

NEW

High Speed Swept Test System Swept Test System

The Santec Swept Test System has been developed to streamline photonic testing, providing a complete solution where high-speed analysis, high resolution and accuracy are key. Combining one of Santec's tunable lasers (TSL-710, TSL-550 or TSL-510) with a Santec optical power meter (MPM-200), a polarization control unit (PCU-100) and custom software, the complete Swept Test System optimizes WDL and PDL measurement for use in both R&D and production environments. Using real-time referencing, while simultaneously acquiring output power from the tunable laser and the transmitted optical power through the DUT, the system provides high accuracy in WDL and PDL analysis using the Muller Matrix Method.

A simplified system is available by combining a Santec Swept Processing Unit (SPU-100) and any basic power meter or photodetector; the resulting Swept Test System variant can be used for WDL measurements. Over-sampling and rescaling algorithms are used to maximize testing throughput while maintaining measurement integrity. The system is particularly suited to transmission spectra characterization such as those required for DWDM components and High Q photonic devices. Rapid sweep and accurate measurement saves time and ensures the integrity and validity of your device characterization.



Features

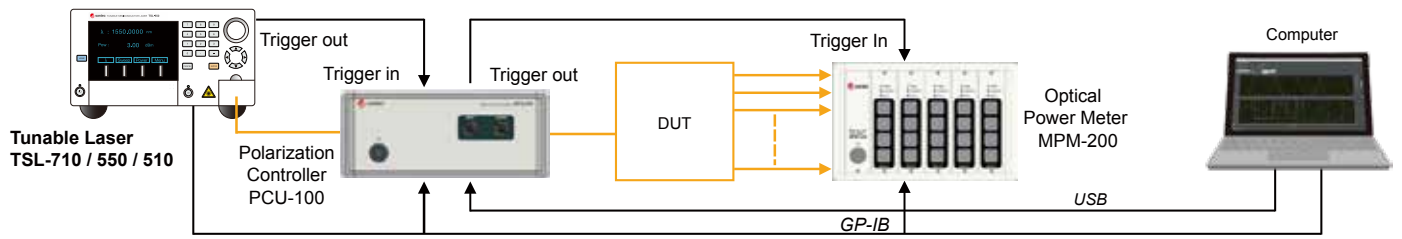
- ▶ Real-time power referencing
 - 1 Accurate WDL / PDL characteristics measurement
 - High power repeatability $< \pm 0.02\text{dB}$
 - High PDL repeatability $\pm 0.01\text{dB}$
 - 2 Automatic normalization of laser source power
- ▶ Rescaling algorithm utilizing the Swept Processing Unit (data acquisition unit)
 - 1 High wavelength resolution and accuracy
 - 2 Reduced measurement time
- ▶ Multi-channel measurement is available.
- ▶ Supporting LabVIEW control software
 - 1 Convenient set up of measurement parameters
 - 2 Data analysis

Applications

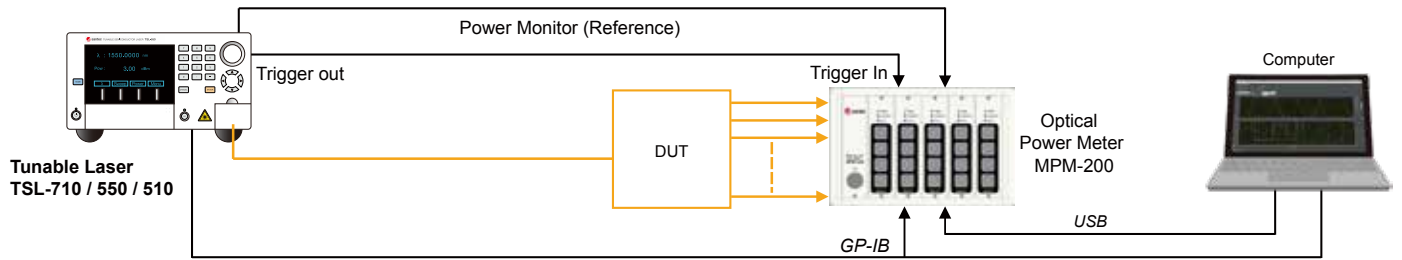
- ▶ Optical components and modules characterization
 - Tunable Filters, Interleavers, Fiber Bragg Gratings (FBGs), Couplers, Splitters, Isolators, Switches
 - WSS, Wavelength Blockers
 - DWDM components
- ▶ Photonic material characterization
- ▶ Optical spectroscopy

