



# PLUTO

## Display Management System

Pluto is the multi purpose Display Management system from Pandora. Designed for use On-Set and in Post-Production, the Pluto is a hardware platform from which various applications can be loaded and applied as demand dictates. Choose from one or all of the applications below.

The current suite of applications to choose from include:

- **3D & 1D LUT Manager**
- **CDL Manager**
- **Stereoscopic Processor**
- **Linus Cursor Generator**

The base unit is supplied with a choice of one app and:

- Independent variable black and white legal/full controls
- 15 test patterns for quick monitor analysis
- Blanking controls

### APP - LUT Manager

- Internally store 16 slots of LUTs. Each slot contains an input 1d, 3d cube and an output 1d LUT
- 3D LUTs may be 16, 17, 32 or 33 point cubes and feature a 16bit internal architecture. 1D LUTs up to 1024 points x 16bit RGB
- Full ASC CDL support including saturation
- LUTs are applied with no processing delay to all outputs
- Simple front panel control for all functions
- Software management available for Windows, Macintosh and Linux platforms
- Any number of Pluto units can be controlled from a single workstation
- Each device on the network will identify itself to the host controller, or be manually added to work across subnets and VLANs etc
- Remote status monitoring and LUT control of each Pluto unit
- Pluto units can be easily grouped to allow upload of new LUT files to multiple units simultaneously
- Upload of LUTs in multiple file formats including ...\*.m3d, \*.dat, \*.3dl, \*.cube, \*.itx, \*.lut, \*.cdl, \*.cdn

### PLUTO as a Complete Solution for Monitor Profiling, Calibration and Look Management



THX's Cinespace customers can use the Pluto as a fully integrated hardware solution.

Firstly the Pluto can be used to profile any display using CineProfiler to automatically control Pluto over ethernet. Secondly, use CineCubeVisual to generate a LUT for the Pluto to then apply to the video stream.



LightSpace by Light Illusion, can automatically control the Pluto over ethernet to generate monitor profiles. Once the Profile saved, LUTs can be generated and then applied using the Pluto.

### APP - CDL Manager

- Use Pluto software to create, modify or simply load and apply CDLs
- In Stereo mode apply a look to individual camera feeds as required – left, right or both
- Apply CDL on input or output to apply before or after the cube
- Modify CDLs/looks in 3 ways; enter numerical values, use up/down arrows to finely adjust or a mouse with the graphical view



*'apply many On-Set looks quickly and easily – bridge the gap from On-Set to Post'*

### APP - Stereoscopic Processing

- Side by side / line interleave / anaglyph / difference (L-R, R-L) / checkerboard
- Independent LUT control for left /right eye
- Dual stereoscopic processing – independently controlled outputs
- Flip and flop of left and right images

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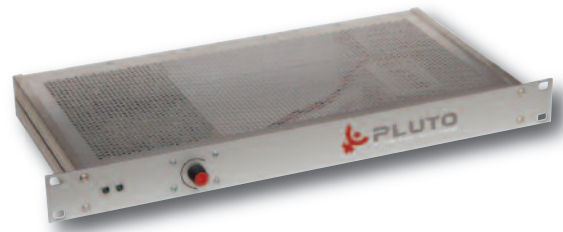
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## APP - Linus Cursor Generator

- Can be run concurrently and applied downstream of LUT Manager
- Safe active picture area / safe title marker / safe action cages
- Centre cross
- 2 x user defined H and V cursors – onscreen readout of ratio and pixel numbers
- Fully controllable from software manager
- Adjustable line styles and colour, and luminance. Useful for the avoidance of screen burn



## PLUTO - Tech

### Connectivity

PLUTO features twin HDSDI 3G connections and can be used to transcode from dual link 4:4:4 to single link 4:2:2 and or RGB/YUV colour space. Additional output options provide HD-SDI to HDMI conversion.

A "Dual Head" mode allows a single Pluto board to be used with two independent single link monitors with separate LUT's for each display for 16 or 17 point cubes only. Alternatively the device can be used in dual link mode with a single monitor in which case 16/17/32/33 point cubes are possible.

