COMMANDO LightningFIBER Media Converters Data Sheet

Contents

Product Overview _

COMMANDO SFP transceiver module is for transmission at 850nm/1310nm/1550nm over Single Mode/Multi-Mode fiber. It supports IEEE Ethernet standards which make it ideally suited for data communications. It supports great distance like 100m/ 300m/ 550m/ 100m/ 10km/ 20km/ 40km/ 80km/ 120km respectively depending on models. It offers customers a wide variety of Gigabit Ethernet connectivity options up to 100Gbps for data center, enterprise wiring closet, and service provider transport applications.

It can be used as uplinks for 1, 10, 40 and 100 Gigabit Ethernet Small Form-Factor Pluggable (SFP, SFP+, QSFP+, QSFP28) Fiber Network Module as well as 1G/10G Copper Network Modules for uplinks, delivering robust performance and Cloud networking needs of growing businesses, data centers and high-end campus networks.

Product Highlights _

- Hot swappable SFP/SFP+/QSFP/QSFP+28 with robust design
- Data Transfer Rate Up to 100 Gbps.
- Distance Support up to 120km.
- Connectivity Media is LC duplex with receiver type PIN.
- DDM function supports real-time monitoring for transceiver status.
- Fully Compatible with most popular, Top brand Products along with all COMMANDO devices.
- Low Power Consumption <1W and low latency 100us typical allow your network devices to work efficiently.
- EMC Support, Anti Electro-Static Discharge and Radiation Resistant.
- Compatible for Single Mode/Multi-Mode fiber.
- Class 1 Laser Safety.
- Plug and Play design simplifies installation with self-adaption.
- Operates at Wavelength 850nm/1310nm/1550nm.
- Form Factor SFP (Small Form Factor Pluggable) MSA & ROHS Compliant.

- Plug and Play design simplifies installation with self-adaption.
- Standard size, Compact casing, dust proof.
- Comes with one-year default warranty – optionally extendable up to 3 years.

Features and Benefits

Easy to Use

COMMANDO SFP Transceivers easy to use with simple and hassle-free setup. It's compact and standard size makes it ideal for all top brand devices along with COMMANDO products. Easy Installation, Plug-and-play installation with no configuration required.

100 Gigabit speed

It provides and offers a wide range of models for different network deployment requirements with 100G speed. These SFP are well built and rigorously tested and can sustain in very rough environment to provide the reliable performance.

Dust proof Enclosure

It has resilient dust proof enclosure protects against harsh outdoor condition with no ingress of dust.

Support uninterrupted critical network infrastructure

It is protected from any hardware failures with Extra Long operational life. With this feature protect on cost and the impact to your business by losing these network devices and thus the users/servers connected to them.

Cost Efficient

State of art quality product that can serve with world's top brand products along with COMMANDO devices on real time high-speed Performance, highly reliable, conformance to international open standards, durable, serviceable, aesthetics, perceived quality, enhanced performance leads to value to money.

Green Technology

It automatically adjusts power consumption according to the link status to limit the

carbon footprint of your network. It also complies with RoHS, prohibiting the use of certain hazardous materials. Besides that most of the packaging material can be recycled and reused.

Hardware _

High Performance

• Low power consumption <1W typically, saving power

• 100us typical latency, MTBF over 1 million hours

• SFP Multi source Agreement (MSA) Compliant

• Input Voltage: 3.1V DC to 3.5V DC Maximum / 3.3V DC Typical.

• Input Current 300 mA Maximum / 200 mA Typical.

Extra Long operational life

• Stainless steel material

• Anti-corrosion and salt spray resistance

• Storage Relative Humidity: 5% to 95%

• Exceptional Performance in Harsh Outdoor Climates with dust proof enclosure ensuring it can with stand harsh outdoor and indoor environments.

