QUANTIFI PHOTONICS®
A Teradyne Company



QCR SERIES

CLOCK RECOVERY INSTRUMENT

SPECIFICATION SHEET

quantifiphotonics.com

INTRODUCING THE QCR SERIES

The **QCR Series Clock Recovery Instrument** is a high-performance instrument designed to extract clean, stable clock signals from high-speed serial data streams.

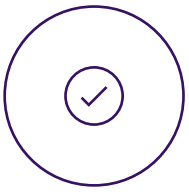
With its low-jitter architecture and precision phase-lock capabilities, it offers a reliable and scalable platform for validating and characterizing next-generation communication systems in combination with the QCA Series High-Speed Communication Analyzer.

FEATURES



Ultra-low jitter

High quality precision timebase with low jitter mode provides ultra-low jitter noise floor and PLL-based low frequency clock phase tracking.



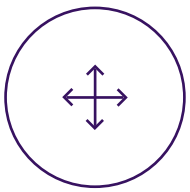
Accurate performance

Comparable feature set and predictive value (correlation) as prohibitively expensive R&D set-ups.



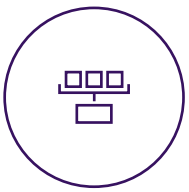
Compact design

Compact design enables high-density, high-channel count, test solutions in a relatively small footprint.



Scalable

Designed to meet the requirements for high channel count validation and high-volume manufacturing and testing.



Ease of integration

Small footprint, remote control and API enable easy integration into probing and assembly equipment.



Lower cost-of-test

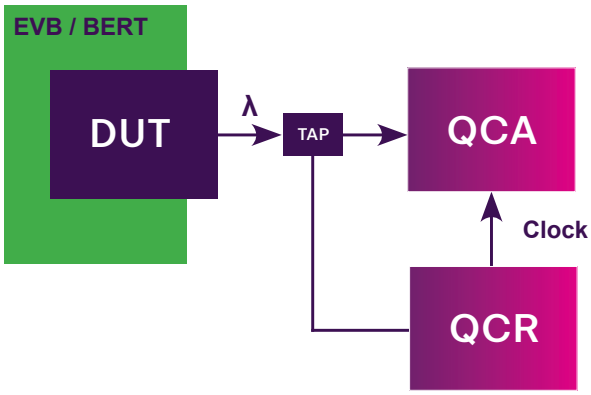
Improved test efficiency and test throughput can reduce the cost-of test and accelerate time-to-market.

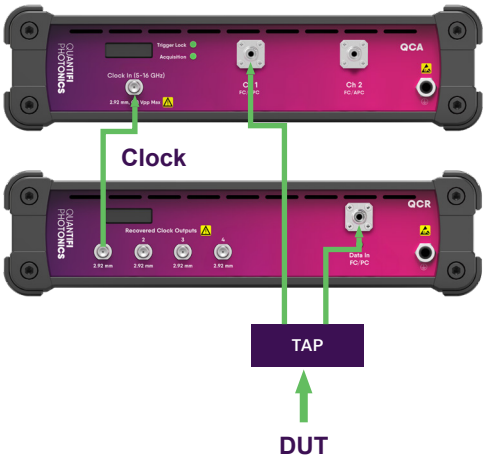
APPLICATIONS

- Optical interconnect testing
- High-speed optical IO characterization
- High-volume test of high-speed PICs
- Validation testing
- Transceiver and optical engine manufacturing test

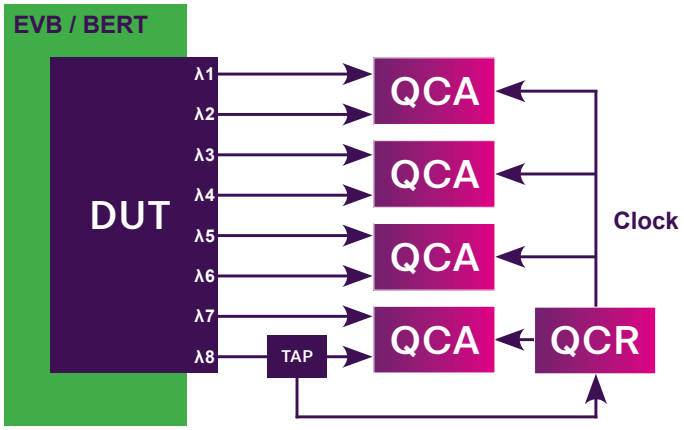
USE CASES

Use case 1: Triggering using a recovered clock and optical splitter (tap)



