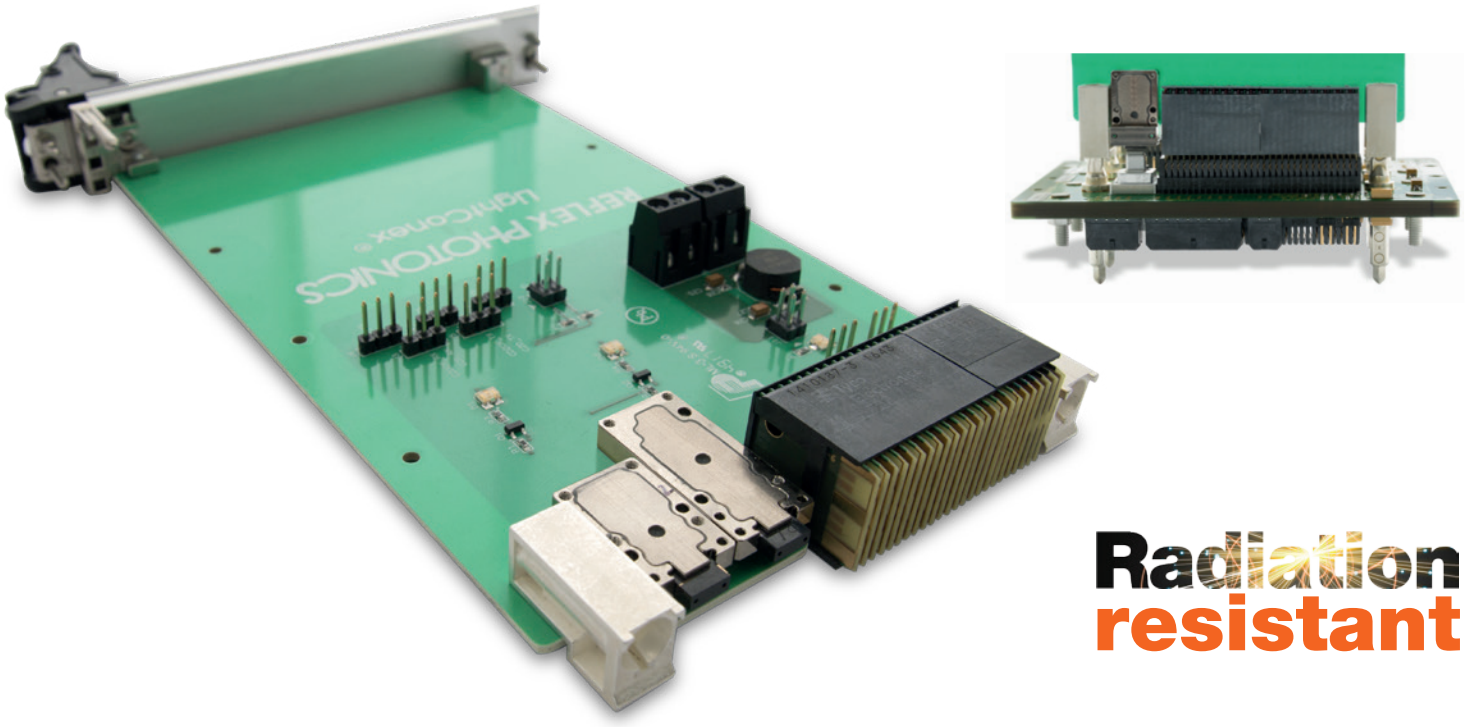
REFLEXPHOTONICS®

Radiation-resistant VPX blind mate optical interconnect.



SpaceCONEX SC 50G (full duplex) and 150G

The *Space*CONEX™ SC active blind mate optical interconnect is a revolutionary solution for VPX systems that includes a fixed plug-in module connector and a floating backplane connector compatible with proposed VITA 66.5 standard.
The low-profile plug-in module connector is screwed on the board edge through an interposer, saving board space and eliminating fiber cable handling. The backplane connector has a spring-loaded MT to ensure a secure MT to MT mating connection under extreme shock and vibration conditions.

Key advantages

- Compatible with the forthcoming VITA 66.5 standard.
- No fiber management.
- **Rugged**: withstand radiation doses >100 krad (Si) and qualified per MIL-STD 883 shock and vibration.
- **Expected life**: up to 20 years.
- **Cold start temperature**: –55 °C.
- **Performance**: up to 12.5 Gbps/lane from –40 °C to 100 °C
- **BER**: As low as 10^{-15}.
- **Low power consumption**: 85 mW/lane (<10 pJ per bit).

Configurations

- 4 TRX (50G, full duplex)
- 12 TX, 12 RX (150G)
- 12 TRX (150G, full duplex), in development.
- 24 TX, 24 (300G), in development.

