HP 85990A
Multicarrier Signal Generator

Product Overview

- Frequency range 5 to 1100 MHz
- Precision level control
- Flexible internal/external modulation
  - Internal PAL and NTSC simulation
  - Customer-specified duty cycle
- MS Windows® user interface
- Frequency offset control
- Ideal for automated test environments

Simulate realistic signal conditions for accurate testing of broadband components.

Whether you are manufacturing broadband devices, or verifying operation of your broadband network, you need to evaluate its electrical performance under realistic signal conditions. With the HP 85990A multicarrier signal generator you can quickly and easily simulate a broadband headend to verify electrical specifications and distortion performance.

The multicarrier signal generator is a computer-controlled bank of high-performance, fixed-frequency carrier generators. You specify the frequencies needed for your application. With the provided PC software, the HP 85990A creates the precise and repeatable conditions required for distortion measurements.

Clean, accurate signals

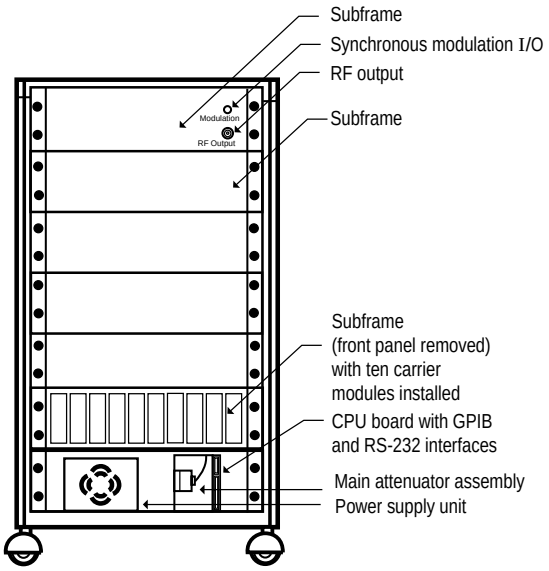
The HP 85990A provides realistic simulation of complex video signals. It supplies spectrally pure carrier frequencies from 5 to 1100 MHz along with pulse modulation at standard NTSC or PAL frequencies. The carrier accuracy is ± 5 ppm to fit any NTSC, PAL, SECAM or CENELEC channel plan.

Flexible modulation formats

The generator features flexible and repeatable control of frequency, amplitude and modulation parameters. You can phase lock any carrier to a common frequency or allow free-run conditions. You also are able to adjust carrier amplitude over a wide range in 0.1 dB increments. For modulated carriers, the modulation can be either synchronous or asynchronous with a user-defined duty cycle. The internal modulation signal is 15.625 kHz for PAL and 15.750 kHz for NTSC systems.

Adaptable system

The system consists of many user-specified, fixed-frequency carrier modules housed in a mainframe. Mainframes range in size, up to a maximum of 129-channels. You can order more carrier modules up to the mainframe's capacity as your system needs change. For large channel plans (180-channel maximum), you connect two mainframes and operate them in a master and slave configuration.



Expandable 59-channel master mainframe

One mainframe occupies 0.3 square meters (560mm wide by 510mm deep) of test floor and has casters for portability. The system height depends on the system size and ranges from one to two meters.

Remote operation

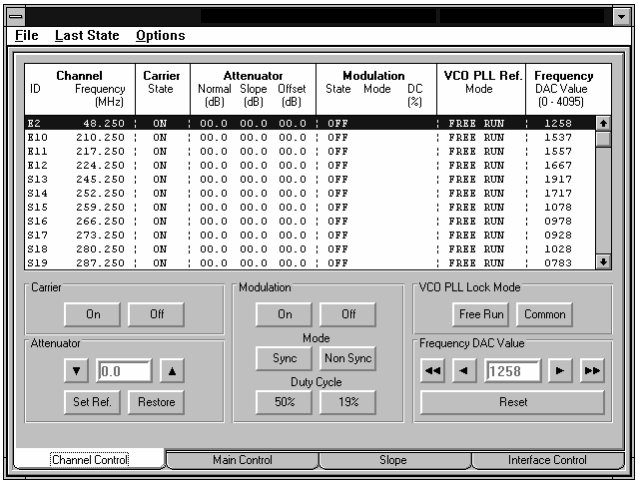
You control the HP 85990A from your computer with the remote control program supplied. The intuitive, MS Windows® interface gets you up and running quickly. Use your keyboard and mouse to control one channel or groups of channels. Save and recall system states to ensure highly repeatable measurements.

The HP 85990A is controlled via an RS-232 or IEEE-488 interface. An HP-IB interface card, cable, and software is included with each HP 85990A.

To develop automated tests quickly and easily, incorporate the well-documented remote control commands into your own process. For the ultimate in automation productivity and time-to-market, HP consulting application engineers are available to assist you with your test software development.

Versatile channel control

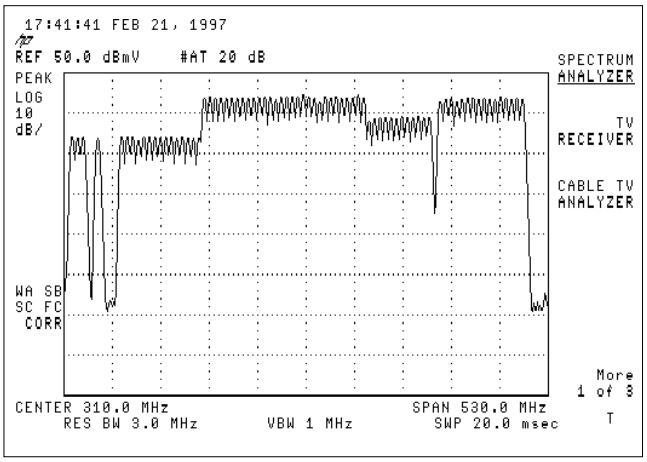
Select and optimize the level, phase lock reference, modulation, and frequency offset of the carriers either individually or in groups.



