

# LEAP<sup>®</sup> ON-BOARD TRANSCEIVER

## 300Gb/s High Speed Optical Module

### SMALL, FAST AND POWER EFFICIENT

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

- Capable of speeds up to 25Gb/s and distances up to 100m
- 300Gb/s total throughput requires only 1 sq in of board space and 5.4W of power
- Optical cable can be routed above or around other components in the design
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#### TARGET MARKETS



#### 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 1.25Gb/s to 25.8Gb/s
- Integrated heat sink design
- Class 1M laser version available
- Enhanced 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. Note CDR operational bit rate of 25-25.8Gb/s
- 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

### ELECTRICAL PERFORMANCE

- Power Supply Voltage: 3.3V
- Bit Error Rate @ 25.78125 Gb/s, PRBS31 (CDR ON): < 10<sup>-12</sup>
- 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

### 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



Industrial Controls & Instruments



Datacenter  
Network Storage System  
Supercomputer

## PART NUMBER SELECTOR

BASE PART NUMBER	2	Y	Z
300Gb/s High speed module	10124588	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 (lxlh)	1
Medium height air cooled heat sink – 23.5x23.5x17.6mm (lxlh)	2
Pillar based tall height air cooled heat sink – 23.5x23.5x23.4mm (lxlh)	4
Large flat air cooled heat sink – 53.0x36.5x12.6mm (lxlh)	5
Pillar based tall height air cooled heat sink 2 – 23.5x23.5x31.7mm (lxlh)	6
Fin based tall height air cooled heat sink – 23.5x23.5x31.7mm (lxlh)	7
“Wings” form air cooled heat sink – 33.2x55.4x12.6mm (lxlh)	8
“Block” form air cooled heat sink – 33.2x38.0x15.6mm (lxlh)	9
“Flat adapter” for customized or water cooled – 28.4x28.4x12.0mm (lxlh)	B
“Cubic” form air cooled heat sink – 37.4x49.4x24.4mm (lxlh)	C

