USER MANUAL

MODEL 2100

MiniMau™ 10BaseT Transceiver/MAU

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WARRANTY INFORMATION

Patton Electronics warrants all Model 2100 components to be free from defects, and will--at our option--repair or replace the product should it fail within one year from the first date of shipment.

This warranty is limited to defects in workmanship or materials, and does not cover customer damage, abuse, or unauthorized modification. If this product fails or does not perform as warranted, your sole recourse shall be repair or replacement as described above. Under no condition shall **Patton Electronics** be liable for any damages incurred by the use of this product. These damages include, but are not limited to, the following: lost profits, lost savings, and incidental or consequential damages arising from the use of or inability to use this product. **Patton Electronics** specifically disclaims all other warranties, expressed or implied, and the installation or use of this product shall be deemed an acceptance of these terms by the user.

RADIO AND TV INTERFERENCE

The Model 2100 generates and uses radio frequency energy, and if not installed and used properly--that is, in strict accordance with the manufacturer's instructions--may cause interference to radio and television reception. The Model 2100 has been tested and found to comply with the limits for a Class A computing device in accordance with the specifications in Subpart J of Part 15 of FCC rules, which are designed to provide reasonable protection from such interference in a commercial installation. However, there is no guarantee that interference will not occur in a particular installation. If the Model 2100 does cause interference to radio or television reception, which can be determined by disconnecting the RS-232 interface, the user is encouraged to try to correct the interference by one or more of the following measures: moving the computing equipment away from the receiver, re-orienting the receiving antenna, and/or plugging the receiving equipment into a different AC outlet (such that the computing equipment and receiver are on different branches).

SERVICE

All warranty and non-warranty repairs must be returned freight prepaid and insured to Patton Electronics. All returns must have a Return Materials Authorization number on the outside of the shipping container. This number may be obtained from Patton Electronics Technical Service at **(301) 975-1007**. *Packages received without an RMA number will not be accepted.*

Patton Electronics' technical staff is also available to answer any questions that might arise concerning the installation or use of your Model 2100. Technical Service hours: **8AM to 5PM EST, Monday through Friday.**

GENERAL INFORMATION

Thank you for your purchase of this Patton Electronics product. This product has been thoroughly inspected and tested, and is warranted for One Year parts and labor.

If any questions or problems arise during installation or use of this product, please do not hesitate to contact Patton Electronics Technical Support at (301)-975-1007.

FEATURES

- Adapts an Ethernet AUI port to 10BaseT UTP interface
- Compatible with IEEE 802.3 specifications
- Supports distances to 300ft.
- Power derived from AUI interface--no AC power or batteries required
- Plugs directly into the AUI (Attachment Unit Interface) port
- Seven LEDs monitor workstation interface status
- Easy to install and operate

DESCRIPTION

The Model 2100 connects directly to a DB-15 Ethernet AUI port and converts the 802.5 Ethernet electrical signals into signals compatible with the 802.3 twisted pair interface. The seven built-in LED indicators monitor the status of the workstation and/or network interface.

THEORY OF OPERATION

The Model 2100 receives data packets from the connected device over the AUI cable and then converts it to a signal to be transmitted over the twisted pair network. After the Model 2100 receives data packets from the network, it then transmits this data back to the workstation. The LED lights indicate power/ready and the proper transmission conditions.

INSTALLING THE MODEL 2100

Connection to the AUI Port. Follow these steps to connect the Model 2100 to the DB-15 AUI port:

1. Turn OFF the computer or device to which the Model 2100 is to be connected.

2. If the Model 2100 is to be connected to the AUI port of an Ethernet interface card, turn the SQE switch ON. If the Model 2100 is to be connected to the AUI port of an Ethernet hub or repeater, turn the SQE switch OFF.

3. Open the slide latch of the AUI port and insert the Model 2100 into the DB-15. Lock the slide latch to secure the Model 2100 in place. If the AUI port is mounted to a card, be sure that the card is configured correctly so that the AUI port is enabled.

