

# NETWORK ANALYZERS

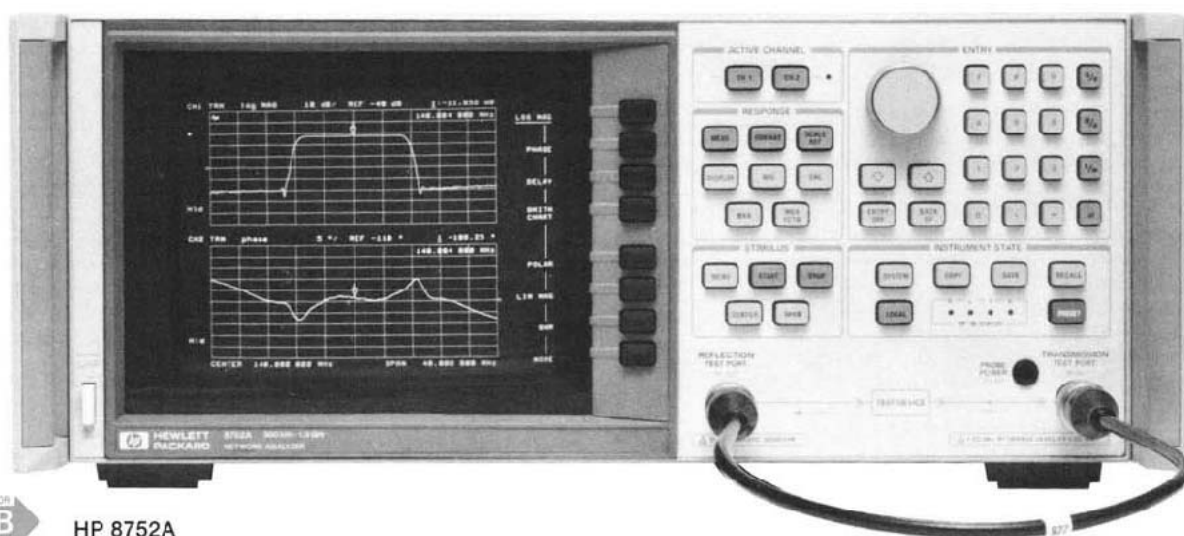
## RF Network Analyzer, 300 kHz to 3 GHz

229

HP 8752A

- 300 kHz to 1.3 or 3 GHz
- Integrated 1 Hz resolution synthesized source
- Integrated transmission/reflection test set
- Crisp color display
- Direct save/recall to an external disk drive

- Execute complex test procedures with the test sequence function
- 100 dB of dynamic range
- Group delay and deviation from linear phase
- Superb uncorrected performance



DESIGNED FOR  
HP-IB  
SYSTEMS

HP 8752A

### HP 8752A RF Network Analyzer

The HP 8752A provides simple and complete vector network measurements in a compact and fully integrated RF network analyzer. Characterize your RF components and networks accurately and economically with the HP 8752A RF network analyzer in the 300 kHz to 1.3 or 3 GHz frequency range. Integration of the swept synthesized source, test set, and receiver, results in a network analyzer that is easy to set up and use which is ideal for service, incoming inspection, production and final test measurements.

The integrated synthesized source provides measurement port power level of +5 to -20 dBm with linear, log, list, power, and CW sweep types. The sensitive, tuned receivers provide 100 dB of dynamic range.

With two independent display channels available, you can simultaneously measure the reflection and transmission characteristics of the device under test on the crisp color display. Data can be displayed in log magnitude, linear magnitude, SWR, phase, group delay, polar, real, or Smith chart formats. The easy-to-use softkey measurement functions allow you to quickly measure the desired characteristic of your device under test.

#### Designed for Manufacturing

The productivity features of the HP 8752A increase your throughput in production. The test sequence function provides rapid and consistent execution of complex, repetitive tests with a single keystroke. In sequencing mode, you make the measurement once from the front panel and the instrument automatically saves the keystrokes without an external computer.

