Optical Measuring Instruments and Optical Device Test Systems

Q8381A

- Wide Wavelength Range: 0.35 to 1.75 µm
- Low Polarization Dependence: ± 0.1 dB or less
- High Input Sensitivity: -85 dB
- Unique Pulse Light Measurement Function
- Power Monitoring Function
- Versatile Memory Function

Q8381A Optical Spectrum Analyzer

Q8381A optical spectrum analyzer can analyze a wide wavelength band from 350 to 1750 nm and a wide dynamic range from -85 to +10 dBm (1.1 to 1.6 µm), accommodating measurements on display LEDs and optical devices for communication. In addition, ADVANCEST’s unique technology realizes low polarization dependence and a high level measurement accuracy of ± 1.5 dB.

In addition to the automatic optimum measurement condition setting, automatic peak search and half-value width measurement functions, the Q8381A mounts the pulse light measuring function, power monitoring function and luminosity compensation display functions for improvement of operation and analysis capabilities. In conventional pulse light measurement, even if a number of averagings is made and the average power of duty ratio is obtained, low level and data missing may result. The Q8381A has solved all these problems.

- Wide Wavelength Measurement with High Sensitivity
  The Q8381A can measure a wide wavelength range from 1.1 to 1.6 µm at a high sensitivity of -85 dBm. Therefore, level measurement for spontaneous emission light from an erbium doped fiber amplifier (EDFA) and wavelength characteristic measurement in combination with white light source can be performed over a wide dynamic range.

- Wide Dynamic Range Measurement
  By minimizing the ambient light level, the Q8381A achieves a wide dynamic range of 40 dB at 1 nm and 50 dB at 5 nm from the peak wavelength. This level of performance is ideal for measurement on the side-mode suppression ratio of DFB laser diodes.

- High-Speed Measurement
  The Q8381A can achieve high-speed measurement in 0.8 seconds or less (with a span of 200 nm) in the NORMAL mode, allowing spectrum variation to be measured securely. In adjustment of the filters center wavelength, it can make measurement in real-time manner by means of inter-marker sweep.

- Low Polarization Dependence Ensures High-Accuracy Level Measurements
  With ADVANCEST’s unique technology, the Q8381A can achieve a level measurement accuracy of ± 1.5 dB, ensured by a polarization dependence as low as ± 0.1 dB over all wavelength bands.

  The wavelength sensitivity characteristic is also compensated in all the wavelength bands, enabling more accurate level measurements.

- Accurate Pulse Light Measurement
  To date, the spectrum of a pulse-modulated optical signal was measured after averaging. However, the measured spectrum may be lower than the actual light-emitting level or data missing may occur. To solve this problem, the Q8381A provides two measurement modes: PULSE sweep mode and GATED MEAS mode.

- Power Monitoring Function
  When analyzing beam light using an optical spectrum analyzer, coupling to optical fiber is required. With the conventional method, the beam light is fed to the analyzer while monitoring the coupling condition using an optical power meter. The Q8381A’s power monitor function can be used in the same manner as the optical power meter.
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Even Solves the Problems of Pulse Light Measurements

Q8381A

Specifications

- Measurement range: 0.35 to 1.75 μm
- Resolution: 0.1, 0.2, 0.5, 1.0, 2.0, 5.0 nm
- Repeatability: ±0.5 nm (23 ±5°C), 1.0 nm (10 to 40°C)
- Dynamic range: 50 dB or more (with ±5 nm level difference from peak wavelength)
- Peak hold mode: Incorporates a circuit for measuring the peak level within the specified gate time (1 ms to 10 s), (Recommended optical pulse width: 30 μs or more), Optical pulse repetitive frequency: ±0.1% or more
- Synchronous measurement input (GATED/NERG INPUT): Can control the measurement timing using an external input signal.
- Memory function: Built-in floppy disk drive, Conforms to the MS-DOS format (Disk type: 2DD/2HD), Capacity: 720 KB/1.2 MB (Formatted)
- Display: Dual-screen superimposition display function, vertical dual-screen split function and three-dimensional cursor display function
- Calculation / analysis: Automatic optimum measurement condition setting, Automatic peak search, Normalization (LOSS/TRANS mode)
- Optical output: Optical pulse repetitive frequency: DC to 100 MHz
- Data output: General-purpose interface bus (GPIB) (IEEE488-1978)
- Input/output: General specification

Standard accessories

- Power cable
- One A20442
- Printer paper
- One roll
- 3.5 inch floppy disk
- One (2DD)

Optional accessories

- OCS-F2SF-2: Optical fiber cable (GI 50/125 μm, 2m)
- OCS-F2SPS-2: Optical fiber cable (SM 10/125 μm, 2m)
- OPCL-200H-100/FC: Fiber collimator (SI 200)
- OPCL-5G-100/FC: Fiber collimator (GI 50)
- A09075: Printer paper (5 rolls)

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GATED MEAS input circuit

74AC14 or equivalent