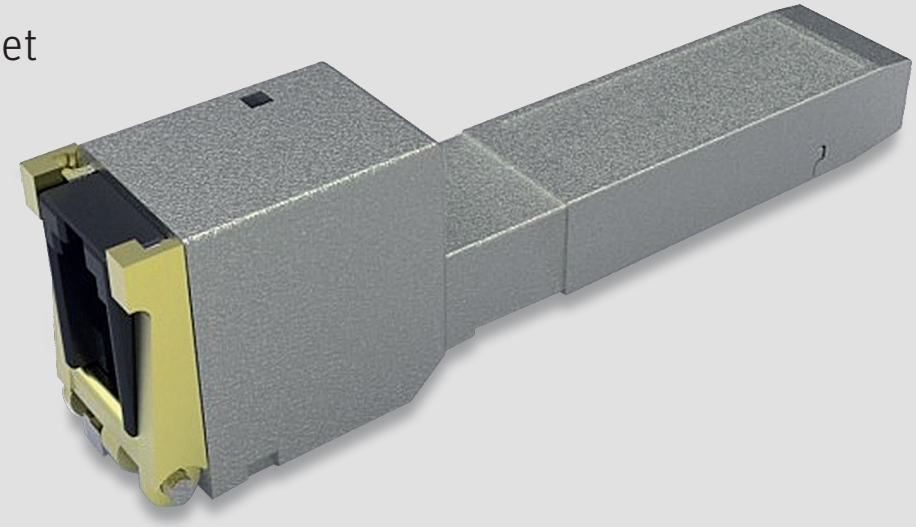
EFS-01 G.fast Bridge CPE SFP

G.fast to Gigabit Ethernet Bridge in Small Form-factor Pluggable



Overview

The **EFS-01** is a compact and high performance G.fast transceiver module in SFP (Small Form-factor Pluggable) package for FTTB or FTTdp application. The latest SoC core brings extremely high data throughput, up to one gigabits per second, over existing copper wires to ensure good quality of service for high definition IPTV, VoIP telephony and Internet web-browsing simultaneously. This hot-pluggable SFP module can be easily integrated into CPE device or residential gateway to upgrade subscriber's broadband access environment instantly. Network in-band management allows advanced system provisioning and future upgrade. By offering high integration and great flexibility to service provider, the **EFS-01** delivers the convenience, efficiency and innovation to its customers.

› Support G.fast with up to 1 Gbps* line rate (*106a profile in short loop condition; actual performance may vary depending on network configuration and link conditions)

› Gigabit Ethernet over SGMII/SERDES through MSA compliant SFP interface

› Configuration and management by EoC channel or Ethernet

Main features & specifications

WAN Interface
- Two-wire loop with 100 ohms line impedance in RJ-11 connector
- Broadband Standards Compliance
  - Fully compliant with the ITU-T G.fast Recommendation (G.9700 / 9701)
  - Supports ITU-T G.994.1 G.hs
  - Supports ITU-T G.997.1 with future extensions for G.fast
  - Support for ITU-T G.997.2
  - Support for IEEE 1588 Time Synchronization
  - Supported profiles: 106a profile
- Full G.fast Performance
  - Bandwidth: 2 – 106MHz (programmable)
  - Maximum PHY rate: 1 Gbps per line
  - Flexible downlink / uplink bit rate ratio
  - Co-exist with legacy technologies, e.g., ADSL and VDSL

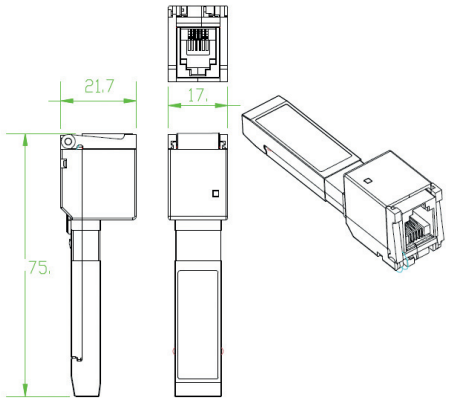
Local Interface
- MSA (Multi-Source Agreement) compliant SFP connector
- SGMII / SERDES interface

LED Indicator
- Power / G.fast – Slow blinking indicates device is functioning and no line signal is detected, solid GREEN when G.fast line is linked in showtime

Environment
- Operation Temperature: 0°C ~ +75°C (SFP cage)
- Operation Humidity: 10% ~ 90% (non-condensing)
- Storage Temperature: -20°C ~ +85°C
- Storage Humidity: 10% ~ 90% (non-condensing)

Power
- DC input 3.3V
- Power consumption: Less than 2.2 watts

Physical Dimensions
- (W x H x L) 17.0 mm x 21.7 mm x 75.0 mm



Functionality

PHY-related
- Very low noise receive path
- Under -150dBm/Hz line reflected noise
- Robust with high immunity to disturbers
- Fast Online Reconfiguration (OLR)
- Fast train/retrain time
- Flexible DTU size

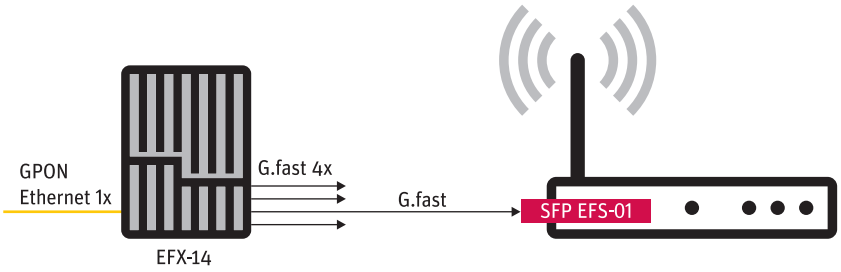
Interface
- SGMII over SERDES
- MDIO management master and slave with Clause 22 and Clause 45 support
- Ethernet MAC and PHY mode support

Time and Synchronization
- Time-of-Day (ToD) synchronization to external clock reference
- Synchronization using low accuracy management protocol, IEEE 1588 or one PPS signal
- 8KHz Network Time Reference (NTR) support between DP and CPE

Low Power Consumption
- Average active end-to-end transceiver power of < 2.2 watts
- Multiple power save modes lowering actual consumption under real life conditions
- Full discontinuous mode support for lower actual consumption under real-life conditions
- Support for L2.0, L2.1 low power states

L2+ Networking
- Up to 4 QoS priority queues per G.fast transceiver port
- "Learning Bridge" mode for DA to G.fast port mapping

Management and Configuration
- Unmanaged and managed (per G.997.2 via EoC) modes
- Configuration interface for customized functionality
- Upgradeable firmware, via EoC channel
- Full performance monitoring



Application with EFX-14 DPU/ONU: existing Router kept in place — future proof solution

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