

# QSFP DD Cable Assemblies

## 200G / 400G / 800G SOLUTIONS

Amphenol's QSFP DD (Double Density) passive copper cable assemblies double the number of channels from 4 to 8 lanes when compared to the existing 100G QSFP cabling systems, enabling more bandwidth within the same mechanical envelope. Compatible with 25G/Lane NRZ up to 112G/Lane PAM4 signaling protocols that allow cables to deliver aggregate bandwidths of 200G, 400G, and 800G per cable assembly. Available in both Passive and Active variants.

- Addresses current and future market desired bandwidth port capability requirements
- Backwards mate compatible with QSFP receptacles
- 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
- Backwards plug capability to 100G; seamless transition to future higher aggregate bandwidth
- Optimized PCB interface board with auto soldering process
- Assembled with industry leading twin-axial SKEWCLEAR® 8-pair or 16-pair wire
- EEPROM in cable assembly
- 25AWG – 32AWG cable sizes
- 112G Passive copper length to 2 meters and Active copper length to 4 meters
- Compatible with existing 100G QSFP based connector ports (with heat sinks and / or light pipes) as well as 200G / 400G / 800G ports
- Custom solutions supported
- 10–12W single port dissipative heat capacity



### TARGET MARKETS



### BENEFITS

- 200G, 400G, or 800G aggregate bandwidth capacity, dual 8-pair or single 16-pair wire supported
- Addresses current and future market desired bandwidth port capability requirements
- Exceeds 25G NRZ and 50G, 112G PAM4 performance and SI parameter in standard specification
- Great SI reliability and physical capabilities (softer and better bending performance than other cables)
- Programmable to customer requirements
- Provides optimized cost, performance, cable bulk & routing solutions
- Meets industry standard signal performance requirements up to lengths of 3 meters at 400G and 2 meters at 800G
- Assured cable pluggability regardless of port bandwidth configuration
- Custom solutions from adapter cables to loopback cables and beyond
- Enables use of copper and optical based cabling solutions

## 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:  $100\Omega \pm 10\Omega$
- SI performance 25G NRZ / 50G PAM4, InfiniBand and OIF specifications (per MSA agreement)

### MECHANICAL PERFORMANCE

- Durability: 50 cycles
- Mating Force: 90N max. (Per MSA agreement)
- Modular Retention: 125N min.
- Cable Axial Strain Relief: 90N min.
- Cable Flex: Per SFF-8417

### ENVIRONMENTAL

- Thermal Shock: EIA 364-32, Condition 1, 25 cycles,  $-55^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$
- Service life to exceed 5 years at  $65^{\circ}\text{C}$

### APPROVALS AND CERTIFICATIONS

- RoHS2 Compliant

## PART NUMBERS

Data Rate	Length	AWG	Part Number	AWG	Part Numbers
28G / Lane	1 meter	32AWG	NDYYJR-0001	Passive	NDYYR-0006
28G / Lane	2 meters	32AWG	NDYYJR-0002	Passive	NDYYR-0001
28G / Lane	3 meters	32AWG	NDYYJR-0003	Passive	NDYYF-0001
56G / Lane	1 meter	32AWG	NDYYR-0001	Passive	NDYYF-0004
56G / Lane	2 meters	30AWG	NDYYF-0002	Passive	NDYYH-000x
56G / Lane	3 meters	27AWG	NDYYH-0003	Passive	NDYYH-000x
56G / Lane	4 meters	30AWG	NJYFR-0004	Linear Active	NDYYR-0006
56G / Lane	5 meters	30AWG	NJYFR-0005	Linear Active	NDYYR-0001
112G / Lane	1 meter	32AWG	NJYEK-0001	Passive	NDYYF-0001
112G / Lane	2 meters	25AWG	NJYEN-0002	Passive	NDYYF-0004
112G / Lane	3 meters	32AWG	NJYLK-0003	Linear Active	NDYYH-000x
112G / Lane	4 meters	30AWG	NJYLR-0004	Linear Active	NDYYH-000x
112G / Lane	4 meters	32AWG	NJHNN8-0004	DSP Active	NDYYH-000x

### SPECIFICATIONS

- Refer to the latest revision of the QSFP-DD hardware specification for QSFP double density 8X pluggable transceiver
- 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 Communication Systems  
Network Interface Cards (NICs)  
Routers  
Switches



Data Center Networking  
External Storage Systems  
High Performance Computing (HPC)  
Networked Storage Systems  
Servers