

## Fiber-to-the-Desk (FTTD)

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In today's networks, fiber optic cabling is frequently used as the backbone of communications network cabling, from the entrance into a building to various telephone/data equipment closets serving users on different floors of the building. But now, more and more organizations are capitalizing on the benefits of fiber optic cable to connect directly to desktops, laptops, or other communications equipment. "Fiber-to-the-Desk" (FTTD) refers to the extension of the fiber optic infrastructure directly to user locations.

### Advantages

Here are some of the many advantages to using fiber optic cable to connect to the main fiber network directly at the desktop:

#### Security

Fiber optic cable is immune to electromagnetic interference (EMI) and radio-frequency interference (RFI), and is therefore more challenging for hackers to tap. Because copper cables emit electromagnetic signals, hackers can read data from nearby without physically touching the lines. Machinery, fluorescent lights, and radio signaling equipment used for communications, including wireless communications, can also create EMI and RFI. In contrast, fiber optic cable uses light that is completely shielded so hackers would have to physically splice into the line, which is difficult to do and easily detected. For organizations concerned with data security, fiber optic cable is the most secure option.

#### Bandwidth and Distance

Fiber optic cable has the ability to support higher data rates than any other cable type, with capacity to transmit hundreds of terabits per second. As demand for more data-intensive applications continues to increase, fiber cable will offer the best bandwidth to accommodate it. As adoption of 10 Gigabit Ethernet becomes increasingly more common, 40 and 100 Gigabit Ethernet will follow. Although higher grades of twisted pair cable are allowable for transmitting these high bandwidth signals, they will only be able to do so over very short distances. Therefore, fiber optic cable is the best choice for transporting higher speed and higher bandwidth signals over longer distances.

#### Lower Overall Cost

The advantages of fiber allow network designers to centralize their network equipment in one MDF or wiring closet and run fiber cables to each work area throughout a building, rather than having a separate equipment closet on each floor. When the number of equipment closets is reduced, the amount of space, power, heating, ventilation, and air conditioning equipment

required is also reduced. Centralization of network management also reduces the number of maintenance or troubleshooting locations, allowing for more efficient use of equipment and personnel. Testing and documentation likewise becomes less cumbersome with fewer locations. Though the initial cost of fiber equipment may be slightly higher than copper, the benefits realized can save organizations significant cost in the long term.

### **Future Proof**

With fiber cabling offering the best security, bandwidth, distance, and lower overall cost, it also offers the longest useful life because of its ability to handle the resulting changes in technology.

