

# RGB-5000 Series

## Synchronous, Single Fiber, Digital, RGB and VGA Fiber Optic Transport System



- Transport **RGB, XGA, SVGA and WUXGA** signals plus various configurations of H and V sync over **ONE** fiber.
- **1920 x 1200 @ 60 Hz and 1080i HD**
- **CWDM 18 Channels of RGB/UXGA** on one fiber, RGB-5000-FTX-7-xxxx
- **Daisy-chain** one WUXGA Source to Multiple Monitors, RGB-5000-FTX/FRX-DC
- **Ethernet & Data** option available, RGB-5000-FTX/FRX-ET
- **Lower Cost, RGB/SXGA** on ONE fiber, RGB-5000-SXGA
- Integrated **Stereo Audio option** available
- **Keyboard, Mouse and Audio** support available with **KMA-2000-FMX**.
- System has **loop-through HD15 inputs** and one HD15 output.
- **Fully Automatic**, no user adjustments or external computer calibration and set-up.

The RGB-5000 provides horizontal gen-lock for a fully synchronous and jitter free high resolution video transport. The video and sync jitter reduced to as low as 4 – 5 nano seconds. The data throughput is 3.125 Gbps. Most systems have a 1.25 GB/S data throughput with high compression. The system enables remoting of a monitor from the video source. It provides electrical isolation and immune to electrical noise in the transmission path. Application include commodity and stock exchanges, medical and MRI displays, advertising and signs, sporting and concert video displays, video walls, digital cinema, radar displays, air traffic control, military information displays plus many more...

### Specifications:

#### VIDEO SIGNAL

Number of Channels: ..... 3  
Standards Supported: ..... RGB HV, RGB, VGA, SVGA, WUXGA with TTL H & V sync, YPbPr, Sun and Apple Macintosh with TTL, composite sync, Silicon Graphics with sync on-green, 1080i HD.

#### Scan Rates:

Horizontal: ..... 15.75 KHz to 130 KHz  
Vertical: ..... 50-150 Hz

Signal-to-Noise Ratio: ..... >60 dB

#### Resolution:

Singlemode: ..... 1920 H x 1200 V @ 60 Hz @ 156MHz  
Multimode: ..... 1920 H x 1200 V @ 60 Hz @ 156MHz

#### OPTICAL

Number of Optical Fibers: ..... 1

#### Wavelength:

Multimode, RGB-5000-FTX-2: ..... 850 nm  
Singlemode, RGB-5000-FTX-50/-52: ..... 1310 nm

Operating Budget, minimum: ..... 8 dBm (-50) SM, 13 dBm (-52) SM, 6 dBm (-2) MM

Operating Distance, (-50) SM: ..... up to 2 KM over 8.3/125 µm

Operating Distance, (-52) SM: ..... up to 15 KM over 8.3/125 µm

Operating Distance, (-2) MM: ..... up to 600 meters over 62.5/125 µm

Emitter Type: ..... Laser

Transmitter Power, minimum: ..... -10 dBm (-50) SM, -5 dBm (-52) SM, -9 dBm (-2) MM

Receiver Sensitivity, maximum: ..... -18 dBm (-50) SM, -18 dBm (-52) SM, -15 dBm (-2) MM

Temperature Range: ..... 0c to 70c

#### Dimensions:

RGB-5000: (L x W x H) ..... 7" L x 5 3/4" W x 1 3/4" H

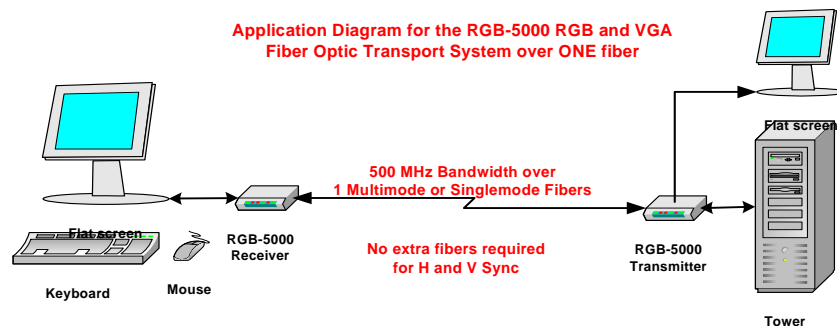
Triple Rack-mount Kit for

3 modules (Part number -RMT): ..... 7" L x 19" W x 1 3/4" H

Power consumption: ..... 15 Watts



### Application Diagram for the RGB-5000 RGB and VGA Fiber Optic Transport System over ONE fiber



The RGB-5000 permits the separation of the display from the image source. A common application is the separation of a computer monitor, keyboard and mouse from the large bulky processor unit.

