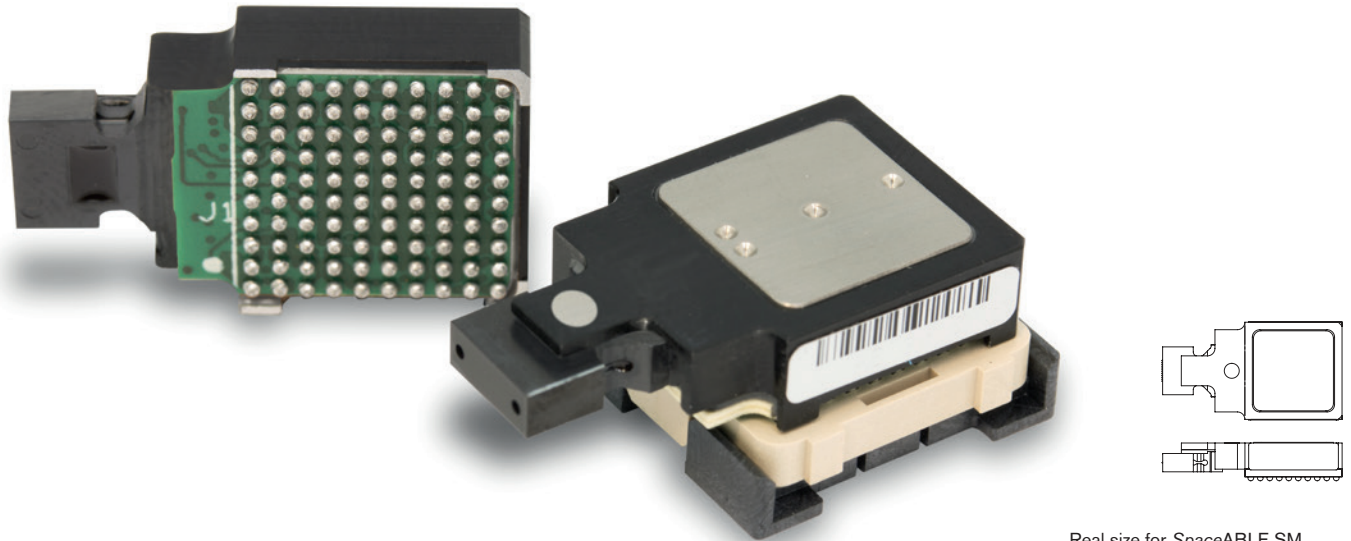


REFLEXPHOTONICS®

The most rugged high-performance embedded parallel optics.



Real size for SpaceABLE SM
50G and 150G.

SpaceABLE SM 50G and 150G Radiation-resistant optical transceivers

Key advantages

- **Small:** Less than 5 mm high.
- **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) **NEW!**
- 12 TX or 12 RX (150G) **NEW!**

Applications

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

SpaceABLE SM product summary

Reflex Photonics' SpaceABLE™ SM radiation resistant transceivers are engineered to withstand radiation doses >100 krad (Si). The SpaceABLE SM 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.

THE **Light** on Board® Company

50G and 150G SpaceABLE SM 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.
- Monitoring: LOS, RSSI, temperature etc.
- Available in industrial (–40°C to 100°C) grade temperature range.

SpaceABLE SM radiation resistant optical transceivers

The *SpaceABLE™* SM modules are tested under heavy ions, protons, and Cobalt 60 electrons sources.

- Meet highest level SWaP requirement.
- **Heavy-ion** tested (Single Event Effect & Latch-up (SEE and SEL))
- **Cobalt 60 electron source** 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, *SpaceABLE SM* 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.

SpaceABLE SM ordering information

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

THE *Light* on Board® Company

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Reflex Photonics is certified to ISO 9001

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