

KEY ADVANTAGES

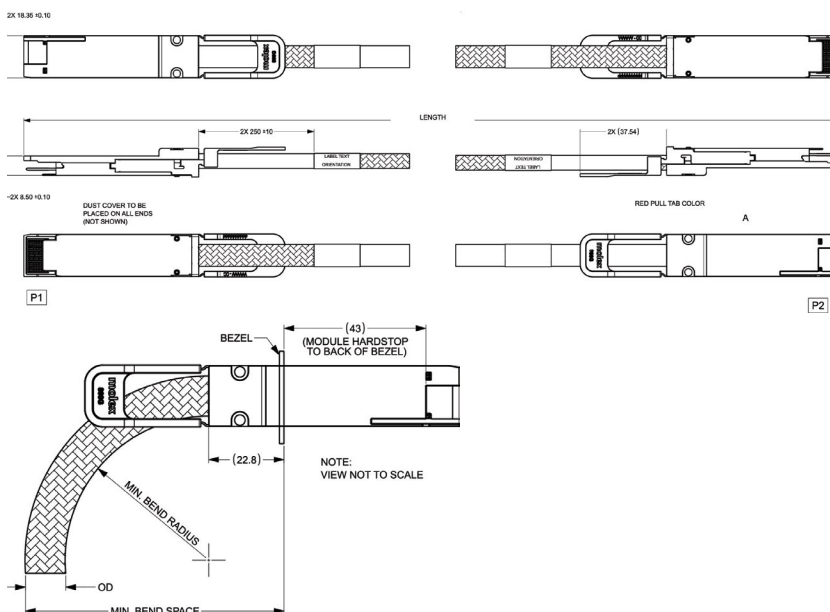
As digital transmission speeds continue to increase from 56G PAM4 to 112G PAM4 to 224G PAM4, the reach of traditional, passive, direct-attach cables (DACs) decreases. AECs bridge the gap between retreating DACs and where active optical cables (AOCs) and optical modules begin.

Re-timers in the cable assemblies reset loss and timing planes, regenerating signals and removing noise to deliver superior signal integrity over lengths up to 5+ meters. AECs reduce cable bundle size, bend space, bend radius and airflow impedance. They also have an extended loss budget of up to 40+ dB, depending on the chip.

Molex's AEC design allows for a wide variety of physical-layer (PHY)/re-timer integrated circuits to be used. This gives customers the freedom to select the re-timer that best fits their application's needs. Straight, Y and X/H AEC cable configurations support shared Top-of-Rack (TOR) installations and network-managed redundancy and security.

*Pending verification

PRODUCT DRAWINGS



Active Electrical Cable (AEC)

QSFP-DD to QSFP-DD Straight Cable

with Broadcom 87850 Re-Timer

MOLEX AEC SPECIFICATIONS

| PHYSICAL | |
|----------------------------------|---|
| Operating Temperatures | 0 to +55°C ambient (0 to +70°C case) |
| Storage Temperatures | -40 to +85°C |
| Module Form Factor | QSFP-DD 800 |
| RoHS Compliant | Yes |
| Low Smoke Zero Halogen Compliant | No |
| UL Compliance | E72548 |
| Cable Flammability Rating | VW-1 per UL E61522, AWM Style 22058 |
| Cable Construction | Expando over discrete twinax |
| OSFP-DD MSA Compliance | Rev. 7.0 pending |

| ELECTRICAL | |
|---------------------------|---|
| Pre-FEC BER | <1e-8 |
| Post-FEC BER | <1e-15 |
| Default Data Rate | 800G: 112G PAM4 (data rate = 106.25 Gbps) |
| Data Rate Capabilities | 800G: 112G PAM4 (data rate = 106.25 Gbps) 400G: 56G PAM4 (data rate = 53.125 Gbps) 200G: 25G NRZ (data rate = 25.78125 Gbps) |
| Host Max I2C Interface | 400 kbps |
| Number of Data Lanes | 8 |
| Impedance | 100 Ohms |
| CMIS Version Compliance | 5.0 |
| EMI Shielded | Yes |
| Full/Half Active | Full |
| Time to CMIS Ready | 100 milliseconds |
| Time to Link | 5 seconds |
| Hot Swappable/Pluggable | Yes |
| Power Consumption per End | 7W |

AEC OPTIONS

| Part Number | Length (m) | AWG | Estimated Weight (g) | Cable Outside Diameter (mm) | Bend Radius (mm) | Bend Space (mm) |
|-------------|------------|-----|----------------------|-----------------------------|------------------|-----------------|
| 2178122223 | 1.0 | 34 | 129 | 6.40 | 19.00 | 48.00 |
| 2178122224 | 2.0 | 34 | 184 | 6.40 | 19.00 | 48.00 |
| 2178122225 | 3.0 | 34 | 239 | 6.40 | 19.00 | 48.00 |
| 2178122226 | 1.5 | 32 | 185 | 8.00 | 24.00 | 55.00 |
| 2178122227 | 2.0 | 32 | 222 | 8.00 | 24.00 | 55.00 |
| 2178122228 | 3.0 | 32 | 296 | 8.00 | 24.00 | 55.00 |
| 2178122229 | 4.0 | 32 | 370 | 8.00 | 24.00 | 55.00 |
| 2178122230 | 3.0 | 30 | 361 | 9.50 | 29.00 | 61.00 |
| 2178122231 | 4.0 | 30 | 469 | 9.50 | 29.00 | 61.00 |
| 2178122232 | 5.0 | 30 | 614 | 9.50 | 29.00 | 61.00 |
| 2178122233 | 4.0 | 28 | 598 | 10.90 | 33.00 | 67.00 |
| 2178122234 | 5.0 | 28 | 729 | 10.90 | 33.00 | 67.00 |
| 2178122235 | 6.0 | 28 | 860 | 10.90 | 33.00 | 67.00 |

Details provided are for informational purposes only and subject to change. Contact us for more details.

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