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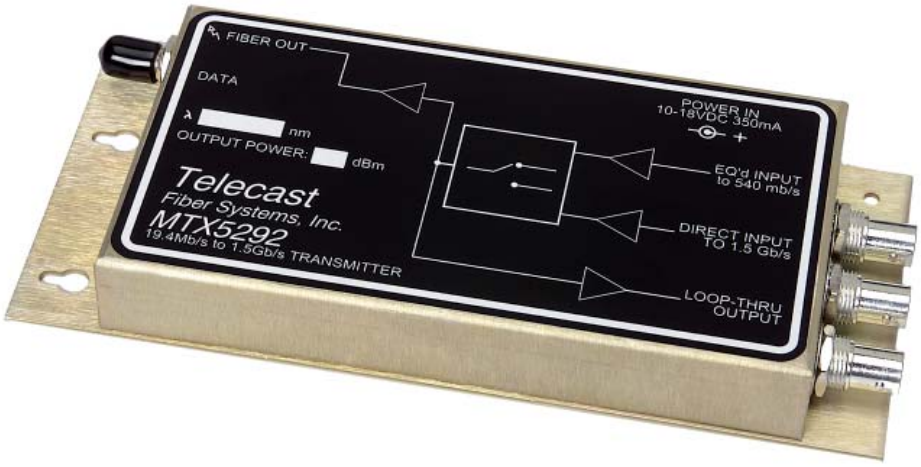
Telecast Fiber Systems, Inc.

5292

SDI/HDTV Modules for the Viper II



The Viper II™ module set for all digital video signals—up to 1.5 Gbps

Telecast's TX/RX5292 fiber optic serial digital video module set offers the industry's broadest range of digital transmission rates while maintaining the quality of transmission that broadcasters demand. No matter what your format, the 5292 set allows you to implement:

- 19.4 Mbps ATSC
- 143 Mbps NTSC composite
- 177 Mbps PAL composite
- 270 Mbps Serial component
- 360 Mbps Serial component video and compressed HDTV
- 540 Mbps proprietary
- 1.2 & 1.5 Gbps HDTV
- DVB/ASI

These modules meet SMPTE 292 standard and are inter-operable with Telecast's Python™ and Viper™, so you can expand on products you already have and create a wide variety of network topologies.

Durable and Flexible

The module set is available as stand alone "throw down" modules (MTX5292 and MRX5292), or as rack mount (TX5292 and RX5292) modules to fit our Viper II 16-slot frame. Or use our easy, rack mount conversion kit to reconfigure them as you like.

Features

- Rack modules or stand-alone
- Up to 8 HD/SDI per fiber via CWDM
- Compatible with TV standards SMPTE 292M, 259M & 244M
- 19.4 Mbps to 1.5 Gbps transport
- No pathological data problems
- Dual video inputs—EQ & direct
- Loop through video TX output
- Multiple video outputs
- Equalizes coax up to 540 Mbps
- Up to 22 dB optical link budget
- Low system jitter
- Durable construction
- Easy rack mount module conversion
- Wide temperature range
- Low power consumption
- High reliability design
- WDM multiplexing optional

Applications

- Campus SDI networks
- Government facilities
- In-building HDTV distribution
- ATSC Studio-Transmitter Links
- HDTV STL
- Remote broadcast production
- Telco last mile and local loop
- CLEC access to IXC POP

Specifications

Video

Transmission Method	Digital
Input Level	800 mV (peak to peak)
Input Impedance	75 Ohms
Output Impedance	75 Ohms
Bit-Error Rate (@ -22 dBm)	10^{-12}
Jitter (pathological data pattern)	<0.2 UI
Rise/Fall Times	<270 ps

Electro-Optical

Operating wavelength	1300 nm
For CWDM specify TX DFB laser	1550 nm
Transmitter output	-7.5 dBm & 0 dBm
Receiver sensitivity	-22 dBm
Optical source	Laser diode
Optical detector	PIN
Fiber type (for HDTV)	single mode

Mechanical/Environmental

Dimensions (WxLxD)	3.35" x 7.65" x 0.94"
Weight (per stand alone module)	10 ounces
Video connectors	BNC
Input Voltage Range	10 to 18 VDC
Power Consumption (per module)	3 watts
Temperature Range	-25° to +55°C
Humidity Range	0 to 95% RH, Noncond.

Operating Notes for: 5292 SDI/HDTV Modules for the Viper II

Power Requirements

All Viper II modules typically consume only 3 watts. The stand-alone module accepts a 10-18VDC, 350mA power cube wth a 2.5mm jack, center pin positive. When mounted in the V2 frame, the modules are powered via the 24-pin Future-Bus connector on the top right side of the module.

Connections

Video — Input to the TX module is via standard 75Ω coaxial BNC. The TX unit has two inputs: an equalized input for data rates up to 540 Mbps and a direct input for data rates up to 1.5 Gbps. The inputs may not be used simultaneously. For best performance, care should be taken to make coaxial cable lengths as short as possible, especially at higher data rates. At 1.5 Gbps, we recommend that coaxial length is limited to 8 meters or less. A loop through output is provided for monitoring.

