Media Converter User's Guide

Second Edition, June 2008

1. Overview

MOXA 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 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 adaptor or USB port on the hosting device (e.g., PC or NB). The option of using USB port power, which is unique to ME51 for products of this type, offers greater flexibility when deploying ME51 in the field.

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

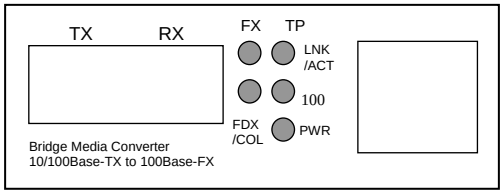
ME51-M-SC: 10/100BaseT(X) to 100BaseFX media converter; multi mode, SC type fiber connection

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

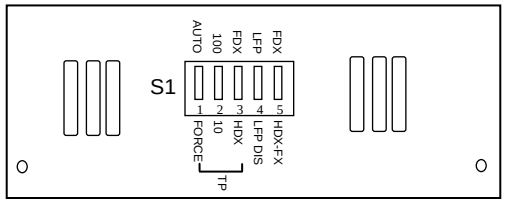
ME51-S-SC: 10/100BaseT(X) to 100BaseFX media converter; single mode, SC type fiber connection

Panel Layout of ME51 series

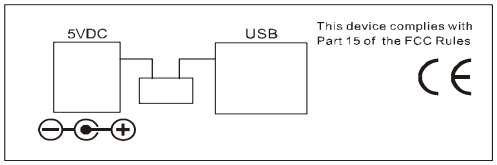
- **Front Panel View**



- **Side Panel View**



- **Rear Panel View**



4. Wiring the Power Inputs

➔ **Note:** The Media Converter is hot-swappable.
Wear a grounding device for electrostatic discharge

ME51 with AC-DC Power Adapter

1. Enabled power source from AC-DC Power Adapter by dip switch setting(Refer to Chapter 6 dip switch setting)
2. Verify that the AC-DC adapter conforms to your country AC power requirement and then insert the power plug
3. Connect ME51 for network connection.

ME51 with Self Powering Cable (USB)

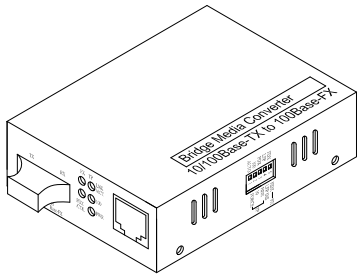
Enable power source from USB by dip switch setting (Refer to Chapter 6 dip switch setting)

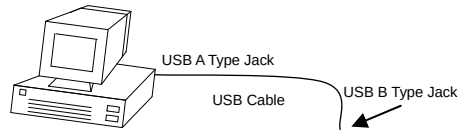
➔ **Note:** Please ensure that the dip switch is on the right side of slide switch

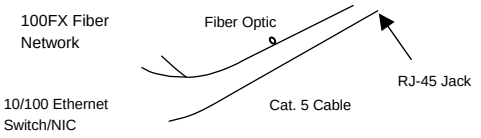
Install USB cable. Plug type A connector in PC(NB)'s USB port(jack) and type B connector in the ME51's USB port (See Fig. 1)

Install the media cable for network connection

Warning: Please make sure that the power of PC/NB is turned on, or else the ME51 will not work.







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

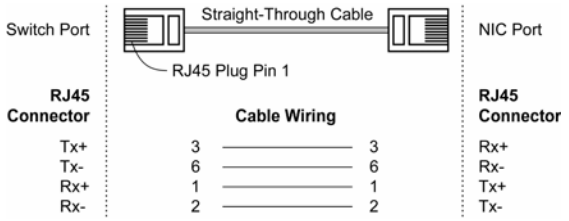
5. Communication Connection

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

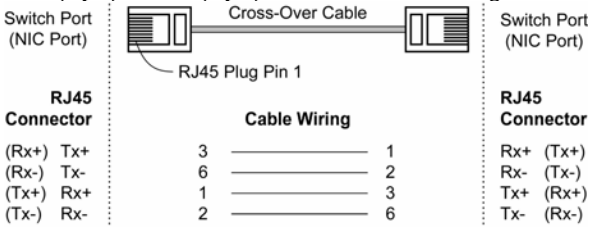
5.1 10/100BaseT(X) Ethernet Port Connection

