Bi-directional Transport for green**Machine**® titan

Features

- Multi-signal bidirectional transport solution through bi-directional 12G SDI channel
- SDI, HDMI and Optical inputs and outputs
- 4x Audio transport in both directions
- 4x GPIO in both directions
- 1x Serial I/O (UART)
- 1x 1Gbit Ethernet transport
- 4 Audio inputs and outputs switchable between analog and digital
- 1x MADI via optical (3G)
- Included transceivers and bidirectional SFP modules for full signal transport
- Timed reference output
- Integrated local control panel for configuration and monitoring
- Extensive monitoring features such as image previews and audio level meters available on the local control panel and control software
- Full remote control using greenGUI control software CustomControl Panels
- Full SNMP v2 support
- Optional video and Ethernet CWDM fiber I/O with all 18 wavelengths selectable
- Optional redundant power protection
- Optional 19" rack frame

Description

The BIDI Transport constellation is a cost-effective bidirectional transport solution that allows transportation of video, audio, Ethernet, and GPI efficiently across two greenMachine Titan hardware devices. It is a flexible solution for applications that require an exchange of multiple signals consisting of video, audio, and GPIs, on two single fiber links over long distance. The Ethernet control information can be transported over a single fiber link over bidirectional SFPs. A Master/Slave model of communication is used between the two greenMachine Titan hardware devices where one machine will act as a Master device while the other will be a Slave.
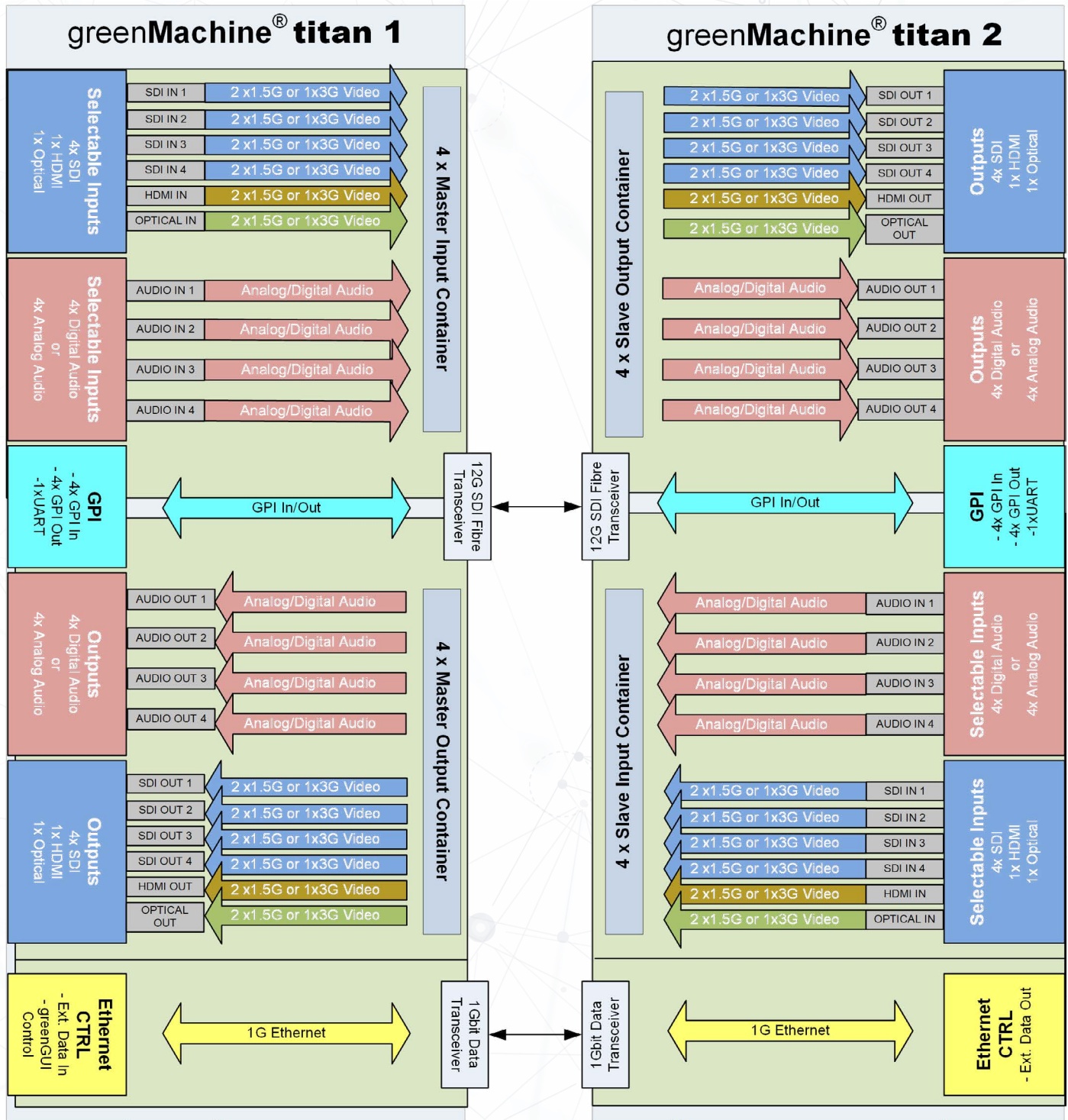
Six HD signals (1.485Gbit/s) or four 3G signals (2.97Gbit/s),One 12G Signal (12 Gbit/s), or combination of signals up to 12Gbit/s, 4 external analog or digital Audio Signals and four GPIs can be transported via the fiber ports in both directions, simultaneously. The reference of one of the two greenMachines (aka the Master) is also transmitted to the other greenMachine (aka the Slave) and can be used in the remote location to synchronize cameras, as an example. A 1Gbit ethernet transport link provides easy control of the two greenMachine via greenGUI software.

