New MPM-220

Multi-Port Optical Power Meter

MPM-211 (4ch power meter)

MPM-212 (2ch power meter with analog output)

MPM-213 (4ch current meter)

MPM-215 (High dynamic range 4ch power meter)

New **MPM-217** (4ch power meter with an interchangeable adapter)

MPM-211/-212/-213/-215/-217 (Modules)

(Interchangeable adapters for MPM-217)

Product Overview

The MPM-220 is a new multi-port optical power meter that is perfect for measuring the optical characteristics of multi-port optical devices. The MPM-220 can simultaneously measure up to 20 ports (4 ports per MPM-211/-215/-217 modules) very fast with high resolution. It features high accuracy, high linearity, and extremely low polarization-dependent sensitivity with power levels from -80 to +10 dBm (-70 to +5 dBm @MPM-215) over a wavelength range of 1250-1680 nm. GPIB and Ethernet interfaces provide a convenient automated measurement solution. The MPM-220 is ideal for IL and PDL measurement of multi-port optical components including Dense Wavelength Division Multiplexing (DWDM), AWG, Wavelength Selective Switches (WSS) and more.

When combined with a santec TSL-Series laser equipped with a power monitor output, the MPM-220 allows the user to complete high precision IL measurements while referencing in real-time. Furthermore, the MPM-220 improves the IL repeatability by providing an optical reference port. The optical reference port provides excellent IL repeatability less than 0.005 dB option.

In Particular, the MPM-220 has a lineup of various types of modules. The MPM-215 is suitable for high-speed measurement of optical components with a dynamic range of 50 dB or more. The MPM-217 has an interchangeable adapter attachments, it is now possible to support SC and LC connectors in addition to the conventional FC connector. Also, by using a general fusion splicer adapter, it is possible to measure bare fiber.

Seeing as the new MPM-220 multi-port optical power meter is command compatible with the previous MPM-210 model, switching to the new MPM-220 is as simple as swapping out your devices.

Features

- Wavelength range: 1250 to 1680 nm
- Up to 20 channels measurement
- Dynamic power range
  (Optical power meter modules)
  MPM-211/212/217 : -80 to +10 dBm
  MPM-215 : -70 to +5 dBm

  (Current meter module)
  MPM-213 : -70 to +10 dBmA
- High IL repeatability options using optical reference port
- Interchangeable Adapters (MPM-217) FC, LC, SC connector and Bare fiber
- Analog output (MPM-212)

Applications

- Optical power measurements
- IL and PDL measurements

Specifications

Main frame, MPM-220

Parameter	Unit	Specifications	Notes
Module number	-	Up to 5	
Interface	-	GP-IB, Ethernet	
Trigger input	-	TTL (3.3 V)	BNC
Trigger output	-	TTL (3.3 V)	BNC
Supply voltage	V	AC 100 to 240, 50/60 Hz	
Maximum power consumption	VA	50	
Operating temperature	°C	10 to 40	
Operating humidity	%	< 80	non condensing
Weight	kg	6	
Dimensions (W) x (D) x (H)	mm	210 × 385 × 130	

Power meter modules, MPM-211(4ch), MPM-212(2ch), MPM-215 (4ch), MPM-217(4ch)

Parameter	Unit	Specifications				Notes
		MPM-211	MPM-212	MPM-217	MPM-215 *1	
Sensor element	-	InGaAs				
Wavelength range	nm	1240 to 1680				
Specification wavelength range	nm	1250 to 1630				
Power dynamic range	dBm	-80 to +10			-70 to +5	
Dynamic range @Fixed gain (typ.) *2 ,*3	dB	45			70	Logging mode
Number of gain range	-	5			1	
Maximum safe power	dBm	+16				
Total uncertainty	%	+/-5 @ -60 to 9 dBm			+/-5 @> -55 dBm	
Power resolution	dB	0.001				
Linearity *2, *4	dB	+/-0.03 @ -55 to 9 dBm			+/-0.02@ > -40 dBm +/-0.05@ > -50 dBm	
Polarization dependent responsivity (typ.) *2,*5	dB	< 0.023				@1530 - 1625 nm
		< 0.03				@1250 - 1630 nm
Averaging time	sec	10µ to 10				
Data logging capability	-	1,000,000 x 2 buffer per port				
Port number per module	-	4 Ports	2 Ports	4 Ports	4 Ports	
Analog output *6	-	None	With	None	None	
Connector type	-	FC		See below*7	FC	

