QUANTIFI PHOTONICS®
A Teradyne Company

Power

1600 SERIES
INLINE POWER METER

SPECIFICATION SHEET

AVAILABLE IN PXI

AVAILABLE IN MATRIQ

quantifiphotonics.com

FEATURES

Quantifi Photonics' Power 1600 Series inline optical power meters provides quick and accurate inline power monitoring.

Simple, intuitive operation with cohesionUI

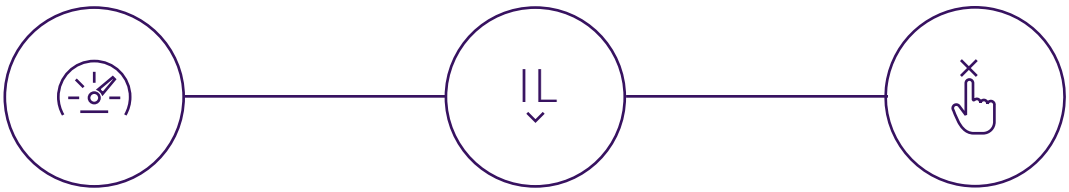
Control the Power-PXIe from your PC or mobile device. Plus, large format view mode makes it easy to monitor your instrument even when working away from your desk.

2 power meters per single-slot module

Achieve high channel density with up to 34 channels in an 18-slot PXI chassis.

SCPI-compliant remote control

Remotely access power readings and integrate them to your automated sequential test using SCPI commands



Suitable for high power measurements

Suitable for high power measurements from -50 dBm to +20 dBm

Low insertion loss

Maximise your power budget with low insertion loss.

Minimize user error

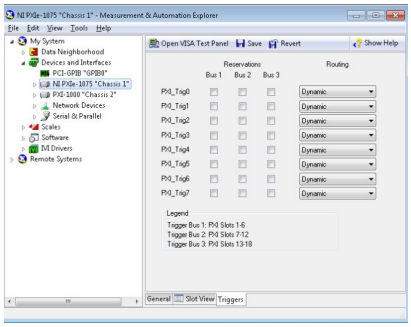
Inline power measurement means no need to connect and disconnect optical fibers. Enjoy increased repeatability and minimize user error.

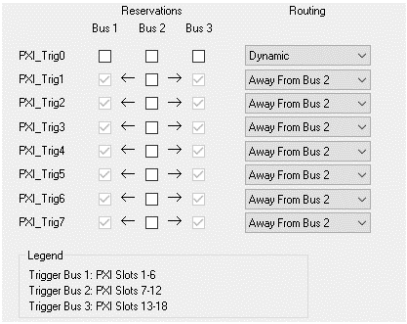
TARGET APPLICATIONS

- Fiber optic manufacturing test.
- Power measurement integration for automated test systems.
- Fiber optic laser test and characterization.
- General and versatile R&D and production tool.

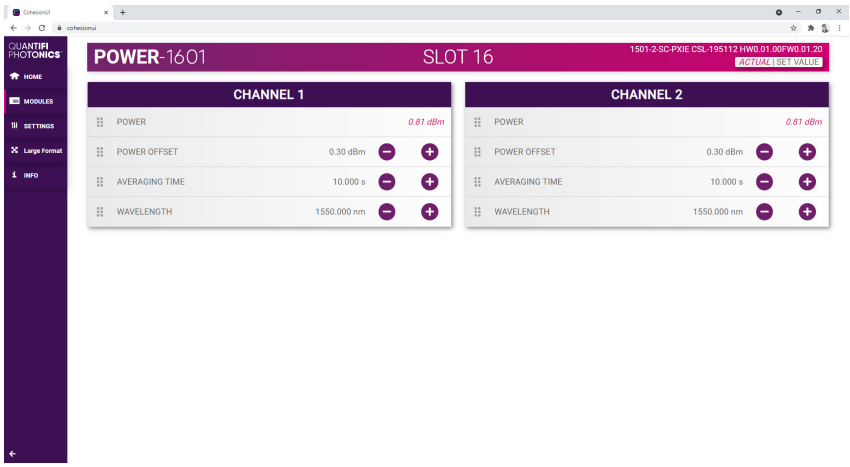
PXI's integrated timing and hardware triggering capabilities allow the user to synchronize a variety of instruments through the trigger bus and system reference clock features of the PXI platform. This offers a number of advantages over more traditional software-initiated measurements.

