

## 25Gbps 15km DWDM Narrow Tunable SFP28

For Mobile Fronthaul Applications

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### Key Features

- 5-part codes to cover the complete C-band (100GHz spacing) enables simplified sparing and configuration
- Up to 15km link length single mode fibre point-to-point and multi-point passive networks
- Supports data rates between 24.0Gbps and 28.1Gbps
- Operating temperature range -40°C to 85°C
- 1x28Gbps Pluggable Transceiver Solution (SFF-8402, rev. 1.1)
- SFF Tunability Interface (SFF-8690, rev. 1.4)
- Support for digital diagnostics and monitoring (SFF-8472, rev. 12.2)
- Dual LC connector, hot pluggable with SFP footprint
- Retimed receiver electrical interface
- Power dissipation <2.5W
- Optional NarroWave® support enables Wavelength Auto-Tuning and Remote diagnostics

### Overview

EFFECT's 25Gbps C-band Narrow Tunable SFP28 optical transceiver module is designed to operate at transmission rates from 24.0Gbps to 28.1Gbps, compatible with multiple network applications and transmission formats: CPRI, OTN, Fibre Channel, etc. Hot pluggable, and with narrow band tunability, significantly reduces sparing and configuring costs in optical networks. The module is optimised for Local Area Networks (LAN), Mobile Fronthaul and 25G Ethernet (25GbE), over single-mode fibre (SMF) optical links, P2P and passive networks.

On the transmit side, the serial data path from the host enters the module through the electrical connector and enters the modulator driver. The modulator driver accurately biases and efficiently modulates EFFECT's Optical System-on-Chip which contains the tunable 1550nm cooled laser and Mach-Zehnder Interferometer (MZI) modulator and transmits the optical signal through an industry standard LC connector. Wavelength control to 100GHz ITU grid and optical power monitoring over life is also integrated within EFFECT's Optical System-on-Chip and packaging technology. A CDR is integrated to retune the signal before it is transmitted over fibre.

On the receive path, DC balanced serial NRZ data is efficiently converted into the electrical domain through the Receiver Optical Sub-Assembly (ROSA) which contains a Avalanche PhotoDiode Receiver (APD) and Trans-Impedance Amplifier (TIA) with Limiting output to the host. A CDR is integrated to retune the signal before it is transmitted to the host equipment.

The optional NarroWave® feature enables wavelength auto-tuning and remote diagnostics monitoring over fiber.

### Typical Applications

- Mobile Fronthaul, LTE 5G/CPRI-10, eCPRI
- 25.78Gb Ethernet switches
- Fiber Channel storage networking & switching

### Compliance

- SFF-8402, rev 1.1
- SFF-8419, rev 1.3
- SFF-8432, rev 5.1
- SFF-8472, rev 12.2
- SFF-8690, rev 1.4
- Telcordia GR-468-CORE
- Telcordia GR-63-CORE, NEBS
- IEC 60825-1 Ed 2 Class 1
- FDA 21 CFR Ch1 Class 1
- RoHS 6/6 Lead Free

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Module Wavelength Assignments and Part Codes

The centre wavelengths of bands 1 to 5 are aligned to DWDM wavelength grid spaced 0.8nm (100 GHz) apart. Individual channels within each module is pre-calibrated.

Band	Part Code	Wavelength (nm)	Frequency (GHz)	Spacing (GHz)	C-Band	No. of Channels
1	EP25ISC1LB	1561.42 to 1555.75	192.00 to 192.70	100	C20 - C27	8
2	EP25ISC2LB	1554.94 to 1549.32	192.80 to 193.50	100	C28 - C35	8
3	EP25ISC3LB	1548.51 to 1542.94	193.60 to 194.30	100	C36 - C43	8
4	EP25ISC4LB	1542.14 to 1536.61	194.40 to 195.10	100	C44 - C51	8
5	EP25ISC15LB	1535.82 to 1530.33	195.20 to 195.90	100	C52 - C59	8

Part code options: EP25ISCxLB – Generic version (where x - band option); EP25INCxLB – Generic version with NarroWave enabled

Optical Characteristics

Transmit Characteristics

Parameter	Min	Max	Unit
Signalling rate	24.0	28.1	Gbps
Optical output power	-1	+4	dBm
Extinction ratio	8.0	9.0	dB
Optical frequency minimum tuning grid	100		GHz

Receive Characteristics<sup>1</sup>

Parameter	Min	Typ	Max	Unit
Receiver wavelength range	191.00 (1569.59)		197.00 (1521.79)	THz(nm)
Receiver power	-19		-5	dBm
Receiver optical reflectance			-35	dB
LOS assert	-35			dBm
LOS assert/de-assert hysteresis	0.5		5.0	dB

1 Measured with minimum ER; PRBS 231-1; over specified wavelength range; OSNR >30 dB; with external clock and data recovery (CDR) board

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