Measurement Devices

QUANTIFI PHOTONICS™

LASER COMPONENTS®

PPG

PULSE PATTERN GENERATOR

SPECIFICATION SHEET

AVAILABLE IN PXI

AVAILABLE IN MATRIQ

03/21 / V1 / AHIF / quantifi/ppg

Germany & Other Countries
Laser Components GmbH
Tel: +49 8142 2864 – 0
Fax: +49 8142 2864 – 11
info@lasercomponents.com
www.lasercomponents.com

United Kingdom
Laser Components (UK) Ltd.
Tel: +44 1245 491 499
Fax: +44 1245 491 801
info@lasercomponents.co.uk
www.lasercomponents.co.uk

LASER COMPONENTS

FEATURES

The PPG is a 4-channel Pulse Pattern Generator capable of generating high-quality signals up to 30 Gbps.

It offers high channel density for multi-channel applications such as parallel transceiver testing.

Programmable de-emphasis and CTLE processor.

Programmable PPG Tx de-emphasis and error detector receiver continuous-time linear equalizer (CTLE) allow the user to compensate for finite coaxial cable interconnect loss.

Simple control with intuitive GUI.

Save time and reduce complexity with the PPG's easy-to-use GUI. Control all channels and functions from its single panel interface.

Single platform testing.

Conduct all your DUT characterization on one platform and spend less time switching cables and patchcords between instruments.

Extremely high channel density in PXI systems.

With up to 4-channels per single-slot PXIe module, fit up to 68 synchronized channels per single PXIe mainframe.

Internal clock synthesizer.

An integrated clock synthesizer for additional convenience and hassle-free operation.

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TARGET APPLICATIONS

- Multi-channel Pulse Pattern Generator for 30 Gbps
- Active optical cable testing
- High speed SerDes characterization

EXAMPLE DATA SIGNAL

Example of 26 Gbps PRBS data signal generated by the PPG-1001

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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 1500 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, LabVIEW or SCPI commands
- Compact and portable design saves benchtop space

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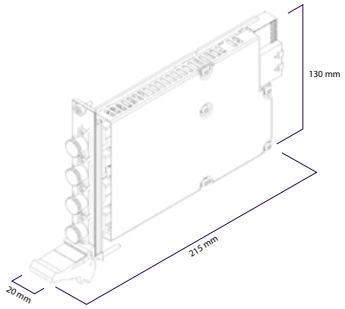
PPG TECHNICAL SPECIFICATIONS

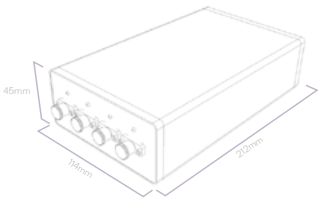
PXI – MODULAR

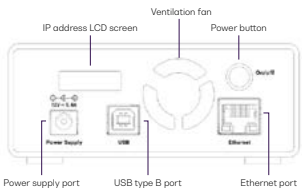
PPG-1001-4-PXIE



MATRIQ – COMPACT & PORTABLE

PPG-1001-4-MTRQ





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PPG TECHNICAL SPECIFICATIONS

General Specifications	PXIE	MATRIQ
Bus connection	PXIe	USB and Ethernet
Slot count	1	-
Dimensions (H x W x D)	130 x 20 x 215 mm | 5.1 x 0.8 x 8.5 inch	5 x 114 x 212 mm | 1.7 x 4.5 x 8.3 inch
Weight	~ 1 kg | ~ 2.2 lbs	~ 1.1 kg | ~ 2.4 lbs
Operating temperature range	5°C to 45°C | 41°F to 113°F	5°C to 45°C | 41°F to 113°F
Storage temperature range	-40°C to 70°C | -40°F to 158°F	-40°C to 70°C | -40°F to 158°F

PPG Output	1001	1001
Number of channels	4	4
RF output	Differential	Differential
RF connector	1 x breakout cable with 8 x 2.92 mm connectors	1 x breakout cable with 8 x 2.92 mm connectors
Impedance	100 ohms between differential outputs	100 ohms between differential outputs
Data coding	NRZ	NRZ
Data rate	0.3 to 30 Gbps	0.3 to 30 Gbps
Data rate step size	1 kbps	1 kbps
PRBS patterns	2n-1, n = 9, 15 or 31	2n-1, n = 9, 15 or 31
Output amplitude (mV differential)	Adjustable 200 to 1100	Adjustable 200 to 1100
Output amplitude steps (mV differential)	5	5
Rise/fall time (20% to 80%)	< 18 ps	< 18 ps
Intrinsic jitter	< 850 fs rms (typical)	< 850 fs rms (typical)
Crossing point adjustment	35% to 65%	35% to 65%
Programmable de-emphasis	2 pre taps, 1 post tap	2 pre taps, 1 post tap
Polarity inversion	Yes	Yes

Clock Output	1001	1001
RF output	Single-ended SMA	Single-ended SMA
Impedance	50 ohms	50 ohms
Half rate clock	1 to 15 GHz	1 to 15 GHz
Intrinsic jitter	< 350 fs rms (typical)	< 350 fs rms (typical)
Output amplitude	200 mV to 500 mV	200 mV to 500 mV

Divided Clock Output	1001	1001
Rf output	Single-ended SMA	Single-ended SMA
Impedance	50 ohms	50 ohms
Frequency	500 MHz to 8 GHz	500 MHz to 8 GHz
Intrinsic jitter	< 350 fs rms (typical)	< 350 fs rms (typical)
Output amplitude	500 mV (typical)	500 mV (typical)
Selectable clock divider	Divide by n, with n = 2,4,8,16	Divide by n, with n = 2,4,8,16

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ORDERING INFORMATION

ACCESSORIES

Included accessories

1 x wiring harness with

8 x K-type RF connectors

Optional Accessories

BERTHarness-1001-1:

Replacement wiring harness for PPG-1001

WARRANTY INFORMATION

This product comes with a standard 3 year warranty.

An optional 5 year extended warranty is also available, please discuss with your sales representative at the time of purchase.

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CATALOGUE

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

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.

Erbium-Doped Fiber 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.

Fixed Wavelength Laser Sources
Highly customizable DFB or FP laser sources available in a wide range of wavelengths and powers. Models support SMF, MMF and PMF.

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. Models support SMF, MMF and PMF.

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)
Low cost, fast spectral measurement in a compact module with built-in analysis including SMSR, OSNR and spectral width. Targeted wavelengths for specific applications in O band, C band and 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.

Bit Error Rate Tester (BERT)
2 or 4-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.

Pulse Pattern Generator (PPG)
4 channel Pulse Pattern Generator from 0.3 to 30 Gbps for high-density multichannel applications. With integrated clock synthesizer and programmable de-emphasis and CTLE processor.

Optical Switch
Proven reliability and fast switching time. Wide variety of switch onfigurations: 1x4, 1x16, 16x16 and more. Models 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.

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.

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

Passive Component Storage
Protect and store your own passive fiber optic components such as splitters, connector adaptor patchcords, WDM couplers, and isolators in one handy module.

PXI – TEST MODULES | MATRIQ – TEST MODULES

We provide these products as PXIe modules and compact MATRIQ benchtop instruments.

See our website for more details.

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WHY CHOOSE QUANTIFI PHOTONICS

Test. Measure. Solve.

Quantifi Photonics is transforming the world of photonics test and measurement. Our portfolio of optical and electrical test instruments is rapidly expanding to meet the needs of engineers and scientists around the globe. From enabling ground-breaking experiments to driving highly efficient production testing, you'll find us working with customers to solve complex problems with optimal solutions.

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

Version 0.6

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