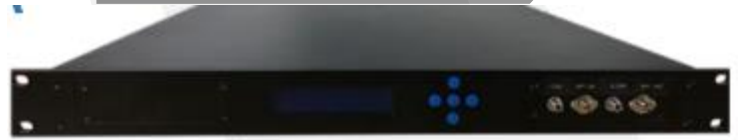




LT-DPQAM-R



DEVICE

Lightwave Transmitter for DP-QAM

OVERVIEW

The Optilab LM-DPQAM-R is a high performance Dual Polarization Quadrature Amplitude Modulation (DP-QAM) lightwave transmitter designed for Optical Communication up to 400 Gb/s or beyond. The LM-DPQAM-R incorporates an internal laser source (DFB, tunable laser) which couples into a four IQ drive speed MZI modulator for DPQAM modulation, with four broadband modulator drivers. The LM-DPQAM-R can also be used for Quadrature Amplitude Modulation (QAM). The LM-DPQAM-R has a built-in Automatic Bias Control board which allows for stable long-term operation, with up to 4 bias operating modes. Adjustable RF gain through the front panel interface and LabVIEW software can be performed. Contact Optilab for more information.

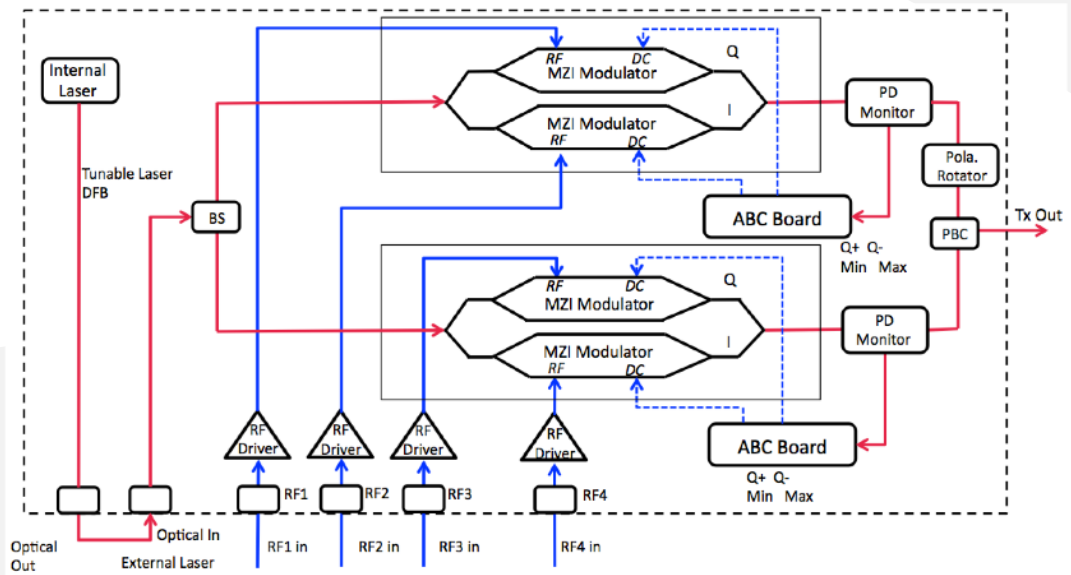
FEATURES

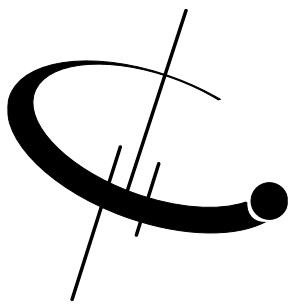
- Up to 400 Gb/s bit rate
- Quadrature modulator driver
- Four auto bias modes
- Four IQ modulators
- Bandwidth options: 40/60/80 Gb/s
- Internal DFB or Tunable Laser

USE IN

- Optical communications
- Analog transmission
- Picosecond pulse generation
- Research and development
- Test and measurement

FUNCTIONAL DIAGRAM





LT-DPQAM-R

SPECIFICATIONS

Bit Rate/Bandwidth	See Table 1.0
Internal Laser Source	See Table 2.0
Impedance	50 Ω typ.
Optical Output Power	-1 dBm min. @ 14 dBm input
Modulator Bias Mode	Automatic bias control modes
Input RF Voltage Range	250 mW to 750 mW typ.
Eye Crossing Adjustment	Available

