

MT9820A

1250 nm to 1650 nm

SPECIFICATIONS

All-Band Optical Component Tester



Key parameters:

- ✓ Independent of Tunable Laser Source
- ✓ ± 5 pm wavelength accuracy
- ✓ Up to 4 simultaneous detectors
- ✓ Continuous sweep over several lasers

Test solution for the characterization of optical components and modules

A revolutionary approach in optical testing

MT9820A has been designed to be the most versatile, compact and low price solution for customers who want to perform optical loss measurements over a wide wavelength range. It builds the bridge between the two previous traditional approaches: own built set-up based on step by step measurement, and complete integrated sweeping systems.

MT9820A adapts to any tunable laser source. Its compact format as well as its open architecture makes it the best mate of optical engineers and technicians who need a reliable low cost instrument to test or validate their design in a fast and accurate way.

Fast and accurate loss measurement for everyone

When it comes to measure optical transfer function, the sweeping method is the only fast and reliable solution. Sweeping measurement is not only faster than step by step measurement but also gives more sampling points and better wavelength accuracy. Nevertheless, most of tunable laser sources are still used in step by step mode because it is easier to implement in conjunction of power meters and a wavemeter. Building sweeping set-up is more difficult as it needs to do real time acquisition for power and wavelength measurements. The quality of the tunable lasers sources is also a key of success: mode hops, sweeping velocity, power flatness, wavelength accuracy... are various phenomenon that needs to be controlled in order to do reliable measurement.

MT9820A brings all these knowledge, controls and accurate measurement capabilities in a simple box that easily interface with customer tunable laser and PC.

A tool that adapt to your needs

Complete sweeping system usually offers good performances but with major drawbacks. The initial cost is very high and most of time includes the purchase of a new tunable laser source or PC. The architecture is also rigid and difficult to maintain and modify in mid and long term perspective.

MT9820A overcomes these difficulties by adapting to the existing installing base. Its compact format as well as its low price makes it best suitable for labs testing benches.

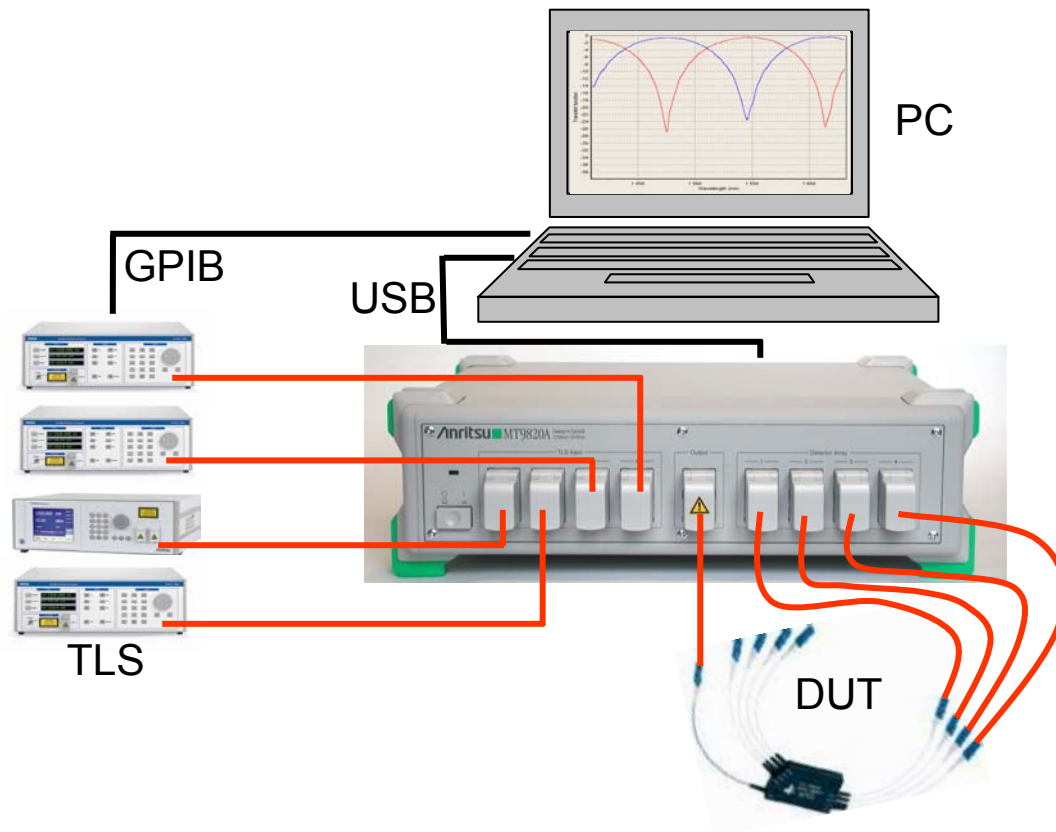
Continuous sweep over several tunable lasers

With its patented configuration, MT9820A is the unique solution on the market that allows you to sweep continuously over several lasers (up to 4) in order to achieve a fast full-range measurement.

