MOXA

ME61 Single-Strand Fiber Converter

First Edition, February 2004

1. Overview

MOXA ME61, Single-Strand Fiber Converter, is a standalone physical layer device that converts between 10/100BaseT(X) and 100BaseFX segments of the same network.

ME61 is designed with an optic Wavelength Division Multiplexing (WDM) technology that transports bi-directional and full duplex signals over a single-strand fiber cable simultaneously. ME61 is powered by an external power adapter or by the USB port of the host (e.g., PC or NB).

2. Package Checklist

MOXA ME61 products are shipped with the following items:
- 1 ME61A or 1 ME61B
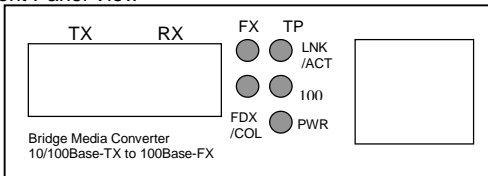- AC-DC Power Adapter
- ME61 User's Manual

Please notify your sales representative immediately if any of the above items is missing or damaged.
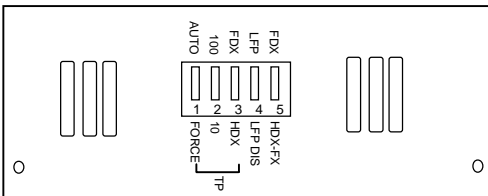
3. Model Descriptions

Model	TX, RX Wavelength
ME61A	TX (Transmit) 1310 nm
	RX (Receive) 1550 nm
ME61B	TX (Transmit) 1550 nm
	RX (Receive) 1310 nm

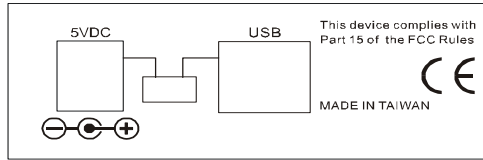**Panel Layout of ME61 series**

- Front Panel View

- Side Panel View

- Rear Panel View

4. Wiring the Power Inputs

Using ME61 with the AC-DC Power Adapter

1. Use DIP switch settings to enable power through the AC-DC Power Adapter (refer to Part 6. for DIP switch settings).
2. Verify that the AC-DC adapter conforms to your country's AC power requirements and then insert the power plug.
3. Connect ME61 to the network.

Note	Wear a grounding device to safeguard against injury due to electrostatic discharge.

Using ME61 with Power over USB

1. Use DIP switch settings to enable power from the USB port (refer to Part 6. for DIP switch settings).

Note	Please ensure that the DIP switch is positioned on the USB side of the slider.

2. Install the USB cable. Plug the type A connector in the PC's USB port and the type B connector in the ME61's USB port (see Fig. 1).
3. Connect ME61 to the network.

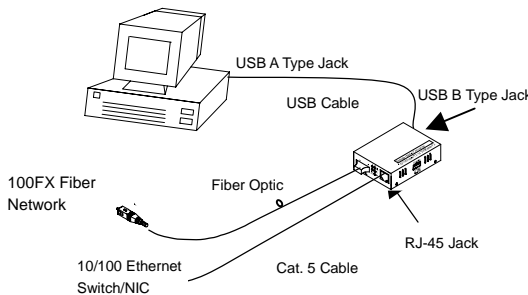| Warning	Make sure that the PC's power is turned on. Otherwise, the ME61 will not receive power.

Fig.1 ME61 with USB power source (Type B-to-Type A Plug) and FX/TP connection
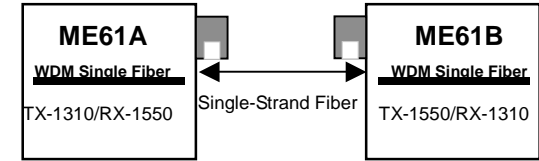

Fig. 2 Basic Network Connection

5. Communication Connection

ME61 models have one 10/100BaseT(X) Ethernet port, and one 100 BaseFX (SC) fiber port.

10/100BaseT(X) Ethernet Port Connection

ME61 supports auto MDI/MDI-X. Below we show pinouts for both MDI (NIC-type) ports and MDI-X (HUB/Switch-type) ports, as well as cable wiring diagrams for straight-through and cross-over Ethernet cables.

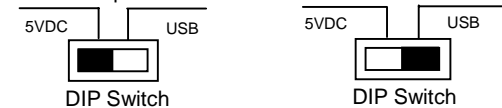**RJ45(8-pin) to RJ45(8-pin) Straight-Through Cable Wiring**
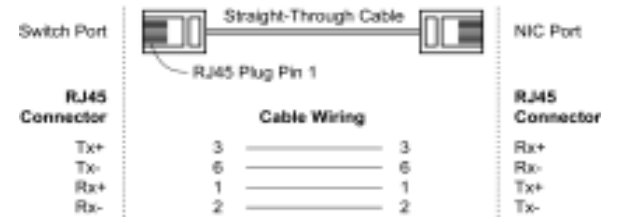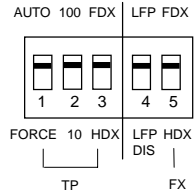