Note: If connection to the AUI port is being made by DB-15 cable, be sure that the cable is wired STRAIGHT THROUGH, with at least the following signals being passed:

AUI PORT		MODEL 2100	
Pin#	Signal	Pin#	Signal
3	Data Out+	3	Data Out+
10	Data Out-	10	Data Out-
5	Data In+	5	Data In+
12	Data In-	12	Data In-
2	Collision In+	2	Collision In+
9	Collision In-	9	Collision In-

Connection to the 10BaseT Hub. To connect the Model 2100 to a 10BaseT hub, use an unshielded twisted pair cable--terminated with RJ-45 plugs--wired STRAIGHT THROUGH in the manner shown below:

MODEL 2100		10BASET HUB	
Pin#	Signal	Pin#	Signal
1	Transmit+	1	Transmit+
2	Transmit-	2	Transmit-
3	Receive+	3	Receive+
6	Receive-	6	Receive-

REFERENCE

APPENDIX A. - LED INDICATORS

Power (PWR). This red light turns on when the Model 2100 is supplied with power by the AUI port.

Link (LNK). This yellow light turns on when the Model 2100 is properly connected to the twisted pair link and the network is operating If the Link LED is not illuminated, transmit, receive and SQE functions will not work.

Polarity (POL). This red light turns on when the Model 2100 determines that the polarity of the twisted pair signals is reversed. Actually, the Model 2100 monitors the twisted pair receive signal to determine if data is normal or inverted. If inverted data is detected, the Model 2100 corrects the data internally. However, the Polarity LED will remain on until the polarity of the twisted pair signals is physically reversed.

Collision (COL).   This red light turns on when the Model 2100 determines that transmit and receive signals have occurred simultaneously over the twisted pair link. The collision LED also lights when network jabber occurs, or when the SQE switch is turned ON.

Receive (RCV). This green light turns on when the Model 2100 receives a data packet from the network (via the twisted pair wiring).

Transmit (XMT).   This green light turns on when the Model 2100 receives a data packet from the node (via the AUI port).

Jabber (JAB).   This green light turns on when the Model 2100 receives a continuous stream of unrecognizable data from the node. When the jabber LED is illuminated, the Model 2100 will not transmit data. This function is designed to keep a damaged node from continually transmitting garbled information through the network. During normal operation, this LED should remain unlit.

APPENDIX B. - SQE FEATURE

The SQE feature verifies that the Model 2100 receives packets correctly: After the node sends each packet, the Model 2100 sends a pulse back to the node verifying that the Model 2100 has received the packet correctly. If the Model 2100 is connected to an interface card, the SQE feature should be enabled (switch ON). If the Model 2100 is connected to a hub or repeater, the SQE switch should be OFF.

APPENDIX C. - TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSES
"Power" LED doesn't light	--Model 2100 is improperly connected to AUI port
	--Node is not turned ON
	--AUI Port of card is not enabled (BNC port may be enabled instead)
"Link" LED doesn't light	--10BaseT hub or concentrator is defective
	--Network cabling uses improper wire pairing
	--Network is not functioning properly
"Polarity" LED is lit	--Polarity signals on twisted pair receive circuit are reversed
"Jabber" LED is lit	--10BaseT adapter card is malfunctioning
	--AUI cabling is wired incorrectly

APPENDIX D. - SPECIFICATIONS

Standard: IEEE 802.3 compliant

Connectors: DB-15 male on AUI port, RJ-45 jack on 10BaseT twisted pair port

LEDs:

Power On	Red
Link	Yellow
Polarity	Red
Collision	Red
Receive	Green
Transmit	Green
Jabber	Green

Link Parameters:
Duration between transmit link pulses: 8ms(min) / 24ms(max)
Duration between receive link pulses: 3ms(min) / 105ms(max)

Collision Parameters:
Collision signal ON/OFF delay (CI+/-): 900ns(max)
Collision to end of AUI loopback ON (DI+/-): 800ns(max)
Start of AUI loopback to end of collision: 100ns(max)

Collision Parameters:
Jabbering node isolated from network if jabber surpasses a 26ms transmit time. The jabber function will inhibit transmission (except for link pulses), discontinue AUI loopback, and send a collision signal on the AUI CI+/- circuit.

Power Supply: None required. Uses power from AUI data signals
Temperature Range: 0-60 degrees C (32-140 degrees F)
Altitude: 0-15,000 feet
Humidity: 5 to 95% noncondensing
Dimensions: 2.25"L x 1.69"H x 0.75"W
Weight: 1.5 oz.