# OSFP Loopback Modules

## 200G / 400G / 800G System Configuration Solution

Amphenol’s OSFP (Octal SFP) Loopback Modules are part of Amphenol’s OSFP I/O system product family that includes copper cables, connectors, and AOC’s. These OSFP loopback cable assemblies are offered in 3 configurations – Passive Electrical, Passive Thermal and Active Thermal. The OSFP loopback units include integrated heat sinks that are a key part of the heat dissipative properties of the OSFP interconnect system. All loopback cable assemblies support 200G (8 lanes @ 25G NRZ), 400G (8 lanes @ 50G PAM4), or 800G (8 lanes @ 112G PAM4) signaling transmission.

### Features
- Integrated heat sink & air flow channels – part of the OSFP’s integrated heat management design
- Adaptable design that provides the user adjustable dynamic control of different power levels per OSFP MSA power class definition
- Available with passive or active (repeater) high speed data path configurations
- Available with and without thermal loading
- 2 LED system indicators – thermal loopbacks
- On-board diagnostic monitoring – thermal loopbacks
- Signal conditioning of OSFP control lines – for both passive & active modules
- EEPROM per OSFP MSA; customization is available
- Enables 25G/ lane NRZ, 50G PAM4, and 112G PAM4 per channel transmission
- Compatible with all mating connector & cage configurations – single port, ganged and stacked
- Custom solutions supported
- Part of Amphenol’s overall OSFP interconnect system
- RoHS compliant

### Benefits
- Allows for up to 15W of heat dissipation capability per port
- Modules are field upgradeable enabling customized programs to customer specific requirements
- Enables diagnostics debugging and system validation testing
- Inexpensive testing of host hardware ports
- Visual indication of module power settings and interrupt flags
- On-board voltage and temperature monitoring
- Control line compliance with MSA – passive models follow DAC requirements; Thermal follows optical requirements
- Enables system communication over I2C buss
- 200G / 400G / 800G aggregate bandwidth capacity
- Allows for maximization of linear port to port density
- Custom solutions from adapter cables to loopback cables and beyond
- Comprehensive OSFP product family offering cable and connector solutions for copper or optical based applications
- Environment friendly
OSFP Loopback Modules

TECHNICAL INFORMATION

MATERIAL
- Nickel plated Zinc die cast shells & latching mechanism parts
- Low loss PCB with Gold finger and solder pads
- Thermoplastic pull tab

ELECTRICAL PERFORMANCE
- Differential Impedance: 100Ω ± 10Ω

MECHANICAL PERFORMANCE
- Refer to OSFP MSA document

ENVIRONMENTAL
- Thermal Shock: EIA 364–32, Condition 1, 25 cycles, -55°C to +85°C
- Service life expectancy to exceed 5 years at 65°C

APPROVALS AND CERTIFICATIONS
- RoHS2 Compliant

SPECIFICATIONS
- Refer to the latest revision specification of the OSFP octal small form factor pluggable module
- Applicable IEEE specifications
  - IEEE802.3by
  - IEEE802.3bj
  - IEEE802.3cd
  - IEEE802.3ck
- The InfiniBand™ architecture specification and annexes

PACKAGING
- Loopback ends packaged with dust covers

TARGET MARKETS/APPLICATIONS
- Low Latency Communication Systems
- Network Interface Cards (NICs)
- Routers
- Switches
- Servers
- Networked Storage Systems
- High Performance Computing (HPC) Applications
- Data Center Networking

PART NUMBERS

<table>
<thead>
<tr>
<th>Data Rate</th>
<th>Description</th>
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<tbody>
<tr>
<td>28G or 56G</td>
<td>OSFP Loopback, EEPROM Only</td>
<td>NLMAMB–0001</td>
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<tr>
<td>28G or 56G</td>
<td>OSFP Loopback, Thermal Load and Microcontroller</td>
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