



***Telecast***  
*Fiber Systems, Inc.*

# ***Viper II TR5900 & TR5950***

**10/100 Ethernet and Gigabit Ethernet Media Converters**

## **User Manual**

Telecast Fiber Systems, Inc.  
102 Grove Street  
Worcester, MA 01605  
Tel: 508-754-4858  
Fax: 508-752-1520  
[www.telecast-fiber.com](http://www.telecast-fiber.com)



## **Table of Contents**

Laser Safety	4
FCC Part A Manual Notice	4
Warning CE	4
Introduction	5
Model Descriptions	5
Installation	6
LED Indications	6
Mode Description	7
Specifications	9
Warranty	10

 **WARNING Laser Safety**

**WARNING! Class 1 Laser. Do not stare into a connector port or fiber.**

### **Laser Radiation**

The unit is a CDRH Class 1 laser device. Although this means it is eye safe, you must avoid looking directly at, or staring into, the laser beam located on an ST connector or on the end of a fiber.

Infrared radiation is produced at the fiber connection port on the front of the unit and at the end of unterminated optical fibers that are attached to this port. Avoid any direct exposure to the light that comes from these sources.

Do not enable the laser when there is no fiber attached to the fiber connection port.

Do not attempt any type of service to this instrument other than what is instructed in this manual. Refer servicing to Telecast Fiber Systems, Inc.

### **FCC Part A Manual Notice**

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 the instruction manual, 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 their own expense.

### **Warning CE**

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.

**- Refer all servicing to qualified service personnel.**

Do not attempt to service this product yourself as opening or removing housing may expose you to dangerous voltage or other hazards.

**- Keep the module away from liquids.**

Spillage into the module may result in fire, electrical shock, or equipment damage. If an object or liquid falls/spills into the housing, unplug the module immediately. Call Telecast and request an RMA (Return Materials Authorization) number.

**- Do not allow powered modules of the same link to come into physical contact.**

Telecast 5950's are designed for long distance connections using a pair of two modules, isolated electrically. Touching the powered ends two modules at the same time may result in an electrical shock.

## Introduction

The Telecast TR5950 is designed for high speed and long distance transport of gigabit Ethernet data. This unit supports features an RJ-45 jack and an ST or SC type fiber optic connector. The module also features auto-negotiation support allowing operation in ether full or half duplex mode. This module can be used as a standalone unit or in a Viper2 Frame.

## Model Descriptions

Part Number	TYPE	Fibers/Conns	OPTICAL POWER	WAVELENGTH
MTR5900-A	Stand Alone	1 - SC	-8 dBm typical	1310 TX / 1550 RX
MTR5900-E	Stand Alone	1 - SC	-8 dBm typical	1550 TX/ /1310 RX
MTR5900-AA	Stand Alone	2 – ST (or SC)	-8 dBm typical	1310 TX and RX
MTR5900-EE	Stand Alone	2 – ST (or SC)	-8 dBm typical	1550 TX and RX

Omit "M" prefix for Rack Mount versions

Same part numbering conventions for 5950 modules

CWDM wavelengths and DFB are optional. Contact Telecast for pricing and availability

## Installation

### As a standalone unit:

1. Verify the DC power adapter conforms to your local AC power requirements before making your power connections
2. Required DC power is 12V at 1 Amp with a 2.5mm jack, center pin positive.
3. Make your fiber and UTP (Universal Twisted Pair CAT-5 or better) and fiber Connections

### For a Rack mount unit:

1. Carefully slide the module into the Viper2 frame. The power connector is located on the rear rail of the frame.
2. Connect the UTP media cable for network connection and connect the fiber or fibers
3. Turn on the converter rack power, the power LED will light up

**Note:** Unlike other Viper2 Modules, Ethernet modules can not be converted from rack to throw-down or throw down to rack due to the LED indicators and how they are wired for each configuration.

### *TR5900/5950 Connections*

Fiber port	Attach the fiber cable. The Tx, Rx fiber cable must be paired at both ends. Singlemode fiber is recommended for 5950 Default: full duplex mode
UTP port	Attach Universal twisted pair (UTP) cat-5 cable to RJ-45 port