## Ordering Information:

	<b>RGB-5000 Series Digital RGB and SXGA Fiber Optic Transport System, ONE Fiber, Multimode (SIN 58-6)</b>
RGB-5000-FTX-SXGA-2-ST	Digital RGB and SXGA Fiber Optic Transmitter, Multimode, -9dBm, 1 fiber, loop-through HD15 inputs, 1280 by 1024, supports all sync formats, RGB HV, RGsB, YsUV, YcCrCb, SXGA, SSXGA and SXGA, Component and Analog HDTV signals. (May require -AUDIO, -RMT, -BLANK) (use KMA-2000-FMX unit for keyboard, mouse & audio) (Includes wall-mount power supply)
RGB-5000-FRX-SXGA-2-ST	Digital RGB and SXGA Fiber Optic Receiver, Multimode, -15 dBm, 1 fibers, HD15 output, 1280 by 1024, supports all sync formats, RGB HV, RGsB, YsUV, YcCrCb, SXGA, SSXGA and SXGA, Component and Analog HDTV signals. (May require -AUDIO, -RMT, -BLANK) (use KMA-2000-FMX to add keyboard, mouse & audio) (Includes wall-mount power supply)
RGB-5000-FRX-SXGA-2-ST-DC	Digital RGB and SXGA Fiber Optic Receiver with Daisy Chain Optics. Multimode, -15 dBm, 1 fibers, HD15 output, 1280 by 1024, supports all sync formats, RGB HV, RGsB, YsUV, YcCrCb, SXGA, SSXGA and SXGA, Component and Analog HDTV signals. (May require -AUDIO, -RMT, -BLANK) (use KMA-2000-FMX to add keyboard, mouse & audio) (Includes wall-mount power supply)
	<b>RGB-5000 Series Digital 500 MHz RGB and SXGA Fiber Optic Transport System, ONE Fiber, Singlemode and CWDM (SIN 58-6)</b>
RGB-5000-FTX-SXGA-50-ST	Digital RGB and SXGA Fiber Optic Transmitter, Singlemode, -10dBm, 1 fiber, loop-through HD15 inputs, 1280 by 1024, supports all sync formats, RGB HV, RGsB, YsUV, YcCrCb, SXGA, SSXGA and SXGA, Component and Analog HDTV signals. (May require -AUDIO, -RMT, -BLANK) (use KMA-2000-FMX to add keyboard, mouse & audio) (Includes wall-mount power supply)
RGB-5000-FTX-SXGA-52-ST	Digital RGB and SXGA Fiber Optic Transmitter, Singlemode, -5dBm, 1 fiber, loop-through HD15 inputs, 1280 by 1024, supports all sync formats, RGB HV, RGsB, YsUV, YcCrCb, SXGA, SSXGA and SXGA, Component and Analog HDTV signals. (May require -AUDIO, -RMT, -BLANK) (use KMA-2000-FMX to add keyboard, mouse & audio) (Includes wall-mount power supply)
RGB-5000-FTX-SXGA-7-XXXX-15KM-ST	Digital RGB and SXGA Fiber Optic Transmitter, Singlemode, CWDM, 15KM, 1 fiber, loop-through HD15 inputs, 1280 by 1024, supports all sync formats, RGB HV, RGsB, YsUV, YcCrCb, SXGA, SSXGA and SXGA, Component and Analog HDTV signals. (May require -AUDIO, -RMT, -BLANK) (use KMA-2000-FMX to add keyboard, mouse & audio) (Includes wall-mount power supply)
RGB-5000-FTX-SXGA-7-XXXX-40KM-ST	Digital RGB and SXGA Fiber Optic Transmitter, Singlemode, CWDM, 40KM, 1 fiber, loop-through HD15 inputs, 1280 by 1024, supports all sync formats, RGB HV, RGsB, YsUV, YcCrCb, SXGA, SSXGA and SXGA, Component and Analog HDTV signals. (May require -AUDIO, -RMT, -BLANK) (use KMA-2000-FMX to add keyboard, mouse & audio) (Includes wall-mount power supply)
RGB-5000-FRX-SXGA-50-ST	Digital RGB and SXGA Fiber Optic Receiver, Singlemode, -18dBm, 1 fibers, HD15 output, 1280 by 1024, supports all sync formats, RGB HV, RGsB, YsUV, YcCrCb, SXGA, SSXGA and SXGA, Component and Analog HDTV signals. (May require -AUDIO, -RMT, -BLANK) (use KMA-2000-FMX to add keyboard, mouse & audio) (Includes wall-mount power supply)
RGB-5000-FRX-SXGA-50-ST-DC	Digital RGB and SXGA Fiber Optic Receiver with Daisy Chain Optics. Singlemode, -18dBm, 1 fibers, HD15 output, 1280 by 1024, supports all sync formats, RGB HV, RGsB, YsUV, YcCrCb, SXGA, SSXGA and SXGA, Component and Analog HDTV signals. (May require -AUDIO, -RMT, -BLANK) (use KMA-2000-FMX to add keyboard, mouse & audio) (Includes wall-mount power supply)
	<b>RGB-5000 Series Digital 500 MHz RGB and UXGA Fiber Optic Transport System, ONE Fiber, Multimode (SIN 58-6)</b>
