

The logo features the word "Amphenol" in a bold, white, sans-serif font on the left. To its right is a stylized graphic of a grid of white lines forming a diamond shape. To the right of this graphic, the words "Active Optics" are stacked above "Products", both in a white, italicized, sans-serif font. The background is a vibrant blue with a grid of white dots and faint binary code (01010101) visible in the upper left.

**Amphenol** *Active Optics*  
*Products*

ENABLING THE ELECTRONICS REVOLUTION

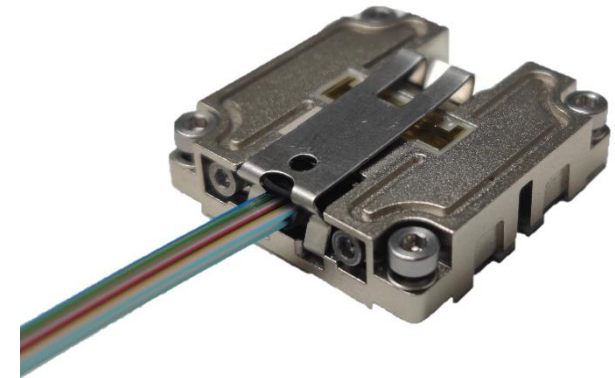
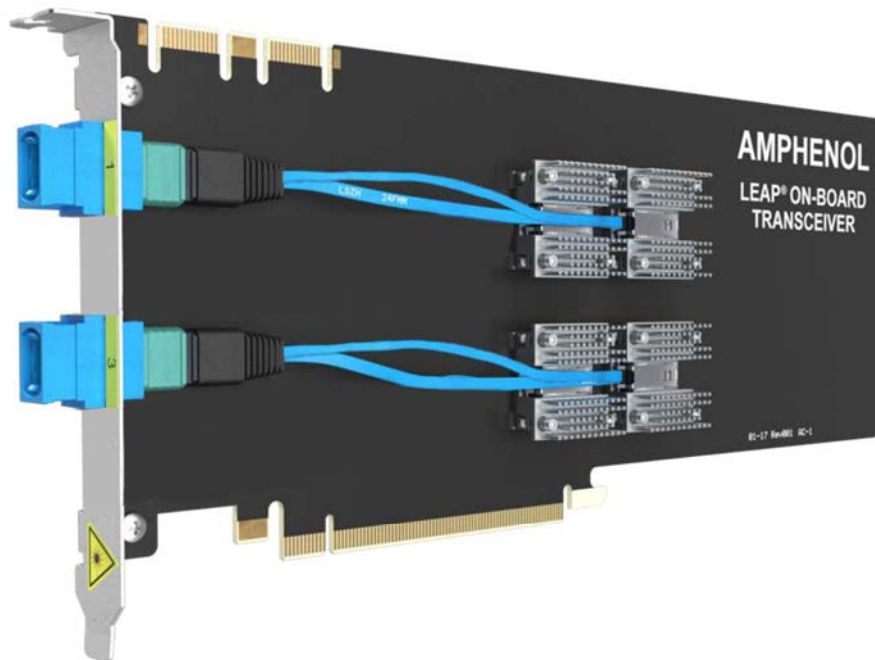
# Leap® On-Board Transceiver

Product Presentation

# Leap<sup>®</sup> On-Board Transceiver

300Gb/s Leap<sup>®</sup> OBT

- Solves Faceplate Density and Interconnect Challenges
- Networking and HPC applications
- 100m reach



# Leap<sup>®</sup> On-Board Transceiver

## Embedded Optical Transceiver System

- **300Gb/s Optical Module**
- **225 Pin Electrical Connector**
- **Customizable 24 Fiber MT Optical Cable**
- **Faceplate Adapter**

