

# GPS L1 Active Splitter



The Microsemi GPS L1 Active Splitter

## Key Features

- Multiple Ports
- High Isolation
- Waterproof
- Base Station Applications

## Introduction

The Microsemi® Active Splitter allows multiple GPS receivers to share a single antenna. Designed for both manufacturing and position/timing redundancy applications, the GPS L1 Active Splitter provides dependable signals for two GPS receivers.

With built-in amplification to overcome splitter losses, the Active Splitter can be conveniently cascaded without adding separate amplifiers and bias-tees between splitters.

## High Isolation Eliminates Receiver Interaction

The Microsemi GPS Active Splitter has the essential port-to-port isolation required to eliminate interaction between multiple GPS receivers. Without such isolation, Local Oscillator (LO) leakage from one GPS receiver can prevent other receivers from acquiring time and position signals and maintaining lock. In wireless base station applications, poor isolation can disable cell sites. In GPS manufacturing tests, poor isolation causes repeatability problems which can reduce yields and cause false rework.

The Microsemi Active Splitter has a minimum of 40 dB isolation at common GPS LO frequencies between the output ports. Extensive field testing by GPS and cellular base station manufacturers has demonstrated suitability for use and the long-term dependability of the Microsemi GPS L1 Active Splitter.

## Convenient DC Power Simplifies Your Installation

Power is conveniently obtained from the GPS receiver(s) connected to the amplifier. This eliminates the need for a separate DC power supply and wiring. DC power applied to the splitter is also passed on for use by an active antenna, further simplifying your installation. The splitter 150-711 (2 outputs), obtains power from a GPS receiver connected to any port.



GPS Splitter kit

# GPS L1 Active Splitter

## Specifications

### Output Ports

- Number of Ports: 2

### Electrical Specifications

- Input/output impedance: 50  $\Omega$
- VSWR (typical)
  - Input: 1.2
  - Output: 1.6
- Bandwidth (-3 dB): L1 (1575.42 MHz)  $\pm$ 20 MHz
- Gain (antenna input to any output at L1): 3 dB  $\pm$ 3 dB
- Noise figure: 5 dB typical
- Port-to-port isolation (L1 +/-40 MHz): 54 dB typical
- AC input level: -25dBm max.
- Damage threshold: +17dBm
- DC power (Operating voltage): +4.5 to +13 V\* dc
  - \*Caution: Operating voltage is passed through to the antenna. The 58532A Antenna operates on +5 Vdc nominal. Applying more than +5 Vdc may damage the 58532A.
- Damage threshold: 18 V dc either polarity
- Operating current: 23 to 48 mA depending on voltage
- Passthrough current: 450 mA
- Group delay: 40 ns typical

### Physical Specifications

- RF connectors: Female N-type
- DC power connector: Female SMC
- Dimensions (including RF connectors): 95 mm W x 130 mm L x 35 mmH (3.75 in. x 5.12 in. x 1.38 in.)
- Weight: 0.5 kg
- RF connectors: N-Type
- Dimensions: 185 mm W x 64 mm L x 34.5 mmH (7.3 in. x 2.5 in. x 1.4 in.)
- Operating temperature: -35°C to +75°C

### Environmental

- Standard: ETSI 300 019-2-4 Spec. T4.1 and 4.1.E

### Temperature

- Non-Operating\*: -65°C to +85°C
- Operating: -40°C to +80°C

### Humidity

- Operating: 95% RH @ +40°C
- Non-Operating\*: 90% RH @ +65°C

### Altitude

- Operating: 15 Kft @ -40/+80°C

### ASTM B117 Salt Fog Test

**Safety:** IEC 1010-1: 1990 + A1 / EN 61-610-1: 1993

### EMC:

- CISPR 22 1993 / EN 55022: 1994 Class B
- IEC 801-2 1991 / EN 50082-1: 1992 4 RV CD, 8 kV AD
- IEC 801-3 1984 / EN 50082-1: 1992 3 V/m, 1 kHz 80% AM, 26 1000 MHz
- IEC 801-4 1988 / EN 50082-1: 1992 0.5 kV Signal Lines and DC Power Port
- IEC 1000-3-2 1995 / EN 61000 3-2: 1995 Harmonics
- IEC 1000-3-3 1994 / EN 61000 3-3: 1995 Flicker

This product model complies with the requirements of the Low Voltage Directive 73/23/EEC and the EMC Directive 89/336/EEC and carries the CE marking accordingly.

\*Storage and transit

### Ordering Information

(Contact Microsemi for pricing and availability)

- 150-711 GPS L1 1:2 Active Splitter.

### Product Includes

- 1:2 GPS Active Splitter, x2 TNC (f) to N (m) adapter, x1 BNC (f) to N (m) adapter, and x2 3' adapter cable with TNC to BNC terminations.

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