ifs

# MC252-1P-1CX
# MC252-1T-1CXP

Power over Coax -
PoE-at Media Converter

## OVERVIEW

The IFS® Power over Coax - PoE-at Media Converters are designed to extend both Ethernet data and PoE over existing coax cable up to 1Km (3,280 ft). This Power over Coax solution consists of a transmitter and receiver set, which works as a pair with or without a power adaptor depending on the installation configuration and power requirements needed.

The solution contains two modules:

• MC252-1T-1CXP: This unit is designed for the head-end/switch end. The module transmits Power over Coax and is powered by an external power adaptor or can be powered directly from a port on a PoE switch*

• MC252-1P-1CX: This unit is designed for the IP PoE Camera end. The module receives Power over Coax and outputs PoE on the R-J45 port. This unit is self-powered via the Power over the Coax or can be powered with an external power adaptor when used with the MCR200-1T-1CXT that may be rack mounted in the MCR-R15 at the head-end.

These modules are compliant with IEEE 802.3at High Power over Ethernet (PoE+) and provide up to 25 watts of power output. This solution eliminates the need for providing local power at an IP PoE camera location thus reducing additional material and labor installation costs. In addition, these modules provide on-board feature-rich diagnostic LEDs and can be used with either 50 or 75 ohm coax.

The modules are also environmentally hardened with an operating temperature range of -40°C~75°C making them ideal for use in extended distance in harsh environments such as warehouses, parking garages, campuses and other difficult environments where commercial-grade equipment may be stressed.

*The actual data rate and power will vary based on the quality of the copper wire, distance and environmental factors. See specifications table for more information.

## STANDARD FEATURES

**VDSL2**
• Cost-effective VDSL2 CO/CPE bridge solution
• CO/CPE selectable via DIP-switch
• Selectable target data rate and target SNR margin
• Discrete Multi-Tone (DMT) line coding

**Ethernet**
• 10/100Mbps Ethernet
• Auto-negotiation and auto-MDI/MDI-X
• Half-duplex back pressure and IEEE802.3x full-duplex pause-frame flow control
• Supports up to 1536 bytes packet size
• 802.1Q VLAN tag transparent

**Power over Ethernet**
• Complies with IEEE 802.3at
• Inserts 52VDC (30w) power on coax (Dependent on Power Source and Coax Distance)
• Protects non-PoE devices if accidentally connected
• Backwards compatible with IEEE802.3af
• Flexible power source either external DC or PoE power input

**Installation & Diagnostics**
• Plug-and-play installation
• Compact size
• Supports 50 or 75 ohm coax
• Extensive LED indicators for network diagnostics

**Robust Hardened Design**
• IP30 metal enclosure
• Wall-mountable
• 52 ~ 56VDC operation
• Voltage/surge-suppression
  - EFT 2000VDC protection for power lines
  - ESD 2000VDC protection for Ethernet
• Complies with IEC60068-2-xx standards for free-fall, shock and vibration
• Wide operating temperature range of up to -40ºC ~ 75ºC

**Warranty**
• 3-year warranty

# Specifications

| Ethernet | Description |
|---|---|
| Data Rate | 10/100Base-TX with Auto-negotiate and Auto-MDI/MDI-X |
| Connector | RJ-45 |
| Cable | 10Base-T (Cat 3, 4, 5) / 100Base-T (Cat 5) — 328 ft. (100m) |

| Coax (VDSL2) | |
|---|---|
| VDSL2 Transmission Mode | CO/CPE Mode; Channel; Rate Limit; SNR |
| VDSL-DMT Encoding | ITU-T G.993.1 VDSL; ITU-T G.997.1; ITU-T G.993.2 VDSL2 (Profile 17a support) |
| Connector | BNC female |
| Cable | 50 or 75 ohm coax |

