

# C21 Combiner

## Technical Product Data

### Features

- **Passes GPS, Galileo & GLONASS L1/L2**
- **Excellent Passband Flatness**  
Gain | L1 - L2 | < 0.5 dB



### Description

The C21 GPS Combiner is a two-input, one-output GPS device. This product typically finds application where two inputs from active GPS antennas is combined evenly into a single receiving GPS unit. In this scenario, the C21 will pass DC from the RF output to both antenna input ports (J1 & J2) in order to power the active GPS antennas on those ports.

The C21 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.

Doc. Description: C21 Combiner	Doc. Number: 1542-TS-GPS-Combiner-C21-01	Revision: 001
Author: Brandie Chenoweth	Department: Marketing	Date: Nov. 28 2011

Electrical Specifications, Operating Temperature -40 to 85°C

Parameter	Conditions	Min	Typ	Max	Units
Freq. Range	In1-Output, In2-50Ω or In2-Output, In1-50Ω	1		2	GHz
In/Out Imped.	Output, In1, In2		50		Ω
Gain	In1 & In2-Output, In1 = In2	1	1.5	2	dB
Input SWR	All Ports 50Ω			2.0:1	-
Output SWR	All Ports 50Ω			2.0:1	-
Gain Flatness	L1 - L2 , In1-Output, In2-50Ω or In2-Output, In1-50Ω			0.5	dB
Amp. Balance	In1 - In2 , In1-Output, In2-50Ω or In2-Output, In1-50Ω			0.5	dB
Phase Balance	Phase (In1 - In2), In1-Output, In2-50Ω or In2-Output, In1-50Ω			1.0	Deg
Group Delay Flatness	$\tau_{d,max} - \tau_{d,min}$ , In1-Output, In2-50Ω or In2-Output, In1-50Ω			1	ns
Isolation	Adjacent Ports: Ant - 50Ω	16			dB
DC IN	Pass DC	Non-Powered Configuration, DC Input on OUT		16	VDC
	Powered	Powered, Mil. Conn. or Tinned Leads		3 <sup>(1)</sup>	28 <sup>(2)</sup> VDC
Ant/Thru Current	Pass DC	Non-Powered Configuration, DC Input on OUT		250	mA
	Powered	Powered, Mil. Conn. or Tinned Leads		Note 3	mA
Max RF Input	Max RF input without damage			30	dBm

