

Peer-to-Peer Fiber Transmission Stagebox solution



Product Highlights

The STAGE RACER is a complete point-to-point optical fiber transmission solution for Outside broadcast events, OB trucks, Commentary position, Stage-Studio connection and Building Infrastructure. It is designed to transport all required signals in the same device and is available in various configurations to cover all types of requirements.

With ERECA's unique feature allowing "on the fly" direction configurable HD-SDI channels and the transport of the many common signals required along with video, Stage Racer is the product of choice for an affordable, fast and easy event deployment.

An internal web server enables remote management and setup (signal presence report / optical power measurement / Data settings / Configure the direction of each HD video signal). For local management, each unit has a LED display panel for signal presence and alarm display.

All the signals are transmitted on 2 singlemode fibers.
An automatic redundancy option of the optical cable is built inside the modules by adding a second connector.

Electrical Interfaces

As standard, the Stage Racer transports a comprehensive set of signals as follows:

- 12, 8 or 4 video 3G/HD/SD SDI signals (direction configurable through built in web server)
- 1 Genlock bidirectional (PAL image / Black burst / Tri-level)
- 16 analog audio I/O for intercom or broadcasting
- 2 Ethernet 10/100/1000Mbps (1 Gigabit trunk with 2 VLANs)
- 2 Data RS 232/422/485 + 6 optional RS422
- 8 Contact closure
- 4 AES 3 bidirectional (Riedel panel compatible)
- 1 bidirectional MADI (AES10) Signal (Shared with 2 of the 4 AES connectors).

Standard connectors are used for all signals. SDI, Analog Video and Digital Audio are on BNC connectors. Other connectors are RJ45 and D-Sub.

Optical connector ranges from LC/PC socket to direct integration of SMPTE connectors on the frame. Each frame is equipped with built-in redundant power supply.



Rear panel connector view (12 video channels version, with Lemo SMPTE option)

Hardware Options

Numerous options can be fitted in the Stage Racer regardless of the number of SDI channels:

- 8 switchable mic/line gain blocks with phantom power injection and gain management
- 6 extra hi speed RS 422 (500 Kbs) serial channels
- Fiber connectivity available in SC/APC, SC/PC, ST/PC, LC/PC, Lemo SMPTE, OpticalCon Duo/Quad
- Remote powering of the RX unit over SMPTE cable by an 48-72VDC external PSU located at the TX unit.
- Low voltage local powering by an external PSU from 8 to 20VDC.
- Optical cable redundancy for 2 or 4 fiber cables.
 - In case of fiber cable break, a built-in redundancy mechanism selects the other cable automatically.
 - For OpticalCON Quad connector, the 2 remaining fibers are also switched inside and available on the front panel SC/APC sockets.

Two extra SC/APC optical ports can be fitted on the front of the unit providing additional flexibility for:

- OpticalCON Quad access port for the 2 remaining fibers.
- Wavelength add/drop on the 2 fibers used by the Stage Racer to pass any signal from an external equipment (RF, 10GB Ethernet, 12G UHD).

Web Management

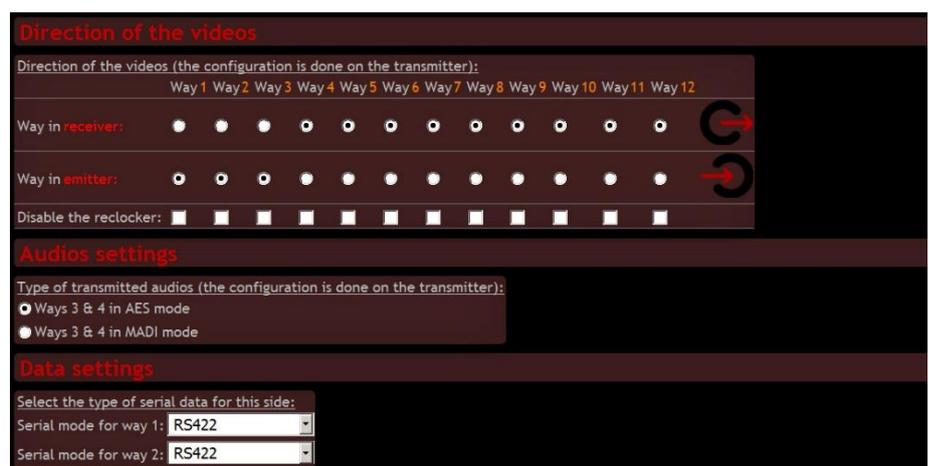
Stage Racer setup and control is accessed through an internal web server (no software needed).

All Information is provided over 4 different pages, organized by category for quick and easy access.

