

GM 6840

greenMachine[®] titan

greenMachine titan



Features

- 4x 3G or 1x 4K/UHD general purpose A/V processing appliance
- Internal input and output signal routers
- Compatible with all available greenMachine constellations
- Integrated control panel with color display for live image monitoring, audio level meters, status indication and menu driven control interface
- Small footprint: 1RU high x half 19" rack width
- 3x electrical SD/HD/3G SDI inputs. Level A and Level B DL
- 3x electrical SD/HD/3G SDI outputs. Level A and Level B DL
- 1x electrical SD/HD/3G/12G SDI Input. 12G Single Link / Quad Link 2SI Level A / BDL
- 1x electrical SD/HD/3G/12G SDI Output. 12G Single Link / Quad Link 2SI Level A / BDL
- 1x 4k/UHD HDMI input (1.4b) and 1x 4k/UHD HDMI output (1.4b): 4K 50/59.94/60Hz signals will be displayed in 4:2:0 color subsampling

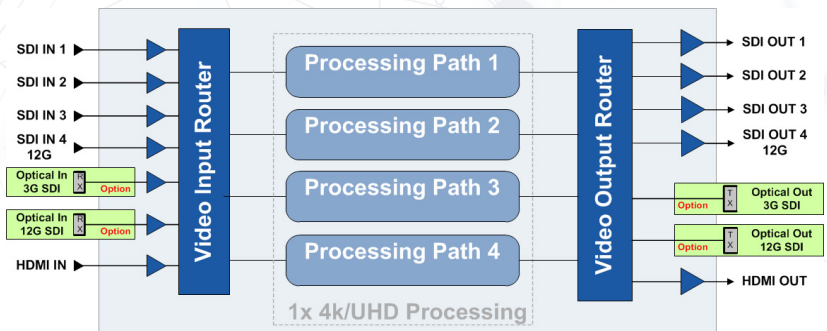
Description

The greenMachine approach is unique. The hardware itself is a powerful general purpose audio and video processing appliance that can perform many different functions using one of the available greenMachine configurations (constellations), i.e. FS, UPXD, HDR etc. The user can select and licence just the constellation, or multiple constellations required at the point of order and can switch between these licenced constellations at any time. Additionally they may purchase licences for additional constellations in the future. As all constellations are pre-installed, un-licensed constellations can be deployed for testing and proof of system concept but will show watermarks at the outputs.

The greenMachine titan platform provides for simultaneous processing of up to four individual SD/HD/3G SDI signals or a single 4k/UHD SDI signal.

Input for 4k/UHD can be either 4x 3G SDI (2SI Quad Link) or 12G SDI (Single Link). Conversion between Single Link 12G SDI and 2SI Quad link signals (and vice versa) is included in the 4K/UHD constellations. Fibre SFP options are available for one SD/HD/3G SDI and one 12G 4k/UHD input and output.

The Nova controller (full remote control) is included in the basic framework



- 1x Analog reference input and output (bi-level or tri-level sync)
- 1x Electrical LAN I/O connection
- 4x Balanced analog audio or digital AES Audio inputs
- 4x Balanced analog audio or digital AES Audio outputs
- 4x GPI inputs and 4x GPI outputs
- 1x Optional SDI fiber I/O (basic fiber or CWDM): SD/HD/3G
- 1x Optional 12G SDI fiber I/O (basic fiber or CWDM): HD up to 12G
- 1x Optional Ethernet LAN fiber connection (basic or CWDM)
- Optional redundant power protection
- Optional 19" rack frame
- Nova controller included: Full remote control using greenGUI control software
- Full SNMP V2 support