The HP 8752A offers excellent uncorrected performance, allowing simple and accurate measurements of your device under test without the need for measurement calibration. Other productivity enhancements include a plot/print buffer, limit testing, arbitrary frequency testing, and marker tracking functions. Up to four on-screen markers are available per channel for hardcopy outputs or for tuning at specific frequencies.

#### Time Domain Analysis

The HP 8752A with option 010 has the capability of displaying the time domain response of a network, obtained by computing the inverse Fourier transform of the frequency domain response. Two time

domain modes are offered with the HP 8752A. The low pass mode provides traditional time domain reflector (TDR) measurement capability and gives the response of a mathematically simulated step or impulse response. The band pass mode, which has only the impulse stimulus, provides the time domain response of frequency-selective devices such as SAW filters and antennas.

#### Specifications

##### Source

##### Frequency characteristics

**Range:** 300 kHz to 1.3 GHz  
(Option 003: 300 kHz to 3 GHz)

**Resolution:** 1 Hz

**Accuracy:**  $\pm 10$  ppm

##### Output characteristics

**Power range:** -20 to +5 dBm

**Resolution:** 0.1 dB

**Flatness:** < 2 dB p-p

**Level accuracy (50 MHz, -5 dBm):**  $\pm 0.5$  dB

**Level linearity (relative to -5 dBm):**

-20 to -15 dBm:  $\pm 0.5$  dB

-15 to 0 dBm:  $\pm 0.2$  dB

0 to +5 dBm:  $\pm 0.5$  dB

**Impedance:** 50  $\Omega$

##### Receiver

**Frequency range:** 300 kHz to 1.3 GHz

(Option 003: 300 kHz to 3 GHz)

**Noise level:** reflection -85 dBm (typical)

Transmission -100 dBm

**Maximum input level:** 0 dBm

**Impedance:** 50  $\Omega$

**Crosstalk:** (300 kHz to 1.3 GHz) 100 dB

(1.3 to 3 GHz) 90 dB

**Dynamic accuracy:**  $\pm 0.05$  dB,  $\pm 0.3$  deg over a 50 dB input range

##### Delay characteristics:

**Range:**  $1/(2^* \text{minimum aperture})$

**Aperture (selectable):** frequency span/(points - 1) to 20% of the frequency span

**Accuracy: (phase accuracy)/(360 \* aperture)**

# NETWORK ANALYZERS

## RF Network Analyzer, 300 kHz to 3 GHz

### HP 8752A (cont'd.)

#### Physical Characteristics

**Size:** 178H x 425W x 482mmD (7.0" x 16.75" x 20.0")  
**Weight:** net, 22kg (48lb); shipping 25kg (55lb)

#### Accessories

##### HP 11878A adapter kit

The HP 11878A Adapter Kit provides the RF components generally required when a SMA or 3.5 mm device needs to be measured with the HP 8752A standard type N configuration. The kit includes four type N to 3.5 mm adapters to accommodate both male and female connectors.

##### Test port return cable (HP 8120-4781)

Hewlett Packard supplies a 610 mm (24 in) 50  $\Omega$  type N RF cable with every HP 8752A. Additional or replacement cables can be ordered separately.

##### HP 11852B 50 $\Omega$ /75 $\Omega$ minimum loss pad

The HP 11852B is a low SWR minimum loss pad required when measurements are made on 75  $\Omega$  devices with the HP 8752A network analyzer. Measurements on two port devices require two HP 11852Bs and one 50  $\Omega$  type N barrel.

