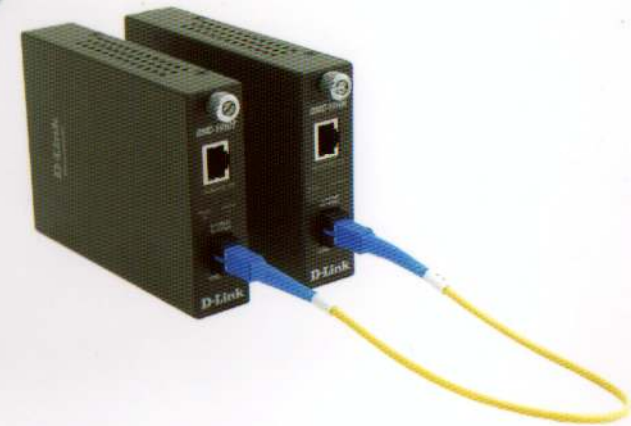


D-Link[®]
Building Networks for People

DMC-1910
DMC-1910T
DMC-1910R



1000BASE-TX to 1000BASE-LX Single-Fiber

Media Converter

Manual

D-Link[®]
Building Networks for People



DMC-1910/ DMC-1910T/ DMC-1910R
1000BASE-TX to 1000BASE-LX
Single-Fiber
Dual-Wavelength
Media Converter Kit
Manual

Rev. 04 (Nov. 2006)

Printed In China



RECYCLABLE

P/N: 29071600MC11300

FCC Warning

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with this user's guide, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

CE Mark Warning

This is a Class A product. In a domestic environment, this product may cause radio interference in which case the user may be required to take adequate measures.

VCCI Warning

この装置は、クラス A 情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。 V C C I - A

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INTRODUCTION

Thank you for choosing the 1000Base Gigabit Ethernet Media Converter. The Converter introduced here provides one channel media conversion between 1000BASE-TX and 1000BASE-LX.

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 in 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.

DMC-1910 is packed with DMC-1910T and DMC-1910R.

If you just buy single unit, the TX 1310nm on unit must work with RX 1310nm on unit.

On the other hand, the TX 1550nm of unit must work with RX 1550nm on unit.

About Media Converter

Media Converter is a network technology specified by IEEE 802.3ab and IEEE 802.3z 1000BASE-TX and 1000BASE-LX standards.

About Link Pass Through

The LLCF function default is enabled, the ports do not transmit a link signal until they receive a link signal from the opposite port. Link loss is “carried forward” to the managed switch or hub that is sending the link. LLCF can be used for either the copper or fiber ports.

PRODUCT FEATURE

This chapter provides product features for DMC-1910, DMC-1910T, DMC-1910R.

DMC-1910 Product Features

- A pair of one-channel media converters between 1000BASE-TX and 1000BASE-LX
 - Two different type of transmitting wavelength: One wavelength with bi-directional for both transmitting and receiving. TX: 1310nm; RX: 1550nm. or TX: 1550nm; RX: 1310nm
 - Link Pass Through function
 - Auto MDI/MDI-X for TX port
 - 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
 - Up to 15 km Single-Mode Fiber Cable Distance
-

DMC-1910T Product Features

- One-channel media converter between 1000BASE-TX and 1000BASE-LX
 - Two different type of transmitting wavelength: One wavelength with bi-directional for both transmitting and receiving. TX: 1550nm; RX: 1310nm.
 - Link Pass Through function
 - Auto MDI/MDI-X for TX port
 - 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
 - Up to 15 km Single-Mode Fiber Cable Distance
-

DMC-1910R Product Features

- One-channel media converter between 1000BASE-TX and 1000BASE-LX
 - Two different type of transmitting wavelength: One wavelength with bi-directional for both transmitting and receiving. TX: 1310nm; RX: 1550nm.
 - Link Pass Through function
 - Auto MDI/MDI-X for TX port
 - 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
 - Up to 15 km Single-Mode Fiber Cable Distance
-

INSTALLATION

This chapter gives step-by-step installation instructions for the Media 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:

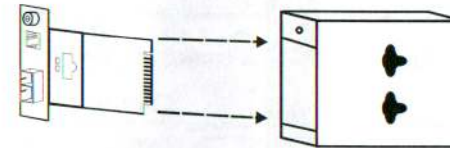
1. Between 32 and 104 degrees Fahrenheit (0 to 40 degrees Celsius).
 2. The relative humidity should be less than 90 percent, non-condensing.
 3. Surrounding electrical devices should not exceed the electromagnetic field (RFC) standards for IEC 801-3, Level 2 (3V/M) field strength.
 4. Make sure that 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.
-

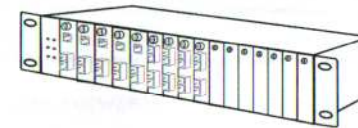
Installing in a Chassis

The Converter can be fit into any of the expansion slots on a special designed chassis.



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.



Monitoring the Converter through Management Module

There is a **management module** that can control this media converter through the **chassis system**; this media converter can be controlled through Web Browser, SNMP and terminal emulation program.

The **management module** will detect the default reset on the DIP switches and display out the status; also the **management module** can control the function through the **chassis system**.



Device Link Setup	To enable or disable the connection of both UTP port and Fiber port
M2 LLR Setup	To enable or disable the LLR function of the Fiber port
M2 AN Setup	To set the UTP to Auto-negotiation or Forced Mode

NOTE: To control the function in a working station, need to collocate together with optional Chassis System and Management Module.

LED Indicator

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

LEDs	State	Indication
Power (PWR)	Lights on	Power on
	Lights off	Power off
Link and Activity (LINK/ACT)	Lights on	Linking
	Lights Blinking	Data transmitting and receiving
	Lights off	Not Linking

Link Pass Through Function

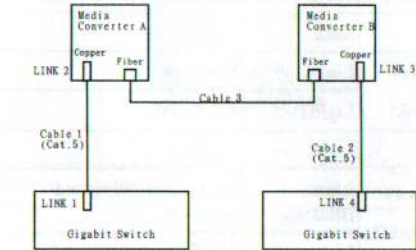
LLCF (Link Loss Carry Forward)

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.

There is a default LLCF setting on this converter.

The table below shows how LLCF function is working:

Media Converter	LLR	Auto-Negotiation
A	See below *1	OFF
B	See below *2	OFF



Link Status	Link 1	Link 2	Link 3	Link 4
Disconnect				
Cable 1	Off	Off	Off	Off
Cable 2	Off	Off	Off	Off
Cable 3	Off	Off	Off	Off

*1 By Single-fiber module is designed in DMC-1910, this function is not necessary.

*2 By Single-fiber module is designed in DMC-1910, this function is not necessary.

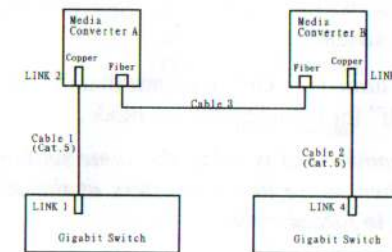
LLR (Link Loss Return)

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

There is a switch to enable or disable the function of the media converter.

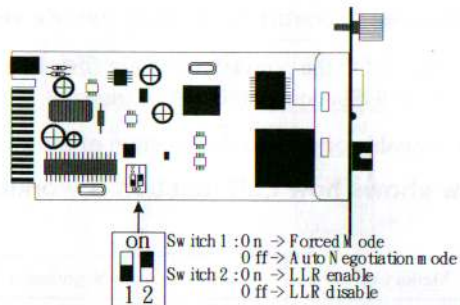
The table below shows how LLR function is working:

Media Converter	LLR	Auto-Negotiation
A	ON	OFF
B	OFF	OFF



Link Status	Link 1	Link 2	Link 3	Link 4
Disconnect				
Cable 1	Off	Off	Off	Off
Cable 2	Off	Off	Off	Off
Cable 3	Off	Off	Off	Off

NOTE: If connecting two converters with LLR function in both ends, it is recommended that the monitor end converter had to turn off the LLR function, and turn on the LLR function of the remote end converter.