- True parallel measurements of multiple devices under test allows you to scale your manufacturing and decrease the test time per DUT.
- Extremely low latency allows you to capture fast events or measure your DUTs very quickly.
- Precise timing alignment between optical and electrical modules gives you control of trigger events to occur exactly when required.





Each slot can create a trigger and the trigger event can be transferred through each PXI Trigger line. Configuring the trigger line can be done easily through NI MAX software interface for the PXIe mainframe.



CHOOSE YOUR FORM FACTOR

PXIe – MODULAR

Our expanding range of PXIe optical test solutions are used by customers in mixed-signal test and measurement systems, reducing complexity, lowering the cost of test and accelerating time to market.

- Multi vendor, open standard with over 2500 PXI modules available
- Advanced timing and synchronization capabilities across instruments
- Low latency, high performance processing and fast data throughput
- Design and build scalable, high channel count systems
- Small footprint and lower power consumption

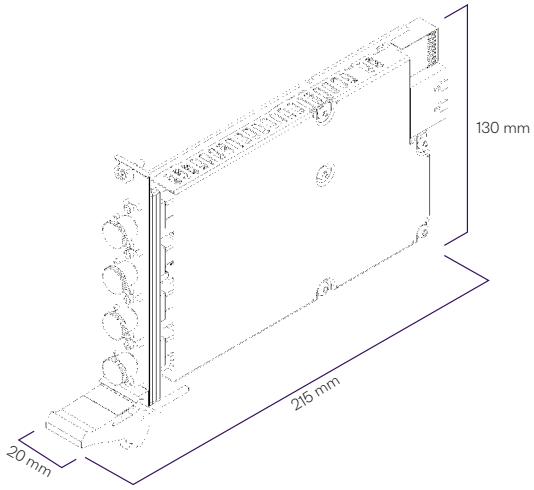
MATRIQ – COMPACT & PORTABLE

The MATRIQ series provides the same high-performance test capabilities of our PXIe modules in an compact benchtop design. MATRIQ instruments are simple to setup and easy to operate, making them the perfect choice for your optical lab or test bench.

- Same performance and control as our PXIe modules
- Plug and play with USB or Ethernet connectivity
- Control via the web-based GUI, COHESIONUI or SCPI commands
- Compact and portable design saves benchtop space

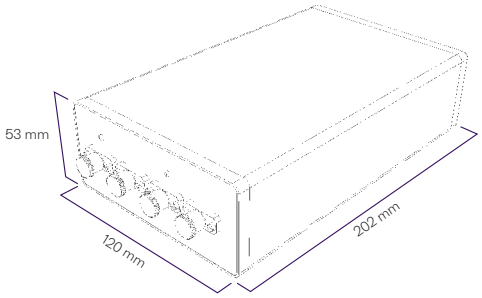
PXI – MODULAR

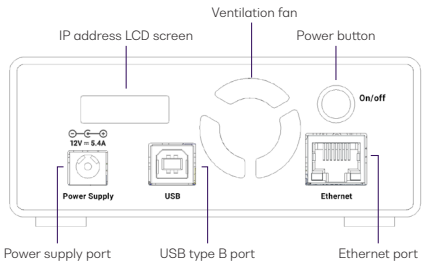
POWER-1601-2-FC-PXIE



MATRIQ – COMPACT & PORTABLE

POWER-1601-2-FC-MTRQ





General Specifications	PXI	MATRIQ
Bus connection	PXIe	USB and Ethernet
Optical connector type	FC/APC, FC/PC, SC/PC, SC/APC	FC/APC, FC/PC, SC/PC, SC/APC
Slot count	1	-
Dimensions (HxWxD)	130 x 20 x 215 mm | 5.1 x 0.8 x 8.5 inches	53 x 120 x 202 mm | 2.1 x 4.7 x 8.0 inches
Weight	~0.4kg | ~0.88 lbs	~ 1.1 kg | ~ 2.4 lbs
Storage temperature range	-40 °C to 70 °C | -40 °F to 158 °F	-40 °C to 70 °C | -40 °F to 158 °F

