Sweepmeter™

for Ultra-Precise Wavelength Calibration

High accuracy wavelength determination for fast swept tunable lasers

The PPC Sweepmeter™ provides an accurate, high-resolution, NIST traceable calibration of wavelength for sweeping tunable lasers. The Sweepmeter™ is ideal for testing optical components such as MUX/DEMUX, dispersion compensators, and etalons; remote sensing with fiber Bragg grating spectroscopy; gas spectroscopy; and wavelength linearization of laser systems.

The Sweepmeter's proprietary measurement system enables data acquisition synchronized with accurate, real-time wavelength calibration, requires minimum communication bandwidth, and integrates easily into swept wavelength measurement systems.

SPECIFICATIONS

Wavelength Resolution
User Programmable, 0.4 to 48 pm/sample (0.050-6 GHz/sample)

Wavelength Accuracy
<1 pm rms

Wavelength Repeatability
<0.2 pm rms

NIST-Traceable Calibration
HCN gas cell calibrates every scan

Wavelength Scan Speed
1-100 nm/s

Operating Wavelength Range
1500-1650[1] nm

Optical Input Power Range
-25 to 0 dBm

Input Fiber Adapter
FC/APC, narrow-key

Polarization Dependence
None

Trigger Input
Two user-configurable triggers; BNC connectors; TTL levels

Clock Output
Real-time, equal-optical-frequency clock for triggering data acquisition; BNC connector; TTL levels.

Clock Output Frequency
270 ksamples/sec maximum (depends on laser scan rate and resolution)

Communication
CompactPCI/PXI, GPIB and RS-232 (bench top)

PXI
Additional user-configurable clock output and trigger inputs on PXI bus.

Software
SCPI command interface
NI-VISA instrument drivers for LabView/LabWindows

Electrical Power
cPCI/PXI version: Powered from PXI Bus, < 3 W
Bench-top version: 6 - 12 VDC input, < 2 W (AC adapter included)

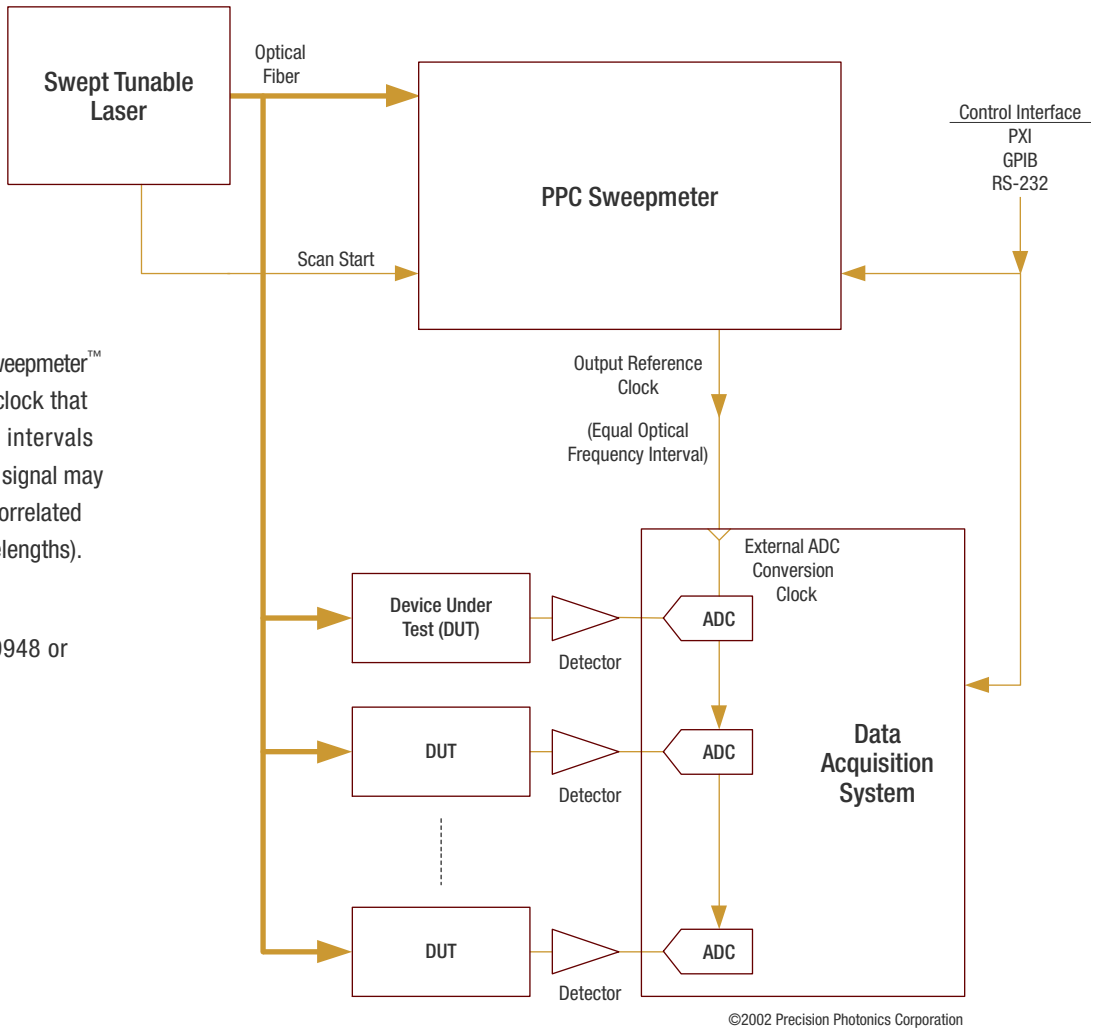
Packaging
cPCI/PXI version: 3U x 8HP (2 slot wide)
Bench-top version: shielded aluminum case, 7" x 6" x 3"

Additional Features
Mode-hop fault detection[2]

[1] Wavelength scan must overlap 20 nm in the range 1528—1563 nm.

[2] Accurate wavelength calibration requires mode-hop-free laser tuning.

Sweepmeter™ Application:
Passive Device Characterization



As a laser sweeps in wavelength, the Sweepmeter™ produces a digital output reference clock that represents equal optical frequency intervals between ticks of the clock. The clock signal may be used to trigger data acquisitions correlated to accurate optical frequencies (wavelengths).

FOR MORE INFORMATION
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