Switch

There is a two pin DIP switch on the module which defines 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

By Single-fiber module is designed in DMC-1910, this function is not necessary.

SPECIFICATIONS

Standards:	IEEE802.3ab 1000BASE-TX IEEE802.3z 1000BASE-LX Single Fiber
Data Transfer Rate:	1488000pps for 1000Mbps
Duplex Mode:	Full Duplex Mode
LED indicators:	PWR, LNK/ACT
Cable	1000BASE-T -- 4 pair Cat. 5, EIA/TIA-568 100-ohm screened twisted-pair (STP), up to 100m 1000BASE-LX -- 9/125µm single-mode fiber optic cable, up to 15km
Transmitting & Receiving wavelength	DMC-1910T: TX 1550nm;RX 1310nm DMC-1910R: TX 1310nm;RX 1550nm
Dimensions	L120 × W88 × H25 mm
Weight	305 g
Power	External power adaptor 7.5V 1.5A
Media Interface:	RJ-45, SC
EMI Compatibility:	FCC Class B CE Certification, Class B VCCI Class B
Temperature:	Storage: -10°C ~ 70°C Operating: 0°C ~ 40°C
Humidity:	10% ~90% non-condensing
Power Consumption:	5.5 Watts (maximum)

ORDERING INFORMATION

Please include the following information when ordering:

1. Fiber type: single-mode
2. Fiber connector type: SC
3. Segment distance range for the fiber port

TX port		
Connector Type	Cabling	Segment Distance
RJ-45	Copper Wire	Max. 100 m
FX port		
Connector Type	Cabling	Segment Distance
SC	Single-Mode Fiber	Max. 15 km



Limited Warranty
(USA Only)

Subject to the terms and conditions set forth herein, D-Link Systems, Inc. ("D-Link") provides this Limited warranty for its product only to the person or entity that originally purchased the product from:

- D-Link or its authorized reseller or distributor and
- Products purchased and delivered within the fifty states of the United States, the District of Columbia, U.S. Possessions or Protectorates, U.S. Military Installations, addresses with an APO or FPO.

Limited Warranty: D-Link warrants that the hardware portion of the D-Link products described below will be free from material defects in workmanship and materials from the date of original retail purchase of the product, for the period set forth below applicable to the product type ("Warranty Period"), except as otherwise stated herein.

1-Year Limited Warranty for the Product(s) is defined as follows:

- Hardware (excluding power supplies and fans) One (1) Year
- Power Supplies and Fans One (1) Year
- Spare parts and spare kits Ninety (90) days

D-Link's sole obligation shall be to repair or replace the defective Hardware during the Warranty Period at no charge to the original owner or to refund at D-Link's sole discretion. Such repair or replacement will be rendered by D-Link at an Authorized D-Link Service Office. The replacement Hardware need not be new or have an identical make, model or part. D-Link may in its sole discretion replace the defective Hardware (or any part thereof) with any reconditioned product that D-Link reasonably determines is substantially equivalent (or superior) in all material respects to the defective Hardware. Repaired or replacement Hardware will be warranted for the remainder of the original Warranty Period from the date of original retail purchase. If a material defect is incapable of correction, or if D-Link determines in its sole discretion that it is not practical to repair or replace the defective Hardware, the price paid by the original purchaser for the defective Hardware will be refunded by D-Link upon return to D-Link of the defective Hardware. All Hardware (or part thereof) that is replaced by D-Link, or for which the purchase price is refunded, shall become the property of D-Link upon replacement or refund.