| VDSL2 Distance> Data Rate* | (Down stream/Up stream) Asymmetric Mode | (Down stream/Up stream) Symmetric Mode |
|---|---|---|
| | 656 ft. (200m) - 100/60Mbps | 656 ft. (200m) - 90/100Mbps |
| | 1,312 ft. (400m) - 95/55Mbps | 1,312 ft. (400m) - 85/100Mbps |
| | 1,968 ft. (600m) - 90/50Mbps | 1,968 ft. (600m) - 70/80Mbps |
| | 2,625 ft. (800m) - 85/45Mbps | 2,625 ft. (800m) - 65/70Mbps |
| | 3,281 ft. (1000m) - 70/35Mbps | 3,281 ft. (1000m) - 70/55Mbps |
| | 3,937 ft. (1200m) - 60/25Mbps | 3,937 ft. (1200m) - 45/40Mbps |

| Power Over Ethernet | |
|---|---|
| PoE Standard | IEEE 802.3at Type 2, IEEE802.3af |
| PSE Interface | RJ-45, 44~56VDC, 600mA max., End-Span, Pin 1/2(+), 3/6(-) |
| PD Interface | BNC, Input Range: 44~57VDC, 24VDC, 1A max. |
| Max. PoE Budget | Power Input by PoE+: 25 watts @ BNC<br>Power Input by Ext. Pwr. Supply: 30 watts @ BNC |

| Max. MC252-1P-1CX power output | with Ext. Pwr. Supply | with PoE+ Switch/Injector |
|---|---|---|
| 656 ft. (200m) | 20W | 13W |
| 1,312 ft. (400m) | 16W | 11W |
| 1,968 ft. (600m) | 12W | 10W |
| 2,625 ft. (800m) | 7W | 6W |
| 3,281 ft. (1000m) | 5W | 4W |
| 3,937 ft. (1200m) | — | — |

| LED Indicators | |
|---|---|
| Power | On - Green |
| 10/100 Base-TX Port | LNK/ACT; 100Mbps - Green |
| VDSL2 (Coax) Port | LNK/ACT; CO Mode; CPE Mode - Green |
| PoE In | Green |

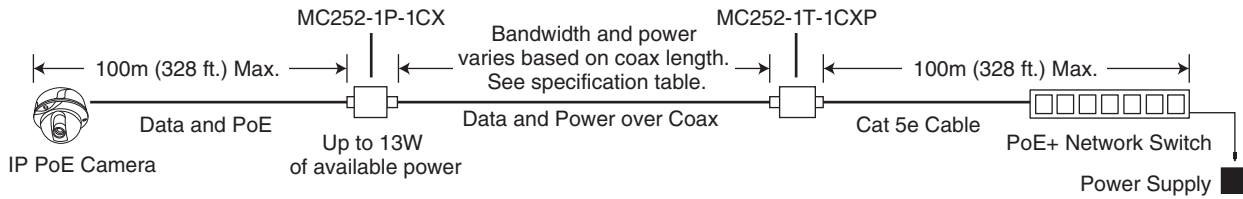| Electrical & Mechanical | |
|---|---|
| Power | 52~56VDC or PoE+ In |
| Enclosure | Metal |
| Dimensions (H x W x D) | 3.7 x 2.76 x 1.54 in. (94 x 70.3 x 39.2 mm) |
| Weight | 0.66 lbs/302g |

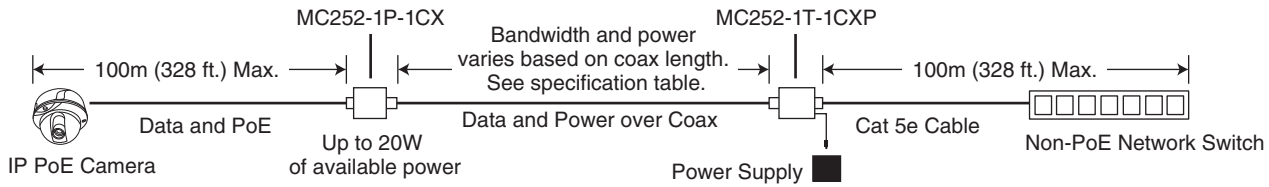| Environmental | |
|---|---|
| Operating Temperature | -40°C~75°C |
| Storage Temperature | -40°C~75°C |
| Relative Humidity | 0%~95% (non-condensing) |

