

AMC-102

High Speed Media Converter and Repeater



FEATURES

- Modular high speed media converter and repeater
- Protocols supported:
 - 155 Mbps STM-1/OC-3
 - 155 Mbps STM-1/STS-3c over UTP/STP
 - 622 Mbps STM-4/OC-12
 - Gigabit Ethernet 802.3z
- Supports single mode fiber, multimode fiber, single fiber, UTP/STP and coax
- Conforms to SDH/SONET transmission standards and Gigabit Ethernet
- Multiple connector types are available for both electrical and optical interfaces

DESCRIPTION

- AMC-102, a high speed Media Converter, provides retimed conversion of optical and electrical signals at rates of 155 Mbps, 622 Mbps and Gigabit Ethernet. The modularity of AMC-102 interfaces enables field conversion between different media, as shown in the application diagrams.
- AMC-102 can convert between different media with the same transmission rate (see *Figure 1*). A single AMC-102 converter with different media modules connects two devices operating with different interfaces - fiber and electrical.

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- AMC-102 also serves as a repeater for extended distances (see *Figure 2* and *Figure 3*). A single AMC-102 is used as a fiber optic or copper repeater when set up with two similar modules (A and B).
- A pair of AMC-102 converters can connect two ATM devices (see *Figure 4*), or two Gigabit Ethernet devices (see *Figure 6*) over different media.
- AMC-102 can connect two ATM devices over single fiber at 155 Mbps (see *Figure 5*). In this application, modules B1 and B2 use the WDM technology, where the transmit signal is at a different wavelength than the receive signal. Modules A1 and A2 can be of any 155 Mbps type. Modules B1 and B2 should be a pair of AMC-102M/SF1/ST or FC and AMC-102M/SF2/ST or FC.
- AMC-102 is supplied as a standalone unit. Special hardware for mounting either a single unit or two units side-by-side in a 19" rack can be ordered separately (see *Ordering*).
- Dry contact alarms are available through a 9-pin D-type connector that provides dry contact for internal major alarms.
- Major alarms occur when:
 - Power supply fails
 - Supply voltage is below a threshold
 - Code download fails
 - Loss of signal (LOS)
 - PLL unlock is received
 - Loss of frame (LOF)
 - Ambient temperature inside the box exceeds +65°C.

APPLICATIONS

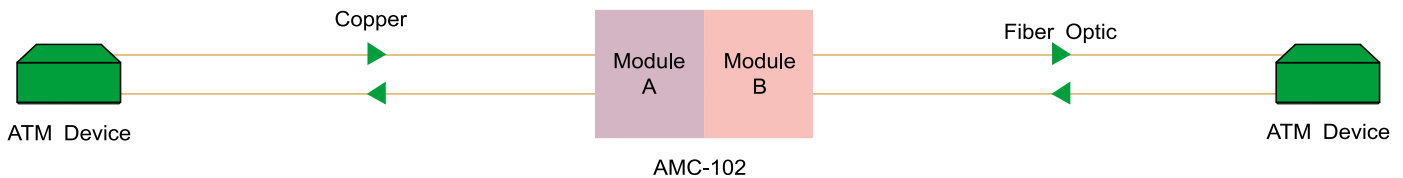


Figure 1. Conversion between Different Media

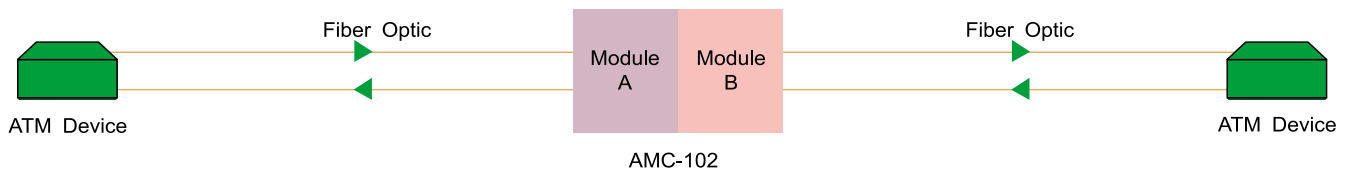


Figure 2. Repeater Application (Using Modules Running at 155 or 622 Mbps)

