

## S14WI - SMART GPS 1 in 4 Splitter

### Description:

The S14WI can eliminate the cost of multiple antennas and long cable runs in commercial or military GPS installations. It is a high performance, intelligent GPS signal splitter designed to meet the demanding reliability requirements of commercial and military applications. It can be configured to monitor the GPS antenna current and provide an alarm indication if the antenna is not operating according to specifications.

The S14WI features a standard antenna DC bias Pick-and-Choose circuit. This allows for the active antenna DC input to be applied to any or all RF outputs. With this feature, one DC voltage will be chosen to power the antenna while other inputs will be switched to DC loads. If the selected DC bias input should fail, the DC bias will automatically switch to another DC input to ensure an uninterrupted supply to the active antenna.

The S14WI is an amplified device with customer defined gain. This allows greater flexibility in optimizing performance for the application. It has an option for a GPS filter on the input. This offers excellent selectivity around the L1 band to prevent interference from other high power radio frequency sources. Surge protection is included on all five ports.

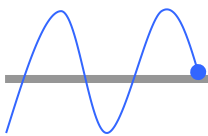
The S14WI is delivered in a sealed housing unit sufficient for many years of operation in demanding environments. The S14WI can be custom configured to fit unique infrastructure requirements.

### Features:

- Ruggedized Waterproofed Housing
- Standard Antenna DC Bias Select
- Optional Antenna Monitoring and Alarm
- Optional GPS Filter
- Pole-Mount Environmental Housing (IEC 529 IP55)
- Surge Protection Standard (Tested to EN61000-4-5)



**S14WI**



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### RF PORTS

|          |   |
|----------|---|
| > Input  | 1 |
| > Output | 4 |

### ELECTRICAL SPECIFICATION

|  |                  |
|--|------------------|
| > Input/Output Impedance                 | 50 $\Omega$      |
| > Frequency                              | 1575.42 MHz      |
| > Bandwidth (3dB)                        |                  |
| Standard                                 | 100 MHz          |
| Filter Option (45dB)                     | 30 MHz           |
| > Gain                                   | 0 – 21 dB        |
| > SWR Input / Output                     | 2.0 : 1          |
| > Noise Figure                           | 2 dB max.        |
| > Amp. Balance (Port to Port)            | 1 dB max.        |
| > Phase Balance                          | 1.0 ° max.       |
| > Delay                                  | 1 ns max.        |
| > Isolation                              |                  |
| Adjacent Ports                           | 35 dB min. @L1   |
| Alternate Ports                          | 44 dB min. @L1   |
| > DC Input (on any Port)                 | 4 – 12 V DC max. |
| > Voltage Drop - Out to IN 0.5 V DC max. |                  |
| > Current                                |                  |
| Device Current                           | 18 – 20 mA max.  |
| Ant/Thru Current                         | 250 mA max.      |
| > Max. HF Input                          | +10 dBm          |
| > Antenna Monitor                        |                  |
| I <sub>OC</sub> Range Open-Circuit       | 10 – 25 mA       |
| I <sub>SC</sub> Range Short-Circuit      | 100 – 180 mA     |
| > Surge Protection 8/20 $\mu$ s          | 4 kA             |

### PHYSICAL SPECIFICATION

|                          |                  |
|--------------------------|------------------|
| > Operating Temperature  | - 40 to 85°C     |
| > Dimensions (W x H x D) | 140 x 32 x 16 mm |
| > Weight                 | ca. 490 g        |
| > Housing                | waterproof       |

### OPTIONS

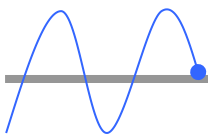
|                   |           |
|-------------------|-----------|
| > Gain            |           |
| Standard          | 10 dB     |
| Custom            | 0 – 21 dB |
| > EMI Shielding   |           |
| > Antenna Monitor |           |
| > Filter GPS L1   |           |
| > RF Connectors   |           |
| N female          |           |
| TNC female        |           |
| SMA female        |           |

