Telecast
Fiber Systems, Inc.

5142

Digital NTSC/PAL Video/Audio Modules for the Viper II

Features

- *Rack modules or stand-alone*
- *Studio quality video and audio*
- *Compatible with NTSC & PAL TV standards*
- *12 bit digitally encoded video*
- *Quad audio, digitally transmitted, 24 bit*
- *RS232 or RS422 data transmission*
- *GPI relay closure circuit*
- *Up to 25 dB optical link budget*
- *Durable construction*
- *Easy rack mount module conversion*
- *Battery back-up option in Viper II Frame*
- *Wide temperature range*
- *Low power consumption*
- *High reliability design*
- *WDM & CWDM multiplexing optional*

Applications

- *Campus A/V networks*
- *Government facilities*
- *In-building video/audio distribution*
- *Studio-Transmitter Links*
- *Television broadcast production*
- *Telco last mile and local loop*
- *CLEC access to IXC POP*

The new Viper II™ system module set for transmitting analog video, 4 ch. audio and data—all on one fiber.

Telecast's 5142 fiber optic video/audio/data module set efficiently transmits your analog video plus data and four channels of audio on one fiber, while maintaining the quality that broadcasters demand. The 5142 set supports both PAL and NTSC video formats, and provides greater than 10 MHz of video bandwidth.

Four line level audio inputs are digitized by the TX5142 using 24-bit sampling, multiplexed with the 12-bit digitally encoded video signal, and optically transmitted. The RX5142 faithfully reconverts these signals into the original analog video and audio channels. The TX/RX5142 also multiplexes a data channel (RS232 or RS422) and a GPI switch closure for control applications.

Durable and Flexible

The 5142 module set is available as stand alone "throw down" modules (MTX5142 and MRX5142), or as rack mount (TX5142 and RX5142) modules to fit our Viper II 16-slot frame. Or use our easy, rack mount conversion kit to reconfigure them as you like.

Video

Interface	RS170, NTSC, PAL
Input/Output Level	1 Vp-p, 75 Ohms
Frequency Response	
30Hz-5MHz	±0.15 dB
-3dB point, min.	≥10MHz
Signal to Noise Ratio, weighted	>71dB
Differential gain	<1%
Differential phase	<1°
Chrom-Lum Inequality Delay	NTSC <10 ns
	PAL <20 ns
Line Time Distortion	<0.5 IRE
Chrominance-Luminance Intermod.	<0.5%

Audio

Input/Output Impedance	10 kohm/<100 ohms
Frequency Response	±0.2 dB, 20Hz to 48kHz
Signal to Noise Ratio (A-weighted)	>104 dB
Total Harmonic Dist.	<0.02%, 20Hz to 10kHz
	<0.1%, 10kHz to 22kHz
Clip level	+24dBu

Electro-Optical

Operating wavelength	1300 nm or 1550 nm range
Transmitter output options	-10 dBm & 0 dBm
Receiver input range	-2 to -26 dBm
Optical source/detector type	Laser diode/PIN
Fiber compatibility	Single mode or multimode

Auxiliary

Data RS232 - 200kB/sec	Data RS422 - 2MB/sec
Contact Closure	Normally Open, Form 1 SPST
Max. Jitter	≤40 nsec

Mechanical/Environmental

Dimensions (WxLxD)	3.35" x 7.65" x 0.94"
Weight (per stand alone module)	10 ounces
Video connectors	BNC
Audio & Data connectors	DB-15 Female
Power Req. (typ., per module)	3 watts @ 10 to 18VDC
Temperature Range	-25° to +55°C
Humidity Range	0 to 95% RH, Noncond.

Operating Notes for: 5142 Audio/Video/Data Modules for Viper II

Power Requirements

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   Standard 75-ohm coaxial BNC.

Audio   All audio and data connections are made via a DB-15. Pin-outs are indicated on the TX and RX faceplates. Inputs and outputs are AC coupled for protection. +50VDC MAX.

Data   RS232 and RS422 are available at the DB15. Depending on jitter, data rate is up to 2 MB/sec. Data type is selected via the pins that are used. The data passes through the system and either format is available on the output connector. Data and contact closure are simplex.

Closure   Normallly OPEN. A short creates a CLOSED condition.

Fiber   Each TX and RX has a bulkhead ST receptacle that accepts a standard multimode or single mode fiber terminated with ST type connectors.

Faceplate Indicators

The **RX5142** front panel has eight LED indicators:

RX STATUS   When green, received optical power is adequate. Red denotes inadequate received optical power

VIDEO   When green, video is present.

AUD 1   Flashes green with varying Audio 1 input levels

AUD 2   Flashes green with varying Audio 2 input levels

AUD 3   Flashes green with varying Audio 3 input levels

AUD 4   Flashes green with varying Audio 4 input levels

DATA   When green, data is present.

GPI   When green, relay closure is activated

The **TX5142** has seven LED indicators:

VIDEO   When green, video sync is detected.

AUD 1   Flashes green with varying Audio 1 input levels

AUD 2   Flashes green with varying Audio 2 input levels

AUD 3   Flashes green with varying Audio 3 input levels

AUD 4   Flashes green with varying Audio 4 input levels

DATA   When green, input data is present

GPI   When green, closure input is shorted to ground

Note: On the TX "throw down" version, there is an additional LED indication for POWER INPUT. This LED is GREEN when DC power is applied.

Using Wavelength-Division Multiplexers (WDM and CWDM)

WDM couplers can be used to combine a 5142 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 TX5142 module may be equipped with a distributed feedback (DFB) laser of a different wavelength, e.g. 1311 nm, 1331 nm, etc. Contact Telecast for more details pertaining to WDM and CWDM applications.

Installation, Care and Maintenance

As stand-alone modules, the 5142 can be installed in any orientation. Keyholes are furnished to allow the units to easily be hung on any vertical surface. Velcro™ may also be used.

Troubleshooting

The 5142's are truly "plug and play" devices. LEDs indicate optical and signal status. 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 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

MTX5142-A	-10 dBm @ 1300nm laser output
MTX5142-B	0 dBm @ 1300nm laser output
MTX5142-E	-10 dBm @ 1550nm laser output
MTX5142-F	0 dBm @ 1550nm laser output
MTX5142CW13	For CWDM specify wavelength; See CWDM brochure
MRX5142	-2 to -26 dBm received optical power range

Values are the same for Stand Alone and Rack Mount modules