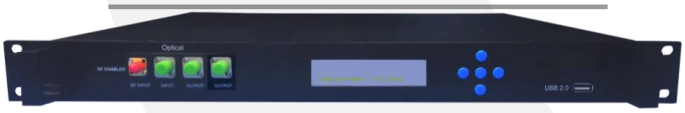
LT-DPSK-R



DEVICE

Lightwave Transmitter for Dual Phase Shift Key, up to 50 Gb/s

OVERVIEW

The Optilab LT-DPSK-R is a high-performance Binary Phase Shift Key (DPSK) lightwave transmitter designed for Optical Communication up to 40 Gb/s or beyond. The LT-DPSK-R incorporates an internal laser source (DFB or tunable laser) which couples into a low-drive & high-speed MZI modulator for BPSK/ DPSK modulation, with a broadband modulator driver. The LT-DPSK-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 remote control through RS232 communication can be performed. Contact Optilab for more information.

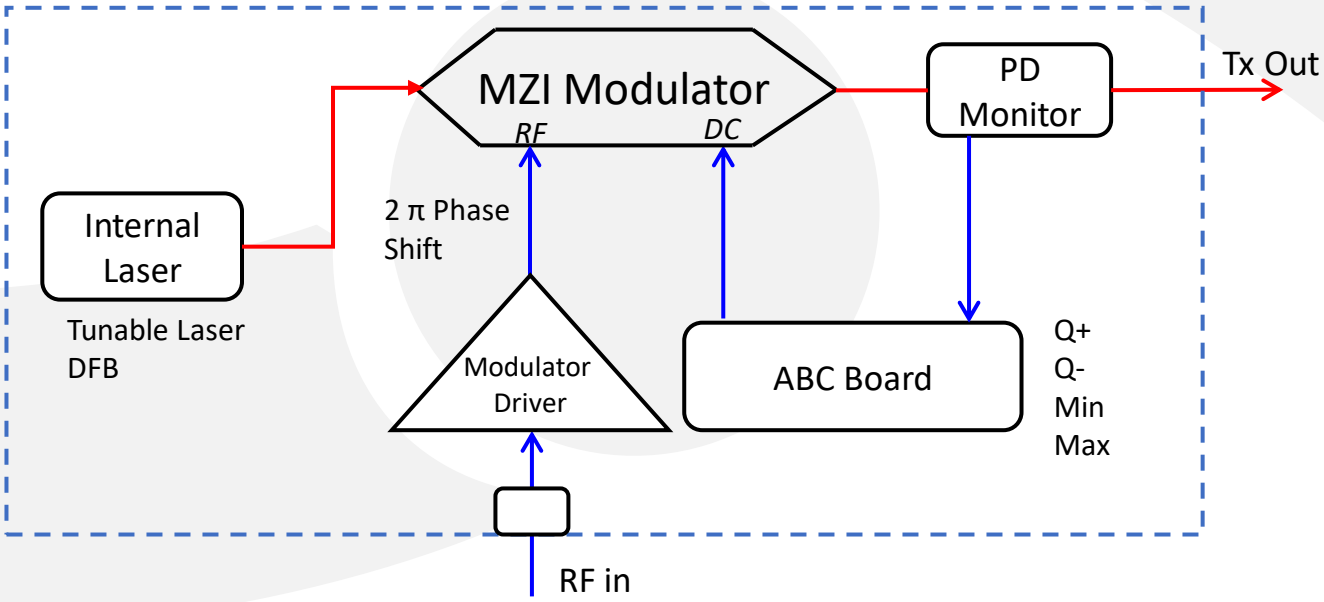
FEATURES

- Up to 50 Gb/s bit rate
- Integrated Modulator Driver
- Internal Automatic Bias Controller
- Low drive modulator for 2 π modulation
- Integrated DFB or Tunable Laser
- RS-232 Communication

USE IN

- Optical communications
- Free space communication
- Picosecond pulse generation
- Research and development
- Test and measurement