Power Specifications	PXI	MATRIQ
AC input voltage range	Please refer to the latest PXI Express Hardware Specifications published by the PXI Systems Alliance.	100 to 240 VAC
AC input current		1.3 A (115 VAC), 0.9 A (230 VAC)
AC frequency range		47 to 63 Hz
DC output voltage		12 V
DC output current max		5.41 A
Dimensions (LxWxH)		4.58 x 2.06 x 1.23" (116.3 x 52.4 x 31.3 mm)

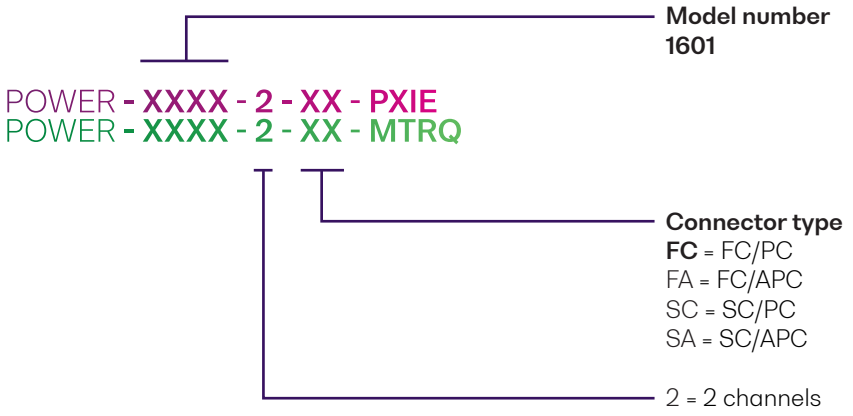
Model Number	1601	1601
Number of channels	2	2
Sensor	Inline fiber tap PD	Inline fiber tap PD
Fiber type	SMF-28	SMF-28
Wavelength range	1260 to 1650 nm	1260 to 1650 nm
Power	-50 to +20 dBm	-50 to +20 dBm
Damage level [9]	+24 dBm	+24 dBm
Uncertainty at reference conditions [2,3,5]	± 0.34 dB (Typical) ± 0.55 dB (Max)	± 0.34 dB (Typical) ± 0.55 dB (Max)
Linearity [2,5]	± 0.1 dB, -40 to 0 dBm ± 0.15 dB, -50 to -40 dBm	± 0.1 dB, -40 to 0 dBm ± 0.15 dB, -50 to -40 dBm
Insertion loss	0.15 dB (Typical)[3] 0.25 dB (Max)[3]	0.15 dB (Typical)[3] 0.25 dB (Max)[3]
Return loss	> 50 dB[6]	> 50 dB[6]
Averaging time	0.01 Hz to 12 kHz	0.01 Hz to 12 kHz
Data logging capability	Yes	Yes
External trigger	Yes	No

Model Number	1611	1611
Number of channels	2	2
Sensor	Inline fiber tap PD	Inline fiber tap PD
Fiber type	OM3	OM3
Wavelength range	800 to 900 nm	800 to 900 nm
Power	-50 to +20 dBm	-50 to +20 dBm
Damage level [9]	+23 dBm	+23 dBm
Uncertainty at reference conditions [2,3,5]	-	-
Linearity [2,5]	± 0.25 dB, 0 to -30dBm	± 0.25 dB, 0 to -30 dBm
Insertion loss	0.15 dB (Typical)[3] 0.25 dB (Max)[3]	0.15 dB (Typical)[3] 0.25 dB (Max)[3]
Return loss	> 20 dB7	> 20 dB7
Averaging time	0.01 Hz to 12 kHz	0.01 Hz to 12 kHz
Data logging capability	Yes	Yes
External trigger	Yes	No

