

# Feature Highlights

- Enhanced Small Form-Pluggable (SFP+) form factor
- Hot pluggable
- Support 10G Ethernet
- RoHS Compliant
- Compliant with MSA (Multiple Source Agreement)
- Compliant with IEEE802.3ae and 802.3aq standards

<sup>1</sup>DEM-436XT-BXD and DEM-436XT-BXU models only.

# 10G SFP+ Modules



D-Link's DEM-400 Series transceivers are hot-swappable SFP+ transceivers that plug into SFP+ slots on switches and support 10G Ethernet. They offer customers a wide variety of 10G Ethernet connectivity options for data centers, enterprise wiring closets, and service provider transport applications.

# Enhanced Small Form-Factor Pluggable Format

The transceivers use the Enhanced Small Form-factor Pluggable format (SFP+). The SFP+ form factor is smaller than other form factors such as Xenpak, X2, and 10G XFP, ensuring lower costs, lower power disruption, and higher port density. They provide the necessary signal amplification for data to be transmitted to the network cable from the port, and vice versa, for the port to receive data from the network cable.

#### Hot Pluggable

All D-Link transceivers are hot-pluggable. You can connect a transceiver while the system is powered on without causing any problems. This permits modules to be added or removed without interrupting the network.

# **10G Ethernet Speeds**

The transceivers all support 10G Ethernet, which results in very fast data transmissions of up to 10 Gbit/s. This is 10 times faster than Gigabit Ethernet and enables the switch to handle faster and higher data transmissions, making it very suitable for business needs.

# Bi-Directional WDM Transmission<sup>1</sup>

Bi-directional WDM transmission allows data to be transmitted simultaneously in both directions on a fiber cable. This helps you save on the cost of deploying extra fiber cables as well as allows for more flexible bandwidth allocation.



| Technical Sp                | ecifications                   | DEM-410T  | DEM-431XT   | DEM-432XT   |
|-----------------------------|--------------------------------|---|---|---|
|                             |                                |   |   |   |
| Standard                    | Standard Compliance            | IEEE-802.3ae<br>10GBASE-T                         | IEEE-802.3ae<br>10GBASE-SR  | IEEE-802.3ae<br>10GBASE-LR  |
|                             | Form Factor Type               | RJ45  | SFP+  | SFP+  |
|                             | Fibre Channel FC-PI Standard   | _   | 1200-Mx-SN-I  | 1200-SM-LL-L  |
|                             | Fiber Media Support            | _   | Multi-Mode  | Single-Mode   |
|                             | Distance Capacity              | 30 m  | 62.5 μm, 160 MHz-km: 26 m<br>62.5 μm, OM1 200 MHz-km: 33 m<br>50 μm, 400 MHz-km: 66 m<br>50 μm, OM2 500 MHz-km: 82 m<br>50 μm, OM3 2000 MHz-km: 300 m | 10 km   |
|                             | Hot Pluggable                  | ✓   | ✓   | ✓   |
| Features                    | MSA Compliant                  | ✓   | ✓   | ✓   |
|                             | RoHS Compliant                 | ✓   | ✓   | ✓   |
| Speed                       | Speed                          | 10 Gbps   | 10 Gbps   | 10 Gbps   |
|                             | Connector                      | RJ45  | Duplex LC Connector   | Duplex LC Connector   |
|                             | Single/Bi-Directional          | _   | Single Direction  | Single Direction  |
|                             | Wavelength                     | _   | 850 nm  | 1310 nm   |
| Interface                   | Output (TX) Optical Power      | _   | Max.: -1 dBm<br>Min.: -5 dBm  | Max.: 0 dBm<br>Min.: -8 dBm   |
|                             | Input (RX) Optical Power       | _   | Max.: 0 dBm<br>Min.: -11.5 dBm  | Max.: 0 dBm<br>Min.: -14.5 dBm  |
|                             | Sensitivity                    | _   | -11.5 dBm   | -14.5 dBm   |
|                             | Cable Type                     | CAT.6A  | Multi-mode 50/125 um or 62.5/125 um<br>fiber  | Single-mode 9/125 um fiber  |
|                             | Power                          | 3.3 V   | 3.3 V   | 3.3 V   |
|                             | Maximum Input Current          | 700 mA  | 300 mA  | 300 mA  |
| Operating                   | Minimum Power Budget           | _   | 6.5 dB  | 9.5 dB  |
|                             | Maximum Power Budget           | _   | 10.5 dB   | 14.5 dB   |
|                             | Heat Generated                 | _   | 2.376 kJ/h  | 4.158 kJ/h  |
| Reliability                 | MTBF (Hours)                   | 217,186   | 213,975   | 207,861   |
| Function                    | Digital Diagnostics Monitoring | _   | _   | _   |
| Physical and<br>Environment | Operating Temperature          | 0 to 60 °C  | 0 to 70 °C  | 0 to 70 °C  |
|                             | Storage Temperature            | -40 to 85 °C                                      | -40 to 85 °C  | -40 to 85 °C  |
|                             | Operating Humidity             | 5 to 95%  | 5 to 95%  | 5 to 95%  |
|                             | Storage Humidity               | 5 to 95%  | 5 to 95%  | 5 to 95%  |
|                             | Dimensions (W x D x H)         | (0.54 x 2.68 x 0.33 inches)<br>13.7 x 68 x 8.5 mm | 13.7 x 55.4 x 8.5 mm<br>(0.53 x 2.18 x 0.33 inches)<br>Compliant with SFF8432   | 13.7 x 55.4 x 8.5 mm<br>(0.53 x 2.18 x 0.33 inches)<br>Compliant with SFF8432 |
|                             | Weight                         | 20 g (0.04 lbs)                                   | 20 g (0.04 lbs)   | 20 g (0.04 lbs)   |
|                             | Bail Latch Color               | Gold  | Beige   | Blue  |
| EMI and                     | EMI                            | FCC Class B, ICES-003 Class B, CE Class B         | FCC Class B, ICES-003 Class B, CE Class B   | FCC Class B, ICES-003 Class B, CE Class B                                     |
| Safety                      | Safety                         | LVD   | LVD   | LVD   |