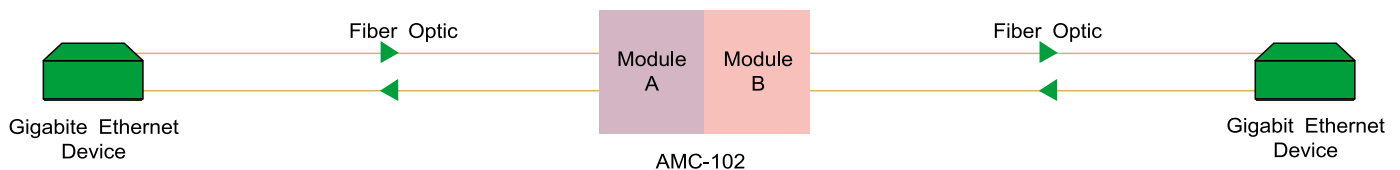


Figure 3. Repeater or Fiber Optic Conversion for Gigabit Ethernet Devices

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SPECIFICATIONS

- Data Rate**
 155 Mbps, 622 Mbps and Gigabit Ethernet
- Indicators**
 PWR (Green) ON when unit is powered
 ERR (Red) ON when firmware download fails
 TEST (Red) ON when a diagnostic test is performed (LOOP button is pressed).

- Power**
 100–250 VAC, 8W, 50–60 Hz or -48 VDC (-36 to -72 VDC)
- Physical**
 Height: 4.4 cm / 1.7 in (1U)
 Width: 21.6 cm / 8.5 in
 Depth: 29.8 cm / 11.7 in
 Weight 1.2 kg / 2.6 lb*

* The weight depends on assembled modules

- Environment**
 Temperature: 0–40° C / 32–104°F
 Humidity: Up to 90%, non-condensing

Table 1. Connector Pin Assignment Table

Type	Contact	Pins
External Alarm	Normally Open	1 and 2
MINOR Alarm	Normally Closed	9 and 4
	Normally Open	9 and 5
MAJOR Alarm	Normally Closed	3 and 8
	Normally Open	3 and 7

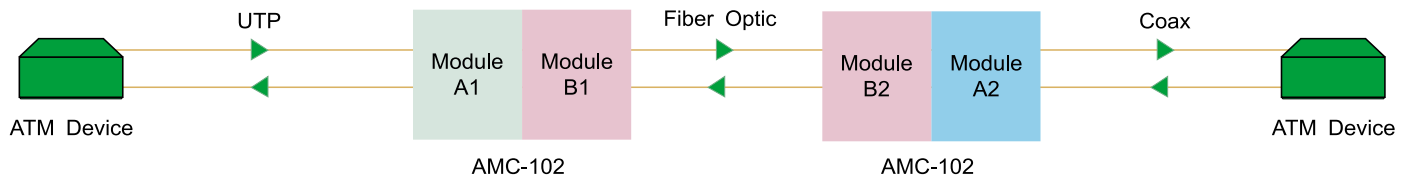


Figure 4. Connecting two ATM Devices over Different Media

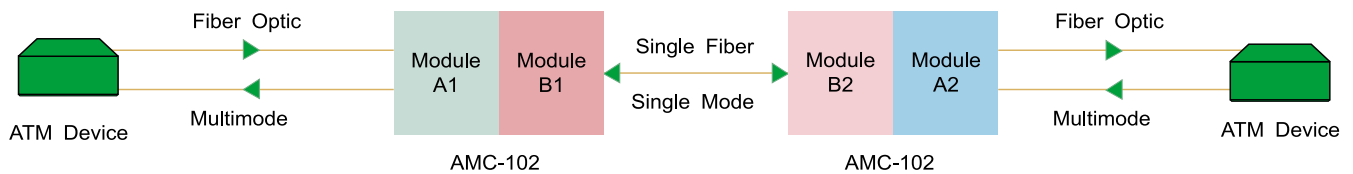


Figure 5. Connecting two ATM Devices over Single Fiber (at 155 Mbps only)