Model Number	1631	1631
Number of channels	2	2
Sensor	Inline fiber tap PD	Inline fiber tap PD
Fiber type	PM panda	PM panda
Wavelength range	**Channel 1**: 1520 to 1570 nm **Channel 2**: 1260 to 1360 nm	**Channel 1**: 1520 to 1570 nm **Channel 2**: 1260 to 1360 nm
Power	-50 to +20 dBm	-50 to +20 dBm
Damage level [9]	+23 dBm	+23 dBm
Uncertainty at reference conditions [2,3,5]	± 0.34 dB (Typical) ± 0.55 dB (Max)	± 0.34 dB (Typical) ± 0.55 dB (Max)
Linearity [2,5]	± 0.25 dB, 0 to -30 dBm	± 0.25 dB, 0 to -30 dBm
Insertion loss [2, 3, 5]	0.6 dB (Typical) 0.8 dB (Max)	0.6 dB (Typical) 0.8 dB (Max)
Return loss [7]	> 20 dB	> 20 dB
Averaging time	0.01 Hz to 12 kHz	0.01 Hz to 12 kHz
Data logging capability	Yes	Yes
External trigger	Yes	No

Notes
1. Specifications are valid at 23 °C ± 3 °C.
2. +10 dBm to -40 dBm, 23 °C.
3. Excluding connectors, add 0.2 dB for SMF and 0.1 dB for MMF per connector.
4. < 10 dB attenuation.
5. At calibration wavelengths.
6. 1550 nm ± 30 nm, standard single-mode fiber, angled connector 8°, T=23 °C ± 5 °C.
7. 850 nm ± 30 nm, standard single mode fiber, angled connector 8°, T=23 °C ± 5 °C.
8. ORL specifications require output port to be terminated into high ORL termination and/or into a fiber network with >60dB optical return loss.
9. 20 minute exposure.

ORDERING INFORMATION



WARRANTY INFORMATION

This product comes with a standard 1 year warranty.

EXTENDED WARRANTIES AND CALIBRATION PLANS

With an **extended warranty and calibration plan** you'll spend more time focused on your priorities and less time worrying about maintenance.

Add a **3 or 5 year extended warranty** when you purchase your Quantifi Photonics instruments.

Guarantee performance

Ensure your equipment is operating at the best it can be for reliable and accurate results.

Lower cost of ownership

Lock in savings and maximise your testing budget with a lower base cost of ownership.

Peace of mind

Spend less time worrying about maintenance and more on generating results.

CALIBRATION PLANS FOR ADDITIONAL DISCOUNTS

Order a **calibration plan** when purchasing your Quantifi Photonics instruments and get additional discounts.

10% Discount On calibrations ordered at the time of purchase.

25% Discount Add on an extended warranty and receive a 25% discount on calibrations.

Over time and with regular use, all optical parts and connectors require re-calibration and maintenance to guarantee accurate and reliable performance. We recommend Quantifi Photonics optical instruments are re-calibrated every 12 months. With an instrument calibration performed by Quantifi Photonics technicians you receive:

- Comprehensive calibration to factory specifications
- End-to-end inspection to ensure all instrument functions are working and connectors are clean
- Firmware, software and documentation updates
- Certificate of calibration which includes detailed test results

How to do I **secure my extended warranty or calibration plan**?

Contact your Quantifi Photonics sales representative or email **sales@quantifiphotonics.com**

Extended warranties and calibration plans must be ordered at the time of purchase and are available only for Quantifi Photonics' products. The 25% calibration discount only applies to calibrations while the product is covered by the extended warranty period.

