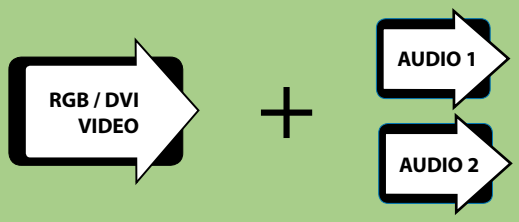
MERIDIAN TECHNOLOGIES

# Digitally-Encoded DVI / RGB Video with 2 Channels of 24-Bit Audio over One Single-mode Fiber

ST/SR-1RG-20X ST/SR-2A-4




## FEATURES:

- Digital transmission of DVI / RGBHV / RGsB over one fiber
- Two Simplex 24-bit Audio Channels
- Supports VGA, SVGA, XGA, SXGA & UXGA (640x480x60Hz to 1920x1200x60Hz)
- 1080p HDTV resolution for DVI signals
- H & V Sync Frequency range of 60 to 150Hz (vertical), 30 to 130kHz (horizontal)
- Uses all-digital processing & transmission for crystal-clear signals and no color skewing
- Real-time video transmission for exceptional quality & resolution – no video compression
- Auto detects & switches resolution & sync configurations
- Requires no adjustments, equalization or de-skewing during setup
- Data throughput in excess of 6 Gbps (uncompressed)
- Most systems have 1.25 Gb/s throughput with significant compression
- DDC (Data Display Channel) optional
- Standard DVI-I video connector with HD-15 dongle included for RGB interface
- USB interface for remote monitor adjustments
- Wide optical dynamic range: Eliminates need for optical attenuation
- Single-mode Laser Based System

## DESCRIPTION:

Meridian's ST/SR-1RG2A-x is high performance Video and Audio transmission system that transports fully-compliant DVI, RGsB or RGBHV and two Simplex 24-Bit audio signals over one single-mode fiber.

The ST/SR-1RG2A-x product consist of two Meridian's cards

1. ST/SR-1RG-xX - 1-ch RGB/DVI Video w/eXpansion Port
2. ST/SR-2A-4 - 2-ch 24-Bit Audio

connected trough Xpansion port in order to combine CWDM 1310nm Band and 1550nm Band wavelengths on one single-mode fiber.

This product provides real-time, digitized transmission of DVI, RGB and H&V sync signals. Because it transmits signals in real-time, no video information is lost and is a perfect solution for dynamic video signals with crystal clear video and no color pixel skewing. Having both DVI and RGB input capability, this system offers an easy upgrade path from RGB to DVI systems with the same modules. In addition, this dual format capability allows the user to convert from one format to the other (RGB to DVI, DVI to RGB) to ensure compatibility with a wide variety of video sources and monitors. An example of this would be to supply a RGB signal at one end of the link and output a DVI signal at the other end.
The supplied adapters (dongles) allow easy interface to standard RGBHV connectors on computers and monitors.
The user can further enhance the video performance with the use of the computer USB interface. This data channel allows the user to adjust brightness, contrast, H&V position, picture sharpness, color, check temperature of the card and load voltage.

## CONFIGURATIONS:

This ST/SR-1RG2A-x product is available as either a rack mount card that can be installed in either Meridian's desk chassis or in 19" racking frames. This product can also be configured as a stand-alone module by using 4 slot or 6 slot desk/wall mount chassis (SR-500 or SR-1002).

## MARKETS:

√ Courtrooms
√ Medical & MRI displays
√ Air traffic control
√ Military information displays
√ Stock exchanges
√ Concert & sporting event video displays
√ Video walls
√ CAD / CAM

# SPECIFICATIONS:

## Video

| | |
|---|---|
| Number of Video Channels | 1 of DVI, RGsB (sync-on-green) or RGBHV (TTL H & V sync) |
| Horizontal Scan Rate | 30kHz to 130kHz (auto sensing) |
| Vertical Scan Rate | 60-150Hz (auto sensing) |
| SNR | >60dB |
| Resolution Range (RGB) | 640x480x60 to 1600x1200x75 |
| Resolution Range (DVI) | 640x480x60 to 1920x1200x60 |
| HDTV Resolution support (DVI) | 480p, 720p, 1080i, 1080p |
| RGB Processing | 24-bits, no compression or scaling |
| Input Impedance/Level | RGB: 75 Ω / 714 mV p-p, H&V 3-5V p-p, 1V p-p w/S.O.G |

## Audio

| | |
|---|---|
| In/Out Impedance | 600 Ohms (Bal. / Un Bal.) |
| Frequenct Response | 10Hz to 20KHz |
| SNR | >90dB (Weighted) @ 1KHz. |
| In / Out Level | -8 to +8 dBm (4VP-Pmax.) (+18dBm available on Request) |
| Total Harmonic Distortion | < 0.01% @ 1 KHz |
| Resolution | 24 Bit |

## Optical

| | |
|---|---|
| Number of fibers | 1 |
| Fiber type | SM (9.0 µm) |
| Wavelength 1310 Band | Video: 1290, 1310, 1330, 1350 nm |
| Wavelength on eXpansion port | Audio: 1550 nm |
| Wavelength 1550 Band | Video: 1510, 1530, 1550, 1570 nm |
| Wavelength on eXpansion port | Audio: 1310 nm |
| Operating distance SM, 1310 Band | Up to 25 Km * |
| Operating distance SM, 1550 Band | Up to 5 Km * |

