



**HEWLETT
PACKARD**

RETROFIT KITS

For HP 8568A and 8566A
Spectrum Analyzers

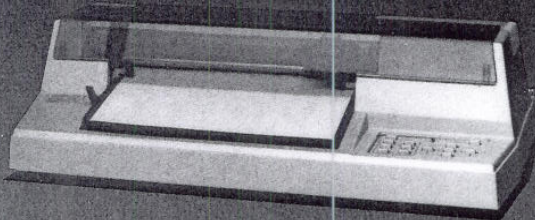
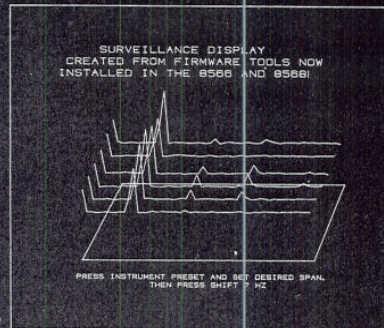
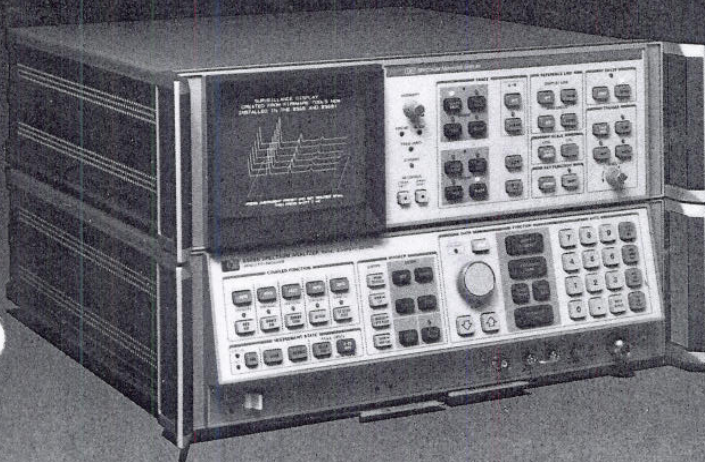
models

HP 8568A + 01K
HP 8566A + 01K



TECHNICAL DATA 1 NOV 84

Give Your HP 8568A or 8566A the Measurement Power and Speed of the "B" Version



An HP 8568A + 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 Commands**
- **Faster Operation**
- **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.

Analyzers 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 Unique

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.

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

MKTYPE Sets the marker type.

Coupling Control

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

Preselector Control

FPKA* 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.

STDEV 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.

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

VARIANCE Returns the amplitude variance of a trace.

* Commands for the HP 8566B only.

to the HP 8566B and 8568B

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). |
| KEYEXC | 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

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|---------------|---|
| 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

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|---------------|--|
| ADD | Operand 1 is added to operand 2 and sent to the destination. |
| AVG | The operand is averaged and sent to the destination. |
| CLRAVG | 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

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|-------------|---|
| 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 8-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

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|--------------|---|
| 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

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| DONE | Sends a message to the controller after the preceding commands are executed. |
|-------------|--|

Service Request

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| 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

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| 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

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

External Mixer Commands*

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|----------------|---|
| 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. |
| IDSTAT? | 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

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

U.S.A. LIST PRICES ONLY