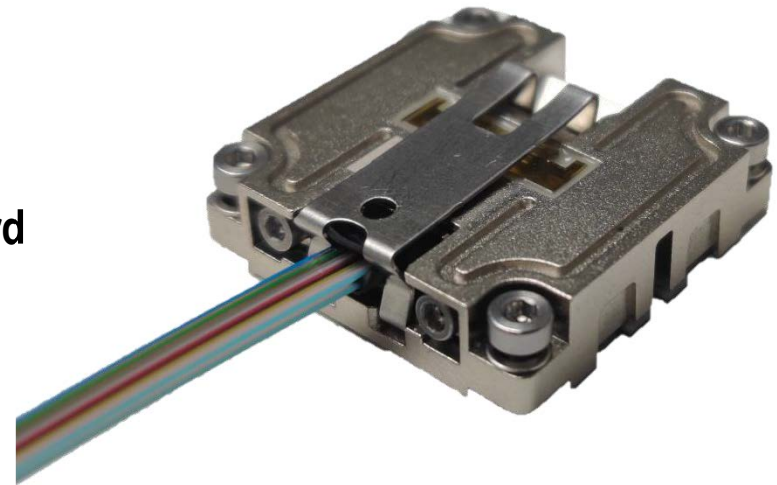


**1.2TB PCIe Card Example: Four 300Gb/s optical interfaces with MPO adapter**

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300Gb/s Leap<sup>®</sup> OBT

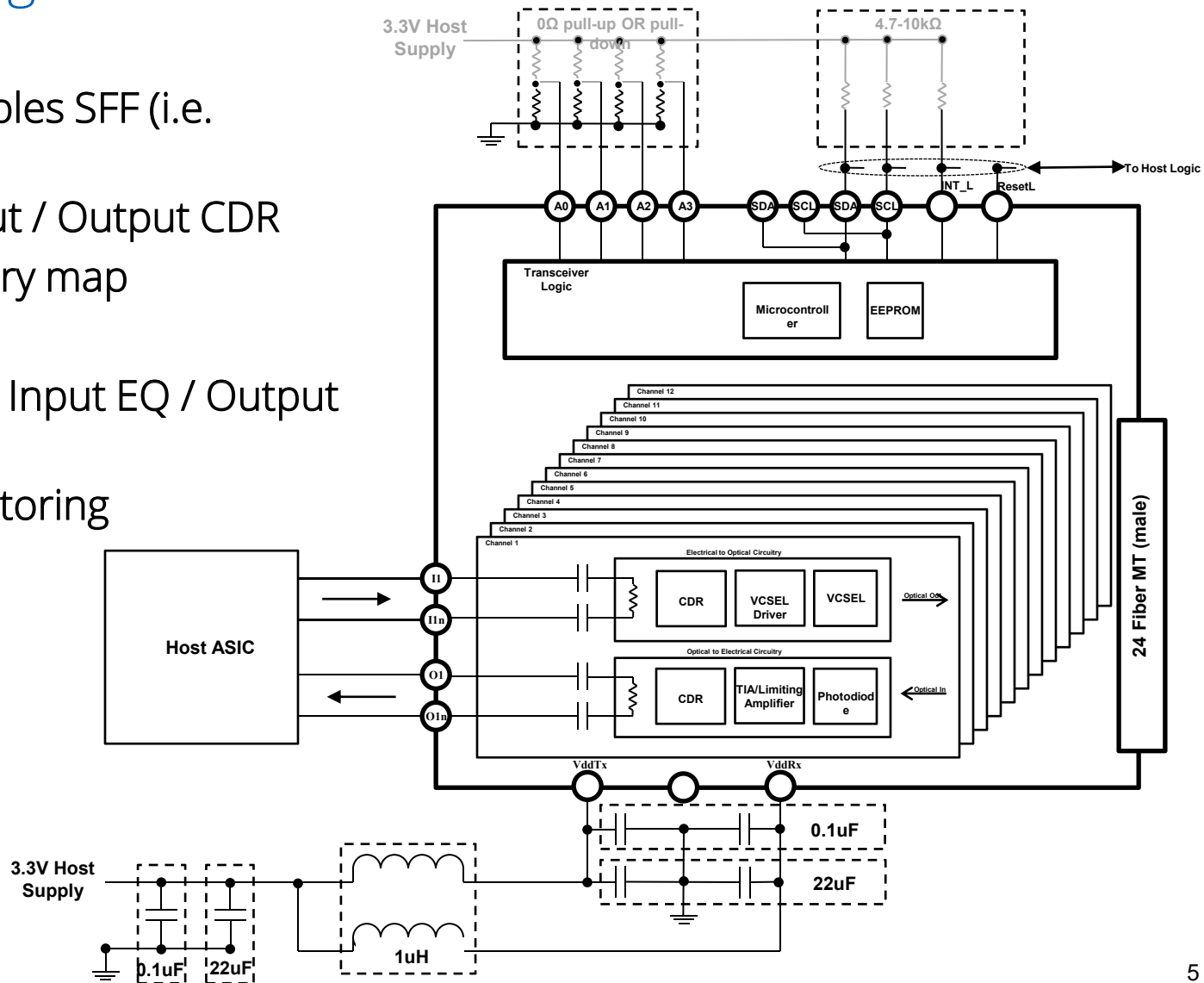
- 12x25Gb/s full duplex (Tx + Rx)
- 0 to 70°C case temperature
- Low power – 5W typical
- 100m Reach with 850nm multimode optics
- Enhanced Bit Error Rate (1e-12) requires no or limited FEC
- CDRs and DC Blocking caps on all high-speed lanes
- Accepts standard MT – Separable Interface
- Air cooled – heat sink can be customized
- Volume production
- Fully qualified according to Telcordia standard