GENERAL

Operating Temperature	-10°C to + 60°C
Storage Temperature	-50°C to +90°C
Operating Humidity	0% to 85% Relative Humidity
Power Supply	100 – 240 VAC, 50 – 60 Hz
Housing Dimensions	1RU, 482.60mm x 470.57mm x 44.00mm
RF Input Connector	K type Female ; V type Available
Optical Connectors	FC/APC; Other Options are Available
Optical Input Fiber Type	PANDA PM
Optical Output Fiber Type	PANDA PM
Remote Control Interface	RS232 Communication

MECHANICAL

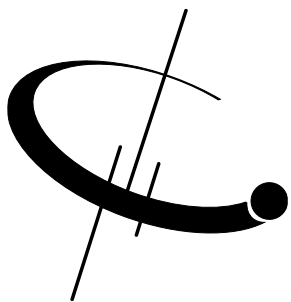
TABLE 1.0
BANDWIDTH OPTIONS

Model #	Bit Rate	Analog Bandwidth
LT-DPQAM-40-R	40 Gb/s min.	15 GHz typ. for each modulator
LT-DPQAM-60-R	60 Gb/s min.	25 GHz typ. for each modulator
LT-DPQAM-80-R	80 Gb/s min.	35 GHz typ. for each modulator

TABLE 2.0
LASER SOURCE
OPTIONS

Model #	Laser Source	Wavelength	Linewidth
LT-QPSK-R-DC	DFB, C band	1550±5 nm	3 MHz typ.
LT-QPSK-R-DL	DFB, L band	1580±5 nm	3 MHz typ.
LT-QPSK-R-TC	Tunable C band	1527 - 1567 nm	2MHz typ. < 100 kHz Optional *
LT-QPSK-R-TL	Tunable L band	1570 - 1608 nm	2MHz typ. < 100 kHz Optional *
LT-QPSK-R-CL	Tunable C+L band	1527 - 1608 nm	2MHz typ. < 100 kHz Optional *



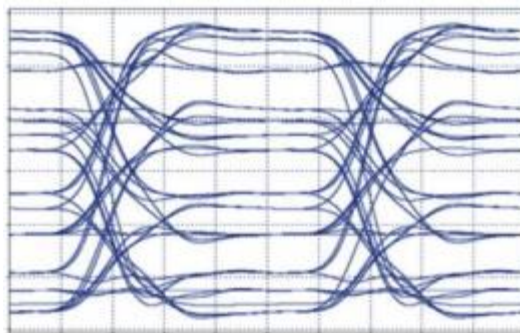


LT-DPQAM-R

TUNABLE LASER SPECIFICATIONS

Laser Wavelength	1527 nm to 1607 nm (C or L or C+L band)
Wavelength Accuracy	1 pm
Wavelength Setting Resolution	1 pm (continuous)
Wavelength Stability	1 pm over 24 hours
Output Power	40 mW typ.
Output Stability	0.02 dB over 8 hours
Laser Linewidth (FWHM)	< 100 kHz Optional
Carrier to Noise Ratio (CNR)	50 dBc typ. @ -5 dBm
Side Mode Suppression Ratio	55 dB typ.
Relative Intensity Noise (RIN)	-157 dB/Hz @ 13 dBm
Polarization Extinction Ratio	20 dB min.
Optical Isolation	30 dB min.
Fiber Type	Panda 1550 PM

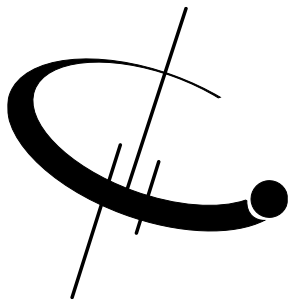
EYE DIAGRAM



BIAS CONTROL MODE

Mode	Operating Conditions	Modulation Format
Q+	Set to quadrature point of positive slope	Analog, NRZ
Q-	Set to quadrature point of negative slope	Analog, NRZ
Min	Set to min. point of modulator curve	Pulse, RZ, BPSK
Max	Set to max. point of modulator curve	Pulse, RZ





LT-DPQAM-R

OPTIONS

LT-DPQAM-XX-R-YY-ZZ

XX Bandwidth: See Table 1.0

YY Laser Source: See Table 2.0

ZZ PM: Polarization Maintaining Output (PM)

