Agilent 11691D/11692D Directional Couplers 2 to 18 GHz

Product Overview

Agilent Technologies

Broadband 20 dB directional couplers

Models 11691D and 11692D high directivity couplers are precision instruments designed for broadband swept reflectometer applications in the 2 to 18 GHz frequency range. With their wide frequency coverage, one of these couplers can replace several couplers without performance degradation, thus adding convenience and economy to swept reflection and transmission coaxial microwave measurements by reducing setup and calibration time. In addition, the broad frequency coverage of the 11691D directional coupler makes it ideal for leveling applications of broadband sources. Its high directivity makes it possible to achieve excellent source matches not achievable with directional detectors.

Specifications

Simultaneous reflection and transmission measurement

These couplers are ideal in reflectometry measurements. The reflection and transmission characteristics of a device can be measured conveniently from 2 to 18 GHz. Figure 1 shows a test configuration in which an 11692D dual coupler and an 11691D single coupler are used to separate and isolate the incident, reflected, and transmitted signals in a swept-frequency measurement of reflection and transmission. These signals are detected and their ratio displayed on a CRT. The 11691D single coupler compensates in the transmitted signal for the coupling variations "seen" by the reference detector.

The compensated ratio (Etran/Eref), being virtually flat, permits high-resolution transmission measurements. These couplers are ideal companions for the 8755 frequency response test set, a 0.1 to 18 GHz detection and display system.

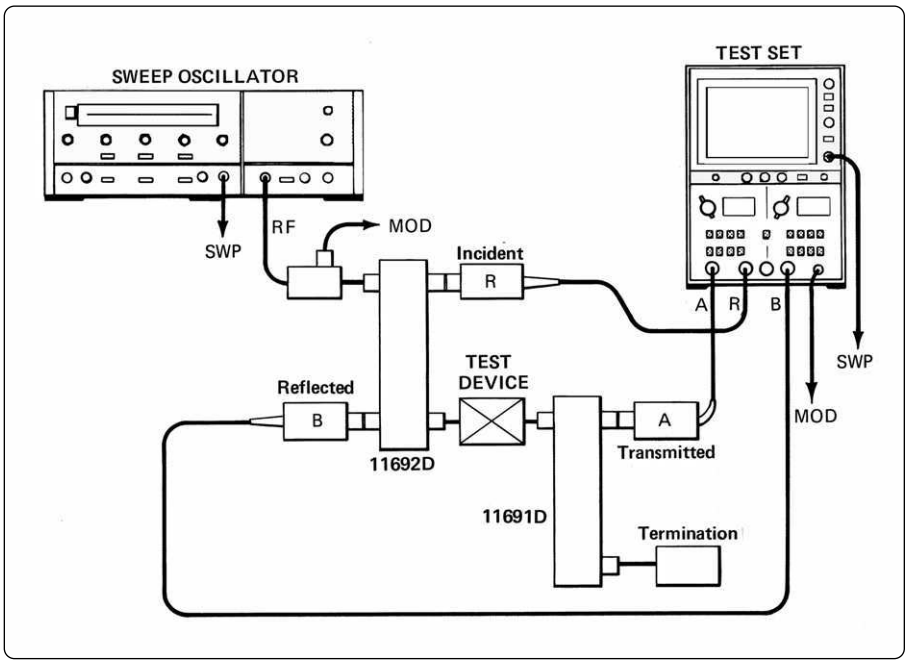

Figure 1. Setup for simultaneous swept measurement of insertion loss (A/R) and return loss (B/R), using 11691D and 11692D couplers.

	11691D	11692D
Frequency range	2 to 18 GHz	2 to 18 GHz
Minimum directivity	2 to 8 GHz: 30 dB	2 to18 GHz: 30 dB
	8 to 18 GHz: 26 dB[1]	8 to 18 GHz: 26 dB[1]
Maximum primary line SWR	2 to 12.4 GHz: 1.3	2 to 12.4 GHz: 1.3
	12.4 to 18 GHz: 1.40	12.4 to 18 GHz: 1.40
Maximum auxiliary port(s) SWR	1.3	1.3
Nominal coupling (dB)	20	20
Maximum coupling variation with frequency (dB)	±1 dB	±I dB[2]
Tracking auxiliary arms	*	±0.7 dB[3]*
Maximum primary line residual loss	< 2 dB	< 1.5 dB
Primary line power	50 Ω average	50 Ω average
Handling capability	250 Ω peak	250 Ω peak
Net weight	1.93 kg (4 1b, 4 oz)	2.72 kg (6 1b, 0 oz)
Dimensions	404.8 mm (15-15/16 in) L	404.8 mm (15-15/16 in) L
	133.4 mm (5-1/4 in) H	133.4 mm (5-1/4 in) H
	42.9 mm (1-11/16 in)W	42.9 mm (1 -11/16 in)W

11691D connector

Option	Primary line Input/output	Auxiliary arms
Standard	APC-7/APC-7	N(f)

11692D connector options

Option	Primary line Input/output	Auxiliary arms Incident/reflection
11692D-005	N(f)/APC-7	N(f)/N(f)
11692D-001	N(f)/N(f)	N(f)/N(f)
11692D-002	N(f)/N(m)	N(f)/N(f)
11692D-003	N(f)/APC-7	APC-7/APC-7
11692D-004	APC-7/APC-7	APC-7/APC-7

Connectors

The APC-7 and type-N connectors are stainless steel designed for durability. The type-N connectors conform to MIL-C-39012 or MIL-C-71.