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## OBT Block Diagram

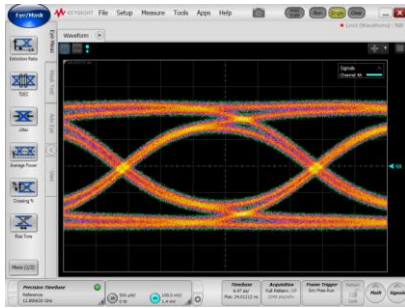
- Closely Resembles SFF (i.e. QSFP28/CXP)
- Integrated Input / Output CDR
- CXP-like memory map
- AC Coupled IO
- Programmable Input EQ / Output Emp.
- Rx Power Monitoring



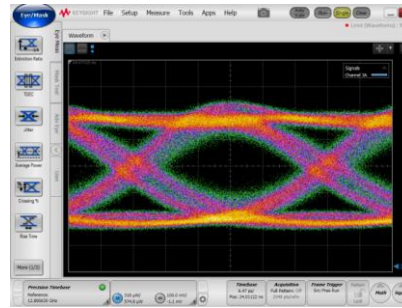
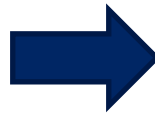
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## Functionalities

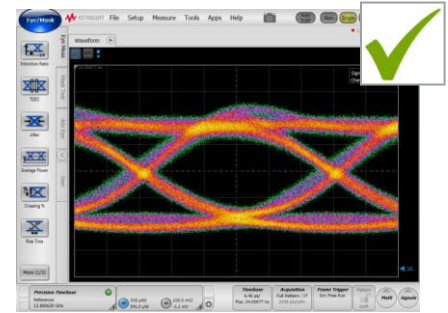
### Equalizer:



TX input eye

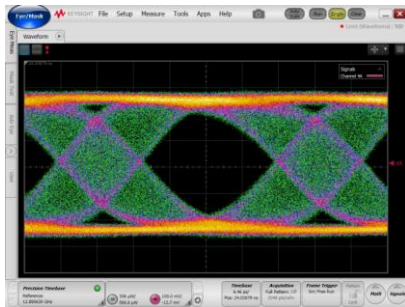


TX output eye  
MidEQ=0, HiEQ=0

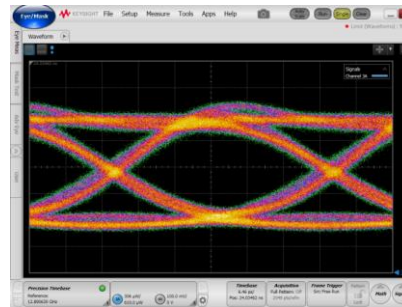


TX output eye  
MidEQ=15, HiEQ=4

### CDR:



Bad TX input signal



TX output eye  
CDR ON

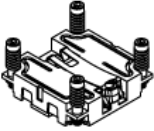
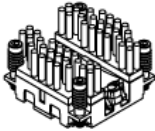
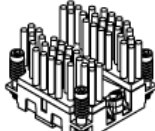


