OVERVIEW

These IFS 4-Port Ethernet to Coax/TP Industrial Media Converters are high-performance modules that combine two well-proven technologies—Ethernet and VDSL2—providing a cost-effective solution for utilizing an existing telephone cable* or coax cable infrastructure when migrating from analog to an Ethernet/IP system. The MC251-4P/1CXT model provides full IEEE802.3-af (15.4w) on each individual 4 RJ45 ports and serves as a PSE device.

These modules provide plug-and-play installation and can be used in combination for either telephone cable or coax cable installations. These modules can also be used with the MCR200-1T/CX over coax only for rack mount installations at the head-end.

The one box design allows for easy set-up as either a client-side (CPE) or central-side (CO) operating device. The module is IEEE 802.3 compliant and supports multiple network protocols. In addition, the module provides on-board feature-rich diagnostic LEDs.

These IFS 4-Port Ethernet/PoE-af to Coax/TP Industrial Media Converters can extend Ethernet transmission up to .87 miles (1.4km) on standard telephone (POTS) type cable or 1.49 miles (2.4km) on coaxial cable. Performance is based on bandwidth requirements and quality of the cable used.

STANDARD FEATURES

VDSL2
• Cost-effective VDSL2 CO/CPE bridge solution
• One-box design, 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 (MC251-4P/1CXT only)
• Complies with IEEE 802.3af
• Inserts 48VDC (15.4w) power on Category network cable
• Protects non-PoE devices if accidentally connected

Installation & Diagnostics
• Plug-and-play installation
• Compact size
• Supports twisted-pair telephone wires (24AWG Minimum)
• Supports 50 or 75 ohm coax
• Extensive LED indicators for network diagnostics

Robust Hardened Design
• Slim IP30 metal enclosure
• DIN-rail or wall-mounting
• 24 ~ 48VDC or 24VAC Operation (MC251-4P/1CXT)
• 12 ~ 48VDC Operation (MC250-4T/1CXT)
• Redundant power with reverse-polarity protection
• Alarm relay output for port breakdown and power-failure alert
• Complies with IEC60068-2-xx standards for free-fall, shock and vibration
• Wide operating temperature range of -40ºC ~ +75ºC

Warranty
• 3-year warranty

*The MC251-4P/1CXT and MC250-4T/1CXT can utilize standard telephone (POTS) type cable for transmission of Ethernet/IP data. It is not designed for transmitting Ethernet data on a PBX system or public switch telephone network (PSTN).
### Specifications

#### Ethernet

- **Data Rate**: 10/100Base-TX with Auto-negotiate and Auto-MDIX
- **Connectors**: 4 - RJ-45
- **Cable**: 10Base-T (Cat 3, 4, 5) / 100Base-T (Cat 5, 5e, 6) — 328 ft. (100m)

#### VDSL2

- **Transmission Mode**: CO/CPE Mode; Channel; Rate Limit; SNR
- **DMT Encoding**: ITU-T G.993.1 VDSL; ITU-T G.997.1; ITU-T G.993.2 VDSL2 (Profile 17a support)
- **Cable**: VDSL2 (800m - 1,2km)

#### VDSL2 Distance vs Data Rate

<table>
<thead>
<tr>
<th>Distance (ft)</th>
<th>Asymmetric (Downstream/Upstream)</th>
<th>Symmetric (Downstream/Upstream)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Twisted-Pair</td>
<td>Coax</td>
</tr>
<tr>
<td>590.6 ft. (180m)</td>
<td>99/63 Mbps</td>
<td>99/65 Mbps</td>
</tr>
<tr>
<td>1,312 ft. (400m)</td>
<td>91/48 Mbps</td>
<td>91/64 Mbps</td>
</tr>
<tr>
<td>2,953 ft. (900m)</td>
<td>84/45 Mbps</td>
<td>84/45 Mbps</td>
</tr>
<tr>
<td>4,593 ft. (1400m)</td>
<td>74/59 Mbps</td>
<td>74/65 Mbps</td>
</tr>
<tr>
<td>6,233 ft. (1900m)</td>
<td>64/79 Mbps</td>
<td>64/71 Mbps</td>
</tr>
</tbody>
</table>

#### Power over Ethernet (PoE) Injector (MC251-4P/1CXT only)

- **PoE Standard**: IEEE 802.3af; Power over Ethernet / PSE; End-Span
- **Power PIN Assignment**: (+) Pins 1 & 2; (–) Pins 3 & 6
- **Power Output (per port)**: PoE 48VDC, Max. 15.4 watts, 350mA

#### LED Indicators

- **Power**: P1: On - Green; P2: On - Green
- **10/100 Base-TX Port**: LNK/ACT; 100Mbps - Green; PoE - Amber (MC251-4P/1CXT only)
- **VDSL2 Port**: LNK/ACT; CO Mode; CPE Mode - Green; Sync. (Green)

#### Electrical & Mechanical

- **Power**: 12 ~ 48VDC (MC251-4P/1CXT) / 12 ~ 48VDC (MC250-4T/1CXT)
- **Enclosure**: IP30 rated Metal Enclosure
- **Weight**: 1.40lbs/631g (MC251-4P/1CXT) / 1.1 lbs/495g (MC250-4T/1CXT)

#### Environmental

- **Operating Temperature**: -40°C ~ +75°C
- **Storage Temperature**: -40°C ~ +85°C
- **Relative Humidity**: 0% ~ 90% (non-condensing)

#### Regulatory

- **EMI**: EN55022 Class A; EN61000-3-2, EN61000-3-3
- **EMS**: EN55024; IEC 61000-4-2, IEC 61000-4-3, IEC 61000-4-4, IEC 61000-4-8, IEC 61000-4-11

*The actual data rate will vary based on the quality of the cable and environmental factors.

### Typical Application

- **IP Camera**: Cat 5e Cable
- **Network Switch**: Cat 5e Cable
- **IP Access**: Cat 5e Cable
- **IP Intercom**: Cat 5e Cable

**Note**: Total number of IP devices dependent upon total data bandwidth required.

### Ordering Information

- **MC251-4P/1CXT**: 4-Port Ethernet/PoE-af to Coax Industrial Media Converter
- **MC250-4T/1CXT**: 4-Port Ethernet to Coax Industrial Media Converter

#### Included Accessories

- User's Manual, DIN Rail Kit, Wall Mount Kit

**Note**: External power supply must be purchased separately. Not compatible with the MCE-COAX.

### Accessories

- **PS12VDC1.5A-U**: 12VDC 1.5A Wall Mounted Power Supply (For use with MC250-4T/1CXT only)
- **HLG-240-48**: High Temperature 48VDC Power Supply
- **PS48VDC100W-DIN**: 48VDC@2A (100W) DIN-Rail Mount Hardened Power Supply (100~240VAC)

**Agency Compliances**

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