# COMMANDO FiberX Media Converter

# MC-GSMSF-25K Data Sheet




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## Product Overview

COMMANDO Un-Managed FiberX Media Converter designed to convert 1000BASE-LX fiber to 1000Base-T copper media or vice versa. It is fully Compliant with IEEE 802.3i, IEEE 802.3u, IEEE 802.3z, IEEE 802.3x, IEEE 802.3ab, 10/100/1000Base-T, 10/100/1000TX, SC-Type connector based. It is supporting single mode single fiber having operational wavelengths 1310nm & 1550nm covering distance up to 25km with inbuilt SFP & RJ 45 ports.

COMMANDO Media Converters comes with real time LED indicators for PWR, Copper Link/ACT, Fiber FX/TX and 1000M/100M. It features LFP (Link Fault Pass-through) function for easily tracing the network link failure. LFP function can enhance the integrity and conformity of the fiber linking to improve the maintainability of the network. It has diagnostic LED's for understanding status like speed, duplex, network traffic with easy-to-understand diagnostic LEDs for continuous status reports on network speed, duplex media access control connection and network traffic. It has no software to configure, which saves time and minimizes the potential for configuration errors. It extends the reach of traditional UTP based LAN from 100m to distance of 25km using Fiber optics media. Making network compatible with copper and fiber convert a fiber connection from a distant wiring closet to a copper connection, and vice versa.

Fiber is used to carry data to greater distance, copper for cost-effectiveness. Ideal for long Distance transmission in Broadband Campus Network, Cable TV, Intelligent Broadband FTTX Networks. It Interoperable with most of Modems, Hub, Switches, Routers, Servers and Network devices with Auto Negotiation and Auto-MDI-X with Ease of installation. Simple Plug and Play installation with no software to configure. Gives small businesses the flexibility of fiber or copper media links with compact, space-saving unit as a stand-alone device or use it in a back-to-back configuration for CAMPUS Networks and FTTH networks. It works at 1310/1550nm on both transmitting and receiving data used as a standalone device (no chassis required) will transmit at extended fiber optic distances utilizing single-mode single fiber up to 25 kilometers.

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## Product Highlights

- Capable of Gigabit Ethernet connections and provide 1000mbps of data transferring Ethernet RJ45 to SFP Media Converter and vice a versa.
- Auto MDI/MDI-X for copper port 10/100/1000Mbps auto-negotiation for copper port along with Half or full duplex auto-negotiation.
- Complies with IEEE 802.3i, IEEE 802.3u, IEEE 802.3ab, IEEE 802.3z.
- Extend network distance up to 25km.
- SC single fiber port connector with single mode fiber operating at 1310/1550nm.
- Support Link Fault Pass Through function
- 2048-entry MAC address table with 4-way hash algorithm
- Supports 9216-byte jumbo packet length forwarding
- Built-in function of broadcast storm suppression, traffic control, CRC error verification
- EMC Support, Anti Electro-Static Discharge and Radiation Resistant
- Class 1 FDA Laser Safety
- Full-duplex and half-duplex operation with IEEE 802.3x flow control along with backpressure
- Latest optical module technology with plug and play, reduce & lower optical loss
- Compensate for optical power attenuation and provides no packets loss
- Automatic identification of MDI/MDI-X and cross connections
- Diagnostic LEDs for continuous monitoring real-time network status
- Supports SPANNING TREE for loop free networks
- Power Adapter External DC 5V, 1A with Wide voltage input design, supporting 5 to 12V external adapters

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- Compact and durable metallic casing with side vent silent design, perfect for noise sensitive environments
- Plug and Play design simplifies installation with self-adaption. Easy Installation with no setup with Zero Configuration Required
- Competitive and Affordable price with Inbuilt SFP and RJ-45 Port which saves cost. Easy-to-Use Media Converter for Small Business Networks
- A wide range of single-channel Media Converters, suitable for expanding any network depending on the speed and distance of the cable length
- Works in harsh environment with heat dissipation optimization
- Supports Energy-Efficient Ethernet(EEE) function (IEEE 802.3az)
- CE, FCC, ROHS, Lead-Free & ISO 9001:2005
- Environmental Specifications for Operating Temperature: 0°C~50°C and Humidity: 5%~90% Non-condensing
- Comes with one-year default warranty – optionally extendable up to 3 years with 3 years replacement guarantee

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# Features and Benefits

### Interoperable with Networking Hardware

Almost all mainstream brand routers, switches, servers, and network equipment are compatible with COMMANDO Media Converters. It extends the reach of traditional UTP based LAN from 100Meters to distance of 25km using Fiber optics media.

