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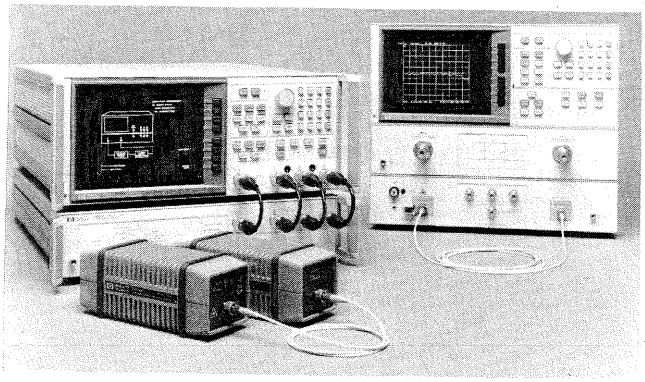
Find the *Keysight / Agilent 83400-60005* at our website: ***Click HERE***

LIGHTWAVE TEST EQUIPMENT

Lightwave Component Analyzer

HP 8702B, 8703A

- 300 kHz to 20 GHz Modulation Frequency
- Calibrated measurements of high-speed optical, electro-optical, and electrical components.
- 850, 1300, or 1550 nm Operation
- Reflection measurements with <1mm resolution
- up to 50 dB optical dynamic range.



HP 8702B & 8703A

Lightwave Component Analyzer

As the transmission rate or bandwidth of fiber optic systems is pushed upward, high frequency design considerations become key. Both the HP 8702B and 8703A measure each of the elements that transmit these wide bandwidths. They make calibrated measurements of lasers or LED transmitters, photodiode receivers, optical fibers, and the electrical components they work with. The lightwave component analyzers operate with a swept modulation frequency to precisely characterize how these components operate on the high-speed, information-bearing signal. Information on how each component responds independent of the others provides insight into how systems can be predicted and improved.

Both the HP 8702B and 8703A operate at a fixed wavelength and sweep the frequency of the intensity modulation signal over the bandwidth you select. The HP 8702B has transducers (lightwave source and receivers), which allow it to operate at 850, 1300, and 1550 nm. The HP 8703A can operate at 1300 and 1550 nm. These sources and receivers come with calibration data to allow calibrated measurements of the electro-optical components.

Measure Optical Components

Measurements can be made of such components as connectors, splitters, couplers, and lenses, as well as fiber itself. This yields modulation bandwidth, insertion loss, length, and optical return loss. In the distance-time domain, reflections can be located without the dead zone typical of OTDR type measurements. Transmission measurements can be also be displayed in the distance-time domain to view the impulse or step response of the component. Delay and dispersion are easily viewed in this manner.

Measure Electro-Optical Components

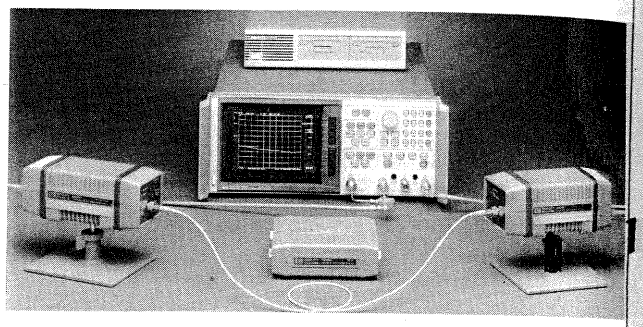
Often the limiting elements in a fiber optic system are the electro-optical components (e.g., lasers, APD's, PIN photodiodes, and modulators), which convert the electrical information to optical or vice versa. The conversion efficiency or responsivity of these devices is a function of many variables. The characterized lightwave source and receiver in the lightwave component analyzer allows each of these devices to be uniquely tested. Data can be displayed in the frequency domain as the modulation frequency response or in the time domain as the step response.

Measure Electrical Components

When used to measure linear electrical components such as amplifiers, filters, and transmission lines, the lightwave component analyzers have the full measurement capability of a microwave network analyzer. Typical measurements are bandwidth, insertion loss/gain, phase, impedance, match, and group delay.

Measure Both Transmission and Reflection Characteristics

Complete characterization on component behavior depends on knowing how the signal is transmitted through it and how it is reflected back. For optical reflections, the lightwave component analyzers use a lightwave directional coupler to make the reflection measurements. Data can be presented in the modulation frequency domain or in the distance-time domain to locate and measure the source of the reflection. Because of the wide measurement bandwidth, single reflections can be located with <1mm of resolution and up to 50 dB optical dynamic range and 100 dB electrical dynamic range. For electrical reflection measurements, the analyzer uses a test set to perform the measurement. Results, such as impedance, can then be displayed.



HP 8702B

HP 8702B Lightwave Component Analyzer

Standard configuration requires an HP 8702B, an RF interface kit, a lightwave source, lightwave receiver, and fiber cable. For reflection measurements, a lightwave coupler is required.

HP 8702B Accessories

Lightwave Source Modules

All with directly modulated Fabry-Perot lasers.

HP 83400A, 300 kHz-3 GHz, 1300 nm, 9/125 um fiber
HP 83401A, 300 kHz-3 GHz, 1300 nm, 50/125 um fiber
HP 83402A, 300 kHz-6 GHz, 1300 nm, 9/125 um fiber
HP 83403A, 300 kHz-3 GHz, 1550 nm, 9/125 um fiber
HP 83404A[1], 300 kHz-3 GHz, 850 nm, 50/125 um fiber

Lightwave Receiver Modules

All with PIN photodiodes.

HP 83410B, 300 kHz-3 GHz, 1300/ 1550 nm, 62.5/125 um fiber
HP 83411A, 300 kHz-6 GHz, 1300/ 1550 nm, 9/125 um fiber
HP 83411B, 300 kHz-6 GHz, 1300/ 1550 nm, 9/125 um fiber
HP 83412A, 300 kHz-3 GHz, 850 nm, 62.5/125 um fiber

Lightwave Directional Couplers

A 3-port, directional coupler for making reflection measurements and monitoring transmission signals. The couplers have a nominal 3 dB coupling factor.

HP 11890A 9/125 um fiber
HP 11891A 50/125 um fiber

RF Interface Kit

HP 11889A

This kit contains the RF accessories required to operate the HP 8702 when a test set is not used. Contains a power splitter, a 20 dB pad, SMA accessories and adapters for the analyzer.

High Frequency Probe

HP 85024A

Performs in-circuit measurements. It's high impedance (0.7 pF in shunt with 1 MΩ) permits high frequency probing without adversely loading the circuit under test. See Page 239 for more information.

[1]The following sticker applies to the HP 83404A:



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