

## RMS18 SPLITTER

### Rack Mount 1x8 GPS Signal Divider



#### DESCRIPTION

The RMS18 Rack Mount Splitter is a one-input, eight-output GPS signal divider. Typical use is where an input from a single active GPS roof antenna is split evenly between eight outputs to create an indoor GPS signal distribution network. The RMS18 is typically configured with a variety of power options: 110, 230 (Euro) or 230 (UK) AC options and 12-24VDC or -48VDC where voltage is passed to the antenna input port in order to power an active GPS antenna on that port. In this scenario, the RF outputs (J1 - J8) would feature a 200Ω DC load to simulate an antenna DC current draw for any receiver connected to those ports.

#### FEATURES

- Standard 19 inch Rack Mount Configuration
- Passes GPS, Galileo, and GLONASS L1/L2
- Numerous Options Available
- -48VDC Power Supply Option

#### OPTIONS

The RMS18 splitter comes with many available options to meet specific needs. Please contact GPS Source via phone, fax, email, or visit the website for further information on product options and specifications.

#### RMS18 Splitter Data Sheet

# 1. RMS18 Specifications

## 1.1 Electrical Specifications

Table 1-1. Electrical Specifications

Operating Temperature -40°C to 85°C

| Parameter                          |          |           | Conditions                                       | Min | Typ | Max               | Units  |
|------------------------------------|----------|-----------|--|-----|-----|-------------------|--------|
| Frequency Range                    |          |           | Ant: Any Port; Unused Ports: 50Ω                 | 1   |     | 1.8               | GHz    |
| In/Out Impedance                   |          |           | Ant: J1 – J8                                     |     | 50  |                   | Ω      |
| Gain                               | Standard | Amplified | Ant: Any Port; Unused Ports: 50Ω                 | 10  | 12  | 14                | dB     |
|                                    | Custom   | Amplified | As Specified (XXdB, from 0 to 14dB)              | X-1 | X   | X+1               |        |
| Input SWR                          |          |           | All Ports 50Ω                                    |     |     | 2:1               | —      |
| Output SWR                         |          |           | All Ports 50Ω                                    |     |     | 2:1               | —      |
| Noise Figure                       |          | Amplified | Ant: Any Port; Unused Ports: 50Ω                 |     |     | 2.2               | dB     |
| Gain Flatness                      |          | Amplified | [L1 – L2] Ant: Any Port; Unused Ports: 50Ω       |     |     | 4                 | dB     |
| Amp. Balance                       |          |           | [J1 – J2] Ant: Any Port; Unused Ports: 50Ω       |     |     | 4                 | dB     |
| Phase Balance                      |          |           | Phase (J1 – J2) Ant: Any Port; Unused Ports: 50Ω |     |     | 1                 | Degree |
| Group Delay Flatness               |          |           | $T_{d,max} - T_{d,min}$ ; Ant: Any Port          |     |     | 1                 | ns     |
| Isolation<br>- Amplified (Hi Iso.) |          |           | Adjacent Ports: Ant – 50Ω                        | 38  |     |                   | dB     |
|                                    |          |           | Opposite Ports: Ant – 50Ω                        | 44  |     |                   |        |
| Current                            |          |           | Current Consumption of device (excludes Draw)    |     |     | 16                | mA     |
| Draw Current                       | Pass DC  |           | Non-Powered Configuration, DC Input on J1        |     |     | 22 <sup>(1)</sup> | mA     |
|                                    | Powered  |           | Military or Quick Connect Option                 |     |     | 100               |        |
| Max RF Input                       |          | Amplified | Max RF Input Without Damage                      |     |     | 0                 | dBm    |

Notes: 1. The maximum combined DC current draw from all ports is a function of the DC input voltage and desired DC output voltage, according to:  $I_{out} \leq 1.4 / (V_{DC IN} - V_{DC OUT}) - 0.016A$

**Table 1-2. AC and DC IN Specifications**

Operating Temperature -40°C to 85°C

| Parameter |          | Condition  | Min                              | Typ              | Max | Units |
|-----------|----------|--|----------------------------------|------------------|-----|-------|
| AC IN     | 110      | Wall Mount Transformer <sup>(1)</sup>                  |                                  | 110              |     | VAC   |
|           | 220/240  | Wall Mount Transformer (International Plugs Available) |                                  | 230              |     |       |
| DC IN     | DC Block |  |                                  |                  | 14  | VDC   |
|           | Pass DC  | Amplified  | 3                                |                  | 16  |       |
|           | Powered  |  | Military or Quick Connect Option | 8 <sup>(2)</sup> |     |       |

