

# AMC-101



## Universal Media Converter and Repeater



### FEATURES

- Modular media converter and repeater, operating over fiber optic, STP and coax lines
- Supports retimed media converting/repeating for protocols such as:
  - 51 Mbps OC-1
  - 155 Mbps OC-3/STM-1
  - 155 Mbps STS-3c over STP
  - 155 Mbps STS-3c/STM-1 over coax
  - FDDI
  - Fast Ethernet
- Transparently converts fiber optic signals at rates of up to 155 Mbps for the following protocols:
  - ATM/SDH/SONET
  - E1/T1
  - E3/T3
  - Token Ring
  - Ethernet
- Supports hot-swappable, electrical and fiber optic modules, including long haul and WDM (single fiber interfaces)

- Complies with ATM Forum and ITU-T G.957 and G.958 specifications
- Unique WRAP feature activates simultaneous loopbacks towards network and user sides for isolation of network failure sources

### DESCRIPTION

- AMC-101 is a modular universal media converter that provides retimed or transparent conversion of optical and electrical signals for ATM, SDH/SONET, FDDI, Fast Ethernet and other protocols at data rates of up to 155 Mbps.
- The following modules are available:
  - Retimed modules, which provide clock regeneration and data reshaping (for 155 Mbps only)
  - Transparent modules, which provide low-cost conversion for applications that do not require repeating or reclocking.
- A long haul fiber optic option is available to provide an increased range of up to 110 km (68 miles).

- The SF1, SF2 and SF3 options allow the units to operate over single strand fiber optic cables.
- SF1 and SF2 use WDM technology. SF3 utilizes a unique proprietary transmission method (requires SC/APC connector).

### RETIMED INTERFACES

- The unit provides retimed media conversion for the following protocols over optical and copper cables:
  - 51 Mbps OC-1
  - 155 Mbps OC-3/STM-1
  - 155 Mbps STS-3c over STP
  - 155 Mbps STS-3c/STM-1 over coax
  - FDDI
  - Fast Ethernet.
- When used as a media and interface converter, AMC-101 provides a cost-effective alternative to the fiber optic interfaces of routers, ATM devices and ADMs.

### TRANSPARENT INTERFACES

- AMC-101 with transparent interfaces provides cost-effective media conversion without repeating and reclocking.
- Transparent modules are recommended for short range applications.
- In fiber-to-fiber conversion applications AMC-101 supports all protocols above 1.5 Mbps and up to 155 Mbps, such as:
  - ATM/SDH/SONET
  - T1/E1
  - E3/T3
  - Token Ring
  - Ethernet.

# AMC-101

## Universal Media Converter and Repeater

Table 1. Electrical Interface Modules

AMC-101 Module	Retimed/ Transparent	Protocols Supported	Cable Type	Connector Type	Impedance [Ω]	Typical Range (Attenuation)			
						Retimed Mode		Transparent Mode	
						[m]	[ft]	[m]	[ft]
STP/155	R/T	STS-3c	STP Type 1	DB-9	150	100	328	50	164
CX/BNC/155	R	STS-3c, STM-1	Coax	BNC	75	12.7 dB*			
CX/DIN/155	R	STS-3c, STM-1	Coax	DIN 47295 1.6/5.6 coax	75	12.7 dB*			

\* 135m range is attainable when using RG59 B/U (at 78 MHz, in accordance with the square root of frequency law).