RGB-5000-FTX-2-ST	Digital RGB and UXGA Fiber Optic Transmitter, Multimode, -9dBm, 1 fiber, loop-through HD15 inputs, 1920 by 1200, supports all sync formats, RGB HV, RGsB, YsUV, YcCrCb, UXGA, SUXGA and UXGA, Component and Analog HDTV signals. (May require -AUDIO, -RMT, -BLANK) (use KMA-2000-FMX unit for keyboard, mouse & audio) (Includes wall-mount power supply)
RGB-5000-FRX-2-ST	Digital RGB and UXGA Fiber Optic Receiver, Multimode, -15 dBm, 1 fibers, HD15 output, 1920 by 1200, supports all sync formats, RGB HV, RGsB, YsUV, YcCrCb, UXGA, SUXGA and UXGA, Component and Analog HDTV signals. (May require -AUDIO, -RMT, -BLANK) (use KMA-2000-FMX to add keyboard, mouse & audio) (Includes wall-mount power supply)
RGB-5000-FRX-2-ST-DC	Digital RGB and UXGA Fiber Optic Receiver with Daisy Chain Optics. Multimode, -15 dBm, 1 fibers, HD15 output, 1920 by 1200, supports all sync formats, RGB HV, RGsB, YsUV, YcCrCb, UXGA, SUXGA and UXGA, Component and Analog HDTV signals. (May require -AUDIO, -RMT, -BLANK) (use KMA-2000-FMX to add keyboard, mouse & audio) (Includes wall-mount power supply)
	<b>RGB-5000 Series Digital 500 MHz RGB and UXGA Fiber Optic Transport System, ONE Fiber, Singlemode and CWDM (SIN 58-6)</b>
RGB-5000-FTX-50-ST	Digital RGB and UXGA Fiber Optic Transmitter, Singlemode, -10dBm, 1 fiber, loop-through HD15 inputs, 1920 by 1200, supports all sync formats, RGB HV, RGsB, YsUV, YcCrCb, UXGA, SUXGA and UXGA, Component and Analog HDTV signals. (May require -AUDIO, -RMT, -BLANK) (use KMA-2000-FMX to add keyboard, mouse & audio) (Includes wall-mount power supply)
RGB-5000-FTX-52-ST	Digital RGB and UXGA Fiber Optic Transmitter, Singlemode, -5dBm, 1 fiber, loop-through HD15 inputs, 1920 by 1200, supports all sync formats, RGB HV, RGsB, YsUV, YcCrCb, UXGA, SUXGA and UXGA, Component and Analog HDTV signals. (May require -AUDIO, -RMT, -BLANK) (use KMA-2000-FMX to add keyboard, mouse & audio) (Includes wall-mount power supply)
RGB-5000-FTX-7-XXXX-15KM-ST	Digital RGB and UXGA Fiber Optic Transmitter, Singlemode, CWDM, 15KM, 1 fiber, loop-through HD15 inputs, 1920 by 1200, supports all sync formats, RGB HV, RGsB, YsUV, YcCrCb, UXGA, SUXGA and UXGA, Component and Analog HDTV signals. (May require -AUDIO, -RMT, -BLANK) (use KMA-2000-FMX to add keyboard, mouse & audio) (Includes wall-mount power supply)
RGB-5000-FTX-7-XXXX-40KM-ST	Digital RGB and UXGA Fiber Optic Transmitter, Singlemode, CWDM, 40KM, 1 fiber, loop-through HD15 inputs, 1920 by 1200, supports all sync formats, RGB HV, RGsB, YsUV, YcCrCb, UXGA, SUXGA and UXGA, Component and Analog HDTV signals. (May require -AUDIO, -RMT, -BLANK) (use KMA-2000-FMX to add keyboard, mouse & audio) (Includes wall-mount power supply)
RGB-5000-FRX-50-ST	Digital RGB and UXGA Fiber Optic Receiver, Singlemode, -18dBm, 1 fibers, HD15 output, 1920 by 1200, supports all sync formats, RGB HV, RGsB, YsUV, YcCrCb, UXGA, SUXGA and UXGA, Component and Analog HDTV signals. (May require -AUDIO, -RMT, -BLANK) (use KMA-2000-FMX to add keyboard, mouse & audio) (Includes wall-mount power supply)
RGB-5000-FRX-50-ST-DC	Digital RGB and UXGA Fiber Optic Receiver with Daisy Chain Optics. Singlemode, -18dBm, 1 fibers, HD15 output, 1920 by 1200, supports all sync formats, RGB HV, RGsB, YsUV, YcCrCb, UXGA, SUXGA and UXGA, Component and Analog HDTV signals. (May require -AUDIO, -RMT, -BLANK) (use KMA-2000-FMX to add keyboard, mouse & audio) (Includes wall-mount power supply)
	<b>RGB-5000 Series Digital 500 MHz RGB and UXGA Fiber Optic Transport System, ONE Fiber, Singlemode with 10BaseT &amp; RS232/RS422 (SIN 58-6)</b>
