

# nBox™

Part of the Northstar™ Simulation Display Solution



## Completely Independent Warp, Blend, and Display Management

At the heart of 3D perception's Northstar ecosystem is nBox, a next-generation, all-in-one display processor that warps, blends and color corrects raw IG content. nBox outputs to multiple projectors at resolutions of up to 4K and seamlessly displays imagery across spherical, cylindrical, conical, and flat screens.

Between projectors, nBox calibrates color, contrast, brightness, gamma, and can also compensate for hot spots, creating a truly consistent image. nBox treats the multi-projector theater as one contiguous display — not as an array of individually controlled projectors. nBox allows for a projector upgrade path while keeping display infrastructure in place.

nBox offers configuration of the DVI-I outputs and DVI-I inputs with different resolution options. nControl software is included, enabling the user to perform all the image adjustments necessary to create a seamless projected display.

With the projector control via LAN, the nBox provides unique features such as Scenario Management for gradient transition from dusk to dawn, and non-linear automatic color correction with ChromaSync.



### Key Features

- All in one image processor for seamless curved screens
- Up to 6 channels per unit
- Units can be stacked for any number of display channels
- Real-time hardware
- Up to 4K resolution
- Fully configurable
- Non-linear image warping and edge blending
- 42 bit color processing (14 bits per channel)
- Image Scaling
- Hotspot compensation
- Black level enhancement
- Non-linear color correction
- Advanced built-in test pattern generator
- Hot swappable cards
- Redundant power supply option
- Diagnostic features
- Intelligent EDID
- Projector Control through signal cable or LAN
- Zero frame latency
- Scenario management
- Supports framerates from 24Hz to 120Hz
- Stereo shutter glass control



### About 3D perception

3D perception provides advanced display components and immersive simulation display systems.



### Main Offices

**Europe**  
Nye Vaks vei 12  
1395 Hvalstad, Norway  
+47 66 98 70 70

**United States**  
12605 Challenger Parkway, Suite 170  
Orlando, Florida 32826  
+1 321-235-7999

[info@3d-perception.com](mailto:info@3d-perception.com)  
[www.3d-perception.com](http://www.3d-perception.com)

**SUPPORTED DISPLAY OUTPUTS AND INPUTS**

Configurable number of outputs and inputs 6 slots available  
Supports 4K projectors

**ADVANCED DISPLAY PROCESSING WITH nCONTROL**

Projector control  
Image warping curved screen  
Image blending curved screen (multi-sided)  
Masking (multi-sided)  
Hotspot compensator  
Black level enhancement  
Internal test pattern generator  
Stereo control  
WarpSync automatic geometry correction  
ChromaSync automatic colour correction  
14 bit color processing (14 bits per channel)  
Signal Analysis Module

**RESOLUTIONS**

Multiple resolution support  
Up to HD 1920 x 1080 (dual input and output boards)  
Up to WUXGA 1920 x 1200 (single input and output boards)  
Up to WQXGA 2560 x 1600 (single input and output boards)

**INPUT FORMATS**

DVI - I single link inputs  
Supports: VGA\* Progressive only  
Supports: HDMI\* Progressive only. HDCP not supported  
Supports: RGB Video\* RGBHV progressive only, 5-wire  
Supports: RGB Video\* RGBS, 4-wire (composite sync)  
Supports: RGB Video\* RGsB, 3-wire (sync on green)  
Supports frame rates from 24 - 120Hz  
DVI dual link inputs for resolutions QXGA and above

**INPUT PROCESSING**

Analog to digital conversion  
Sync conversion Composite sync, sync on green  
Frame rate conversion

**OUTPUT FORMATS**

DVI - I single link outputs  
Supports: VGA\*  
Supports: HDMI\*  
Supports: RGB Video\*  
Supports frame rates 24 - 120Hz  
DVI-D dual link output for resolutions QXGA and above

**SYSTEM AND MAINTAINABILITY**

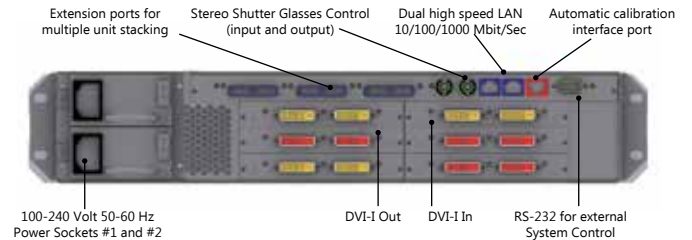
Weight: 13.5 kg / 29.7 lbs fully configured  
Dimensions: 19" 2U form factor, 44 cm x 9 cm x 44 cm  
Power Consumption: 250W  
Embedded PC 64 bit processor Power PC™  
Real-time embedded operating system  
Configurable I/O  
Stackable for large system installations  
Optical DVI extender output power  
Redundant power supply option  
Redundant fans  
Hot swap I/O boards  
Power supply modules  
Fans

**I/O PORTS**

6 Independent slots for input and output boards  
High-speed LAN 10/100/1000 MBits/Sec  
Stereo shutter glasses control  
RS232 Port for external system control  
Automatic calibration interface port  
100-240 Volt, 50-60 Hz power socket #1  
100-240 Volt, 50-60 Hz power socket #2  
Additional diagnostic LAN port

**INTERFACES (OTHER)**

3rd-party system controller interface On LAN or RS232 I/O ports  
Intelligent EDID

**nControl™****Display System Management Software**

nControl is an intuitive, user-friendly graphical software interface for installation, user control and maintenance. nControl is responsible for maintaining a consistently pixel-perfect image, and in concert with nBox and Aurora, it automatically performs geometry adjustment, edge blending, color balancing, and gamma correction. With a push of a button, it automates maintenance procedures and will readjust the system's image in seconds.

**Key Features**

- Centralized interface for integrated control of entire display system
- One-click power up/down and maintenance
- Save/load multiple training configurations – changes eye-points, accounts for different obstructions
- Scenario Management – through IG Interface, transition time of day during live training session
- Control projector shutters for night time training
- Automate procedures which could otherwise take hours

**About 3D perception**

3D perception provides advanced display components and immersive simulation display systems.

**Main Offices**

**Europe**  
Nye Vakås vei 12  
1395 Hvalstad, Norway  
+47 66 98 70 70

**United States**  
12605 Challenger Parkway, Suite 170  
Orlando, Florida 32826  
+1 321-235-7999

[info@3d-perception.com](mailto:info@3d-perception.com)  
[www.3d-perception.com](http://www.3d-perception.com)