System configuration summary
This summary lists the main components required to form a basic measurement system. Options or peripherals may be added to provide enhanced measurement and data storage capability.

Full S-parameter measurements

- Agilent PNA Series microwave network analyzer
- Test port cables, 50 ohms
- Calibration kit for applicable connector type

This configuration guide describes standard configurations, options, accessories, upgrade kits and compatible peripherals for the PNA Series microwave network analyzer. This guide should be used with the Agilent PNA Series microwave network analyzer, Technical Specifications for a complete description of this analyzer.
Ordering guide for PNA Series network analyzers

This guide is intended to assist you in the ordering process. Additional information and products (such as calibration kits and cables) are described throughout this document.

❑ Choose ONE and ONLY one (Options are mutually exclusive)

❑ Choose any combination

Step 1: Choose a frequency range and number of ports
(Must choose one and only one)

❑ 300 kHz – 9 GHz, please refer to the RF PNA Series Configuration Guide (literature number 5980-1235E)
❑ 45 MHz – 50 GHz, continue to Step 2

Step 2: Would you like extended power range?
❑ Yes (Option UNL)
❑ No (Standard power range)

Step 3: Would you like a configurable test set?
❑ Yes (Option 014)
❑ No (Standard test set)

Step 4: Would you like time domain analysis?
❑ Yes (Option 010)
❑ No

Step 5: Would you like any accessories for your network analyzer?
❑ Rack mount kit with handles (Option 1CP)
❑ Rack mount kit without handles (Option 1CM)

Step 6: Would you like a commercial calibration certificate with test data?
❑ Yes (Option UK6)
❑ No

Step 7: Would you like an additional warranty for a total of 5 years?
❑ Yes (Option W50)
❑ No

Step 8: Would you like any additional documentation for your network analyzer?

English CD-ROM comes standard
❑ Service documentation, assembly level (Option 0BW)
❑ United States - English documentation set (Option AVK)
❑ Germany - German localization (Option ABD)
❑ Spain - Spanish localization (Option ABE)
❑ France - French localization (Option ABF)
❑ Japan - Japanese localization (Option ABJ)
Agilent Microwave PNA Series

The microwave PNA Series is an integrated vector network analyzer with frequency coverage from 45 MHz to 50 GHz. It is equipped with a built-in LCD display, hard and floppy disk drives, S-parameter test set and synthesized source. The analyzer has two 50-ohm, 2.4-mm (f) test ports. Included with each instrument is a mouse, keyboard, CD-ROM containing a copy of online help and programming documentation, a mini parallel-to-parallel adapter, and a three-year return-to-Agilent service warranty.

- **E8364A** network analyzer, 45 MHz to 50 GHz

### Options

- **Option 010** time-domain capability
  For viewing reflection and transmission responses in time or distance domain.

- **Option 014** configurable test set
  With the configurable test set option, six front panel access loops are provided. Three access loops are for port one and three for port two. The loops provide access to the signal path between (a) the source output and the reference receiver, (b) the source output and directional coupler thru and (c) the coupled arm of the directional coupler and the port receiver. This option provides the capability to improve measurement sensitivity for measuring low-level signals, to reverse the directional coupler to achieve even more dynamic range or to add components and other peripheral instruments for a variety of measurement applications.

- **Option 1CM** rack mount kit
  Adds a rack mount and rail kit for use without handles

- **Option 1CP** rack mount kit
  Adds a rack mount and rail kit for use with previously supplied handles

- **Option UNL** Extended power range and bias tees
  Adds two step attenuators and two bias tees. A step attenuator and bias tee set is inserted between the source and test port one and another set between the source and test port two.
**Documentation**

- **Option AVK** adds printed copy of Online Help and programming documentation
- **Option 0BW** adds printed copy of assembly level service manual

**Localization**

The following options provide a translated, printed copy of Online Help and an English printed copy of programming documentation.