### ORDER INFORMATION

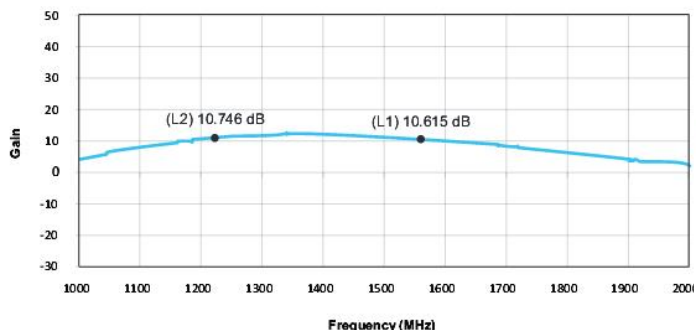
Contact AuCon regarding Price / Availability and Test Data. CoC on request.

#### Notes:

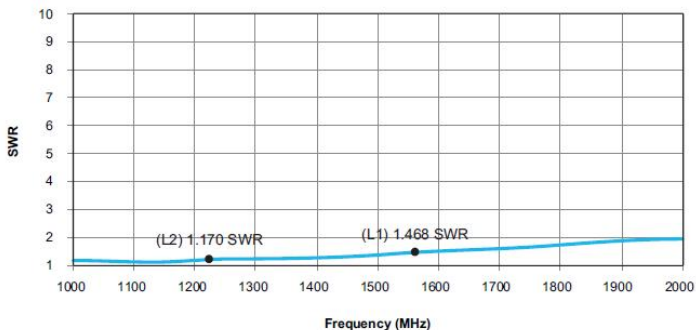
1. If the desired custom gain is greater than 10dB, for proper RF performance, the S14WI should have all RF ports terminated to a 50 Ohm coaxial cable system or a 50 Ohm load.
2. Ant/Thru Current is maximum current available from the DC Source through the S14WI when output of S14WI is short circuited.
3. Open-Circuit and Short-Circuit current (I<sub>OC</sub>, I<sub>SC</sub>) can be specified by the customer within the specific range.



