Active Optics Products

Amphenol

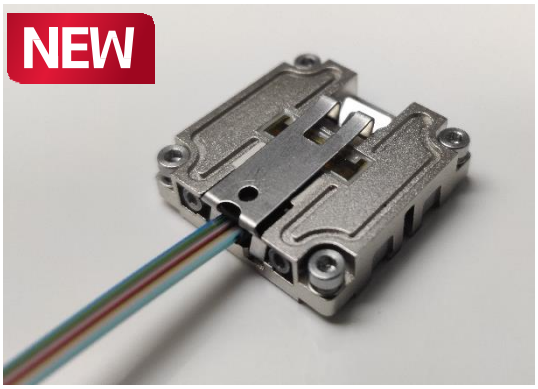
Rugged Leap® On-Board Transceiver (12TRx)

192Gbps High-Density Optical Module

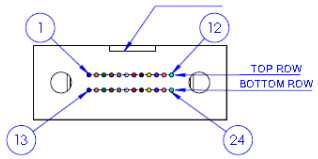
RUGGED, SMALL, FAST, POWER EFFICIENT

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	BENEFITS
▪ 1" x 1" layout grid	▪ Transceivers can be placed in 2-dimensional layout grid with 1" pitch between adjacent transceivers ▪ Uses 2.5x less board space than QSFP (12-channels)
▪ Ethernet 100GBASE-SR4 compliance (per quad)	▪ Ethernet transmission distance up to 100m (multi mode fiber)
▪ Compatible with Amphenol MT optical cables	▪ Uses off-the-shelf MT optical interface
▪ Compatible with Amphenol socket	▪ No through holes to connect transceiver – one side of board only ▪ Easy to install
▪ Two wire control and diagnostic interface	▪ Allows for transceiver optimization and monitoring connection discovery, channel diagnostics, and signal status monitoring
▪ Data rate transparent from 1.25Gbps to 16Gbps	▪ Supports non-standard protocols in this range of datarates.
▪ Heat sink design options	▪ Select from a number of pre-fabricated or customized designs to meet your system needs ▪ Water cooled compatible version available
▪ Class 1M laser version available	▪ Fail safe operation that meets all safety requirements
▪ Bit Error Rate (1e-12) requires no or limited FEC	▪ Lower system latency and better system performance
▪ Programmable input equalization	▪ 11dB of signal peaking at 12GHz to compensate for suboptimal signal condition
▪ Programmable output amplitude and emphasis	▪ Compensate for PCB traces loss for proper signal conditioning

TECHNICAL INFORMATION

MATERIAL

- Electrical interface mates with Amphenol Electrical Socket: 10140369
- Optical interface mates with Amphenol Optical Cable: Contact us

ELECTRICAL PERFORMANCE

- Power Supply Voltage: 3.3V
- Bit Error Rate @10 Gbps, PRBS31
- 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

- RoHS 6/6 compliant
- 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

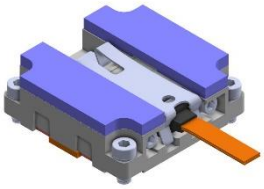
- 10GbE
- Proprietary 16Gbp links
- PCIe Gen 4
- SAS 4.0
- Infiniband FDR

TARGET MARKETS/APPLICATIONS

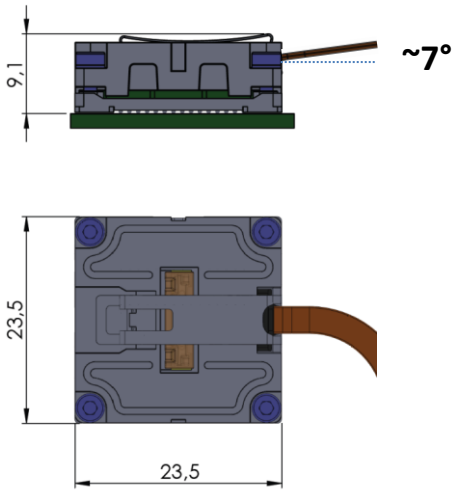
Embedded avionics

Radar

Ground communication



LEAP OBT with flat adapter heat sink (configuration: D)



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 (Lxlxh)	1
Medium height air cooled heat sink – 23.5x23.5x17.6mm (Lxlxh)	2
Pillar based tall height air cooled heat sink – 23.5x23.5x23.4mm (Lxlxh)	4
Pillar based tall height air cooled heat sink 2 – 23.5x23.5x31.7mm (Lxlxh)	6
Fin based tall height air cooled heat sink – 23.5x23.5x31.7mm (Lxlxh)	7
"Wings" form air cooled heat sink – 33.2x55.4x12.6mm (Lxlxh)	8
"Block" form air cooled heat sink – 33.2x38.0x15.6mm (Lxlxh)	9
"Flat adapter" for customized or water cooled – 28.4x28.4x12.0mm (Lxlxh)	B
"Cubic" form air cooled heat sink – 37.4x49.4x24.4mm (Lxlxh)	C
Flat adapter – 23.5x23.5x8.2mm (Lxlxh)	D

Top - LGA Springs

Bottom - BGA Solder

Amphenol LGA-BGA socket 10140369 (lead free or leaded)

For more information,
Please contact: marketing@amphenol-aop.com