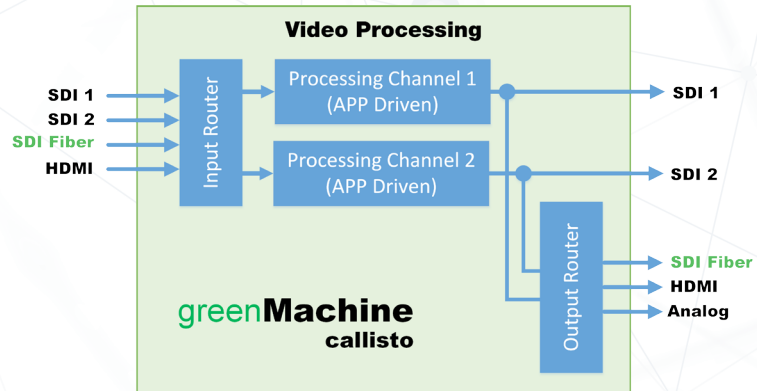


# GM 6820

# greenMachine<sup>®</sup> callisto

## greenMachine callisto



## Features

- 2 channel general purpose A/V processing appliance
- Internal input and output signal routers
- Compatible with all downloadable APPs in the greenStore™
- 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
- 2x electrical SD/HD/3G SDI inputs. Level A and Level B DL
- 2x electrical SD/HD/3G SDI outputs. Level A and Level B DL
- 1x HDMI input (1.4a) and 1x HDMI output (1.4a)
- 1x Analog reference input (bi-level or tri-level sync)
- 1x Analog reference (bi-level sync) or CVBS composite video output

- 1x Electrical LAN I/O connection
- 4x Balanced analog audio or digital AES Audio inputs
- 4x Balanced analog audio or digital AES Audio outputs
- 2x GPI inputs and 2x GPI outputs
- 1x Optional SDI fiber I/O (basic fiber or CWDM)
- 1x Optional Ethernet LAN Fiber connection (basic or CWDM)
- Optional redundant power protection
- Optional 19" rack frame
- Full remote control using greenGUI control software
- Full SNMP v2 support (with corresponding APP)

## Description

The greenMachine approach is unique. The hardware itself is a powerful general purpose audio and video processing appliance that is custom configured using a selection of APPs which are purchased and downloaded from the greenStore™.

You are not limited to one APP per greenMachine, APPs can be mixed, matched and combined to custom build the desired functionality and work-flow in each individual processing channel.

Without any APPs installed the hardware has no real functionality aside from very rudimentary setup functions for basic configuration like IP settings and I/O signal monitoring.

This is an extremely powerful hardware design using the very latest high speed programmable Xilinx technology as well as dual ARM processors. A technology solution ready for today and also the future with a flexible APP driven architecture.

Get the full story at [www.green-machine.com](http://www.green-machine.com)

## APPs

(Examples only - many more are available at the greenStore™)



**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...



**Embed/De-embed** A high quality multi-format audio embedder and de-embedder application which can embed and / or de-embed up to 16 mono audio channels in the SDI channel. The embedder can also embed DolbyE signals which in conjunction with the Frame Synchronizer APP will always maintain the Guardband...



**Scaler / Video Converter** A broadcast quality conversion APP 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...



**Audio Processing** This provides a multitude of audio processing functionality. Each mono audio channel has gain adjustments, mute and inversion, stereo to mono mix-down plus silence and overload monitoring and a 1 kHz test signal generator...

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

[www.lynx-technik-greenstore.com](http://www.lynx-technik-greenstore.com)

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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 primary and redundant power supplies.