**Pluto supports all common video standards [auto sensing] including: 525 / 625 / 720P / 1080i / 1080psf / 1080P**

100 baseT Ethernet to allows control via Software Manager. Network settings are fully configurable to fit into an existing infrastructure.

### Control

Pluto has a simple control wheel interface and on-screen menu for local control of all functions. Alternatively, a Software Manager can be used to remotely control, as well as upload up to 3x16 LUTs [1d-3d-1d] that are stored internally using flash memory. Once uploaded, the Pluto will retain the LUTs allowing the unit to be taken on-set for immediate review of numerous "looks".

If the 1U rack is mounted remotely then it is possible to disable the local panel and drive all functions using only the Software Manager. Conversely the software can be "locked out" from the front panel to prevent accidental override during essential play-out.

### Chassis

Pluto has an integrated full range, self switching PSU. Its low power design means no fans and hence no noise. Single low light LED on the front shows if any type of LUT is applied or not.

With enough space and power available, an additional Pluto board can be added inside, allowing 4 monitors to be independently controlled in one 1U chassis.

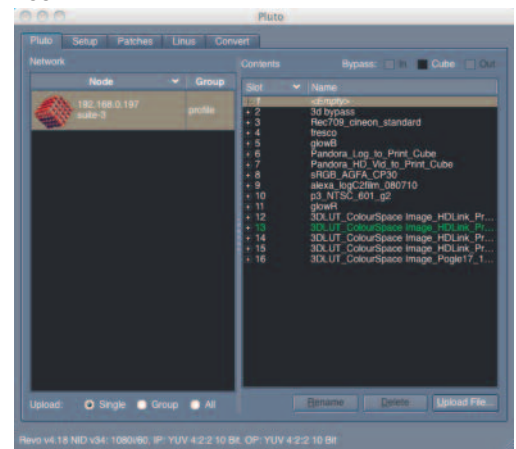
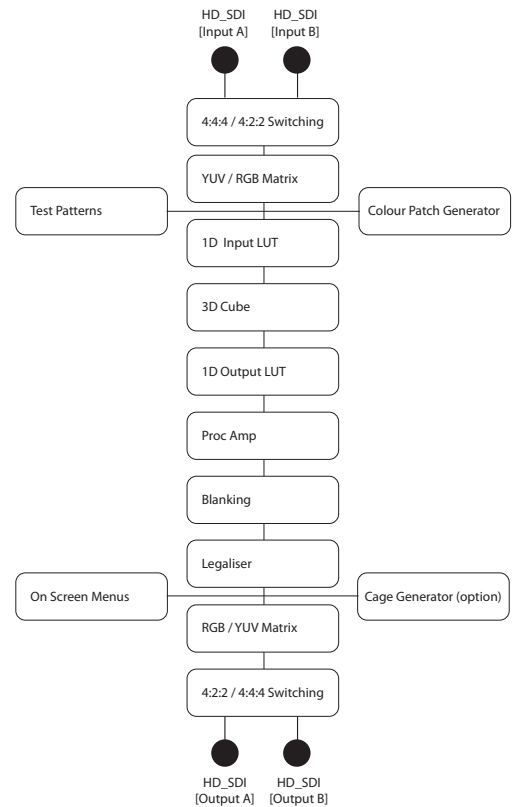
Download the full user manual from the support pages of our Website: [www.pandora-int.com](http://www.pandora-int.com)

### Software Manager

The lightweight Software Manager provided [MAC/ Windows/Linux versions] allows remote control and remote administration. Multiple Pluto's can be named and grouped together e.g. per room, department or facility and new LUTs uploaded simultaneously to all or to each unit individually. It is also possible to read the status of all units on the network so that engineering can ensure that the correct LUTs are applied in each area.

Software is provided to read LUT files in multiple formats and is fully compatible with Lightspace CMS, Cinespace and TruLight Colour Management tools with support for 16,17,32,33 point cubes.

Automated patch generation comes with LUT Manager for use with 3rd Party monitor profiling software, to facilitate closed-loop profiling of all types of displays.



### Dealer Stamp / Details

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