Typical configuration

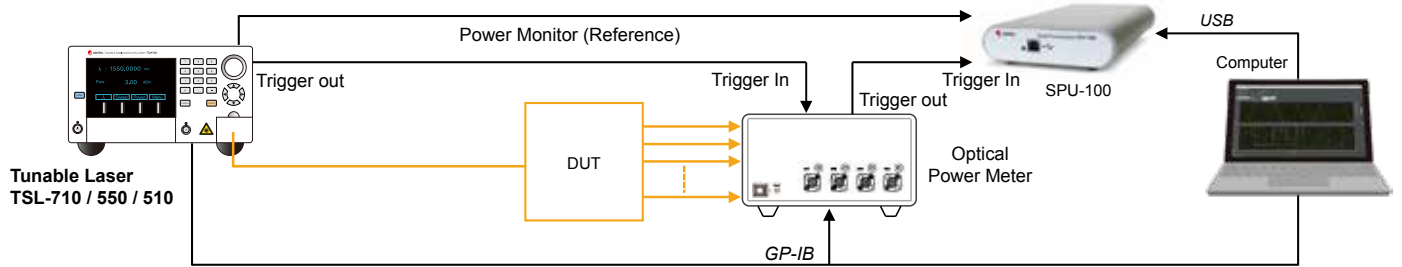
IL / PDL measurement setup with the polarization controller PCU-100 and the power meter MPM-200



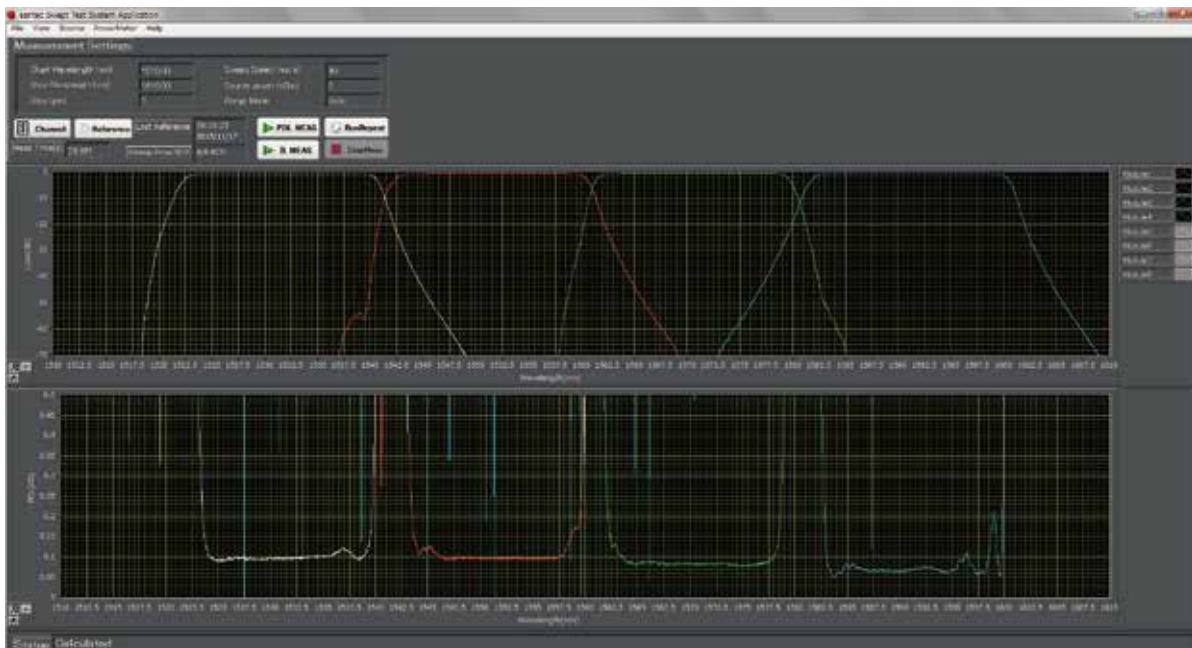
IL measurement setup with the power meter MPM-200



