

# Ethernet SFP Transceivers

## For Optical Fiber

- Industry Standard 802.3u Compliance
- Multi-Source Agreement (MSA) Specification Compliance
- 200Mbps Full Duplex Data Transfer Rate

### FEATURES

- **Small Form Factor Pluggable (SFP) Multi-Source Agreement (MSA) Specification Compliant**
- **IEEE 802.3u 100BASE-FX Standard**
- **2 km Multi-Mode or 15 km Single-Mode Fiber**
- **Hot-Swappable**
- **FDA, CDRH, TUV Laser Eye Safety Certified**



**D**-Link's DEM-210 and DEM-211 SFP transceivers provide a high performance solution for serial optical data communication applications. They are hot-swappable, Small Form Factor Pluggable (SFP) compliant with the Multi-Source Agreement (MSA) specification. The transceivers have duplex LC connectors and provide IEEE 802.3u compliant link for up to 100Mbps in the half duplex mode (or 200Mbps full-duplex mode) transmission for fiber cable applications.

D-Link's highly integrated transceivers offer low jitter performance for extended optical links support without performance degradation. This high performance enables reliable data transfer in short-, intermediate- and long-distances for building, factory, campus and metropolitan networking applications.

Previous combo-port switch designs have only provided Gigabit copper or SFP fiber-optic connectivity but not 100BASE-FX SFP fiber-optic connectivity. Switch designs like the DES-1226G and DES-3526 are of the former type. D-Link now provides 100BASE-FX SFP fiber-optic connectivity on Gigabit combo SFP ports for new switch model designs<sup>1</sup>. Further, in our effort to offer a full product portfolio, D-Link has developed the DEM-210 100BASE-FX SFP transceiver which can plug-in to the Gigabit combo SFP fiber-optic slot of selected switches to provide 100BASE-FX connectivity.

<sup>1</sup> : The transceiver connects with certain specific supported D-Link switches. It is not for use in the Gigabit SFP fiber-optic ports found in other switches. The current list of D-Link switches that support the new module includes the following: DES-1228, DES-1228P, DES-1252, DHS-3028, DHS-3628F, DHS-3626F, DGS-3612G.



|                              | DEM-210   | DEM-211   |
|------------------------------|---|---|
|                              |  |  |
| <b>Cable</b>                 | Single-Mode Fiber   | Multi-Mode Fiber  |
| <b>Fiber Type</b>            | 9/125um Single-Mode   | 62.5/125um Multi-Mode   |
| <b>Max. Cable Distance</b>   | 15 km   | 2 km  |
| <b>Standard</b>              | 802.3u 100BASE-FX   | 802.3u 100BASE-FX   |
| <b>Data Rates</b>            | 100Mbps   | 100Mbps   |
| <b>Port Type</b>             | Duplex LC   | Duplex LC   |
| <b>RoHS Compliant</b>        | √   | √   |
| <b>Wavelength</b>            | 1310nm  | 1310 nm   |
| <b>Output Optical Power</b>  | Max. -8dBm, Min. -15dBm   | Max. -14dBm, Min. -19dBm  |
| <b>Sensitivity</b>           | -32dBm  | -32 dBm   |
| <b>Power Budget</b>          | 17dB  | 13dB  |
| <b>Power Voltage</b>         | 3.3V  | 3.3V  |
| <b>Operating Temperature</b> | 0° to 70° C   | 0° to 70° C   |
| <b>Storage Temperature</b>   | -40° to 85° C   | -40° to 85° C   |
| <b>Operating Humidity</b>    | 10% to 90% Non-Condensing   | 10% to 90% Non-Condensing   |
| <b>Storage Humidity</b>      | 5% to 90% Non-Condensing  | 5% to 90% Non-Condensing  |
| <b>Emission</b>              | FCC Class B, CE, ICES-003, VCCI   | FCC Class B, CE, ICES-003, VCCI   |
| <b>Safety</b>                | FDA/CDRH, TUV, UL   | FDA/CDRH, TUV, UL   |