Operating temperature range

• Commercial temperature range: 0 to 70°C (32 to 158°F)

• COMMANDO Extended temperature range: -5°C to 85°C (23 to 185°F)

• Rugged temperature range: -40 to 85°C (-40 to 185°F)

• Storage temperature range: -40 to 85°C (-40 to 185°F)

Table 1 Hardware Specifications

Product Code	Form factor	Transmission speed	IEEE Standard compliance	Connector type	TX Power	Receiver Sensitivity (dBm)

CMD-SM-1G		1000Mbps	1000BASE-LX/LH	LC duplex	-9.5 ~ -3dBm	< -23dBm/td >
CMD-MM-1G	SFP	1000Mbps	1000BASE-SX	LC duplex	-9.5 ~ -3dBm	< -17dBm
CMD-SR-10G	SFP+	10.3125Gbps	10GBASE-SR	LC Duplex	-7.3~-1dBm	< -11.1dBm
CMD-LR-10G	SFP+	10.3125Gbps	10GBASE-LR	LC Duplex	-8.2~0.5dBm	<-14.4dBm
CMD-UTP-1G	GBIC-T , SFP	1000Mbps	1000BASE-T	RJ-45	Standard	<1W
CMD-ER-10G	SFP+	10.3125Gbps	10GBASE-ER	LC Duplex	-7.3~-1dBm	< -11.1dBm
CMD-ZR-10G	SFP+	11.3Gbps	10GBASE-ZR	LC Duplex	0~5dBm	<-23dBm
CMD-SR4-100G	QSFP28+	103.1 Gbps	100GBASE-SR4	MTP/MPO-12	-8.4~2.4dBm	<-10.3dBm
CMD-LR4-100G	QSFP28+	103.125Gbps	100GBASE-LR4	LC duplex	-4.3~4.5dBm	<-10.6dBm

CMD-UTP-10G	10GBASE-T SFP+	10Gbps	10GBASE-T	Copper CAT 6a/7	Standard	<1W
CMD-LR4-40G	QSFP+	44.6Gbps	40GBASE-LR4	LC duplex	-7~2.3dBm	<-11.5dBm
CMD-SR4-40G	QSFP+	41.2Gbps	40GBASE-SR4	MTP/MPO-12 Male	-7.6~1dBm	<-11.1dBm
CMD-SM-1G-RGD	SFP	>1000Mbps	1000BASE-LX	LC duplex	-9.5 ~ -3dBm	< -23dBm
CMD-MM-1G-RGD	SFP	1000Mbps	1000BASE-SX	LC duplex	-9.5 ~ -3dBm	< -17dBm

Specifications

COMMANDO SFP's has options for speed 1, 10, 40 and 100 Gigabit Ethernet fiber based Quad Small Form-Factor Pluggable (SFP, SFP+,QSFP+, QSFP28) and 1, 10 Gigabit Ethernet Small Form-Factor Pluggable Plus (SFP/SFP+) copper based modules that fit diverse campus needs. The SFP/SFP+/ QSFP28 transceiver is a compact, hot-swappable device that plugs into a physical port of a network device. SFP/SFP+/ QSFP28 optics are used in communication networks and have a transmitting side (Tx) and a receiving side (Rx). The different SFP/SFP+/QSFP28 transceivers work with different wavelengths at an appointed distance.

Table 2. Model Comparison

Product Code	Center wavelength (nm)	Media Type	Replacement for Top brand	Maximum transmission distance	Digital Diagnostics Monitoring supported
CMD-SM-1G	GBIC-LX/LH, 1310nm	MMF/SMF	GLC-LH-SMD	550m/ 10km	DDM
CMD-MM-1G	GBIC-SX, 850nm	MMF	GLC-SX-MMD	550m	DDM
CMD-SR-10G	10GBASE-SR, 850nm	MMF	SFP-10G-SR	300m	DDM
CMD-LR-10G	10GBASE-LR, 1310nm	SMF	SFP-10G-LR	10km	DDM
CMD-UTP-1G	GBIC-T , RJ-45	Copper	GLC-T	100m	Standard
CMD-ER-10G	10GBASE-ER, 1550nm	SMF	SFP-10G-ER	40km	DDM
CMD-ZR-10G	10GBASE-ZR/ZW, 1550nm	SMF	----------------	80km	DDM
CMD-SR4-100G	100GBASE-SR4, 850nm	MTP/MPO-12, MMF	----------------	100m	DDM

CMD-LR4-100G	100GBASE-LR4, 1310nm	LC Duplex, SMF	----------------	10km	DDM
CMD-UTP-10G	10GBASE-T RJ-45	Copper CAT 6a/7	----------------	100m	Standard
CMD-LR4-40G	40GBASE-LR4, 1310nm	SMF	----------------	10km	DDM
CMD-SR4-40G	40GBASE-SR4, 850nm	MMF	----------------	100m	DDM
CMD-SM-1G-RGD	1000BASE-LX/LH,1310nm, Rugged	MMF/SMF	----------------	550m/10km	DDM
CMD-MM-1G-RGD	1000BASE-SX, 850nmRugged	MMF	----------------	550m	DDM

**Included in the bundle/box
COMMANDO SFP Transceivers**

All COMMANDO SFP Transceivers made available for use globally along with accessory used to facilitate or enhance operations. All COMMANDO SFP Transceivers Comes with following Accessories.

