greenMachine®

Quick Reference

titan

Quad Channel Universal Video and Audio Processing Platform

Overview

The current greenMachine titan comprises four 3G/HD/SD-SDI video channels or a single 4K/UHD video channel. It offers up to 12G processing support (3840 x 2160 @60 Hz) and provides the functionality to convert between single-link 4K video (12G) and quad-link 4K video (2SI; 4x3G).

The greenMachine titan hardware is a powerful general-purpose audio and video processing appliance that is custom-configured by the user using one of the pre-defined constellations. It is not limited to one constellation per greenMachine. It may be switched between multiple licensed constellations to configure the machine for many different applications in the workflow.

A Constellation is a template or package of features. When you deploy a constellation on a greenMachine, you are reconfiguring that machine to have those features.

All current constellations are present in the greenMachine when delivered.
All constellations can be deployed for full functional testing even without a license, but unlicensed constellations will show a watermark on the video output. If required, licenses can then be purchased from you local LYNX representative.

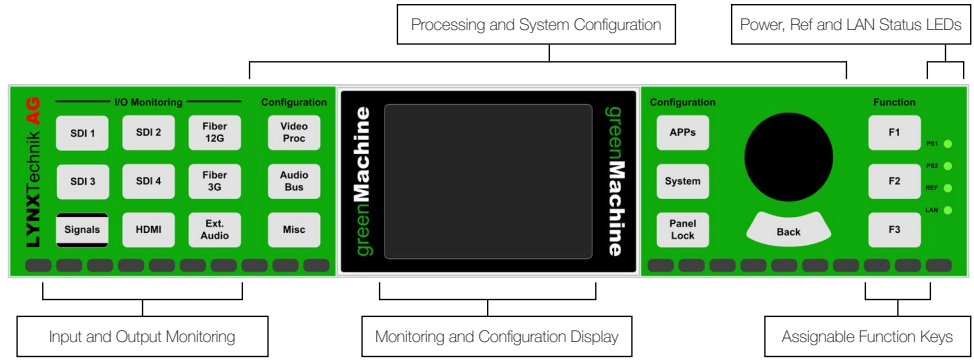
If you ordered a greenMachine package and/or additional constellations, then your greenMachine has been delivered pre-configured and ready to use.

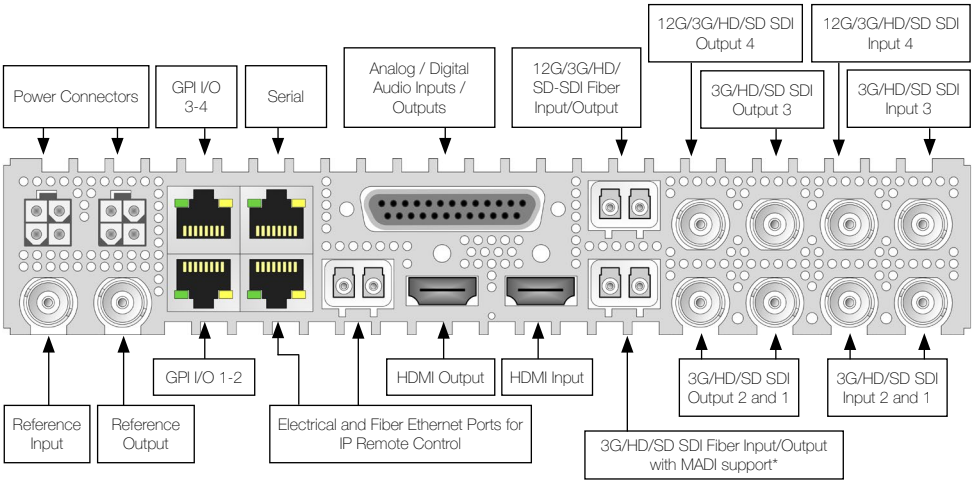
UNPACKING **greenMachine titan**

The greenMachine titan comes with the following items:

- ☑ 1x greenMachine titan
- ☑ 1x external power supply (RPS A100)
- ☑ 1x power cord (EU, UK or US)
- ☑ 1x quick reference guide
- ☑ 1x warranty card

HARDWARE OVERVIEW





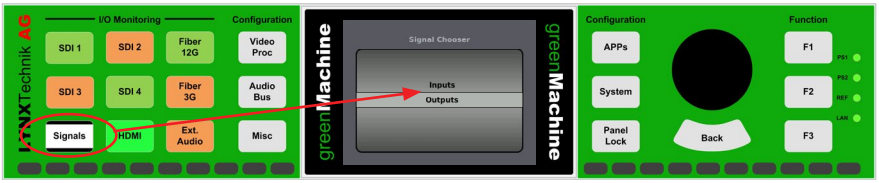
*64 channel MADI supported on selected constellations

LOCAL CONTROL AND MONITORING

When used stand-alone, the greenMachine titan has a local control panel that can be used to fully operate and monitor the module.
The nine push buttons on the left-hand side, in conjunction with the local display, provide everything that is required for a detailed input and output signal monitoring.