- **Option ABD** German manual
- **Option ABE** Spanish manual
- **Option ABF** French manual
- **Option ABJ** Japanese manual

**Certification options**

- **Option UK6** Commercial calibration certificate with test data

**Service and support options**

- **Option W01** Converts 3-year return-to-Agilent service warranty to 1-year on-site service (check with your local Agilent sales or service office for availability in your area)
- **Option W31** Converts 3-year return-to-Agilent service warranty to 3-year on-site service (check with your local Agilent sales or service office for availability in your area)
- **Option W32** 3-year return-to-Agilent commercial calibration agreement
- **Option W34** 3-year return-to-Agilent standards-compliant calibration agreement
- **Option W50** Extends return-to-Agilent service warranty to 5 years
- **Option W51** Converts 3-year return-to-Agilent service warranty to 5-year on-site service (check with your local Agilent sales or service office for availability in your area)
- **Option W52** 5-year return-to-Agilent commercial calibration agreement
- **Option W54** 5-year return-to-Agilent standards-compliant calibration agreement
Measurement accessories
A complete line of RF and microwave test accessories can be found in the Agilent RF and Microwave Test Accessories Catalog (literature number 5968-4314EN) or by visiting www.agilent.com/find/mta

Accessories are available in these connector types: 50 ohm Type-N, 3.5 mm, 7 mm, 2.4 mm, 2.92 mm, and waveguide. Test port cables and a calibration kit should be added for a complete measurement system. A verification kit is used to verify corrected system performance.

Test-port cables
Test port cables are used to connect the network analyzer to the device under test.
- **85133C** single semi-rigid: 2.4 mm cable, dc to 50 GHz
  - Includes one 81 cm (32 in) cable with female connector
- **85133D** semi-rigid: 2.4 mm cable set, dc to 50 GHz
  - Includes two 53 cm (21 in) cables with male and female connectors
- **85133E** single flexible 2.4 mm cable, dc to 50 GHz
  - Includes one 113 cm (44 in) cable with a female connector
- **85133F** flexible 2.4 mm cable set, dc to 50 GHz
  - Includes two 72 cm (28 in) cables with male and female connectors

Calibration kits
Mechanical calibration kits include standards, such as open/short circuits and loads, which are measured by the network analyzer for increased measurement accuracy.

Choose a calibration kit for each connector type to be used.

**Economy**, includes:
- open standards (male and female)
- short standards (male and female)
- fixed-termination standards (male and female)
- in-series adapters

**Standard**, includes the devices in the economy kit and adds:
- sliding load standards (male and female)

**Precision**, includes the devices in the economy kit and adds:
- 50 ohm airline(s) for TRL calibration
- TRL adapters
For devices with 2.4 mm connectors
(see Adapters section for information about Agilent 2.4 mm adapters)

**Mechanical calibration kits**

- **85056D** economy: 45 MHz to 50 GHz. Includes:
  - 00901-60003 2.4 mm (m) fixed broadband load
  - 00902-60004 2.4 mm (f) fixed broadband load
  - 85056-60005 2.4 mm (m) to 2.4 mm (m) adapter
  - 85056-60006 2.4 mm (f) to 2.4 mm (f) adapter
  - 85056-60007 2.4 mm (m) to 2.4 mm (f) adapter
  - 85056-60020 2.4 mm (m) short
  - 85056-60021 2.4 mm (f) short
  - 85056-60022 2.4 mm (m) open
  - 85056-60023 2.4 mm (f) open

- **85056A** standard: 45 MHz to 50 GHz. Includes:
  - 00901-60003 2.4 mm (m) fixed broadband load
  - 00902-60004 2.4 mm (f) fixed broadband load
  - 00915-60003 2.4 mm (m) sliding load
  - 00915-60004 2.4 mm (f) sliding load (Option 001)
  - 11904-60001 2.4 mm (m) to 2.92 mm (m) adapter
  - 11904-60002 2.4 mm (f) to 2.92 mm (f) adapter
  - 11904-60003 2.4 mm (m) to 2.92 mm (m) adapter
  - 11904-60004 2.4 mm (f) to 2.92 mm (f) adapter
  - 85056-60005 2.4 mm (m) to 2.4 mm (m) adapter
  - 85056-60006 2.4 mm (f) to 2.4 mm (f) adapter
  - 85056-60020 2.4 mm (m) short
  - 85056-60021 2.4 mm (f) short
  - 85056-60022 2.4 mm (m) open
  - 85056-60023 2.4 mm (f) open

