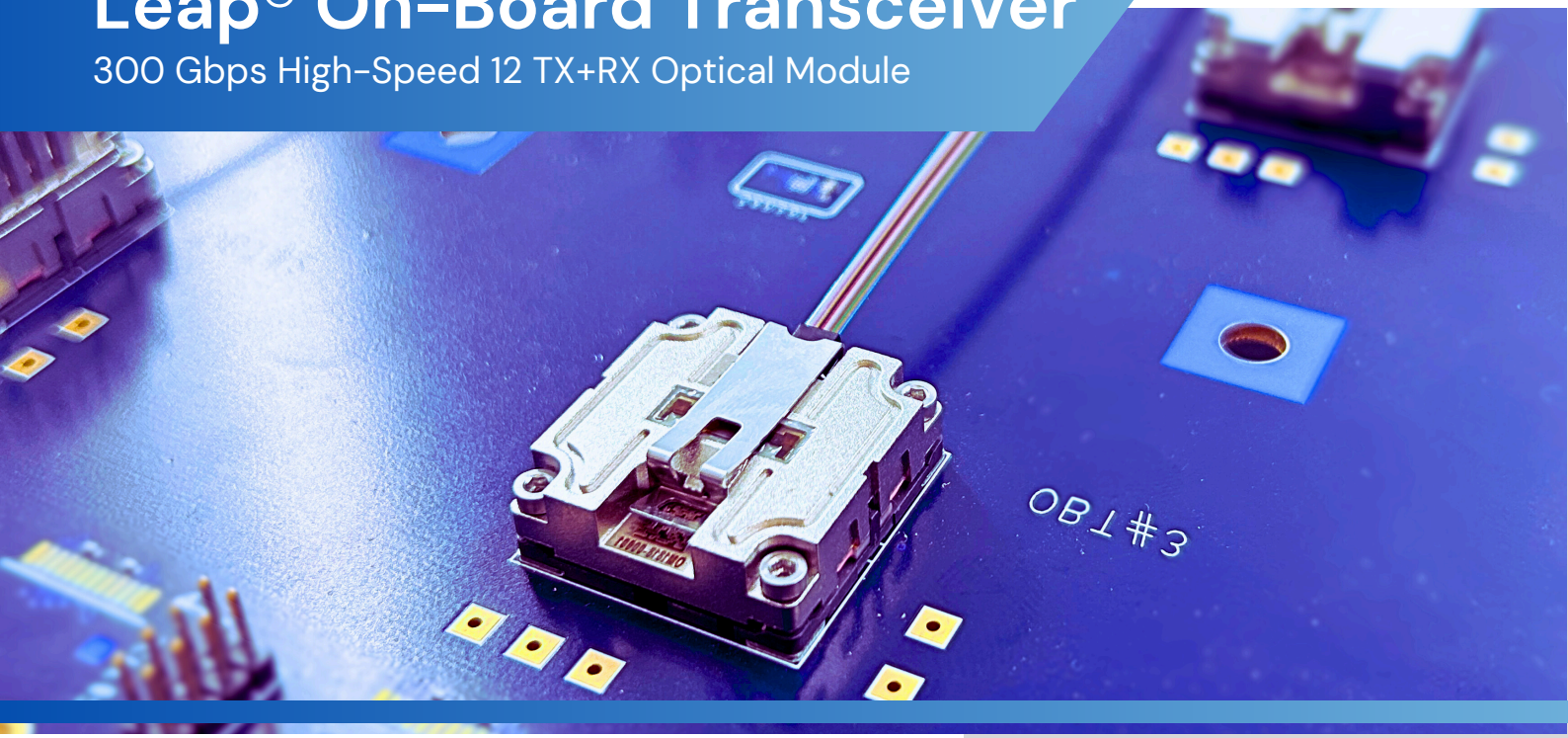
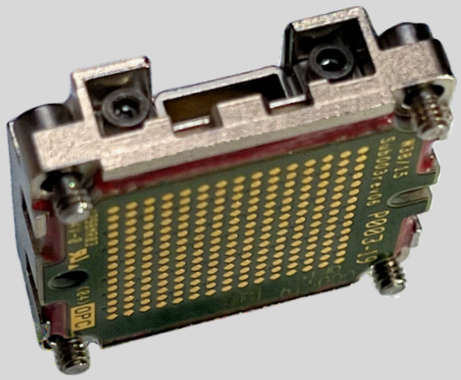
Leap® On-Board Transceiver

300 Gbps High-Speed 12 TX+RX Optical Module



Amphenol AOP **300 Gbps Leap® OBT** High-Speed 12 TX+RX Optical Module is **faster, smaller, more cost and power efficient than most conventional datacenter interconnects.** With its 12 channels working independently and each channel delivering up to 25 Gbps, it is versatile, aggregating up to 300 Gbps. It is the best choice for high density projects that need to take advantage of board space while being as close as possible to the FPGA.



