The most rugged high-performance embedded parallel optics.

**Key advantages**

- **Small**: Less than 6 mm high (module and interposer)
- **Rugged**: Withstand radiation doses >100 krad (Si) and qualified per MIL-STD 883 shock and vibration.
- **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**: –9 dBm
- **Low power consumption**: 100 mW/lane

**Configurations**

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

**Applications**

- High-throughput communication satellites
- LEO satellite constellations
- GEO satellites (with extended lifetime option)
- Board-to-board and payload-to-payload connections
- High I/O density, high BW communication links

**SpaceABLE SL product summary**

The low profile SpaceABLE™ SL screw-in module (4.5 mm) mounts to the board via an LGA connector. It is offered as a (4+4)-lane transceiver, a 12-lane transmitter, or a 12-lane receiver. All modules operate at 12.5 Gbps per lane from –40 °C to 100 °C at ultra-low bit error rates of $10^{-15}$. The optical module includes equalizers and pre-emphasis to compensate long traces; these features can be turned off for short traces (less than 10 cm) to reduce power consumption.
50G (full duplex), 150G, 150G (full duplex) and 300G

**SpaceABLE SL features**

- Multimode 850 nm wavelength laser
- Over 100 m reach on OM3 ribbon fiber
- Standard MT parallel fiber connector
- RoHS
- Equalizer, pre-emphasis, adjustable output
- Monitoring: LOS, RSSI, temperature etc.
- Integrated microcontroller
- Available in industrial (−40°C to 100°C) grade temperature range

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

- **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)).

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**SpaceABLE SL ordering information**

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Product Description</th>
<th>Lanes</th>
<th>Bandwidth (Gbps/lane)</th>
<th>Sensitivity (dBm)</th>
<th>Mounting</th>
<th>Operating Temperature (°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SLT12P918533001</td>
<td>SpaceABLE 12TX transmitter</td>
<td>12</td>
<td>12.5</td>
<td>n.a.</td>
<td>RoHS LGA</td>
<td>−40 to 100</td>
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<tr>
<td>SLR12P918530101</td>
<td>SpaceABLE 12RX receiver</td>
<td>12</td>
<td>12.5</td>
<td>−9</td>
<td>RoHS LGA</td>
<td>−40 to 100</td>
</tr>
<tr>
<td>SLX04P918532101</td>
<td>SpaceABLE 4TRX transmit/receive</td>
<td>4+4</td>
<td>12.5</td>
<td>−9</td>
<td>RoHS LGA</td>
<td>−40 to 100</td>
</tr>
</tbody>
</table>

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THE Light on Board® Company

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Reflex Photonics is certified to ISO 9001

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