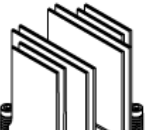
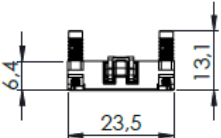
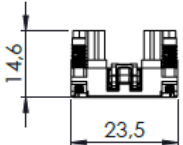
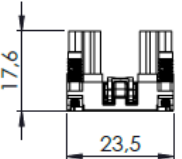
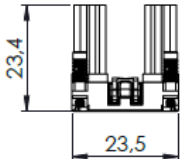
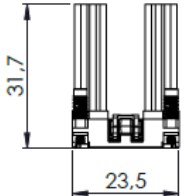
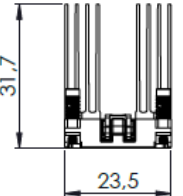
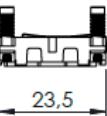
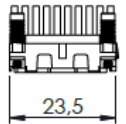
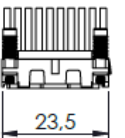
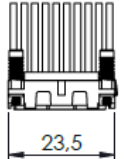
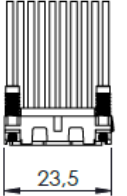
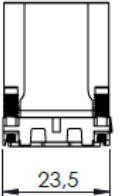
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## OBT Heat Sinks

- Various heat sinks for different system environments
- Selection based on:
  - Space available
  - Air flow direction
  - System height
- Typically air cooled
- Water cooled type available

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## OBT Heat Sinks

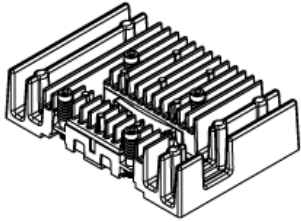
10124588-2Y0	10124588-2Y1	10124588-2Y2	10124588-2Y4	10124588-2Y6	10124588-2Y7
					
no heatsink	low heatsink	high heatsink	extended heatsink	super extended heatsink	fin heatsink
					
					



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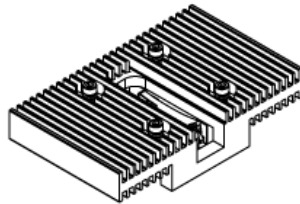
## OBT Heat Sinks

10124588-2Y5



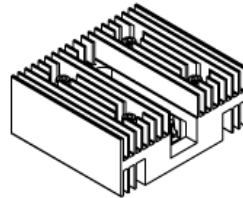
flat

10124588-2Y8



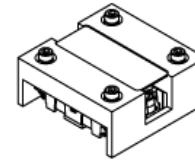
wings

10124588-2Y9



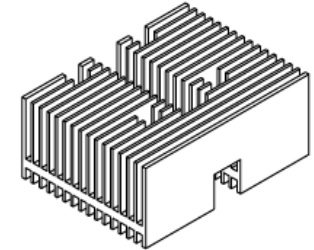
block

10124588-2YB

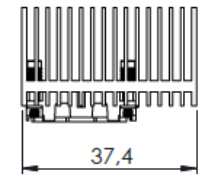
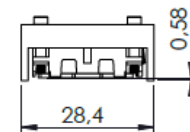
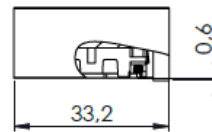
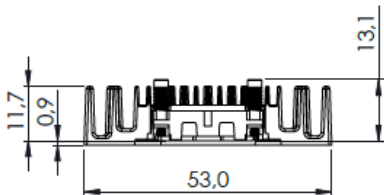
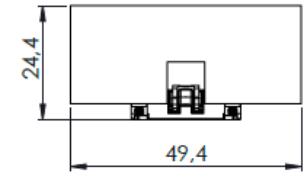
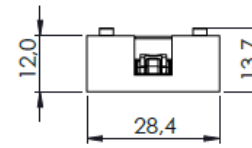
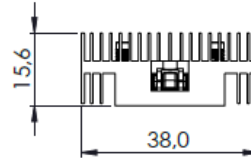
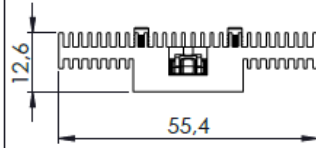
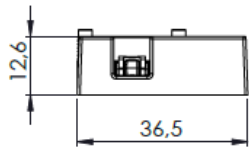


