D-Link®

DMC-920
10/100BASE-TX to
100BASE-FX
Single-Fiber
Dual-Wavelength
Media Converter Kit
User's Guide

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RECYCLABLE

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INTRODUCTION

Thank you for choosing the 10/100BASE Fast Ethernet Media Converter, the Dual Wavelength Single Fiber

Converter introduced here provides a pair of one channel single fiber media conversion between 10/100BASE-TX and 100BASE-FX Single Fiber.

Dual-Wavelength Single-Fiber

These types of Single-Fiber modules combine transmit and receive signals onto one fiber strand using two wavelengths. This design avoids the budget losses incurred by the single-wavelength single-fiber technology, and minimizes any possibility of reflections in the system. The units on both ends of a link are different. One module uses one wavelength to transmit and a second wavelength to receive, while the other module flips that relationship. For this reason these units are sold in pairs.

PRODUCT FEATURES

- A pair of One-channel single fiber media conversion between 10/100BASE-TX and 100BASE-FX.
- Two different type of transmitting wavelength: One wavelength with bi-directional for both transmit and receive.
  - DMC-920R: TX: 1310μm; RX: 1550μm.
  - DMC-920T: TX: 1550μm; RX: 1310μm
- Auto negotiation of speed and duplex mode on TX port
- Auto MDI-X on TX port
- One slide switch for configuring fixed half/full duplex modes
- Store-and-forward mechanism
- Back-pressure & IEEE802.3x compliant flow control
- Full wire-speed forwarding rate
- Front panel status LEDs
- Used as a stand-alone device or with a chassis
- Hot-swappable when used with a chassis
- Manageable through Intelligent Chassis System

INSTALLATION

This chapter gives step-by-step installation instructions for the Converter.

Selecting a Site for the Equipment

As with any electric device, you should place the equipment where it will not be subjected to extreme temperatures, humidity, or electromagnetic interference. Specifically, the site you select should meet the following requirements:

1. The ambient temperature should be between 32 and 104 degrees Fahrenheit (0 to 40 degrees Celsius).
2. The relative humidity should be less than 90 percent, non-condensing.
3. Surrounding electrical devices should not exceed the electromagnetic field (RFC) standards for IEC 801-3, Level 2 (3V/M) field strength.
4. Make sure that the equipment receives adequate ventilation. Do not block the ventilation holes on each side of the switch or the fan exhaust port on the side or rear of the equipment.
5. The power outlet should be within 1.8 meters of the switch.

Connecting to Power

1. This Converter is a plug-and-play device.
2. Connect the supplied AC to DC power adaptor with a power voltage of 7.5Vdc/1.5Amp to the DC-Jack on the converter, and then attach the plug into a standard AC outlet.

Sliding Switch

There is a sliding switch for duplex mode setting for fiber

port. Refer to the table below for more details.

|	Half Duplex		Full Duplex (default)
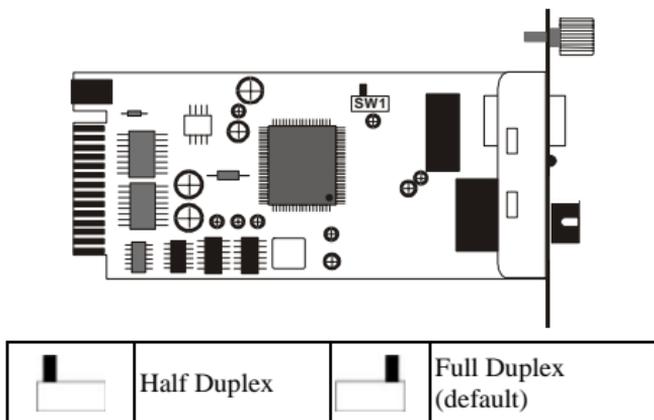
Installing in a Chassis

The Converter can be fit into any of the expansion slots on a special designed chassis.
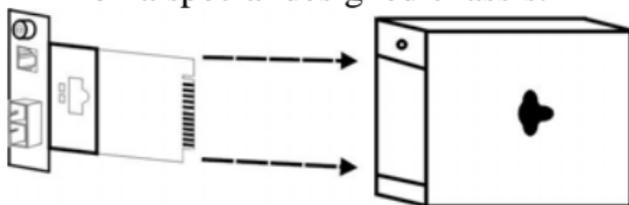
• First, install the converter onto a carrier supplied with the chassis:

Step 1- Unscrew and pull out the media converter board.

Step 2- Plug in the media board to any of the vacant slot.