- Notes:
1. For the powered option with a wall mount transformer (Voltage Input = 110/220/240 VAC),  $V_{DC IN}$  is 9V.
  2. DC IN for powered option must be 2V greater than desired DC Voltage Out
  3. The maximum combined DC current draw from all ports is a function of the DC input voltage and desired DC output voltage, according to:  $I_{out} \leq 1.4 / (V_{DC IN} - V_{DC OUT}) - 0.016A$

## 2. Performance Data

### 2.1 RMS18

Figure 2-1. Standard Gain RMS18 Splitter: Gain vs. Frequency

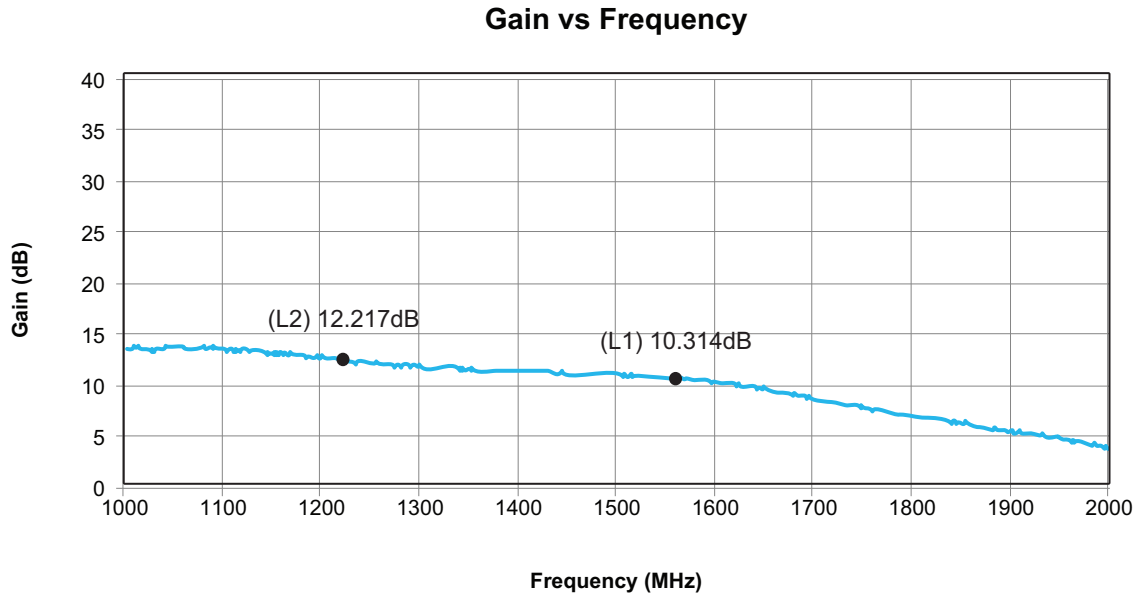
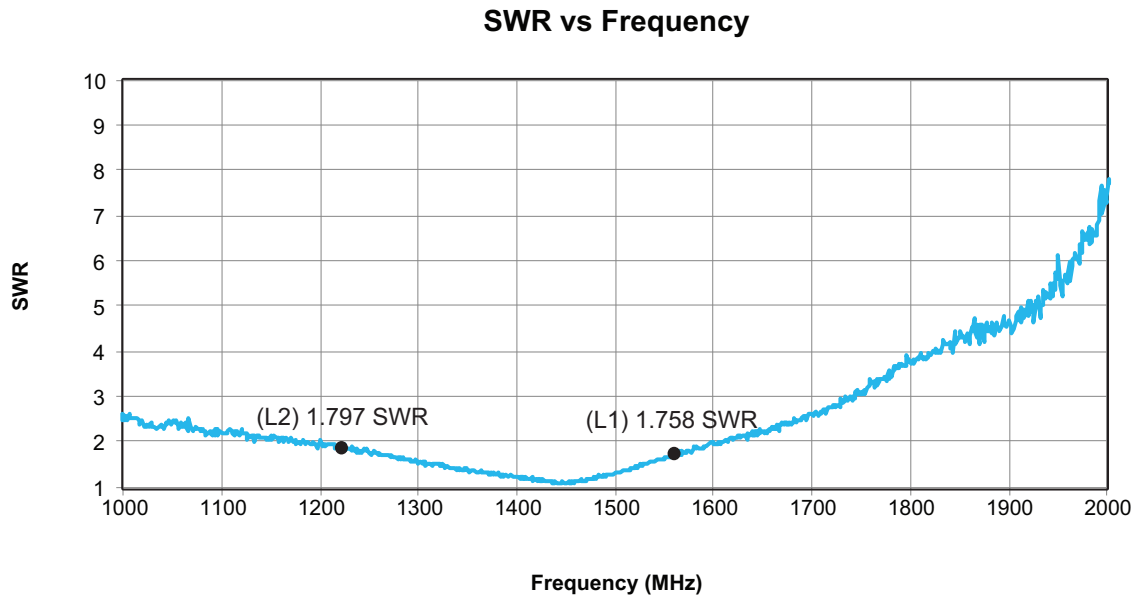