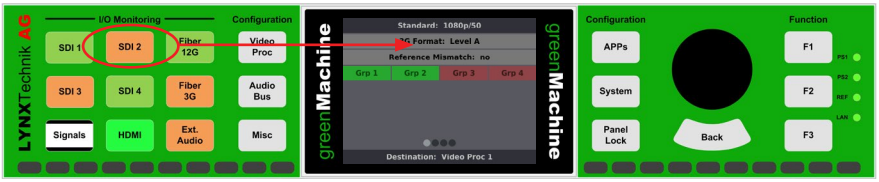
“Signals“ Button

Press the “Signals” button located on the bottom left of the control panel to access the “Signal Chooser“ to select “Inputs“ or “Outputs“ mode.



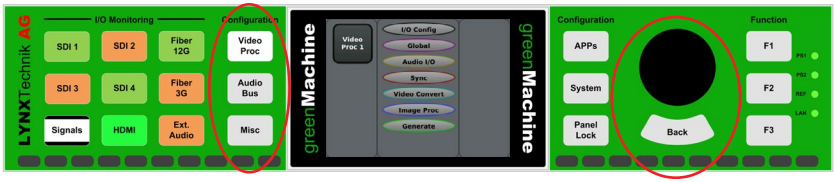
Detailed Signal Information

To get detailed information for a specific input or output signal, press the correlating signal button (e.g. SDI 2) when in “Inputs” or “Outputs“ mode and the display will show detailed information for this input or output. Press the same signal button repeatedly to toggle between different signal information pages.



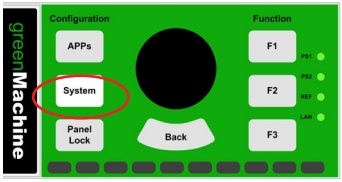
Processing Configuration

Access and control the configuration menus by using the buttons to the immediate left and top right of the display. You can also use the “Back“ button underneath the rotary encoder.



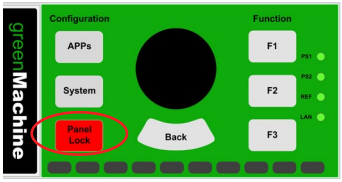
The areas on the left and right hand side of the display show the active menu items. Turn the rotary encoder to navigate between these different menu items. The center part of the display will show a preview of the currently highlighted menu item. Pushing the rotary encoder will enter the menu item.

System Settings



The “System” button to the right of the display will access the system settings menu. Within this menu you can adjust the IP settings and panel configuration, reset the processing parameters and/or system settings (excluding IP settings), monitor the module’s health parameters or assign presets to the Function Keys, which are located on the far right of the control panel next to the rotary push encoder.

Panel Lock



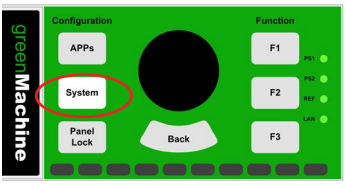
Pressing and holding the “Panel Lock” button for 3 seconds will lock the processing and system settings for the local control panel. When locked, the “Panel Lock” button will be illuminated red.
Press and hold the “Panel Lock” button for 3 seconds to unlock.
All input and output monitoring functionalities are available in lock mode.

DEPLOYING A NEW CONSTELLATION WITH THE LOCAL CONTROL PANEL

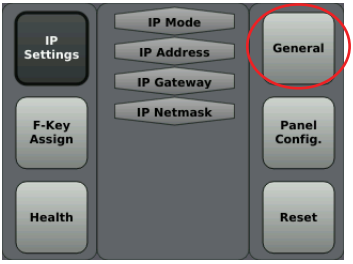
Note: If you ordered a greenMachine package and/or additonal constellations, then your greenMachine has been delivered pre-configured and ready to use.

All current constellations are present in the greenMachine when delivered.
All constellations can be deployed for full functional testing even without a license, but unlicensed constellations will show a watermark on the video output. If required, licenses can then be purchased from you local LYNX representative.

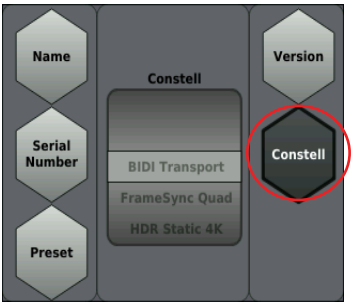
Deployment of constellations can be done in the System menu. To select the System menu, just press the button mid right to the display.