RJ45 (8-pin) to RJ45(8-pin) Cross-Over Cable Wiring

6. DIP Switch Settings

Power input settings

- Power source from AC-DC Power Adapter enabled
- Power over USB enabled

Communication settings

AUTO 100 FDX | LFP FDX

1 2 3 | 4 5

FORCE 10 HDX | LFP HDX
DIS

TP | FX

DIP Switch		DIP Function
FX	FDX	FX at full duplex (default)
	HDX	FX at half duplex
LFP		Enable Link Fault Pass-through (default)
LFP DIS		Disable Link Fault Pass-through
TP	FDX	TP at full duplex (default)
	HDX	TP at half duplex when TP at Force
	100	TP at 100M (default)
	10	TP at 10M when TP at Force
	AUTO	TP at auto-negotiation (default)
	FORCE	Force TP at 10M or at half duplex

Note:
- You must set DIP Switch 1 to "FORCE" when DIP Switches 2 and 3 are set to "10" and "HDX," respectively

- For ME61, DIP Switch 5 must be set to "FDX."

- After resetting the DIP Switches, you must reboot ME61 to activate the new settings.
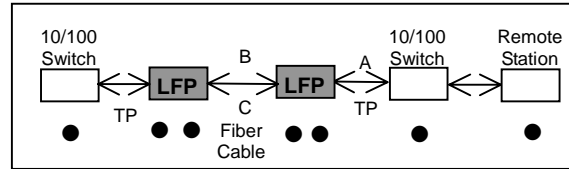
7. Link Fault Pass-through

This media converter supports Link Fault Pass-through (LFP) for TX/FX converter applications.
Link status on one port is propagated to the other port to notify remote nodes. If the TP port is unplugged, the ME61 stops transmitting over the fiber port, causing the remote fiber node link to fail. The LED will show link failure on both the TP and fiber ports. If the fiber link fails, the ME61 restarts auto-negotiation on the TP port, but stays in the link failure state. This causes the remote TP node link to fail. The LED also shows the link failure on both the TP and fiber ports.
The figures below show normal status when the link succeeds, and the error status when TP Cable A, Fiber Cable B, or Fiber Cable C fails to connect.

Note The Link Fault Pass-through (LFP) function is enabled by DIP switch. Disable the LFP function by setting the DIP switch to the LFP DIS position.
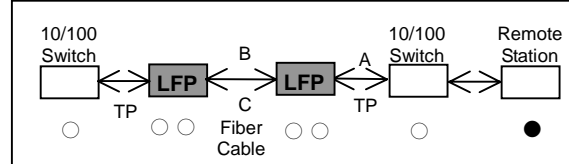
Normal status via a pair of LFPs

Status if TP A is broken
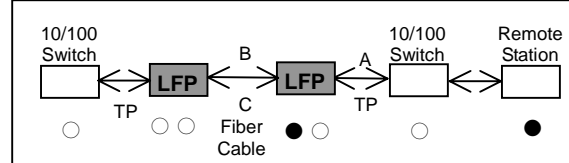
Status if Fiber Cable B or C is broken

Note ● indicates LNK/ACT LED Lit
○ indicates LNK/ACT LED Off

Warning The LFP (Link Fault Pass Through) function works only when two converters working in pairs have this capability. Furthermore, both LFP converters should be supplied by the same manufacturer/vender. The connection comes from LFP converters with odd models or non-LFP converters will cease the LFP function.

8. LED Description

LED	Color	Function
FX LNK /ACT	Green	Lit when FX port is linking Blinks when FX port is transmitting data
FX FDX /COL	Amber	Lit when full-duplex mode is active Off when half-duplex is active Blinks when a collision occurs
TP LNK /ACT	Green	Lit when TP port is linking Blinks when FX port is transmitting data
TP 100	Green	Lit when TP port is transmitting data at 100 Mbps Off when TP port is transmitting data at 10 Mbps
PWR	Green	Lit when +5V power is supplied

9. Technical Specifications
- **Standards:** IEEE802.3u 10/100Base-TX, 100Base-FX
- **Flow Control:** IEEE802.3x compliant for full-duplex
  Back pressure flow control for half-duplex
- **TP Cable Limitations:** Cat. 5 and up to 100m
- **Fiber Optic Cable:** Single-Strand Fiber Cable
  Recommended: 9/125 μm single-mode, Optional: 8.3/125, 8.7/125 or 10/125 μm
- **Wavelength:** ME61A TX: 1310 nm/RX: 1550 nm,
  ME61B TX: 1550 nm/RX: 1310 nm
- **Min. TX Output:** -10 dBm
- **Max. TX Output:** -7 dBm
- **Sensitivity:** -32 dBm
- **Power Requirement:** 1A@+5VDC from AC-DC Adapter
  0.5A@+5VDC from USB port
- **Ambient Temperature:** 0° to 50°C
- **Humidity:** 5% to 90%
- **Dimensions:** 26.2(H) × 70.3(W) × 94(D) mm
- **Complies with FCC Part 15 Class A and CE Mark**

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