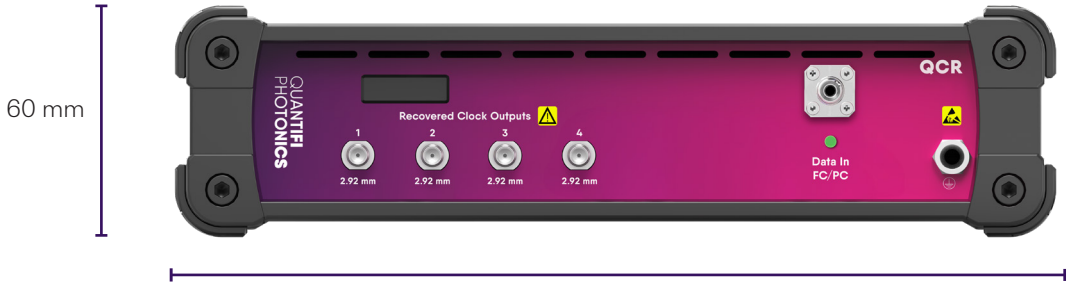


Use case 2: Triggering using a recovered clock and 8-channel DUT

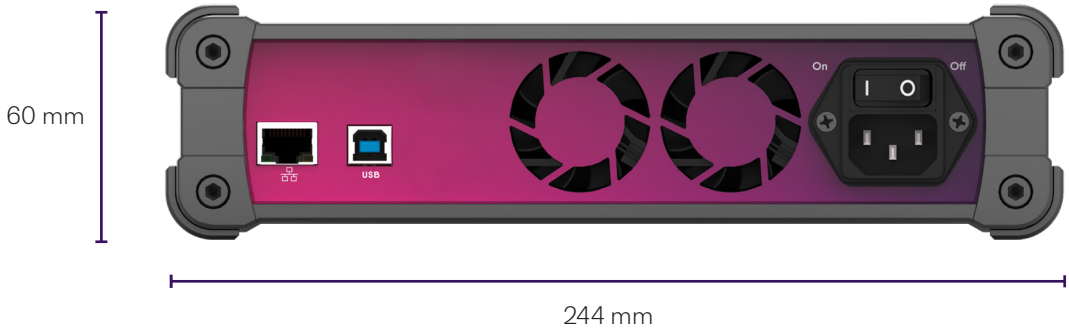


DIMENSIONS

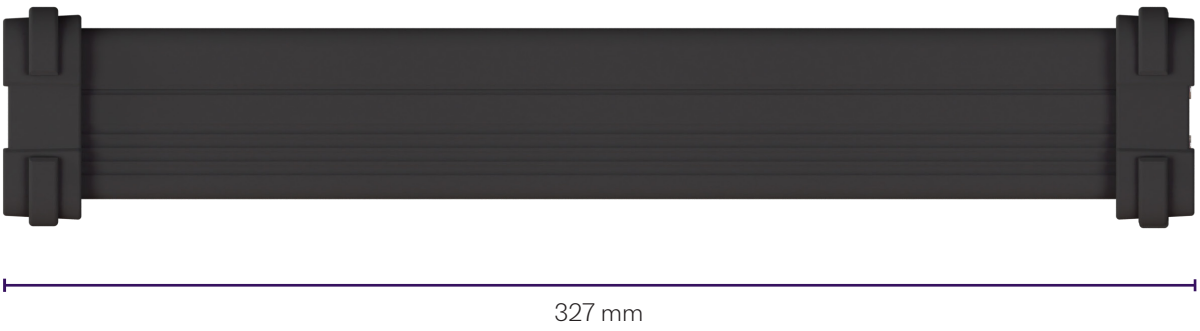
Front view



Rear view



Side view



QCR SERIES TECHNICAL SPECIFICATIONS

General Specifications	QCR
Dimensions (HxWxD)	60 x 244 x 327 mm | 2.36 x 9.6 x 12.9 inches
Weight	2.71 kg
Bus connection	USB (instrument control), Ethernet
Number of channels	1 data input, 4 synchronous recovered clock outputs (to trigger up to 4 oscilloscopes)
Operating temperature range	5 °C to 45 °C | 41 °F to 113 °F
Storage temperature range	-40 °C to 70 °C | -40 °F to 158 °F

Power Specifications	QCR
AC input voltage range	100 to 240 V
AC input current	1.3 A (115 V), 0.9 A (230 V)
AC frequency range	47 to 63 Hz

