Fiber-optic Digital Interconnection

Opto-Digital Links

Long-distance with cost effectiveness
High-speed
Securities (Electrical isolation)
High-quality (No signal loss)

Stretch **DVI™**
Stretch **HDMI™**
Stretch **USB™**
Stretch **FireWire™**
Gigabit **VCSEL Transceiver**

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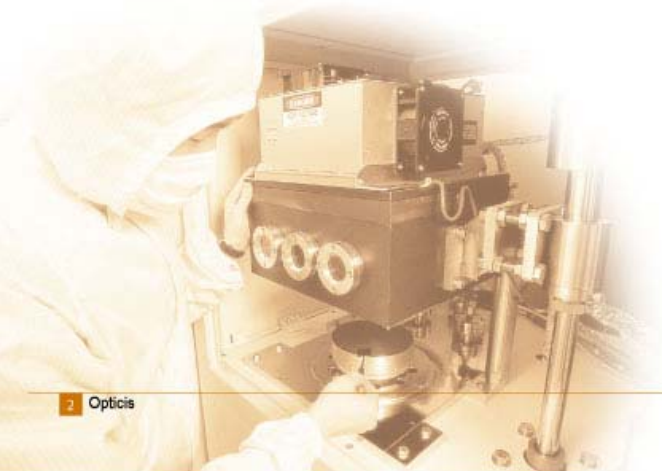
About Opticis [ăp-'ti-sis]

Opticis Co., Ltd., based in South Korea, was founded in December 1999 to design and manufacture cost effective, high quality fiber-optic digital link products. With expertise in design and manufacturing VCSELs and associated applications, Opticis aims to be the world's leading provider in high-speed fiber-optic link solutions such as digital graphic extension, serial data interface and interconnection, and datacomm transceivers.

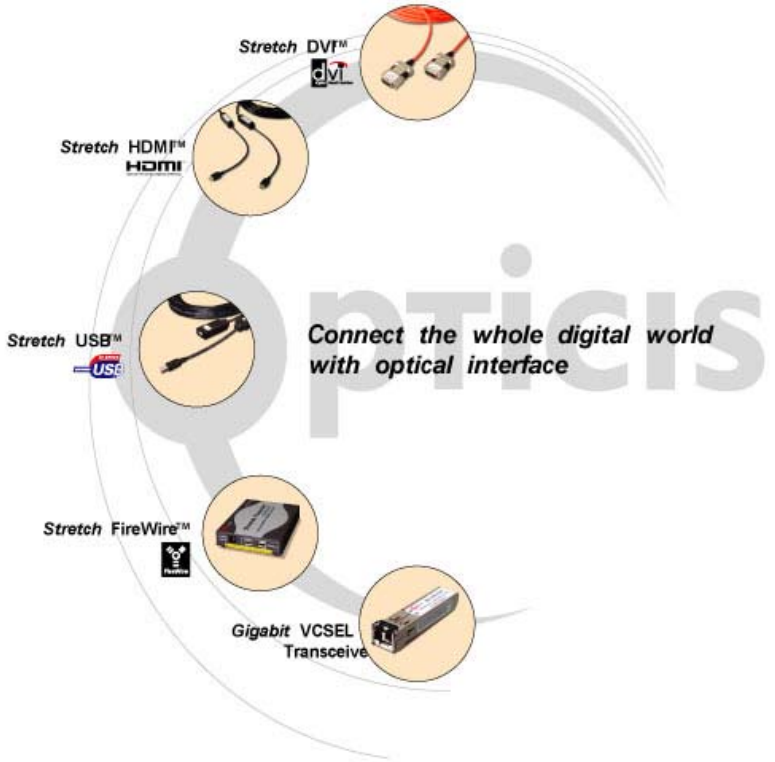
As the high-speed digital interfaces prevail in PC and Audio & Video industry, the connectivity issue becomes critical especially for environmental cautious, high-speed and long extension applications, where copper cables cannot link further than several meters. In such areas, Opticis has been implementing the high-speed interface standards such as the Digital Visual Interface (DVI) for PC graphics industry and the state-of-the art High-Definition Multimedia Interface (HDMI) for digital TV industry, the Universal Serial Bus (USB) for PC peripherals, and the IEEE1394 (FireWire) for digital appliance interconnection to their optical links. In addition, Opticis has been successfully supplying the multi Gigabit VCSEL transceivers for datacomm, including SC, LC connection types and SFF Pluggable as well as parallel transceivers for several years. Opticis continues to offer new fiber-optic link products, complying with industry standards, and to meet the needs of wide bandwidth data transmission and far reach.

