

User's Guide

11857F 75 Ω Type-F Test Port Cable Set



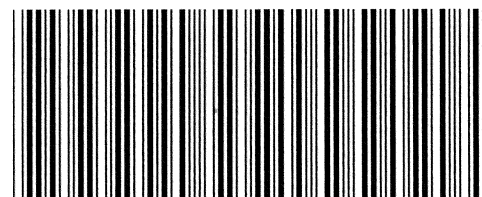
Agilent Technologies

Part Number 11857-90025

Printed in USA

Print Date: February 2008

Supersedes: April 2001



11857-90025

Notice.

The information contained in this document is subject to change without notice.

Agilent Technologies makes no warranty of any kind with regard to this material, including but not limited to, the implied warranties of merchantability and fitness for a particular purpose. Agilent Technologies shall not be liable for errors contained herein or for incidental or consequential damages in connection with the furnishing, performance, or use of this material.

WARRANTY

This Agilent Technologies instrument product is warranted against defects in material and workmanship for a period of one year from date of shipment. During the warranty period, Agilent Technologies will, at its option, either repair or replace products which prove to be defective.

For warranty service or repair, this product must be returned to a service facility designated by Agilent Technologies. Buyer shall prepay shipping charges to Agilent Technologies and Agilent Technologies shall pay shipping charges to return the product to Buyer. However, Buyer shall pay all shipping charges, duties, and taxes for products returned to Agilent Technologies from another country.

Agilent Technologies warrants that its software and firmware designated by Agilent Technologies for use with an instrument will execute its programming instructions when properly installed on that instrument. Agilent Technologies does not warrant that the operation of the instrument, or software, or firmware will be uninterrupted or error-free.

LIMITATION OF WARRANTY

The foregoing warranty shall not apply to defects resulting from improper or inadequate maintenance by Buyer, Buyer-supplied software or interfacing, unauthorized modification or misuse, operation outside of the environmental specifications for the product, or improper site preparation or maintenance.

NO OTHER WARRANTY IS EXPRESSED OR IMPLIED. AGILENT TECHNOLOGIES SPECIFICALLY DISCLAIMS THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

EXCLUSIVE REMEDIES

THE REMEDIES PROVIDED HEREIN ARE BUYER'S SOLE AND EXCLUSIVE REMEDIES. AGILENT TECHNOLOGIES SHALL NOT BE LIABLE FOR ANY DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, WHETHER BASED ON CONTRACT, TORT, OR ANY OTHER LEGAL THEORY.

Assistance

For any assistance, contact your nearest Agilent Technologies Sales or Service Office.

Online assistance: www.agilent.com/find/assist

United States (tel) 1 800 452 4844	Latin America (tel) (305) 269 7500 (fax) (305) 269 7599	Canada (tel) 1 877 894 4414 (fax) (905) 282-6495	Europe (tel) (+31) 20 547 2323 (fax) (+31) 20 547 2390
New Zealand (tel) 0 800 738 378 (fax) (+64) 4 495 8950	Japan (tel) (+81) 426 56 7832 (fax) (+81) 426 56 7840	Australia (tel) 1 800 629 485 (fax) (+61) 3 9210 5947	

Asia Call Center Numbers

Country	Phone Number	Fax Number
Singapore	1-800-375-8100	(65) 836-0252
Malaysia	1-800-828-848	1-800-801664
Philippines	(632) 8426802 1-800-16510170 (PLDT Subscriber Only)	(632) 8426809 1-800-16510288 (PLDT Subscriber Only)
Thailand	(088) 226-008 (outside Bangkok) (662) 661-3999 (within Bangkok)	(66) 1-661-3714
Hong Kong	800-930-871	(852) 2506 9233
Taiwan	0800-047-866	(886) 2 25456723
People's Republic of China	800-810-0189 (preferred) 10800-650-0021	10800-650-0121
India	1-600-11-2929	000-800-650-1101

General Information

To obtain optimum performance from this cable set, observe these simple precautions:

- Flex and straighten the cables as little and as seldom as possible.
- 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 nonlint swab, apply only isopropyl alcohol as a solvent.
- Type-N male connector center conductor protrusion: 0.207 inch maximum.
- Type-N female connector center conductor shoulder: 0.207 inch minimum.

Description

The standard 11857F 75Ω type-F test port cable set consists of two RF cables. See figure 1-1. Individual cables may be ordered. See table 1-2 for information and model numbers

