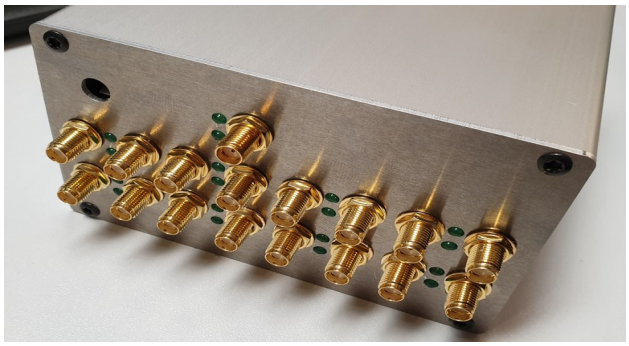
16-channel GPS antenna splitter

sysmocom
systems for mobile communications GmbH



Introduction

In several use cases there is a need for providing a GPS reference signal to a variety of device with built-in receivers.

Running separate Antenna cables to each of those GPS receivers is often difficult and cumbersome.

This includes, for example

- lab setups where many cellular base stations with GPS clock reference input are operated
- lab setups wit a variety of measurement devices that utilized GPS disciplined reference clocks
- in-building distribution of GPS RF signals

The sysmocom **16-channel GPS antenna RF splitter** is the ideal solution for such setups. Its unparalleled number of 16 receiver-side RF ports allow for a large density of GPS receivers.

The GPS RF signal of a single GPS antenna (which can optionally be phantom powered by the splitter) is filtered, amplified, filtered again and then split (in two stages of 1:4 dividers) across 16 RF outputs.

Each output features an integrated DC-block and a dedicated LED to indicate if phantom voltage is supplied by the attached receiver or not. Supported biasing voltages on the output side are in the range of 3 .. 12V DC.

The product is available in two form-factors

- a stand-alone extruded aluminum desktop enclosure - useful for portable operation on a lab desk
- as a module for a 3U component carrier - a perfect fit for larger rack-mounted lab installation or in-building GPS RF signal distribution

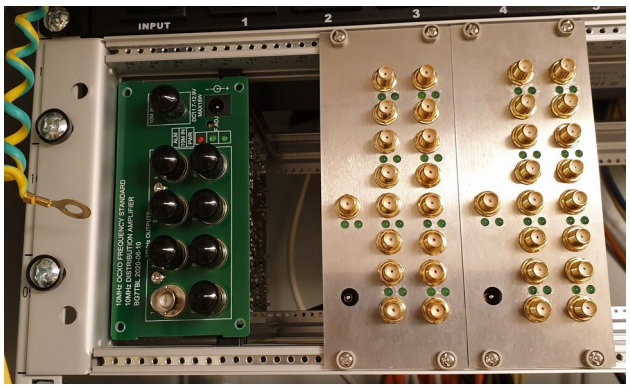
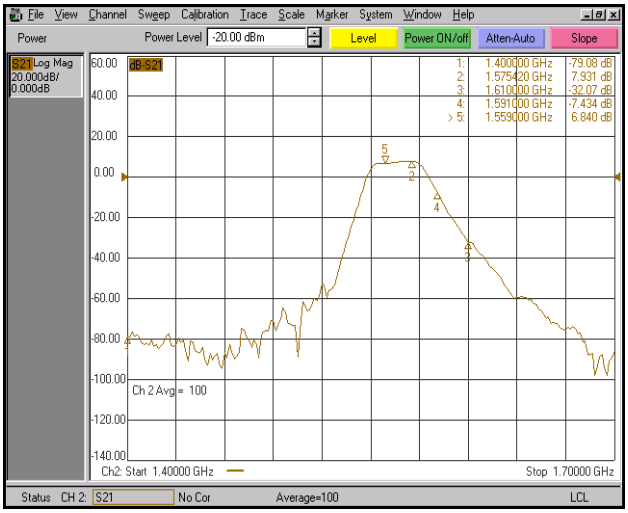


Figure 1: Two 1:16 GPS splitters mounted adjacent to each other in a 3U component carrier

RF Passband



For more detailed technical data, see the specification tables on the reverse side of this data sheet.

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Electrical Specification

Supply Voltage	12V DC / 300 mA, provided via either • 5.5/2.1 mm barrel connector (front panel), or • 2.54 mm pitch header (internal, close to back panel)
Phantom Voltage to Antenna	Selectable via Jumper: • none • 3V • 5V • external source (e.g. to feed 12V antennas from external supply)
Phantom Voltage from Receivers	Supported Voltage range: 3V to 12V DC (only used for indicator LEDs)
Overall RF System Gain	8 dB typical @ 1.57542 GHz
Passband	1.57422 … 1.57662 GHz
RF Isolation (between output ports)	20 dB (ports of same 1:4 splitter); 40 dB (ports of different 1:4 splitter)
Filtering	• >= 80 dB at frequencies < 1.4 GHz • >= 65 dB at frequencies < 1.5 GHz • >= 65 dB at frequencies > 1.6 G Hz • >= 80 dB at frequencies > 1.65 GHz
RF connectors	SMA, female, bulkhead mount
Internal Filters	2x EPCOS B39162B3520U410
Internal LNA	1x 30dB gain, 1.0dB NF
Absolute Maximum input RF power	25 dBm
Operating Temperature	-40 to 85 centigrade

Mechanical Specifications (excluding connectors)

Variant	3U component carrier	Desktop Enclosure
Dimensions (W x H x D)	128.4 mm x 50.8 mm *(10 DU)* x 45 mm	105 mm x 65 mm x 53 mm
Weight (net)	TBD	TBD
Order Code	`gps-spl-16-bgt`	`gps-spl-16-koh`

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