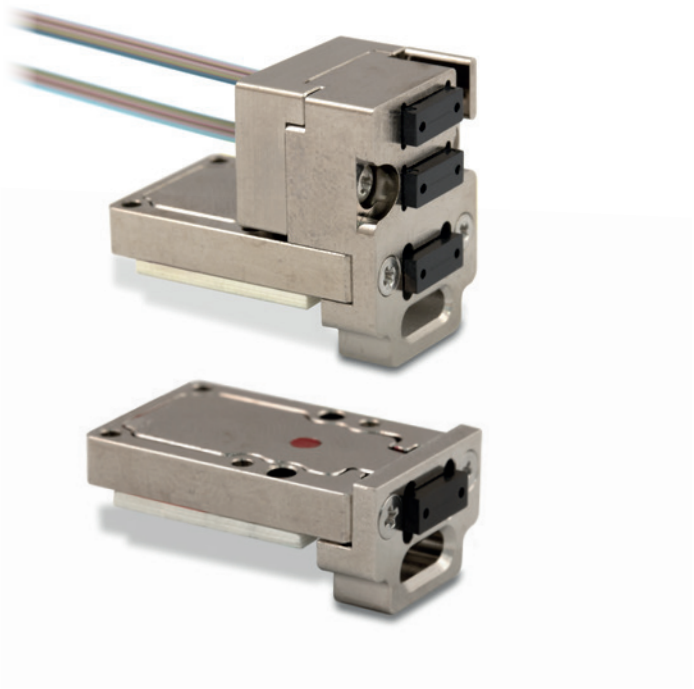
smiths interconnect

*Light*CONEX 28G 4TRX

Optical plug-in module connectors for VPX systems



Product Summary

The *Light*CONEX 28G 4TRX optical module is a four-lane, full-duplex, optical transceiver in a small, ruggedized package. It is available with a VITA 66.5-compliant Style C or Style D connector that mates with a respective style of VITA backplane aperture. Style D provides additional optical connectivity for any mid-board transceivers.

The electrical interfaces are based on CML logic levels and support per channel data rates of up to 28.05 Gbps (a total bandwidth of over 100 Gbps full-duplex).

The module integrates an industry-standard, 1×12 MT, optical interface using the QSFP28-compatible (4-TX/4-n.c./4-RX) channel configuration. The module uses an LGA-type electrical interface connector with 96 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.

VPX optical interconnect designed to meet the defense industry requirements

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 1010.9

MIL-STD-202

- Damp heat tests, Method 103B

MIL-STD-810

- Cold storage tests, Method 502.5

Key features

- Industrial temperature: –40 °C to 85 °C
- Up to 28.05 Gbps per channel
- Short-reach 850 nm VCSELs
- Standard, 1×12 MT, optical interface
- 4 differential CML inputs
- 4 differential CML outputs
- LGA electrical interface
- Link distance of up to 70 m with OM3 fiber, and 100 m with OM4
- I2C communication interface
- Asynchronous channel operation
- Data protocol-agnostic, balanced code

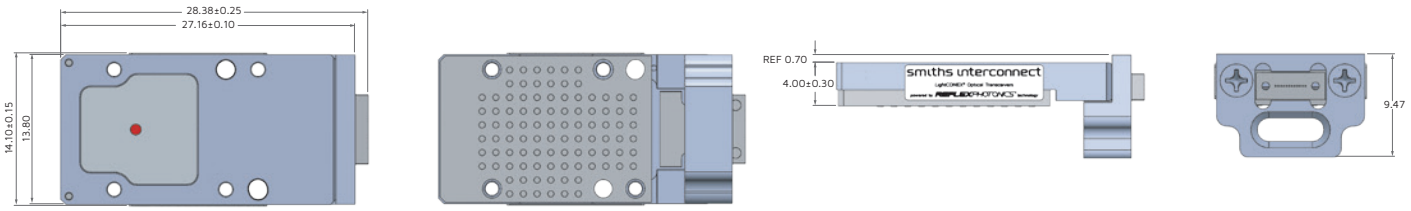
Application

The *Light*CONEX 28G 4TRX module targets the following VITA-style backplane applications:

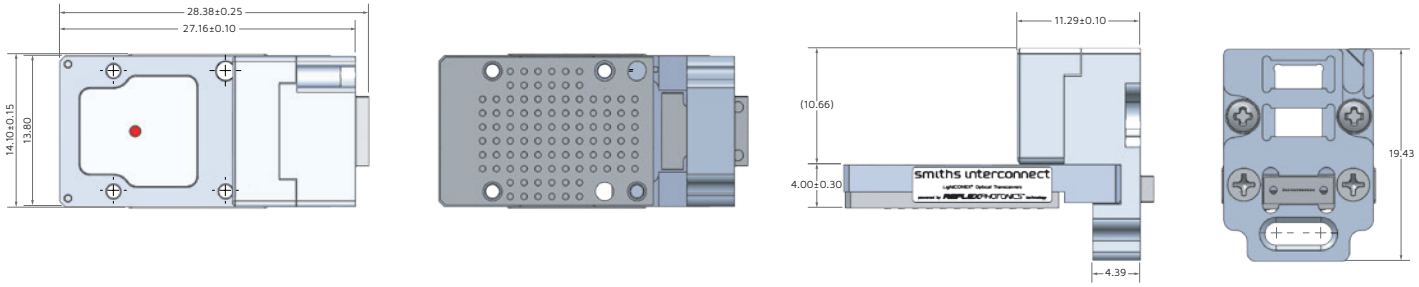
- Embedded VPX computing systems
- Phased array radar
- CCD/CMOS imaging sensor
- Data intensive applications

Mechanical layout

Style C



Style D



Part Numbering and Ordering Information

Part number	Description
Transceiver	
LCX04C428532502	*Light*CONEX 28G 4TRX Style C
LCX04D428532502	*Light*CONEX 28G 4TRX Style D
Accessories	
415-00041	1.55 mm 96-position interposer kit (700-00115 interposer +4 x $^{5}/_{16}$ in. screws)
700-00115	1.55 mm 96-position interposer (no screws)
399-00033	MT dust cap for Style C (included with the *Light*CONEX).
399-00037	MT dust cap for Style D (included with the *Light*CONEX).
Optical cables	
500-00256	1x12 plug-in 15 cm MT-to-MT optical cable
500-00262	2x12 plug-in 15 cm MT-to-MT optical cable

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