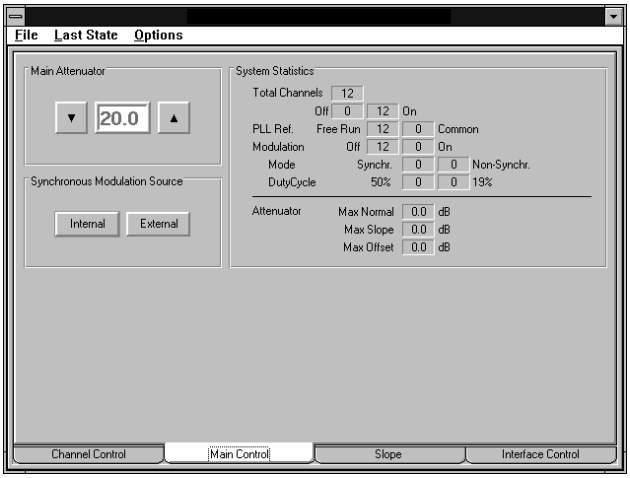
MS Windows is a U.S. registered trademark of Microsoft Corp.

Flexible level control

The HP 85990A offers flexible control of channel levels. The main attenuator controls the power delivered from the entire system over a 63 dB range in 1 dB steps. For precise level control, adjust each channel's individual attenuator over a 15 dB range with a resolution of 0.1 dB per step.



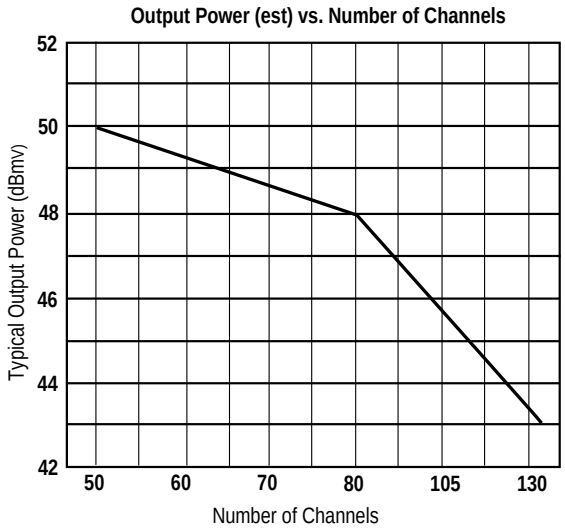
Quickly and easily attenuate groups of channels.



Simplified control of the system's combined output.

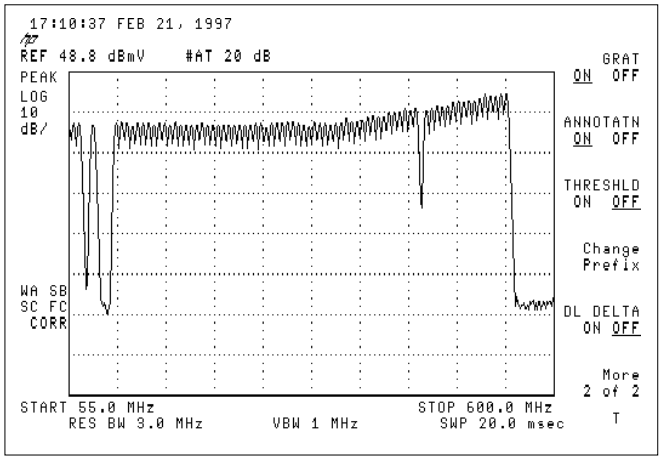
Output level

Maximum carrier level output depends upon the number of channels in the system. The figure below shows typical output level, as a function of the number of installed carriers.



Convenient slope control

The HP 85990A simulates the environment seen by amplifiers in the field by setting a linear, sloped output. Given a frequency range and slope, the HP 85990A automatically sets the proper carrier output levels. Selecting the "remove slope" button instantly returns the carriers to a flat slope.



Automatically set output levels given a slope and a frequency range.

Ordering Information

Model	Description
HP 85990A	HP 85990A multicarrier signal generator

Options

001	Individual HP 85990A carrier module (number of carrier modules)
002	Modulation format (NTSC standard, PAL with option)
004	Output impedance (75 ohm standard, 50 ohm with option)
005	Secondary modulation duty cycle (19% standard, may specify with option)
006	Spare/retrofit carrier module (number of spare modules)
059	59-channel master mainframe
060	60-channel slave mainframe
089	89-channel master mainframe
090	90-channel slave mainframe
129	129-channel master mainframe
130	130-channel slave mainframe

Additional Literature

5964-3682E	HP 85990A multicarrier signal generator technical data

For more information on HP cable TV test equipment, applications or services in the U.S. please call 1-800-452-4844 Ext. HPTV. For international inquires, please contact your local Hewlett-Packard sales office. A current listing is available via the Worldwide Web at http://www.hp.com. A listing of the complete HP product offering is also available on the Worldwide Web at http://www.hp.com/go/catv.

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