### RPS 6120 - Redundant Power Supply

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



### Fiber Options

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



Basic SDI Video Fiber Transmitter		Power	
<b>OH-TX-1-LC / ST / SC</b>	SDI Fiber TX SFP - LC / SC or ST -1310nm	-5dBm	
SDI Video Fiber Receiver		Sensitivity	
<b>OH-RX-1-LC / ST / SC</b>	SDI Fiber RX SFP - LC / SC or ST (1270-1610nm)	-16dBm	
Basic SDI Video Fiber Transceiver		Power / Sensitivity	
<b>OH-TR-1</b>	SDI Fiber Transceiver Singlemode (1310nm)	-5dBm	-18dBm
<b>OH-TR-0-850</b>	SDI Fiber Transceiver Multimode (850nm)	-5dBm	-15dBm
CWDM SDI Video Fiber Transmitter		Power	
<b>OH-TX-4-XXXX</b>	SDI Video Fiber Transmitter SFP CWDM (singlemode) 18 wavelengths available according to ITU T G692.2 1270nm through 1610nm. <b>XXXX</b> = wavelength	-1dBm	
CWDM SDI Video Fiber Transceiver		Power / Sensitivity	
<b>OH-TR-4-XXXX</b>	SDI Video Fiber Transceiver SFP CWDM (singlemode) 18 wavelengths available according to ITU T G692.2 1270nm through 1610nm. <b>XXXX</b> = wavelength	-1dBm	-20dBm
Basic Ethernet Fiber Transceiver		Power / Sensitivity	
<b>OH-TR-51</b>	Ethernet Fiber Transceiver. Singlemode - 1310nm	-3dBm	-21dBm
CWDM Ethernet Fiber Transceiver		Power / Sensitivity	
<b>OH-TR-54-XXXX</b>	Ethernet Fiber Transceiver SFP CWDM (singlemode) 18 wavelengths available according to ITU T G692.2 1270nm through 1610nm. <b>XXXX</b> = wavelength	0dBm	-21dBm

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.

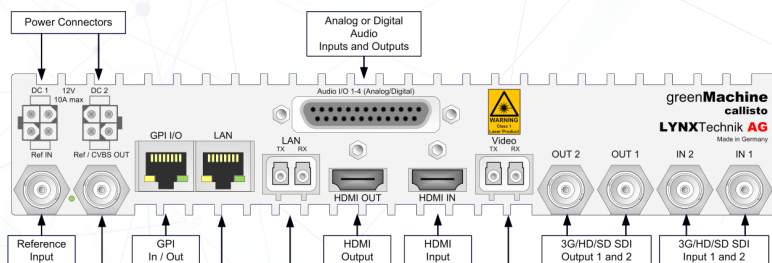
The RPS 6120 power supply (EA11011H-120) complies with the following safety standards: **UL, CCC, PSE**



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## Specifications

<b>SDI Input</b>	2x SDI video on 75 Ohm BNC connector SMPTE, 292M, 424M, 259M with automatic video format and standard detection  Electrical Return Loss: >15dB from 5MHz to 1.5GHz, >10dB from 1.5GHz to 3GHz  Automatic cable EQ (Belden 1694A cable) 340m @ 270Mbit/s, 150m @ 1.5Gbit/s, 110m @ 2.97Gbit/s
<b>HDMI Input</b>	1x 10 bit HDMI 1.4a  24 bit (3x8 bit) and 30bit (3x10 bit) deep color (R,G,B / Y,Cr,Cb / X,Y,Z)
<b>Optical I/O (Optional)</b>	1x Video SFP Transceiver (SMPTE 297M - 2006)
<b>Ethernet (LAN)</b>	1x 10/100/1000 BaseT RJ45 Connector
<b>Optical Ethernet (Optional)</b>	IEEE 802.3z 1000Base-X Gbit/s Ethernet over Fiber at 1 Gbit/s (125 MB/s)
<b>GPI I/O</b>	2x general purpose inputs + 2x general purpose outputs - RJ45 Connector
<b>Reference Input</b>	1x analog video reference on 75 Ohm BNC connector  Analog bi-level (SDTV) or tri-level (HDTV) auto detect and cross lock capability
<b>SDI Output</b>	2x 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  Electrical Return Loss: >15dB from 5MHz to 1.5GHz, >10dB from 1.5GHz to 3GHz
<b>HDMI Output</b>	1x 10 bit HDMI 1.4a  24 bit (3x8 bit) and 30 bit (3x10 bit) deep color (R,G,B / Y,Cr,Cb / X,Y,Z)
<b>Ref / CVBS Output</b>	1x analog video reference on 75 Ohm BNC connector  Analog bi-level (SDTV) or CVBS video: 525/59.94Hz, 625/50Hz
<b>Audio I/O</b>	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 nominal
<b>Power</b>	12VDC @ 25W nominal (supports 7 - 24VDC input range)  2x power connections for redundant power supply
<b>Mechanical</b>	W: 218mm (1/2 19"), H: 44mm (1.75"), D: 225mm (8.86") - including connectors. Weight: 1.1kg (2.43lb)
<b>Ambient</b>	Temperature: 5°C to 40°C (41°F to 104°F) maintaining specification  Humidity: 90% maximum, non-condensing
<b>Model #</b>	GM 6820 EU - (EAN# 4250479324602) GM 6820 UK - (EAN# 4250479324619) GM 6820 US - (EAN# 4250479324626)
<b>Includes</b>	greenMachine, primary power supply and AC power cord, SubD 25 audio adapter PCB and quick reference guide (APPs not included - purchased separately from greenStore™)



Rev 1.1 - Specifications subject to change