Not only in technology, has the management team represented extensive experiences but also in business area. With its leadership, the Quality Management System has been certified, having been assessed and complied with the requirements of the quality standard, by ISO 9001:2000. Opticis is determined to deliver products of quality and reliability to customers for better responsiveness and satisfaction, which we believe, wins profitable business.



Fiber-optic Digital Interconnection

- No loss of transmission quality.
- Pure and secure connection.
- Implementation of industry standard protocols.

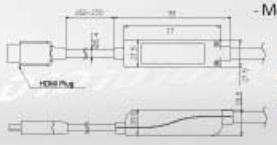


All products comply with RoHS regulatio

Stretch HDMI ™ : Point to Point Cable

M1-2000; Slim and Compact sized modules

- Just plug and go: directly replaces copper cables without any change in installation.
- Supports all VESA resolutions up to WUXGA (1920x1200) and full HDTV up to the maximum resolution, 1080p.
- Hybrid cable with four (4) multi-mode fibers for the video/audio transmission and copper wires for the DDC/HDCP.
- Extends up to 100 meters (326 feet).
- Uses the HDMI +5V source or an external DC +5V adapter.
- Compact design of end connectors allows direct connection to the HDTV source and TV set.
- Meets the requirement of FCC and CE standards for EMI/RFI emissions.



Drawing Dimension [mm]

Ordering information : M1-2000-xxx,
where **xxx** = Length in meters.
Standard lengths are 10, 20, 30, 50, 70 and 100 meters.

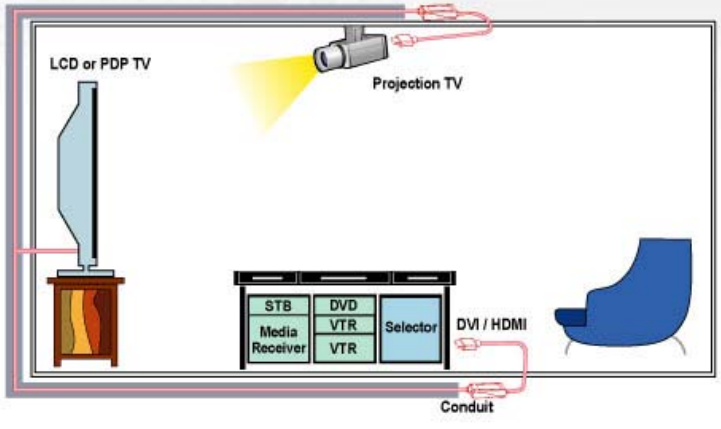
Stretch HDMI ™ : Detachable Fiber Module

M1-2R2H ; Detachable HDMI Transmitter / Receiver

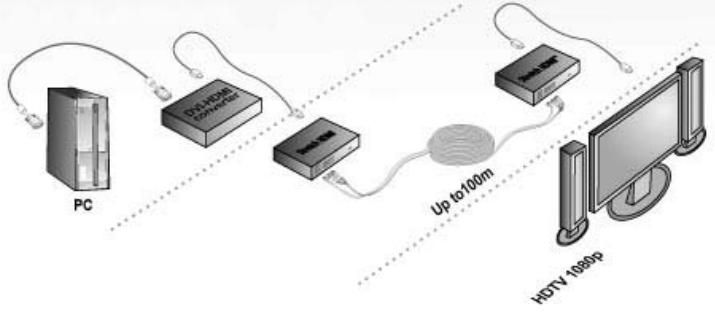
- Complies with HDMI standard and DDWG, specifying DVI.
- Supports all VESA resolutions up to WUXGA (1920x1200) and full HDTV up to 1080p.
- No software to install: just plug and go.
- HDMI receptacles are applied to connect to HDTV sources and displays through HDMI male-to-male cables (1.0m).
- Extends up to 100 meters (326 feet).
- Offers Class 1 Laser Eye Safety in compliance with FDA/CDRH and IEC 60825-1.
- Transmits the TMDS over a pair of duplex LC **multi-mode** fibers.
- Performs DDC/HDCP interconnection over CAT5 with RJ-45 connector.
- Includes a +12V power adapter, plugged to either module to supply to the other over CAT5.
- Ready two ear wings to be easily mounted by screws.

