

# OmniMux<sup>™</sup> 400XL

Systems AS400/3X Fiber Optic SuperMux<sup>™</sup>

**User Manual** 

www.omnitron-systems.com

#### SAFETY CONSIDERATIONS

#### Warning

The instructions in this User's Manual are for use by qualified personnel only. To avoid electrical shock, do not perform any servicing of this unit or its accessories (such as power units) other than that contained in the operating instructions, unless you are qualified and certified to do so by Omnitron Systems Technology, Inc.

#### Caution

All user-required operations can be performed without ever opening the unit's cover. Never attempt to open or remove the unit's cover or tamper with its power units (other than plugging and unplugging them as specified in the operating instructions).

#### Line Voltage

Before Connecting the Power units to the line voltage, make sure that the voltage of the power source (wall outlet) matches the voltage specified on the power units.

#### Warranty

This **OST** product is warranted to the original purchaser against defects in material and workmanship for a period of **TWO YEARS** from the date of shipment. This warranty period may be extended to **LIFETIME** by the original purchaser if the product is **REGISTERED** with **OST** within 90 days from the date of shipment. TO REGISTER, PLEASE COMPLETE AND MAIL OR FAX BACK THE REGISTRATION CARD. During the warranty period, **OST** will, at its option, repair or replace a product which is proven to be defective.

For warranty service/repair, the product must be sent to an **OST** designated repair facility, shipment prepaid by the Buyer. **OST** will pay postage/shipping charges to return the product to Buyer (using **OST**'s standard shipping method).

#### Limitation of Warranty

The foregoing warranty shall not apply to defects resulting from improper or inadequate use and/or maintenance of the equipment by Buyer, Buyer-supplied equipment, Buyer-supplied interfacing, unauthorized modifications or tampering with equipment (including removal of equipment cover by personnel not specifically authorized and certified by **OST**), misuse, operating outside the environmental specification of the product (including but not limited to voltage, ambient temperature, radiation, unusual dust, etc.), or improper site preparation or maintenance.

No other warranty is expressed or implied. **OST** specifically disclaims the implied warranties of merchantability and fitness for any particular purpose.

#### **Exclusive Remedies**

The remedies provided herein are the Buyer's sole and exclusive remedies. **OST** shall not be liable for any direct, indirect, special, incidental, or consequential damages, whether based on contract, tort, or any legal theory.

#### <u>Notes</u>

# OmniMux 400XL

### **USER MANUAL**

#### **General Description**

The OmniMux 400XL is a fourth generation IBM 5250 compatible active fiber optic device. The OmniMux 400XL may be configured as either a multiplexer, demultiplexer, demultiplexer star, or as a star. Featuring a fiber optic link and eight fiber optic ports, the OmniMux 400XL provides the highest integration of fiber optic connectivity in the AS400 / Systems 3x industry. Two models offer a selection of fiber type:

2800-MM	Multimode fiber optics
2810-SM	Single-mode fiber optics

#### **Data Reliability**

The OmniMux 400XL is capable of reliably locking and maintaining synchronization with data rate variations of -2% to +4%. It features a Digital Phase Locking Architecture; this architecture facilitates reliable operation with a high noise immunity. It allows the OmniMux 400XL to reliably synchronize and lock to legitimate data frames and also to discriminate and ignore any open, shorted or noisy inputs (induced or crosstalk). This makes the OmniMux 400XL a reliable solution in environments where high availability, stability, reliability, and low maintenance are important.

### **Switches & Indicators**

The OmniMux 400XL has eight switches. The meaning of the switches is shown on the front panel and is further explained in the table below.

#### STAR MUX DMUX LINK 0 POL Ť DMUX/STAR ŧ DMUX/ADR TEST 4 \$ ŧ 2 3 5 4 6 7 8 1

SWITCH	POSITION	MEANING
1 & 2: TEST	UP: UP	Normal Mode
	Any other combination	OST Use Only
3: LINK 0 POLARITY	UP DOWN	Non-inverted Polarity Inverted Polarity
4 & 5: MODE	UP: UP UP: DOWN DOWN: UP DOWN: DOWN	Star Mode Multiplexer Mode Demultiplexer Mode Demux Star Mode
6 - 8: DEMUX STAR ADDRESS	1 = UP 0 = DOWN	Set To Address Of Workstation

In addition to the eight switches there are 23 LED indicators. There are 11 pairs of LEDs associated with each of the connectors. The meaning of the LEDs depends on the mode of operation.

# **Technical Specifications**

•	Protocol:	IBM 5250 for AS/400 and System 34/36/38
•	Terminals:	3179, 3180, 3196, 3197, 3476, 3477, 5250, 5251, 5291, 5292,
		and compatibles
•	Printers Supported:	3262, 3812, 4214, 4224, 4234, 5219, 5224, 5225, 5226, 5262, and compatibles
•	Cables	-
	Fiber Optic:	Multimode glass fiber sizes 50/125, 62.5/125, or 100/140 micron Single mode glass fiber size 9/125 micron
	UTP:	Level 3 (EIA/TIA 568):
		24 AWG solid copper 100 +/- 15 Ohms @ 1.0 Mhz; 7db per
		1000 ft. @ 1.0 Mhz (lower grade wiring at shorter distances)
	DB25	OST part # 9100-DB25-1 (not included)
•	Data Rate:	1 Mbps +4%, -2%
•	Supported Distance	S
	Fiber Optic:	15,000 ft multimode
	-	30,000 ft single mode
	Port UTP:	3000 ft.
•	Indicators	
	Power:	Yellow LED
	Ports	Green LED = Data activity
		Red LED = Data parity error
•	Dimensions:	W: 19.00" x D: 10.00" x H: 1.75"
•	Power:	110 Volts, 60 Hz or 220 Volts, 50 Hz
•	Temperature	
	Operating:	0 to 45 degrees C
	Storage:	-40 to 75 degrees C
•	Humidity:	Up to 90% (non condensing)

## **Technical Support Contact Information**

If you encounter problems in installing or operating this product, contact Omnitron Technical Support.