Figure 2-2. RMS18 Splitter: SWR vs. Frequency



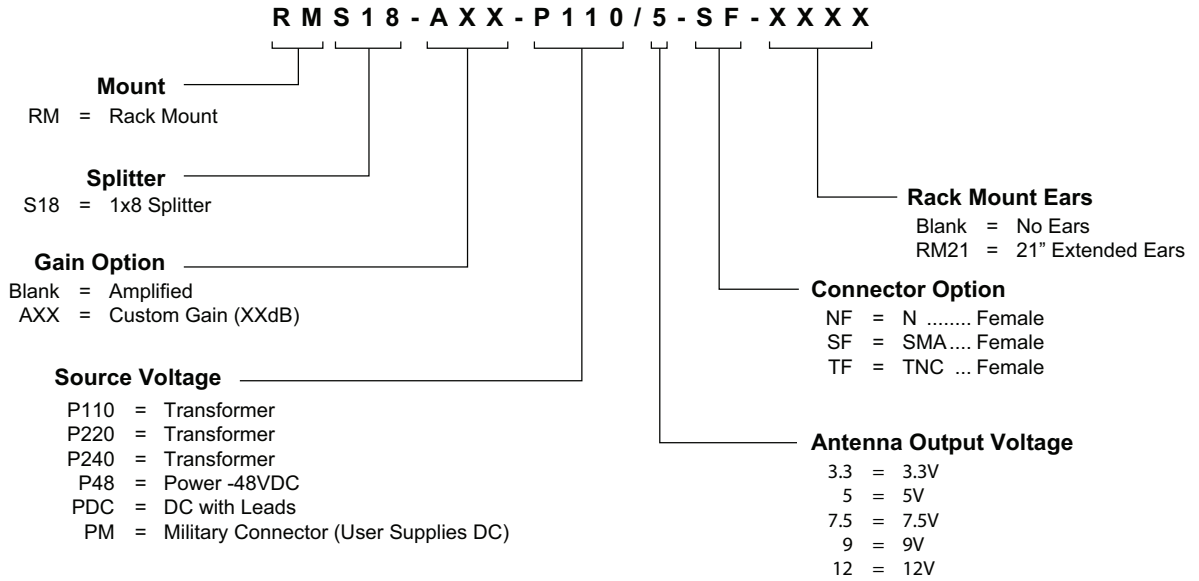
### 3. Product Options

Table 3-1. RMS18 Available Options

| Power Supply                  |  |  |
|-------------------------------|--|--|
| Source Voltage <sup>(2)</sup> | Voltage Input  | Type                                   |
|                               | 110VAC   | Wall Mount Transformer                 |
|                               | 220VAC   | Wall Mount Transformer                 |
|                               | 240VAC (U.K.)  | Wall Mount Transformer                 |
|                               | DC 8-28VDC   | Military Style Connector or with Leads |
| Output Voltage <sup>(1)</sup> | DC Voltage Out   |  |
|                               | 3.3  |  |
|                               | 5  |  |
|                               | 7.5  |  |
|                               | 9  |  |
|                               | 12   |  |
|                               | Custom   |  |
|                               |  |  |
| RF Connector                  |  |  |
| Connector                     | Connector Type   | Limitations                            |
|                               | N (Female/Male)  | N/A                                    |
|                               | SMA (Female/Male)  | N/A                                    |
|                               | TNC (Female/Male)  | N/A                                    |
| Housing                       |  |  |
| Housing                       | Housing Type   | Limitations                            |
|                               | 19 x 8 x 1.75 in Rack Mount                                    | N/A                                    |
| Port <sup>(1)</sup>           |  |  |
| DC Blocked                    | OUT1 – OUT8 are DC Blocked with 200Ω Load; DC is passed to ANT |  |

- Notes:
1. Source Voltage Option:  
Any or all RF ports (input or output) can be DC Blocked or can pass through the powered DC voltage.
  2. For powered option with a wall mount transformer (Voltage Input = 110/220/240VAC),  $V_{DC IN}$  is 9V.