RGB-5000-FTX-50-ST-ET	Digital RGB and UXGA Fiber Optic Transmitter with Duplex 10BaseT Ethernet and RS232/RS422 Data Channels, Singlemode, -10dBm, 1 fiber, loop-through HD15 inputs, 1920 by 1200, supports all sync formats, RGB HV, RGsB, YsUV, YcCrCb, UXGA, SUXGA and UXGA, Component and Analog HDTV signals. (May require -AUDIO, -RMT, -BLANK) (use KMA-2000-FMX to add keyboard, mouse & audio) (Includes wall-mount power supply)
RGB-5000-FRX-50-ST-ET	Digital RGB and UXGA Fiber Optic Receiver with Duplex 10BaseT Ethernet and RS232/RS422 Data Channels, Singlemode, -18dBm, 1 fibers, HD15 output, 1920 by 1200, supports all sync formats, RGB HV, RGsB, YsUV, YcCrCb, UXGA, SUXGA and UXGA, Component and Analog HDTV signals. (May require -AUDIO, -RMT, -BLANK) (use KMA-2000-FMX to add keyboard, mouse & audio) (Includes wall-mount power supply)
-AUDIO	Stereo Audio Option for the RGB-5000. (1) each for transmitter & receiver side.
-RMT	Triple Rack-mount Kit (1 kit)
-BLANK	Blank panel for rack-mounting kit
TRI-PS-5VDC	Triple Power Supply, 5VDC, 6 Amps used to power up to three RGB-5000
	<b>Options and Accessories</b>
-KMM	Add PS/2 Keyboard and Serial Mouse support for the RGB-2000, requires a 4th fiber, Multimode ONLY (option required for both the transmitter and receiver) (PS/2 Mouse Not Supported)
-KMAM	Add PS/2 Keyboard, Serial Mouse and Audio support for the RGB-2000, includes Stereo Line level inputs and outputs and Microphone input with AGC, requires a 4th fiber, Multimode ONLY (option required for both the transmitter and receiver) (PS/2 Mouse Not Supported)
KMA-2000-FMX-35M	Stand-alone, PS/2 Keyboard, Serial Mouse and Audio Fiber Link includes Stereo Line level inputs and outputs and Microphone input with AGC, requires a 2nd fiber, Multimode & Multimode. (PS/2 Mouse Not Supported) (requires KMA-2000-FMX-53) (Includes wall-mount power supply)
KMA-2000-FMX-53M	Stand-alone, PS/2 Keyboard, Serial Mouse and Audio Fiber Link includes Stereo Line level inputs and outputs and Microphone input with AGC, requires a 2nd fiber, Multimode & Multimode. (PS/2 Mouse Not Supported) (requires KMA-2000-FMX-35) (Includes wall-mount power supply)
-KMS	Add PS/2 Keyboard and Serial Mouse support for the RGB-2000, requires a 4th fiber, Singlemode ONLY (option required for both the transmitter and receiver) (PS/2 Mouse Not Supported)
-KMAS	Add PS/2 Keyboard, Serial Mouse and Audio support for the RGB-2000, includes Stereo Line level inputs and outputs and Microphone input with AGC, requires a 4th fiber, Singlemode ONLY (option required for both the transmitter and receiver) (PS/2 Mouse Not Supported)
KMA-2000-FMX-35S	Stand-alone, PS/2 Keyboard, Serial Mouse and Audio Fiber Link includes Stereo Line level inputs and outputs and Microphone input with AGC, requires a 2nd fiber, Singlemode & Multimode. (PS/2 Mouse Not Supported) (requires KMA-2000-FMX-53) (Includes wall-mount power supply)
KMA-2000-FMX-53S	Stand-alone, PS/2 Keyboard, Serial Mouse and Audio Fiber Link includes Stereo Line level inputs and outputs and Microphone input with AGC, requires a 2nd fiber, Singlemode & Multimode. (PS/2 Mouse Not Supported) (requires KMA-2000-FMX-35) (Includes wall-mount power supply)
-ATT15	15 dBm inline, optical attenuator, ST male to ST female (Requires 3 for each RGB-2000-FTX-50-ST Singlemode systems for Short Distances)
HD15M-CABLE	Male to Male, HD15 Connector, SVGA Monitor Cable, 6 feet (Use to connect the SVGA computer output to the RGB-2000-FTX transmitter)
HD15M-BNC-CABLE	Male HD15 to 5 BNC Connectors, SVGA Monitor Cable, 6 feet (Use to convert an HD15 to 5 BNC connectors. The RGB2000 supports both HD15 and BNC connectors)
13W3M-BNC-CABLE	Male 13W3M to 4 BNC Connectors, SVGA Monitor Cable, 6 feet (Use to convert an 13W3M to 4 BNC connectors. The Composite Sync signal should be connected the RGB-2000-FTX HSYNC input)