Drawing Dimension [mm]

Home Theater



Installation of HDMI DTV with PC Source

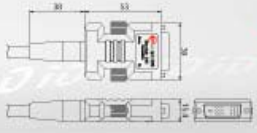


Stretch DVI ™ : Point to Point Cables

- Just plug and go: directly replaces copper cables without any change in installation.
- Supports all VESA resolutions up to WUXGA (1920x1200) and HDTV up to the maximum resolution, 1080p.
- Certifies FCC and CE standards for EMI/RFI emissions.

M1-1P0 ; Metallic small sized module

- Hybrid cable with four (4) multi-mode fibers for the TMDS transmission and copper wires for the DDC/HDCP.
- Extends up to 100 meters (326 feet).
- Uses the PC host +5V source from the video sources.
- Compact design of end connector allows direct connection to the host video card and display.

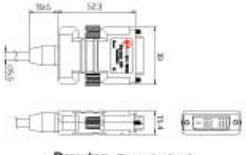


Drawing Dimension [mm]

Ordering information : M1-1P0y-xxx,
where **y** = **I**: Enables the graphic card to power enough to the receiver.
E: Requires a power in either the transmitter or receiver.
xxx=Length in meters.
Standard lengths are 10, 20, 30, 50, 70 and 100 meters.

M1-100x ; All-fiber cable for electrical isolation

- Employs a bundled cable of multi-mode fibers.
: 50/125 or 62.5/125um, Riser jacket of non-flammable PVC.
- Extends up to 500 meters (1,640 feet).
- Offers perfect electrical galvanic isolation.
- Supports fiber-optic DDC or Auto EDID programming feature.



Drawing Dimension [mm]

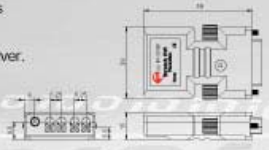
Ordering Information : M1-100y-xxx,
where **y** = **0**: Optical DDC connection.
= **A**: Auto EDID programming feature for Virtual DDC.
xxx = Length in meters.
Standard lengths are 10, 20, 30, 50 and 100 meters.

Stretch DVI ™ : Detachable Fiber Modules

- Detachable fiber features for EASY INSTALLATION.
- Offers Class 1 Laser Eye Safety in compliance with FDA/CDRH and IEC 60825-1.
- Certifies FCC and CE standards for EMI/RFI emissions.

M1-201SA-TR ; Easy installation and fiber-only connection

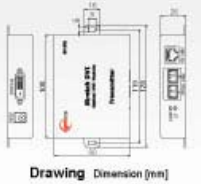
- Extends WUXGA (1920x1200) 60Hz DVI data up to 500 meters (1,640 feet).
- Transmits the TMDS over a pair of duplex LC **multi-mode** fibers.
- Offers Auto EDID programming feature, detecting from display and restoring to an EEPROM in the transmitter without any physical DDC connection.
- The modules are compact enough to directly plug to graphic sources and displays by adopting DVI-plugs at the ends .
- Includes two (2) +5V DC power adapters for the transmitter and receiver.