Applications

- High-throughput communication satellites
- Internet of Space
- VPX single board computers.
- High I/O density, high BW communication links.

smiths interconnect

50G (full duplex) and 150G *Space*CONEX SC features

- 4 TX plus 4 RX lane per device (50G, full duplex).
- 12 TX or 12 RX lane per device (150G).
- Multimode 850 nm wavelength laser.
- Over 100 m reach on OM3 ribbon fiber.
- Active blind mate connection to the backplane.
- Fully RoHS compliant.
- Monitoring: LOS, RSSI, temperature etc.

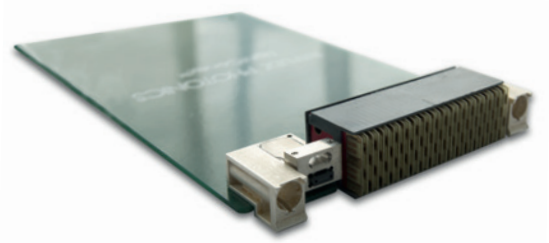
*Space*CONEX SC radiation resistant optical transceivers

The *Space*CONEX SC modules will be tested for heavy ions, protons and gamma rays.

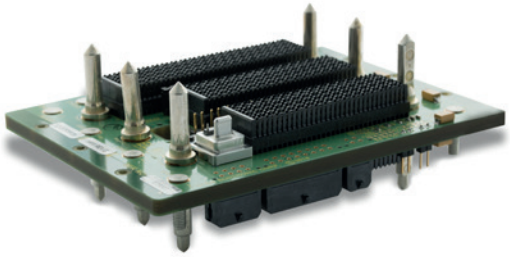
- Meet highest level SWaP requirement.
- **Heavy-ion** tested (Single Event Effect & Latch-up (SEE and SEL))
- **Cobalt 60 gamma rays** tested (MIL-STD-883G, method 1019.7) Total Ionizing Dose (TID).
- **High and low energy protons** tested (Total Non-Ionizing Dose (TNID)).
- Lot acceptance test, following ECSS process.

In addition, *Space*CONEX SC also pass standard *Light*ABLE™ qualifications.

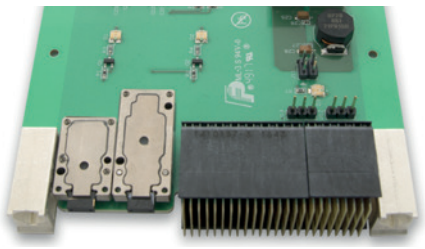
- **Vibration tests** per MIL-STD-883, Method 2007.3.
- **Mechanical shock** tests per MIL-STD-883, Method 2002.4.
- **Thermal shock** tests per MIL-STD-883, Method 1011.9.
- **Damp heat** tests per MIL-STD-202, Method 103B.
- **Cold storage** tests per MIL-STD-810, Method 502.5.
- **Thermal cycling** tests per MIL-STD-883, Method 1010.8.



3U VPX board with VITA 46 and *Space*CONEX SC plug-in connector.



ELMA 3U VPX backplane with *Space*CONEX SC backplane connector.



Side-by-side single 12-lane active module and 24-lane active modules on a 3U VPX board.

Close-up of the *Space*CONEX SC 12-lane plug-in module connector.

Close-up of the *Space*CONEX SC 24-lane backplane connector.

*Space*CONEX SC ordering information

Part Number	Product Description	Lanes	Bandwidth (Gbps/lane)	Sensitivity (dBm)	BER	Mounting	Operating Temperature (°C)
SCT12P518533001	*Space*CONEX SC 12TX Transmitter	12	12.5	n.a.	E^{-12}	RoHS LGA	–40 to 85
SCR12P518530301	*Space*CONEX SC 12RX Receiver	12	12.5	–12	E^{-12}	RoHS LGA	–40 to 85
SCX04P518532301	*Space*CONEX SC 4TRX Transceiver	4+4	12.5	–12	E^{-12}	RoHS LGA	–40 to 85
SCX12P518532301	*Space*CONEX SC 12TRX Transceiver	12+12	12.5	–12	E^{-12}	RoHS LGA	–40 to 85
ACCESSORIES							
TBD	*Space*CONEX SC adapter kit						
TBD	*Space*CONEX SC VITA 66.5 backplane connector kit						

www.reflexphotonics.com

Reflex Photonics Inc. – A Smiths Interconnect Company

16771 Chemin Ste-Marie
Kirkland QC H9H 5H3
Canada

For information on Reflex Photonics products, contact:

sales@reflexphotonics.com
+1 514 842 5179 (Montreal)
+1 484 484 1717 x259 (USA)

Reflex Photonics is certified to ISO 9001