

## HL9477 Broadband Resistive Power Divider (67 GHz)

### Features and Technical Specifications

|                                                    |                                               |
|----------------------------------------------------|-----------------------------------------------|
| Bandwidth (-1.5 dB)                                | DC to 67 GHz                                  |
| Insertion Loss (DC)                                | 6.02 ± 0.11 dB                                |
| Insertion Loss (AC)                                | 6 dB, typical<br>See Fig. 1 below             |
| Amplitude Match                                    | ± 0.1 dB, typical<br>See Fig. 1 below         |
| Phase Match                                        | ± 4-6° at 40 GHz, typical<br>See Fig. 2 below |
| Return Loss                                        | See Fig. 3 below                              |
| Rise time                                          | 5.2 ps, typical                               |
| Insertion Delay                                    | ≈ 125 ps, all ports                           |
| Max Input Power                                    | +33 dBm                                       |
| Impedance (DC)                                     | 50 Ω ± 5%                                     |
| Connectors                                         | 1.85 mm, 3x jack/female                       |
| Length and Width (center to end of each connector) | 17.57 mm (0.69")                              |
| Height                                             | 13.59 mm (0.535")                             |
| Weight                                             | 14 g (0.49 oz.)                               |
| Temperature Limits                                 | -40° to +40° C, operating                     |
| RoHS Compliance                                    | RoHS compliant; made with lead-               |
| Warranty                                           | 1 year, see website                           |



#### PRODUCT SUMMARY

The HL9477 is a 6 dB power divider that provides outstanding amplitude and phase symmetrical power division from DC to beyond 67 GHz.

This product is designed using a three-resistor network resulting in outputs that are nominally attenuated to 6 dB, and all ports are impedance matched to 50 Ohms when the ports are terminated.

The HL9477 is designed suitable for use in multi-Gbps communications systems, high-speed analog-to-digital conversion, frequency response testing for differential devices, and many other applications.

#### DEPLOYMENT NOTES

This product is also available with different connectors: 2.4 mm (P/N HL9475), 2.92 mm (HL9474), or SMA (HL9472).

The HL9477 ports are symmetrical and the device can be used in any direction.

For the purposes of this datasheet and the S Parameters on our website, Port 1 is indicated with a small dot on the label.

#### ADDITIONAL DATA

Higher-resolution versions of the charts on the following pages are available on our website.

## HL9477 Amplitude and Phase Match

The HL9477 is matched to 50  $\Omega$  on all ports and thus can be used in any direction. *Figure 1* shows bandwidth and amplitude match of the HL9477 from 10 MHz to 70 GHz. *Figure 2* shows phase mismatch (from 0°) on the output ports over the same frequency range.

For both plots, Port 1 is the input and Ports 2-3 are the outputs.