flat heatsink adapter

10124588-2YC



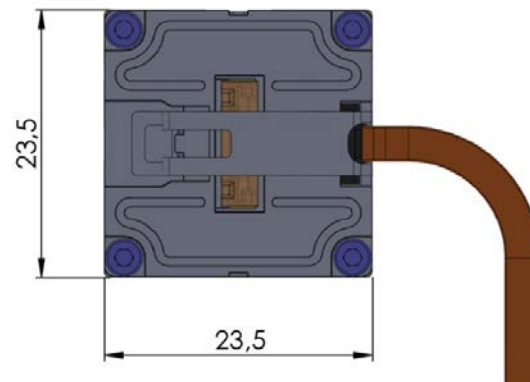
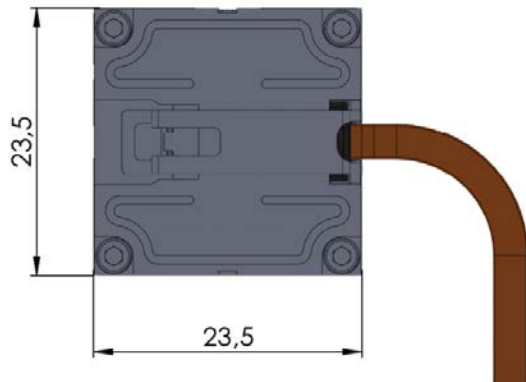
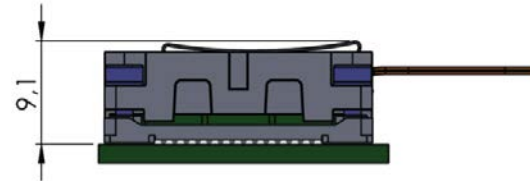
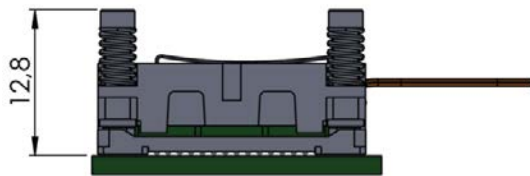
cubic



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## Product versions

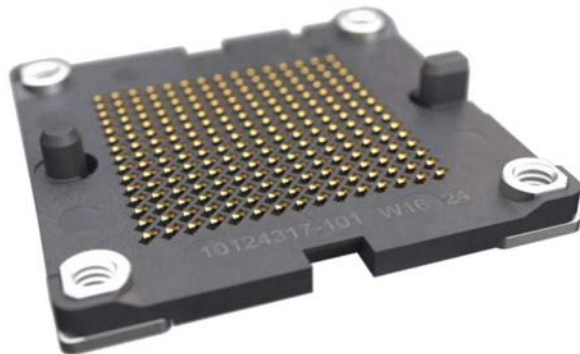
- *New version supported (Rev.D):*
  - Lower height
  - New screw design to facilitate customized heat-sink designs
  - Improved optical port to guarantee stable MT ferrule mating under mechanical stress
  - Improved MT ferrule clip design (increased spring force / enables use of specific tool for assembly)



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## Electrical Socket

- BGA/LGA Socket
- No through holes required
- <0.2dB IL at 12.5GHz
- Alignment features