Drawing Dimension [mm]

M1-2R2-TR ; DVI Transmitter / Receiver

- Extends WUXGA (1920x1200) 60Hz DVI data up to 100 meters (326 feet).
- Transmits the TMDS (R, G, B, Clock) over a pair of duplex LC **multi-mode** fibers and interconnects DDC/HDCP over **CAT5** with RJ45.
- Adopts DVI-receptacles to connect to sources and displays through DVI male-to-male cables (1.0m).
- Ready two ear wings to be easily mounted by screws.
- Includes a +12V power adapter, plugged either module, to supply to the other over **CAT5**.
- Optionally, offers manual EDID programming feature in place of using **CAT5** connection.



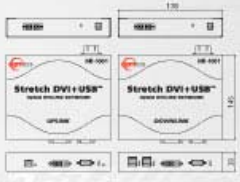
Drawing Dimension [mm]

M1-2R2VI-DU ; Dual link DVI for 4M pixel displays

- Extends over 100 meters (326 feet).
- Supports up to 2560x1600 resolution at 60Hz refresh rate.
- Transmits R, G, B; 3 channels for each link and one clock over fiber cables with 8 LC or 4 duplex LC **multi-mode** fiber interconnection.
- Performs DDC/HDCP interconnection over **CAT5** with RJ45 connector.
- Adopts DVI-receptacles to connect to graphic sources and displays through dual DVI male-to-male cables (1.0m).
- Includes a +12V DC power adapter, plugged to either module, to supply to the other over **CAT5**.

Drawing Dimension [mm]

Stretch DVI ™ : Multi-functional Extension Modules



Drawing Dimension [mm]

M5-1001; Extend Digital KVM

- Extends DVI, USB and RS232 up to 2Km (6,520 feet) over a duplex SC **single-mode** fiber and 200 meters (652 feet) over a duplex SC **multi- mode** fiber.
- Optionally, extends up to 10Km using Virtual DDC feature.
- Supports DVI up to SXGA (1280 X 1024) 24bit color and 60Hz refresh rate with DVI-I female.
- Supports DDC communication over the same fiber.
- Complies with USB 1.1 (12Mbps).
- Offers 4 ch USB 1.1 hub in downlink module.
- RS232 with 9 pin D-sub connector.
- Offers Class 1 Laser Eye Safety in compliance with FDA/CDRH and IEC 60825-1.
- Complies with the limits for a class A digital device, pursuant to part 15 and 2 of FCC and CE.
- Two (2) +12V DC adapters are applied to each module.
- Option: M5-100N without USB.

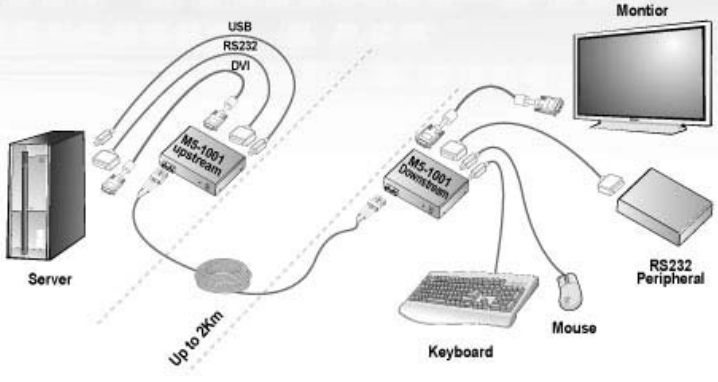
Stretch DVI ™ : Multi-functional Extension Modules