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



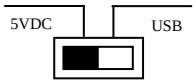
RJ45 (8-pin) to RJ45 (8-pin) Cross-Over Cable Wiring



6. Dip Switch Settings

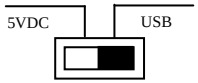
Power inputs settings

Enabled power source from AC-DC Power Adapter



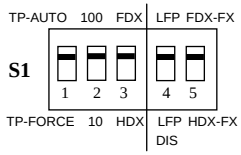
DIP Switch

Enabled power source from USB



DIP Switch

Communication setting



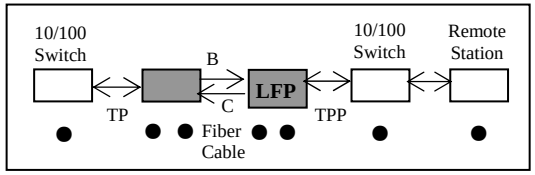
FX	FDX	FX at full duplex (default)
	HDX	FX at half duplex
LFP		Enable Link Fault Pass-Through
LFP DIS		Disable Link Fault Pass-Through
TP	FDX	TP at full duplex (default)
	HDX	TP at half duplex when TP at Force
	100	TP at 100M (default)
	10	TP at 10M when TP at Force

7. Link Fault Pass Through

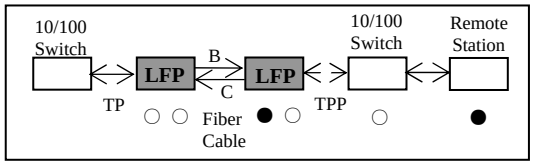
➔**Note:** Link fault pass through (LFP) function will be enabled by dip switch setting. Disable LFP function by setting dip switch to LLFP DIS.

This media converter supports link fault pass through (LFP) in TX/FX converter application. Link status on one port is propagated to the other port to notify the remote nodes. If TP port is unplugged, this converter stops transmission on fiber port. This causes the remote fiber node link to fail. LED shows the link failure on both TP and fiber ports. If fiber link fails, this converter restarts auto-negotiation on TP port but always stays in the link failure state. This causes the remote TP node link to fail. LED also shows the link failure on both TP and fiber ports. Below shown the normal status when the link is successful connected and the erroneous status when TP Cable A, Fiber Cable B or Fiber Cable C fails to connect.

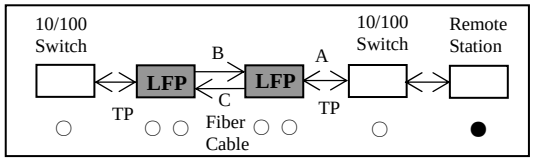
Normal status via a pair of LFPs



The status as TP Cable A is broken



The status as 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 both two converters have this capability in pairs. Furthermore, both LFP converters should be supplied only by the same manufacturer/vender. The connection comes from LFP converters with odd models or non-LFP converters will cease the LFP function.

6. LED Description

LED	Color	Function
FX LNK/ACT	Green	Lit when FX is linking Blinks when FX's Data is being transmitted
FX FDX/COL	Amber	Lit when full-duplex mode is active Off when half-duplex is active Blinks when collision occurred
TP LNK/ACT	Green	Lit when TP is linking Blinks when FX's Data is being transmitted
TP 100	Green	Lit when TP's Data is being transmitted at 100 Mbps Off when TP's Data is being transmitted at 10 Mbps
PWR	Green	Lit when +5V power is supplied

7. DC Jack and AC-DC Power Adapter

The DC jack's central post is 2.5mm wide and conforms to

- **Flow Control:** IEEE802.3x compliant for full-duplex
  Back pressure flow control for half-duplex
- **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

➔ **Note:** For connecting this device to Router, Bridge or Switch, please refer to the corresponding device's Technical Manual.

MOXA®

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