
RF Economy Network Analyzers

Configuration Guide

HP 8711C and 8712C
300 kHz to 1.3 GHz

HP 8713C and 8714C
300 kHz to 3.0 GHz

This configuration guide describes standard configurations, options and compatible accessories. For full specifications, see *HP RF Economy Network Analyzer Technical Specifications* (HP literature number 5965-1464E). Contact your HP representative at the offices listed on the back page of this guide if you need more information.

Standard RF Economy Network Analyzers

Standard analyzers include:

- 300 kHz to 1.3 GHz or 3.0 GHz synthesized source
- Built-in display, integrated transmission/reflection test set
- Built-in 3.5 inch disk drive
- Narrowband and broadband receivers
- Standard 50 ohm system (also available as 75 ohm system, Option 1EC)
- Type-N test port cable and 175 MHz demonstration filter
- One-year return-to-HP warranty
- Operating and programming manuals, and example program disks

- ❑ **HP 8711C** scalar network analyzer, 300 kHz to 1.3 GHz
- ❑ **HP 8712C** vector network analyzer, 300 kHz to 1.3 GHz
- ❑ **HP 8713C** scalar network analyzer, 300 kHz to 3.0 GHz
- ❑ **HP 8714C** vector network analyzer, 300 kHz to 3.0 GHz

Options

- ❑ **75 ohm system impedance, Option 1EC**
Converts to 75 ohm system impedance. Substitutes 75 ohm type-N connectors, test port cable and demonstration filter.
- ❑ **60 dB step attenuator, Option 1E1**
Extends output power range down to –60 dBm.
- ❑ **HP Instrument BASIC (IBASIC), Option 1C2**
IBASIC is a subset of HP BASIC for creating and executing test programs inside the network analyzer, including keystroke capture and one-button macros, without the need for an external controller. Includes HP Instrument BASIC User's Handbook (HP part number 08712-90045) and IBASIC example programs disk (HP part number 08712-10021).
- ❑ **AM delay for 50 ohm systems, Option 1DA**
- ❑ **AM delay for 75 ohm systems, Option 1DB (Option 1EC required)**
Adds amplitude modulation group delay capability to measure group delay in frequency-translation devices such as tuners and receivers. Includes two external broadband detectors and a power splitter. Not recommended for devices with limiting circuits, saturated amplifiers or automatic gain control. To test devices that are not frequency translators the HP 8712B or HP 8714B vector network analyzers offer lower noise and better accuracy when measuring group delay.
- ❑ **Fault location and structural return loss, Option 100**
Adds time-domain-based fault location, as well as structural return loss capability.
- ❑ **LAN interface, Option 1F7**
Adds TCP/IP-compliant LAN interface.
- ❑ **Keyboard, Option 1CL**
Adds mini-DIN interface keyboard (HP model number C1405B, Option ABA) and cable to enhance IBASIC editing and instrument control capability. Keyboard overlay (HP part number 08712-80004) is supplied with every instrument.
- ❑ **Extra 50 ohm cable and type-N (f-f) adapter, Option AFN**
- ❑ **Extra 75 ohm cable and type-N (f-f) adapter, Option AFP**
- ❑ **Rack mount kit, Option 1CM**
- ❑ **Performance test software, Option 1FP**

Special Options

Special options are available for unique applications. Examples include multiport and reversing test sets. Contact your HP representative for more information.

Documentation

- ☐ **Adds manual set, Option 0B1**
- ☐ **Deletes manual set, Option 0B0**
- ☐ **Deletes service guide, Option AVB**
- ☐ **Deletes programming guide, Option AV7**

Localization Options

These options provide a localized user's guide at no extra charge. They include information on installation, instrument functions, optimized measurements, and calibration.

- ☐ **Taiwanese User's Guide, Option AB0**
Also available as HP part number 08712-90050.
- ☐ **Korean User's Guide, Option AB1**
Also available as HP part number 08712-90051.
- ☐ **Chinese User's Guide, Option AB2**
Also available as HP part number 08712-90049.
- ☐ **German User's Guide, Option ABD**
Also available as HP part number 08712-90054.
- ☐ **Spanish User's Guide, Option ABE**
Also available as HP part number 08712-90052.
- ☐ **French User's Guide, Option ABF**
Also available as HP part number 08712-90053.
- ☐ **Japanese User's Guide, Option ABJ**
Also available as HP part number 08712-90048.
- ☐ **Italian User's Guide, Option ABZ**
Also available as HP part number 08712-90055.

Warranties

One-year return-to-HP service warranty is standard.

- ☐ **Three-year return-to-HP service coverage, Option W30**
Please contact your local sales office for prices.
- ☐ **Five-year return-to-HP service coverage, Option W50**
Please contact your local sales office for prices.

Conversion to one-year on-site warranty coverage (where available).