IL measurement setup with any other power meter



Graphical user interface



Specifications

Parameter	Unit	Specifications			Notes
		TSL-550		TSL-710	
		Type A	Type C	-	
Wavelength Accuracy*1 (typ.) (Absolute)	pm	±16	±4.6	±2.4	At 10nm/s
		±19	±7.2	±5.0	At 40nm/s
Wavelength Accuracy (typ.) (Relative)	pm	±9	±3.1	±1.6	At 10nm/s
		±12	±5.7	±4.2	At 40nm/s
Wavelength Repeatability*2	pm	±6	±1.9	±1.0	At 10nm/s
		±7	±3.5	±2.6	At 40nm/s
Scan Speed	nm/s	1 to 100		0.5 to 100	
Dynamic Range for Insertion Loss (typ.)	dB	70			
Dynamic Range for PDL (typ.)	dB	0 to 5			
Measurement Time for IL (typ.)	sec	4			At 40nm/s*4, *5
Measurement Time for IL / PDL (typ.)	sec	14			At 40nm/s*4, *5
Wavelength Resolution	pm	1	0.1		
IL Accuracy (typ.)	dB	±0.02			0 to 20dB Device IL
		±0.03			20 to 40dB Device IL
IL Repeatability*2, *3 (typ.)	dB	±0.02(±0.01 (typ.))			
IL Resolution	dB	0.001			
PDL Accuracy (typ.)	dB	±(0.02 + 3% of PDL)			0 to 20dB Device IL
		±(0.15 + 3% of PDL) (typ.)			20 to 40dB Device IL
PDL Repeatability*2, *3 (typ.)	dB	±0.01			
PDL Resolution	dB	0.01			
Communication	-	USB (USB 2.0 High Speed)			MPM-200 / PCU-100 / SPU-100
		GP-IB (IEEE488.2)			TSL-550 / TSL-710 / MPM-200 / PCU-100
Operating Temperature	degC	15 to 35			
Operating Humidity	%	< 80			non-condensing

* All specifications are quoted after 1 hour warm-up period.

All specifications applies with santec optical power meter MPM-200.

*1 Temperature within 25°C±5°C

*2 Temperature within 25°C±1°C

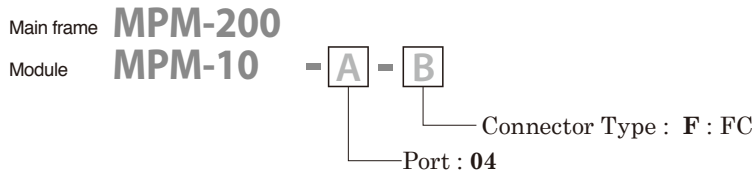
*3 Does not include influence of connector.

*4 The measurement condition is within wavelength resolution 5pm, wavelength range 40nm for 1 channel.

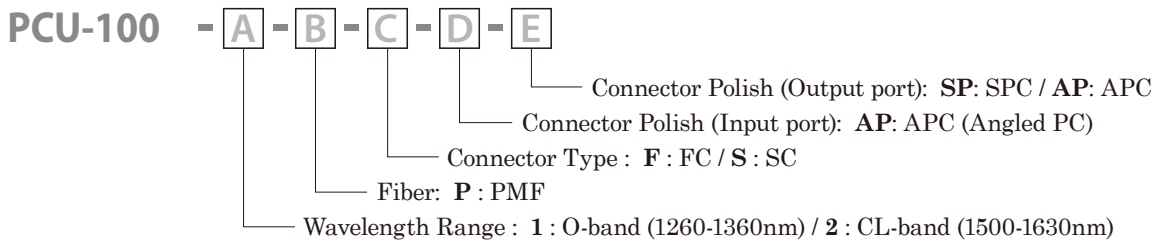
*5 Measurement dynamic range per scan is up to 35dB.

Ordering code

Optical Power Meter

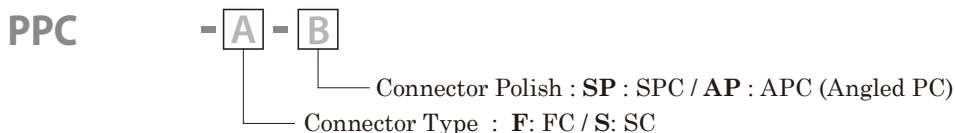


Polarization Control Unit



PMF Patch cord (Tunable Laser (TSL) <---> PCU-100)

Please select the ordering code for PMF patch cord if purchasing the PCU-100.
 Connector selection (Type / Polish): One port is same option as the PCU-100 code. ("B" and "C")
 Please select the same option as the TSL ordering code for the other port.
 Fiber length 1.0m, Fiber jacket φ2.0mm



Swept Processing Unit

SPU-100

Contact information



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