

Media Converters



Media Converters Tutorial

What is a Media Converter?

A Media converter is used to extend copper UTP Ethernet cabling to distances beyond the 100 Meter maximum for UTP by converting the voice/video/data signals to fiber optic cabling.

How is a Media Converter used?

Media Converters have two types of ports; one for copper (UTP or STP) and one for fiber (usually duplex, but sometimes simplex). You simply plug in the fiber cable and the copper cable and power on the media converter. Some more advanced media converters are designed with features such as link loss carry forward and link loss return. These features are usually enabled by moving dip switches on the Media Converter.

Where are Media Converters used?

Media converters are used in environments where EMI/RFI is present such as manufacturing facilities. Other applications include campus networks where many buildings need to be connected via fiber. Also high rise buildings typically use a fiber backbone which is laid vertically and taps into copper (UTP) networks on each floor via a media converter.

Distance Limitations of Copper and Fiber Optic Network Cabling Types:

Cable Type	Distance Limitation
Category 5/5E/6 UTP and STP cable	100 Meters Max.
Multimode Fiber Cable 62.5/125 μ	2 Km Max.
Multimode Fiber Cable 50/125 μ	2 Km Max.
Single mode Fiber Cable 9/125	15 Km Max. (Typical)

Note: Fiber cable distances are typical when used in an Ethernet Data network environment. Some Single mode fiber media converters can extend up to 100 Km. These devices use special high powered laser transceivers to achieve these distances.

Form Factors

There are two styles of media converters, standalone and chassis based. Standalone converters are typically used in locations when only one or two fiber links are needed. The chassis based options are often used in MDF or IDF locations where multiple fiber links are converted to UTP.



Standalone



Chassis



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Managed and Unmanaged

Unmanaged or "plug and play" media converters are easy to install and trouble shoot. The disadvantage with unmanaged converters is when a network issue is occurring, there is no way to access the media converter to see exactly what might be causing the issue. Many chassis based media converter solutions feature an option for an SNMP card that

shows statistics and overall health of all the media converters in the chassis. This is helpful when you have multiple chassis filled with media converters in a large data center. Additionally there are some standalone converters on the market today that support SNMP management.

Typical Media Converter Application