Step 3- Fit the converter onto the carrier and use the screw to secure it.
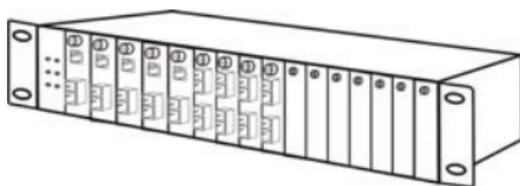
LED Indicator

The LED indicators give you instant feedback on status of the converter:

```
100○   ○—○TX
       FDX/COL LINK/ACT
PWR○   ○—○FX
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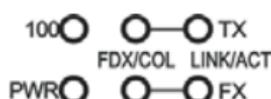
LEDs	State	Indication
Power (PWR)	Steady	Power on
	Off	Power off
100 Mbps (100)	Steady	Runs at 100Mbps on TX port
	Off	Runs at 10Mbps on TX port
TX Port (TX) FX Port (FX) FDX/COL	Steady (FDX)	Connection in full duplex mode FDX stands for FULL-DUPLEX
	Lights off	Connection in half duplex mode
	Blinking (COL)	Data collision
TX Port (TX) FX Port (FX) LINK/ACT	Steady (LINK)	A valid network connection established
	Lights off	Not Linking
	Blinking (ACT)	Transmitting or receiving data ACT stands for Activity

The optional Management Chassis that can control this Smart Media Converter through the management system, this Smart Media Converter can be controlled through Web Browser, SNMP management utility and terminal emulation program.

The Management Chassis will detect the default reset on the DIP switches and display out the status, also the Management Chassis can control the function through the management system.
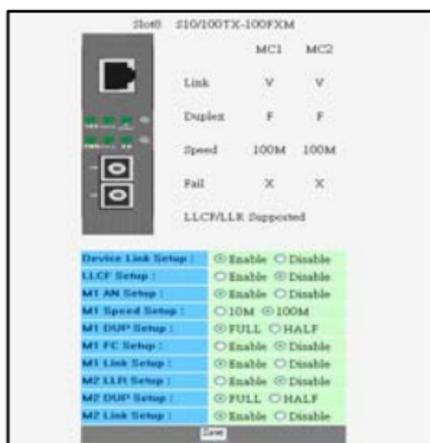
Through the optional Media Converter Chassis System via Management Module, you can control the setting of this Smart Media Converter.

To set the Fiber and UTP (FDX/HDX), UTP (Auto negotiation/Manual), Speed (10M/100M), LLR (Enable/Disable), LLCF (Enable/Disable)

| Device Link Setup	To enable or disable the connection of both UTP port and Fiber port
LLCF Setup	To enable or disable the LLCF function of the device
M1 AN Setup	To set the UTP to Auto-negotiation or Forced Mode
M1 Speed Setup	To set the speed of UTP to 10M or 100M
M1 DUP Setup	To set the Duplex Mode of UTP port to Full or Half
M1 FC Setup	To set the Flow Control of the UTP to enable or disable
M1 Link Setup	To enable or disable the connection of the UTP port
M2 LLR Setup	To enable or disable the LLR function of the Fiber port
M2 DUP Setup	To set the Duplex Mode of Fiber port to Full or Half
M2 Link Setup	To enable or disable the connection of the Fiber port

LLR (Link Loss Return)

When a device connected to the converter and the fiber line loss the link, the converter's fiber will disconnect the link of transmit.