For the signal transport to occur which consists of video, audio, and GPIs, the two greenMachine Titans need to be connected via two single-mode fiber cables over transceiver SFPs. For the Ethernet control signal transmission, one single-mode fiber cable is required over bidirectional SFPs.

The greenMachine titan hardware comes with a fully featured local control interface with an LCD which displays image previews and audio level meters of the processed video paths in addition to the graphical user interface.

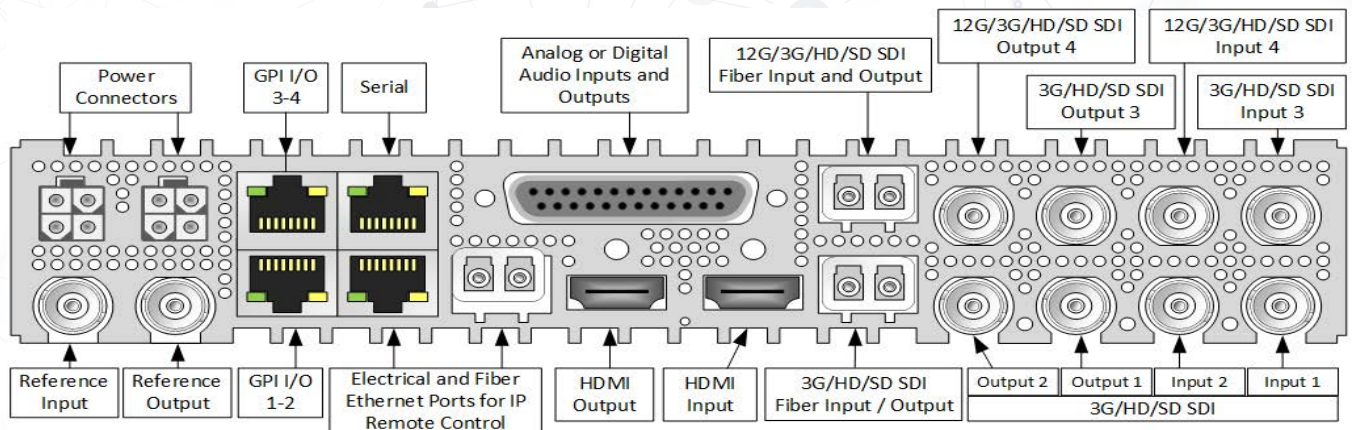Get the full story at **www.green-machine.com**

Functional Diagram

greenMachine® titan 1

Selectable Inputs
4x SDI
1x HDMI
1x Optical

SDI IN 1	2 x1.5G or 1x3G Video
SDI IN 2	2 x1.5G or 1x3G Video
SDI IN 3	2 x1.5G or 1x3G Video
SDI IN 4	2 x1.5G or 1x3G Video
HDMI IN	2 x1.5G or 1x3G Video
OPTICAL IN	2 x1.5G or 1x3G Video

Selectable Inputs
4x Digital Audio
or
4x Analog Audio

AUDIO IN 1	Analog/Digital Audio
AUDIO IN 2	Analog/Digital Audio
AUDIO IN 3	Analog/Digital Audio
AUDIO IN 4	Analog/Digital Audio

4 x Master Input Container

GPI
- 4x GPI In
- 4x GPI Out
- 1xUART

GPI In/Out

12G SDI Fibre Transceiver

Outputs
4x Digital Audio
or
4x Analog Audio

AUDIO OUT 1	Analog/Digital Audio
AUDIO OUT 2	Analog/Digital Audio
AUDIO OUT 3	Analog/Digital Audio
AUDIO OUT 4	Analog/Digital Audio

Outputs
4x SDI
1x HDMI
1x Optical

SDI OUT 1	2 x1.5G or 1x3G Video
SDI OUT 2	2 x1.5G or 1x3G Video
SDI OUT 3	2 x1.5G or 1x3G Video
SDI OUT 4	2 x1.5G or 1x3G Video
HDMI OUT	2 x1.5G or 1x3G Video
OPTICAL OUT	2 x1.5G or 1x3G Video