**Frequency range:** dc to 2.0 GHz

**Insertion loss:** 5.7 dB

**Return loss:** 75  $\Omega$  typically >30 dB, 50  $\Omega$  typically >26 dB

**Connectors:** 50  $\Omega$  type N female and 75  $\Omega$  type N male

##### HP 85024A High Frequency Probe

The HP 85024A High Frequency Probe makes it easy to perform in-circuit measurements. An input capacitance of only 0.7 pF shunted by 1 Megohm of resistance permits high frequency probing without adversely loading the circuit under test. Excellent frequency response and unity gain guarantees high accuracy in swept measurements with this probe. High probe sensitivity and low distortion levels allows measurements to be made while taking advantage of the full dynamic range of HP RF analyzers. Spectrum analyzers which supply probe power from the front panel include the HP 8568B, 8590B, 8591A, 8560A, 8561B, 8562A/B, and 71100A. RF network analyzers like the HP 8753C, 8752A, 3577A, and 4195A are also directly compatible. You can use the HP 85024A with other instruments by using the HP 1122A Probe Power Supply or any dual  $\pm$  15V, 130 mA supply.



HP 85024A

#### Specifications

**Input Capacitance (@ 500 MHz):** <0.7 pF (nominal)

**Input Resistance:** 1 Megohm (nominal)

**Bandwidth:** 300 kHz to 3 GHz

**Gain (@ 500 MHz):** 0 dB  $\pm$  1 dB

**Average Noise Level (10 Hz to 10 MHz):** <1 mV

**Frequency Response:**  $\pm$  1.25 dB (300 kHz to 1 GHz)  
 $\pm$  2, -3 dB (1 GHz to 3 GHz)

**Input Voltage for 1 dB Compression:** 0.3 V

**Maximum Safe RF Voltage:** 1.5V peak (with 10:1 divider 15V peak)

**Noise Figure:** <50 dB (<100 MHz)  
<24 dB (100 MHz to 3 GHz)

**Distortion (@ 0.3 V):** <-30 dBc

#### Includes

Type N Male Adapter, 10:1 Divider, Spare probe tips, 2.5-inch Ground Lead, Hook Tip, Spanner Tip, and Probe Tip Nut Driver.

#### Calibration kits

Accuracy enhancement procedures characterize the systematic errors of the measurement system by measuring known devices (standards) on the system over the frequency range of interest. The calibration kits in the HP 8752A family contain precision standards with which to characterize the systematic errors of an HP 8752A measurement system.

##### HP 85032B Option 001 50 $\Omega$ type N calibration kit

Contains precision 50  $\Omega$  type N standards used to calibrate the HP 8752A for measurements of devices with 50  $\Omega$  type N connectors. This kit can also be used to perform system verification. Option 001 removes the precision phase-matched 7mm-to-type N adapters. Standards include fixed terminations, open circuits, and short circuits.

##### HP 85033C option 001 3.5 mm calibration kit

Contains precision 3.5 mm standards used to calibrate the HP 8752A network analyzer for measurements of devices with 3.5 mm or SMA connectors. Option 001 removes the precision phase-matched 7mm-to-3.5mm adapters. Standards include fixed terminations, open circuits, and short circuits.

#### Ordering Information

Ordering Information	Price
HP 8752A Network Analyzer	\$22,000
Opt 003 3 GHz Frequency Extension	+\$4,000
Opt 010 Time Domain Capability	+\$4,800
Opt 802 add Dual Disk Drive and Cable	+\$1,495
Opt 908 Rack Mount Kit (without handles)	+\$35
Opt 910 Extra Manual	+\$150
Opt 913 Rack Mount Kit	+\$40
HP 85032B Opt 001 50 $\Omega$ Type N Calibration Kit	\$1,100
HP 85033C Opt 001 3.5 mm Calibration Kit	\$2,000
HP 11878A 3.5 mm Adapter Kit	\$550
HP 11853A 50 $\Omega$ Type N Accessory Kit	\$350
HP 11854A 50 $\Omega$ BNC Accessory Kit	\$350
HP 8120-4781 Type N Replacement Test Port Cable	\$350
HP 85024A High Frequency Probe	\$1,900

☎ Fast Ship product