# NVIDIA NVS 810

**Product Snapshot**

# NVIDIA NVS

## Multi-display graphics

| Traditional Markets |
|---|



| | |
|---|---|
| ▪ | **Financial centers** |
| ▪ | **Trading floors** |
| ▪ | **Call centers** |
| ▪ | **Corporate desktops** |

| New Growth Markets |
|---|



| | |
|---|---|
| ▪ | **Digital signage** |
| ▪ | **Public facilities (airports, hospitals)** |
| ▪ | **Retail** |
| ▪ | **Emergency response** |
| ▪ | **Process control** |

# NVIDIA NVS 810

## Product positioning

| | |
|---|---|
| ▪ | **World's most capable display signage card providing the lowest cost per display driven and TCO** |
| ▪ | **Seamlessly drives 8 displays from a single card or combine cards together to form massive signage walls** |
| ▪ | **Advanced image management using Mosaic warp/blend/overlap and remote management with NVWMI toolkit** |

# NVIDIA NVS 810

## Solves digital signage problems

| Solutions cost is too expensive: |
| --- |
| ▪ Only solution to offer 8x 4K displays from a single slot board for less than $100 per display |
| ▪ Eliminates the need for additional systems and cards = lowest TCO |

| Creating and deploying solutions is complicated: |
| --- |
| ▪ Advanced image management with warp/blend/overlap, previously only available on high-end Quadro |
| ▪ Proven NVIDIA Mosaic to create massive unified displays |
| ▪ Remote monitoring and configuration with NVIDIA Enterprise Management Tools (NVWMI) |

| Other NVS 810 benefits include: |
| --- |
| ▪ Latching mDP connector ensures reliability and signal integrity |
| ▪ Multi-stream decode and playback of H.264 |

# NVIDIA NVS 810

## Cost per display comparison

Lowest TCO

**NVS 810**

4GB, 68W, 8x mDP,
8x 4096 x 2160

**$80 Per Display**

**A6**

2GB, 75W, 6x mDP,
6x 4096 x 2160

**$80 Per Display**

**NVS 510**

2GB, 35W, 4x mDP,
4x 3840 x 2160

**$87 Per Display**

**M6**

2GB, 75W, 6x mDP,
6x 4096 x 2160

**$100 Per Display**

**M4**

2GB, 75W, 4x mDP,
4x 2560 x 1600

**$125 Per Display**

**M8**

2GB, 75W, 8x mDP,
8x 2560 x 1600

**$200 Per Display**

Highest TCO

Performance and Feature Support

# NVIDIA NVS 810

## Technical specifications

| | |
|---|---|
| CUDA Cores | 1024 (512 x 2) |
| GPU | GM107 x 2 |
| GPU Memory | 4GB DDR3 (2GB per GPU) |
| Form Factor | Single Slot, 9.5" x 4.4" |
| PCIe | Gen 3.0 x16 |
| Display Connectors | 8x mDP |
| Max Display Configuration | 8x 4K at 30Hz |
| Max Board Power | 68W |
| Max Number of Frame Locked Displays | 8 |
| Max Boards Per System | 3 Win 7 \| 4 Win 10 |
| Max Number of Mosaic Screens | 16 |
| Max Number of Windows Screens | 24 Win 7 \| 32 Win 10 |
| Max Number of Linux Screens | 32 |
| Thermal Solution | Active Fansink |
| PNY Part Number | VCNVS810DP-PB[1] |

[1]PNY PN VCNVS810DVI-PB also available with 8 mDP to DVI-D SL adapters.