*The actual data rate and power will vary based on the quality of the coaxial cable distance and environmental factors.
See instruction manual for a complete listing of data rates and power at various coax transmission distances.
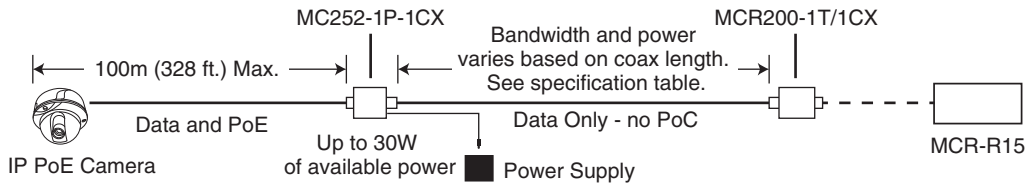
# Typical Application
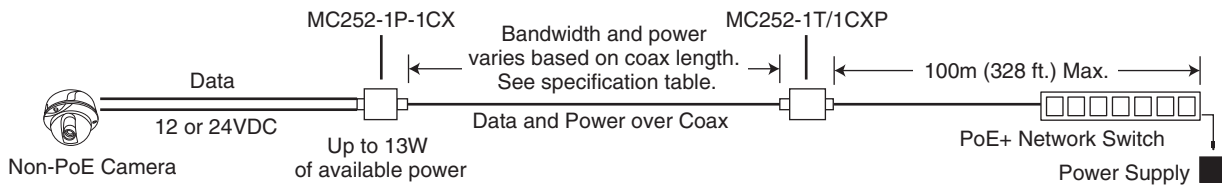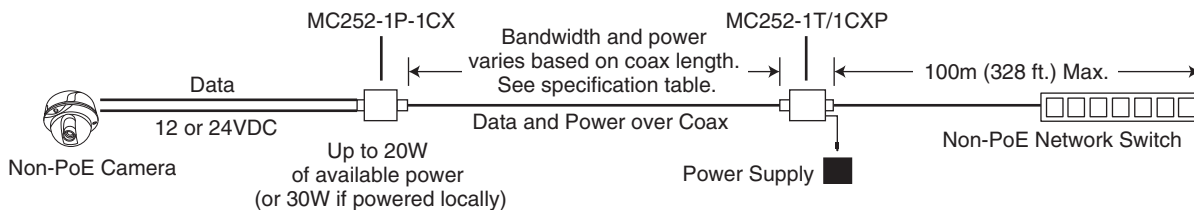
## Remote PoC Power via Network PoE+ Switch*

MC252-1P-1CX

MC252-1T-1CXP

100m (328 ft.) Max.

Bandwidth and power varies based on coax length. See specification table.

100m (328 ft.) Max.

Data and PoE

Up to 13W of available power

Data and Power over Coax

Cat 5e Cable

PoE+ Network Switch

IP PoE Camera

Power Supply

## Remote PoC Power via MC252-1T-1CXP*

MC252-1P-1CX

MC252-1T-1CXP

100m (328 ft.) Max.

Bandwidth and power varies based on coax length. See specification table.

100m (328 ft.) Max.

Data and PoE

Up to 20W of available power

Data and Power over Coax

Cat 5e Cable

Non-PoE Network Switch

IP PoE Camera

Power Supply

## Local PoE Power via MC252-1P-1CX*

MC252-1P-1CX

MCR200-1T/1CX

100m (328 ft.) Max.

Bandwidth and power varies based on coax length. See specification table.