M5-2000 & M5-2001; Daisy-chained Optical DVI

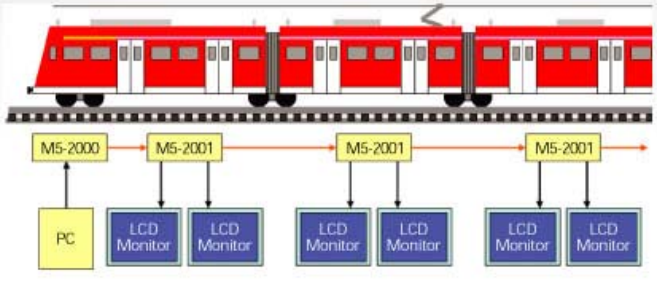
- Designed for digital signage and multiple information displays.
- Extends up to 500 meters (1,640 feet) between each module over a duplex LC **multi-mode** fiber.
- Supports DVI data up to SXGA (1280 X 1024) 24bit color and 60Hz refresh rate with DVI-I female connector.
- Makes daisy-chain connection of monitors placed far distantly with a combination of M5-2000 and multiple M5-2001 with no limit;
  - **M5-2000** converts the TMDS (R, G, B, Clock) of the graphic cards into optical two (2) channels data and transmits over a duplex LC **multi-mode** fiber.
  - **M5-2001** repeats optical data and distributes two DVI data to each monitor.
- A +12V DC adapter is applied to each module.
- Offers Class 1 Laser Eye Safety in compliance with FDA/CDRH and IEC 60825-1.
- Complies with the limits for a class A digital device, pursuant to part 15 and 2 of FCC and CE.
- Offers Virtual DDC feature by programming user's EDID in EEPROM of transmitter without any physical DDC connection.

Drawing Dimension [mm]

Remote Peripherals



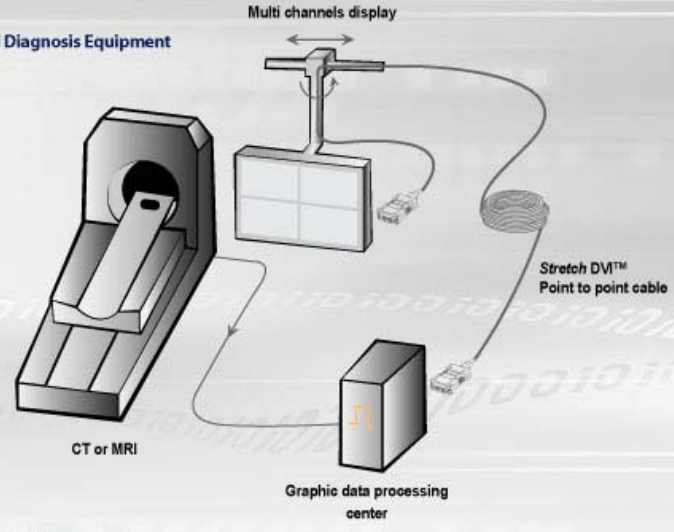
Train Information Display



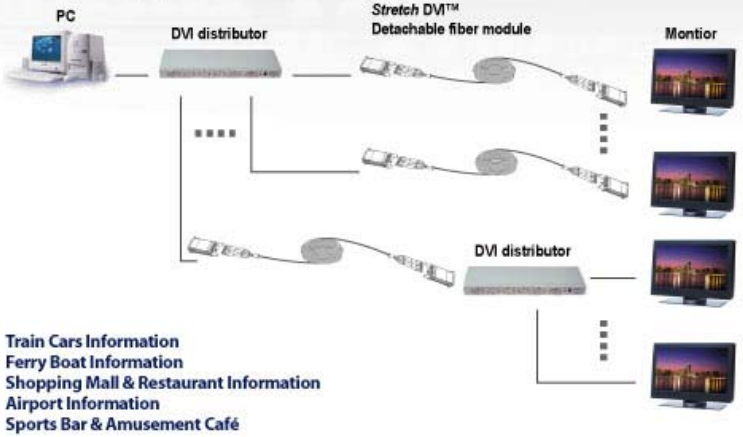
- **Informs door sign and station stop.**
- **Brings commercial advertisements.**
- **Delivers daily news**

Application of Stretch DVI™ / HDMI™

Medical Diagnosis Equipment



Information Display

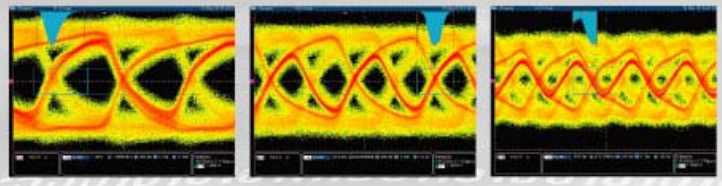


Train Cars Information
Ferry Boat Information
Shopping Mall & Restaurant Information
Airport Information
Sports Bar & Amusement Café

Why fiber-optic Stretch DVI™ / HDMI™ ?

