



HP 3565S

HP 3565S Multichannel Measurement System

Looking for a powerful, computer-based, modular measurement platform? The HP 3565S can be configured from 2 to 496 channels, and is optimized for fast signal acquisition and analysis. Using the HP 3565S, systems may be configured for modal analysis, closed-loop vibration control, rotating machinery analysis, noise and vibration analysis, signal monitoring, and more. As testing needs change, you can add new modules, new applications software, or enhance the system computer.

Measurement hardware is modular with five types of modules: Inputs, sources, signal processors, tachometer/trigger, and SCSI interface for high-speed data storage. You select the number of inputs, number of sources, and signal processing power desired. Whether you prefer UNIX workstations or DOS-based PCs, the HP 3565S acts as a measurement coprocessor, accelerating system performance.

Applications Software

System software for the HP 3565S is available from Hewlett-Packard (HP 3566A, HP 3567A, HP 35635R), and a variety of independent software vendors, such as: Leuven Measurement Systems (LMS), Mahrenholtz and Partner (M&P), Structural Measurement Systems (SMS), Creare Inc., and Structural Dynamics Research Corp. (SDRC). For further information, contact your HP sales representative.

HP 3565S Software Solution Providers

Vibration control	Data acquisition	Rotating machinery	Modal analysis	Acoustic analysis	Signature analysis	Custom solutions
LMS M&P	Creare LMS SDRC	LMS SDRC	LMS SDRC SMS	LMS SMS	Creare LMS SDRC	Creare HP

The HP 35635R Programmer's Toolkit is a digital signal processing (DSP) development environment and training class for HP 3565S hardware. Custom, high-performance solutions can be created using C programming and the Toolkit library of commands and functions. A very high level of C programming and DSP expertise is required. Contact your HP sales representative about prices, class schedules, supported computers, and prerequisites for taking the class.

System Mainframes

Choose the HP 35650A mainframe for large, expandable systems. It provides power and cooling for up to 8 modules. Up to 8 of these mainframes may be interconnected for a total of 64 available slots.

Choose the HP 35650B mainframe for small, transportable systems. It provides power and cooling for 4 slots. This mainframe cannot be connected to additional mainframes.

Signal Processing Modules

The signal processing modules perform the following functions for the system:

- Control of all system operations, including commands to control the other modules and the flow of data between the modules
- Transfer of measurement data to the host computer via HP-IB
- Control of direct throughput to disk
- Generation of time records to be sent to the HP 35656A DAC
- Processing of time data from the input modules

HP 35651B Signal Processing Module

This signal processing module uses an MC 68020 main processor and a MC 56001 DSP processor for computing spectrums. The module includes 1 MB of RAM for data and program space. Additional RAM is available as an option. Most application software available for the HP 3565S uses this module.

HP 35654A Signal Processing Module

This module is a higher performance version of the HP 35651B, and is used for computation-intensive applications such as high-speed waterfall displays. In general, the added capability of this module is accessible only through custom programming, as taught in the HP 35635R Programmers Toolkit course.

HP 35659A SCSI Interface Module

The HP 35659A SCSI interface module provides high-speed digital recording of signals sampled by HP 3565S input modules. The samples can be recorded on an optional internal 420 MB hard disk, Option AMV, or on external HP SCSI-compatible drives. Actual throughput performance depends on the disk drive; however, several HP 35659A modules can be used in parallel to increase system performance. Approximate throughput rates for supported drives are:

Model number	Disk type	Size	Transfer rate
Series 6300	Removable optical	325 MB per side	600 kB/s
C2213A	Hard disk	660 MB	1.3 MB/s
C1520A DAT	DAT tape drive	1.3 GB	150 kB/s
7959S	Hard disk	325 MB	750 kB/s
Option AMV	Hard disk	420 MB	1.8 MB/s

Input Modules

All three input modules use analog-to-digital converters to digitize signals. In each channel, an A/D converter is preceded by an analog anti-alias filter and followed by a digital filter (with zoom capability) and an 8k FIFO buffer. Time data from the FIFO buffers is sent to the signal processing module for math-intensive computations.

HP 35652A/B Input Module

The HP 35652A single channel input module has 80-dB dynamic range and dc to 51.2 kHz bandwidth. Charge amplifiers for piezoelectric transducers and ICP transducer power supplies are built into each module.

The HP 35652B is similar to the HP 35652A, except with an increased measurement bandwidth to 102.4 kHz.

HP 35655A Input Module

This is an 8-channel input module, with dc to 12.8 kHz bandwidth for each of the 8 channels, and a dynamic range of 72 dB. All 8 channels sample simultaneously to maintain phase match across the channels and have their own filtering. Each channel includes an ICP power supply. When using ICP power, all transducers must be isolated from ground.

HP 35658A Tachometer/Trigger Module

The HP 35658A module provides a system trigger input and a tachometer input for rotating machinery analysis. The HP 35658A is not required for most system applications.

Source Modules

HP 35653C 102.4 kHz Source Module

This module provides the following excitation signals for frequency response measurements: continuous sine wave, burst sine wave, band-limited random noise, or burst random noise of variable duration. This module also provides a reference signal for system calibration.

HP 35656A Programmable DAC

This module uses a programmable digital-to-analog converter with 16 bits of resolution to generate arbitrary stimulus signals up to 51.2 kHz bandwidth. The data buffer size is selectable from 1 to 32768 words.

Ordering/Configuration Information

	Price
HP 35605A System Rack (for 2 mainframes)	\$1,860
HP 35606A System Rack (for 4 mainframes)	\$2,375
HP 35650A 8-Slot Mainframe	\$6,500
HP 35650B 4-Slot Portable Mainframe	\$4,650
HP 35651B Signal Processing Module	\$6,200
HP 35652A 51.2-kHz Input Module	\$2,675
HP 35652B 102.4-kHz Input Module	\$3,000
HP 35653C 102.4-kHz Source Module	\$2,010
HP 35654A Signal Processing Module	\$14,400
HP 35655A 8-Channel Input Module	\$10,300
HP 35656A Programmable DAC	\$4,650
HP 35658A Tachometer/Trigger Module	\$2,000
HP 35659A SCSI Interface Module	\$5,500
Opt AMV 440 MB Internal Hard Disk	\$3,500

For the most current prices and product information, contact your local Hewlett-Packard sales office—see page 665.