## APPLICATIONS

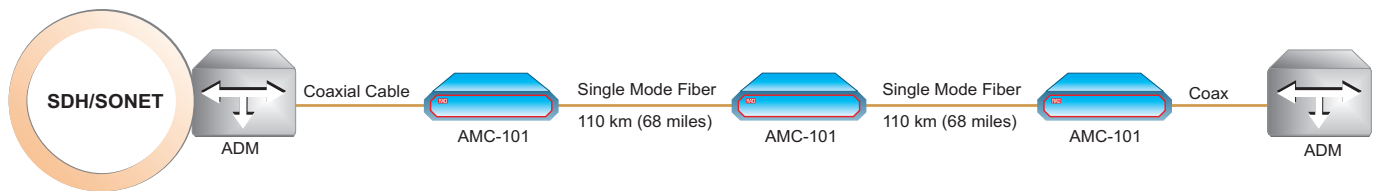


Figure 1. AMC-101 Operating as Media Converter and Repeater

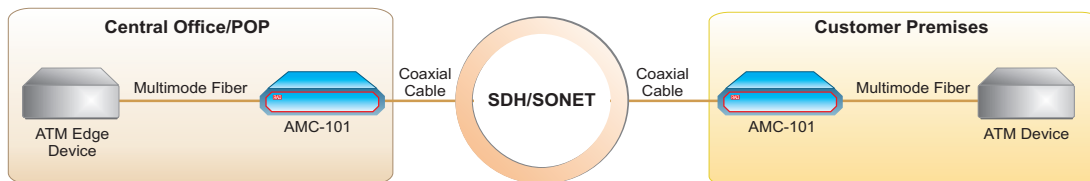


Figure 2. AMC-101 Extending ATM Services over an SDH/SONET Network

## Universal Media Converter and Repeater

**Table 2. Fiber Optic Interfaces**

AMC-101 Module	Retimed/ Transparent	Connector Type	Transmitter Type, Wavelength [nm]	Fiber Type	Typical Optical Power [dBm]	Receiver Sensitivity [dBm]	Typical Range According to Data Rates					
							51 Mbps		100 Mbps		155 Mbps	
							[km]	[miles]	[km]	[miles]	[km]	[miles]
MM/ST/85	T	ST	VCSEL, 850	62.5/125, multimode	-17	-30	3	1.8	2	1.2	2	1.2
MM/SC/85	T	SC										
MM/FC/85	T	FC										
MM/SC/13	R/T	SC	LED, 1310	62.5/125, multimode	-18	-31	4	2.4	2	1.2	2	1.2
MM/ST/13	R/T	ST										
SM/SC/13L	R/T	SC	Laser, 1310	9/125, single mode	-12	-31	40	25	25	15.5	20	12.4
SM/ST/13L	R/T	ST										
SM/FC/13L	R/T	FC										
SM/SC/13LH	R/T	SC	Laser (long haul), 1310	9/125, single mode	-2	-34	60	37	50	31	40	25
SM/ST/13LH	R/T	ST										
SM/FC/13LH	R/T	FC										
SM/ST/15L	R/T	ST	Laser, 1550	9/125, single mode	-12	-31	50	31	25	15.5	20	12.4
SM/FC/15L	R/T	FC										
SM/SC/15LH	R/T	SC	Laser (long haul), 1550	9/125, single mode	-2	-34	110	68	100	62.1	80	49.7
SM/ST/15LH	R/T	ST										
SM/FC/15LH	R/T	FC										
SF1/SC	R/T	SC	Laser (WDM), Tx – 1310 Rx – 1550	9/125, single mode	-12	-29	35	21.7	25	15.5	20	12.4
SF2/SC	R/T	SC	Laser (WDM), Tx – 1550 Rx – 1310	9/125, single mode	-12	-29	35	21.7	25	15.5	20	12.4
SF3	R/T	SC/APC	Laser (single-strand fiber), 1310 Tx and Rx	9/125, single mode	-12	-27	20	12.4	20	12.4	20	12.4

**Notes:**

- Typical ranges are calculated according to attenuation of 0.4 dB/km for 1310 nm and 0.25 dB/km for 1550 nm interfaces.
- FO interfaces (except AMC-M/MM/ST, SC, FC/85) support transparent or retimed configurations (if ordered).  
Add R for a retimed interface. For example AMC-M/SM/SC/13L/R.
- The Fast Ethernet and FDDI protocols are supported by the retimed modules only.



# AMC-101

## Universal Media Converter and Repeater

### SPECIFICATIONS

- **Interface Modules**

See Table 1 and Table 2

- **Data Rate**

Up to 155 Mbps

- **Alarm Relay**

Dry contact via 9-pin, D-type, female connector

- **Indicators**

PWR (green) – Power status

FLT (red) – Blinks when an illegal combination of card types and selected data rate is detected

WRAP (green) – On when a loopback is running towards the user and network sides

SIG (green) – On when received signal is detected, or blinks when the PLL is unlocked (retimed modules only)

- **Controls**

WRAP – Activates a loopback towards the user and network sides

Rate selector – Selects the operation rate (51, 100, 155 Mbps) for retimed or transparent modules (OTHER)

- **Power**

AC: 100–240 VAC, 50 or 60 Hz

DC: -48 VDC

- **Power Consumption**

16W max

- **Physical**

Height: 44 mm / 1.7 in

Width: 216 mm / 8.5 in

Depth: 240 mm / 9.4 in

Weight: 1 kg / 2.2 lb

- **Environment**

Temperature: 0–40°C/32–104°F

Humidity: Up to 90%, non-condensing

### ORDERING

#### AMC-101/~

Universal media converter and repeater

~ Specify power supply type:

**AC** for 100 to 240 VAC

**48** for -48 VDC

#### AMC-M/#

Interface module for AMC-101

*Note: Refer to Table 1 and Table 2 for the module names.*

# Specify interface for AMC-101 interface according to Table 1 and Table 2.

Add R for a retimed interface

For example AMC-M/SM/SC/13L/R

Default is transparent.

*Note: Each AMC-101 unit houses two different interfaces.*

#### RM-101

Hardware kit for mounting one or two AMC-101 units in a 19-inch rack



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