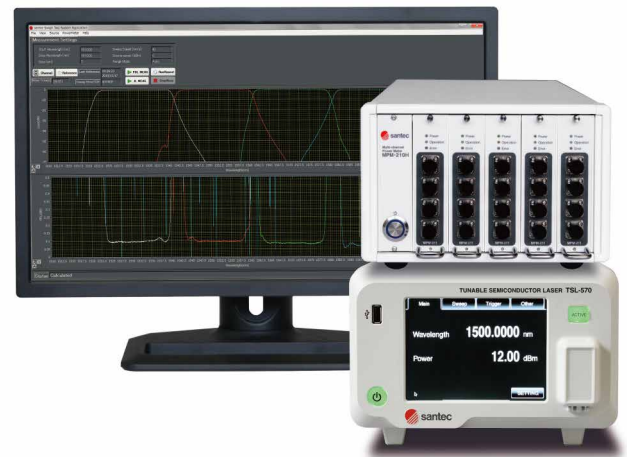


NEW

# 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-770, TSL-710 or TSL-550) with a Santec optical power meter (MPM-210H), a polarization control units (PCU-110 or 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. Over-sampling and rescaling algorithms are used to maximize testing throughput while maintaining measurement integrity.

The santec MPM-210H power meter mainframe can be used in conjunction with the 4-channel current meter module, the MPM-213. The Swept Test System combined with the MPM-210H and MPM-213 is suitable for measuring the performance of fiber optics components using transceiver-like photodiodes (ROSA/Coherent receiver, etc.) or optical channel monitors.



## Features

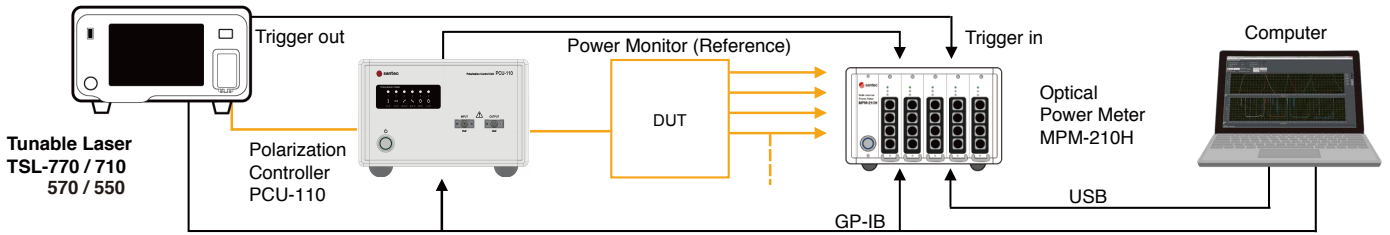
- ▶ Real-time power referencing
  - 1 Accurate WDL / PDL characteristics measurement
    - High power repeatability  $< \pm 0.02$  dB
    - High PDL repeatability  $\pm 0.01$  dB
  - 2 Automatic normalization of laser source power
- ▶ Rescaling algorithm utilizing the Swept Processing Unit (data acquisition unit)
  - 1 High wavelength resolution and accuracy
  - 2 Reduced measurement time
- ▶ Multi-channel measurement is available.
- ▶ Supporting Dynamic Link Library (DLLs) to develop software (VB.net, C#, C++ or LabVIEW)
  - 1 Convenient set up of measurement parameters
  - 2 Data analysis

## Applications

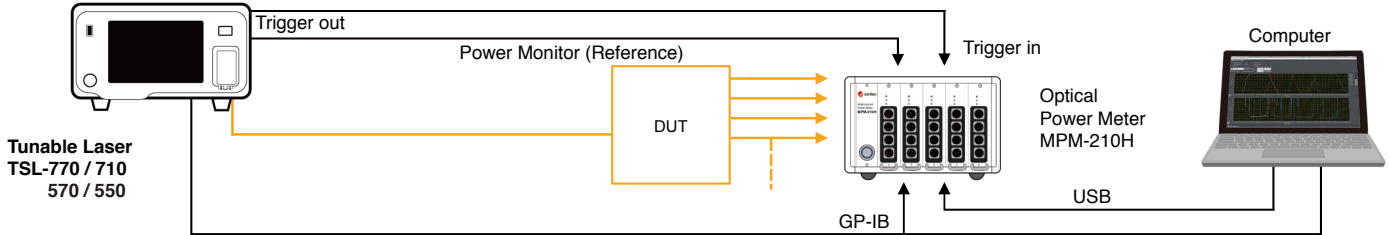
- ▶ Optical components and modules characterization
  - Tunable Filters, Interleavers, Fiber Bragg Gratings (FBGs), Couplers, Splitters, Isolators, Switches
  - WSS, Wavelength Blockers
  - DWDM components
- ▶ Photonic material characterization
- ▶ Optical spectroscopy

