AT-FS237

Fast Ethernet Single Strand Fiber Media Converter

AT-FS237s13/1-xx

2-port single strand fiber media converter, 10/100TX (RJ-45) to 100FX (SC) (1310nm TX/1310nm RX) with 12vDC power supply and distances up to 15km

POINT-TO-POINT ACCESS

Designed to be used in pairs in a network topology to provide point-to-point access, the AT-FS237 media converter is a 10/100Mbps copper to single-mode fiber media converter capable of sending and receiving on single strand fiber (1310nm). The AT-FS237 converts 10/100TX (RJ-45) to 100FX (SC) and can extend distances up to 15km. Easy to install and requiring no software configuration, the compact, rack-mountable AT-FS237 comes with a choice of external power supplies. And, finally, both ports feature full- and half-duplex operation.
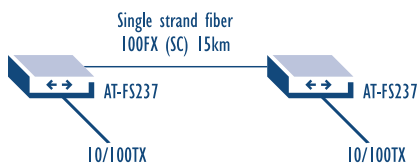
AUTO MDI, MDI-X

The AT-FS237 media converter features automatic MDI/ MDI-X. The 10/100TX (RJ-45) port determines the configuration of the ports on connected device and then configures itself. This feature enables users to use either crossover cables or straight-through cables when connecting device to the copper port.

SMART MISSING LINK™ (SML)

The Missing Link feature allows the ports on the media converter to pass the Link status of their connections to each other. When the media converter detects a problem with a port—such as the loss of connection to a node—it shuts down the connection to the other port, thereby notifying the node that the connection has been lost. The AT-FS237 also features Smart Missing Link™ (SML)—a feature that monitors network connections and provides notification when network segments fail, allowing network managers to quickly identify the source and location of failed segments and minimize downtime.

KEY FEATURES

- LEDs for unit & port status

- Auto MDI/MDI-X

- Mode selection button that toggles among Link Test, MissingLink, & Smart MissingLink

- DIP switches for port configuration

- Supports Half & Full Duplex operation

- Data packet forwarding & filtering at full wirespeed
  (10Mbps to 100Mbps, 100Mbps to 100Mbps, & 10Mbps to 10Mbps)

- Store & forward switching mode

- Automatic address learning & aging

- IEEE 802.3u compliant auto-negotiation

- External AC/DC power adapter
  (North America, Continental Europe, or United Kingdom)

- 12-52vDC power supply option

- -48vDC power supply option

- Rack-mountable using optional AT-MCR12, TRAY4, or TRAY1 chassis

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STATUS INDICATORS

System LEDs:

Power	Indicates power is applied to the converter

Per Fiber Port:

Link	Indicates a valid receive link exists
Duplex	Indicates full or half-duplex operation
Collision	Indicates collision during packet transmission on the port

Per Copper Port:

Link	Indicates a valid receive link exists
Speed	Indicates either 10 or 100Mbps operation
Auto	Indicates port is set for auto-negotiation
FD/Collision	Indicates collision during packet transmission on the port. Indicates full-duplex or half-duplex operation.

OPERATIONAL CHARACTERISTICS

Per fiber port:

Duplex	Selects either full- or half-duplex operation

Per copper port:

Auto	Selects auto-negotiation mode or manual setting
Duplex	Forces port to full- or half-duplex operation (Auto setting = manual only)
Speed	Forces port to 10 or 100Mbps operation (Auto setting = manual only)

OPERATIONAL MODE

Missing Link (ML)
Smart Missing Link™ (SML)
Link Test

Packet Buffer	28k per port
MAC address table	8k addresses
Forwarding/filtering rate	
	148,880pps for 100Mbps
	14,880pps for 10Mbps
Latency	14.3 µsec
	(64 byte packet, 100Mbps full-duplex)

FIBER OPTIC PORT SPECIFICATIONS

Fiber Optic Transmitter

Model	Fiber Type[1]	Fiber optic Diameter (Microns)	Optical Wavelength	Launch Power (dBm)[2] Min.	Avg.[3]	Max.
AT-FS237s13/1	SMF	9/125	1310nm	-15.0	-11.0	-8.0

1. SMF = Single-mode fiber.
2. Launch power is measured at one meter from the transmitter.
3. Launch power (Avg.) is power coupled into a Single-mode fiber.

Fiber Optic Receiver

Model	Fiber Type[1]	Fiber optic Diameter (Microns)	Optical Wavelength	Receiver Sensitivity (dBm) Max.	Avg.	Saturation
AT-FS237s13/1	SMF	9/125	1310nm	-30.0	n/a	-8.0

1. SMF = Single-mode fiber.

Fiber Optic Datalink

Model	Fiber Type[1]	Minimum Power/Link Budget	Minimum Operating Distance[2]	Minimum Operating Distance[3]
AT-FS237s13/1	9/125 SMF	6.0dB	0	15km (9.4mi)

1. SMF = Single-mode fiber.
2. The recommended mimimum range is stated in all cases where the maximum transmitter output power exceeds the receiver's saturation level. This is to prevent blinding or burning out of the optical receiver on the far-end mode.
3. Distance is calculated based on ideal situations without any other loss factor.

Fiber Optic Loss Specification (Benchmark)

Fiber Type[1]	Fiber optic Diameter	Optical Wavelength	Typical Loss Factor	Bandwidth
SMF	9/125(microns)	1310nm	0.4dBm	n/a

1. SMF = Single-mode fiber.

POWER CHARACTERISTICS

Input supply voltage 12vDC or 12-50vDC
Rated currents .5A max.
Power consumption 24W max.

ENVIRONMENTAL SPECIFICATIONS

Operating Temp.	0°C to 40°C (32°F to 104°F)
Storage Temp.	-25°C to 70°C (-13°F to 158°F)
Relative humidity	(Operating) 5% to 90% non-condensing
Relative humidity	(Storage) 5% to 95% non-condensing
Operating & Storage Altitude	
	Up to 3,048m (10,000ft)

PHYSICAL CHARACTERISTICS

Dimensions	10.5cm x 9.5cm x 2.5cm (4.12" x 3.75" x 1.0")
Weight	294g (10.4 oz)

ELECTRICAL/MECHANICAL APPROVALS

CE	IEEE 802.3, IEEE 802.3u
Safety	UL60950 (cULus)
	EN60950
	EN60825 (TUV)
Emission	FCC Part 15 Class B
	EN55022 Class B
Immunity	EN55024

ORDERING INFORMATION

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2-port single strand fiber media converter,
10/100TX (RJ-45) to 100FX (SC)
(1310nm TX/1310nm RX)
with 12vDC power supply and distances up to 15km

AT-PWR237-11
12vDC power supply with screw terminals

AT-EN237
Weatherproof enclosure

Where xx	= 10 AC power supply, US power cord
	= 20 AC power supply, European power cord
	= 30 AC power supply, UK power cord
	= 40 AC power supply, Australian power cord

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