#### **Note for TP port cable connection:**

1. Use the straight-through (NOT crossover) CAT-5 cable
2. Be sure of the proper wiring and the link LED status

### **LED Descriptions**

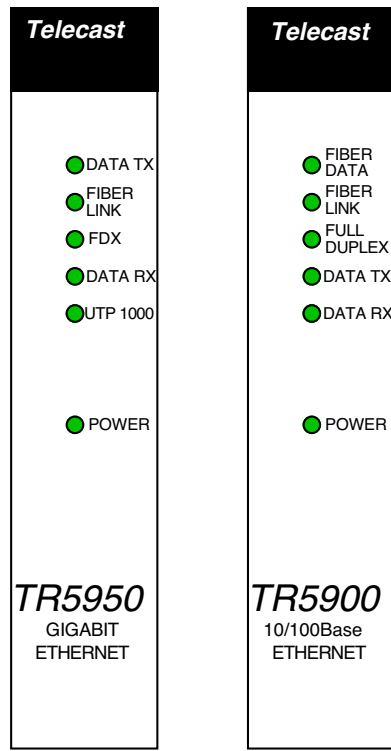
#### *TR5950 front panel information*

LED	Color	Function
TX Data	Green	Blinks or lit when data is transmitting
RX Data	Green	Blinks or lit when data is being received
Optical Link	Green	Lit when fiber connection is good
UTP 1000	Green	Lit when 1000base is present on UTP
FDX	Green	Lit when full-duplex mode is active
PWR	Green	Lit when DC power is coming up

#### *TR5900 front panel information*

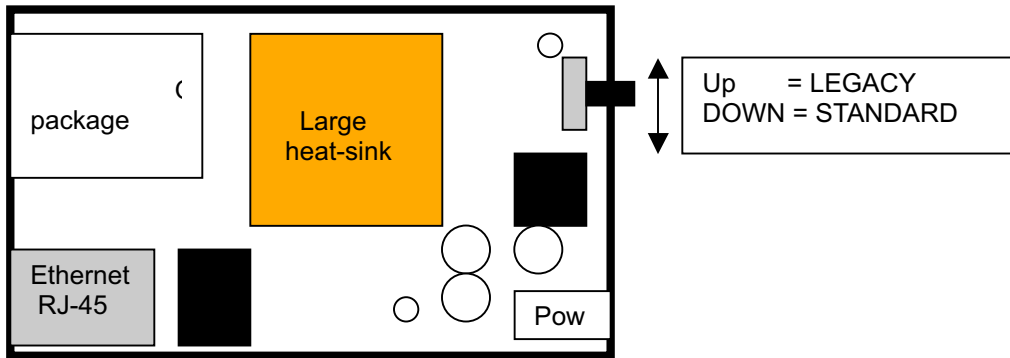
LED	Color	Function
Data TX	Green	Blinks or lit when data is transmitting
Fiber Link	Green	Lit when fiber connection is good
FDX	Green	Lit when full-duplex mode is active
Data RX	Green	Blinks or lit when data is being received
UTP 1000	Green	Lit when 1000base is present on UTP
PWR	Green	Lit when DC power is coming up

*Rack Mount Faceplate indications*



**Mode Description (Model 5950 ONLY)**

*Standard (S) and Legacy (L) mode selection*



The TR5950 comes from the factory in S-mode.

- change the mode switch if OMC-1000x isn't working.
- Power down your system before changing the mode switch
- Mode settings must be the same at each end of the link

**A note about Legacy and Standard modes:**

Modules come configured in STANDARD Mode. Older Gigabit Ethernet modules used the Marvell ALASKA chipset. This chipset implemented 1000Base-X without clock information and auto negotiation that is available on newer chipsets. The switch changes internal settings to disable the clock and auto-negotiation parts of the gigabit signal and ensure compatibility with older Gigabit Ethernet transceivers

If you find that your system does not function in STANDARD mode, change the mode to LEGACY and re-test.



## Specifications

### 5900

Standards:	IEEE 802.3z/AB 10/100Base-TX/FX
Connector:	
Optical	ONE SC or TWO STs' (Single mode fiber recommended)
Electrical	One RJ-45
Max. Distance: Cat.5 twisted pair:	up to 100m
Optical fiber:	9/125um singlemode up to 10km
	Multimode operation is possible at substantially shorter distances. Contact the factory.
	CWDM and DFB optics are also available
LED Indicators:	FX Rx, FX Link, TX Tx, TX Link, FDX, PWR
Power Requirement :	1Amp, 12VDC, 2.5mm jack, center pin positive
Ambient Temperature :	0 to 50 C
Humidity :	5% to 90%
Dimensions :	94 x 69.5 x 26(mm)

### 5950

Standards:	IEEE 802.3z/AB 1000Base-TX/FX
Connector:	
Optical	ONE SC or TWO STs' (Single mode fiber recommended)
Electrical	One RJ-45
Max. Distance: Cat.5 twisted pair:	up to 100m
Optical fiber:	9/125um singlemode up to 10km
	CWDM and DFB optics are also available. Contact the factory.
LED Indicators:	FX Rx, FX Link, TX Tx, TX Link, FDX, PWR
Power Requirement :	1Amp, 12VDC, 2.5mm jack, center pin positive
Ambient Temperature :	0 to 50 C
Humidity :	5% to 90%
Dimensions :	94 x 69.5 x 26(mm)