## Typical configuration

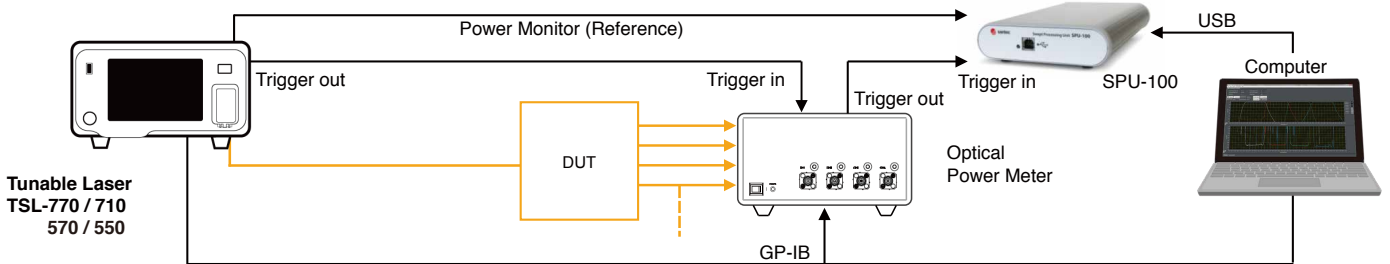
IL / PDL measurement setup with the polarization controller PCU-110 and the power meter MPM-210H



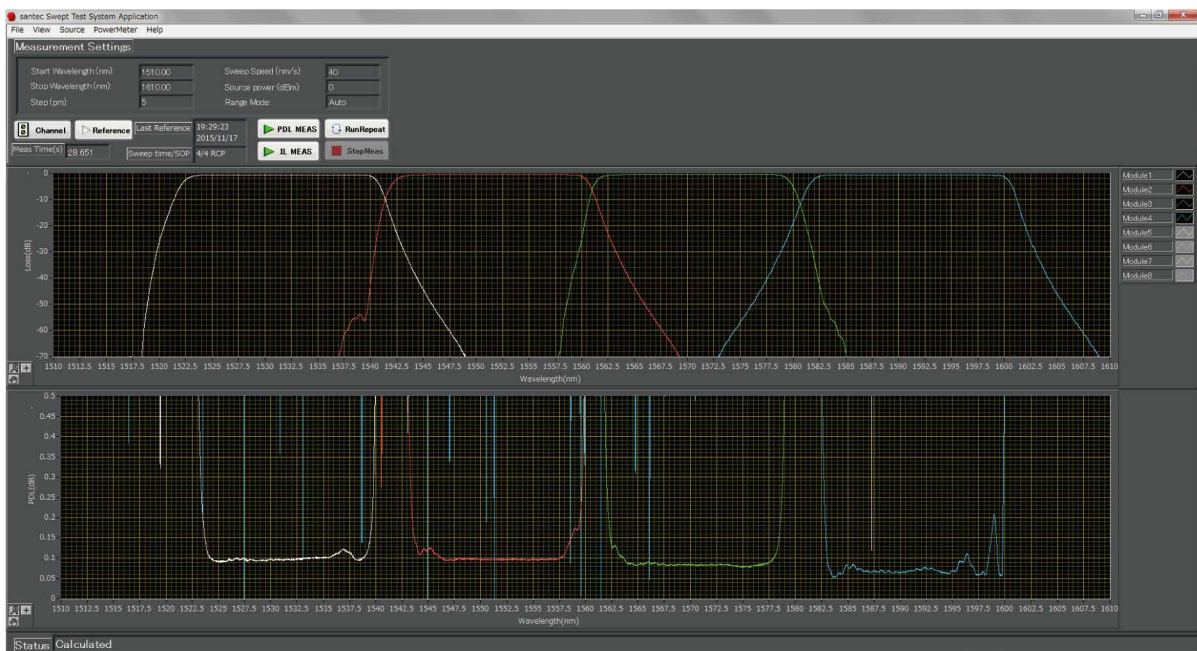
IL measurement setup with the power meter MPM-210H