| Technical Specifications | DEM-433XT | DEM-434XT | DEM-435XT |
|--------------------------|-----------|-----------|-----------|
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| Standard                    | Standard Compliance            | IEEE-802.3ae<br>10GBASE-ER  | IEEE-802.3ae<br>10GBASE-ZR  | IEEE-802.3ae<br>IEEE-802.3aq<br>10GBASE-LRM  |
|-----------------------------|--------------------------------|---|---|--|
|                             | Form Factor Type               | SFP+  | SFP+  | SFP+   |
|                             | Fibre Channel FC-PI Standard   | N/A   | 1200-SM-LL-L 10G Fiber Channel  | N/A  |
|                             | Fiber Media Support            | Single-Mode   | Single-Mode   | Multi-Mode   |
|                             | Distance Capacity              | 40 km   | 80 km   | 62.5/125 um: 100 m<br>50 um, OM2, 500MHz-km: 220 m<br>50 um, OM3, 2000MHz-km: 220 m<br>50 um, OM4, 2000MHz-km: 220 m |
|                             | Hot Pluggable                  | ✓   | ✓   | ✓  |
| Features                    | MSA Compliant                  | ✓   | ✓   | ✓  |
|                             | RoHS Compliant                 | ✓   | ✓   | ✓  |
| Speed                       | Speed                          | 10 Gbps   | 10 Gbps   | 10 Gbps  |
|                             | Connector                      | Duplex LC Connector   | Duplex LC Connector   | Duplex LC Connector  |
|                             | Single/Bi-Directional          | Single Direction  | Single Direction  | Single Direction   |
|                             | Wavelength                     | 1550 nm   | 1550 nm   | 1310 nm  |
| Interface                   | Output (TX) Optical Power      | Max.: 4 dBm<br>Min.: -2 dBm   | Max.: 5 dBm<br>Min.: 0 dBm  | Max.: 0 dBm<br>Min.: -5 dBm  |
|                             | Input (RX) Optical Power       | Max.: 0 dBm<br>Min.: -15 dBm  | Max.: -8 dBm<br>Min.: -22 dBm   | Max.: 0 dBm<br>Min.: -12 dBm   |
|                             | Sensitivity                    | -15 dBm   | -22 dBm   | -12 dBm  |
|                             | Cable Type                     | Single-mode 9/125 um fiber  | Single-mode 9/125 um fiber  | Multi-mode 50/125 um or 62.5/125 um<br>fiber   |
|                             | Power                          | 3.3 V   | 3.3 V   | 3.3 V  |
|                             | Maximum Input Current          | 300 mA  | 300 mA  | 300 mA   |
| Operating                   | Minimum Power Budget           | 13 dB   | 22 dB   | 7 dB   |
|                             | Maximum Power Budget           | 19 dB   | 27 dB   | 12 dB  |
|                             | Heat Generated                 | 6.118 kJ/h  | 7.05 kJ/h   | 4.158 kJ/h   |
| Reliability                 | MTBF (Hours)                   | 213,975   | 207,861   | 213,975  |
| Function                    | Digital Diagnostics Monitoring | _   | _   | _  |
| Physical and<br>Environment | Operating Temperature          | -5 to 70 °C   | 0 to 70 °C  | 0 to 70 °C   |
|                             | Storage Temperature            | -40 to 85 °C  | -40 to 85 °C  | -40 to 85 °C   |
|                             | Operating Humidity             | 5 to 85%  | 5 to 85%  | 5 to 85%   |
|                             | Storage Humidity               | 5 to 95%  | 5 to 85%  | 5 to 95%   |
|                             | Dimensions (W x D x H)         | 14.8 x 56.5 x 11.85 mm<br>(0.58 x 2.22 x 0.47 inches)<br>Compliant with SFF8432 | 14.3 × 56.5 × 11.85 mm<br>(0.58 × 2.22 × 0.47 inches)<br>Compliant with SFF8432 | 14.8 x 56.5 x 11.85 mm<br>(0.58 x 2.22 x 0.47 inches)<br>Compliant with SFF8432                                      |
|                             | Weight                         | 20 g (0.04 lbs)   | 20 g (0.04 lbs)   | 18.5 g (0.04 lbs)  |
|                             | Bail Latch Color               | Red   | White   | Brown  |
| EMI and                     | EMI                            | FCC Class B, ICES-003 Class B, CE Class B                                       | FCC Class B, ICES-003 Class B, CE Class B                                       | FCC Class B, ICES-003 Class B, CE Class B  |
| Safety                      | Safety                         | LVD   | LVD   | LVD  |
|                             |                                |   |   |  |



