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.
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

**Specifications**

**SUPPORTED DISPLAY OUTPUTS AND INPUTS**
- Configurable number of outputs and inputs
- 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)

**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*
- Supports: HDMI*
- Supports: RGB Video* (progressive only, 5-wire)
- Supports: RGB Video* (RGBS, 3-wire (sync on green))
- Supports: RGB Video* (RGBHV, progressive only)
- Supports: RGB Video*
  - Supports: Frame rates 24 - 120Hz
  - DVI dual link inputs for resolutions QXGA and above

**INPUT PROCESSING**
- Analog to digital conversion
- Sync conversion
- 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 MBit/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 EDD

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