## D-Link Worldwide Offices

|                       |                         |                        |                            |                          |                          |
|-----------------------|-------------------------|------------------------|----------------------------|--------------------------|--------------------------|
| <b>U.S.A.</b>         | TEL: 1-800-326-1688     | FAX: 1-866-743-4905    | <b>Luxemburg</b>           | TEL: 32-(0)2-517-7111    | FAX: 32-(0)2-517-6500    |
| <b>Canada</b>         | TEL: 1-905-8295033      | FAX: 1-905-8295223     | <b>Poland</b>              | TEL: 48-(0)-22-583-92-75 | FAX: 48-(0)-22-583-92-76 |
| <b>Europe (U. K.)</b> | TEL: 44-20-8955-9000    | FAX: 44-20-8955-9001   | <b>Hungary</b>             | TEL: 36-(0)-1-461-30-00  | FAX: 36-(0)-1-461-30-09  |
| <b>Germany</b>        | TEL: 49-6196-77990      | FAX: 49-6196-7799300   | <b>Singapore</b>           | TEL: 65-6774-6233        | FAX: 65-6774-6322        |
| <b>France</b>         | TEL: 33-1-30238688      | FAX: 33-1-30238689     | <b>Australia</b>           | TEL: 61-2-8899-1800      | FAX: 61-2-8899-1868      |
| <b>Netherlands</b>    | TEL: 31-10-282-1445     | FAX: 31-10-282-1331    | <b>India</b>               | TEL: 91-022-26526696     | FAX: 91-022-26528914     |
| <b>Belgium</b>        | TEL: 32(0)2-517-7111    | FAX: 32(0)2-517-6500   | <b>Middle East (Dubai)</b> | TEL: 971-4-3916480       | FAX: 971-4-3908881       |
| <b>Italy</b>          | TEL: 39-02-2900-0676    | FAX: 39-02-2900-1723   | <b>Turkey</b>              | TEL: 90-312-473-40-55    | FAX: 90-312-473-40-58    |
| <b>Sweden</b>         | TEL: 46-(0)8564-61900   | FAX: 46-(0)8564-61901  | <b>Egypt</b>               | TEL: 202-291-9035        | FAX: 202-291-9051        |
| <b>Denmark</b>        | TEL: 45-43-969040       | FAX: 45-43-424347      | <b>Israel</b>              | TEL: 972-9-9715700       | FAX: 972-9-9715601       |
| <b>Norway</b>         | TEL: 47-99-300-100      | FAX: 47-22-309580      | <b>LatinAmerica</b>        | TEL: 56-2-232-3185       | FAX: 56-2-232-0923       |
| <b>Finland</b>        | TEL: 358-9-2707 5080    | FAX: 358-9-2707-5081   | <b>Brazil</b>              | TEL: 55-11-218-59300     | FAX: 55-11-218-59322     |
| <b>Spain</b>          | TEL: 34-93-4090770      | FAX: 34-93-4910795     | <b>South Africa</b>        | TEL: 27-12-665-2165      | FAX: 27-12-665-2186      |
| <b>Portugal</b>       | TEL: 351-21-8688493     |                        | <b>Russia</b>              | TEL: 7-495-744-0099      | FAX: 7-495-744-0099 #350 |
| <b>Czech Republic</b> | TEL: 420-(603)-276-589  |                        | <b>Japan</b>               | TEL: 81-3-5781-0963      | FAX: 81-3-5781-0965      |
| <b>Switzerland</b>    | TEL: 41-(0)-1-832-11-00 | FAX: 41(0)-1-832-11-01 | <b>China</b>               | TEL: 86-10-58635800      | FAX: 86-10-58635799      |
| <b>Greece</b>         | TEL: 30-210-9914 512    | FAX: 30-210-9916902    | <b>Taiwan</b>              | TEL: 886-2-6600-0123     | FAX: 886-2-6600-8168     |
|                       |                         |                        | <b>Headquarters</b>        | TEL: 886-2-6600-0123     | FAX: 886-2-6600-9898     |