### Flexible Media Conversion

It converts signals that are transmitted from copper type of media to fiber and converts 10/100/1000 Mbps copper Ethernet to a 100/1000 Mbps fiber optic connection. This allows you to expand, enhance reachability to 25km distance with high-speed fiber optic cables between connected devices that are otherwise connected with short distance Ethernet cables, such as Cat 5 twisted pair cables.

### Cost Effectiveness.

Gives small businesses the flexibility of fiber or copper media links for their gigabit backbones or networks with inbuild SFP and RJ-45 ports & fiber for greater distance, copper for local LAN.

### Easy to Use

Auto-negotiation and auto MDIX on each port senses the link speed of a network device (10/100/1000 Mbps) and intelligently adjusts for compatibility and optimal performance. Supports full-duplex flow control (IEEE 802.3x). Its compact size makes it ideal for desktops with limited space. LED indicators provide an easy way to monitor network activity. Dynamic LED lights provide real-time work status display and basic fault diagnosis. Easy Installation, Plug-and-play installation with no configuration required.

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## Compact and Strong Built

It has compact and strong build metal case which includes one RJ-45 connector port and one SC connector port with plastic cover. All are well built and rigorously tested and having sturdy metallic casing.

## Energy Efficient and Reliable

COMMANDO FiberX Media Converter offers energy efficient Media Converter which provide the reliability, failure free performance which businesses need.

## Easy installation and management

Simple Plug and Play installation with no software to configure. Gives small businesses the flexibility of fiber or copper media links.

## Green Technology

It automatically adjusts power consumption according to the link status to limit the carbon footprint of your network. It also complies with CE, FCC, ROHS, Lead-Free & ISO 9001:2005 prohibiting the use of certain hazardous materials. Moreover, most of the packaging material can be recycled and reused.

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## Hardware

It has Gigabit Ethernet 1000mbps of data transferring Ethernet RJ45 to SFP Media Converter. With auto MDI/MDI-X for copper port 10/100/1000Mbps auto-negotiation for copper port. Half or full duplex auto-negotiation. It has diagnostic LEDs for continuous monitoring. Plug and Play design simplifies installation with self-adaption. Easy Installation with no setup with Zero Configuration Required. With compact metallic casing, silent design perfect for noise sensitive environments.

### Distance supported

Single Mode fiber up to 25km
Copper up to 100 meters

### Fiber port option

SC fiber port with Single mode.

### LED Indications

FX, TX, PWR, 1000M,100M, Link/ACT

### Dimensions

Typically, 94 x 70.3 x 26.2 mm

### Power Adapter

External DC 5-12V, 1A

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## Specifications

COMMANDO FiberX Media Converter series supports IEEE 802.3 for 10BASE-T/F, IEEE 802.3u for 100BASE-TX/FX, IEEE 802.3 for 10BASE-T/F, IEEE 802.3u for 100BASE-TX/FX. IEEE 802.3i, IEEE 802.3u, IEEE 802.3z, IEEE 802.3x, IEEE 802.3ab, 10/100/1000Base-T, 10/100/1000TX Single-mode with supporting wavelengths 1310nm & 1550nm covering distance up to 25km also supported Auto-MDIX function, automatically identify straight forward cable and cross-over cable. Support port auto-negotiation function (Automatically negotiate transmission rate and Duplex modes). Support Link Fault Pass Through function with diagnostic LEDs for continuous monitoring.

Table 1. Specifications

| Parameter | Specification |
|---|---|
| Standards and Protocols | IEEE 802.3i, IEEE 802.3u, IEEE 802.3ab, IEEE 802.3z |
| Interface | RJ-45: 1×10/100/1000Base-TX<br>SC Fiber:1×10/100/1000Base-FX |
| Media Exchange Interface | Auto-MDI/ MDIX, Full-duplex IEEE802.3x Flow Control |
| Transmission Distance | 25km depending on model |
| Forwarding Rate | Full wire-speed forwarding rate |
| Media | 10BASE-T: Cat3,4,5 UTP (≤100 meter)<br>100BASE-TX: Cat5 or later UTP (≤100 meter)<br>1000BASE-TX: Cat6 or later UTP (≤100 meter)<br>Single mode: 25km (Depends on fiber loss) |
| Wavelength | 1310/1550nm |
| Diagnostic LEDs | • Power<br>• Speed 1000M/100M (for Copper based ports)<br>• FX/TX (for fiber ports)<br>• LINK/ACT (for Copper based ports) |
| Operation Temperature | 0° to 50°C (32°F~122°F) |