Our portfolio of optical & electro-optical test modules is rapidly expanding to meet a wide range of customer requirements and applications.

For more details visit **quantifiphotonics.com/products**

Tunable Laser Sources

Versatile telecom laser sources with full tunability across C or L bands. Narrow 100 kHz linewidth, up to 16.5 dBm of power, optional whisper mode to disable frequency dither.

Fixed Wavelength Laser Sources

Highly-customizable DFB or FP laser sources available in a wide range of wavelengths and powers up to 24 dBm. Supports SMF, MMF and PMF.

Swept, Tunable Continuous Wave Laser

Swept, tunable continuous wave (CW) laser source with 0.01 dB power stability and 400 nm/s high-speed scan rate for R&D and production testing.

Superluminescent Diode Broadband Light Source

Super-luminescent LED light source with high output power, large bandwidth and low spectral ripple and various wavelengths.

Erbium-Doped Fibre Amplifier (EDFA)

High power Erbium-Doped Fiber Amplifier for signal power amplification in C and L bands with various control modes, including automatic gain control.

Variable Optical Attenuator (VOA)

Fast attenuation speed with low insertion loss and built-in power monitoring. Operates in fixed attenuation or constant output power modes. Support SMF, MMF and PMF.

Polarization Controller & Scrambler

High-speed automated polarization control with broad wavelength coverage from 1260nm to 1650nm, low insertion loss and back reflection. Full remote control via intuitive GUI, LabVIEW or SCPI.

Optical Power Meters

Fast terminating or inline monitoring of optical signal power from -60 to +10 dBm across 750 – 1700 nm wavelengths. Model with logarithmic analog output for applications such as silicon photonics fiber alignment.

Optical Spectrum Analyzer (OSA)

Cost-effective, spectral measurement in a compact module with built-in analysis for: SMSR, OSNR & spectral width. Targeted wavelengths for specific applications in O band, C band & L band.

Optical-to-Electrical Converter

High bandwidth, broadband O-to-E converter. Available in a range of configurations; choose from 1 or 2 channels, AC or DC coupling and various conversion gain and operating wavelength ranges.

Digital Sampling Oscilloscope (DSO)

Digital equivalent-time sampling oscilloscope (DSO) with high-quality precision timebase and low jitter mode, available in 1 or 2 channels in a compact benchtop instrument.

Bit Error Rate Tester (BERT)

4 or 8-channel Pulse Pattern Generator and Error Detector at rates up to 29 Gbps for the design, characterization and production of optical transceivers and opto-electrical components.

Photonic Doppler Velocimeter (PDV)

Purpose-built module for Photonic Doppler Velocimetry (PDV). A circulator, two VOAs and a passive coupler all built into one compact module.

Optical Switch

Proven reliability and fast switching time. Wide variety of switch onfigurations: 1x4, 1x16, 16x16 and more. Models support SMF, MMF and PMF.

Photocurrent Amplifier

Versatile photodiode amplifier to measure photocurrent in photonic integrated circuit (PIC) applications. Digital and analog measurement.

Passive Component Integration

Integrate passive optical components of your choice such as WDM couplers, splitters, band-pass filters, PM beamsplitters and circulators. SMF, MMF and PMF.

Test. Measure. Solve.™

Quantifi Photonics provides test solutions to help customers unlock scalable and cost-effective high-volume manufacturing of photonic integrated circuits (PICs), co-packaged optics and pluggable optics. The company's portfolio includes a wide range of photonic test instruments, and digital sampling oscilloscopes, available as benchtop or the industry-standard PXI format to support cost-effective, high-throughput design verification testing and high-volume manufacturing.

To find out more, get in touch with us today.

General Enquiries sales@quantifiphotonics.com
Technical Support support@quantifiphotonics.com
Phone - NZ +64 9 478 4849
Phone - USA +1-800-803-8872

quantifiphotonics.com

QUANTIFI PHOTONICS®
A Teradyne Company