FUNCTIONAL DIAGRAM



LT-DPSK-R

SPECIFICATIONS

GENERAL

Bit Rate/Bandwidth	See Table 1.0
Internal Laser Source	See Table 2.0
Impedance	50 Ω typ.
Optical Output Power	6 dB typ.
Modulator Bias Mode	Automatic bias control modes
Input RF Voltage Range	250 mV to 750 mV typ.
Eye Crossing Adjustment	Available

MECHANICAL

Operating Temperature	-10 °C to +60 °C
Storage Temperature	-50 °C to +90 °C
Power Supply Requirements	110/220 VAC, 50-60 Hz
Optical Connectors	FC/APC, others optional
Input Fiber Type	PANDA PM
Output Fiber Type	SMF-28 standard; PANDA PM optional
RF Input Connector	See Table 1.0
Remote Control	USB 2.0 and LabVIEW software included
Alarm	Bias mode status, over temperature
Dimensions	1RU 482.6 (L) mm x 470.57 (W) mm x 44 (H) mm

TABLE 1.0 BANDWIDTH OPTIONS

Model #	Bit Rate	Analog Bandwidth	RF Connector
LT-DPSK-10-R	12 Gb/s min.	10 GHz typ.	SMA type
LT-DPSK-20-R	20 Gb/s min.	17 GHz typ.	K type
LT-DPSK-30-R	32 Gb/s min.	25 GHz typ.	K type
LT-DPSK-40-R	40 Gb/s min.	32 GHz typ.	K type
LT-DPSK-50-R	50 Gb/s min.	40 GHz typ.	V type

TABLE 2.0 LASWER SOURCE OPTIONS

Model #	Laser Source	Wavelength	Linewidth
LT-DPSK-R-D0	DFB D band	1310 ± 10 nm	3 MHz typ.
LT-DPSK-R-DC	DFB C band	1550 ± 10 nm	3 MHz typ.
LT-DPSK-R-DL	DFB L band	1580 ± 10 nm	3 MHz typ.
LT-DPSK-R-TC	Tunable C band	1527 - 1567 nm	2MHz typ. < 100 kHz Optional *
LT-DPSK-R-TL	Tunable L band	1570 – 1608 nm	2MHz typ. < 100 kHz Optional *
LT-DPSK-R-CL	Tunable C+L band	1527 - 1608 nm	2MHz typ. < 100 kHz Optional *

* Intrinsic linewidth

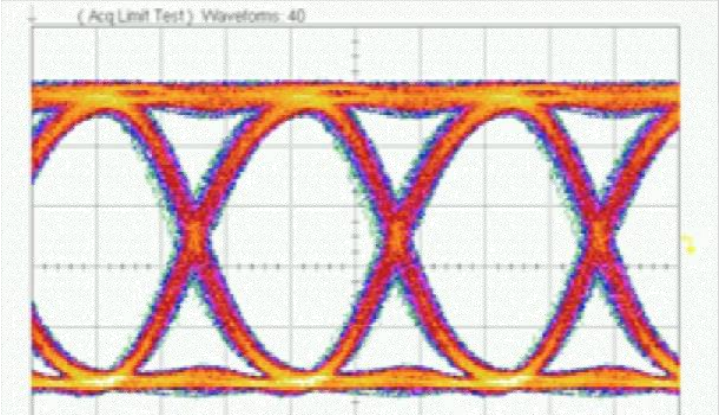
ORDERING OPTIONS

LT-DPSK-XX-R-YY-ZZ

XX Bandwidth: See Table 1.0
YY Laser Source: See Table 2.0
ZZ PM: Polarization Maintaining Output