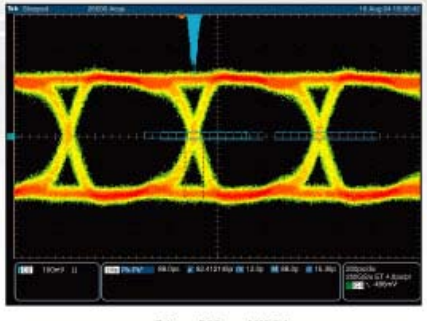
쭈Future proof : 1080p & Ready to HDMI 1.3

- Limitation of copper DVI: 720p or 1080i – 25 feet



<Copper 10m, XGA> <Copper 10m, SXGA> <Copper 10m, UXGA>

- Already-proven in 500m UXGA : Crystal-clear UXGA/1080p Quality

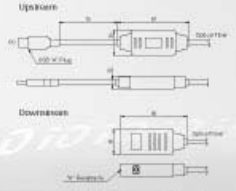


<Fiber 500m, UXGA>

쭈 No quality degradation for life-time and even long-extension up to 500m

쭈Free cable EMI / EMC

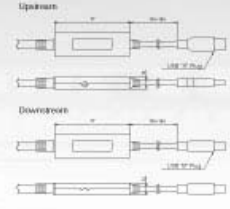
Stretch USB ™ : Optical USB Extension Cable



Drawing Dimension [mm]

M2-100 ; Pure fiber model

- Complies with USB 1.1 High-speed (12Mbps) standard.
- Extends up to 45 meters (150 feet).
- Offers perfect electrical galvanic isolation.
- Adopts two (2) strands mult-imode fiber between two links, not to be interfered magneto-electrically.
- No software to install, Easy to use; Plug and play; Designs in a generic hub in the downlink.
- Uses USB controller power for the uplink and a +5V power adapter in shipping group for the downlink.
- Supports wide-ranged OS's Windows98, XP, 2000, Mac and SUN Solaris (Certified).



Drawing Dimension [mm]

M2-210 ; Hybrid fiber model

- Complies with USB 1.1 High-speed (12Mbps) standard.
- Extends up to 45 meters (150 feet).
- Uses +9V DC power adapter in the uplink, supplying power over the hybrid cable to the downlink and devices to be connected.
- No software to install, Easy to use; Plug and play; Designs in a generic hub in the downlink.
- Supports wide-ranged OS's Windows98, XP, 2000, Mac and SUN Solaris (Certified).

Ordering information : **M2-1AB-xx** for pure fiber and
M2-21B-xx for hybrid fiber.
where **A - 0**: A plug-in to A receptacle.
1: A plug-in to B plug-in (use an A-to-B short cable).
B - 0: for Windows/Mac.
1: for SUN Solaris.
xx : Length of fiber in meter.

Electrical Hazard Environment

Industry PC EMI chamber

PLC with touch panel Robot or Machinery

Stretch FireWire ™ : Optical FireWire Repeater

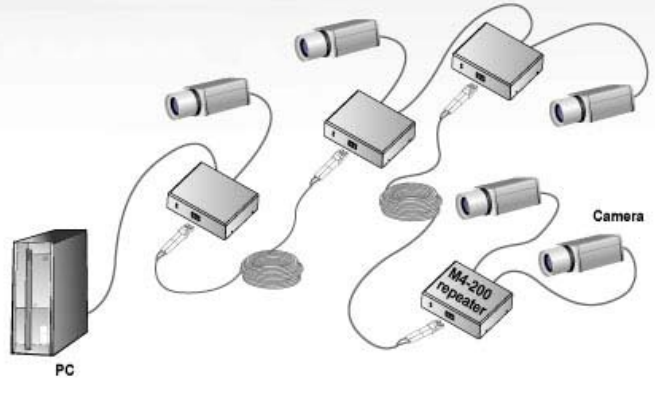
M4-200 ; Two Electrical and One optical ports

