

Agilent 772D, 773D

Directional Couplers

2 to 18 GHz

Technical Overview

New Performance Standards in Microwave Couplers

The Agilent Technologies 772D dual directional coaxial coupler and 773D directional coupler are high directivity couplers designed for broadband swept reflectometer measurements and leveling 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 by reducing setup and calibration time. The high directivity and low main line SWR make it possible to achieve excellent source match. The smaller size and light weight of the 773D directional coupler make it much easier to use on the bench. The addition of threaded mounting holes makes it an ideal candidate for use inside equipment in leveling loop applications. Low SWR and flat coupling variation from 2 to 18 GHz and high power capability make these couplers ideal for your most demanding measurement needs.



| | Agilent 772D | Agilent 773D |
|---|--|--|
| Description | Dual directional coupler | Directional coupler |
| Frequency range | 2 to 18 GHz | 2 to 18 GHz |
| Minimum directivity | 39 dB (0.1 – 2 GHz) typical 30 dB (2 – 12.4 GHz) 27 dB (12.4 – 18 GHz) 20 dB (18 – 20 GHz) typical | 39 dB (0.1 – 2 GHz) typical 30 dB (2 – 12.4 GHz) 27 dB (12.4 – 18 GHz) 21 dB (18 – 20 GHz) typical |
| Maximum main line SWR | 1.05 (0.1 – 2 GHz) typical 1.28 (2 – 12.4 GHz) 1.40 (12.4 – 18 GHz) 1.29 (18 – 20 GHz) typical | 1.04 (0.1 – 2 GHz) typical 1.21 (2 – 12.4 GHz) 1.27 (12.4 – 18 GHz) 1.16 (18 – 20 GHz) typical |
| Maximum coupled line SWR | 1.08 (0.1 – 2 GHz) typical 1.30 (2 – 12.4 GHz) 1.40 (12.4 – 18 GHz) 1.17 (18 – 20 GHz) typical | 1.07 (0.1 – 2 GHz) typical 1.30 (2 – 12.4 GHz) 1.40 (12.4 – 18 GHz) 1.17 (18 – 20 GHz) typical |
| Nominal coupling (dB)⁴ | 20 ± 1 dB (2 – 18 GHz) | 20 ± 1 dB (2 – 18 GHz) |
| Max. coupling variation with Freq.⁴ | <±1.0 dB or 2 dB peak-to-peak (2 – 18 GHz) | <±1.0 dB or 2 dB peak-to-peak (2 – 18 GHz) |
| Tracking between auxiliary arms | <±0.7 dB ^{1,2} | N/A ² |
| Maximum main line residual loss | <0.26 dB (0.1 – 2GHz) typical <1.5 dB (2 – 18 GHz) | < 0.15 dB (0.1 – 2 GHz) typical <0.9 dB (2 – 18 GHz) <0.9 dB (18 – 20 GHz) typical |
| Main line power handling capability | 0.1–2 GHz 100 W (50 dBm) average typical 2–18 GHz 250 W (54 dBm) peak ³ typical 50 W (47 dBm) average 50 W (47 dBm) average 250 W (54 dBm) peak ³ 18–20 GHz N/A 50 W (47 dBm) average typical N/A | 100 W (50 dBm) average typical 250 W (54 dBm) peak ³ typical 250 W (54 dBm) peak ³ 250 W (54 dBm) peak ³ typical |
| Net weight | 2.6 kg | 0.8 kg |
| Dimensions (cm) | 39.1 (L) x 13.34 (W) x 4.13 (H) | 18.4 (L) x 10.5 (W) x 3.0 (H) |

1. With test port shorted and not including source match ripple.
2. Typical relative tracking between 772D and 773D is <±0.7 dB.
3. Peak power duration of 10 μs
4. Nominal coupling = (Max. coupling + Min. coupling)/2



Connectors

Agilent 772D

Test port APC-7; input, incident, and reflected ports Type-N (F)