The switch 5 is to enable or disable the LLR function of the media converter.
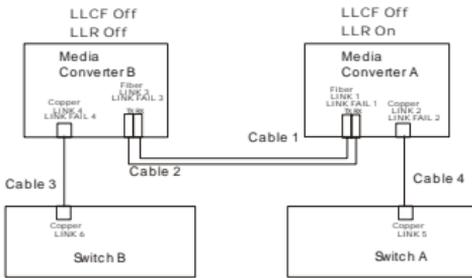
The table below shows the status happens when LLR function is working through two ways of connection

Link Status / Disconnect	Link 1	Link 2	Link 3	Link 4	Link 5	Link 6	Link Fail 1 LED	Link Fail 2 LED	Link Fail 3 LED	Link Fail 4 LED
Cable 1	On	On	Off	On	On	On	Off	Off	On	Off
Cable 2	Off	On	Off	On	On	On	On	Off	On	Off
Cable 3	On	On	On	Off	On	Off	Off	Off	Off	On
Cable 4	On	Off	On	On	Off	On	Off	On	Off	Off
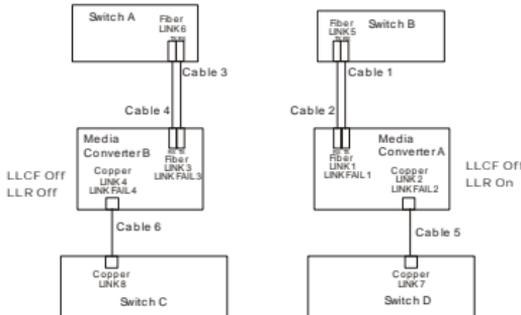
Link Status / Disconnect	Link 1	Link 2	Link 3	Link 4	Link 5	Link 6	Link 7	Link 8	Link Fail 1 LED	Link Fail 2 LED	Link Fail 3 LED	Link Fail 4 LED
Cable 1	On	On	On	On	Off	On	On	On	Off	Off	Off	Off
Cable 2	Off	On	On	On	Off	On	On	On	On	Off	Off	Off
Cable 3	On	On	On	On	On	Off	On	On	Off	Off	Off	Off
Cable 4	On	On	Off	On	On	On	On	On	Off	Off	On	Off
Cable 5	On	Off	On	On	On	On	Off	On	Off	On	Off	Off
Cable 6	On	On	On	Off	On	On	On	Off	Off	Off	Off	On

Note: When using two converters, don't enable the both device's LLR function at the same time.

LLCF (Link Loss Carry Forward)

When a device connected to the converter and the TP line loss the link, the converter's fiber will disconnect the link of transmit, so that the other ends will know that there is a linkage error on this end. And when the Fiber line loss the link, the converter's TP will disconnected, and the other end will know that there is linkage problem exist.

The switch 6 is to enable or disable the LLR function of the media converter.
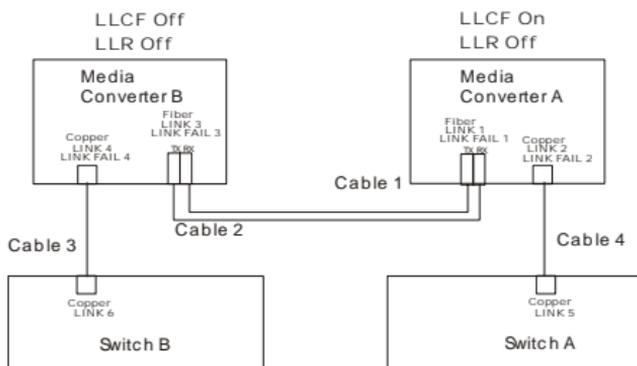
The table below shows the status happens when LLCF function is working through two ways of connection:

| Link Status / Disconnect	Link 1	Link 2	Link 3	Link 4	Link 5	Link 6	Link Fail 1 LED	Link Fail 2 LED	Link Fail 3 LED	Link Fail 4 LED
Cable 1	On	On	Off	On	On	On	Off	Off	On	Off
Cable 2	Off	Off	On	On	Off	On	On	Off	Off	Off
Cable 3	On	On	On	Off	On	Off	Off	Off	Off	On
Cable 4	On	Off	Off	On	Off	On	Off	On	On	Off
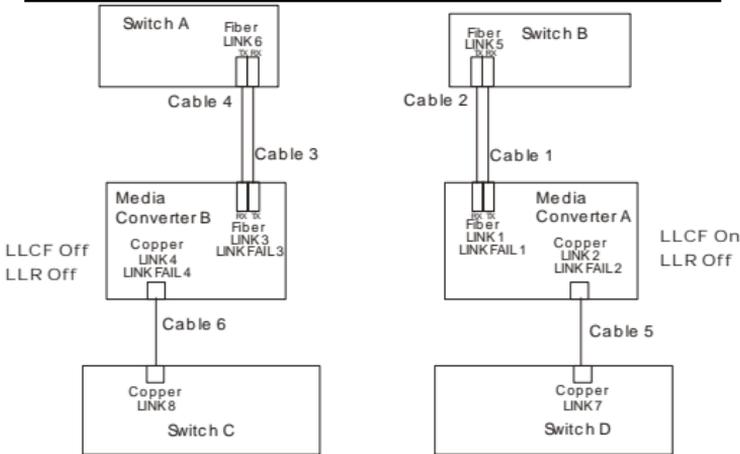
| Link Status / Disconnect	Link 1	Link 2	Link 3	Link 4	Link 5	Link 6	Link 7	Link 8	Link Fail 1 LED	Link Fail 2 LED	Link Fail 3 LED	Link Fail 4 LED
Cable 1	On	On	On	On	Off	On	On	On	Off	Off	Off	Off
Cable 2	Off	Off	On	On	On	On	Off	On	On	Off	Off	Off
Cable 3	On	On	On	On	On	On	On	On	Off	Off	Off	Off
