEXT REFER TO THE DRAWINGS 055 OF THAT PARTICULAR LABEL.
THE PRODUCT SERIAL # LABEL P/N IS: LBL-AAA-AAA-BLZ,
THE BLANK LABEL P/N IS: LBL-AAA-AAA-CNZ, &
THE 1 X 2 SPLITTER LABEL IS: LBL-AAA-AAA-AGZ.

ISOMETRIC VIEW
SCALE: 1/2

SLIMLINE 1 X 2 SPLITTER LABEL

ALL MATERIALS AND FINISHES SHALL COMPLY WITH EUROPEAN UNION RESTRICTION OF HAZARDOUS SUBSTANCES. (RoHS)

DRAWN Thomas Tafolla	DATE 15 NOV, 07	TITLE FSA 1 IN 2 OUT SLIMLINE PASS DC SMA (F) CONN	REV 001
CHECKED	3RD ANGLE PROJECTION	SIZE A	REV 001
APPROVED	SCALE 1/1	DWG FILE NAME GPS SOURCE PART NUMBER FSA-ACC-CCX-AGZ	SHEET 1 OF 1

Standard Housing Military 38999 Connector:

