Errata

Title & Document Type: HP 8568 and HP 8566A Retrofit Kit Brochure

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HP References in this Manual
This manual may contain references to HP or Hewlett-Packard. Please note that Hewlett-Packard's former test and measurement, semiconductor products and chemical analysis businesses are now part of Agilent Technologies. We have made no changes to this manual copy. The HP XXXX referred to in this document is now the Agilent XXXX. For example, model number HP8648A is now model number Agilent 8648A.

About this Manual
We've added this manual to the Agilent website in an effort to help you support your product. This manual provides the best information we could find. It may be incomplete or contain dated information, and the scan quality may not be ideal. If we find a better copy in the future, we will add it to the Agilent website.

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Search for the model number of this product, and the resulting product page will guide you to any available information. Our service centers may be able to perform calibration if no repair parts are needed, but no other support from Agilent is available.
Give Your HP 8568A or 8566A the Measurement Power and Speed of the "B" Version

An HP 8566A + 01K or 8566A + 01K Retrofit Kit gives your "A" version high performance spectrum analyzer all the features and capabilities of the "B" version:

- More Programming
- Faster Operation
- Commands
- Softkey Feature
- Direct Plot Capability
- 16K Bytes of User RAM

A retrofitted "A" spectrum analyzer can execute over 100 new programming commands that perform complex measurements easily, execute new signal and trace functions, and provide program flow control. Commands are executed faster and, with softkeys, can be performed without computer control.

Using the softkey feature, you can store in the analyzer complete, user-defined measurement procedures, up to 58 characters in length, directly from the front panel. Or, use a computer to write and store (or "download") longer procedures. Softkeys are executed from either the front panel or a computer. Trace and measurement data obtained from softkey procedures can also be stored in the analyzer.

Direct plotter output transfers all trace data, graticule, and annotation displayed on the CRT directly to an HP digital plotter, such as the HP 7470A or HP 7475A. To execute a direct plot, press the LOWER LEFT RECORDER key.

Retrofit Your Instrument Quickly and Easily

It takes only 4 to 6 hours to retrofit an analyzer, and the retrofit instructions are easy to follow.

The heart of a retrofit kit is the new A15 Controller board, which replaces three boards in an "A" analyzer. In an HP 8568A retrofit, the RF Section Interface board is also replaced. In an HP 8566A retrofit, the Front Panel Keyboard and Front Panel Interface board are replaced. An HP 8566A retrofit may also require a simple YTX alignment you can do yourself (an adjustment procedure and two padding capacitors are included in the kit). No other recalibration is necessary.

Analizers may be retrofit at HP customer service centers for an additional cost.

Both kits contain all the hardware necessary for retrofit, plus complete step-by-step instructions, Operation Verification Discs, and an Operating and Programming Manual.

For more "B" version literature or retrofit kit information, call your HP Sales Representative.
Programming Codes Uniq

**Instrument State Control**

**USTATE**
Configures or returns the configuration of user-defined states: ONEOS, ONSWP, TRMATH, VARDEF, FUNCDEF, TRDEF.

**Bandwidth Control**

**VBO**
Specifies the coupling ratio of the video bandwidth and resolution bandwidth.

**Marker Control**

**MKACT**
Specifies the active marker: 1, 2, 3, or 4.

**MKCONT**
Continues sweeping from the marker.

**MKP**
Specifies the horizontal marker position, in display units.

**MKPAUSE**
Pauses the sweep at the marker for the duration of the specified delay time [in seconds].

**MKPK**
Moves the active marker to the maximum signal detected, or to adjacent signal peaks.

**MKPX**
Specifies the minimum excursion for peak identification. Preset value is 6 dB.

**MKREAD**
Specifies the marker readout mode.

**MKTTRACE**
Moves the active marker to the corresponding position on another specified trace.

**MKTYP**
Sets the marker type.

**Coupling Control**

**VBO**
Specifies the coupling ratio of the video bandwidth and resolution bandwidth.

**Preselector Control**

**FPK**
Performs a fast preselector peak and returns the measured value of the active marker.

**Display Control**

**TRGRPH**
Dimensions and graphs a trace.

**Writing and Reading Display Memory**

**DSPLY**
Displays the value of a variable on the analyzer screen.

**OP**
Returns the lower left and upper right vertices of the display window.

**TEXT**
Writes a text string to the screen at the current pen location.

**Trace Processing**

**MOV**
Moves the operand to the destination.

**TRDSP**
Turns the specified trace on or off, but continues taking information.

**Trace Math**

**AMBPL**
Subtracts trace B from trace A, adds the display line value to the difference, and sends the result to trace A.

**TRMATH**
Executes the specified trace math or user-operator commands at the end of a sweep.

**Other Trace Functions**

**COMPRESS**
Compresses the trace source to fit the trace destination.

**CONCAT**
Concatenates the operands and sends the new trace to the destination.

**FFT**
Performs a forward fast fourier transform.

**MEAN**
Returns the trace mean.

**ONEOS**
Executes the specified command(s) at the end of every sweep.

**ONSWP**
Executes the specified command(s) at the start of every sweep.

**PDA**
Returns the probability distribution in amplitude.

**PDF**
Returns the probability distribution in frequency.

**PEAKS**
Returns the number of peak signals.

**PWRBW**
Returns the bandwidth of the specified percent of the total power.

**RMS**
Returns the RMS value of a trace in display units.

**SMOOTH**
Smooths the trace over a specified number of points.

**STDDEV**
Returns the standard deviation of a specified trace amplitude in display units.

**SUM**
Sums the amplitude of each trace element and returns the sum to the controller.

**SUMSOR**
Squares the trace element amplitudes and returns their sum.

**TRDEF**
Defines the name and length of a user-defined trace.

**TRGRPH**
Dimensions and graphs a trace.

**TRPRST**
Sets the trace operations to preset values.

**TRSTAT**
Returns the current trace operations.

**TWNAD**
Formats the trace information for fast fourier analysis (FFT).

**VARIANCE**
Returns the amplitude variance of a trace.

* Commands for the HP 8566B only
User-Defined Commands

DISPOSE
Frees the memory previously allocated by user-defined functions.
Instrument Preset disposes ONEOS, ONSWP, and TRMATH functions.

FUNCDEF
Assigns a specified program to a function label.

KEYDEF
Assigns a function label to a softkey number (See FUNCDEF).

KEYEXEC
Executes a specified softkey.

MEM
Returns the amount of allocatable memory available for user-defined commands.

ONEOS
Executes the specified command(s) at the end of every sweep.

ONSWP
Executes the specified command(s) at the start of every sweep.

TRDEF
Defines the name and length of a user-defined trace.

TRMATH
Executes the specified trace math or user-operator commands at the end of a sweep.

USTATE
Configures or returns the configuration of user-defined states: ONEOS, ONSWP, TRMATH,
VARDEF, FUNCDEF, TRDEF.

VARDEF
Defines a variable name and assigns a real value to it. Instrument Preset reassigns the initial
value to the variable identifier.

Program Flow Control

IF
IF compares two specified operands. If the condition is true, it executes the command list until
the next ELSE or ENDIF statement is encountered.

THEN
No-operation function.

ELSE
Delimits the alternate condition of the IF command.

ENDIF
Delimits the end of the IF command.

REPEAT
Delimits the top of the REPEAT UNTIL looping construct.

UNTIL
UNTIL compares two specified operands. If the condition is true, the commands following
UNTIL are executed. If the condition is false, the operands following the previous REPEAT
command are executed.

Math Functions

ADD
Operand 1 is added to operand 2 and sent to the destination.

AVG
The operand is averaged and sent to the destination.

CLR AVG
Sets the average counter to 1.

CONCAT
Concatenates two operands and sends the new trace to the destination.

CTA
Converts the operand values from display units to measurement units.

CTM
Converts the operand values from measurement units to display units.

DIV
Operand 1 is divided by operand 2 and sent to the destination.

EXP
The operand is divided by a specified scaling factor before being raised as a power of 10.

LOG
The log of the operand is taken and multiplied by the specified scaling factor.

MIN
The minimum value of two operands is stored in the destination.

MOV
Moves the source to the destination.

MPY
Operand 1 is multiplied by operand 2 and sent to the destination.

MXM
The maximum value of two operands is stored in the destination.

SQR
The square root of the operand is stored in the destination.

SUB
Operand 2 is subtracted from operand 1 and sent to the destination.

XCH
The contents of two destinations are exchanged.

Information and Service Diagnostics Commands

BRD
Reads the data word at the analyzer's internal input/output bus.

BWR
Writes a data word to the analyzer's internal input/output bus.

ERR
Returns the results of the processor test.

ID
Returns the HP model number of the analyzer used (HP 8566B or HP 8568B).

MBRD
Reads the specified number of bytes, starting at the specified address, and returns them to
the controller.

MBWR
Writes the specified block data field into the analyzer's memory, starting at the specified
address.

MRD
Reads the two-byte word at the specified analyzer memory address and returns the word to
the controller.

MRDB
Reads the 9-bit byte contained in the specified address and returns the byte to the controller.

MWR
Writes a two-byte message to the specified analyzer memory address.

MWRB
Writes a one-byte message to the specified analyzer memory address.

REV
Returns the analyzer revision number.

RQS
Returns the decimal weighting of the status byte bits enabled during a service request.
Programming Codes Unique to the HP 8566B and 8568B

Output Format Control
- **DSPLY**: Displays the value of a variable on the analyzer screen.
- **MDS**: Specifies the measurement data size to byte or word. Preset condition is word.
- **MDU**: Returns the values of the CRT baseline and reference level.
- **TDF**: Selects the trace data output format as 01, 02, 03, 04, A-block data field, or I-block data field. Preset format is 03.

Synchronization
- **DONE**: Sends a message to the controller after the preceding commands are executed.

Service Request
- **RQS**: Returns the decimal weighting of the status byte bits enabled during a service request.
- **SRQ**: Sets a service request if the operand bits are allowed by RQS.

Plotter Output
- **PLOT**: Plots the CRT. The scaling points, P1 and P2, must be specified and compatible with plotter.
- **P1x**: Represents the first x-axis scaling point to be specified in the PLOT command.
- **P1y**: Represents the first y-axis scaling point to be specified in the PLOT command.
- **P2x**: Represents the second x-axis scaling point to be specified in the PLOT command.
- **P2y**: Represents the second y-axis scaling point to be specified in the PLOT command.

Memory Information
- **MEM**: Returns the amount of allocatable memory available for user-defined commands.

External Mixer Commands*
- **CNVLOSS**: Selects the reference level offset to amplitude calibrate the display for a mixer with a given conversion loss. Default units are dB.
- **FULBAND**: Sets the start and stop frequencies for full waveguide bands.
- **IDSTAI?**: Returns the completion status of the signal identifier.
- **NSTART**: Specifies the start harmonic for signal identification.
- **NSTOP**: Specifies the stop harmonic for signal identification.

* Commands for the HP 8566B only.

Ordering Information

HP 8568A + 01K Retrofit Kit $2,500
HP 8566A + 01K Retrofit Kit $2,500

U.S.A. LIST PRICES ONLY

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