

HP 85103C/D  
Upgrade Packages  
to the HP 8510C



HP 8510 Performance Upgrades  
to meet your new  
design and test challenges

## Performance and convenience

Update your HP 8510A or 8510B Network Analyzer to the state-of-the-art HP 8510C: the next significant step in the evolution of microwave vector network analyzer technology. The HP 85103C/D Performance Upgrade Packages let you protect your past investment in an HP 8510, giving you the best measurement performance to meet your new design and test challenges, all at a very attractive cost.

The HP 8510 is renowned for its flexibility in covering a wide variety of applications, from basic component testing to on-wafer probing, to antenna and RCS measurements. Regardless of your application, you will benefit from these new features...

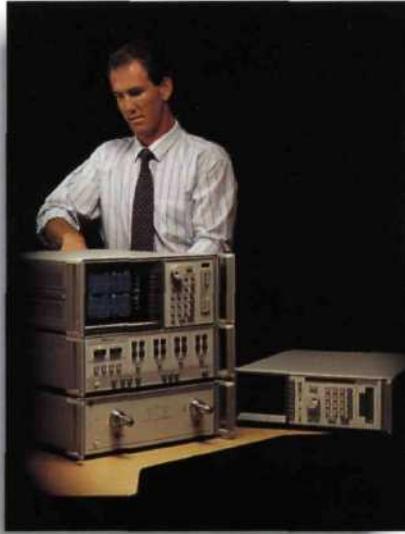
- High-resolution, 16-color display
- Flat test port power vs. frequency
- Three times faster measurements
- Four S-parameter display
- Built-in 3.5-inch disk drive
- Buffer for plots and printouts
- Five on-screen marker readouts
- Enhanced printed data listings
- Internal real-time clock

NEW

In addition, our latest firmware revision shipped with current 8510 upgrade kits, gives you these features:

- Power sweep
- Receiver calibration
- Limit lines
- Dissimilar connector compensation
- Full color printer compatibility

These capabilities will help you stay competitive in developing your microwave component designs in today's market.



## Additional capabilities for HP 8510A users

In addition to all of the features already mentioned, take advantage of all the capabilities that were added by the HP 8510B. The HP 85103C Performance Upgrade Package adds all of these to your HP 8510A.

More internal data storage

- Store four times more information for instant recall

More processing power

- Two to sixteen times faster time domain measurements
- 25% improvement in error-correction speed

Faster HP-IB operation

- Two times faster data transfer

Powerful calibration techniques

- TRL and LRM calibration for in-fixture or on-wafer measurements respectively
- Unique "Adapter Removal" calibration for commonly-found noninsertable devices

Dual source control

- For applications requiring two sources such as mm-wave, mixer, antenna, and radar cross section measurements

Frequency list sweep mode

- Take data only at the frequencies you need to test

## Precise level control

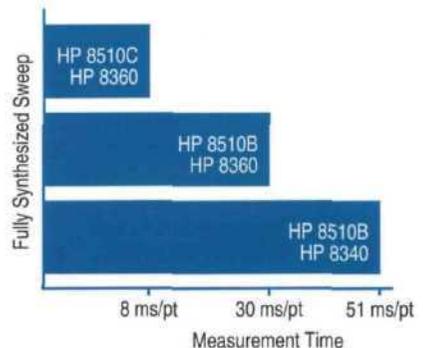
Improve your measurements of power-sensitive devices such as amplifiers. The HP 8510C allows you to "calibrate" for flat output power versus frequency at the measurement port when used with an HP 8360 Series Synthesized Sweeper. By executing a sweep with a power meter connected to the test port, and storing the resulting table of correction offset values, extremely flat power at the test ports can be obtained (typically  $\pm 0.2$  dB).

## Swept power measurements

Quickly determine the 1-dB gain-compression point of your amplifier. Performing a receiver calibration with flat test port power allows you to achieve absolute-power measurements of your device. Then, use the power sweep feature to sweep power at a single CW frequency to determine the amplifier's 1-dB gain compression point.

## Triple your measurement speed

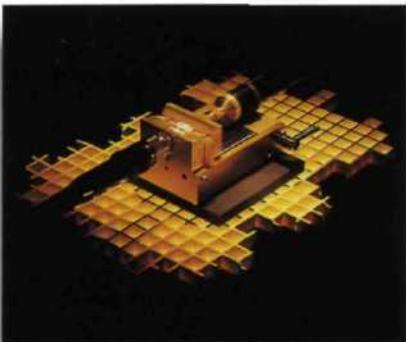
Cut your test times by over a factor of three if you currently use an HP 8510B with an HP 8360 Series Synthesized Sweeper. Upgrading to the HP 8510C lets you take full advantage of the 5 ms switching speed of the HP 8360 family of sources. Plus, upgrading to the HP 8510C gives you full compatibility with the newest HP 8510 S-parameter test set: the premier 50 GHz HP 8517B.



NEW

## In-fixture measurements

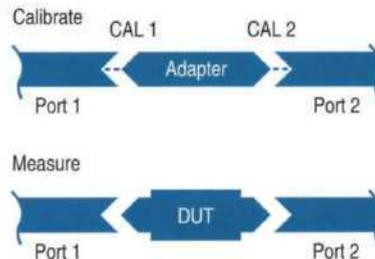
Improve the accuracy and quality of your in-fixture measurements of active devices using the TRL (Thru-Reflect-Line) two-port calibration technique. TRL is a must for these applications because device measurements are corrected for systematic errors such as launch discontinuities and mismatches right up to the measurement plane.