For devices with K connectors (2.92mm)
(see Adapters section for information about Agilent 2.92 mm adapters)

**Mechanical calibration kits**

- **85056K** 2.92/2.4 economy: 45 MHz to 50 GHz. Includes:
  - 00901-60003 2.4 mm (m) fixed broadband load
  - 00902-60004 2.4 mm (f) fixed broadband load
  - 00915-60003 2.4 mm (m) sliding load (Option 001)
  - 00915-60004 2.4 mm (f) sliding load (Option 001)
  - 11904-60001 2.4 mm (m) to 2.92 mm (m) adapter
  - 11904-60002 2.4 mm (f) to 2.92 mm (f) adapter
  - 11904-60003 2.4 mm (m) to 2.92 mm (m) adapter
  - 11904-60004 2.4 mm (f) to 2.92 mm (f) adapter
  - 85056-60005 2.4 mm (m) to 2.4 mm (m) adapter
  - 85056-60006 2.4 mm (f) to 2.4 mm (f) adapter
  - 85056-60020 2.4 mm (m) short
  - 85056-60021 2.4 mm (f) short
  - 85056-60022 2.4 mm (m) open
  - 85056-60023 2.4 mm (f) open
### For devices with 3.5 mm or SMA connectors

(see Adapters section for information about the Agilent 3.5 mm adapters)

#### Mechanical calibration kits
- **85052D** economy: 45 MHz to 26.5 GHz. Includes:
  - 00902-60003 3.5 mm (m) fixed load
  - 00902-60004 3.5 mm (f) fixed load
  - 85052-60006 3.5 mm (m) short
  - 85052-60007 3.5 mm (f) short
  - 85052-60008 3.5 mm (m) open
  - 85052-60009 3.5 mm (f) open
  - 85052-60012 3.5 mm (f) to 3.5 mm (f) adapter
  - 85052-60013 3.5 mm (f) to 3.5 mm (m) adapter
  - 85052-60014 3.5 mm (m) to 3.5 mm (m) adapter

- **85052B** standard: 45 MHz to 26.5 GHz. Includes:
  - 00902-60003 3.5 mm (m) fixed load
  - 00902-60004 3.5 mm (f) fixed load
  - 00911-60019 3.5 mm (m) sliding load
  - 00911-60020 3.5 mm (f) sliding load
  - 85052-60006 3.5 mm (m) short
  - 85052-60007 3.5 mm (f) short
  - 85052-60008 3.5 mm (m) open
  - 85052-60009 3.5 mm (f) open
  - 85052-60012 3.5 mm (f) to 3.5 mm (f) adapter
  - 85052-60013 3.5 mm (f) to 3.5 mm (m) adapter
  - 85052-60014 3.5 mm (m) to 3.5 mm (m) adapter

- **Option K11** PSC-3.5 slotless female center contact repair kit

- **85052C** precision TRL: 45 MHz to 26.5 GHz. Includes:
  - 00902-60003 3.5 mm (m) fixed load
  - 00902-60004 3.5 mm (f) fixed load
  - 85052-60006 3.5 mm (m) short
  - 85052-60007 3.5 mm (f) short
  - 85052-60008 3.5 mm (m) open
  - 85052-60009 3.5 mm (f) open
  - 85052-60032 3.5 mm (f) to 3.5 mm (f) adapter
  - 85052-60033 3.5 mm (m) to 3.5 mm (m) adapter
  - 85052-60034 3.5 mm (f) to 3.5 mm (m) adapter
  - 85052-60035 3.5 mm short TRL line
  - 85052-60036 3.5 mm long TRL line

### For devices with Type-N connectors

(see Adapters section for information about Agilent Type-N adapters)