IL measurement setup with any other power meter



## Graphical user interface



■ Specifications

Parameter	Unit	Specifications				Notes
		TSL-550		TSL-710	TSL-770	
		Type A	Type C			
Wavelength Accuracy (typ.) (Absolute) <sup>*1</sup>	pm	±16	±4.4	±2.4	±1.6	at 10 nm/s
		±18	±7.2	±4.7	±2.3	at 50 nm/s
Wavelength Accuracy (typ.) (Relative)	pm	±8	±3.1	±1.6	±1.3	at 10 nm/s
		±11	±5.9	±4.2	±2.0	at 50 nm/s
Wavelength Repeatability <sup>*2</sup>	pm	±6	±1.9	±1.0	±0.6	at 10 nm/s
		±8	±3.8	±2.8	±0.9	at 50 nm/s
Scan Speed	nm/s	1 to 100			1 to 200	
Dynamic Range for Insertion Loss (typ.)	dB	80				
Dynamic Range for PDL (typ.)	dB	0 to 5				
Measurement Time for IL (typ.)	sec	3.5			4	at 50 nm/s <sup>*4, *5</sup>
Measurement Time for IL / PDL (typ.)	sec	12.5			14	at 50 nm/s <sup>*4, *5</sup>
Wavelength Resolution	pm	0.1				
IL Accuracy (typ.)	dB	±0.02				0 to 30 dB Device IL
		±0.1				30 to 40 dB Device IL
IL Repeatability (typ.) <sup>*2, *3</sup>	dB	±0.02				
IL Resolution	dB	0.001				
PDL Accuracy (typ.)	dB	±(0.02 + 3% of PDL)				0 to 20 dB Device IL
		±(0.15 + 3% of PDL) (typ.)				20 to 40 dB Device IL
PDL Repeatability (typ.) <sup>*2, *3</sup>	dB	±0.01				
PDL Resolution	dB	0.01				
Communication	-	USB (USB 2.0 High Speed)				MPM-210H / SPU-100
		GP-IB (IEEE488.2)				TSL Series / MPM-210H / PCU-110
Operating Temperature	°C	15 to 35				
Operating Humidity	%	< 80				non-condensing

\* All specifications are quoted after 1 hour warm-up period and executing a zero calibration.

All specifications applies with santec optical power meter MPM-210H.

\*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 5 pm, wavelength range 50 nm for 1 channel.

\*5 Measurement dynamic range per scan is up to 40 dB.

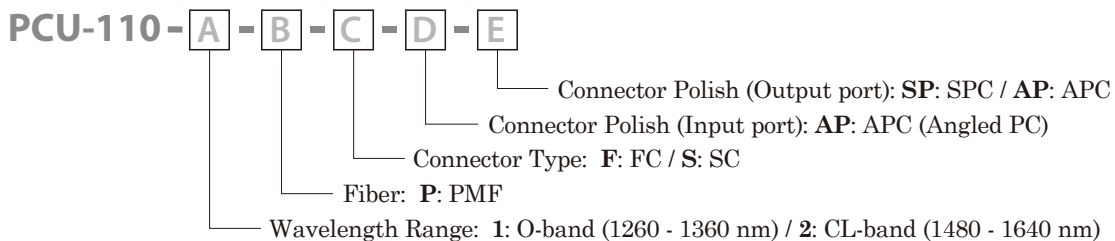
■ Ordering code

Optical Power Meter

Main frame **MPM-210H**

Module **MPM-211/212/213/215** Please refer to MPM-210H catalogue

Polarization Control Unit



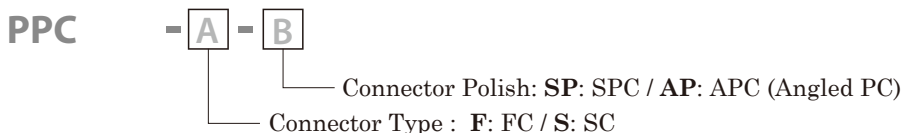
PMF Patch cord (Tunable Laser (TSL) <---> PCU-110)

Please select the ordering code for PMF patch cord if purchasing the PCU-110.

Connector selection (Type / Polish): One port is same option as the PCU-110 code. ("C" and "D")

Please select the same option as the TSL ordering code for the other port.

Fiber length 1.0 m, Fiber jacket φ2.0 mm



Swept Processing Unit

**SPU-100**

# Contact information



[www.santec.com](http://www.santec.com)

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