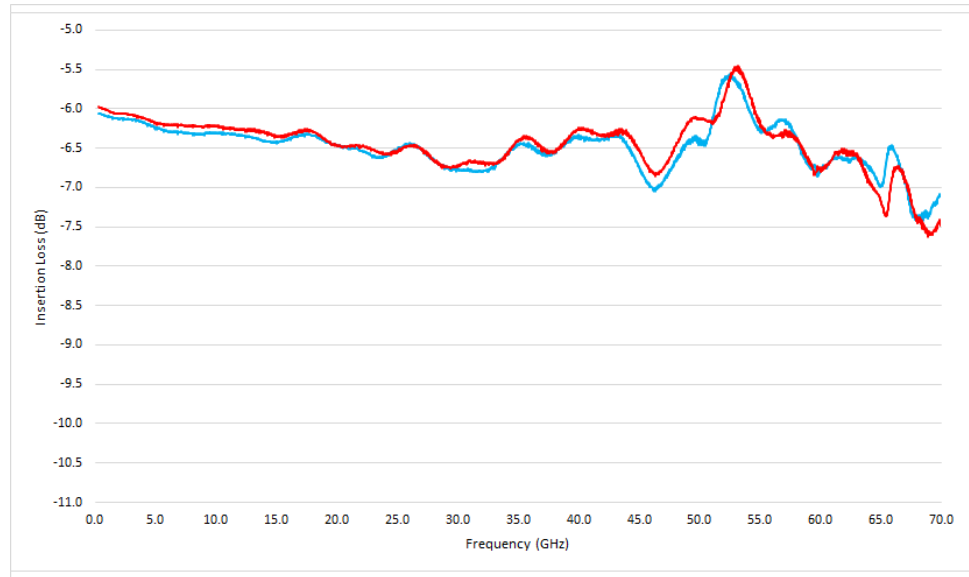


Figure 1: Typical amplitude match of an HL9477 device

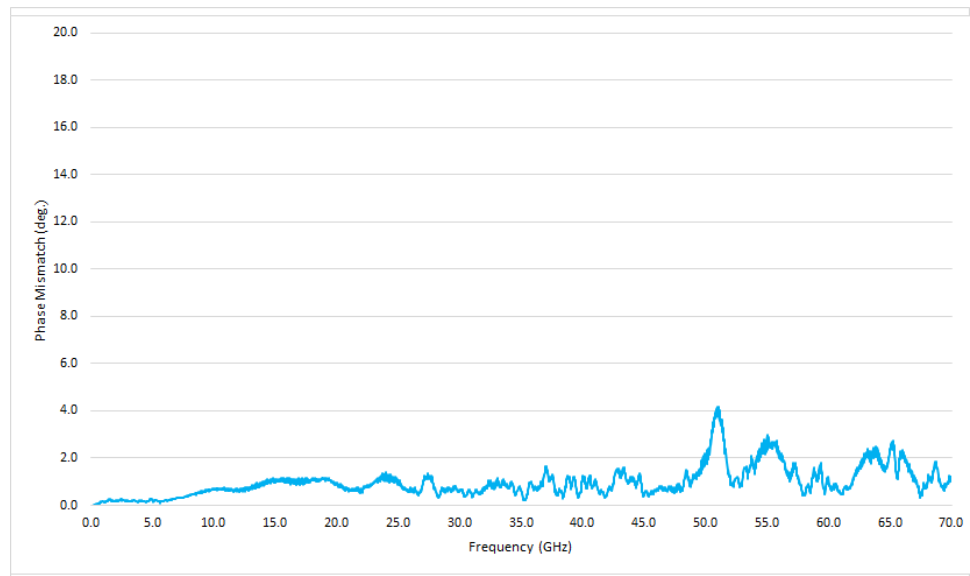


Figure 2: Typical phase mismatch of HL9477 output ports, in degrees

### HL9477 Return Loss and VSWR

The HL9477 is a symmetrical power divider, so Return Loss and VSWR are very similar between ports. *Figure 3* shows the typical return loss of all ports, while *Figure 4* shows VSWR.

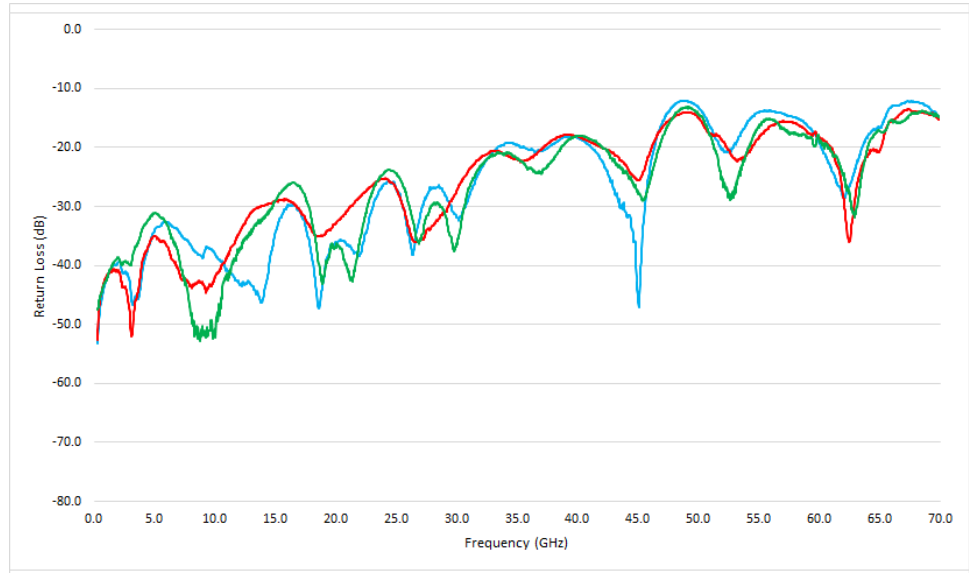


Figure 3: Typical return loss on the HL9477

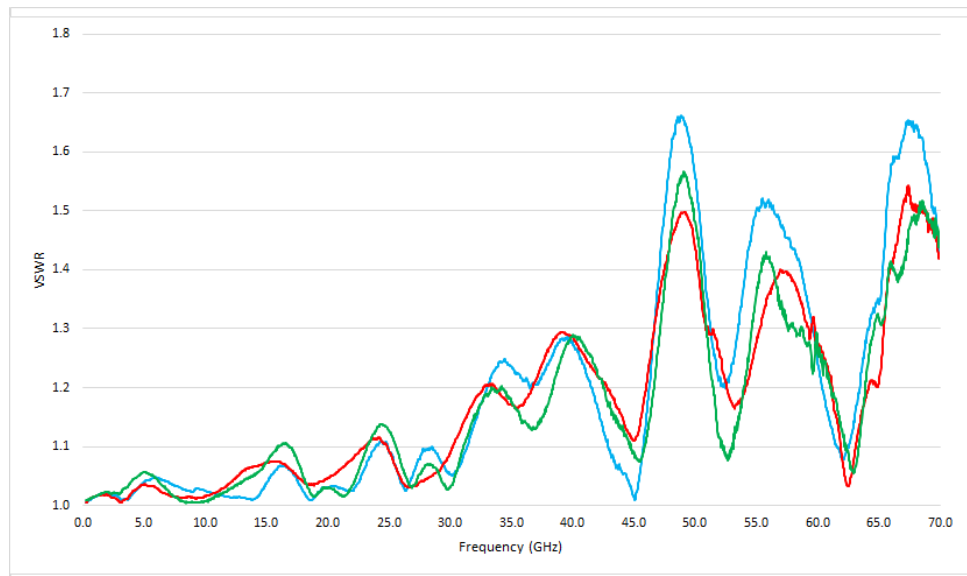


Figure 4: Typical VSWR on the HL9477