

# COMPLEX MODULATION ANALYZER

# **IQScope**

The IQScope works with readily available sampling oscilloscopes, providing an affordable solution to complex modulation analysis. It takes advantage of the large bandwidth and 15 bit resolution of sampling oscilloscopes to enable accurate measurements of higher-order complex modulation formats.

## Key Features

- Samples up to 8000 points across a baud; the highest points of any other system
- Displays comprehensive symbol transition information
- Delivers high 15 bit vertical resolution ensuring the lowest quantization noise
- Compatible with widely deployed sampling oscilloscopes
- The most affordable OMA solution currently on the market
- Simple and uncluttered interface, designed with a clear configurable screen layout



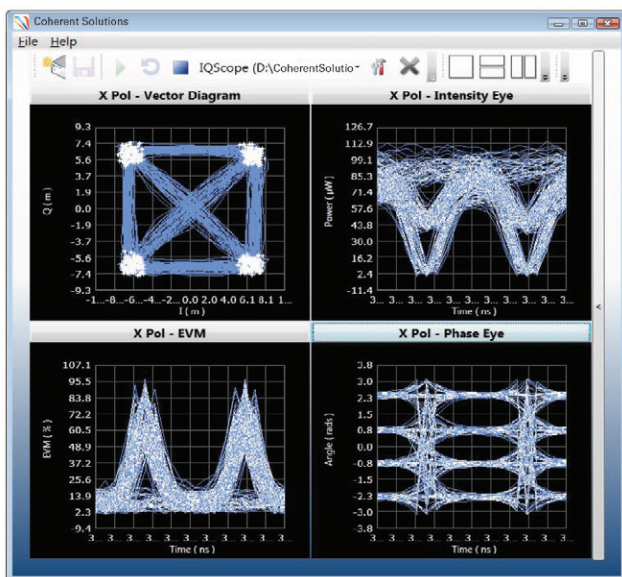
## Product Front Controls



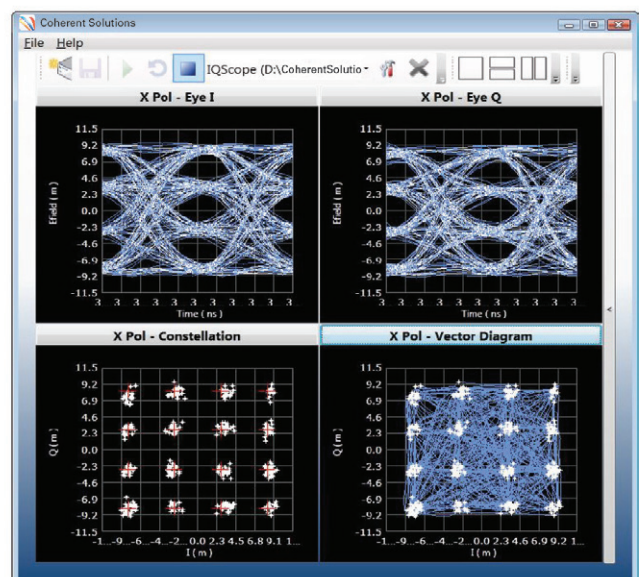
## Applications

Modulator testing, R&D testing of transmitter, chirp testing and more

## Software User Interface



Various visualizations of a 56 Gbps QPSK signal



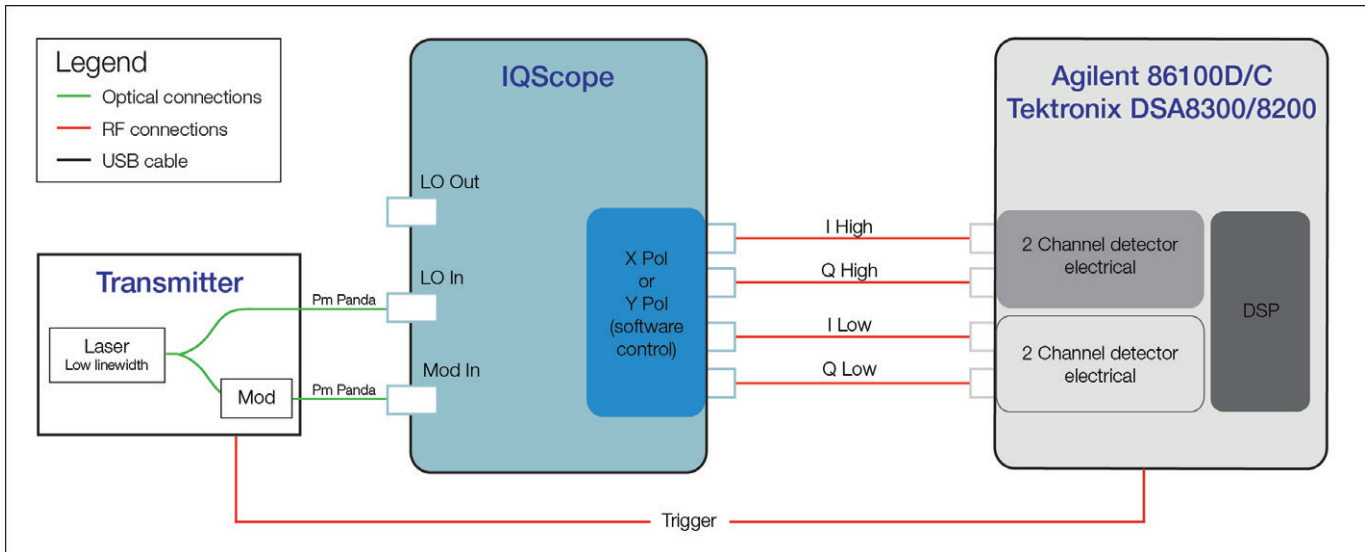
Various visualizations of a 40 Gbps 16-QAM signal

## Laser Safety Information



This instrument is a Class 1M laser product. Do not view the laser output directly with optical instruments such as magnifiers or microscopes.

## Usage Example Schematics



## Bit Rate Examples<sup>a</sup>

Maximum detectable baud rate	Up to 56 Gbaud per pol
Maximum detectable bit rate for DP-QPSK	Up to 225 Gbit/s
Maximum detectable bit rate for DP-16QAM	Up to 450 Gbit/s

<sup>a</sup> - Based on the 42 GHz bandwidth setup.

## Specifications

### Functionalities

Supported modulation formats