Then select the General menu.



Select the constellation menu and then select the constellation you would like to deploy from the list in the display and press the rotary button.



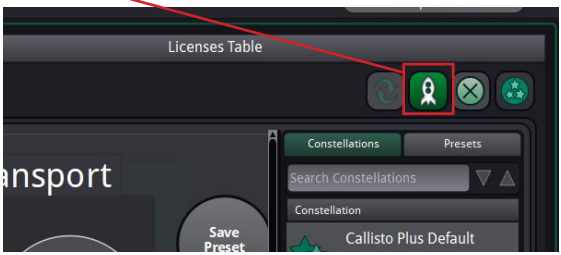
DEPLOYING A NEW CONSTELLATION WITH THE LynxCentraal

Each greenMachine in the universe contains a flexGUI to control all the processing parameters within the constellations.
The universe has access to all machines and all their parameters. Selecting a greenMachine in the rolodex menu on the left side (scrolling menu) will cause the universe to zoom into that machine. Double-clicking on a machine in the universe graphic will bring focus in the rolodex.
On the right-hand side of the Universe View, you will find a scroll menu with all the Constellations available in the greenUniverse (see picture below). These are the templates that you can use to reconfigure your machine. The constellation Rolodex does not display or contain any machine specific information. To deploy a Constellation onto any greenMachine, just select it from the Constellations listing, and drag and drop it on to the greenMachine.

Above the constellation list, you will find the “Deploy” button (see red rectangle in image below). Once you have dropped the constellation onto a greenMachine, the “Deploy” button will be highlighted in two possible colors:

Green: This indicates that you have the license for the constellation you would like to deploy. Simply click the “Deploy“ button.

Red: This indicates that you are missing the license that is required for the constellation you want to deploy. If deployed the constellation will have a watermark but can otherwise used as normal.



IP SETTINGS OF THE **greenMachine titan**

By default, the IP setting of the greenMachine is set to DHCP. If you have a DHCP server, simply connect the greenMachine to your network with the DHCP server and an IP address will automatically be assigned to the greenMachine.

If you want to manually set the IP address, you can easily do this via the front control panel. Press the “System” button (middle button to the right of the display) and access the IP settings menu with the push encoder.

1. Change the “IP Mode“ from DHCP to Static.
2. Set the static IP Address in the “IP Address“ menu.
3. Confirm the IP address settings after adjusting the last digits.

DOWNLOADING AND INSTALLING THE **LynxCentraal**

Most settings can be changed on the greenMachine itself using the front panel. But we offer a more convenient and intuitive way to control a whole set-up of LYNX Technik products with with our new control software, LynxCentraal (available for Windows and Mac). You can download it for free from our website:

www.lynx-technik.com > Downloads > LynxCentraal
or
lynxcentraal.lynx-technik.com

After downloading and installing, connect your computer to the same ethernet network that the greenMachine is connected to. LynxCentraal wil automatically detect all available greenMachines and other compatible LYNX Technik products.

GM6849_R7

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TECHNICAL SPECIFICATIONS

SDI Input	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 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 6GBit/s; >4dB to 12GBit/s
HDMI Input/Output	1x 10 bit HDMI 4K/UHD 1.4b
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)
Ethernet (LAN)	1x 10/100/1000 BaseT RJ45 Connector
Optical Ethernet (Optional)	IEEE 802.3z 1000Base-X Gbit/s Ethernet over Fiber at 1 Gbit/s (125 MB/s)
GPI I/O	4x general purpose inputs + 4x general purpose outputs - RJ45 Connectors
Reference Input	1x analog video reference on 75 Ohm BNC connector Analog bi-level (SDTV) or tri-level (HDTV) auto detect
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
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 6GBit/s; >4dB to 12GBit/s
Serial Data	EIA/ETA RS232C / RS422 /RS 485 (selectable through LynxCentraal) - RJ45 connector ESD protection for up to 16kV
Reference Output	1x analog video reference on 75 Ohm BNC connector Analog bi-level (SDTV) or ri-level (HDTV), cross lock capability
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
Power	12VDC @ 45W nominal (supports 7 - 24VDC input range) 2x power connections for redundant power supply
	Use only LYNX Technik products with LYNX Technik parts delivered with the product or marked as a compatible LYNX Technik product accessory. Loop connecting two greenMachines is to be avoided. Do not connect and disconnect DC plugs under load. Disconnect AC power first. Refrain from high mating cycle counts.
Mechanical	W: 218mm (1/2 19"), H: 44mm (1.75"), D: 225mm (8.86") - including connectors Weight: 1.4kg (3.09lb)
Ambient	Temperature: 5°C to 40°C (41°F to 104°F) maintaining specification Humidity: 90% maximum, non-condensing