

OSFP Loopback Modules

200G / 400G / 800G / 1.6 T 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), 800G (8 lanes @ 112G PAM4), or 1.6T (8 lanes @ 224G PAM4) signaling transmission.



TARGET MARKETS



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, 112G PAM4, and 224G 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 / 1.6T 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

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, 92Ω (224G)

MECHANICAL PERFORMANCE

- Refer to OSFP MSA document

ENVIRONMENTAL

- Thermal Shock, 112G: EIA 364-32, Condition 1, 25 cycles, -55°C to +85°C
- Thermal Shock, 224G: EIA-364-32, 100 cycles, -20°C to +75°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

Data Rate	Description	Part Numbers
28G or 56G	OSFP Loopback, EEPROM Only	NLMAMB-0001
28G or 56G	OSFP Loopback, Thermal Load and Microcontroller	NLMAME-0001
112G	OSFP Loopback, Thermal Load and Microcontroller	NLMACE-0001
112G	OSFP Loopback, EEPROM Only	NLMACB-0001
224G	OSFP Loopback	NLMADB-0001
224G	OSFP Loopback	NLMADB-0002