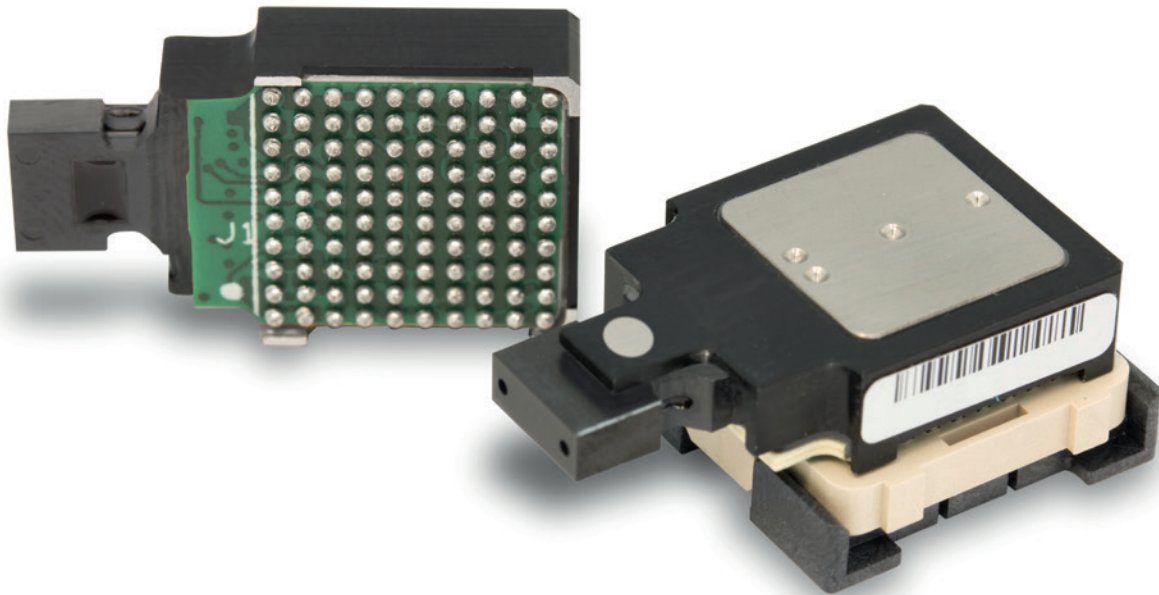


REFLEXPHOTONICS®

The most rugged high-performance embedded parallel optics.



LightSPACE 50G and 150G Radiation hardened optical transceivers

Key specifications

- **Small:** Less than 5 mm high.
- **Rugged:** withstand radiation doses >100 krad and qualified per MIL-STD 883 shock and vibration.
- **Expected life:** >20 years.
- **Sealed:** Moisture and thermal shock resistant.
- **Storage temperature:** -57°C to 125°C.
- **Performance:** up to 12.5 Gbps/lane from -40°C to 100°C
- **BER:** As low as 10^{-15} .
- **Sensitivity:** as high as -12 dBm.
- **Low power consumption:** 100 mW/lane.

LightSPACE product summary

Reflex Photonics' *LightSPACE*™ radiation hardened transceivers are engineered to withstand radiation doses >100 krad. The *LightSPACE* embedded optical modules are rugged devices offering high bandwidth (greater than 150 Gbps) in a chip-size package. Furthermore, all our devices are tested following ECSS process and lot acceptance testing, and component pre-screening is done for every batch of transceivers sold for this application.

Configurations

- SR12: 12 TX or 12 RX.
- SR4: 4 TRX.
- SR12: 12 TRX (Q4/2018).

50G and 150G LightSPACE features

- 4 TX plus 4 RX lane per device (50G).
- 12 TX or 12 RX lane per device (150G).
- Multimode 850 nm wavelength laser.
- Over 100 m reach on OM3 ribbon fiber.
- Standard MT parallel fiber connector.
- Surface mountable or pluggable.
- RoHS or tin-lead.
- Equalizer, pre-emphasis, adjustable output.
- Monitoring: LOS, RSSI, temperature etc.
- Integrated microcontroller.
- Available in industrial* (–40 °C to 100 °C) grade temperature range.

LightSPACE radiation hardened optical transceivers

The *LightSPACE* modules are 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, *LightSPACE* also pass standard *LightABLE™* 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.

LightSPACE ordering information

Part Number	Product Description	Lanes	Bandwidth (Gbps/lane)	Sensitivity (dBm)	BER	Mounting	Operating Temperature* (°C)
SMX04P518332101	SM 4TRX transmit/receive	4+4	12.5	–9	E ⁻¹²	RoHS Pluggable	–40 to 100
SMT12P518333001	SM 12TX transmitter	12	12.5	–9	E ⁻¹²	RoHS Pluggable	–40 to 100
SMR12P518330101	SM 12RX receiver	12	12.5	–9	E ⁻¹²	RoHS Pluggable	–40 to 100
SMX04P518432101	SM 4TRX transmit/receive	4+4	12.5	–9	E ⁻¹²	Leaded Pluggable	–40 to 100
SMT12P518433001	SM 12TX transmitter	12	12.5	–9	E ⁻¹²	Leaded Pluggable	–40 to 100
SMR12P518430101	SM 12RX receiver	12	12.5	–9	E ⁻¹²	Leaded Pluggable	–40 to 100
SMX04P518232101	SM 4TRX transmit/receive	4+4	12.5	–9	E ⁻¹²	Leaded SMT	–40 to 100
SMT12P518233001	SM 12TX transmitter	12	12.5	–9	E ⁻¹²	Leaded SMT	–40 to 100
SMR12P518230101	SM 12TX transmitter	12	12.5	–9	E ⁻¹²	Leaded SMT	–40 to 100

*Industrial part qualified between –40 °C and 85 °C at 10.3125 Gbps.

THE *Light* on Board® Company

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Reflex Photonics is certified to ISO 9001

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