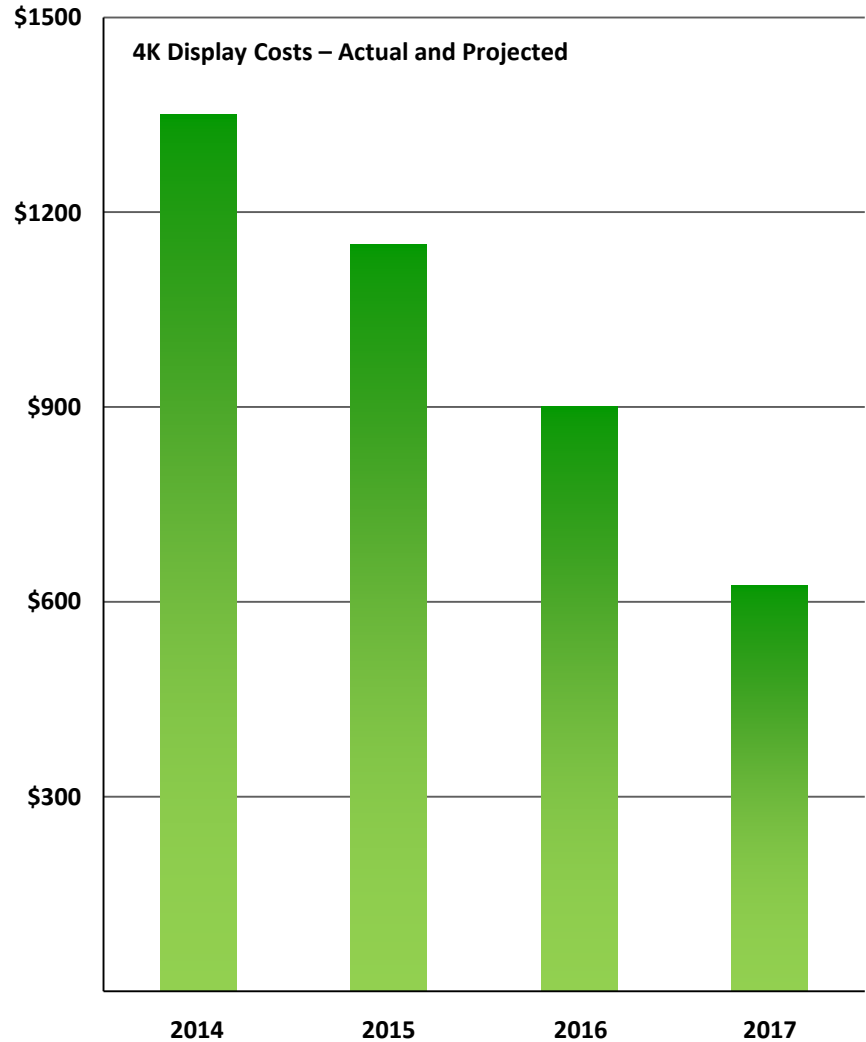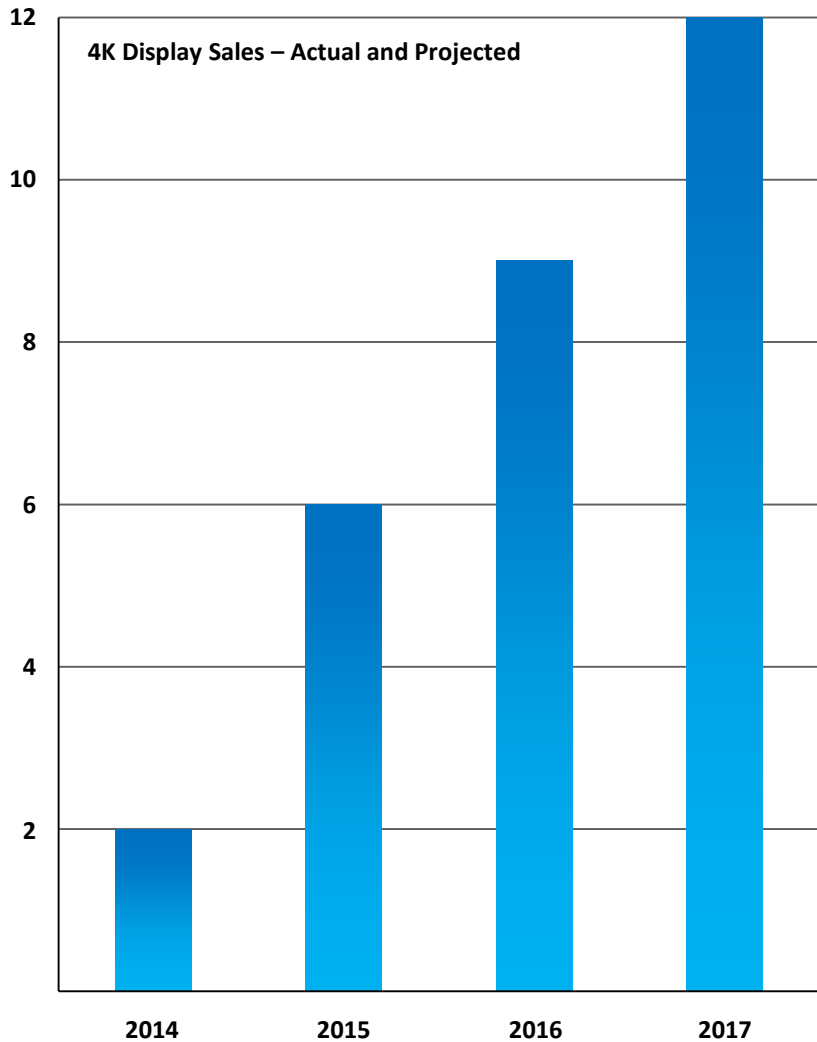# NVIDIA NVS and Quadro

