

Media Converter User's Guide

First Edition, December 2003

1. Overview

MOXA ME51 Media Converter is a standalone physical layer device that converts between 10/100BaseT(X) and 100BaseFX segments of the same network. The converter supports Link Fault Pass-through (LFP) for easily tracing network link failures, and the LFP function enhances the integrity and conformity of TP-Fiber linking to make the network easier to maintain. ME51 is powered by an external power adapter or USB port on the hosting device (e.g., PC or NB).

2. Package Checklist

MOXA ME51 products are shipped with the following items:

- 1 ME51-M-SC, 1 ME51-M-ST or 1 ME-S-SC
- AC-DC Power Adapter
- ME51 User's Manual

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

3. Model Description

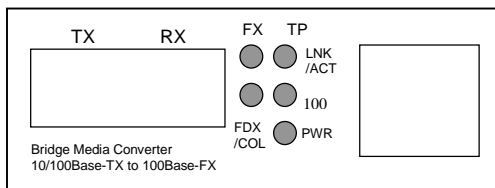
ME51-M-SC: 10/100BaseT(X) to 100BaseFX media converter; multi mode, SC type fiber connection

ME51-M-ST: 10/100BaseT(X) to 100BaseFX media converter; multi mode, ST type fiber connection

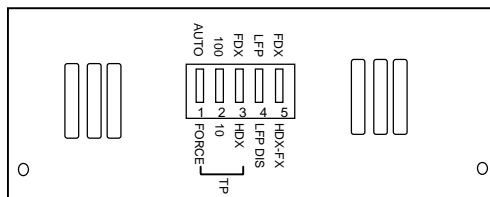
ME51-S-SC: 10/100BaseT(X) to 100BaseFX media converter; single mode, SC type fiber connection

Panel Layout of ME51 series

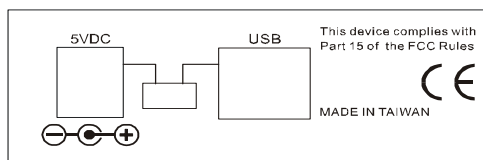
- Front Panel View



- Side Panel View



- Rear Panel View



4. Wiring the Power Inputs

Using ME51 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 ME51 to the network.

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

ME51 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 ME51's USB port (see Fig. 1).
3. Connect ME51 to the network.

Warning: Make sure that the PC's power turned on. Otherwise, the ME51 will not receive power.

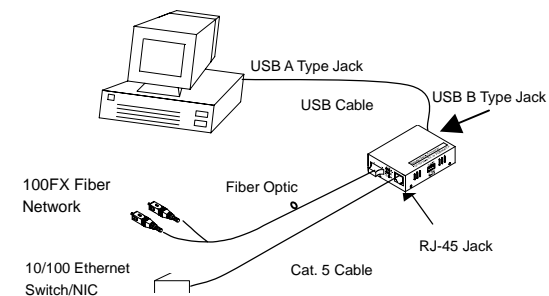


Fig.1 : ME51 with USB power source (Type B-to-Type A Plug) and FX/TP connection

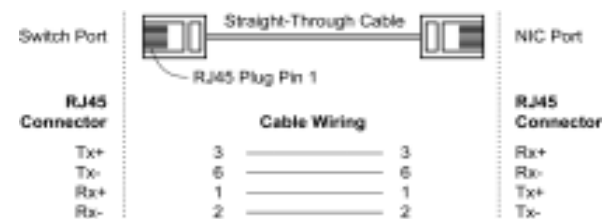
5. Communication Connection

ME51 models have one 10/100BaseT(X) Ethernet port, and one 100 BaseFX (SC or ST type connector) fiber port.

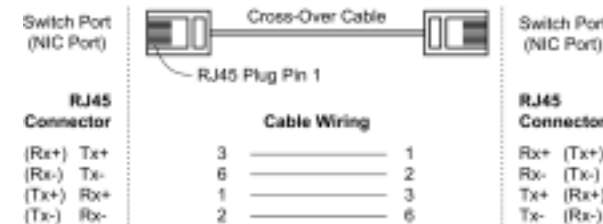
10/100BaseT(X) Ethernet Port Connection

ME51 supports auto MDI/MDI-X. Below we show pinouts for both MDI (NIC-type) ports and MDI-X (HUB/Switch-type) ports, and also show cable wiring diagrams for straight-through and cross-over Ethernet cables.

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



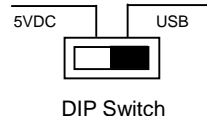
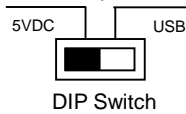
RJ45(8-pin) to RJ45(8-pin) Cross-Over Cable Wiring



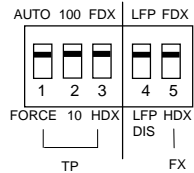
6. Dip Switch Setting

Power input setting

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



Communication setting



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 ME51-S-SC, DIP Switch 5 must be set to "HDX"
 - After resetting the DIP Switches, you must reboot ME51 to activate the new settings.

7. Link Fault Pass-through

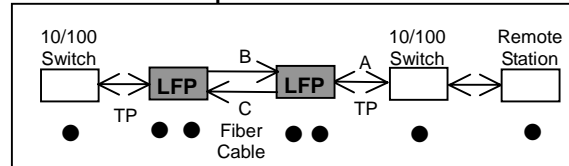
- Note:** The Link Fault Pass-through (LFP) function is enabled by DIP switch. Disable the LFP function by setting the DIP switch to the LFP DIS position.

This media converter supports Link Fault Pass-through (LFP) for TX/FX converter applications.

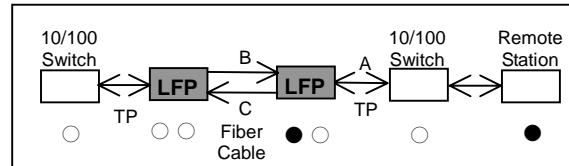
Link status on one port is propagated to the other port to notify remote nodes. If the TP port is unplugged, the ME51

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 ME51 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.

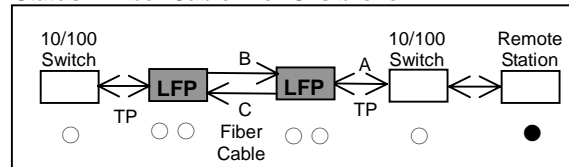
Normal status via a pair of LFPs



Status if TP Cable 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 as a pair have LFP capability. Furthermore, both LFP converters should be supplied by the same manufacturer/vendor. If you are using an odd number of converters, or models that don't support LFP, then the LFP function will not work.

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 supplying

9. Cable Connection Parameter

- **TP Cable Limitations:** Cat. 5 and up to 100m
- **Converter Fiber Cable Limitations:** Multi mode 2 km, Single mode 20 km

10. Technical Specification

- **Standards:** IEEE802.3u 10/100Base-TX, 100Base-FX
- **Flow Control:** IEEE802.3x compliant for full-duplex
Back pressure flow control for half-duplex
- **Fiber Cable:** 50/125, 62.5/125 or 100/140 μ m multi-mode
8.3/125, 8.7/125, 9/125 or 10/125 μ m single-mode
- **Wavelength:** 1310 nm
- **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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