Technical Specifications DEM-436XT-BXD DEM-436XT-BXU





|              | Standard Compliance            | IEEE-802.3ae<br>10GBASE-LR  | IEEE-802.3ae<br>10GBASE-LR  |
|--------------|--------------------------------|---|---|
|              | Form Factor Type               | SFP+  | SFP+  |
| Standard     | Fibre Channel FC-PI Standard   | N/A   | N/A   |
|              | Fiber Media Support            | Single-Mode   | Single-Mode   |
|              | Distance Capacity              | 20 km   | 20 km   |
| Features     | Hot Pluggable                  | ✓   | ✓   |
|              | MSA Compliant                  | ✓   | ✓   |
|              | RoHS Compliant                 | ✓   | ✓   |
| Speed        | Speed                          | 10 Gbps   | 10 Gbps   |
|              | Connector                      | Simplex LC Connector  | Simplex LC Connector  |
|              | Single/Bi-Directional          | WDM Bi-directional  |   |
|              | Wavelength                     | TX: 1330 nm, RX: 1270 nm  | TX: 1270 nm, RX: 1330 nm  |
| Interface    | Output (TX) Optical Power      | Max.: 0 dBm<br>Min.: -5 dBm   | Max.: 0 dBm<br>Min.: -5 dBm   |
|              | Input (RX) Optical Power       | Max.: 0 dBm<br>Min.: -13 dBm  | Max.: 0 dBm<br>Min.: -13 dBm  |
|              | Sensitivity                    | -13 dBm   | -13 dBm   |
|              | Cable Type                     | Single-mode 9/125 um fiber  | Single-mode 9/125 um fiber  |
|              | Power                          | 3.3 V   | 3.3 V   |
|              | Maximum Input Current          | 300 mA  | 300 mA  |
| Operating    | Minimum Power Budget           | 8 dB  | 8 dB  |
|              | Maximum Power Budget           | 13 dB   | 13 dB   |
|              | Heat Generated                 | 4.158 kJ/h  | 4.158 kJ/h  |
| Reliability  | MTBF (Hours)                   | 207,861   | 207,861   |
| Function     | Digital Diagnostics Monitoring | _   | _   |
|              | Operating Temperature          | 0 to 70 °C  | 0 to 70 °C  |
|              | Storage Temperature            | -40 to 85 ℃   | -40 to 85 °C  |
|              | Operating Humidity             | 5 to 95%  | 5 to 95%  |
| Physical and | Storage Humidity               | 5 to 95%  | 5 to 95%  |
| Environment  | Dimensions (W x D x H)         | 13.7 x 55.4 x 8.5 mm<br>(0.53 x 2.18 x 0.33 inches)<br>Compliant with SFF8432 | 13.7 x 55.4 x 8.5 mm<br>(0.53 x 2.18 x 0.33 inches)<br>Compliant with SFF8432 |
|              | Weight                         | 20 g (0.04 lbs)   | 20 g (0.04 lbs)   |
|              | Bail Latch Color               | Blue  | Blue  |
| EMI and      | EMI                            | FCC Class B, ICES-003 Class B, CE Class B                                     | FCC Class B, ICES-003 Class B, CE Class B                                     |
| Safety       | Safety                         | LVD   | LVD   |

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