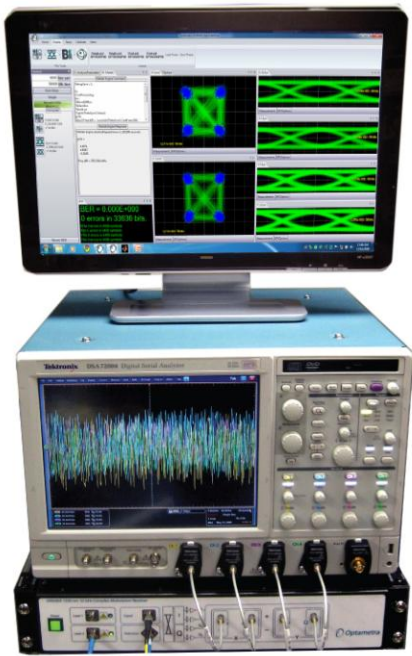


OM4105/OM4106 112 G Coherent Lightwave Signal Analyzer™/Pro™



OM4106 Coherent Lightwave Signal Analyzer Pro: OM3105 Coherent Modulation Receiver driving real-time Tektronix oscilloscope running Optametra Signal Analysis Suite. Remote CPU display shows 112Gb/s DP-QPSK signal.

Key Features

- Complete coherent signal analysis system for polarization-multiplexed QPSK, differential BPSK/QPSK, and other advanced modulation formats
- Displays constellation diagrams, phase eye diagrams, Q-factor, Poincaré sphere, signal waveform, and extracted laser phase characteristics, with available analysis options (e.g. bit error rate)
- Optametra Signal Analysis Suite tolerates > 1 MHz instantaneous signal laser linewidth—compatible with standard network tunable sources
- OM3105 Coherent Modulation Receiver (CMR™) includes Signal and Reference tunable laser sources
- No laser phase or frequency locking required
- Smart polarization separation follows signal
- Incorporates Optametra OM3105 Coherent Modulation Receiver (CMR™) for high stability, linear, polarization-diverse, optical field detection
- Runs with Tektronix, Agilent and LeCroy real-time oscilloscopes¹
- OM4106 CLSA Pro™ provides access to internal functions via its MATLAB interface

Optametra's OM4105/OM4106 112 G Coherent Lightwave Signal Analyzers™ (CLSA™)/Pro™ are new 1550 nm (C- and L-band) fiber optic test systems for visualization and measurement of complex-modulated signals, offering a complete solution to testing both coherent and direct-detected transmission systems. Optametra's hardware includes the OM3105 polarization-diverse Coherent Modulation Receiver™ (CMR™) enabling simultaneous measurement of any modulation format, including dual-polarization (DP) QPSK. Optametra's software performs all calibration and processing functions to enable real-time burst-mode constellation diagram display, eye-diagram display, Poincaré sphere, and bit-error detection. Bit rates up to and exceeding 112 Gb/s (100G DP-QPSK) can be analyzed.

Interface:

Line Code	OOK, BPSK, QPSK, DBPSK, DQPSK, DP-BPSK, DP-QPSK
Data	Any PRBS or user supplied pattern
Data Rates	Tested up to 112 Gb/s; receiver is capable of 128 Gb/s.
Control	Built-in Ethernet interface

Measurement:

Display	Eye diagrams, vector modulation (constellation diagrams), Poincaré sphere, decision threshold Q plot
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Signal Quality	Bit-error rate (by examination of payload), eye decision threshold Q-factor, tributary skew, constellation
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alignment (bias, phase angle),
constellation mask, and statistics

Calibration Routines:

Gain, offset, receiver path mismatch (hybrid phase angle and state of polarization factory calibrated)

Other Characteristics:

Lasers Power: +13 dBm
Linewidth: 100-kHz short term
Accuracy: 10 pm
Wavelength: C or L-band tunable
C-band 1527.6-1565.5 nm
L-band 1570.01-1608.76 nm
Settable Grid (10, 50, 100 GHz)

Fine tuning ±12GHz

¹ Requires 4-channel, 20 GHz Tektronix DS072004 through DSA72004B

² MATLAB is a registered trademark of the MathWorks

Requirements when using external lasers

Instantaneous linewidth < 2 MHz
Short-term stability < 200 MHz
Suggested reference power:
+7 to +13 dBm

Receiver

C-band (1530 to 1570 nm)
L-band (1570 to 1610 nm) optional
> 28 GHz (OM3105A) or
> 30 GHz (OM3105B)
Phase accuracy: ±2 degrees
+3 to +13 dBm input signal range
Maximum recommended *total* input
optical power +15 dBm

General characteristics:

Size:

Assembled (H x W x D) 8.9 cm x 43.2 cm x 29.85 cm / 3.5 in x 17.0 in x 11.75 in

Weight:

Net 11.8 kg / 26 lbs **Shipping** 15.9 kg / 35 lbs

Operating temperature range: +10° C to +35° C

Storage temperature range: -20° C to +70° C, non-condensing humidity

Humidity: 15% to 80% relative humidity, non-condensing

Power requirements : 115 – 230 V~ 50–60 Hz, 1 power cable, Max. 100 VA

Calibration interval: 1 year

Limited warranty: 1 year, extended warranty program available

Model	Description
OM4105 Complex Modulation Analyzer	Polarization-diverse complex receiver system. Purchase includes one (1) license to Signal Analysis Suite. The initial release includes OOK, BPSK, QPSK, DPSK, DQPSK, optional dual-pol formats, optional BER calculation, constellation diagram, eye diagram, data and error display, polarization analysis, Q-factor, and will work on PRBS or user-entered data. Includes installation and training. Includes integration of customer's real-time oscilloscope.
OM4106 Complex Modulation Analyzer Pro	OM4105 as above; Professional model further enables MATLAB interface with access to all internal variables for custom filters, optional BER calculation, compensation, analyses and plots.

Please contact Optametra Sales (sales@optametra.com) for a price quote or to arrange a demonstration