- ☐ **HP 8711C, Option W17**
- ☐ **HP 8712C, Option W17**
- ☐ **HP 8713C, Option W17**
- ☐ **HP 8714C, Option W17**
- ☐ **Three-year on-site service coverage, Option W31 (Option W17 required)**
Please contact your local sales office for prices.
- ☐ **Five-year on-site service coverage, Option W51 (Option W17 required)**
Please contact your local sales office for prices.
- ☐ **Commercial calibration certificate with test data, Option UK6**
Can be ordered at time of original purchase.

Measurement Accessories

Accessories are available in these connector types: 3.5 mm, 50 and 75 ohm type-N, BNC, and type-F. A complete line of RF accessories can be found in the HP RF and Microwave Test Accessories Catalog, HP literature number 5091-4269E.

50 Ohm Accessories

- ❑ **Type-N economy calibration kit, HP 85032E**
Standards include fixed termination and open-circuit/short-circuit combination in type-N (m) only.
- ❑ **RF scalar detector, HP 86200B**
External scalar detector, 10 MHz to 3 GHz, 50 ohm type-N (m) connector.
See HP literature number 5962-9931E for detailed technical specifications. Two-meter detachable cable, HP part number 8120-5514 included; order 20-meter cable separately as HP part number 8120-5515.
- ❑ **BNC accessory kit, HP 11854A**
Provides the RF components generally required for measuring devices with 50 ohm BNC connectors, dc to 3 GHz. Contains four 50 ohm type-N to BNC adapters in all combinations of both connector sexes, plus BNC (m) short.
- ❑ **50 to 75 ohm minimum loss pad, HP 11852B**
Adapts from 50 ohm type-N (f) to 75 ohm type-N (m).
 - ❑ **Option 004**
Substitutes 50 ohm type-N (m) and 75 ohm type-N (f) connectors.
- ❑ **Test port economy cable, HP part number 8120-6469**
50 ohm type-N (m), 0.61m (2 ft) long.
- ❑ **Test port precision cable, HP part number 8120-4781**
50 ohm type-N (m), 0.61m (2 ft) long. SWR <1.1 to 3 GHz, high isolation, and phase-matched to ± 2 degrees at 3 GHz.

75 Ohm Accessories

- ❑ **Type-N economy calibration kit, HP 85036E**
Standards include fixed termination and open-circuit/short combination in type-N (m) only.
- ❑ **Type-F calibration kit, HP 85039A**
Includes 75 ohm type-F load, open circuit, and four adapters for the measurement of devices with type-F(f) connectors.

❑ **RF scalar detector, HP 86201B**

External scalar detector, 10 MHz to 3 GHz, 75 ohm type-N (m) connector. See HP literature number 5962-9931E for detailed specifications. Two-meter detachable cable, HP part number 8120-5514 included; order 20-meter cable as HP part number 8120-5515.

❑ **BNC accessory kit, HP 11856A**

Provides the RF components generally required for measuring devices with 75 ohm BNC connectors, dc to 2 GHz. Contains four 75 ohm type-N to BNC adapters in all combinations of both connector sexes, plus BNC (m) short.

❑ **Type-F adapter kit, HP 86211A**

Adapter kit provides three 75 ohm, dc to 2 GHz, type-N to type-F adapters.

❑ **50 to 75 ohm minimum loss pad, HP 11852B**

Adapts from 50 ohm type-N (f) to 75 ohm type-N (m).

❑ **Option 004**

Substitutes 50 ohm type-N (m) and 75 ohm type-N (f) connectors.

❑ **Test port economy cable, HP part number 8120-6468**

75 ohm, type-N (m), 0.61 m (2 ft long).

❑ **Test port precision cable, HP part number 8120-2408**

75 ohm, type-N (m), 0.61 m (2 ft long). SWR <1.1 to 2 GHz, and phase matched ± 2 degrees at 2 GHz.

General Accessories

❑ **Antistatic mat kit, HP part number 85043-80013**

Peripherals

Economy network analyzers support interfaces in parallel (Centronics), serial (RS-232C) and HP-IB, which conform to IEEE 488.2 and SCPI standard interface commands. Models change frequently; check with your HP representative on the latest peripheral models. Some peripherals not listed here may be compatible with HP network analyzers.

Controllers

HP network analyzers can be controlled by external computer via HP-IB. (Note that optional IBASIC offers programming capability inside the network analyzer.) Consult with your HP representative for alternatives.

Printers

Your HP network analyzer can print hard copy directly to HP PCL (printer control language) printers. Some printers have options to specify their interface; consult your local HP representative for more details. The two most recommended models are:

- ❑ **HP DeskJet 600**, most economical monochrome printer, with color kit, offers color plots.
- ❑ **HP LaserJet 5L**, fastest monochrome printer.