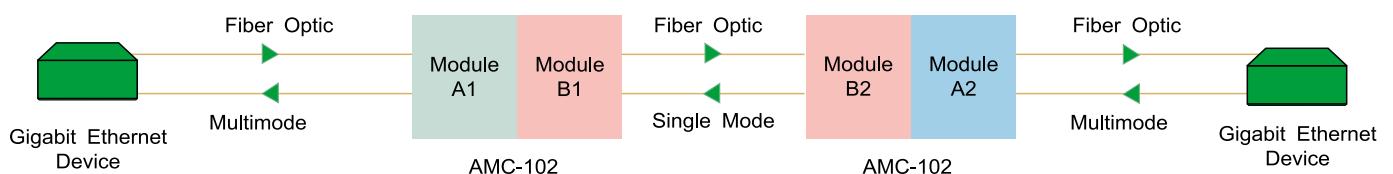


Figure 6. Connecting two Gigabit Ethernet Devices over Different Fibers

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ORDERING

AMC-102/#

ATM Media Converter and Repeater

Specify power supply:

AC for 90-260 VAC

48 for -48 VDC (-36 to -72 VDC)

AMC-102M/+

Interface module for AMC-102

+ Specify module name:

See Table 2 and Table 3

RM-24

Hardware for mounting one or two units in a 19" rack

Table 2. Optical Module Characteristics

Module Name			Protocols Supported	Fiber Type (Wavelength, nm)	Typical Distance* km (mile)	Dynamic Range (dB)	Typical Optical Power Output (dBm)	Sensitivity (dBm)
SC	ST	FC						
MM/SC/13	MM/ST/13		STM-1/OC-3	62.5/125 (1310)	2 (1.2)	17	-18	-31
	SF1/ST (single strand)	SF1/FC (single strand)	STM-1/OC-3	9/125 (Tx 1310) (Rx 1550)	40 (25)	28	-12	-29
	SF2/ST (single strand)	SF2/FC (single strand)	STM-1/OC-3	9/125 (Tx 1550) (Rx 1310)	40 (25)	28	-12	-29
SM/SC/13	SM/ST/13	SM/FC/13	STM-1/OC-3	9/125 (1310)	25 (16)	30	-15	-31
SM/SC/13L (LASER)	SM/ST/13L (LASER)	SM/FC/13L (LASER)	STM-1/OC-3	9/125 (1310)	40 (25)	30	-12	-31
SM/SC/13LH (LASER)	SM/ST/13LH (LASER)	SM/FC/13LH (LASER)	STM-1/OC-3	9/125 (1310)	60 (37)	33	-2	-34
	SM/ST/15L (LASER)	SM/FC/15L (LASER)	STM-1/OC-3	9/125 (1550)	50 (31)	30	-12	-31
SM/SC/15LH (LASER)	SM/ST/15LH (LASER)	SM/FC/15LH (LASER)	STM-1/OC-3	9/125 (1550)	110 (68)	33	-2	-34
MM/SC/13/622			STM-4/OC-12	62.5/125 (1310)	0.2 (0.12)	12	-18	-26
SM/SC/13L/622 (LASER)			STM-4/OC-12	9/125 (1310)	15 (9)	20	-12	-28
SM/SC/13LH/622 (LASER)			STM-4/OC-12	9/125 (1310)	40 (25)	25	-2	-28
SM/SC/15LH/622 (LASER)			STM-4/OC-12	9/125 (1550)	80 (50)	23	-2	-28
MM/SC/85L/1000BSX (LASER)			IEEE 802.3z (Duplex)	62.5/125 (50/125 (850))	0.26 (0.16) (0.55 (0.34))	14	-7	-17
SM/SC/13L/1000BLX (LASER)			IEEE 802.3z (Duplex)	9/125 (1310)	20 (6.25)	19	-5	-22
SM/SC/15LH/1000BLX (LASER)			IEEE 802.3z (Duplex)	9/125 (1550)	70 (44)	14	+3	-24

* Typical distances are based on attenuation of 0.4 dB/km for 1310 nm modules (at 155 or 622 Mbps) and 0.25 dB/km for 1550 nm modules (at 155 Mbps).



data communications

Table 3. Electrical Modules Specifications

Module Name	Supported Protocols	Cable Type	Range	Connector Type	Impedance (Ω)
STP/155	STS-3C, STM-1	STP Type 1	100m	DB-9	150
UTP/155	STS-3C, STM-1	UTP Cat 5	100m	Shielded RJ-45	100
CX/BNC/155*	STS-3C, STM-1	Coax	12.7 dB*	BNC	75
CX/DIN/155*	STS-3C, STM-1	Coax	12.7 dB*	DIN 47295 1.6/5.6 Coaxial connector	75

* At 78 MHz, according to square root of frequency law; 135m is attainable when using RG-59 B/U

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