## **Warranty**

### **LIMITED WARRANTY STATEMENT**

Telecast Fiber Systems, Inc. ("Telecast") expressly warrants to Buyer that the Products supplied shall be free from defects in materials and workmanship for a period of 12 months following the date the Products are delivered to Buyer (the "Warranty Period"). Telecast's liability under this limited warranty shall be limited, at its option, to providing refund of purchase price for Products, or replacing or repairing Products shown to be defective either in materials or workmanship. Buyer's sole and exclusive remedy for breach of warranty shall be such refund, replacement or repair.

A claim of defect in materials or workmanship in any Product shall be allowed only when it is submitted in writing to Telecast Fiber Systems, Inc. within seven days after discovery of the defect, and in any event within the Warranty Period. No claim shall be allowed in respect of any Product which has been altered, neglected, damaged or stored in any manner which adversely affects it. In order to obtain service under the terms of this warranty, Distributor's customer or Distributor must notify Telecast of the defect prior to the expiration of the applicable warranty period and obtain a Return Authorization Number from Telecast. In no event may products be returned to Telecast or to Distributor for warranty service without having obtained from Telecast a Return Authorization Number.

This limited warranty applies only to new and unused Products delivered to Buyers located within the United States of America, or to international Buyers if sold through an authorized Distributor organization, and shall not extend to any equipment not manufactured by Telecast Fiber Systems, Inc., even though such equipment may be sold or operated with the Products. In addition, this limited warranty shall be void and of no further force or effect whatsoever if the Product is repaired or modified by any person other than an authorized representative of Telecast Fiber Systems, Inc. without the consent of Telecast Fiber Systems, Inc. This warranty shall not apply to any defect, failure or damage caused by improper use or inadequate maintenance and care. Nor shall this warranty apply to any damage caused in whole or in part by attempts by personnel other than Telecast's personnel, as approved in advance in accordance with the foregoing provisions, to open, install, repair, or service the Product; nor to damage resulting from improper connection with incompatible equipment; nor to damage to a unit which has been modified by personnel other than Telecast personnel.

Products returned to Telecast for warranty service shall be shipped, freight prepaid to Telecast. Telecast will return the repaired product or ship a replacement, freight prepaid, to either Distributor or Distributor's customer, as requested by Distributor's customer, at a location within the United States or, at Telecast's option, to Distributor's location in the case of international sales.

This limited warranty shall also apply to Products that replace defective Products and Products that have been repaired by authorized representatives of Telecast Fiber Systems, Inc., but only for the original Warranty Period. The Warranty Period shall not be extended by reason of defect, or any period of time during which the Product is not available to Buyer because of defects or repairs, without the express written consent of Telecast Fiber Systems, Inc.

EXCEPT FOR THE EXPRESS LIMITED WARRANTY AGAINST DEFECTS IN MATERIALS AND WORKMANSHIP CONTAINED HEREIN, TELECAST FIBER SYSTEMS, INC. MAKES NO WARRANTY OF ANY KIND WHATSOEVER, EXPRESS OR IMPLIED, AND ALL WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, AND OTHER WARRANTIES OF WHATEVER KIND ARE HEREBY DISCLAIMED BY TELECAST FIBER SYSTEMS, INC. THIS LIMITED WARRANTY SETS FORTH EXCLUSIVELY ALL OF TELECAST FIBER SYSTEMS, INC.'S LIABILITY IN CONTRACT OR OTHERWISE IN THE EVENT OF A DEFECTIVE PRODUCT.

WITHOUT LIMITATION ON THE FOREGOING, TELECAST FIBER SYSTEMS, INC. EXPRESSLY DISCLAIMS ANY LIABILITY WHATSOEVER FOR ANY DAMAGES INCURRED DIRECTLY OR INDIRECTLY IN CONNECTION WITH THE SALE OR USE OF, OR OTHERWISE IN CONNECTION WITH, THE PRODUCT, INCLUDING WITHOUT LIMITATION, LOSS OF PROFITS AND SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES, WHETHER CAUSED BY NEGLIGENCE OR OTHERWISE, REGARDLESS WHETHER TELECAST HAS BEEN GIVEN ADVANCE NOTICE OF THE POSSIBILITY THEREOF.

THIS WARRANTY IS GIVEN BY TELECAST IN LIEU OF ANY OTHER WARRANTY EXPRESSED OR IMPLIED.