## Feature Benefits of the RGB-5000 UXGA Video, Audio, Data and Ethernet Fiber Link

- One Multimode or Singlemode fiber optic cable shall be used to connect a transmitter to a receiver.
- The transmitter and receiver pairs are self calibrating and adjusting to account for varying H and V scan rates and resolution. Manual adjustments are not necessary and shall not be needed.
- An external computer is not required for system set-up and calibration.
- The system will lock instantly and automatically to changes in video format and resolution.
- The system is compatible with fiber optic switching.
- The system is available with optional fiber optic switching of all signals.
- The system will lock and support to all resolutions and scan rates as per RGB HV, RGsB, VGA, SVGA, UXGA with TTL H & V sync, Sun and Apple Macintosh with TTL, composite sync, Silicon Graphics with sync on-green standards and specifications.
- No front panel controls are offered limiting installation setup, calibration and prevents systems tampering.
- The system uses 24 bit encoding with 8 bits for each of the Red, Green and Blue video signal components.
- A reduction from 24 bit encoding at higher scan rates is not performed preventing banding or contouring distortions.
- All units are available in either stand-alone or rack mounted configurations
- All units are powered by 5VDC in either configuration
- Power consumption is to be limited to 15 Watts
- Up to three transmitter or receiver units fit in one 19 inch rack-unit.
- Transmitters shall have a looping HD-15 connector for local monitoring
- The operational temperature range shall be 0C to +70C
- Video resolution of 1920 x 1200 @ 60 HZ shall be supported
- Horizontal scan rates of 15.75 to 130 kHz and vertical scan rates of 50 to 150 Hz shall be supported
- Location and detection of sync signals shall be automatic
- Data throughput of 3.125 Gbps with no compression shall be supported
- Video and sync jitter shall be <5 nano seconds
- Video signal to noise ratio shall be >60db
- Optional stereo line level audio channel in the same direction as the video is supported
- Audio connector is 3.5mm stereo plug on the transmitter and the receiver
- Optional Bi-directional RS-232 or RS-422 data is supported. The data format is field selectable by either jumper or switch selection.
- Optional 10 Base T Ethernet is supported
- Optional Daisy-chain or drop and repeat feature is available on the receiver units.
- Optionally transport up to 18 UXGA video signals over ONE fiber using CWDM optical multiplexing