Current meter module, MPM-213

Parameter	Unit	Specifications	Notes
		MPM-213	
Current dynamic range	dBmA	-70 to + 10 @ 100 pA to 10 mA	
Dynamic range @Fixed gain(typ.)*2, *3	dB	45 dB	Logging mode
Number of gain range	-	4	
Maximum safe power	dBmA	16	
Total uncertainty	%	+/-5 @ -45 to 9 dBmA	Averaging time > 10 ms
		+/-1 @ > -35 dBm (typ.)	Averaging time > 10 ms
Power resolution	dB	0.001	
Linearity	dB	+/-0.03@ -45 to 9 dBmA	Averaging time > 10 ms
Averaging time	sec	10µ to 10	
Data logging capability	-	1,000,000 per port x2	
Port number per module	-	4 ports	
Connector type	-	BNC Connector	
Reverse Bias Voltage	V	-	

*1: This module is not compatible with other modules on a same Main Frame. *2: Temperature: 23±5 ºC
*3: Averaging time > 50 µs, Within ±1 ºC after zeroing, At gain 1, 2 or 3 for MPM-211 / 212
*4: For MPM-211 / 212, Averaging time > 100 ms, Auto range mode, For MPM-215, Averaging time > 30 µs
*5: SMF, Straight connector *6: Output voltage 0 to 2 V, Measurement dynamic range > 30 dB (typ.)
*7: It is available for FC, SC, LC connectors and Bare fiber.

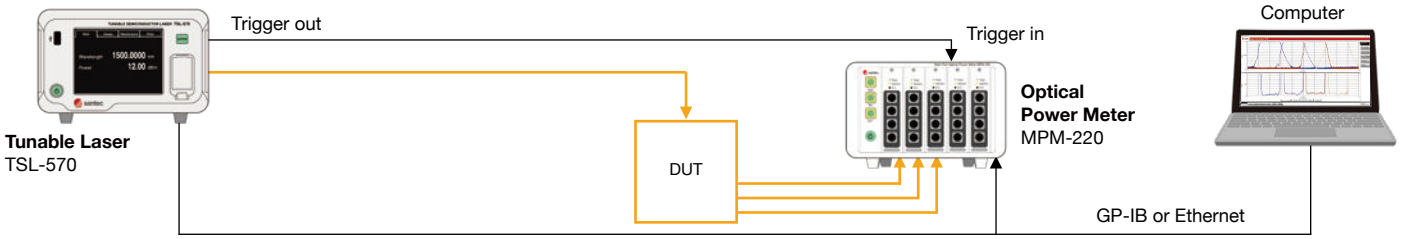
Common information for module

Parameter	Unit	Specifications	Notes
Operating temperature	°C	10 to 40	
Operating humidity	%	< 80	non condensing
Dimensions (W) x (D) x (H)	mm	30.3 × 183.5 × 114.8	Connectors are not included.