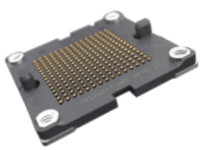
Key Features

12-channel module capable of data rates from 1.25 Gbps up to 26.3 Gbps at any range from 0 °C to 70 °C.

300 Gbps total throughput requiring **only 1 sqin (25 x 25 mm) of board space and 5.8 W of power with CDR enabled.**

Heat dissipation towards the top through many options of heat sinks or cold plates - water cool compatible.

Optical cable can be routed above and around other components for a versatile and flexible the design. Mounts easily on an Amphenol LGA/BGA socket interposer.



Applications

- Network Systems
- Artificial Intelligence & HPC
- 5G Base Stations
- Telescope & Imaging
- Industrial Control
- Ground Communication
- Particle Accelerators

Contact Us

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Amphenol Active Optics Products

	Features	Benefits
1	1" x 1" layout grid	Optical module can be placed in 2-dimensional layout grid with 1" pitch between adjacent modules. Uses 2.5x less board space than QSFP28
2	Ethernet 100GBASE-SR4 compliance (per quad) Compatible with standard MT optical cables	Ethernet transmission covering 70 m or more (MM fiber) Uses off-the-shelf MT optical interface
3	Compatible with Amphenol socket	Easy to install: a highly space-efficient solution for electrically connecting 225 contacts
4	Two-wire control and diagnostic interface (I²C)	Allows for transceiver optimization and monitoring connection discovery, channel diagnostics, and signal status monitoring
5	Data rate transparent from 1.25 Gbps to 26.3 Gbps	Supports non-standard protocols in this range of datarates. CDR operational bit rate of 25.3-26.3 Gbps
6	Integrated heat sink design	Select from a number of pre-fabricated or customized designs to meet your system needs. Water cooled compatible version available
7	Class 1M laser laser version available	Fail safe operation that meets all safety requirements
8	Programmable input equalization	Compensate up to 11 dB insertion loss at 12GHz
9	Programmable output amplitude and de-emphasis	Compensate for PCB traces loss for proper signal conditioning
10	Enhanced Bit Error Rate 10^{-12} requires no FEC	Lower system latency and better system performance

Supported Standards

- 100GBASE-SR4 per 802.3(per quad)
- Proprietary 25Gb/s links
- PCIe Gen 4
- SAS 4.0
- EDR Infiniband

Environmental

- RoHS compliant
- Case operating temperature: 0 °C to 70 °C
- Shock MIL-STD 883: Method 2002.4 (500 g; 1 ms)
- Vibe MIL-STD 883: Method 2007.3 (20 g)
- FDA: 0312716
- TUV: 21246478
- UL: E251142-191

Packaging

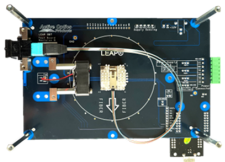
- Multipart Blister Package

Dimensions

- 23,5 x 23,5 x 9,1 mm (without heat sink)

Evaluation Kit

Test various scenarios in a very simply and effective way, increasing the time to market. Comes together with Application Notes & Graphical User Interface (GUI). Get in touch for more on **P/N: 10132378-XYZ.**



Electrical Performance

- Power Supply Voltage: 3.3 V only
- BER < 10^{-12} at 25.78 Gbps, PRBS31
- Lanes per device: 12 Transmit and 12 Receive
- Power Consumption: 5.8 W (typ.) all features ON
- Transmitter Type: 850 nm VCSEL Laser
- Receiver Type: PIN Photodiode

Part Number Selector

10124588 - X Y Z

Coating
3 - Standard
4 - Conformal Coating

Laser Class
1 - Laser Class 3B
3 - Laser Class 1M

Heat Sink Type (LxWxH) mm
0 - none
1 - short height: 23.5x23.5x14.6
2 - medium height: 23.5x23.5x17.6
4 - pillar tall 1: 23.5x23.5x23.4
6 - pillar tall 2: 23.5x23.5x31.7
7 - fin based: 23.5x23.5x31.7
8 - wings form: 33.2x55.4x12.6
9 - block form: 33.2x38.0x15.6
B - flat adapter water cool: 28.4x28.4x12.0
C - cubic form: 37.4x49.4x24.4
D - flat adapter: 23.5x23.5x8.2

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