Figure 1-1. 11857F Cable Set

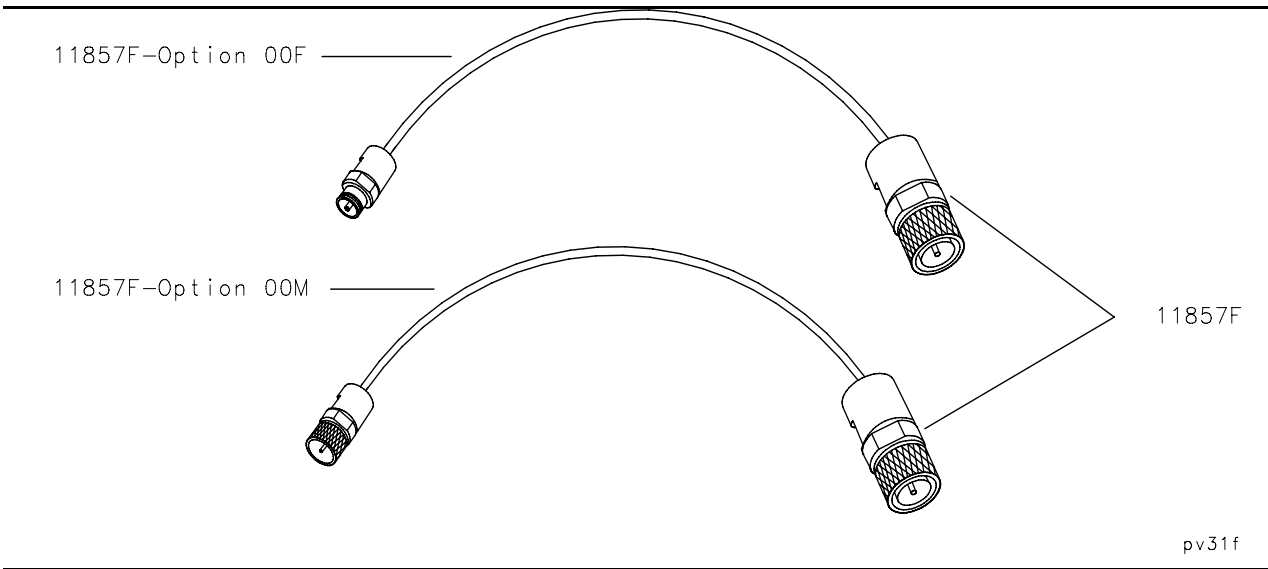


Table 1-2

Model Number	Quantity	Description
11857F	2 cables	75Ω type-N male and type-F female. 75Ω type-N male and type-F male.
11857F - Option 00F	1 cable	75Ω type-N male and type-F female.
11857F - Option 00M	1 cable	75Ω type-N male and type-F male.

NOTE When ordering cables it is important to identify the proper cable(s). Please refer to the correct model number, 11857F- Option 00F, 11857F- Option 00M or 11857F.

Operating Characteristics

Impedance	$75\Omega \pm 2\Omega$
Connectors	75 Ω type-N male and type-F female (Option 00F) 75 Ω type-N male and type-F male (Option 00M)
Insertion loss	0.45 dB at 3 GHz (per cable)
Transmission Stability	Phase Stability: $0.5^\circ + (0.83 \times \times \times^\circ * F)^1$ Magnitude Stability: ± 0.025 dB maximum Return Loss Stability: -45 dB
	1. where F is frequency in GHz
Return Loss	26 dB (to ≤ 1 GHz) 24 dB (>1 GHz to 3 GHz)

Physical Characteristics

Length	61 cm (24 ± 0.25 inches)	
Weight (approximate):	Net	Shipping
11857F	0.66 lbs	2.0 lbs
11857F-Option 00F	0.33 lbs	1.6 lbs
11857F-Option 00M	0.33 lbs	1.6 lbs

CAUTION Mating a 50 Ω male connector with a 75 Ω female connector will **DESTROY** the 75 Ω female connector.

Visual Inspection

Visual inspection and, if necessary, cleaning should be done every time a connection is made. Metal particles from the connector threads may fall onto the mating plane surface of the connector when it is disconnected. One connection made with a dirty or damaged connector can damage both connectors beyond repair.

Magnification is helpful when inspecting connectors, but it is not required and may actually be misleading. Defects and damage that cannot be seen without magnification generally have no effect on electrical or mechanical performance. Magnification is of great use in analyzing the nature and cause of the damage and in cleaning connectors, but it is not required for inspection. Use the following guidelines when evaluating the integrity of a connector.

Look for Obvious Defects and Damage First

Examine the connector first for obvious defects and damage: badly worn plating on the connector interface, deformed threads, or bent, broken, or misaligned center conductors. Connector nuts should move smoothly and be free of burrs, loose metal particles, and rough spots.

What Causes Connector Wear?

Connector wear is caused by connecting and disconnecting the cable. The more use a connector gets, the faster it wears and degrades. The wear is greatly accelerated when connectors are not kept clean, or are connected incorrectly.

Connector wear eventually degrades performance of the cable. Replace cables with worn connectors.

The test port connectors on the network analyzer test set may have many connections each day, and are therefore also subject to wear. It is recommended that an adapter be used as a test port saver to minimize the wear on the test set's test port connectors.

Inspect the Mating Plane Surfaces

Flat contact between the connectors at all points on their mating plane surfaces is required for a good connection. Look especially for deep scratches or dents, and for dirt and metal particles on the connector mating plane surfaces. Also look for signs of damage due to excessive or uneven wear or misalignment.

Light burnishing of the mating plane surfaces is normal, and is evident as light scratches or shallow circular marks distributed more or less uniformly over the mating plane surface. Other small defects and cosmetic imperfections are also normal. None of these affect electrical or mechanical performance.

If a connector shows deep scratches or dents, particles clinging to the mating plane surfaces, or uneven wear, clean and inspect it again. Cables with damaged connectors should be repaired or discarded. Determine the cause of damage before connecting a new, undamaged connector in the same configuration.