Phone:	(949) 250-6510
Fax:	(949) 250-6514
Address:	Omnitron Systems Technology, Inc.
	27 Mauchly #201
	Irvine, CA 92618, USA
Email:	support@omnitron-systems.com
URL:	www.omnitron-systems.com

### **Applications**

The drawing on the previous page illustrates four different applications of the OmniMux 400XL.

### A. Fiber Optic SuperMux Mode

Application A shows an OmniMux 400XL configured as a super multiplexer (switches 4:5 = Up:Down) connected to the host workstation controller via the DB25 "brick" cable. The Fiber Optic SuperMux mode integrates the connectivity of several multiplexers in one unit. Each port link in the multiplexer mode may support any mixture of the eight host ports. For example, port link 1 may carry the data for host ports 0, 1, and 2, while port link 6 may carry the data for host ports 3 through 7. The Fiber Optic SuperMux mode makes the OmniMux 400XL most versatile 5250 connectivity device in the industry.

#### Remember that host port numbers must be uniquely assigned among the various demultiplexer or demux star destinations

#### **B.** Fiber Demultiplexer

Application B shows an OmniMux 400XL configured as a demultiplexer (switches 4:5 = Down:Up). Up to eight stars with fiber link capability (such as the OmniMux 400XL or OmniMux 400) may be connected to the unit in this manner. Note that the host link is made via the fiber optic link port in Application B.

### C. Fiber Demux Star

Application C shows an OmniMux 400XL configured as a demux star (switches 4:5 = Down:Down). Workstations and printers may be directly connected to the OmniMux 400XL in demux star mode. Remember to set the port address on switches 6-8 when in demux star mode. Note that the host link is made via the fiber optic link port in Application C.

### **D.** Fiber Star

Application D shows an OmniMux 400XL configured as a star (switches 4:5 = Up:Up). OST recommends using the OmniRepeater 400FTD in conjunction with the OmniMux 400XL to provide a complete "fiber-to-the-desk" solution. Note that the host link is made via the UTP link port in Application D.

# Self Test Mode

ALL LEDS	MEANING
Illuminate Briefly on Power Up	Passed Self-Test
Any Other Behavior	Failed Self-Test, contact Technical Support @ 949-250-6510

### Normal Mode

TOP LED	MEANING
RED	Data parity error received
OFF	No data parity errors
BOTTOM LED	MEANING
BOTTOM LED GREEN	MEANING Data is Being Received

# **Diagnostic Features**

The OmniMux 400XL diagnostic features make it easy to install and maintain. There are two levels of diagnostics: Self Test and run-time activity and error monitoring.

### Self Test

The power-on self test ensures that the OmniMux 400XL is fully operational. When power is applied to the unit self testing occurs. At the end of the self test all four LEDs will illuminate briefly. The power LED will illuminate yellow providing a continuous indication that the external power supply unit is operational.

## **Run-Time Activity & Error Monitoring**

During normal operation the Link and Port LEDs provide continuous diagnostic information. These LEDs detect and display true link and port activity and data parity errors. This is accomplished by individual port monitoring and searching for legal frame header patterns.

Upon the detection of a valid frame pattern, a green LED indicator displays the detected activity. This feature assists in installation and in the selection of correct polarity baluns and/or setting of the polarity switch.

The data is analyzed for correct parity and the detection of parity error is indicated by a red LED. This feature facilitates the continuous monitoring of signal and line quality.

# **Unpacking**

- a. Visual Inspection before unpacking, a visual inspection should be conducted in order to detect any physical damage to the equipment. Any evidence of damage should be noted and reported immediately.
- b. Unpacking place shipping container on a flat surface, cut straps or tape, open top. Take out each item carefully and place securely on a clean flat surface. Return all packing material into container (foam, boxes etc.), close and store away for future re-use.
- c. Inspection Inspect each item for any apparent damage, any evidence of damage should be noted and reported immediately.
- d. Content Review the content; the following items should be included:
  - OmniMux 400XL module (1)
  - Accessory bag containing: 2 Mounting ears, 6 machine screws, and 4 rubber feet
  - 7<sup>1</sup>/<sub>2</sub> ft. AC power cord (1)
  - User's Manual (the document you are now reading)

Please note any missing items or discrepancies and report them immediately.

### Site Requirements

A 110 Volt, 60 Hz **or** a 220 Volt, 50 Hz power outlet should be available within 5 ft. of the unit. the selection of correct polarity baluns and/or setting of the polarity switch.

The data is analyzed for correct parity and the detection of parity error is indicated by a red LED. This feature facilitates the continuous monitoring of signal and line quality.

# **Applications**



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