Active Optics Products

Amphenol

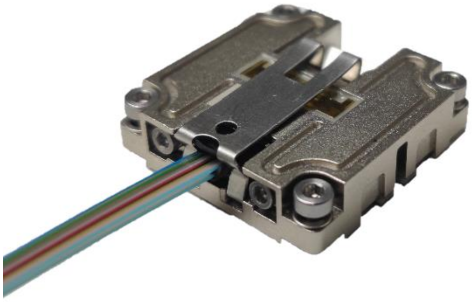
Leap® On-Board Transceiver

300Gb/s High-Speed Optical Module

SMALL, FAST AND POWER EFFICIENT

Amphenol AOP 300Gb/s Leap® High-Speed Optical Module is faster, smaller, more cost and power efficient than most conventional datacenter interconnects.

- Capable of speeds up to 25Gb/s at distances up to 70m
- 300Gb/s total throughput requires only 1sq inch of board space and 5.4W of power
- Optical cable can be routed above around other components in the design



*Transceiver is shown with attached optical cable. 101410369 electrical socket is not shown.

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 QSFP28 (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 300Mb/s to 25.8Gb/s	▪ Supports non-standard protocols in this range of datarates. Note CDR operational bit rate of 25-25.8Gb/s
▪ Integrated heat sink design	▪ 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
▪ Enhanced 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: 10140369-101LF
- Optical interface mates with Amphenol Optical Cable: Contact us

ELECTRICAL PERFORMANCE

- Power Supply Voltage: 3.3V
- Bit Error Rate @ 25.78125 Gb/s, PRBS31 (CDR ON): < 10^{-12}
- Lanes per device: 12 Transmit and 12 Receive
- Power Consumption: 5.4W (typ.)
- Transmitter Type: 850nm VCSEL Laser
- Receiver Type: PIN Photodiode

ENVIRONMENTAL

- RoHS 6/6 compliant
- Laser Class 1M or 3B versions available
- Case Operating Temperature: 0°C to +70°C
- Conformal coating option

PACKAGING

- Individual Blister Package

SUPPORTED STANDARDS

- 100GBASE-SR4 per 802.3 (per channel)
- FDA: 0312716
- TUV: 21246478
- UL: E251142-191
- Proprietary 25Gb/s links
- PCIe Gen 4
- SAS 4.0
- 100GBase-SR4
- EDR Infiniband

TARGET MARKETS/APPLICATIONS

Network systems

Radars

Ground communication

Industrial control

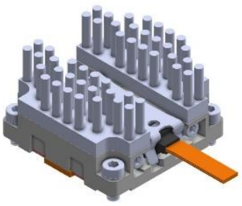
PART NUMBER SELECTOR

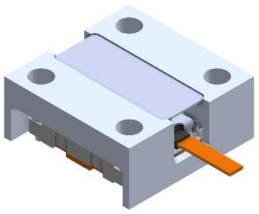
10124588	-	x	y	z

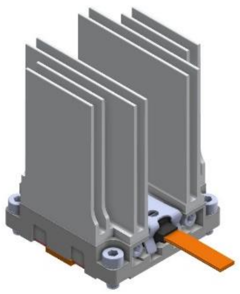
x	
Standard	3
Conformal coating	4

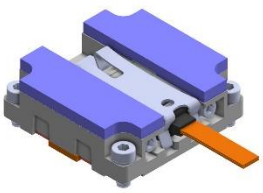
y	
Laser Class 1M	3
Laser Class 3B	1

z	
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









For more information,
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