Agilent 773D

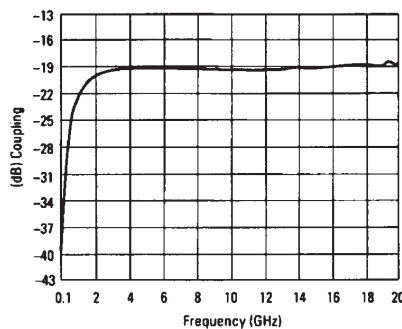
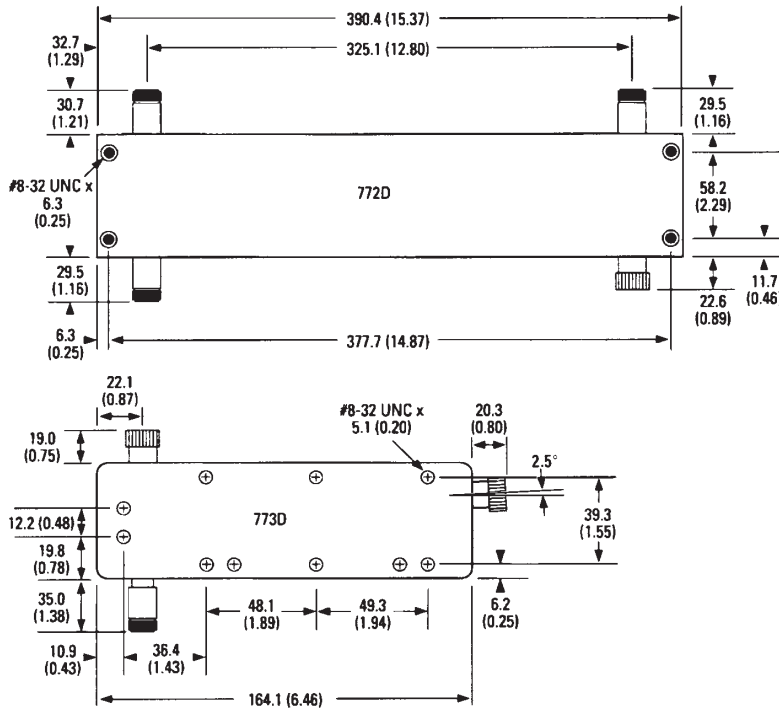
Input and output ports APC-7; coupled port Type-N (F)

Agilent 772D, 773D Option 001

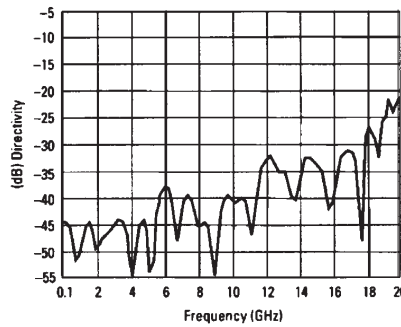
All connectors Type-N (F)

Outline Drawings

Dimensions in millimeters (inches)



Typical coupling



Typical directivity

www.agilent.com

www.agilent.com/find/mta

For more information on Agilent Technologies' products, applications or services, please contact your local Agilent office. The complete list is available at:

www.agilent.com/find/contactus

Americas

| | |
|---------------|----------------|
| Canada | (877) 894 4414 |
| Brazil | (11) 4197 3600 |
| Mexico | 01800 5064 800 |
| United States | (800) 829 4444 |

Asia Pacific

| | |
|--------------------|----------------|
| Australia | 1 800 629 485 |
| China | 800 810 0189 |
| Hong Kong | 800 938 693 |
| India | 1 800 112 929 |
| Japan | 0120 (421) 345 |
| Korea | 080 769 0800 |
| Malaysia | 1 800 888 848 |
| Singapore | 1 800 375 8100 |
| Taiwan | 0800 047 866 |
| Other AP Countries | (65) 375 8100 |

Europe & Middle East

| | |
|----------------|----------------------|
| Belgium | 32 (0) 2 404 93 40 |
| Denmark | 45 45 80 12 15 |
| Finland | 358 (0) 10 855 2100 |
| France | 0825 010 700* |
| | *0.125 €/minute |
| Germany | 49 (0) 7031 464 6333 |
| Ireland | 1890 924 204 |
| Israel | 972-3-9288-504/544 |
| Italy | 39 02 92 60 8484 |
| Netherlands | 31 (0) 20 547 2111 |
| Spain | 34 (91) 631 3300 |
| Sweden | 0200-88 22 55 |
| United Kingdom | 44 (0) 118 927 6201 |

For other unlisted countries:

www.agilent.com/find/contactus

(BP-3-1-13)

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

© Agilent Technologies, Inc. 2013
Published in USA, August 19, 2013
5959-8753



www.agilent.com/find/myagilent

A personalized view into the information most relevant to you.