Cable 4	On	On	Off	On	On	On	On	On	Off	Off	On	Off
Cable 5	On	Off	On	On	Off	On	Off	On	On	Off	Off	Off
Cable 6	On	On	On	Off	On	On	On	Off	Off	Off	Off	On

Dual Wavelength Single Fiber

The converter combine transmit and receive signal onto one fiber strand using two kind of wavelength. The units on both ends of a link are different. One module uses one wavelength to transmit and a second wavelength to receive, while the other module flips that relationship. For this reason these units are sold in pairs.

The Front Panel of the pair
single Fiber converter
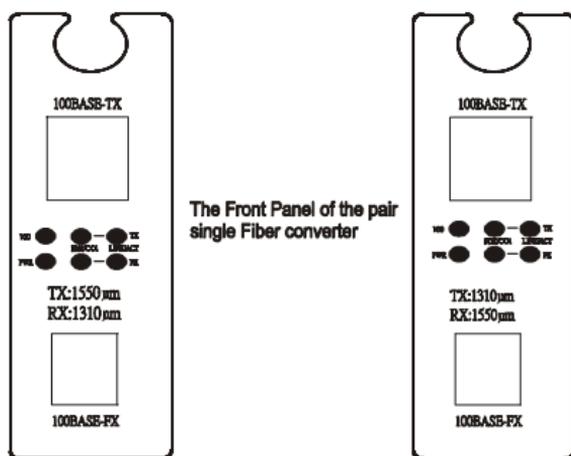
When using a DMC-920R that the TX(transmit) is 1310μm
and the RX(receive) is 1550μm, then the other end need to
have a combination of DMC-920T that the TX(transmit) is
1310μm and the RX(receive) is 1550μm.

The TX needs to connect to the other end's RX with the same
wavelength.

Media Converter # 1   Media Converter # 2
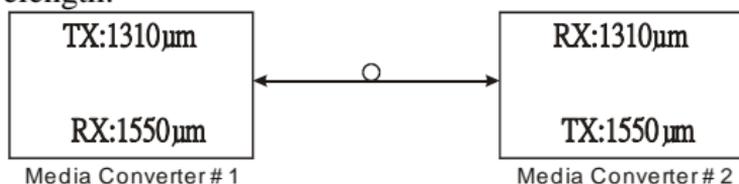
There is a two pin DIP switch on the module which define as
switch 1 and switch 2:

Switch 1: Fiber mode switch

When the switch was turned to "On", it means that the fiber
was turned to forced mode, and "Off" for auto-negotiation
mode.

**Note: Be sure the opposite end is using the same setting(forced or
Auto-negotiation). And when using two converters at the same
time, the two converters MUST set to forced mode.**

Switch 2: LLR

When the switch was turned to "On", it means that the
LLR was enabled and "Off" for disabled.

**Note: When using two converters at the same time, then only one
converter need to enable the LLR function.**

SPECIFICATIONS

Applicable Standards	IEEE 802.3 10BASE-T IEEE802.3u 100BASE-TX & 100BASE-FX
Fixed Ports	1 TX port, 1 Single Fiber FX port
Speed	10/20Mbps for half/full-duplex 100/200Mbps for half/full-duplex
Forwarding rate	148,800pps
LED Indicators	Per Unit- (2 LEDs): Power; Speed(100)
	Per Port- (2 LEDs): FDX/COL, LINK/ACT
Cable	10BASE-T – 2-pair UTP Cat. 3,4,5, up to 100 m (328 ft) 100BASE-TX -- 2-pair UTP Cat. 5, up to 100 m (328 ft) 100BASE-FX -- 9/125 single-mode fiber optic cable, up to 20 km
Dimensions	L120 × W88 × H25 mm
Weight	305 g
Power	External power adaptor 7.5V 1.5A
Power Consumption	7.2W Max.
Operating Temperature	0°C ~ 40°C (32°F ~ 104°F)
Storage Temperature	-25°C ~ 70°C (-13°F ~ 158°F)
Humidity	10 ~ 90%, non-condensing
Emissions	FCC part 15 Class B, CISPR ClassB, VCCI Class B, CE Mark