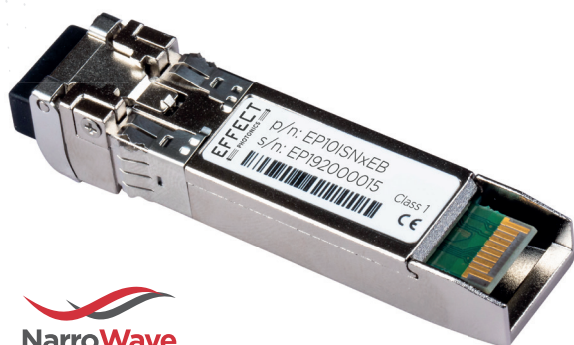


10Gbps 40km DWDM Narrow Tunable SFP+

For use in Mobile Fronthaul Applications

1/2



Key Features

- 5-part codes to cover the complete C-band (100GHz spacing) enables simplified sparing and configuration
- Up to 40km link length single mode fibre point-to-point and multi-point passive networks
- Supports data rates between 1Gbps and 11.3Gbps
- Operating temperature range -40°C to 85°C
- SFP+ Multi-Source Agreement compliant (SFF-8083, rev. 1.7)
- 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
- Limiting receiver electrical interface
- Power dissipation <2.0W
- Optional NarroWave® support enables Wavelength Auto-Tuning and Remote diagnostics

Overview

EFFECT's 10Gbps Narrow Tunable SFP+ optical transceiver module is designed to operate at transmission rates from 1Gbps to 11.3Gbps, 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 10G Ethernet (10GbE), 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.

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.

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

Typical Applications

- Mobile Fronthaul
- CPRI 2 - 8 and eCPRI (10G)
- 10G DWDM Point-to-Point links
- Multi-point networks
- Local area networks (LAN)
- 10GBase-ER Ethernet applications
- 1G FC to 10G FC
- 10G OTN

Compliance

- SFF-8083, rev 1.7
- SFF-8418, rev 1.4
- 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

10Gbps 40km DWDM Narrow Tunable SFP+

For use in Mobile Fronthaul Applications

2/2

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.

Band	Part Code	Wavelength (nm)	Frequency (GHz)	Spacing (GHz)	C-Band	No. of Channels
1	EP10ISN1EB	1561.42 to 1555.75	192.00 to 192.70	100	C20 - C27	8
2	EP10ISN2EB	1554.94 to 1549.32	192.80 to 193.50	100	C28 - C35	8
3	EP10ISN3EB	1548.51 to 1542.94	193.60 to 194.30	100	C36 - C43	8
4	EP10ISN4EB	1542.14 to 1536.61	194.40 to 195.10	100	C44 - C51	8
5	EP10ISN5EB	1535.82 to 1530.33	195.20 to 195.90	100	C52 - C59	8

Part code options: EP10ISNxEB - Generic version (where x - band option); EP10INNxEB - Generic version with NarroWave enabled

Optical Characteristics

Transmit Characteristics

Parameter	Min	Typ	Max	Unit
Signalling rate	1.0		11.3	Gbps
Optical output power	-1		+3	dBm
Extinction ratio (10.709Gbps NRZ, filtered)	9.0	10.0		dB
Optical frequency minimum tuning grid	100			GHz

Receive Characteristics¹

Parameter	Min	Max	Unit
Receiver wavelength range	191.00 (1569.59)	197.00 (1521.79)	THz(nm)
Receiver power	-27	-7	dBm
Receiver optical reflectance		-27	dB
LOS assert	-35	-30	dBm
LOS assert/de-assert hysteresis	0.5	2.0	dB

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

Contact information

e-mail: sales@effectphotronics.nl
 phone: +44 7825 917 942
 website: www.effectphotronics.com

EFFECT Photonics reserves the right to make changes to the product at any time without notice to improve reliability, function or design, in order to provide the best product possible. Whilst every reasonable effort has been made to ensure accuracy, EFFECT Photonics assumes no liability for omissions or errors.

© EFFECT Photonics 2020. All rights reserved. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner. The information presented in this document does not form part of any quotation or contract, is believed to be accurate and reliable and may be changed without notice. No liability will be accepted by the publisher for any consequence of its use. Publication thereof does not convey nor imply any license under patent or other industrial or intellectual property rights. EFFECT Photonics assumes no responsibility or liability whatsoever for any failure or unexpected operation resulting from misuse, neglect improper installation, repair or improper handling or unusual physical or electrical stress including, but not limited to, exposure to parameters beyond the specified maximum ratings or operation outside the specified range. EFFECT Photonics' PRODUCTS ARE NOT DESIGNED, INTENDED, AUTHORIZED OR WARRANTED TO BE SUITABLE FOR USE IN LIFE-SUPPORT APPLICATIONS, DEVICES OR SYSTEMS OR OTHER CRITICAL APPLICATIONS. INCLUSION OF EFFECT PHOTONICS PRODUCTS IN SUCH APPLICATIONS IS UNDERSTOOD TO BE UNDERTAKEN SOLELY AT THE CUSTOMER'S OWN RISK. Should a customer purchase or use EFFECT Photonics products for any such unauthorized application, the customer shall indemnify and hold EFFECT Photonics and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs damages and attorney fees which could arise. Notice: All referenced brands, product names, service names and trademarks are the property of their respective owners.

All product specifications are subject to change without notice. Last updated: May 2020