Data and PoE

Up to 30W of available power

Data Only - no PoC

MCR-R15

IP PoE Camera

Power Supply

## Remote 12 or 24VDC Power via Network PoE+ Switch*

MC252-1P-1CX

MC252-1T/1CXP

Data

Bandwidth and power varies based on coax length. See specification table.

100m (328 ft.) Max.

12 or 24VDC

Up to 13W of available power

Data and Power over Coax

PoE+ Network Switch

Non-PoE Camera

Power Supply

## Remote 12 or 24VDC Power via MC252-1T-1CXP*

MC252-1P-1CX

MC252-1T/1CXP

Data

Bandwidth and power varies based on coax length. See specification table.

100m (328 ft.) Max.

12 or 24VDC

Up to 20W of available power (or 30W if powered locally)

Data and Power over Coax

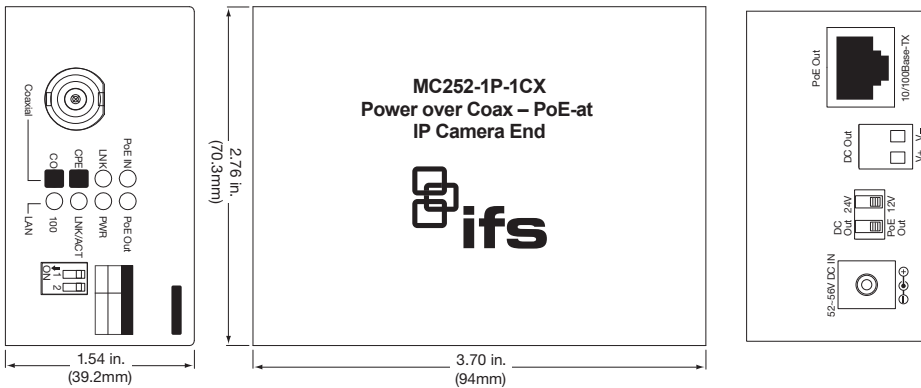Non-PoE Network Switch

Non-PoE Camera

Power Supply

*The actual data rate and power will vary based on the quality of the coaxial cable, distance and environmental factors. See instruction manual for a complete listing of data rates and power at various coax transmission distances.
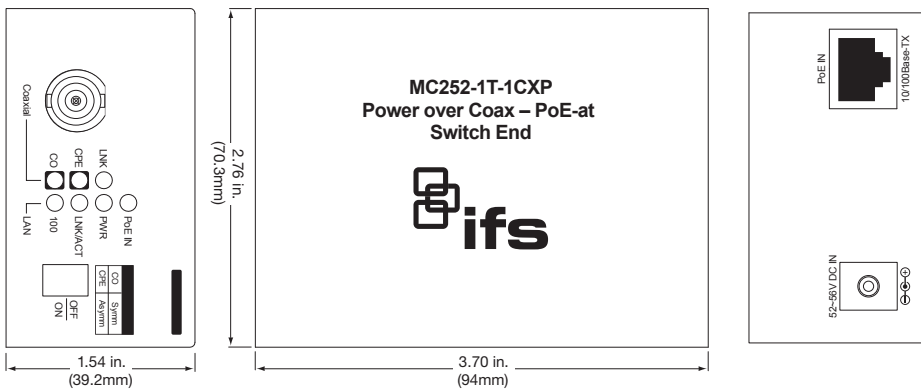
# MC252-1P-1CX
# MC252-1T-1CXP

Power over Coax - PoE-at Media Converter

## Dimensional Diagrams

### MC252-1P-1CX



### MC252-1T-1CXP



Agency Compliances
• FCC
• CE

## Ordering Information

| MC252-1P-1CX | Power over Coax - PoE-at (IP Camera End) Media Converter |
|---|---|
| MC252-1T-1CXP | Power over Coax - PoE-at (Switch End) Media Converter |

Note: External power supply must be purchased separately. Must be used in pairs. Not compatible with the MCE-COAX.

## Accessories

| PS56VDC65W-US | 56VDC - 65w Wall Mount Power Supply |
|---|---|

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