

# Cisco MFE and MGE SFP Transceivers

## Cisco Small Business Network Accessories

Easily Connect Switches with Fiber Optic Networking Modules

### Highlights

- Adds fiber-optic connectivity to Cisco Small Business and Cisco Small Business Pro Series switches
- High-performance link for connecting networks within a building or small campus area
- Easy removal with an integrated spring latch
- Hot swappable to maintain network availability

### Product Overview

Cisco® MFE and MGE Small Form-Factor Pluggable (SFP) or mini Gigabit Interface Converter (mini-GBIC) transceivers (Table 1) are easy-to-install modules that provide a simple way to add fiber connectivity or to add an extra Gigabit Ethernet port to your Cisco Small Business or Cisco Small Business Pro Series switches. The transceivers are available for single-mode or multimode fiber-optic cabling and can support distances from 100 meters up to 40 kilometers.

The Cisco MFE and MGE transceivers provide fast and reliable connectivity between switches that are located on different floors, in separate buildings, or on a small campus network needing connectivity between sites. These transceivers can support both Fast and Gigabit Ethernet applications.

**Table 1.** MFE and MGE SFP Transceiver Modules

|                         | Description   |
|-------------------------|---|
| <b>MFE Transceivers</b> |   |
| <b>MFEBX1</b>           | 100BASE-BX-20U SFP transceiver for single-mode fiber, 1310 nm wavelength, support up to 20 km   |
| <b>MFEFX1</b>           | 100BASE-FX SFP transceiver, for multimode fiber, 1310 nm wavelength, support up to 2 km         |
| <b>MFELX1</b>           | 100BASE-LX SFP transceiver, for single-mode fiber, 1310 nm wavelength, support up to 10 km      |
| <b>MGE Transceivers</b> |   |
| <b>MGBBX1</b>           | 1000BASE-BX-20U SFP transceiver, for single-mode fiber, 1310 nm wavelength, support up to 20 km |
| <b>MGBLH1</b>           | 1000BASE-LH SFP transceiver, for single-mode fiber, 1310 nm wavelength, support up to 40 km     |
| <b>MGBLX1</b>           | 1000BASE-LX SFP transceiver, for single-mode fiber, 1310 nm wavelength, support up to 10 km     |
| <b>MGBSX1</b>           | 1000BASE-SX SFP transceiver, for multimode fiber, 850 nm wavelength, support up to 550 m        |
| <b>MGBT1</b>            | 1000BASE-T SFP transceiver for category 5 copper wire, support up to 100 m                      |

### Features

- Built-in spring latch for easy module removal
- Hot swappable
- Low insertion-loss duplex LC receptacle
- Low electromagnetic interference (FCC Part 15, Class B) for clear communications
- Meets FDA and International Electrotechnical Commission (IEC) eye safety standards

### Cisco Limited Warranty

The Cisco Small Business transceivers come with a 5-year limited hardware warranty with return to factory replacement. In addition, Cisco offers software updates for bug fixes at no charge for the life of the warranty and one year of telephone technical assistance from the Small Business Support Center. For more information visit, [http://www.cisco.com/en/US/docs/general/warranty/5year\\_SmallBusiness.html](http://www.cisco.com/en/US/docs/general/warranty/5year_SmallBusiness.html).

### Specifications

Table 2 contains the specifications, package contents, and minimum requirements for the Cisco MFE and MGE SFP Transceivers.

**Table 2.** Specifications for the Cisco MFE and MGE SFP Transceivers

| Specifications                 |   |
|--------------------------------|---|
| <b>Media</b>                   | MFEBX1: Single-mode fiber (SMF)<br>MFELX1: Single-mode fiber (SMF)<br>MFEFX1: Multimode fiber (MMF)<br>MGBBX1: Single-mode fiber (SMF)<br>MGBLH1: Single-mode fiber (SMF)<br>MGBLX1: Single-mode fiber (SMF)<br>MGBSX1: Multimode fiber (MMF)<br>MGBT1: Category 5e UTP |
| <b>Application</b>             | MFEBX1: 100BASE-BX-20U<br>MFELX1: 100BASE-LX<br>MFEFX1: 100BASE-FX<br>MGBBX1: 1000BASE-BX-20U<br>MGBLH1: 1000BASE-LH<br>MGBLX1: 1000BASE-LX<br>MGBSX1: 1000BASE-SX<br>MGBT1: 1000BASE-T   |
| <b>Connector type</b>          | MFEBX1: Single LC<br>MFELX1: Duplex LC<br>MFEFX1: Duplex LC<br>MGBBX1: Single LC<br>MGBLH1: Duplex LC<br>MGBLX1: Duplex LC<br>MGBSX1: Duplex LC<br>MGBT1: RJ-45   |
| <b>Wavelength typical (Tx)</b> | MFEBX1: 1310 nm<br>MFELX1: 1310 nm<br>MFEFX1: 1310 nm<br>MGBBX1: 1310 nm<br>MGBLH1: 1310 nm<br>MGBLX1: 1310 nm<br>MGBSX1: 850 nm<br>MGBT1: N/A  |
| <b>Wavelength range (Rx)</b>   | MFEBX1: 1550 nm<br>MFELX1: 1310 nm<br>MFEFX1: 1310 nm<br>MGBBX1: 1490 nm<br>MGBLH1: 1310 nm<br>MGBLX1: 1310 nm<br>MGBSX1: 850 nm<br>MGBT1: N/A  |

