OSFP (Octal Small Form Factor Pluggable) Copper Cable Assemblies

200G / 400G / 800G SOLUTIONS

Amphenol’s leading the industry in OSFP cable development. Our Electronics Products ‘Product of the Year’ award-winning OSFP (Octal Small Form Factor Pluggable) cable assemblies are compatible with 25G/lane channel NRZ up to 112G/lane channel PAM4 signaling protocols that allow the cables to deliver aggregate bandwidths of 200G, 400G, and 800G per cable assembly. Available in both Passive and Active variants.

- Comprehensive system integrated interconnect design for copper or optical based cable solutions
- Addresses current and future market desired bandwidth port capability requirements
- Optimized heat dissipative and airflow features to maximize the heat dissipative properties of the system
- Data Rate: 25G NRZ / 56G PAM4 / 112G PAM4
- Cable sizes: 25 AWG – 32 AWG
- 112G Passive cable lengths up to 2 meters
- 112G Active cable lengths up to 4 meters

TARGET MARKETS

OSFP (Octal Small Form Factor Pluggable) Copper Cable Assemblies

Comprehensive system integrated interconnect design for copper or optical based cable solutions
Addresses current and future market desired bandwidth port capability requirements
Optimized heat dissipative and airflow features to maximize the heat dissipative properties of the system
Data Rate: 25G NRZ / 56G PAM4 / 112G PAM4
Cable sizes: 25 AWG – 32 AWG
112G Passive cable lengths up to 2 meters
112G Active cable lengths up to 4 meters

FEATURES

- Configurable & flexible
- Optimized PCB interface board with auto soldering process
- EEPROM in cable assembly
- Assembled with industry leading twin-axial SKEWCLEAR® 8-pair or 16-pair wire
- Integrated heat sink and air flow channels as part of module design
- 25AWG – 32AWG cable sizes
- RoHS2 compliant
- 112G Passive copper length to 2 meters and Active copper length to 4 meters
- Custom solutions supported
- 15 watt single port dissipative heat capacity

BENEFITS

- 200G, 400G, or 800G aggregate bandwidth capacity, dual 8-pair or single 16-pair wire supported
- Exceeds 25G NRZ and 50G, 112G PAM4 performance and SI parameter in standard specification
- Programmable to customer requirements
- Great SI reliability and physical capabilities (softer and better bending performance than other cables)
- Fully compliant with optical module design, easier for customer system development
- Provides optimized cost, performance, cable bulk & routing solutions
- Environmentally friendly
- Meets industry standard signal performance requirements
- Custom solutions from adapter cables to loopback cables and beyond
- Enables use of copper as well as short and long reach optical applications
OSFP (Octal Small Form Factor Pluggable) Copper Cable Assemblies

TECHNICAL INFORMATION

MATERIAL
- Nickel plated Zinc die cast shells & latching mechanism parts
- EM–888k laminated PCB with gold finger and solder pads
- Dual 8 differential pair or single 16 differential pair wire with EMI shielding braid and LSZH or PVC jacketing. Flex Sleeves for 112G bundles.
- Thermoplastic cable pull tab

ELECTRICAL PERFORMANCE
- Differential Impedance: 100Ω±10Ω
- SI performance 25G NRZ / 50G PAM4 / 112G PAM4, InfiniBand™, and OIF specifications (per MSA agreement)

MECHANICAL PERFORMANCE
- Durability: 50 cycles
- Mating Force: 40N max.
- Modular Retention: 25N min.
- Cable Flex: Per SFF-8417

ENVIRONMENTAL
- Thermal Shock: EIA 364–32, Condition 1, 25 cycles, −55°C to +85°C
- Service life 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
- Individually packed in anti-static bags
- Cable ends packaged with dust covers

TARGET MARKETS/APPLICATIONS
- Low Latency Communications Systems
- Network Interface Card (NICs)
- Routers
- Switches
- Data Center Networking
- External Storage Systems
- High Performance Computing (HPC) Networked Storage Systems
- Server

PART NUMBERS

<table>
<thead>
<tr>
<th>Data Rate</th>
<th>Length</th>
<th>AWG</th>
<th>Part Number</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>28G / Lane</td>
<td>1 meter</td>
<td>32AWG</td>
<td>NDVVJR-0001</td>
<td>Passive</td>
</tr>
<tr>
<td>28G / Lane</td>
<td>2 meters</td>
<td>32AWG</td>
<td>NDVVJR-0012</td>
<td>Passive</td>
</tr>
<tr>
<td>28G / Lane</td>
<td>2.5 meters</td>
<td>30AWG</td>
<td>NDVVJF-0012</td>
<td>Passive</td>
</tr>
<tr>
<td>56G / Lane</td>
<td>1 meter</td>
<td>32AWG</td>
<td>NDVVYR-0001</td>
<td>Passive</td>
</tr>
<tr>
<td>56G / Lane</td>
<td>2 meters</td>
<td>30AWG</td>
<td>NDVVYF-0002</td>
<td>Passive</td>
</tr>
<tr>
<td>56G / Lane</td>
<td>3 meters</td>
<td>28AWG</td>
<td>NDVVYG-0003</td>
<td>Passive</td>
</tr>
<tr>
<td>56G / Lane</td>
<td>3.5 meters</td>
<td>25 AWG</td>
<td>NDVVYX-0006</td>
<td>Passive</td>
</tr>
<tr>
<td>112G / Lane</td>
<td>1 meter</td>
<td>32AWG</td>
<td>NJMMEK-0001</td>
<td>Passive</td>
</tr>
<tr>
<td>112G / Lane</td>
<td>2 meters</td>
<td>25AWG</td>
<td>NJMMEN-0002</td>
<td>Passive</td>
</tr>
<tr>
<td>112G / Lane</td>
<td>2 meters</td>
<td>32AWG</td>
<td>NJMMLK-0002</td>
<td>Linear Active</td>
</tr>
<tr>
<td>112G / Lane</td>
<td>3 meters</td>
<td>30AWG</td>
<td>NJMMLR-0003</td>
<td>Linear Active</td>
</tr>
</tbody>
</table>