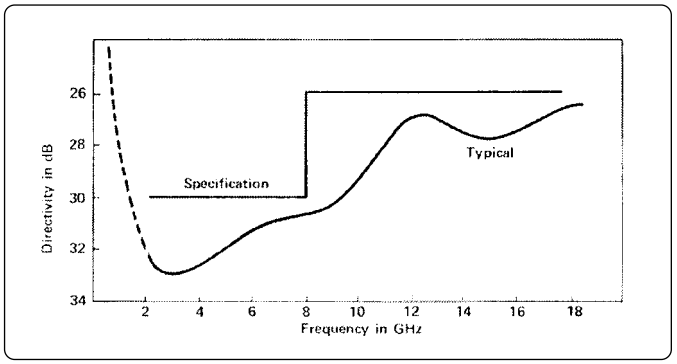

Figure 2. Directivity specifications.

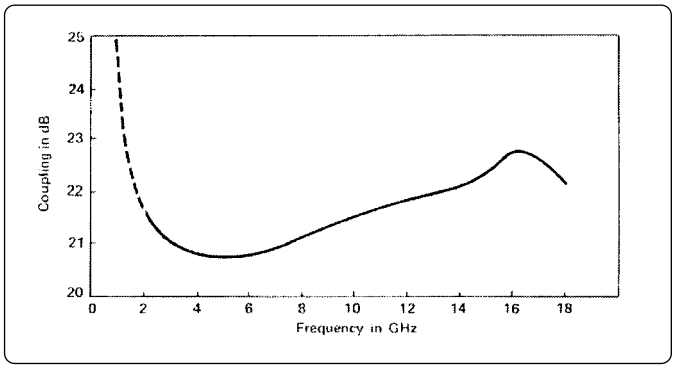

Figure 3. Typical coupling curve.

1. 24 dB with type-N connector on the INPUT PORT (11691D) or TEST PORT (11692D).
2. Incident to test port.
3. With the test port shorted and not including source match ripple.

* Typical tracking between 11691D and 11692D is ±0.07 dB.

Agilent Technologies' Test and Measurement Support, Services, and Assistance

Agilent Technologies aims to maximize the value you receive, while minimizing your risk and problems. We strive to ensure that you get the test and measurement capabilities you paid for and obtain the support you need. Our extensive support resources and services can help you choose the right Agilent products for your applications and apply them successfully. Every instrument and system we sell has a global warranty. Support is available for at least five years beyond the production life of the product. Two concepts underlie Agilent's overall support policy: "Our Promise" and "Your Advantage."

Our Promise

Our Promise means your Agilent test and measurement equipment will meet its advertised performance and functionality. When you are choosing new equipment, we will help you with product information, including realistic performance specifications and practical recommendations from experienced test engineers. When you use Agilent equipment, we can verify that it works properly, help with product operation, and provide basic measurement assistance for the use of specified capabilities, at no extra cost upon request. Many self-help tools are available.

Your Advantage

Your Advantage means that Agilent offers a wide range of additional expert test and measurement services, which you can purchase according to your unique technical and business needs. Solve problems efficiently and gain a competitive edge by contracting with us for calibration, extra-cost upgrades, out-of-warranty repairs, and onsite education and training, as well as design, system integration, project management, and other professional engineering services. Experienced Agilent engineers and technicians worldwide can help you maximize your productivity, optimize the return on investment of your Agilent instruments and systems, and obtain dependable measurement accuracy for the life of those products.

Agilent Email Updates

www.agilent.com/find/emailupdates

Get the latest information on the products and applications you select.

Agilent T&M Software and Connectivity

Agilent's Test and Measurement software and connectivity products, solutions and developer network allows you to take time out of connecting your instruments to your computer with tools based on PC standards, so you can focus on your tasks, not on your connections. Visit **www.agilent.com/find/connectivity** for more information.

By internet, phone, or fax, get assistance with all your test & measurement needs

Phone or Fax

United States:
(tel) 800 452 4844

Canada:
(tel) 877 894 4414
(fax) 905 282 6495

China:
(tel) 800 810 0189
(fax) 800 820 2816

Europe:
(tel) (31 20) 547 2323
(fax) (31 20) 547 2390

Japan:
(tel) (81) 426 56 7832
(fax) (81) 426 56 7840

Korea:
(tel) (82 2) 2004 5004
(fax) (82 2) 2004 5115

Latin America:
(tel) (305) 269 7500
(fax) (305) 269 7599

Taiwan:
(tel) 0800 047 866
(fax) 0800 286 331

Other Asia Pacific Countries:
(tel) (65) 6375 8100
(fax) (65) 6836 0252
Email: tm_asia@agilent.com

Online Assistance:
ww.agilent.com/find/assist

Product specifications and descriptions in this document subject to change without notice.

Printed in USA, September 18, 2002
5952-1145

Agilent Technologies