4 x Master Output Container

Ethernet CTRL
- Ext. Data In
- greenGUI Control

1G Ethernet

1Gbit Data Transceiver

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4 x Slave Output Container

2 x1.5G or 1x3G Video	SDI OUT 1
2 x1.5G or 1x3G Video	SDI OUT 2
2 x1.5G or 1x3G Video	SDI OUT 3
2 x1.5G or 1x3G Video	SDI OUT 4
2 x1.5G or 1x3G Video	HDMI OUT
2 x1.5G or 1x3G Video	OPTICAL OUT

Outputs
4x SDI
1x HDMI
1x Optical

Analog/Digital Audio	AUDIO OUT 1
Analog/Digital Audio	AUDIO OUT 2
Analog/Digital Audio	AUDIO OUT 3
Analog/Digital Audio	AUDIO OUT 4

Outputs
4x Digital Audio
or
4x Analog Audio

12G SDI Fibre Transceiver

GPI In/Out

GPI
- 4x GPI In
- 4x GPI Out
- 1xUART

4 x Slave Input Container

Analog/Digital Audio	AUDIO IN 1
Analog/Digital Audio	AUDIO IN 2
Analog/Digital Audio	AUDIO IN 3
Analog/Digital Audio	AUDIO IN 4

Selectable Inputs
4x Digital Audio
or
4x Analog Audio

2 x1.5G or 1x3G Video	SDI IN 1
2 x1.5G or 1x3G Video	SDI IN 2
2 x1.5G or 1x3G Video	SDI IN 3
2 x1.5G or 1x3G Video	SDI IN 4
2 x1.5G or 1x3G Video	HDMI IN
2 x1.5G or 1x3G Video	OPTICAL IN

Selectable Inputs
4x SDI
1x HDMI
1x Optical

1Gbit Data Transceiver

1G Ethernet

Ethernet CTRL
- Ext. Data Out

For more details and to see the complete portfolio of greenMachine constellations, please visit:
www.green-machine.com

Connections

				Analog or Digital Audio Inputs and Outputs		12G/3G/HD/SD SDI Fiber Input and Output		12G/3G/HD/SD SDI Output 4	12G/3G/HD/SD SDI Input 4

Power Connectors · GPI I/O 3-4 · Serial · 3G/HD/SD SDI Output 3 · 3G/HD/SD SDI Input 3

Reference Input · Reference Output · GPI I/O 1-2 · Electrical and Fiber Ethernet Ports for IP Remote Control · HDMI Output · HDMI Input · 3G/HD/SD SDI Fiber Input / Output · Output 2 · Output 1 · Input 2 · Input 1 · 3G/HD/SD SDI

Supported SDI Formats

HDTV Formats	1080i / 50Hz	1080p / 30Hz	720p / 29.97Hz	12GBit/s Formats	3840 x 2160p / 50Hz
	1080i / 59.94Hz	1080psf / 25Hz	720p / 30Hz	Quad Link 2SI	3840 x 2160p /
	1080i / 60Hz	720p / 23.98Hz	720p / 50Hz	Level A and b	59.94Hz
	1080p / 25Hz	720p / 25Hz	720p / 59.94Hz	(4 x 3Gbit/s)	3840 x 2160p / 60Hz
	1080p / 29.97Hz		720p / 60Hz		
3GBit/s Formats Level A and B	1080p / 50Hz				
	1080p / 59.94Hz				
	1080p / 60Hz				

Options

RFR 6000 - 1RU 19" Rack Mount Chassis

The RFR 6000 is a compact 19" rack mounting solution occupying 1RU of vertical rack space. It can be configured to accommodate one or two greenMachines. In either configuration the RFR 6000 also provides innovative mounting options for one or two of the external RPS 6120 "brick" power supplies both of which can be securely mounted within the 19" 1RU footprint.

RXT 6001 - Rack Frame Extension for RFR 6000

The RXT 6001 is a compact and flexible rack extension for RFR 6000. It can be setup to hold up to four RPS 6120 power supplies. For optimum placement within an equipment room, greenMachine hardware can be mounted in a 19" rack enclosure, the RFR6000 1RU rack frame option.

RPS 6120 - Redundant Power Supply

Each greenMachine includes the RPS 6120 primary power supply, an external desktop "brick" style power supply. An optional second power supply can be added for redundant protection. The greenMachines support seamless auto changeover between primary and redundant power supply. LEDs on the front control panel of the greenMachine hardware indicate the status of the supplies.

Ordering Information

GMC-BIDI-Transport	BIDI Transport Constellation	EAN: 4250479326088
RFR6000	1 RU 19" Rack Mount Chassis	EAN: 4250479324466
RXT6001	Rack Frame Extension for RFR6000	EAN: 4250479326507
R PS 6120 EU	Desk Power supply with EU cord	EAN: 4250479324343
R PS 6120 UK	Desk Power supply with UK cord	EAN: 4250479324350
R PS 6120 US	Desk Power supply with US cord	EAN: 4250479324367