LRM calibration (Line-Reflect-Match), a derivative of TRL, is ideal for on-wafer measurements of MICs and MMICs. By using a single broadband match standard which can be easily fabricated on a wafer as the impedance reference, LRM calibration allows very accurate measurements over broad frequency ranges.

## Noninsertable calibration

Many microwave components are "noninsertable", meaning that some kind of adapter is required during the transmission step of the calibration process to be able to measure the device itself. For example, devices with female connectors on both ports qualify as being noninsertable components, because an adapter is required at the test port while calibrating. The response of this adapter is then included with that of the device under test.



The unique "Adapter Removal" capability of the HP 8510 allows the effects of the adapter used during calibration to be fully characterized during the calibration process and removed from the measurement of the device under test. This results in fully traceable and highly accurate measurements of noninsertable devices.

## Designed without compromise

The "no-compromise" design of the HP 8510C is mirrored in the HP 85103C/D upgrade kits. From the superb color display and built-in disk drive to the convenient hardcopy output capabilities, the upgraded instrument says "quality".

## Backwards compatibility

Even with the performance upgrades, your HP 8510 retains its familiar user-interface and remains compatible with all your existing HP 8510 system hardware (test sets and sources), as well as your HP-IB software. Included in the upgrade kit is a software program which runs on an HP 9000 series 300 computer to convert your old tape files to disk for use with your new HP 8510C.

## Upgrade kit installation

Both upgrade kits are a hardware and firmware upgrade to your HP 8510, and include on-site installation and check-out by a qualified HP Customer Engineer at no additional charge.

Your system will be upgraded in a matter of hours, so you'll be up and running quickly with all of these new capabilities.

### Five markers on-screen

Observe all five marker values, or all four S-parameters at the currently active marker.

### Plot to various printers

Supports the popular ThinkJet, PaintJet, DeskJet and LaserJet printers over either HP-IB or serial (RS-232) interfaces.

### Internal plot/print buffers

Continue making measurements without having to wait for plots and printouts to finish.

### Built-in 3.5-inch high-density disk drive

Supports both HP 9000 series 300 and MS-DOS<sup>®</sup> formats for maximum flexibility.

### Four S-parameter display

View complete device performance at a glance. Choose between separate graticules or overlay mode.

### High-resolution color CRT

Crisp 19 cm 16-color display, with full control of trace and graticule color.



### Customizable outputs

You control the format of printed tabular data listings.

### Internal real time clock

Add time/date information to your critical calibrations and measurements for fool-proof record-keeping.

MS-DOS<sup>®</sup> is a U.S. registered trademark of Microsoft Corporation.

## Meet your new design challenges

Building on Hewlett-Packard's over 25 years of experience in vector network analysis, the HP 8510C—and its associated new hardware—continues to provide the best performance to meet your new design and test challenges.



## New sources for network analysis

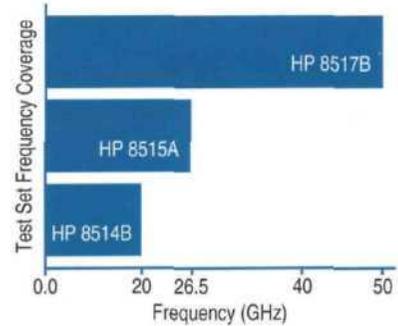
The HP 8360 Series Synthesized Sweepers provide outstanding capabilities as a stimulus source for network analysis applications with the HP 8510C.

Replace your current HP 8340 or 8341 with an HP 8360 Series source. You will gain the benefits of six-times faster synthesized stepped sweeps and a 10-fold improvement in frequency accuracy for analog sweeps, while freeing your existing source for use in stand-alone or bench-top applications. Obtain precision output level control at the test port, excellent pulse performance, higher output power, and outstanding signal purity.

For more information, call your local HP sales office listed in your telephone directory.

## Extended frequency coverage

Expand your HP 8510 system to cover measurement applications to 50 GHz. The new HP 8517B S-parameter Test Set, coupled with the HP 83651A Synthesized Sweeper, provides better accuracy and stability than any other system currently available.



## Ordering Information

### HP 85103C Performance Upgrade Package:

Upgrades any HP 8510A to the HP 8510C.

### HP 85103D Performance Upgrade Package:

Upgrades any HP 8510B to the HP 8510C.

Includes on-site installation of the new hardware and check-out of the upgraded HP 8510, where available. The warranty on your HP 8510 will be renewed or extended for 90 days of on-site service from date of installation (where available). This excludes the source, test set, and accessories. Obsolete hardware is returned to HP.

### Option 001 Rack Modification Kit

Adds rack modification hardware required for rack mounted systems.

Intended for use with HP 85043A System Rack (e.g. HP 8510T, 85107A etc.)

### Option 010 Time Domain

The same upgrade for existing HP 8510 network analyzers with option 010 time domain capability.

Serial number of existing HP 8510 is required when submitting order.  
1.75 inches (4.5 cm) of additional rack space is necessary.

### HP 83601A Upgrade Kit

Upgrades HP 83621A/83631A sources.

This upgrade modifies these synthesized sweepers for maximum synthesized sweep speed with the HP 8510C. (Required for sources shipped prior to January 1, 1991). Installation performed on-site by HP Customer Engineer. For other HP 8360 Series sources, consult your HP sales representative.

Note: For full power sweep compatibility source upgrades may be required. Consult the HP 8510C ordering guide or your HP sales representative for more information.

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