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| | |
|---|---|
| Storage Temperature | -20° to 70°C (-4°F-158°F) |
| Operating humidity (relative, non-condensing) | 10% to 90% non-condensing |
| Storage humidity (relative, non-condensing) | 5% to 90% non-condensing |
| Input Power Supply | 5 to 12 V DC, 1A with external power adapter |
| Dimensions | Typically, 94 x 70.3 x 26.2 |
| Weight | <700gm (Metal casing) |
| Emission Certifications (EMI) | CE, FCC Class A Laser, RoHS, ISO 9001:2015 |

Table 2. Model comparison

| Product Code | Copper Ports | Fiber Mode | Fiber type | Wavelength supported | Distance Supported |
|---|---|---|---|---|---|
| MC-GSMSF-25K | 1GE | Single Mode | Single Fiber | 1310/1550nm | 25km |
| MC-GSMDF-25K | 1GE | Single Mode | Dual Fiber | 1310/1550nm | 25km |
| MC-1G+1SFP | 1GE | SFP, 1GBASE-LR/1GBASE-SR | SFP Dependent | SFP Dependent | SFP Dependent |
| MC-SMSF-25K | 1FE | NCF, Single Mode | Single Fiber | 1310/1550nm | 25km |
| MC-SMDF-25K | 1FE | Single Mode | Dual Fiber | 1310nm | 25km |

## Included in the bundle/box

COMMANDO Media Converter made available for use globally along with accessory used to facilitate or enhance operations. COMMANDO Media Converter comes with following Accessories.

1x COMMANDO MC-GSMSF-25K Media Converter

1x 5 V DC, 1A Adapter with Cable

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## 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.
- One-year default warranty with option of warranty extension up to 3 years

COMMANDO WarrantyX Program available on: www.commandonetworks.com/warranty

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Table 3. Support and Warranty

| Warranty and Support | |
|---|---|
| Products covered | COMMANDO FiberX 1GE, Single Mode, Single Fiber, 1310/1550nm, 25KM, MC (MC-GSMSF-25K) |
| Warranty duration | One Year RTB (Return To Base) replacement warranty – optionally extendable up to 3 years. |
| Hardware replacement | COMMANDO, its resellers, or its service center will use commercially reasonable efforts to replace the product subject to stock availability. Otherwise, a replacement will be arranged within 15 working days after receipt of the Return Materials Authorization (RMA) request. |
| 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 than 90 days after original shipment by COMMANDO). |
| Support duration | Lifetime support. |
| COMMANDO Care | COMMANDO will provide 24x7 support for basic configuration, diagnosis, and troubleshooting of device-level problems for up to one year from the date of shipment of the originally purchased product. This support does not include solution or network-level support beyond the specific device under consideration. |
| Online Portal Access | Warranty allows guest access to commandonetworks.com for all available technical queries. |

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## Ordering Information

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

Table 4. Ordering Information

| Product Code | Description |
|---|---|
| MC-GSMSF-25K | COMMANDO FiberX 1GE, Single Mode, Single Fiber, 1310/1550nm, MC, 25KM |
| MC-GSMDF-25K | COMMANDO FiberX 1GE, Single Mode, Dual Fiber, 1310nm, MC, 25KM |
| MC-1G+1SFP | COMMANDO FiberX 1GE, SFP, 1GBASE-LR/1GBASE-SR, Media Converter |
| MC-SMSF-25K | COMMANDO FiberX 1FE, NCF, Single Mode, Single Fiber, 1310/1550nm, MC, 25KM |
| MC-SMDF-25K | COMMANDO FiberX 1FE, Single Mode, Dual Fiber, 1310nm, MC, 25KM |

## Document History

| Release | New or Revision | Described in | Date |
|---|---|---|---|
| Release 1 | First Release | First Release | March 24, 2021 |
| Release 2 | Second Release | Individual Datasheets | November 9, 2022 |
| Release 3 | Third Release | Product Highlights | March 20, 2023 |