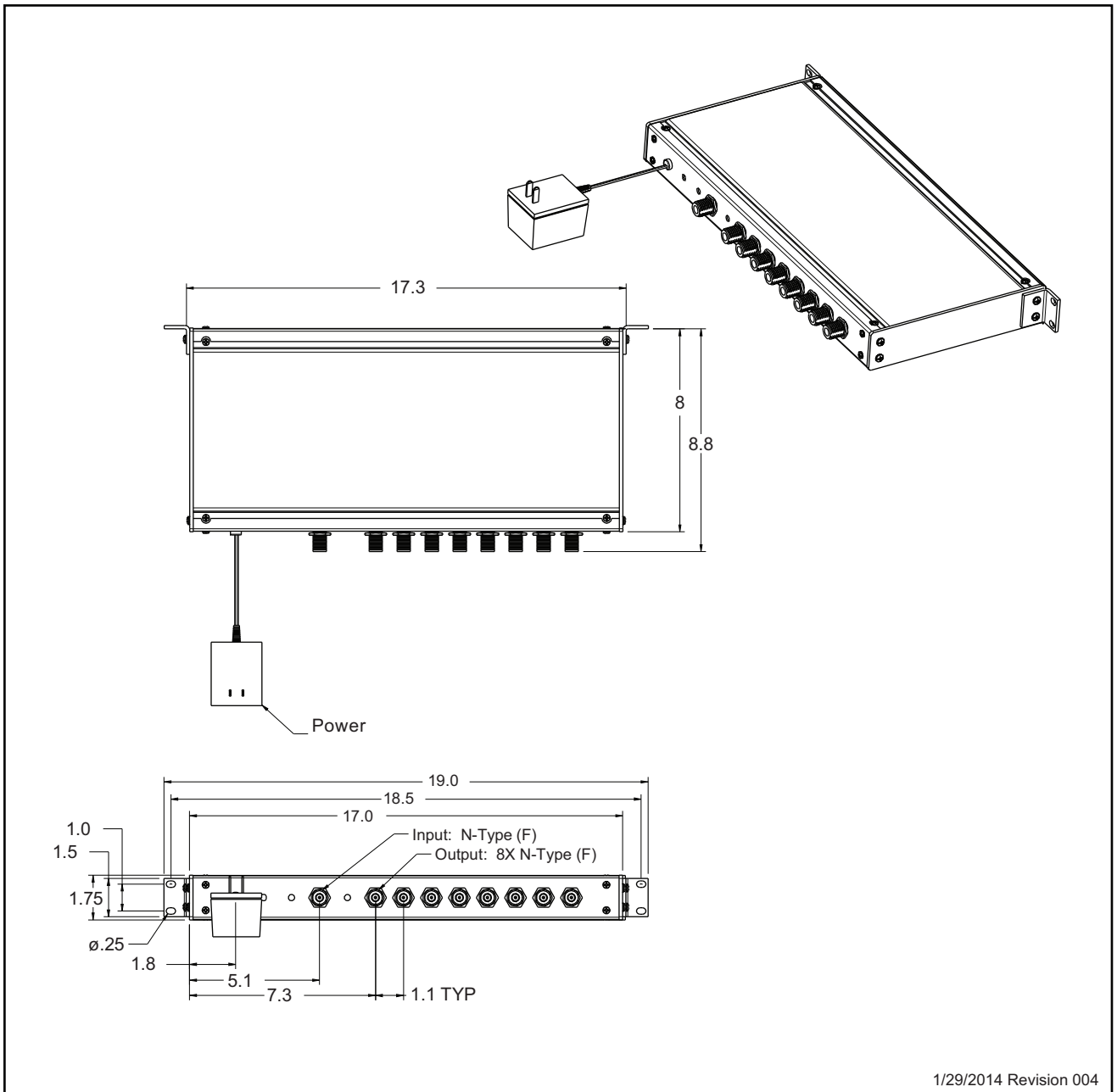
## 4. Product Code Decoder



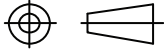
Note: To have product/part codes customized to meet exact needs, contact GPS Source at [techsales@gpssource.com](mailto:techsales@gpssource.com) or visit the website at [www.gpssource.com](http://www.gpssource.com).

## 5. Mechanical Drawing

### RMS18 Splitter — FSA-ADS-ABX-BBZ



1/29/2014 Revision 004

|  |                              |   |                      |                                    |                                       |
|--|------------------------------|---|----------------------|------------------------------------|---------------------------------------|
| GPS Source Part No.<br><b>FSA-ADS-ABX-BBZ</b>  | Finish<br><b>As Provided</b> | Size<br><b>C</b>  | Mass<br><b>4.5lb</b> | Tolerances                         |                                       |
| Description<br><b>Rack Mount RMS18 GPS Splitter<br/>FSA 1 IN 8 OUT PWR 110/5VDC N(F)</b>   | Material<br><b>See BOM</b>   | 3 <sup>rd</sup> Angle Projection<br> |                      | Linear<br>.X = ±0.1<br>.XX = ±0.01 | Angular<br>±1°<br>RADII<br>See Linear |
| All materials and finishes shall comply with European Union RoHS and are lead free. Dimensions are in inches unless otherwise specified. |                              |   |                      |                                    |                                       |



**GPS LIVE INSIDE**

## **RMS18 Splitter Data Sheet**

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AS9100C:2009 and ISO 9001:2008 Compliant Company



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