Constellations

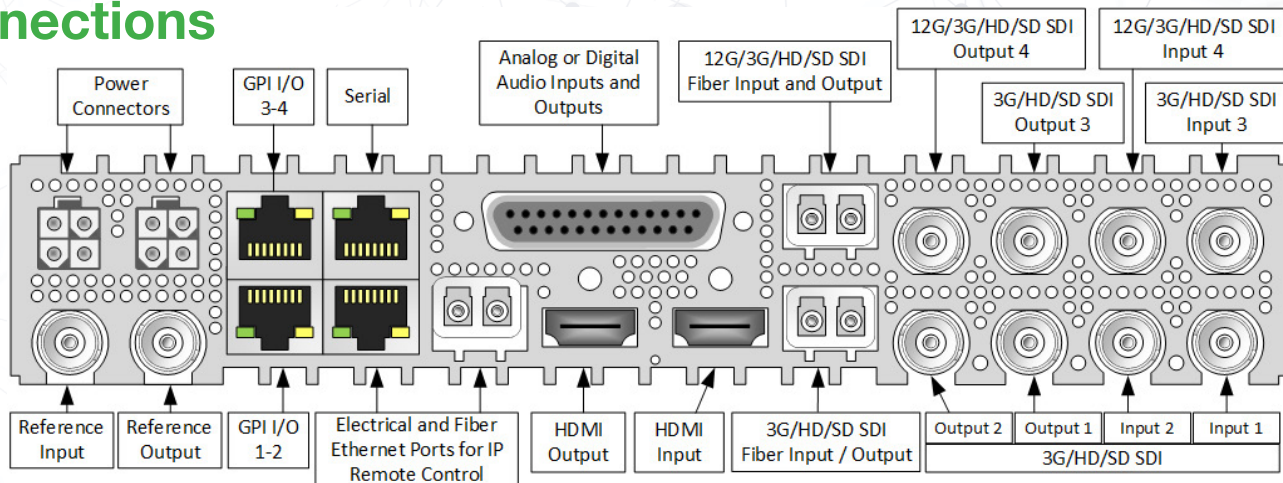
(Examples only - many more are available
- please ask your local LYNX representative)

GMC-Quad3G-FS	Quad 3G Frame Synchronizer This utilizes robust "flywheel" synchronization that will accommodate a wide variety of low quality asynchronous SDI sources. All embedded audio is extracted and delayed automatically to match the video processing delay. Audio is free from disturbances even when dropping and adding frames...
GMC-4K-UPXD	4K/UHD Up/Down Cross Converter A broadcast quality 4K/UHD Up/Down/Cross converter that provides a multitude of conversion and scaling possibilities. The powerful input cropping functionality enables a full Region of Interest (ROI) selection and in addition, the output image size can be adjusted...
GMC-TESTOR-titan	4K/UHD or 4x3G Audio & Video Test Generator This provides a powerful audio & video test generator for a single 4K/UHD channel or 4 channels of up to 3G SDI. A wide range of test patterns are available pre-installed, but the user can easily load own test patterns or images through the greenGUI...

For more details and to see the complete portfolio of constellations, please visit:

www.lynx-technik.com

Connections



Specifications

SDI Inputs	3x 3G SDI video on 75 Ohm BNC connector - SMPTE, 292M, 424M, 259M with automatic video format and standard detection Return Loss: >15dB from 5MHz to 1.5GHz, >10dB from 1.5GHz to 3GHz Automatic cable EQ (Belden 1694A): 340m@270Mbit/s, 150m@1.5Gbit/s, 110m@2.97Gbit/s	12G SDI Output	1x 12G SDI video on 75 Ohm BNC connector - SMPTE 292M, 424M, 259M, 2081, 2082 Return Loss: same as 3G SDI; >7dB to 6GHz; >4dB to 12GHz
12G SDI Input	1x 12G SDI video on 75 Ohm BNC connector - SMPTE 292M, 424M, 259M, 2081, 2082 with automatic video format and standard detection Return Loss: same as 3G SDI; >7dB to 6GHz; >4dB to 12GHz	Serial Data	EIA/ETA RS232C / RS422 / RS 485 (selectable through greenGUI) - RJ45 connector ESD protection for up to 16kV
HDMI Input / Output	1x 10 bit HDMI 4K/UHD 1.4b	Reference Output	1x analog video reference on 75 Ohm BNC connector Analog bi-level (SDTV) or ri-level (HDTV), cross lock capability
Optical I/O (Optional)	1x 3G SDI SFP Transceiver (SMPTE 297M - 2006) 1x 12G SDI SFP Transceiver (SMPTE 292M, 424M, 2081 2082) - no SD SDI (270Mbit)	Audio I/O	4x input and 4x output on Sub-D 25 female connector Analog: input impedance >10k Ohm, Output Impedance 150 Ohm Analog I/O full scale level: selectable 12, 15, 18, 20, 22, 24 dBu Digital: AES3 balanced transformer isolated; Digital output level: 4V peak to peak nom
Ethernet (LAN)	1x 10/100/1000 BaseT RJ45 Connector	Power	12VDC @ 45W nominal (supports 7 - 24VDC input range) 2x power connections for redundant power supply
Optical Ethernet (Optional)	IEEE 802.3z 1000Base-X Gbit/s Ethernet over Fiber at 1 Gbit/s (125 MB/s)	Mechanical	W: 218mm (1/2 19"), H: 44mm (1.75"), D: 225mm (8.86") - including connectors. Weight: 1.4kg (3.09lb)
GPI I/O	4x general purpose inputs + 4x general purpose outputs - RJ45 Connectors	Ambient	Temperature: 5°C to 40°C (41°F to 104°F) maintaining specification Humidity: 90% maximum, non-condensing
Reference Input	1x analog video reference on 75 Ohm BNC connector Analog bi-level (SDTV) or tri-level (HDTV) auto detect	Model #	GM 6840 EU - (EAN# 4250479325050) GM 6840 UK - (EAN# 4250479325067) GM 6840 US - (EAN# 4250479325074)
SDI Output	3x SDI video on 75 Ohm BNC connector (SMPTE, 292M, 424M, 259M) Timing jitter: < 0.2 UI @ 270Mbit/s, < 1.0 UI @ 1.5Gbit/s, < 2.0 UI @ 2.97Gbit/s Alignment jitter: < 0.2 UI @ 270Mbit/s, < 0.2 UI @ 1.5Gbit/s, < 0.3 UI @ 2.97Gbit/s Return Loss: >15dB from 5MHz to 1.5GHz, >10dB from 1.5GHz to 3GHz	Includes	greenMachine, primary power supply and AC power cord, SubD 25 audio adapter PCB and quick reference guide (constellations not included - purchased separately)