BPSK, DPSK, QPSK, DQPSK, 16QAM, 64QAM, DP-BPSK, DP-DPSK, DP-QPSK, DP-DQPSK, DP-16QAM, DP-64QAM and more

Visualizations

Constellation diagrams, vector diagrams, I&Q eye diagrams, Intensity versus time, phase versus time, I&Q versus time and more

Measurement capabilities

Error Vector Magnitude, phase error, IQ phase error, IQ gain imbalance, IQ skew, Signal-to-noise ratio and more

### Digital demodulation uncertainty<sup>a</sup>

Amplitude (EVM) error

< 2.4% RMS

Phase error

< 0.0175 rads

### External local oscillator input

Connector type

Polarization maintaining FC/UPC

Optical input wavelength range

1527.60 nm to 1565.50 nm



External local oscillator input power range	0 dBm to +14 dBm
Maximum input peak power (damage level)	+20 dBm
Local oscillator linewidth requirement	< 300 kHz
<b>Optical DUT input</b>	
Optical input wavelength range	1527.60 nm to 1565.50 nm
Optimum input power	-5 to +5 dBm <sup>b</sup>
Maximum input power	+14 dBm
<b>Built-in optical local oscillator output</b>	
Optical CW output power	6.5 dBm to 14 dBm
Wavelength range	1527.60 nm to 1565.50 nm
Linewidth	100 kHz
RIN	< -145 dB/Hz
Frequency accuracy	± 1.5 GHz
Polarization extinction ratio	> 20 dB
<b>RF output</b>	
Connector type - high speed channels	RF 2.4mm
Connector type - low speed channels	SMA 3.5mm
RF bandwidth (typical)	42 GHz <sup>c</sup>

a - Electrical version with Tektronix DSA8300.

b - With LO input power of 3 dBm. For lower LO input powers, higher DUT input power is required. For carrier suppression <25 dB.

c - Lower bandwidth options available upon request.

**All specifications are subject to change without notice. Please contact Coherent Solutions for the latest information.**