**S14WI Splitter — Unfiltered Frequency Response  
Gain vs Frequency**

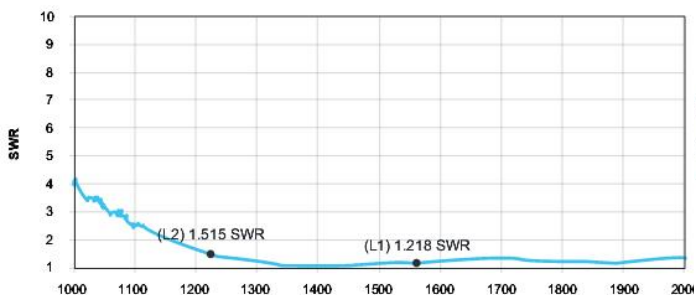


**S14WI Splitter — Unfiltered Output SWR  
SWR vs Frequency**



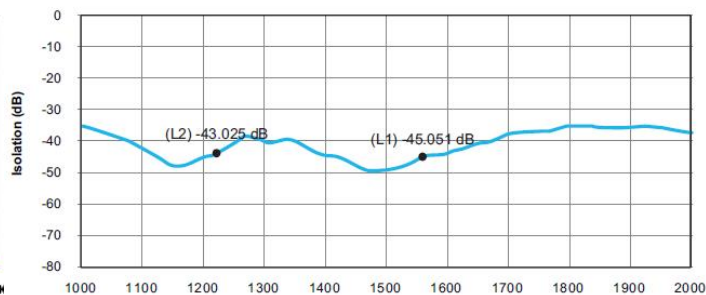
2. Unfiltered Input SWR

**S14WI Splitter — Unfiltered Input SWR  
SWR vs Frequency**



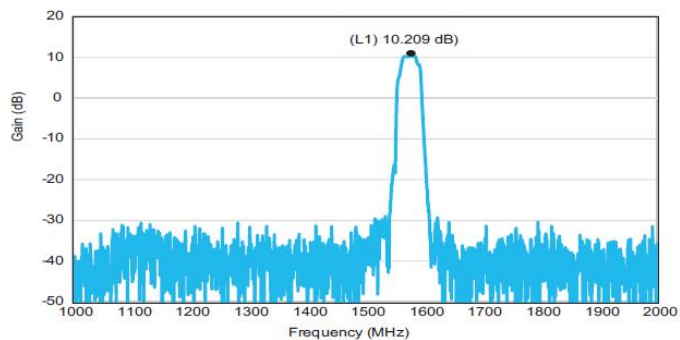
4. Adjacent Port Isolation

**S14WI Splitter — Adjacent Port Isolation  
Isolation vs Frequency**

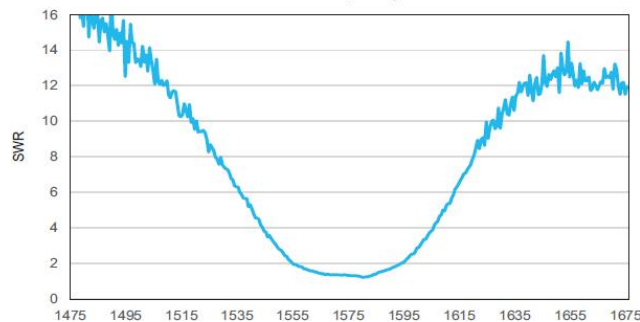


Filtered Frequency Response

**S14WI Splitter - Frequency Response  
Gain vs Frequency**

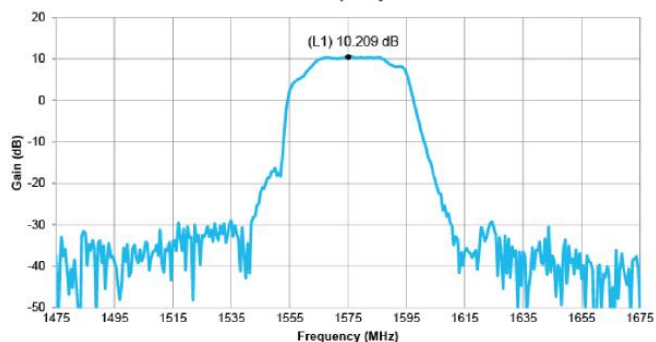


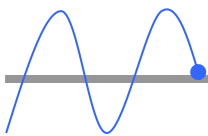
**S14WI - Filtered Input  
SWR vs. Frequency**



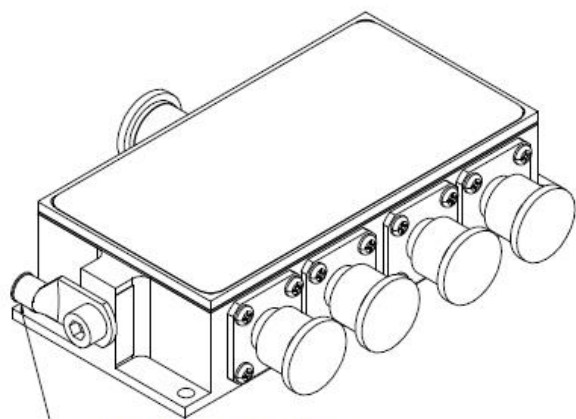
Filtered Frequency Response

**S14WI - Filtered Frequency Response  
Gain vs Frequency**





## S14WI - Mechanical Drawing



GROUND LUG INCLUDED  
IN SHIPPED ASM

M6 X 1.0 SOCKET HEAD  
CAP SCREW (5mm HEX)  
USE FOR GROUND LUG  
ATTACHMENT

PROTECTIVE WEATHER  
CAPS INCLUDED IN SHIPPED ASM

