AT-MX10, AT-MX20 & AT-210, Micro Transceivers

AT-MX10, 10Base2 MAU transceiver
AT-MX10S, 10Base2 MAU, slim-line transceiver
AT-MX20T, 10T MAU transceiver
AT-MX210T, 10T MAU transceiver
AT-MX210TS, 10T MAU, slim-line transceiver

KEY FEATURES

IEEE 802.3 compliant and Ethernet Version 1.0 and 2.0 compatible

Direct Attachment Unit Interface (AUI) connection

Slim-line versions (AT-MX10S, AT-210TS) for improved mechanical fit for Macintosh, Sun SPARC stations and IBMRS/6000 workstations

Switch-selectable SQE test (all models) and LED (AT-MX10, AT-MX10S, AT-210T, AT-210TS)

Polarity detection and correction (AT-MX20T, AT-210T, AT-210TS) and LED (AT-210T, AT-210TS)

Link integrity test function and LED (AT-MX20T, AT-210T, AT-210TS)

5 year warranty

These micro transceivers are 10Base2 and 10T compliant transceivers designed to reduce Ethernet cabling costs. Compact size allows these transceivers to connect directly to the workstation, bringing thin Ethernet or Unshielded Twisted Pair (UTP) wiring directly to the workstation. With UTP and inexpensive coax network media, distances up to 100 meters between workstations can be supported using UTP, and up to 185 meters using coax.

The 10Base2 compliant AT-MX10 and AT-MX10S transceivers use an industry-standard Ethernet transceiver chip that guarantees IEEE 802.3 compliance. The 10T compliant AT-MX20T, AT-210T and AT-210TS transceivers are also guaranteed compliant by the use of standard ICs.

On all models Signal Quality Error (SQE)/Heartbeat test can easily be enabled or disabled via an externally accessible switch. Additionally, all models have integral jabber lock-up prevention circuitry and a loopback function. This function emulates coaxial media where transmitted packets are looped back to the receive side. Local Area Network (LAN) controllers can use the loopback feature to determine if a Media Attachment Unit (MAU) is connected and operational.

The AT-MX20T, AT-210T and AT-210TS transceivers incorporate other functions that offer improved network reliability for workstations. The 10T link integrity test function provides a continuous test of the connection to the multiport repeater.

A test pulse is periodically transmitted and expected at the companion transceiver's receive side. If the pulse is not seen on the receive side, the transceiver is placed into link test fail mode. Normal operation of the transmit side is inhibited and the "Link" LED is turned off. Normal operation is resumed when the link is reestablished by the reception of a valid packet or two valid link pulses.

10T transceivers also address the polarity of the receive pair wiring. In less than one second, the UTP transceiver automatically "rolls" the wire pair and allows for the proper operation of the transceiver. Also, the "Polarity" indicator on the AT-210T and AT-210TS transceivers is not illuminated when the circuitry has transposed the receive pair.

SQE/Heartbeat test status is indicated by LEDs on the AT-MX10, AT-MX10S, AT-210T and AT-210TS transceivers. The AT-MX10 and AT-MX10S transceivers utilize a two-colored LED that indicates the presence of Data Terminal Equipment (DTE) power in addition to the SQE test. The AT-210T and AT-210TS both have a single LED that indicates the status of the SQE test switch.

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STATUS INDICATORS

AT-MX10/AT-MX10S:	
Power/HB	Two-color Heartbeat LED
AT-MX20T:	
Power	Power is present from the DTE
Transmit	Indicates packet is being transmitted to the media
Receive	Indicates packet is being received from the media
Link	Indicates a valid link exists
AT-210T/AT-210TS:	
Power	Power is present from the DTE
Link	Indicates a valid link exists
SQE Test	SQE/Heartbeat test enabled
Polarity	Automatic polarity reversal has not occurred

AUI INTERFACE

Transmitter:	Typical	Range
Threshold Voltage	-200mv	-175 to -225mv
SQE Test Delay	800ns	600 to 1600ns
Duration	1000ns	500 to 1500ns
Collision Indication Delay	200ns	900ns
Assert Delay	200ns	900ns
Jabber Setup	45ms	20 to 100ms
Recovery	450ms	250 to 750ms
Receiver:		
Start-Up Delay	500ns	
Steady State Delay	100ns	200ns
Signal Amplitude	±800mv	±550 to ±1200mv
Loopback		
Steady State Delay	100ns	
Start-Up Delay	100ns	500ns

COAXIAL INTERFACE

Input Impedance	> 100K Ω
Coaxial Tap Capacitance	< 6 pf

Input/Output Voltage:	Typical	Range
DC Offset	-0.1v	-0.5 to 0v
AC Offset	1.86Vp-p	1.2 to 2.4Vp-p
Transmit Rise/Fall Time	25ns	±5ns

TWISTED PAIR CONNECTOR (RJ-45)

Pin No.	Function
1	+TD
2	-TD
3	+RD
4	Not Used
5	Not Used
6	-RD
7	Not Used
8	Not Used

TWISTED PAIR INTERFACE

Transmitter:	Typical	Range
Peak Differential		
Signal Amplitude	2.5v	2.2 to 2.8v
Transmitter Jitter	±1.5ns	±2ns
Harmonics Content	27dB Down	
Common Mode Output Voltage		
Start-Up Delay	100ns	200ns
Steady State Delay	100ns	200ns
Silence Voltage	±50mv	
Duration	16ms	8 to 130ms
Link Test Pulse	100ns	80 to 130ns
Output Impedance	100 Ω	95 to 105 Ω
Receiver:		
Receiver Threshold	-400mv	-350 to -450mv
Input Impedance	100 Ω	95 to 105 Ω
Differential Noise Rejection	300mv	

POWER CHARACTERISTICS

Isolation:	
Breakdown Voltage	
AT-MX10/AT-MX10S	500v rms 50/60Hz for 1 min
AT-MX20T/AT-210T/AT-210TS	1500v rms 50/60 Hz for 1 min

Supply:	Typical	Range
Voltage	12v	11.4 to 12.6v
Current	300mA	500mA

ENVIRONMENTAL SPECIFICATIONS

Operating Temp	0°C to 50°C
Storage Temp.	-20°C to 60°C
Relative Humidity	5% to 80% noncondensing

PHYSICAL CHARACTERISTICS

Dimensions:	
Standard	6.4cm x 4.6cm x 2.0cm (2.5" x 1.8" x 0.8")
Slim-line	6.9cm x 4.3cm x 2.5cm (2.7" x 1.7" x 1.0")
Weight:	
Standard	70g (2.4oz)
Slim-line	73g (2.5oz)

ELECTRICAL/MECHANICAL APPROVALS

EMI	FCC Class A, TUV, Vfg-B
Safety	UL, CSA, TUV-GS

ORDERING INFORMATION

AT-MX10-05
10Base2 MAU transceiver

AT-MX10S-05
10Base2 MAU Slim-Line transceiver

AT-MX20T-05
10T MAU transceiver

AT-210T-05
10T MAU transceiver

AT-210TS-05
10T MAU Slim-Line transceiver

Product Range: Allied Telesyn's long-term focus on price/performance networking has made it a market-leading provider of LAN, WAN and MAN network systems. Advanced Layer 3 switch and router technology perfectly complements its traditional Layer 2 switch, hub, adapter card and media conversion capabilities.

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