Limited Software Warranty: D-Link warrants that the software portion of the product ("Software") will substantially conform to D-Link's then current functional specifications for the Software, as set forth in the applicable documentation, from the date of original retail purchase of the Software for a period of ninety (90) days ("Warranty Period"), provided that the Software is properly installed on approved hardware and operated as contemplated in its documentation. D-Link further warrants that, during the Warranty Period, the magnetic media on which D-Link delivers the Software will be free of physical defects. D-Link's sole obligation shall be to replace the non-conforming Software (or defective media) with software that substantially conforms to D-Link's functional specifications for the Software or to refund at D-Link's sole discretion. Except as otherwise agreed by D-Link in writing, the replacement Software is provided only to the original licensee, and is subject to the terms and conditions of the license granted by D-Link for the Software. Software will be warranted for the remainder of the original Warranty Period from the date of original retail purchase. If a material non-conformance is incapable of correction, or if D-Link determines in its sole discretion that it is not practical to replace the nonconforming Software, the price paid by the original licensee for the non-conforming Software will be refunded by D-Link; provided that the non-conforming Software (and all copies thereof) is first returned to D-Link. The license granted respecting any Software for which a refund is given automatically terminates.

Non-Applicability of Warranty: The Limited Warranty provided hereunder for hardware and software of D-Link's products will not be applied to and does not cover any refurbished product and any product purchased through the inventory clearance or liquidation sale or other sales in which D-Link, the sellers, or the liquidators expressly disclaim their warranty obligation pertaining to the product and in that case, the product is being sold "As-Is" without any warranty whatsoever including, without limitation, the Limited Warranty as described herein, notwithstanding anything stated herein to the contrary.

Submitting A Claim: The customer shall return the product to the original purchase point based on its return policy. In case the return policy period has expired and the product is within warranty, the customer shall submit a claim to D-Link as outlined below:

- The customer must submit with the product as part of the claim a written description of the Hardware defect or Software nonconformance in sufficient detail to allow D-Link to confirm the same.

- The original product owner must obtain a Return Material Authorization ("RMA") number from the Authorized D-Link Service Office and, if requested, provide written proof of purchase of the product (such as a copy of the dated purchase invoice for the product) before the warranty service is provided.
- After an RMA number is issued, the defective product must be packaged securely in the original or other suitable shipping package to ensure that it will not be damaged in transit, and the RMA number must be prominently marked on the outside of the package. Do not include any manuals or accessories in the shipping package. D-Link will only replace the defective portion of the Product and will not ship back any accessories.
- The customer is responsible for all in-bound shipping charges to D-Link. No Cash on Delivery ("COD") is allowed. Products sent COD will either be rejected by D-Link or become the property of D-Link. Products shall be fully insured by the customer. D-Link will not be held responsible for any packages that are lost in transit to D-Link. The repaired or replaced packages will be shipped to the customer via UPS Ground or any common carrier selected by D-Link, with shipping charges prepaid. Expedited shipping is available if shipping charges are prepaid by the customer and upon request.
- Return Merchandise Ship-To Address
USA: 17595 Mt. Herrmann, Fountain Valley, CA 92708
Canada: 2180 Winston Park Drive, Oakville, ON, L6H 5W1 (Visit <http://www.dlink.ca> for detailed warranty information within Canada)

D-Link may reject or return any product that is not packaged and shipped in strict compliance with the foregoing requirements, or for which an RMA number is not visible from the outside of the package. The product owner agrees to pay D-Link's reasonable handling and return shipping charges for any product that is not packaged and shipped in accordance with the foregoing requirements, or that is determined by D-Link not to be defective or non-conforming.

What is Not Covered: This limited warranty provided by D-Link does not cover: Products, if in D-Link's judgment, have been subjected to abuse, accident, alteration, modification, tampering, negligence, misuse, faulty installation, lack of reasonable care, repair or service in any way that is not contemplated in the documentation for the product, or if the model or serial number has been altered, tampered with, defaced or removed; Initial installation, installation and removal of the product for repair, and shipping costs; Operational adjustments covered in the operating manual for the product, and normal maintenance; Damage that occurs in shipment, due to act of God, failures due to power surge, and cosmetic damage; Any hardware, software, firmware or other products or services provided by anyone other than D-Link; Products that have been purchased from inventory clearance or liquidation sales or other sales in which D-Link, the sellers, or the liquidators expressly disclaim their warranty obligation pertaining to the product. Repair by anyone other than D-Link or an Authorized D-Link Service Office will void this Warranty.

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- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

For detailed warranty outside the United States, please contact corresponding local D-Link office.

Register your D-Link product online at <http://support.dlink.com/register/>