Supported SDI Formats

SDTV Formats	525 / 59.94Hz 625 / 50Hz	12Gbit/s Formats Single Link	3840 x 2160p / 50Hz 3840 x 2160p / 59.94Hz 3840 x 2160p / 60Hz
HDTV Formats	1080i / 50Hz 1080i / 59.94Hz 1080i / 60Hz 1080p / 23.98Hz 1080p / 24Hz 1080p / 25Hz 1080p / 29.97Hz	1080p / 30Hz 1080psf / 23.98Hz 1080psf / 24Hz 1080psf / 25Hz 720p / 23.98Hz 720p / 24Hz 720p / 25Hz	720p / 29.97Hz 720p / 30Hz 720p / 50Hz 720p / 59.94Hz 720p / 60Hz
3Gbit/s Formats Level A and B	1080p / 50Hz 1080p / 59.94Hz 1080p / 60Hz	12Gbit/s Formats Quad Link 2SI Level A and b (4 x 3Gbit/s)	3840 x 2160p / 50Hz 3840 x 2160p / 59.94Hz 3840 x 2160p / 60Hz

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Options

RFR 6000 - 1RU 19" Rack Mount Chassis

Rack mounting hardware which can accommodate one or two greenMachines in 1RU of rack space which also securely mounts the power supplies. Note: two power supplies can be mounted onto one RFR 6000. Please see more information in the RFR 6000 quick reference guide.



RPS 6120 - Redundant Power Supply

A second external in line power supply for redundant power protection.



Fiber Options

The titan is equipped with three SFP sockets which can accommodate a variety of plug in SFP fiber I/O options. Two sockets are for SDI connectivity and the other is for Ethernet. Fiber options can be added at any time.



Basic 3G SDI Video Fiber Transmitter		Power		
OH-TX-1-Y-LC/ST/SC	SDI Fiber TX SFP - LC / SC or ST -1310nm	-5dBm		
3G SDI Video Fiber Receiver		Sensitivity		
OH-RX-1-LC/ST/SC	SDI Fiber RX SFP - LC / SC or ST (1270-1610nm)	-16dBm		
Basic 3G SDI Video Fiber Transceiver		Power / Sensitivity		
OH-TR-1-LC	SDI Fiber Transceiver Singlemode (1310nm)	-5dBm	-18dBm	
OH-TR-0-850-MM	SDI Fiber Transceiver Multimode (850nm)	-5dBm	-15dBm	
12G SDI Video Fiber (support 1.5G/3G/6G and 12G SDI)		Power / Sensitivity		
OH-TR-12-LC	12G SDI Fiber Transceiver, Singlemode (TX 1310nm)	-5dBm	-12dBm	
OH-TX-12-LC	12G SDI Fiber Transmitter, Singlemode (1310nm)	(TX, TR)	(RX,TR)	
OH-RX-12-LC	12G SDI Fiber Receiver, Singlemode			
CWDM SDI Video Fiber Transmitter (TX) and Transceiver (TR)		Power / Sensitivity		
OH-TR-4-XXXX	SDI Video Fiber Transceiver SFP CWDM (singlemode) 18 wavelengths acc. to ITU T G692.2: 1270nm through 1610nm. 12G SDI CWDM Fiber Transmitter 8 wavelengths (1270nm-1330nm; 1550nm-1610nm) according to ITU T G692.2	-1dBm	-20dBm	
OH-TX-4-XXXX		-1dBm		
OH-TX-12-XXXX-LC		-3dBm		
XXXX = wavelength				
Basic Ethernet Fiber Transceiver		Power / Sensitivity		
OH-TR-51	Ethernet Fiber Transceiver, Singlemode - 1310nm	-3dBm	-21dBm	
CWDM Ethernet Fiber Transceiver		Power / Sensitivity		
OH-TR-54-XXXX	Ethernet Fiber Transceiver SFP CWDM (singlemode) 18 wavelengths acc. to ITU T G692.2 1270nm through 1610nm.	0dBm	-21dBm	
XXXX = wavelength				