#### Mechanical calibration kits
- **85054D** economy: 45 MHz to 18 GHz. Includes:
  - 85054-60025 Type-N (m) short
  - 85054-60026 Type-N (f) short
  - 85054-60027 Type-N (m) open
  - 85054-60028 Type-N (f) open
  - 85054-60031 Type-N (f) to 7mm adapter
  - 85054-60032 Type-N (m) to 7mm adapter
  - 85054-60037 Type-N (f) to Type-N (f) adapter
  - 85054-60038 Type-N (m) to Type-N (m) adapter
  - 85054-60046 Type-N (m) fixed load
  - 85054-60047 Type-N (f) fixed load

- **85054B** standard: 45 MHz to 18 GHz. Includes:
  - 00909-60011 Type-N (m) fixed lowband load
  - 00909-60012 Type-N (f) fixed lowband load
  - 85054-60025 Type-N (m) short
  - 85054-60026 Type-N (f) short
  - 85054-60027 Type-N (m) open
  - 85054-60028 Type-N (f) open
  - 85054-60031 Type-N (f) to 7mm adapter
  - 85054-60032 Type-N (m) to 7mm adapter
  - 85054-60037 Type-N (f) to Type-N (f) adapter
  - 85054-60038 Type-N (m) to Type-N (m) adapter
  - 85054-80010 Type-N (f) sliding load
  - 85054-80009 Type-N (m) sliding load
  - 85054-60050 Type-N (f) connector gage
  - 85054-60052 Type-N (f) gage master
  - 85054-60051 Type-N (m) connector gage
  - 85054-60053 Type-N (m) gage master

- **Option K11** PSC-N slotless contact repair kit
For devices with 7 mm connectors
(see Adapters section for information about Agilent 7 mm adapters)

Mechanical calibration kits
- **85050D** economy: 45 MHz to 18 GHz. Includes:
  - 85050-60006 7 mm fixed broadband load
  - 85050-80007 7 mm short
  - 85050-80010 7 mm open

- **85050B** standard: 45 MHz to 18 GHz. Includes:
  - 00909-60008 7 mm coax termination
  - 85050-60006 7 mm fixed broadband load
  - 85050-80007 7 mm short
  - 85050-80010 7 mm open

- **85050C** precision TRL: 45 MHz to 18 GHz. Includes:
  - 00909-60008 7 mm coax termination
  - 85050-60003 7 mm to 7 mm airline
  - 85050-60005 7 mm to 7 mm TRL adapter
  - 85050-60006 7 mm fixed broadband load
  - 85050-80007 7 mm short
  - 85050-80009 7 mm short collet
  - 85050-80010 7 mm open

For devices with waveguide
(see Adapters section for information about Agilent coax to waveguide adapters)

Mechanical calibration kits

X Band
- **X11644A** standard, WR-90: 8.2 to 12.4 GHz. Includes:
  - 00896-60008 X-band standard section
  - 00910-60003 X-band termination
  - 11644-20018 X-band short
  - 11644-20021 X-band shim

P Band
- **P11644A** standard, WR-62: 12.4 to 18 GHz. Includes:
  - 00896-60007 P-band standard section
  - 00910-60002 P-band termination
  - 11644-20017 P-band short
  - 11644-20020 P-band shim

K Band
- **K11644A** standard, WR-42: 18 to 26.5 GHz. Includes:
  - 00896-60006 K-band standard section
  - 00910-60001 K-band termination
  - 11644-20016 K-band short
  - 11644-20019 K-band shim

R Band
- **R11644A** standard, WR-28: 26.5 to 40 GHz. Includes:
  - 00914-20028 R-band termination
  - 11644-20005 R-band short
  - 11644-20003 R-band shim
  - 11644-60001 R-band 10 cm straight waveguide
  - 11644-60016 R-band 5 cm straight waveguide

Q Band
- **Q11644A** standard, WR-28: 26.5 to 40 GHz. Includes:
  - 11644-60005 Q-band termination
  - 11644-20004 Q-band short
  - 11644-20001 Q-band shim
  - 11644-60002 Q-band 10 cm straight waveguide
  - 11644-60017 Q-band 5 cm straight waveguide
Verification kits

All Agilent verification kits include:
• precision $Z_0$ airline
• mismatched airline
• fixed attenuators
• traceable measured data and uncertainties

- **85057B** 45 MHz to 50 GHz 2.4 mm kit
  Includes attenuators, airline and mismatch airline with data on a 3.5-inch disk for use in confirming accuracy enhanced system measurement performance, traceable to national standards. Test procedure is provided in the service manual.