**Top - LGA Springs**

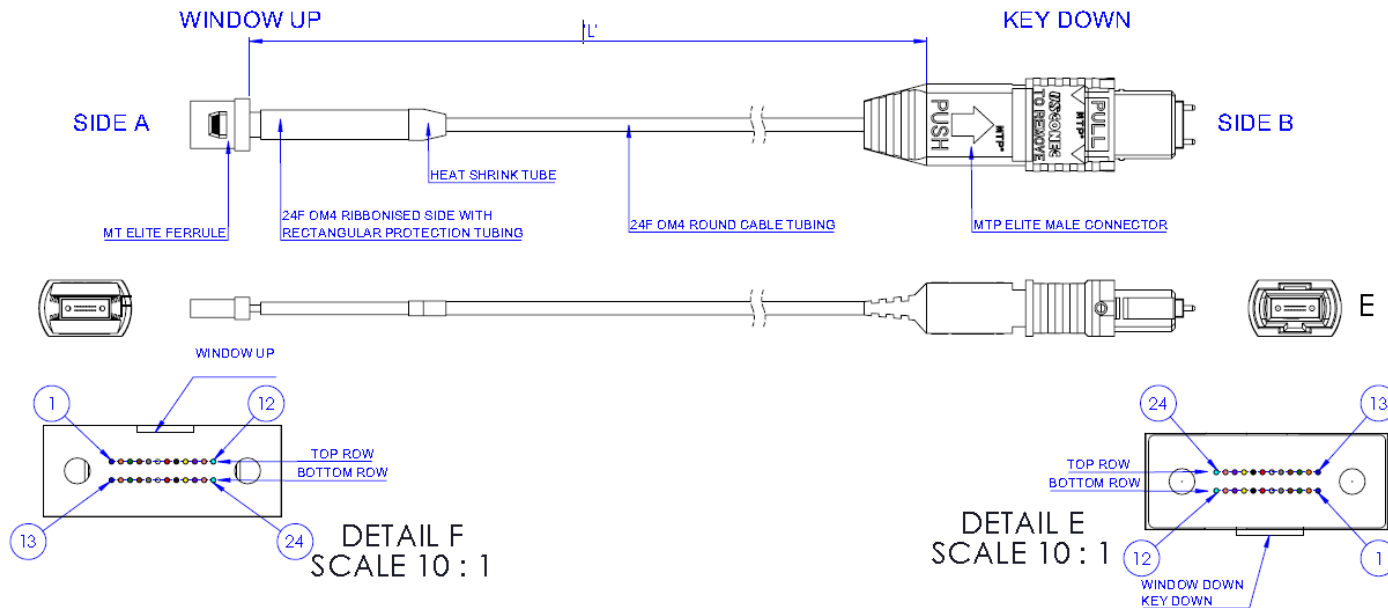


**Bottom - BGA Solder**

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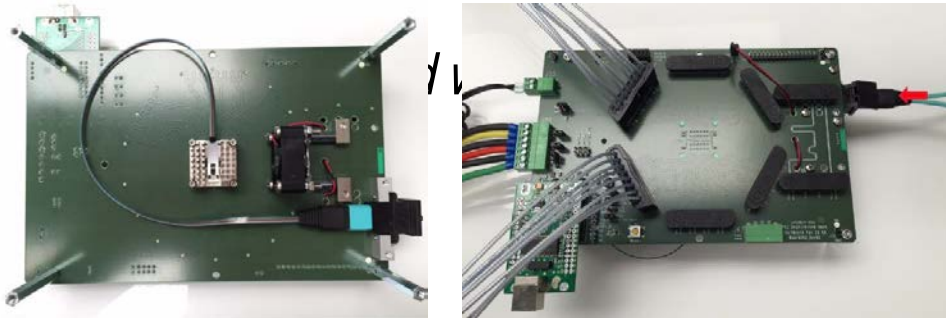
## Optical Fiber Assembly

- *OBT Optical Interface – MT-MPO cable*
  - MT OBT optical interface
  - MPO Male user interface
  - OM4 for maximum performance
  - Selectable length
  - PN 10141993-LLL (LLL=Length in mm)



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## OBT Evaluation Support



### *Design-in support:*

- Simulation models available (under NDA)
- PRBS generator/checker integrated

### *Full documentation available:*

- Design guide
- Application Notes