- Extends IEEE1394b protocol signals up to 500m (1,640 feet) over a duplex LC **multi-mode** fiber.
- Complies not only with 1394b-2002 but also backwardly 1394a-2000 & 1995.
- Supports 800 (S800), 400 (S400), 200 (S200) and 100 (S100) Mbps in full duplex data rate.
- Offers two electrical bilingual ports and an optical duplex LC receptacle, most popular standard connector in fiber-optic industry.
- Dimension (W/H/D): 101/24/91 mm and Weight: 190g each.
- Low power consumption: less 6W.
- Free RF noises and EMI from fiber.
- Adopts two (2) bilingual receptacles to connect to 1394 controllers and devices through 1394 cables (1.0m).
- No software to install: Easy to use: Plug and play.
- Meets Class 1 eye safety, certified by FDA/CDRH and IEC 60825-1.
- Complies with the limits for class A device, pursuant to Part 15 of FCC-rules and EN 55022/55024/61000-3 for CE certification.

Drawing Dimension [mm]

Ordering information : Delivers optionally 1) Two (2) Bilingual-to-Bilingual cables for S800 or
2) Two (2) Bilingual-to-DS (6pins) cables for S400.

Surveillance & Machinery Vision



Gigabit VCSEL Transceivers

Opticis designs and manufactures 850nm multimode VCSEL transceivers with availability of customized design for multi-Gigabit rate short haul applications such as SAN, LAN, Blade Servers, SIP Servers, and backbone of core networks.
Opticis transceivers have been designed in with highly reliable Oxide VCSELs and GaAs PIN-PDs. They are all compliant with Gbit Ethernet and 1x/2x Fiber Channel.

Optionally, for harsh industry / military applications, extended temperature transceivers are offered with a specification of -40˚C to 85˚C.

Small form factor pluggable (LC)

- Up to 2.5Gbps data rate.
- Hot pluggable in power-in.
- Duplex LC connector.
- Validated under temperature range: 0˚C to 70˚C.
- Fully metallic enclosure designed for low EMI.
- Less power dissipation, 750mW.
- AC termination.

Small form factor (LC)

- Up to 2.5Gbps data rate.
- Compliance with MSA footprint 2x5.
- Duplex LC connector.
- Validated under temperature range: 0˚C to 70˚C.
- Fully metallic enclosure designed for low EMI.
- Less power dissipation, 750mW.
- AC termination.

Full form factor (SC)

- Up to 1.25Gbps data rate.
- Compliance with industry standard footprint 1x9.
- Duplex SC connector.
- Validated under temperature range: 0˚C to 70˚C.
- Fully metallic enclosure designed for low EMI.
- Less power dissipation, 750mW.
- AC/DC termination.

Ordering information
Model Names: **M3-xyz-ABCD**
Where, "**xyz**"± stands **125** for 1.0625Gbps/FC and 1.25Gbps/Gbit Ethernet.
260 for 2.125Gbps/2xFC and 2.5Gbps Infiniband.
"**A**"± stands **S** for 1x9 SC, **L** for 2x5 LC or **P** for SFP.
"**B**"± stands **A** for AC termination.
"**C**"± stands **T** for TTL SD_out.
"**D**"± stands blank for 0˚C to 70˚C, and **E** for -40˚C to 85˚C.

Quality Commitment

- We keep quality process being assured in compliance with ISO9001:2000.
- We aim at zero defect in the market.
- We have all products varified or certified in EMI / EMC standards in compliance with FCC and CE.
- We keep improving compatibility.

VITEX (USA)
www.vitexlink.com

IndustrialComponent.Com (USA)
industrialcomponent.com/opticis/index.html

HY-LINE (Germay, Austria, Switzerland)
www.hy-line.de

MJINT Ltd. (United kingdom)
www.mjint.biz

Axess Technology (France)
www.axess-technology.com

Control Design A.S. (Norway, Sweden, Denmark)
www.controldesign.no

SNK (Russia)
www.snk-syntex.ru

SUN Instrument (Japan)
www.sun-ins.com