LT-DPSK-R

EYE DIAGRAM

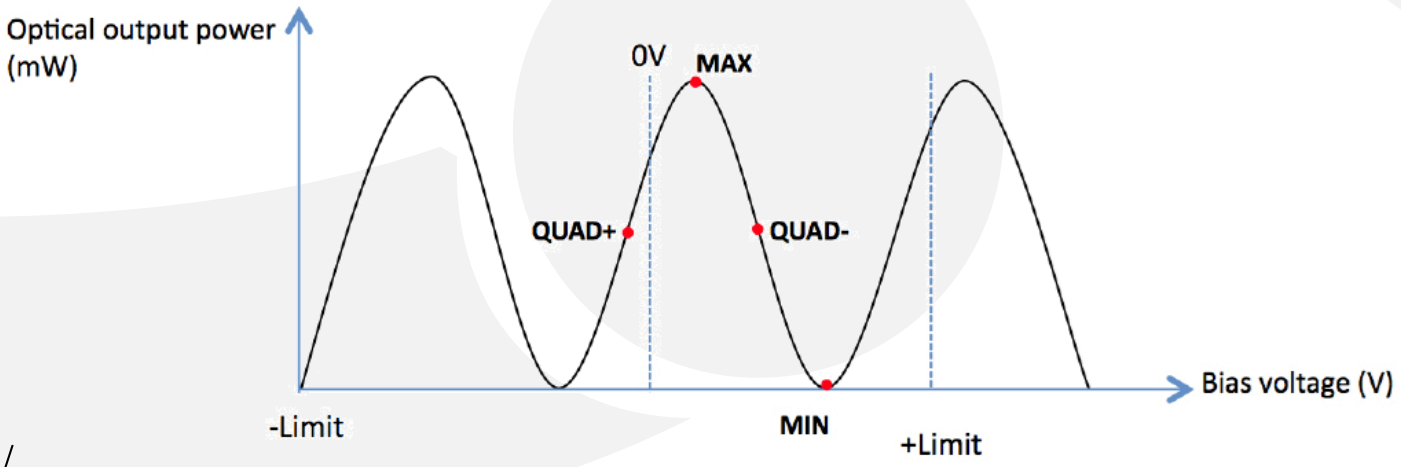


BIAS CONTROL MODE

Mode	Operation 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

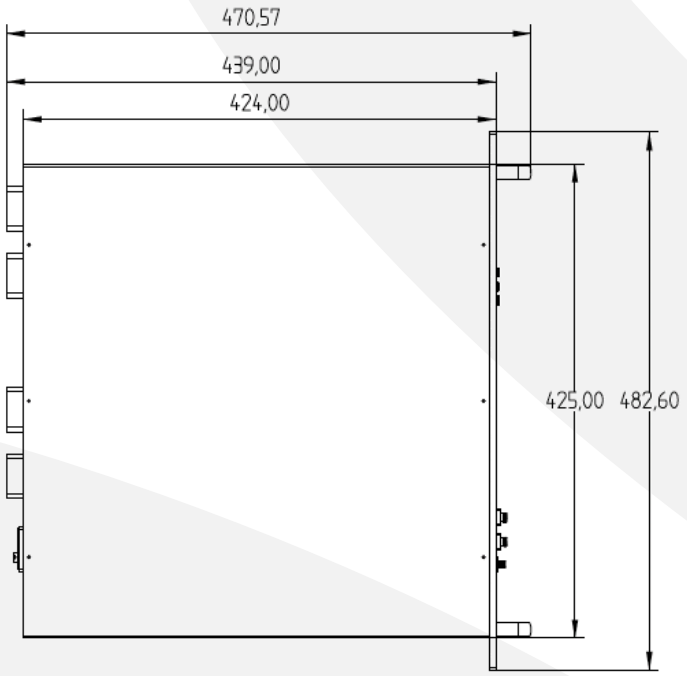
BIAS SETTING MODES FOR LT-DPSK-R

Based on a sophisticated phase measurement of a small dither signal, the LT-DPSK-R provides four selectable operating modes: quadrature (Quad +), inverted quadrature (Quad -), minimum (Min), or maximum (Max) points.



LT-DPSK-R

MECHANICAL DRAWING



RELATED ITEM

- LM-DPSK-R

The Optialb LM-DPSK-R is a high-performance Binary Phase Shift Key (DPSK) lightwave modulator solution designed for optical communication up to 40 Gb/s or beyond with optional user's external laser selection. Contact Optilab for more information.