

# Operating and Service Guide

**Agilent Technologies**  
**11850C**  
**50 Ohm**  
**Three-Way Power Splitter**



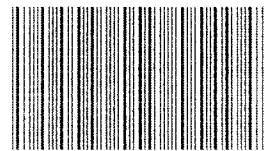
**Agilent Technologies**

**Manufacturing Part Number: 11850-90019**

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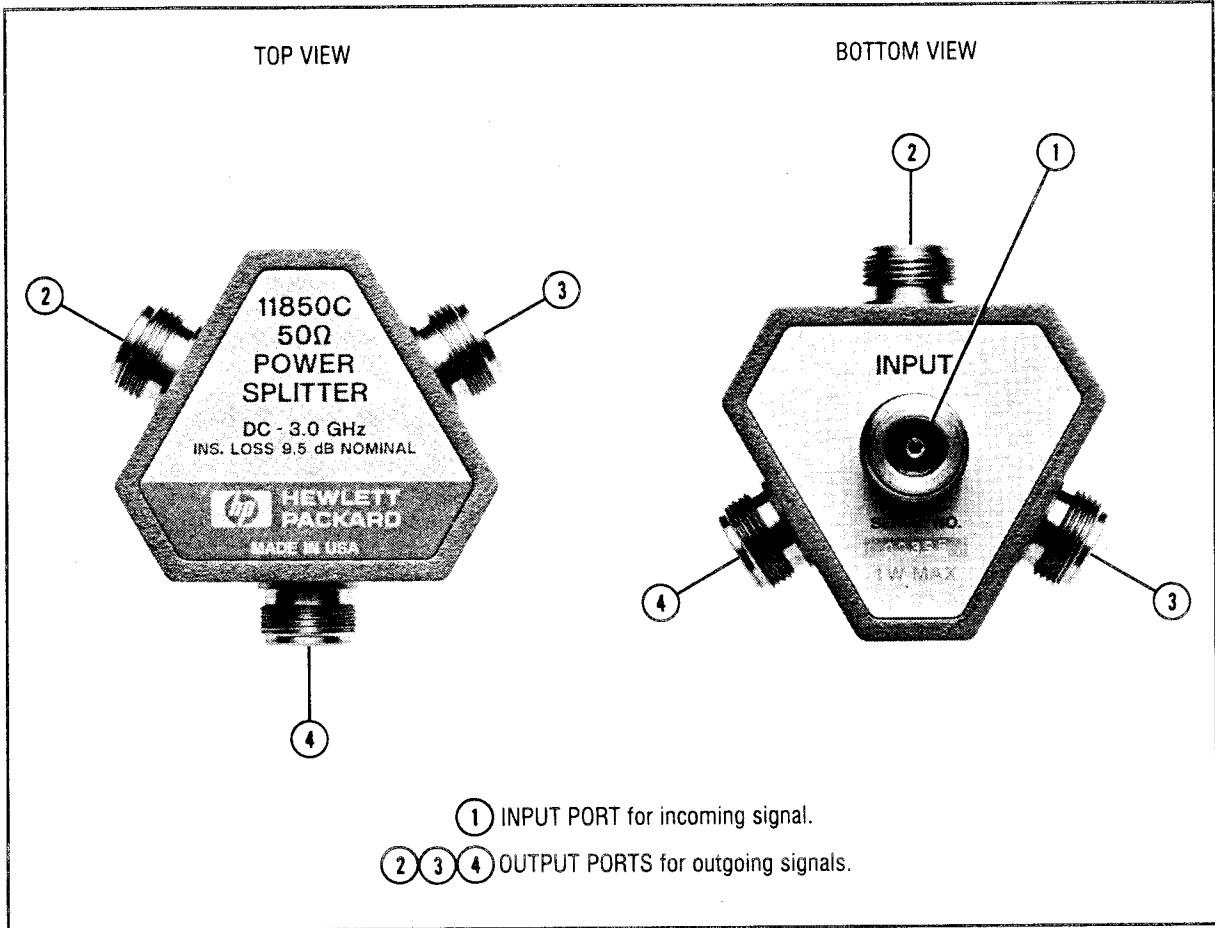
## GENERAL INFORMATION

To obtain optimum performance from this power splitter, observe these simple precautions:

- Make connections carefully to avoid misalignment and connector damage or inaccurate measurements.
- Keep the connectors free of dirt and metallic particles.
- If you must clean the connectors, try clean compressed air first. Do not use abrasives. With a plastic swab, apply **only** liquid Freon (trichlorotrifluoroethane) as a solvent.
- For more information, refer to the Microwave Connector Care manual (HP part number 08510-90064) or application note 326, Principles of Microwave Connector Care (literature number 5954-1566).
- Type-N(f) center conductor protrusion: 0.204 to 0.207 inch.

## INSPECTION

To confirm the proper operation of this device, first visually inspect its connectors for signs of wear or damage. Then check its electrical operation by observing how closely the three output ports track each other. For example, connect the RF output of an HP 8753A network analyzer to the power splitter's input port. Connect one output port of the power splitter to input R of the HP 8753A and terminate the other two output ports with  $50\Omega$  loads. Center the trace on the CRT and set the scale to 0.2 dB/division. Store the trace in memory. Connect the cable from input R to a different power splitter output port and terminate the other two. Compare the two traces in the "Display: Data and Memory" mode. The two traces should not vary by more than 0.3 dB at any frequency between 300 kHz and 3 GHz.



## DESCRIPTION

The HP 11850C, illustrated above, is a 50 $\Omega$  three-way power splitter for use in network measurements where one arm of the power splitter is used to supply a reference signal for leveling or ratio measurements.

## OPERATING CHARACTERISTICS

|  |   |
|--|---|
| Impedance (nominal):                         | 50 $\Omega$                               |
| Frequency range:                             | DC to 3 GHz                               |
| Tracking (between any two output ports):     | $\pm 0.3$ dB, $\pm 3.5$ degrees           |
| Equivalent source match (ratio or leveling): | 26 dB, DC to 1.3 GHz; 20 dB, 1.3 to 3 GHz |
| Input port match:                            | 20 dB, DC to 1.3 GHz; 10 dB, 1.3 to 3 GHz |
| Insertion loss (nominal):                    | 9.5 dB +0.5 dB/GHz, 300 kHz to 3 GHz      |
| Maximum operating level:                     | +20 dB                                    |
| Damage level:                                | +30 dB                                    |

## PHYSICAL CHARACTERISTICS

|                              |   |
|------------------------------|---|
| Input and output connectors: | 50 $\Omega$ type-N (f)                                  |
| Dimensions:                  | 67 mm by 46 mm by 67 mm<br>(2.6 in by 1.9 in by 2.6 in) |
| Weight, net:                 | 1.8 kg (4 lb) shipping: 3.1 kg (7 lb)                   |



Customer Order Number

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