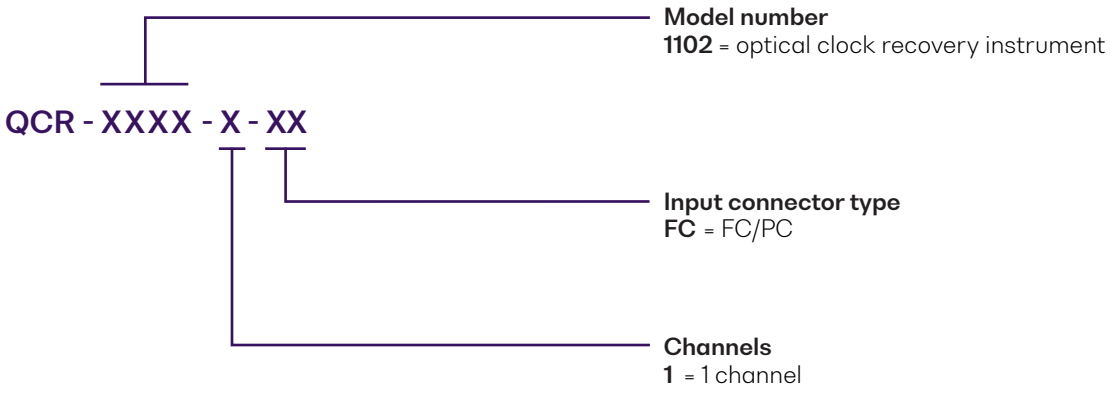
Model	1102[1]
Clock recovery	
Coupling	FC/PC
Supported data formats	NRZ, PAM4 pattern length ≤ PRBS31
Supported symbol rate ranges	25 - 32 Gbd (NRZ), 50 - 58 Gbd (PAM4)
Max input power (average)	4.5 dBm
Damage threshold (average)	7 dBm
Sensitivity (OMA)[2]	≤ 65 uW (-12 dBm)
Supported phase-locked-loop bandwidths	10, 15, 25 MHz
Recovered clock outputs	
RF termination	50 Ω
RF connector	2.92 mm
Output channels	4, single-ended, AC-coupled
Output amplitudes	50 - 1200 mV_{pp} (individually adjustable)
Recovered clock frequency range	12.5 - 16 GHz
Recovered clock divide ratios	1, 2, 4 (individually selectable)
Jitter (rms)	180 fs (typical)

Notes
1. Advanced specs as of October 2026 and subject to change.
2. For 53.125 Gbd PAM4 PRBS31.

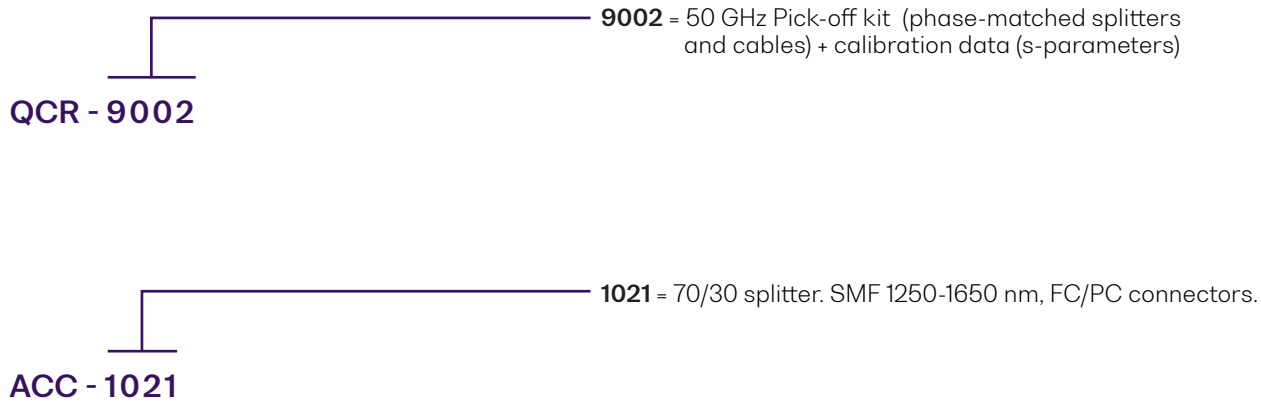
MINIMUM PC REQUIREMENTS

- Operating system: Microsoft Windows® 11 (64-bit)
- Processor: Intel® CoreTM i7
- Memory (RAM): 16 GB (32 GB recommended)

ORDERING INFORMATION



ACCESSORIES



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.

Versatile test modules for a wide range of requirements and applications.

Tunable Laser Source



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 Source



DFB laser sources available in a 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.

ELSFP-Compliant External Laser Source



Uses ELSFP-compliant pluggable modules to provide 8 channels of CW optical power at 1310 nm up to 24 dBm.

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 1260 to 1650 nm, low insertion loss and back reflection. Full remote control via intuitive GUI, LabVIEW or SCPI.

Optical Power Meter



Fast terminating or inline monitoring of optical signal power from -60 to +10 dBm across 750 to 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. Choose from 1 or 2 channels, AC or DC coupling and various conversion gain and operating wavelength ranges.

Optical Switch



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

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. SMF, MMF and PMF.

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.

Clock Recovery Instrument (CDR)



Clock recovery instrument for the QCA Series. Low jitter design and precise phase-locking provide a reliable, scalable solution for high-speed communication testing.

Coherent Transmitter



Generate high-quality coherent optical signals for transmitter development, testing and advanced modulation research.

Coherent Receiver



High-performance coherent optical receiver for accurate measurement and characterization of coherent modulation formats.

VISIQ Analysis Software

VISIQ

Coherent signal analysis software for intuitive DSP configuration, signal analysis and optimization.

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

Quantifi Photonics Ltd © 2026. All rights reserved. No part of this publication may be reproduced, adapted, or translated in any form or by any means without the prior permission from Quantifi Photonics Ltd. All specifications are subject to change without notice. Please contact Quantifi Photonics for the latest information.