The RX unit has three BNC outputs; two are normal data outputs and the third inverts the data for applications or equipment that require an inverted data stream.

Fiber — Each TX and RX has a bulkhead ST-type optical connector. Although it is possible to use multimode fiber cable for lower data rates, we recommend singlemode optical fiber cable for high definition video. The optical wavelength and output power of the TX are indicated on the TX faceplate. The optical power input range is indicated on the RX faceplate.

Faceplate Indicators

The RX5292 has a single LED indicator on the left side panel. It displays four states of the module:

1. No LED	No DC power
2. Red LED	Bad fiber link
3. Blinking Red/Green	No input data/Good optical link
4. Green LED	Valid input data/Good optical link

If the LED is bi-color (red-green) but not blinking, this indicates that your optical connection is marginal. Try cleaning connectors to improve the link.

The TX5292 also has a single LED indicator on the left side panel. It displays three states of the module:

1. No LED	No DC power
2. Red LED	No input data
3. Green LED	Valid input data

Using Wavelength-Division Multiplexers (WDM and CWDM)

WDM couplers can be used to combine a 5292 signal with a signal of a different wavelength on the same fiber. For Coarse WDM (CWDM), which allows up to 8 different wavelengths to share a common fiber, each TX5292 module must be equipped with a distributed feedback (DFB) laser of a different wavelength, e.g. 1511 nm, 1531 nm, etc. Contact Telecast for more details pertaining to WDM and CWDM applications.

Embedded Signals in the SDI Data Stream

Pre-embedded SMPTE compliant SDI signals are transparent to the system, although the 5292 does not perform the embedding or extraction.

Installation, Care and Maintenance

As stand-alone modules, the 5292 can be installed in any orientation but key-holes are furnished to allow the units to easily be hung on any vertical surface. Velcro™ may also be used.

Troubleshooting

The 5292's are truly "plug and play" devices, and contain no user serviceable parts. The faceplate LEDs indicate fiber and/or data problems. If the units seem to malfunction, contact Telecast for a return materials authorization (RMA) number.

Conversion to Rack Mount

Five steps are required to convert from "stand-alone" modules into rack mountable modules. A RMK (rack mount conversion kit) for each particular module is required to make this conversion.

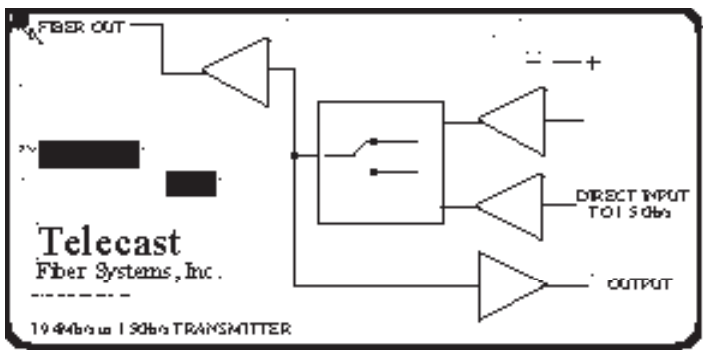
1. Remove the three phillips screws that secure the rear plate
2. Carefully remove the rear plate and store it for future use
3. Using the same three screws, attach the module to rack "sled".
4. Connect the ribbon cable from the module to the faceplate
5. Secure the fiber optic jumper from the module to the chassis mount ST connector barrel on the rear of the rack "sled"

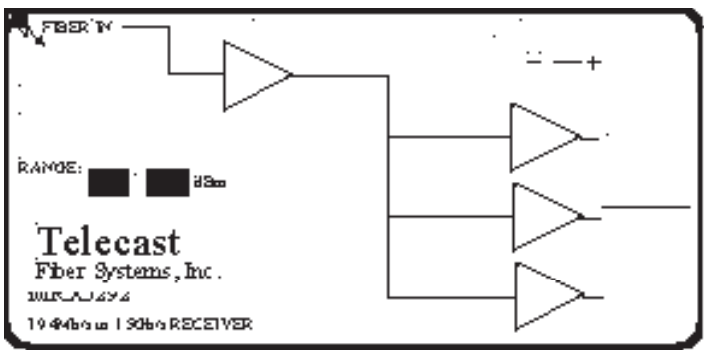
Perform steps in reverse order to revert to a stand-alone module.

Ordering Information

MTX5292-A	-7.5 dBm @ 1300nm laser output
MTX5292-B	-2.0 dBm @ 1300nm laser output
MTX5292-DF	0 dBm @ 1550nm range distributed feedback laser
	Specify DFB wavelength for CWDM; see Telecast CWDM brochure
MRX5292	-2 to -19 dBm received optical power range

Values are the same for Stand Alone and Rack Mount modules





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