### **Applications**

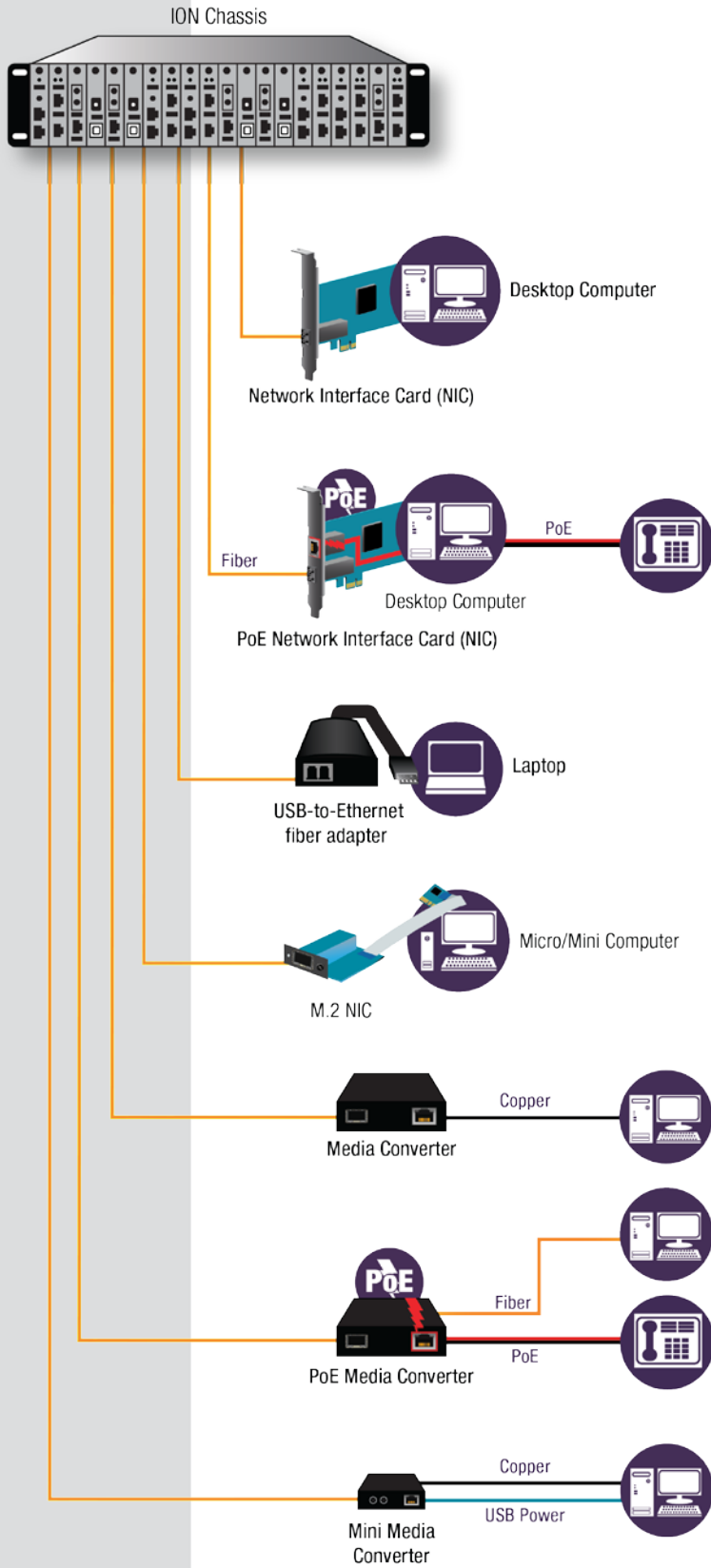
Fiber to the desk can be used for mission critical networks, virtual networks, and LAN networks. It is useful for increasing bandwidth availability, moving large amounts of data at high transmission rates, and for bringing service to locations where power is limited or unavailable. It also provides a more secure connection for organizations who are concerned about tapping or other security vulnerabilities. FTTD is particularly useful for:

- Enterprises and Business Campuses
- Banks, Online Brokers and other Financial Institutions
- Healthcare Organizations
- Colleges and Universities
- Local, State, and Federal Governments
- Sports and News Broadcast Agencies

### **Transition Networks Solution**

Transition Networks offers a variety of options for bringing fiber to the desk, supporting protocols from 10Mbps to 10 Gbps Ethernet, including:

- [PCI and PCIe Network Interface Cards \(NICs\)](#)
- [ExpressCard NICs](#)
- [Power-over-Ethernet \(PoE\) NICs](#)
- [M.2 Fiber NICs](#)
- [Scorpion-USB Ethernet Fiber Adapters](#)
- [Full-featured and basic copper to fiber media converters](#)
- [PoE Injector media converters](#)
- [PoE-powered and USB-powered media converters](#)



**Fiber NIC**

- PCI, PCIe or Express Card bus fiber NICs are securely installed within PC and provide a fiber connection between main computer room and desktop location
- PCIe Fiber NICs with PoE enable VoIP Phones

**USB to Fiber Ethernet Adapter**

- Provides fiber connectivity point for laptops, tablets or thin clients; requires no external power supply

**M.2 Fiber Network Interface Card**

- Provides fiber connectivity point for micro PCs, mini PCs and thin clients

**Media Conversion**

- Provides connection between fiber infrastructure and embedded copper NIC
- Media Converters with PoE add power to the copper port to simplify VoIP phone deployment
- USB powered media converters uses the USB port on the end device to power the media converter, making it ideal for environments with limited space or where power is not available

## Summary

With over 30 years of expertise in network migration, Transition Networks is a valuable partner in planning and implementing changes to your network. The quality of the products you incorporate into your network is extremely important, which is why most Transition Networks products are backed by a lifetime warranty as well as our unsurpassed customer support. Transition Networks is ISO 9001 and ISO 14001 Quality certified. Our products are compatible with IEEE standards, as well as with other important elements in your network, allowing you to transition your network for today's needs and cost-effectively future-proof it for tomorrow. For assistance in selecting the specific products to optimize your network, please visit [transition.com/contact-us](http://transition.com/contact-us).