- **85055A** 300 kHz to 18 GHz Type-N kit
  Includes attenuators, airline and mismatch airline with data on a 3.5-inch disk for use in confirming accuracy enhanced system measurement performance, traceable to national standards. Test procedure is provided in the service manual.

- **85053B** 300 kHz to 26.5 GHz 3.5 mm kit
  Includes attenuators, airline and mismatch airline with data on a 3.5-inch disk for use in confirming accuracy enhanced system measurement performance, traceable to national standards. Test procedure is provided in the service manual.

- **85051B** 300 kHz to 18 GHz 7 mm kit
  Includes attenuators, airline and mismatch airline with data on a 3.5-inch disk for use in confirming accuracy enhanced system measurement performance, traceable to national standards. Test procedure is provided in the service manual.

- **R11645A** 26.5 to 40 GHz R-Band W-28 kit
  Includes attenuators and mismatch attenuator with data on a 3.5-inch disk for use in confirming accuracy enhanced system measurement performance, traceable to national standards. Test procedure is provided in the service manual.

- **Q11645A** 33 to 50 GHz Q-Band W-22 kit
  Includes attenuators and mismatch attenuator with data on a 3.5-inch disk for use in confirming accuracy enhanced system measurement performance, traceable to national standards. Test procedure is provided in the service manual.

Adapters

- **11900A/B/C/D** 2.4 mm adapters
- **11904A/B/C/D** 2.4 mm to 2.92 mm adapters
- **11902A/B** 2.4 mm to 3.5 mm adapters
- **11903A/B/C/D** 2.4 mm to Type-N 50 ohm adapters
General accessories

USB Peripherals
- N4688A CD-ROM drive
  Provides an external read/write CD-ROM drive with a USB cable.
- N4689A USB hub
  Provides a USB hub for connecting additional USB peripherals.

Probe
- 85024A high-frequency probe
  Provides high-impedance in-circuit test capability from 300 kHz to 3 GHz.

Power meters and sensors
Recommended for self support, adjustments and performance tests to verify proper instrument operation.
- E4418B single-channel power meter
- E4419B dual-channel power meter
- 8481B power sensor, 10 MHz to 18 GHz, Type-N (m), 25 W
- 8481A power sensor, 10 MHz to 18 GHz, Type-N (m), 100 mW
- 8485A power sensor, 50 MHz to 26.5 GHz, APC-3.5 mm (m), 100 mW
- 8487A power sensor, 50 MHz to 50 GHz, 2.4 mm, 300 mW
- 8487D power sensor, 50 MHz to 50 GHz, 2.4 mm, 100 mW
- R8486A power sensor, 26 GHz to 40 GHz, waveguide flange UG-599/U, 100 mW
- Q8486A power sensor, 33 GHz to 50 GHz, waveguide flange UG-383/U, 100 mW
- E4412A CW power sensor, 10 MHz to 18 GHz, Type-N (m), 200 mW

Amplifiers
- 83006A power amplifier, 10 MHz to 26.5 GHz, 20 dB gain, power out: +18 dBm to 10 GHz or +16 dBm to 20 GHz or +14 dBm to 26.5 GHz
- 83017A power amplifier, 50 MHz to 26.5 GHz, 25 dB gain, power out: +20 dBm to 20 GHz, or +15 dBm to 26.5 GHz
- 83018A power amplifier, 2 to 26.5 GHz, 27 dB gain to 20 GHz or 23 dB to 26.5 GHz, power out: +24 dBm to 20 GHz or +21 dBm to 26.5 GHz
- 83020A power amplifier, 2 to 26.5 GHz, 30 dB gain to 20 GHz or 27 dB to 26.5 GHz, power out: +30 dBm to 20 GHz or +26 dBm to 26.5 GHz
- 83050A power amplifier, 2 to 50 GHz, 23 dB gain, power out: +20 dBm to 40 GHz or +17 dBm to 50 GHz
- 83051A power amplifier, 45 MHz to 50 GHz, 23 dB gain power out: +12 dBm to 45 GHz or +10 dBm to 50 GHz

