

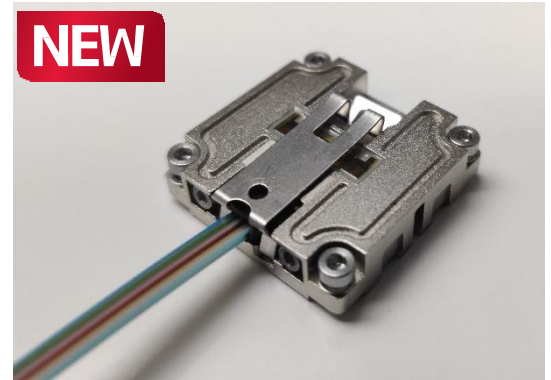
# Rugged Leap® On-Board Transceiver (12TRx)

## 192Gbps High-Density Optical Module

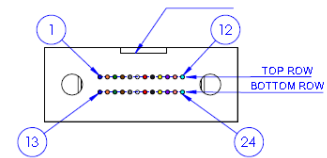
### RUGGED, SMALL, FAST, POWER EFFICIENT

Amphenol AOP's 192Gbps Leap® On-Board Transceiver is the fastest, smallest and most cost effective optical transceiver module in the military and aerospace industry.

- Data-rates up to 16Gbps per channel ; 12 channels
- 192Gbps total throughput requires:
  - 1"x1" of board space
  - 3.5W of power
- Case operational temperature [-40°C;+85°C]
- Shock MIL-STD 883: Method 2002.4 (500g; 1ms)
- Vibe MIL-STD 883: Method 2007.3 (20g)
- Fail-safe fixation on interposer with 4 screws
- Plug&Play transceiver (incl. power conversion)



\*Transceiver is shown with 101410369 electrical socket



\*MT Ferule 24

#### FEATURES

- 1" x 1" layout grid
- Ethernet 100GBASE-SR4 compliance (per quad)
- Compatible with Amphenol MT optical cables
- Compatible with Amphenol socket
- Two wire control and diagnostic interface
- Data rate transparent from 1.25Gbps to 16Gbps
- Heat sink design options
- Class 1M laser version available
- Bit Error Rate (1e-12) requires no or limited FEC
- Programmable input equalization
- Programmable output amplitude and emphasis

#### BENEFITS

- Transceivers can be placed in 2-dimensional layout grid with 1" pitch between adjacent transceivers
- Uses 2.5x less board space than QSFP28 (12-channels)
- Ethernet transmission distance up to 100m (multi mode fiber)
- Uses off-the-shelf MT optical interface
- No through holes to connect transceiver – one side of board only
- Easy to install
- Allows for transceiver optimization and monitoring connection discovery, channel diagnostics, and signal status monitoring
- Supports non-standard protocols in this range of datarates.
- Select from a number of pre-fabricated or customized designs to meet your system needs
- Water cooled compatible version available
- Fail safe operation that meets all safety requirements
- Lower system latency and better system performance
- 11dB of signal peaking at 12GHz to compensate for suboptimal signal condition
- Compensate for PCB traces loss for proper signal conditioning

## TECHNICAL INFORMATION

### MATERIAL

- Electrical interface mates with Amphenol Electrical Socket: 10140369-101LF
- Optical interface mates with Amphenol Optical Cable: 10141993-xxx
- RoHS 6/6 compliant

### ELECTRICAL PERFORMANCE

- Power Supply Voltage: 3.3V
- BER < 10<sup>-12</sup>
- Lanes per device: 12 Transmit and 12 Receive
- Power Consumption: 3.5W (typ.)
- Transmitter Type: 850nm VCSEL Laser
- Receiver Type: PIN Photodiode
- Laser Class 1M or 3B versions available

### ENVIRONMENTAL

- Case Operating Temperature: -40°C to +85°C
- Conformal coating
- Shock MIL-STD 883: Method 2002.4 (500g; 1ms)
- Vibe MIL-STD 883: Method 2007.3 (20g)

### PACKAGING

- Individual Blister Package

### SUPPORTED STANDARDS

- 100GBASE-SR4 per 802.3 (per channel)
- Proprietary 16Gbp links
- PCIe Gen 4
- SAS 4.0
- EDR Infiniband

### TARGET MARKETS/APPLICATIONS



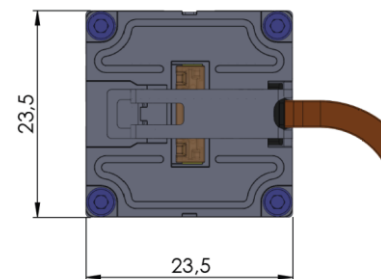
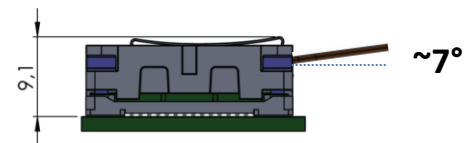
Embedded avionics



Radar



Ground communication



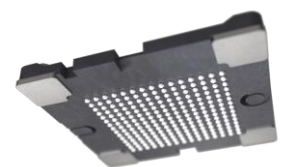
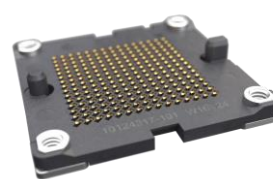
Dimensions (incl. electrical socket)

## PART NUMBER SELECTOR

10124588	-	x		y		z
		Rugged	A	Laser Class 1M	3	
				Laser Class 3B	1	
No heat sink for customer or water cooled thermal solutions						0
Short height air cooled heat sink – 23.5x23.5x14.6mm (LxHxh)						1
Medium height air cooled heat sink – 23.5x23.5x17.6mm (LxHxh)						2
Pillar based tall height air cooled heat sink – 23.5x23.5x23.4mm (LxHxh)						4
Large flat air cooled heat sink – 53.0x36.5x12.6mm (LxHxh)						5
Pillar based tall height air cooled heat sink 2 – 23.5x23.5x31.7mm (LxHxh)						6
Fin based tall height air cooled heat sink – 23.5x23.5x31.7mm (LxHxh)						7
“Wings” form air cooled heat sink – 33.2x55.4x12.6mm (LxHxh)						8
“Block” form air cooled heat sink – 33.2x38.0x15.6mm (LxHxh)						9
“Flat adapter” for customized or water cooled – 28.4x28.4x12.0mm (LxHxh)						B
“Cubic” form air cooled heat sink – 37.4x49.4x24.4mm (LxHxh)						C
Flat heat sink adapter						D

Top - LGA Springs

Bottom - BGA Solder



LEAP OBT socket  
10140369-101 (lead free or leaded)

For more information,  
Please contact: [marketing@amphenol-aop.com](mailto:marketing@amphenol-aop.com)

**Disclaimer**  
Please note that the above information is subject to change without notice.