**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:

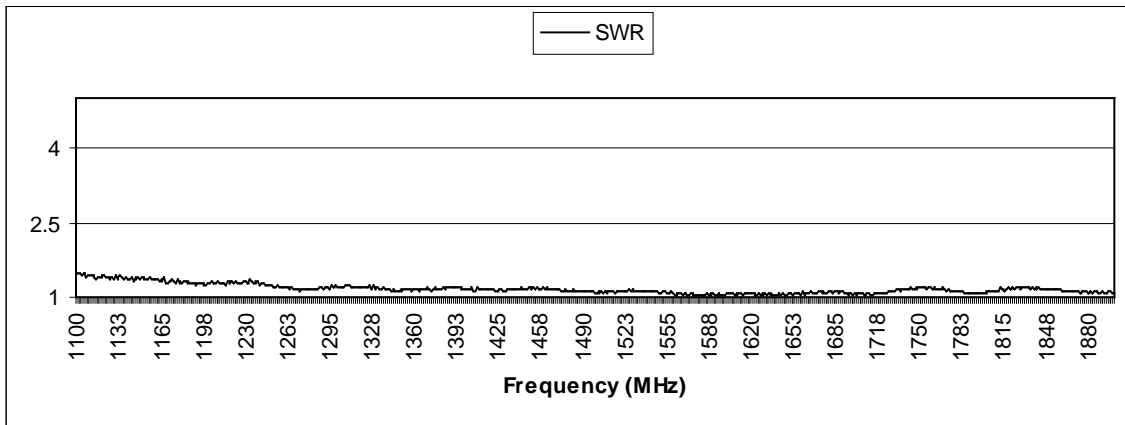
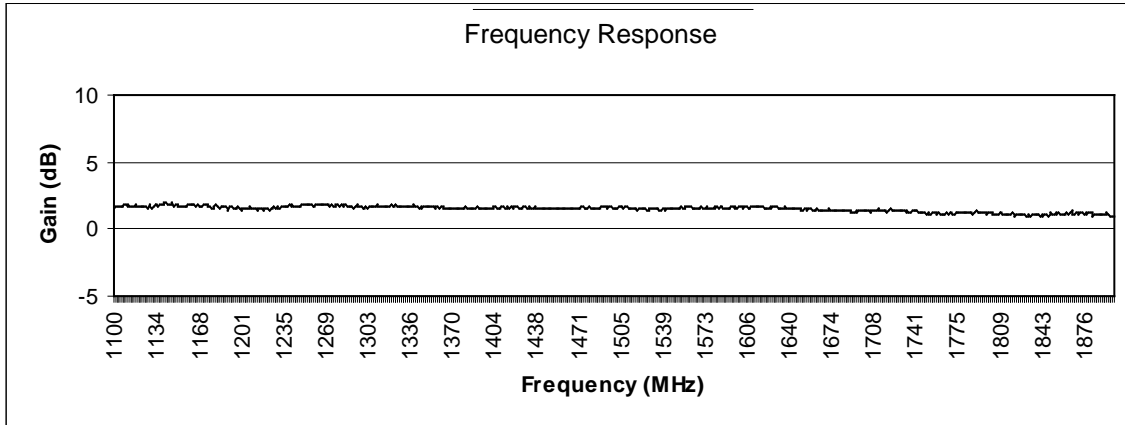
$$I_{out} \leq 1.4 / (V_{DC\ IN} - V_{DC\ OUT}) \quad \text{Amps}$$

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

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Performance Data:

C21 (In1=In2)



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Available Options:

Power Supply Options:		
<b>Source Voltage Options</b>	<b>Voltage Input</b>	<b>Type</b>
	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 Tinned Leads
<b>Output Voltage Options<sup>(1)</sup></b>	<b>DC Voltage Out<sup>(2)</sup></b>	
	3.3	
	5	
	7.5	
	9	
	12	
	Variable (3-12V)	
Custom		
RF Connector Options:		
<b>Connector Options</b>	<b>Connector Type</b>	<b>Limitations</b>
	N (Male & Female)	
	SMA (Male & Female)	
	TNC (Male & Female)	
	SMB (Female)	
	SMC (Female)	
Housing Options:		
<b>Housings</b>	<b>Housing Type</b>	<b>Limitations</b>
	Standard	None
	Slimline	Powered Option Not Ava. SMA Connector ONLY
Port Options:		
Pass DC <sup>(1)</sup>	All Ports Pass DC	
DC Blocked <sup>(1)</sup>	OUT port is DC Blocked, DC is passed to both RF IN ports	

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:

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

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Part Number:

C21 - P110 / 5 - SF

Product:

Standard 2x1 Combiner  
(Pass DC IN1 & IN2, OUT is DC Blk.)

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)

Output Voltage:

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

Connector Options:

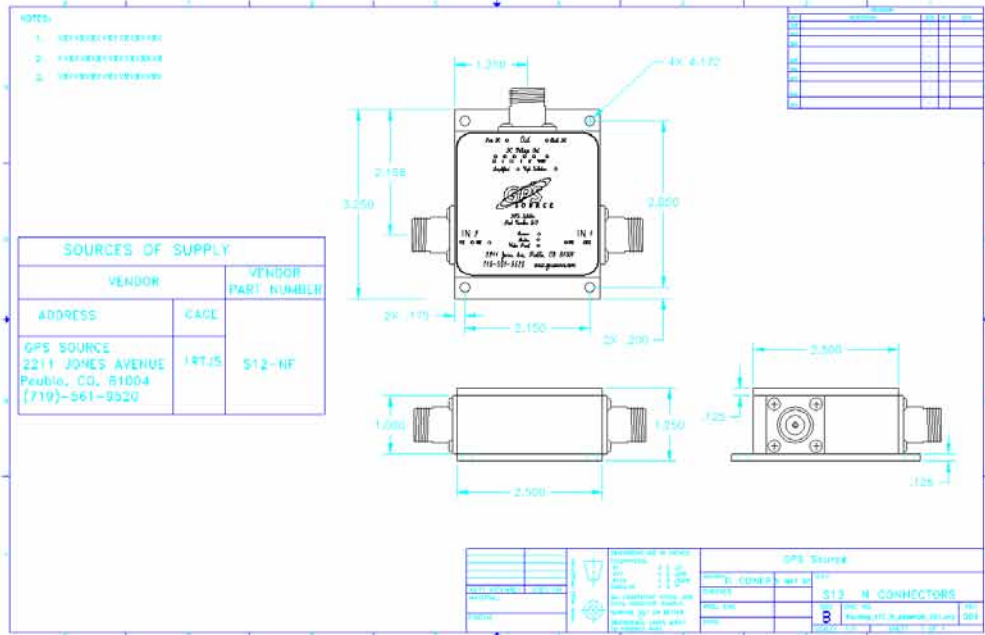
- NM** – N, Male
- NF** – N, Female
- SM** – SMA, Male
- SF** – SMA, Female
- TM** – TNC, Male
- TF** – TNC, Female
- BM** – BNC, Male
- BF** – BNC, Female
- SB** – SMB Jack, Female
- SC** – SMC Jack, Female

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).

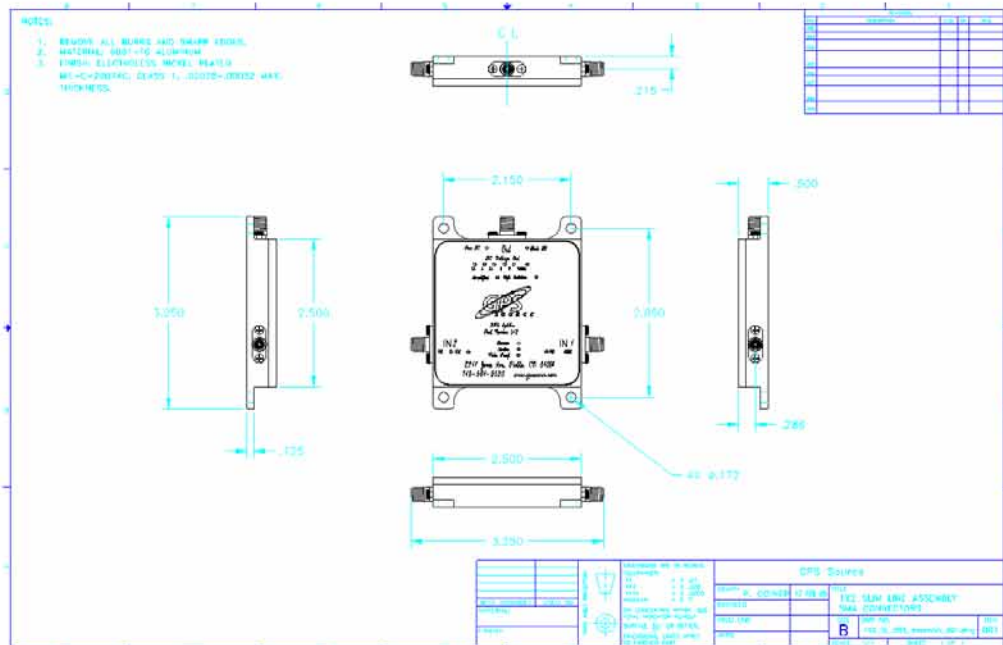
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Mechanical:

Standard Housing:



Slimline Housing:



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