Couplers
- 87300B coaxial coupler, 1 to 20 GHz, SMA (f), 10 dB coupling
- 87300C coaxial coupler, 1 to 26.5 GHz, 3.5 mm (f), 10 dB coupling
- 87301D coaxial coupler, 1 to 40 GHz, 2.4 mm (f) or optional 2.92 mm (f), 13 dB coupling
- 87310B 90° coaxial coupler, 1 to 18 GHz, SMA (f), 3 dB coupling
- 87301E coaxial coupler, 2 to 50 GHz, 2.4 mm (f), 10 dB coupling

Equipment racks and case
- Rack mount flange kit, for use with handles; includes handles
- Rack mount kit, for use without handles; may be ordered as option 1CM
- Rack mount kit, for use with previously supplied handles; may be ordered as option 1CP
- Rail kit, included with option 1CM and 1CP

1. The PNA Series analyzer is supplied with handles.
Applications

Material measurement

- **85070D** High-Temperature Dielectric Probe Kit
  The 85070D allows the measurement of the dielectric properties of materials quickly and conveniently. Measurements made with this probe are nondestructive and require no sample preparation. The dielectric probe is well suited for measurements of liquid, semisolid and flat solid materials. Measurement results can be viewed in a variety of formats (\(\varepsilon'\), \(\varepsilon''\), \(\tan\delta\) or Cole-Cole). The supplied software can be run in the PNA analyzer or on a PC.

- **85071D** Materials Measurement Software
  The material software calculates the permittivity and permeability of material samples placed in a coaxial airline or a rectangular waveguide. The measurement technique works well for solid materials that can be machined to fit precisely inside a transmission line. Measurement results can be viewed in a variety of formats (\(\varepsilon'\), \(\varepsilon''\), \(\tan\delta\), \(\mu'\), \(\mu''\), \(\tan\delta_m\) or Cole-Cole). The software can be run in the PNA analyzer or on a PC.

Filter tuning

- **N4261A** Filter Tuning Software
  This software will significantly reduce filter tuning training times and increase manufacturing throughput. Through the graphical user interface, visual training indicators show when the individual resonators and couplers in a filter have been tuned within specifications. The indicators also show the user when and how to tune each filter element, reducing the number of times each element has to be retuned before the filter meets specifications.

Peripherals

The following peripherals may be used with the E8364A. Other peripherals not listed here may also be compatible with these instruments.

**CD-ROM drive**
USB-compatible CD-ROM drive

**Monitors**
VGA-compatible monitor

**Printers**
USB, LAN, parallel or serial printers with Microsoft ® Windows ® 2000 printer driver

**Interface cables**
Choose the appropriate cables to connect each peripheral to the network analyzer.

- **10833A GPIB** cable, 1.0 m (3.3 ft)
- **10833B GPIB** cable, 2.0 m (6.6 ft)
- **10833D GPIB** cable, 0.5 m (1.6 ft)
Upgrade kits

Upgrade kits for the E8364A

Upgrade kits are available to add options after initial purchase. To order an upgrade kit for an E8364A, order the analyzer's model number followed by a “U”, then indicate the option to be added:

- **Option 010** time-domain upgrade kit
  The serial number of the E8364A to be retrofitted must be specified when ordering this kit. Installation is not included.

- **Option 014** configurable test set upgrade kit

- **Option 099** firmware upgrade
  Provides the latest revision of firmware for the PNA Series on CD-ROM. Firmware is user-installable. Installation requires USB CD-ROM drive or external computer connected via LAN. The latest firmware is also available from our web site. Visit our web page at: [www.agilent.com/find/pna](http://www.agilent.com/find/pna)

- **Option UNL** Extended power range
  Adds a step attenuators and a bias tee between source and each test port.

