

# DisplayPort Optical Extension Cable (M1-5000)

## Stretch DisplayPort over Optical Fibers



### Description

The DisplayPort standard - which defined by VESA (Video Electronics Standard) - is an attractive alternative to digital display interface such as HDMI and DVI. Optical technology for this transmission stretches the performance beyond the limitations of copper wire with longer length, data security, negligible RFI/EMI and the elimination of costly analog distribution systems.

DisplayPort supports single-lane transfer rates as fast as 2.7Gbps across as many as four data pairs for a maximum of 10.8Gbps over a single cable. These features combine with support for color depth as great as 16 bits per color channel to give designers the option of improving image quality in applications that require screen resolution of as much as WQXGA (2560×1600), as well as increasing refresh rates to 120 Hz. The DisplayPort interface also carries embedded clock signals and provides a bidirectional auxiliary channel operating at 1 Mbps to enable link management and device control to comply with VESA's EDID (extended-display-identification) and MCCS (monitor-control-command-set) standards.

The M1-5000 consists of a transmitter and a receiver module, one side is connected by our creative multi channels optical connector and the other side is connected by short male DisplayPort copper cable. M1-5000 is fully compatible with DisplayPort 1.1.

### Features

- ◆ Supports DisplayPort 1.1 standards
- ◆ Offers total data rate 10.8Gbps (2.7Gbps per lane)
- ◆ Supports all VESA resolutions up to WQXGA (2560×1600), at 60Hz
- ◆ Hybrid cable with four multi mode fibers cables for the DP interface and embedded copper wires to support the auxiliary channel, Hot Plug Detect and power management.
- ◆ Extends high resolution DP data
  - (1) up to 100 meters (326 feet) with auxiliary channel
  - (2) up to 2 km (6562 feet) without auxiliary channel
- ◆ Compact end connector design easily allows direct connect to the HDTV source and display peripheral.
- ◆ No software to install; just plug and go.
- ◆ Data security with negligible RFI/EMI emissions.

### Applications

- ◆ Digital FPD, PDP and projector installation in conference rooms, auditoriums and for kiosk systems.
- ◆ Digital display system integration for medical, military, aerospace, factory automation, and traffic control platforms.
- ◆ LED signboards for large scale information display and stadiums.

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### Compliance with International Standards

M1-5000 meets the requirements of North American FCC and European CE standards for RFI/EMI emissions, material ratings, and laser safety. Consult the product specification for further details.

### Power

**M1-5000** uses an external AC/DC adapter either in the transmitter side or in the receiver side to enable the supply of +5V to the transmitter and receiver modules.

### Length

10, 20, 30, 40, 50, 70 and 100m are standard stock lengths. But other lengths up to 100m can be ordered..

### Recommended Operating Conditions

| Parameter                     | Symbol | Min | Typ | Max  | Units |
|-------------------------------|--------|-----|-----|------|-------|
| Ambient Operating Temperature | $T_A$  | 0   | 25  | + 50 | °C    |
| Storage Temperature           | $T_s$  | -30 |     | + 70 | °C    |
| Storage Humidity              | $H_s$  | 10  |     | 85   | RH%   |

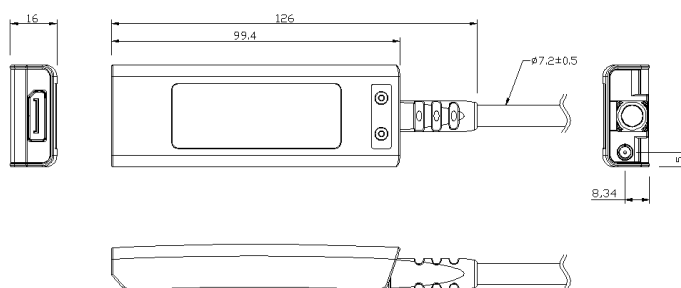
### Electrical Power Supply Characteristics

( $T_A = 0\text{ }^{\circ}\text{C}$  to  $+50\text{ }^{\circ}\text{C}$ , unless otherwise noted)

| Parameter         | Symbol   | Min       | Typ  | Max | Units  |
|-------------------|----------|-----------|------|-----|--------|
| Supply Voltage    | $V_{CC}$ | 4.5       | 5    | 5.5 | V      |
| Supply Current    | TX       | $I_{TCC}$ | -    | 120 | 200 mA |
|                   | RX       | $I_{RCC}$ | -    | 350 | 400 mA |
| Power Dissipation | TX       | $P_{TX}$  | 0.60 | 1.1 | W      |
|                   | RX       | $P_{RX}$  | 1.75 | 2.2 | W      |

### Drawing

Dimension [mm]



### Ordering Information

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