The latest information about printers and printer compatability is available on the World Wide Web. General printer information address is: <http://www.dmo.hp.com/peripherals/printers/main.html>

Upgrade Kits

Installation is not included in upgrade kits.

- ❑ **AM delay kit 50 ohms, HP 86221B**
- ❑ **AM delay kit 75 ohms, HP 86225B**
Adds AM delay modulator and includes power splitter and two detectors. Also available as HP part number 08711-60062, which excludes detectors and power splitter.
- ❑ **IBASIC kit, HP 86224C**
Adds IBASIC programming capability; also available as HP part number 08711-60164.
- ❑ **Step attenuator kit, HP 86223B**
Adds a 60 dB attenuator to all models; also available as HP part number 08711-60067.
- ❑ **Firmware kit, HP 86226C**
Provides the latest version firmware; also available as HP part number 08712-60047.
- ❑ **LAN upgrade kit, HP 86227C**
Adds a TCP/IP compliant LAN interface; also available as HP part number 08712-60052.
- ❑ **Fault location, structural return loss kit, HP 86228C**
Adds fault location and structural return loss capability; also available as HP part number 08712-60048.
- ❑ **Rack mount kit, HP 08712-60036** for use with or without handles.

Service and Support

- ❑ **Service kit, HP part number 08712-60012**
Service kit includes extender board, extender cables, voltage reference source, special wrench.

Spare Parts Kits

Spare parts kits include CPU, power supply, receiver, source, fractional-N boards and disk drive for self-support.

- ❑ **Spare parts kit, HP 86215C**
For 50 ohm HP 8711C and HP 8712C (HP part number 08712-60046)
- ❑ **Spare parts kit, HP 86216D**
For 75 ohm HP 8711C and HP 8712C (HP part number 08712-60045)
- ❑ **Spare parts kit, HP 86216C**
For 50 ohm HP 8713C and HP 8714C (HP part number 08713-60011)
- ❑ **Spare parts kit, HP 86216D**
For 75 ohm HP 8713C and HP 8714C (HP part number 08713-60010)

Recommended Test Equipment

Recommended test equipment for self support and performance of most performance tests and adjustments after a repair:

- ☐ **Power meter, HP 437B or**
 - ☐ **Dual channel power meter, HP 438A**
 - ☐ **Power sensor, HP 8482A** (for both 50 and 75 ohm instruments)
 - ☐ **Diode power sensor, HP 8481D** (for step attenuator options only)
 - ☐ **Power sensor, HP 8483A** (for 75 ohm instruments)
 - ☐ **Minimum loss pad, HP 11852B**, for 75 ohm (2 each)
 - ☐ **50 ohm calibration kit, HP 85032B**
 - ☐ **75 ohm calibration kit, HP 85036B**
 - ☐ **Voltage reference, HP part number 08712-60031**
(part of service kit HP part number 08712-60012)
 - ☐ **Function generator, HP 8116A**
 - ☐ **10 dB step attenuator, HP 8496A or 8496G**
 - ☐ **Instrument controller, HP 9000-series** 200 and 300 computers
 - ☐ **20 dB fixed attenuator, HP 8491A-series** (or part number 0955-0768 for 75 Ω units)
- Additional test equipment may include HP 8560-series or 8566A/B spectrum analyzer, and miscellaneous fixed attenuators, cables, adapters, and power splitters.

For more information on Hewlett-Packard Test and Measurement products, applications, or services, please call your local Hewlett-Packard sales office. A current listing is available via the World-wide Web through AccessHP at <http://www.hp.com>. If you do not have access to the internet please contact one of the HP centers listed below and they will direct you to your nearest HP representative.

United States:

Hewlett-Packard Company
Test and Measurement Organization
5301 Stevens Creek Blvd.
Bldg. 51L-SC
Santa Clara, CA 95052-8059
1 800 452 4844

Canada:

Hewlett-Packard Canada Ltd.
5150 Spectrum Way
Mississauga, Ontario
L4W 5G1
(905) 206 4725

Europe:

Hewlett-Packard
European Marketing Centre
P.O. Box 999
1180 AZ Amstelveen
The Netherlands

Japan:

Hewlett-Packard Japan Ltd.
Measurement Assistance Center
9-1, Takakura-Cho, Hachioji-Shi,
Tokyo 192, Japan
Tel: (81-426) 56-7832
Fax: (81-426) 56-7840

Latin America:

Hewlett-Packard
Latin American Region Headquarters
5200 Blue Lagoon Drive, 9th Floor
Miami, Florida 33126, U.S.A.
(305) 267 4245/4220

Australia/New Zealand:

Hewlett-Packard Australia Ltd.
31-41 Joseph Street
Blackburn, Victoria 3130, Australia
1 800 629 485

Asia Pacific:

Hewlett-Packard Asia Pacific Ltd.
17-21/F Shell Tower, Times Square,
1 Matheson Street, Causeway Bay,
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