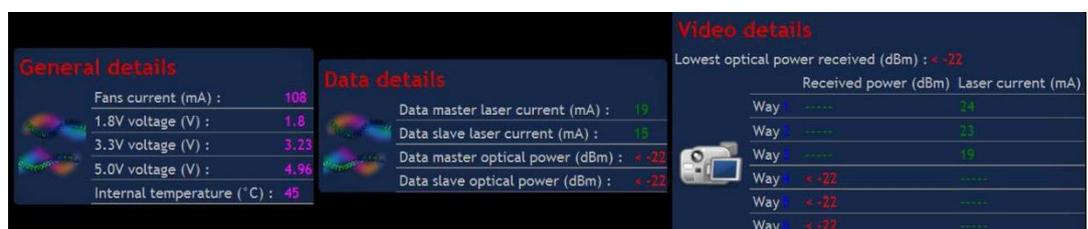
Live Signal Status overview
(all type of signals, PSU, optical fiber)



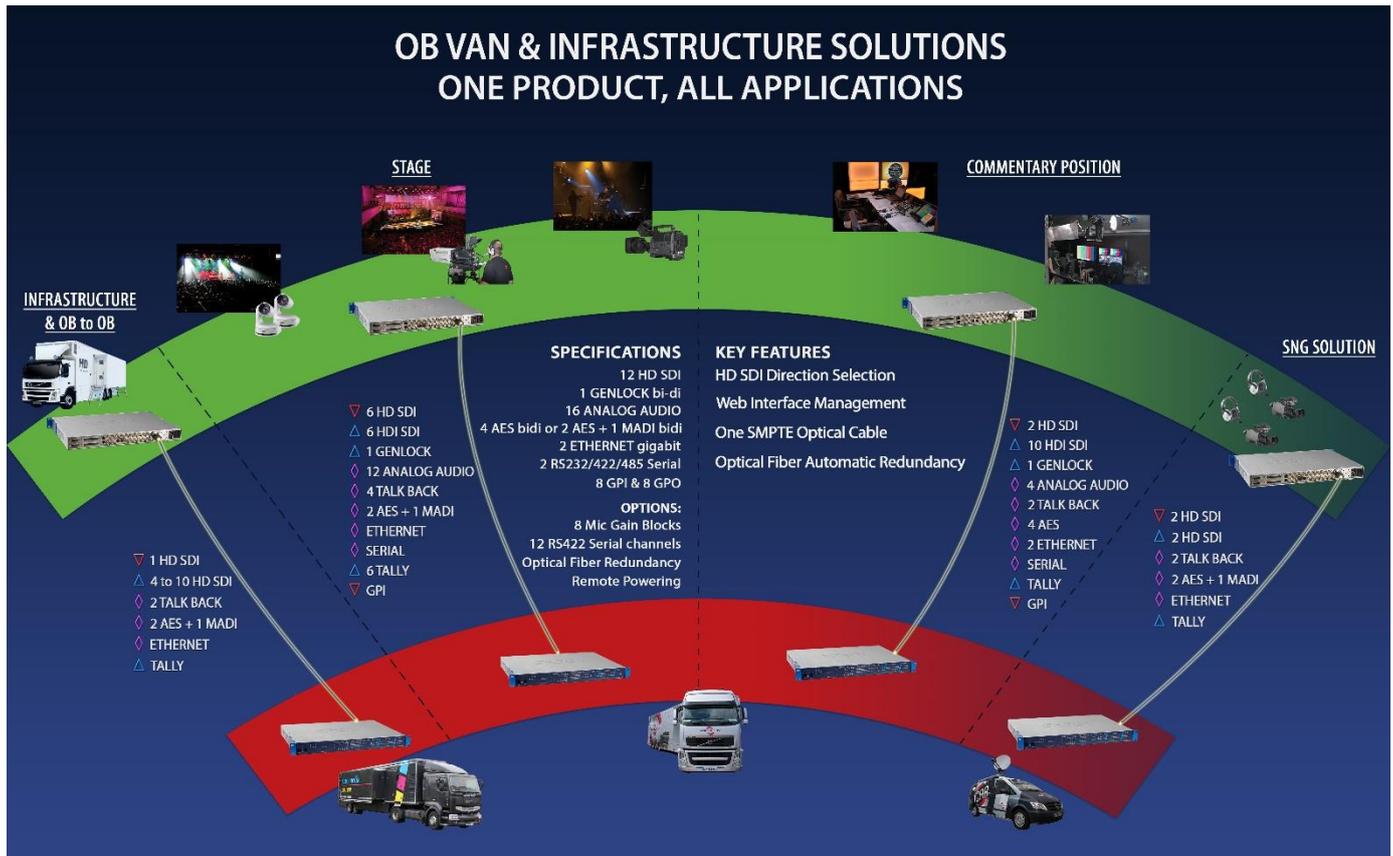
Settings
(SDI port direction, AES/MADI configuration, Serial data type)



Measurements
(internal hardware, data and video fiber optical powers)