## 4K multi-display support

| | 1 Card | 2 Cards | 3 Cards | 4 Cards |
|---|---|---|---|---|
| **Quadro M6000** | 4<br>Overlap + Bezel Correction | 8<br>Overlap + Bezel Correction and Quadro Sync | 12<br>Overlap + Bezel Correction and Quadro Sync | 16<br>Overlap + Bezel Correction and Quadro Sync |
| **Quadro M5000** | 4<br>Overlap + Bezel Correction | 8<br>Overlap + Bezel Correction and Quadro Sync | 12<br>Overlap + Bezel Correction and Quadro Sync | 16<br>Overlap + Bezel Correction and Quadro Sync |
| **Quadro M4000** | 4<br>Overlap + Bezel Correction | 8<br>Overlap + Bezel Correction and Quadro Sync | 12<br>Overlap + Bezel Correction and Quadro Sync | 16<br>Overlap + Bezel Correction and Quadro Sync |
| **Quadro K1200** | 4<br>Overlap + Bezel Correction | 8<br>Bezel Correction | 12<br>Bezel Correction | 16<br>Bezel Correction |
| **NVS 810** | 8<br>Overlap + Bezel Correction | 16<br>Bezel Correction | 24<br>Bezel Correction | 32<br>Bezel Correction |

**NVIDIA NVS 810 provides highest density and lowest TCO (Total Cost of Ownership)**

# 4K Display Sales Trends

## Shipments are growing rapidly while prices continue to fall[1]

**4K Display Sales – Actual and Projected**

| Year | Sales |
|------|-------|
| 2014 | 2 |
| 2015 | 6 |
| 2016 | 9 |
| 2017 | 12 |

**4K Display Costs – Actual and Projected**

| Year | Cost |
|------|------|
| 2014 | $1350 |
| 2015 | $1140 |
| 2016 | $900 |
| 2017 | $630 |

# NVIDIA NVS and Quadro Driver Features
## Simplifies development and deployment

| Custom Resolutions | Mosaic | Tiled Displays | 10- and 12-bit Color |
|---|---|---|---|
| GFT, DMT, CVT, CVT-RB, Manual timing | Seamless desktop across multiple GPUs | Automatic Mosaic setup on tiled displays using DisplayID | Support High Dynamic Range (HDR) displays |
| **EDID Management** | **Mosaic + Sync** | **Ultra High Resolution Desktop** | **3D Stereo** |
| Capture and read EDID from file | Framelock, overlap support, 3D stereo | Up to 16k by 16k | OpenGL, DirectX, active, passive, pixel packed |
| **4K Resolution** | **GPU Direct for Video** | **External or Internal Sync** | **DisplayPort MST** |
| DP 1.2 or HDMI 1.4B connectors or later | Picture-in-picture (POP) support | Genlock/TTL sync or internal sync | Support for multi-streaming devices |
| **Warp + Intensity API** | **NVAPI** | **Display Clone Modes** | **GPU Affinity** |
| Edge-blending and projection mapping for Windows or Linux | Programmatically control driver | DisplayPort clone, Pan and Scan clone, 4K cloning | Multi-GPU support and Swap Groups |
| **8K e-Shift Support** | **Mosaic Confidence Monitor** | **NVWMI** | |
| Native support for 8K e-shift projector | Smart clone features | Scripting, event monitor, remote setup | |

