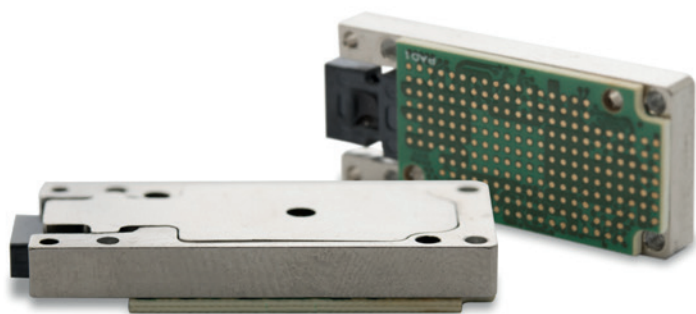


LightABLE 10G LGA 12TRX

Rugged optical transceiver



Product Summary

The *LightABLE™* LGA 12TRX optical module is a 12-lane, full-duplex, 10 Gbps per lane, optical transceiver in a small, ruggedized package.

The electrical interfaces are based on CML logic levels and support per channel data rates of up to 10.3125 Gbps (a total bandwidth of over 120 Gbps full-duplex).

The module integrates an industry-standard, 2x12 MT, optical interface compatible with 24-lane, parallel, optical fiber ribbon cables. The module uses an LGA-type electrical interface connector with 223 pins to attach to a host board.

The module contains a preprogrammed microcontroller for configuration – only power and high-speed signaling is required.

An I2C serial interface is provided to interrogate the module.

Rugged, low-SWaP,
multichannel optical
transceivers for
defense applications

Qualification

MIL-STD-883

- Vibration tests, Method 2007.3
- Mechanical shock tests, Method 2002.5
- Thermal shock tests, Method 1011.9
- Thermal cycling tests, Method 1010.8

JEDEC-STD-22

- Damp heat - Method A101

MIL-STD-810

- Cold storage tests, Method 502.5

Key Features

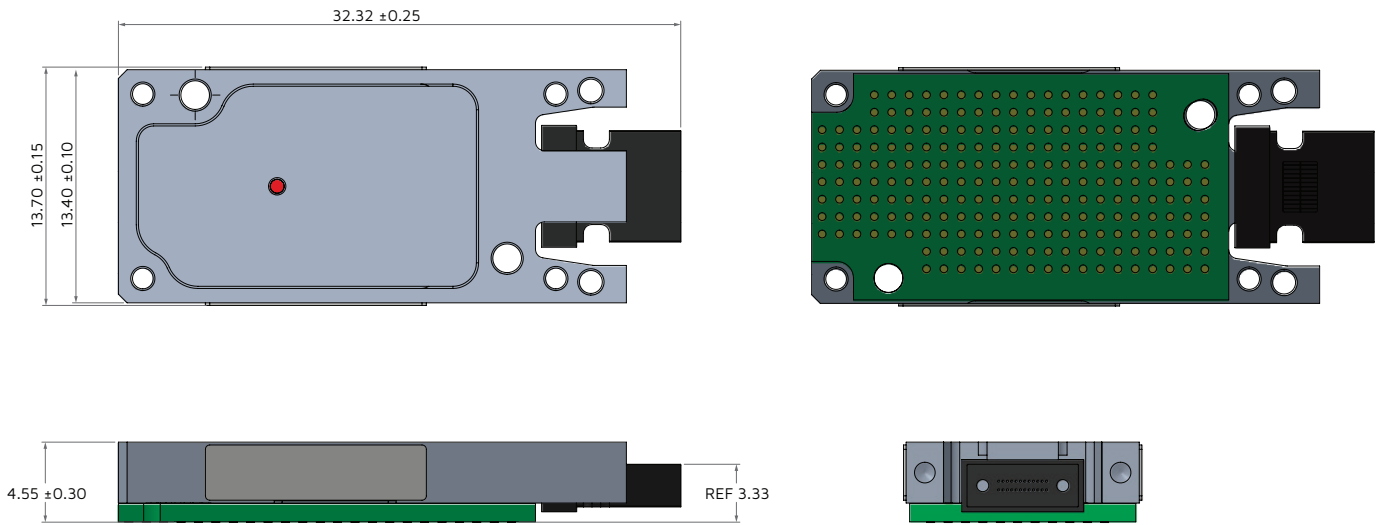
- Industrial temperature: -40 °C to 85 °C
- Sensitivity up to -9 dBm
- Up to 10.3125 Gbps per channel
- Short-reach 850 nm VCSELs
- Standard 2x12 MT optical interface
- 24 differential CML inputs
- 24 differential CML outputs
- LGA electrical interface
- Link distance up to 100 m (OM3 fiber)
- I2C communication interface
- Asynchronous channel operation
- Data protocol-agnostic, balanced code

Application

The *LightABLE* 12TRX LGA module targets the following applications:

- Phased array radars
- CCD/CMOS imaging systems
- FPGA serdes
- Any C4ISR systems requiring large amounts of data throughput

Mechanical layout



Part Numbering and Ordering Information

Part number	Description
Transceiver	
LLX12P4185321AA	LightABLE 10G 12TRX LGA transceiver
Accessories	
415-00019	1.20 mm 223-positions LGA interposer kit (interposer + 3 sets of 4 x screws (1/8 in., 5/16 in., and 7/32 in.), pan head Phillips, stainless steel, #0-80 thread)
700-00019	1.20 mm 223-positions LGA interposer (no screws)
600-00037	MT dust cap (included with the LightABLE).
322-00030	MicroClip
706-00003	Dowel pins
500-00262	15 cm MT-to-MT fiber cable
Evaluation boards and related parts	
LLK240018530001	LightABLE 10G 12TRX evaluation board
865-00003	I2C host adapter (AARDVARK)
500-00080	Optical ribbon cable MT (2x12)-to-MT 2x (1x12)
500-00017	12-fiber multimode breakout cable with MT-to-FC/PC connectors