Stage Racer Application fields



Stage Racer - Technical Specifications

Optical	
Dynamic range:	10 dB for the 12 channels (11.5 dB for 8Ch, 13 dB for 4Ch) pathological signal
Available connectors:	SC/APC, SC/PC, ST/PC, LC/PC, LEMO 3K (EDW / FXW) or NEUTRIK OpticalCon DUO / QUAD
Video SDI	
Number, connector:	4, 8 or 12 channels on BNC
Direction setting:	Each channel is direction configurable via the web interface
Impedance:	75Ω
Standard:	SD, ASI, HD, 3G (Reclocker bypass available for SDTI, AES or MADI compatibility)
Amplitude:	Input: cable equalization (140 m Belden 1694A for 3G), Output: 800 mV pp
Return loss:	Better than - 15 dB for 0 to 1500 MHz and better than - 10 dB for 1500 to 3000 MHz
Composite Video / GL	
Number, connector:	1 Bidirectional, 2 BNC
Impedance:	75Ω
Standard:	PAL, SECAM, NTSC. Composite / Black Burst / Tri-level (Auto sense)
Bandwidth:	> 5.8 MHz at +/- 0.2 dB
Differential Gain/ Phase	< 1%, < 1°
Group delay:	< 10 ns
SNR:	> 67 dB (CCIR567)
Analog Audio	
Number, connector:	16 line inputs, 16 line outputs (8ch mic/line option available below)
Impedance:	Input: 10 KΩ differential (non floating), Output: 20 Ω differential (non floating)
Amplitude:	+4 dBm nominal (saturation at + 18 dBm)
Bandwidth:	50 Hz to 15 KHz at +/- 0.5dB, (20 Hz to 20 KHz at -3 dB)
Distortion:	0.05% at 1Khz +18 dBm
Signal to noise ratio:	90dB, "A" weighted

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Digital audio	
Number, connector	4 AES bidirectional (Riedel panel compatible) OR 1 MADI (AES10) + 2 AES bidirectional (Riedel panel compatible)
Bitrate	Up to 48 KHz AES audio / 125 MBs full bandwidth for MADI, clock phase conservative
Impedance / Connector:	75 Ω , BNC
Setting:	AES 3-4 or MADI configuration is done via the web interface
Data	
Number, connector:	2 bidirectional channels, 1 RJ 45 socket per channel.
Protocols:	RS485, RS422, RS232 controllable via web interface
Data rate:	from 0 to 500 Kbd/s
Ethernet	
Number, connector:	2 ports grouped or separated by VLAN (802.1.ab), both transmitted on 1 GBs trunk, RJ45 Socket
Protocols:	10, 100 or 1000 mb/s, Full or Half-duplex (Auto), MDI or MDI-X (Auto)
GPIO	
Number, connector:	8 bidirectional GPIO contacts (6 on D-SUB + 1 GPIO along each DATA RJ45 connector)
Output:	Relay (dry contact). 'Common' – 'Normally Open' terminals for each relay
Input:	Floating on the D-SUB, Input pin grounding on RJ45
Powering	
Consumption:	20 Watts per side for the 12 video channels version
Low voltage source:	8 to 20 VDC, XLR 4 pins connector, protected by 5*20 mm standard internal fuse
Mains source:	From 90 to 260 VAC / 47 to 63 Hz / Dual supplies in the 1U rack
Mechanical	
Size / Weight:	1 RU 19" rack, depth 315mm excluding connectors / 3.8 kilograms.
Cooling:	Internal fan, side panels In/Out
Operating Temp range:	From -20 to + 60°C. (Avoiding direct sun exposition)
Signaling	
Transmitted signals:	1 LED per signal
Alarms:	1 LED per technical alarm (Power supply / Temperature / Fiber alarm)
Remote:	All signal presence / alarms are reported trough the web interface

Stage Racer: Option Specifications

Optical OPTION	
Redundant path:	Double optical transmission with automatic optical path selection.
Optical losses:	1.8 dB per link for optical switching
Analog Audio OPTION	
Input:	Microphone input gain blocks on channels 8 to 16
Mic input, Gain:	From 10 to 60dB, Bypass and Tunable by 3dB steps, through internal Web Server.
Phantom power:	48 volts switchable, through internal Web Server, Source Impedance 6.8k Ω
Data OPTION (Fast)	
Number, connector:	6 bidirectional channels, one D-Sub25 on the front
Protocols & Data rate:	RS422, from 0 to 500 Kbps
Remote Powering OPTION on LEMO 3K / OpticalCon DUO	
Power topology:	Power source: 1U rack STAGE Racer TX unit with external DC 48-72VDC on XLR4 power source Powered device: Stage Racer RX
Performance:	1200m of 9.2mm standard AWG16 SMPTE for 72V external PSU (reduced to 400m for 48V)

ERECA reserves the right to change specifications without notice.