Ordering Information

GM 6840-1 EU
GM 6840-1 UK
GM 6840-1 US
RFR 6000
RPS 6120 EU
RPS 6120 UK
RPS 6120 US

greenMachine titan EU
greenMachine titan UK
greenMachine titan US
1RU 19" Rack Mount Chassis
Desk Power supply with EU cord
Desk Power supply with UK cord
Desk Power supply with US cord

EAN: 4250479325050
EAN: 4250479325067
EAN: 4250479325074
EAN: 4250479324466
EAN: 4250479324343
EAN: 4250479324350
EAN: 4250479324367

For greenMachine the following regulatory and safety standards apply:

CE: EN 55103-1/1996, EN 55103-2/1996, EN 60950-1/2006
Following the provisions of 2004/108/EC and 2006/95/EC directives.

FCC: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15, Subpart B of the FCC Rules.

The RPS 6120 power supply (EA11011H-120) complies with the following safety standards: **UL, CCC, PSE**



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Rev 2.2 - Specifications subject to change

RFR 6000

greenMachine[®] Rack Frame

greenMachine RFR 6000 19" Rack Frame for 1 or 2 greenMachines

Features

- Compact 1 RU design
- Accommodates one or two greenMachines
- Innovative mounting for up to two RPS6120 power supplies
- Rack position adjustable to Recessed, Flush or Protruded



Description

The greenMachines are ideally suited for standalone applications but these powerful processing platforms reach their full potential when used within a system design.

The RFR 6000 is a compact and flexible rack mounting solution. It can be setup to hold up to two greenMachines. Regardless which setup, the RFR 6000 also provides an innovative mounting solution for two RPS 6120 power supplies.

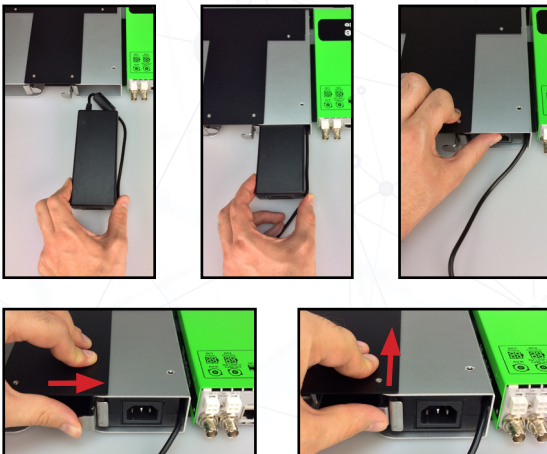
Get the full story at www.green-machine.com

Specifications

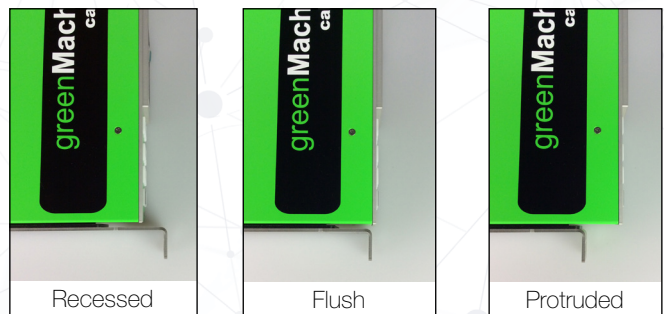
Height	1RU
Width	19" rack mount
Depth Single Module	29.7cm (11.69")
Depth Two Modules	44.7cm (17.59")
Weight	1.5 kg (3.31 Lbs)
Model #	RFR 6000 - (EAN# 4250479324466)
Includes	RFR 6000 rack frame, Phillips screwdriver and quick reference guide.



Two greenMachines setup



Power supply mounting



Adjustable mounting position