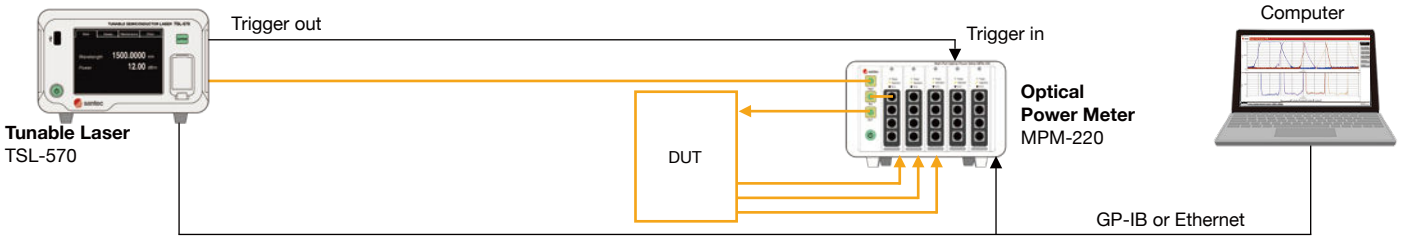
Typical Swept Test System Configuration

IL measurement setup with the power meter MPM-220

Standard setup

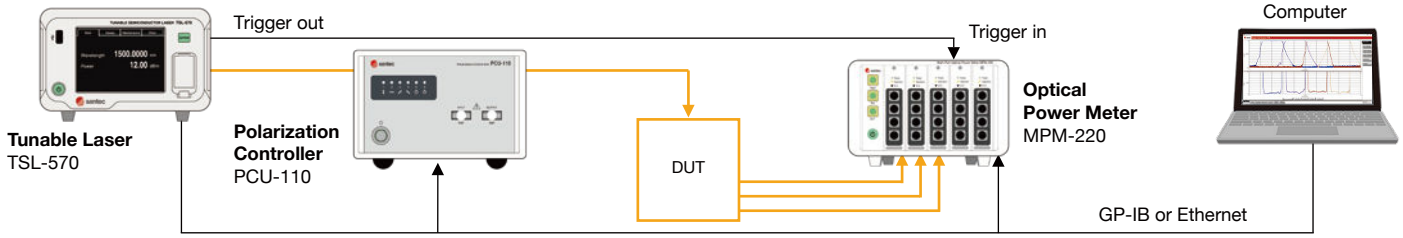


High Specification setup

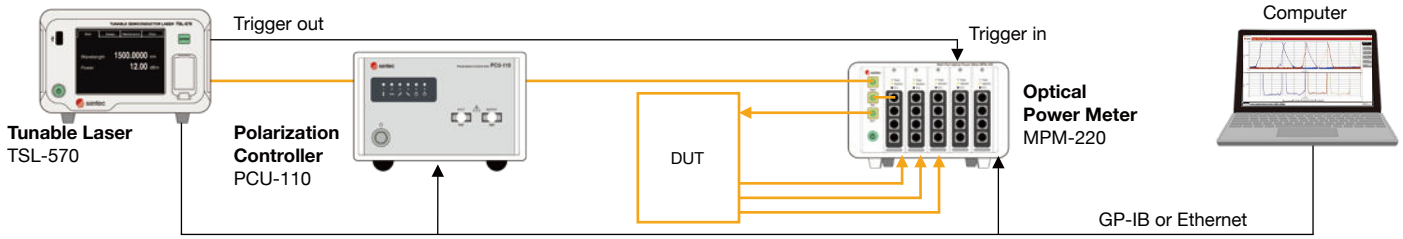


IL / PDL measurement setup with the polarization controller PCU-110 and the power meter MPM-220

Standard setup



High Specification setup



Comparison Chart for Modules

Modules	Category	Port number	Analog out	Power dynamic range	Dynamic range @Fixed gain	Connector
MPM-211	4ch power meter	4	None	-80 to +10 dBm	50 dB (typ.)	FC
MPM-212	2ch power meter with analog output	2	2 ports	-80 to +10 dBm	50 dB (typ.)	FC, BNC
MPM-213	4ch current meter	4	None	-70 to +10 dBm	40 dB (typ.)	BNC
MPM-215	High dynamic range 4ch power meter	4	None	-70 to +5 dBm	70 dB (typ.)	FC
MPM-217	4ch power meter	4	None	-80 to +10 dBm	50 dB (typ.)	FC, LC, SC, Bare fiber

Ordering Code

Main frame

MPM-220

Modules

4 port power meter — **MPM-211**-□-□

- A: Port: 04
- B: Connector Type: **F**: FC

2 port power meter — **MPM-212**-□-□

- A: Port: 02
- B: Connector Type: **F**: FC

4 port current meter — **MPM-213**-□-□

- A: Port: 04
- B: Connector Type: **B**: BNC

4 port power meter — **MPM-215**-□-□

- A: Port: 04
- B: Connector Type: **F**: FC

4 port power meter — **MPM-217**-□

- A: Port: 04

Adapter panel for MPM-217* — **MPM-OP**-□

- A: Connector Type: **F**: FC / **L**: LC / **S**: SC **H**: Bare fiber adaptor

*The adapter panel must be purchased as a set with the MPM-217.

Santec Japan Corporation
5823 Ohkusa-Nenjozaka, Komaki,
Aichi, 485-0802, Japan
Tel: +81-568-79-3535

Santec USA Corporation
400 Kelby Street Suite 1501 Fort Lee,
NJ 07024, USA
Toll-Free: +1-800-726-8321

Santec Europe Ltd.
99 Park Drive, Milton Park, Abingdon,
Oxfordshire, OX14 4RY, UK
Tel: +44-20-3176-1550

Santec (Shanghai) Corporation Limited
21F Room H, Hua Du Bldg., No.838 Zhangyang Road,
Pudong District, Shanghai, 200122, China
Tel: +86-21-58361261

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www.santec.com