MT9820A: high performance in real time

MT9820A is an unique combination of high speed electronic and optical interferometry. Up to four real time measurements are now possible with ± 5 pm wavelength accuracy. This allows the use of MT9820A during alignment and manufacturing process, but also for optical sensor analysis.

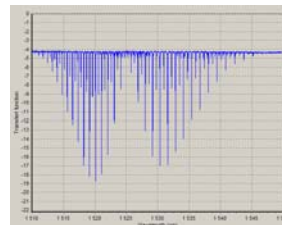
Measurement set-up in a 4 lasers and 4 inputs configuration:



Examples:

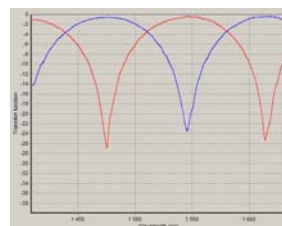
Transmission of an Acetylene gas cell :

- high resolution measurement
- accurate detection
- characterization of deep and thin notch filters with a high dynamic



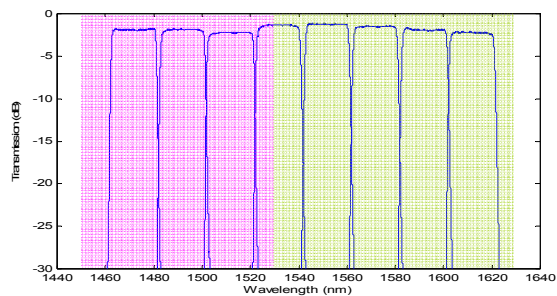
Simultaneous measurement of two ports of a 1490/1550 filter for FTTH applications:

- multi-port analysis



Transmission measurement of an 8 channels CWDM mux/demux component using two adjacent tunable laser sources :

- wide wavelength range, with up to 4 TLS inputs



Specifications		
General Characteristics	Laser inputs	2 to 4
	Detectors	2 to 4
Wavelength	Operating wavelength range	1250-1650nm
	Absolute wavelength accuracy ^{1,2}	±5pm
	Relative wavelength accuracy	±1pm
Power	Detection range	Minimum input power on detectors: -60 dBm
		Maximum input power on detectors: 0 dBm
	Transfer function accuracy ³	±0.2dB
	Dynamic range ⁴	> 60 dB
Sampling Characteristics	Sampling Resolution	1pm – 2pm – 4pm – 8pm – 16pm – 32pm – 64pm – 128pm
	Points per scan	Up to 200,000 with 1 detector operation Up to 50,000 with 4 detectors operation
	Measurement speed	From 10 to 100nm/s
Interfaces	Optical connectors	Universal
	Interface with PC	USB
Environment	Operating temperature range	+10 to +40°C
	Storage temperature range	-40°C to +60°C
	Power Supply	100 to 240 V (50 to 60Hz)
	Dimensions (WxHxD) in mm ³	335x110x320
	Weight	4 kg

1 : Except on O band.

2 : For a scan > 100 nm

3 : For incident power on detectors > -30 dBm. Accuracy: +/- 0.5 dB for power between -30dBm and -60 dBm.

4 : > 55 dB on models with 3 or 4 detectors

Tunable Laser Source Requirements	
Remote control ⁵	GPIB
Output Power	Any value between 0.5mW and 10mW
Mode hops	No mode hop mode is highly desirable but the instrument is able to detect and operates with few mode hopes
Sweeping speed	From 10nm/s to 100nm/s.

PC Requirements	
Operating system	Windows XP or 2000
Interfaces	USB port and GPIB interface card ⁵

5 : Remote operation through binary signal on rear side BNC input is provided as an alternative to GPIB.

Ordering Information

Model Number **MT9820A-0XY**

X = Laser inputs (X = 2, 3 or 4)

Y = Detectors (Y = 2, 3 or 4)

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