| Performance                     |   |
|---------------------------------|---|
| <b>Maximum distance</b>         | MFEBX1: up to 20 km<br>MFELX1: up to 10 km<br>MFEFX1: up to 2 km<br>MGBBX1: up to 20 km<br>MGBLH1: up to 40 km<br>MGBLX1: up to 10 km<br>MGBSX1: up to 550 m<br>MGBT1: up to 100 m  |
| <b>Average output power</b>     | MFEBX1: -20 dBm to -14 dBm<br>MFELX1: -20 dBm to -14 dBm<br>MFEFX1: -15 dBm to -8dBm<br>MGBBX1: -8 dBm to -3 dBm<br>MGBLH1: -4 dBm to 0 dBm<br>MGBLX1: -9.5 dBm to -3 dBm<br>MGBSX1: -9.5 dBm to -4 dBm<br>MGBT1: N/A   |
| <b>Receiver sensitivity</b>     | MFEBX1: -32 dBm (max)<br>MFELX1: -30 dBm (max)<br>MFEFX1: -34 dBm (max)<br>MGBBX1: -23 dBm (typ)<br>MGBLH1: -25 dBm (typ)<br>MGBLX1: -20 dBm (typ)<br>MGBSX1: -20 dBm (typ)<br>MGBT1: N/A   |
| <b>Receiver overload</b>        | MFEBX1:-8 dBm (min)<br>MFELX1:-10 dBm (min)<br>MFEFX1: -5 dBm (min)<br>MGBBX1: -3 dBm<br>MGBLH1: -3 dBm<br>MGBLX1: -3 dBm<br>MGBSX1: -0 dBm<br>MGBT1: N/A   |
| Environmental                   |   |
| <b>Dimensions<br/>W x H x D</b> | MFEBX1: 13 x 9 x 56 mm (0.53 x 0.33 x 2.19 in.)<br>MFELX1: 13 x 9 x 56 mm (0.53 x 0.33 x 2.19 in.)<br>MFEFX1: 13 x 9 x 56 mm (0.53 x 0.33 x 2.19 in.)<br>MGBBX1: 13.4 x 8.5 x 55.7 mm (0.53 x 0.33 x 2.19 in.)<br>MGBLH1: 13.4 x 8.5 x 56.5 mm (0.53 x 0.33 x 2.22 in.)<br>MGBLX1: 13.4 x 8.5 x 55.7 mm (0.53 x 0.33 x 2.19 in.)<br>MGBSX1: 13.4 x 8.5 x 56.5 mm (0.53 x 0.33 x 2.22 in.)<br>MGBT1: 13.4 x 8.5 x 66 mm (0.53 x 0.33 x 2.60 in.) |
| <b>Unit weight</b>              | 0.018 kg (0.63 oz. )  |
| <b>Power</b>                    | 1W (max)  |
| <b>Operating temperature</b>    | 32° to 158°F (0° to 70°C)   |
| <b>Storage temperature</b>      | -40° to 185°F (-40° to 85°C)  |
| <b>Operating humidity</b>       | 10% to 85% noncondensing  |
| <b>Storage humidity</b>         | 5% to 90% noncondensing   |
| Standards                       |   |
| <b>Compliance</b>               | FCC Part 15 Class B<br>EN55022 Class B (CISPR 22B)<br>VCCI Class B  |
| <b>Safety</b>                   | FDA 21 CFR 1040.10 and 1040.11<br>EN60950, EN (IEC) 60825-1,2   |

|   |
|---|
| <b>Package Contents</b>   |
| <ul style="list-style-type: none"> <li>• Cisco SFP transceiver</li> <li>• Quick installation guide</li> </ul>   |
| <b>Minimum Requirements</b>   |
| <ul style="list-style-type: none"> <li>• Switch with SFP port. Consult the module's <a href="#">Quick Start Guide</a> for interoperability guidelines.</li> </ul> |

## Ordering Information

Table 3 provides ordering information for the Cisco MFE and MGE Transceivers

**Table 3.** Ordering

| MFE and MGE Transceivers |                                 |
|--------------------------|---------------------------------|
| Product Number           | Description                     |
| <b>MFEBX1</b>            | 100BASE-BX-20U SFP transceiver  |
| <b>MFEFX1</b>            | 100BASE-FX SFP transceiver      |
| <b>MFELX1</b>            | 100BASE-LX SFP transceiver      |
| <b>MGBBX1</b>            | 1000BASE-BX-20U SFP transceiver |
| <b>MGBLH1</b>            | 1000BASE-LH SFP transceiver     |
| <b>MGBLX1</b>            | 1000BASE-LX SFP transceiver     |
| <b>MGBSX1</b>            | 1000BASE-SX SFP transceiver     |
| <b>MGBT1</b>             | 1000BASE-T SFP transceiver      |



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