## Connectors

| | |
|---|---|
| Video | DVI-I (female), HD-15 female (on dongle) |
| Audio | 3-pin connectors |
| Optical | ST - MM(default), FC - SM(default) |
| USB | 4-pin USB (type B) |
| Power | See stand-alone chassis for details |

## Power **

| | |
|---|---|
| DVI/RGB Video card | 7 Watts |
| Audio card | 4 Watts |

## Indicators (LEDs)

| | |
|---|---|
| Power | Green |
| Diagnostic | Green (OK), Red (alarm) |
| Tx carrier | Green (OK), Red (alarm) |
| Rx carrier | Green (OK), Red (alarm) |
| DVI active | Green |
| RGB active | Green |
| SHV (sync H&V) | Green |
| SOG (sync on green) | Green |
| USB active | Green (Rx-Data), Red (Tx-Data) |

## Physical

### 1 Slot Card (Audio card)

| | |
|---|---|
| Dimensions | 160 mm (6.3") L, 127 mm (5") W |
| | 20mm (0.80") W |
| Weight | 450 gms (16 Oz) |
| No. of Slots | 1 |

### 2 Slot Card (RGB Video card)

| | |
|---|---|
| Dimensions | 160 mm (6.3") L, 127 mm (5") W |
| | 44 mm (1.60") W |
| Weight | 450 gms (16 Oz) |
| No. of Slots | 2 |

## Quality

| | |
|---|---|
| MTBF | >150,000 hours @ Ground Fix 35ºC per MIL217F |

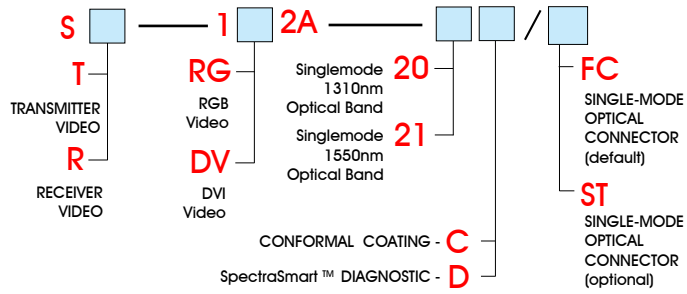
## Environmental

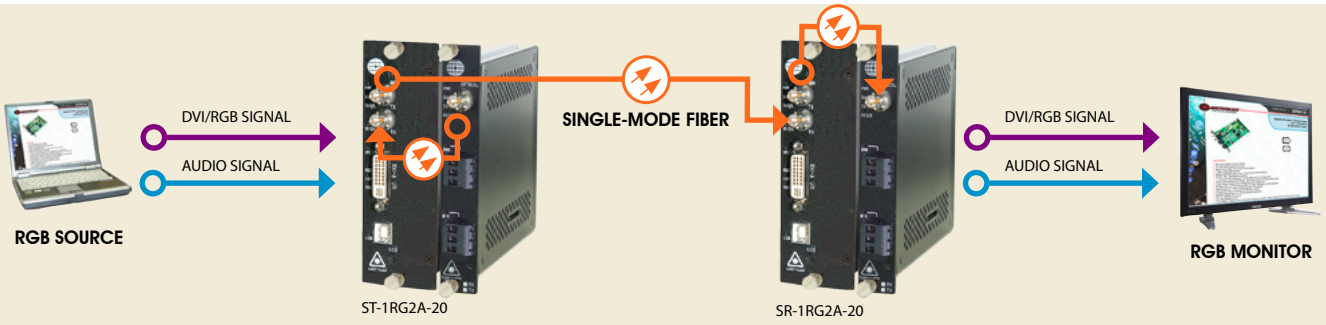
| | |
|---|---|
| Operating Temperature | -10ºC to +50ºC |
| Storage Temperature | -55ºC to +85ºC |
| Relative Humidity | 0 to 95% Non-condensing |

* *Based on maximum resolusion & fiber bandwidth*
** *Due to variations of drivers and diagnostic options, power shown @ max value*

## Part Numbers:

| Card | Wavelength |
|---|---|
| ST/SR-1DV-20X, ST/SR-1RG-20X DVI/RGB Video Tx/Rx, SM | ch1=1290nm, ch2=1310nm, ch3=1330nm, ch4=1350nm |
| ST/SR-2A-4 Audio Tx/Rx, SM | ch5=1550nm |
| ST/SR-1DV-21X, ST/SR-1RG-21X DVI/RGB Video Tx/Rx, SM | ch1=1510nm, ch2=1530nm, ch3=1550nm, ch4=1570nm |
| ST/SR-2A-4 Audio Tx/Rx, SM | ch5=1310nm |




# OPTICAL:

| Product Optical Code | Fiber Type/Size (µm) | Optical Output (dBm) | Receiver Sensitivity (dBm) | Optical Budget (dB) | Wavelength (nm) | Optical Connector | Optical Dynamic Range (dB) | Max Distance (Km) |
|---|---|---|---|---|---|---|---|---|
| 20 | Singlemode (DFB Laser) 9 / 125 | 0 | -16 | 16 | 1310 Band + 1550nm | FC, ST | 20 | 50 |
| 21 | Singlemode (DFB Laser) 9 / 125 | 0 | -16 | 16 | 1550 Band + 1310nm | FC, ST | 20 | 5 *** |

*** Distance is limited by chromatic dispersion



Meridian Technologies Inc. • 700 Elmont Road • Elmont, NY 11003 • 516. 285. 1000 • FAX 516. 285. 6300 • sales@meridian-tech.com • www.meridian-tech.com