Upgrades requiring model number changes are addressed on a special handling quotation basis. Contact your local Agilent sales or service office for further information.
Additional services

The ease-of-use and performance of the PNA Series vector network analyzers is only a small part of what is available from Agilent. Contact your local Agilent Sales or Support Desk regarding additional service and support products available:

- Calibration services
- Repair services
- Technical consulting
- Process consulting
- Education and training

- **W50** 5-Year Extended Repair Coverage
  Provides warranty-like repair coverage with return-to-Agilent logistics for an additional 2-years over the standard 3-year warranty that comes with the hardware.

- **W01** 1-year on-site warranty conversion
  Upfront option that converts 3-year return-to-Agilent service warranty to 1-year on-site

- **W31** 3-year on-site warranty conversion
  Upfront option that converts 3-year return-to-Agilent service warranty to 3 years on-site.

- **W51** 5-year on-site warranty conversion
  Upfront option that converts 3-year return-to-Agilent service warranty to 5-years on-site.

- **W32** 3-Year Calibration Service
  Upfront option that provides (return-to-Agilent) standard calibrations based on manufacturer calibration cycles for the hardware over 3-year period.

- **W34** 3-Year Accredited Calibration Service
  Upfront option that provides (return-to-Agilent) accredited calibrations (premium documentation and adjustment recording) based on manufacturer calibration cycles for the hardware over 3-year period.

- **W52** 5-Year Calibration Service
  Upfront option that provides (return-to-Agilent) standard calibrations based on manufacturer calibration cycles for the hardware over 5-year period.

- **W54** 5-Year Accredited Calibration Service
  Upfront option that provides (return-to-Agilent) accredited calibrations (premium documentation and adjustment recording) based on manufacturer calibration cycles for the hardware over 5-year period.

For on-line information about Agilent’s service and support products visit: www.agilent.com/find/tm_services
Literature and information

PNA Series Brochure, literature number 5968-8472E

Microwave PNA Series Data Sheet, literature number 5988-3992EN

Application and product notes

Application Development with the Agilent PNA Series of Network Analyzers
literature number 5980-2666ENUS

Understanding and Improving Network Analyzer Dynamic Range Application Note 1363-1
literature number 5980-2778EN

The “Need for Speed” in Component Manufacturing Test
literature number 5980-2783EN

Connectivity Advances in a LAN-enabled Instrument
literature number 5980-2782EN

De-embedding and Embedding S-parameter Networks Using the PNA Series Network Analyzer Application Note 1364-1
literature number 5980-2784EN

Advanced Filter Tuning Using Time Domain Application Note 1287-10
literature number 5980-2785EN

Understanding the Fundamental Principles of Vector Network Analysis Application Note 1287-1
literature number 5965-7707E

Exploring the Architectures of Network Analyzers Application Note 1287-2
literature number 5965-7708E

Applying Error Correction to Network Analyzer Measurements Application Note 1287-3
literature number 5965-7709E

Network Analyzer Measurements: Filter and Amplifier Examples Application Note 1287-4
literature number 5965-7710E

Improving Throughput in Network Analyzer Applications Application Note 1287-5
literature number 5966-3317E

Using a Network Analyzer to Characterize High-Power Components Application Note 1287-6
literature number 5966-3319E

Simplified Filter Tuning Using Time-Domain Analysis Application Note 1287-8
literature number 5968-5328E

In-Fixture Measurements Using Vector Network Analyzers Application Note 1287-9
literature number 5968-5329E

10 Hints for Making Better Network Analyzer Measurements Application Note 1291-1
literature number 5965-8166E

Key web resources

Visit our component manufacturer industry area at:
www.agilent.com/find/component_test

Visit the PNA Series home page at:
www.agilent.com/find/pna

Most application and product notes may be downloaded from our web site at:
www.agilent.com/find/tmappnotes/apps
Agilent Technologies’ Test and Measurement Support, Services, and Assistance

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Printed in USA, November 1 2001
5988-3993EN