Support and Warranty

- Same-day assistance.
- Comprehensive 24-hour support using common communication/chat platforms, Email and Telephone.
- Provide FAQs and troubleshooting help online (self-service) through cloud-based solutions.
- Highly technical and trained representatives to resolve issues.
- Three-year default warranty.

Table 3. Support and Warranty

Warranty and Support

Products covered	COMMANDO Lightning FIBER SFP Transceivers Modules
Warranty duration	Three Year RTB (Return To Base) replacement warranty.

Hardware replacement	COMMANDO, its resellers or its service center will use commercially reasonable efforts to replace the product subject to stock

End-of-life policy	In case of discontinuation of the product, support is limited to 3 years from announcement date.

| Effective date | Hardware warranty commences from the date of shipment to customer (and in case of resale by a COMMANDO reseller, not more e |

Support duration	Lifetime support.

COMMANDO Care	COMMANDO will provide 24x7 support for basic configuration, diagnosis, and troubleshooting of device-level problems for up to

Online Portal Access	Warranty allows guest access to commandonetworks.com for all available technical queries.

Ordering Information

Ordering information for the COMMANDO SFP Transceivers,To place an order, please contact your local reseller/distributor or COMMANDO Sales Representative at www.commandonetworks.com/ordering

Table 4. Ordering Information

Product Code	Description
CMD-SM-1G	COMMANDO LightningFIBER GBIC-LX/LH, SFP, 1310nm, MMF/SMF, 550m/10km, DDM, Compatible w/ GLC-LH-SMD
CMD-MM-1G	COMMANDO LightningFIBER GBIC-SX, SFP, 850nm, 550m, MMF, DDM, Compatible w/ GLC-SX-MMD
CMD-SR-10G	COMMANDO LightningFIBER 10GBASE-SR, SFP+, 850nm, 300m, MMF, DDM, Compatible w/ SFP-10G-SR
CMD-LR-10G	COMMANDO LightningFIBER 10GBASE-LR, SFP+, 1310nm, 10km, SMF, DDM, Compatible w/ SFP-10G-LR
CMD-UTP-1G	COMMANDO LightningFIBER GBIC-T SFP, Copper, RJ-45, 100m, Standard, Compatible w/ GLC-T
CMD-ER-10G	COMMANDO LightningFIBER 10GBASE-ER, SFP+, 1550nm, 40km, SMF, DDM, Compatible w/ SFP-10G-ER
CMD-ZR-10G	COMMANDO LightningFIBER 10GBASE-ZR/ZW,SFP+, 1550nm, 80km, SMF, DDM

CMD-SR4-100G	COMMANDO LightningFIBER 100GBASE-SR4, QSFP28+, 850nm, 100m, MTP/MPO-12, MMF, DDM
CMD-LR4-100G	COMMANDO LightningFIBER 100GBASE-LR4, QSFP28+, 1310nm, 10km, LC Duplex, SMF, DDM
CMD-UTP-10G	COMMANDO LightningFIBER 10GBASE-T Copper RJ-45, SFP+, Up to 100m, CAT 6a/7
CMD-LR4-40G	COMMANDO LightningFIBER 40GBASE-LR4, QSFP+, 1310nm, 10km, SMF, DDM
CMD-SR4-40G	COMMANDO LightningFIBER 40GBASE-SR4, QSFP+, 850nm, 100m, MMF, DDM
CMD-SM-1G-RGD	COMMANDO LightningFIBER 1000BASE-LX/LH, SFP, 1310nm, 550m/10km, MMF/SMF, DDM, Long Wavelength, Rugged
CMD-MM-1G-RGD	COMMANDO LightningFIBER 1000BASE-SX, SFP, 850nm, 550m, MMF, DDM, Short Wavelength, Rugged

Document History

Release	New or Revision	Described in	Date
Release 1	First Release	First Release	January 4, 2021