# NVIDIA Mosaic: Why is it Necessary?

## Windows on its own presents independent desktops
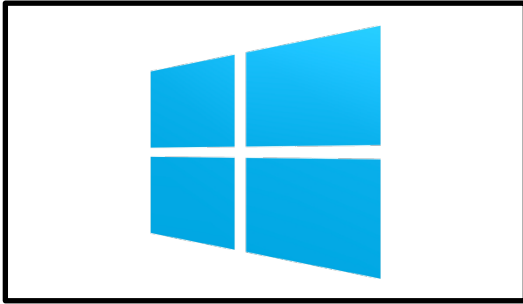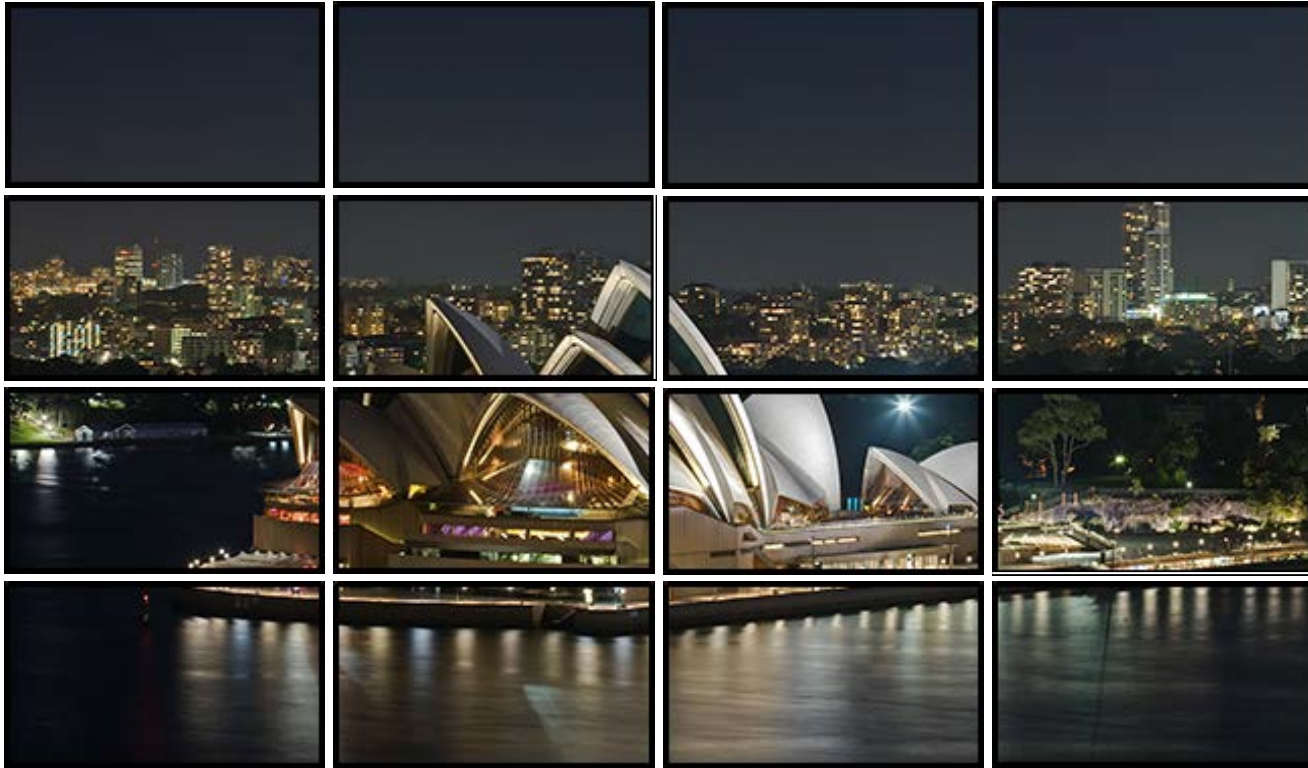
# Windows Presents Independent Desktops
## Even when used with multiple GPUs
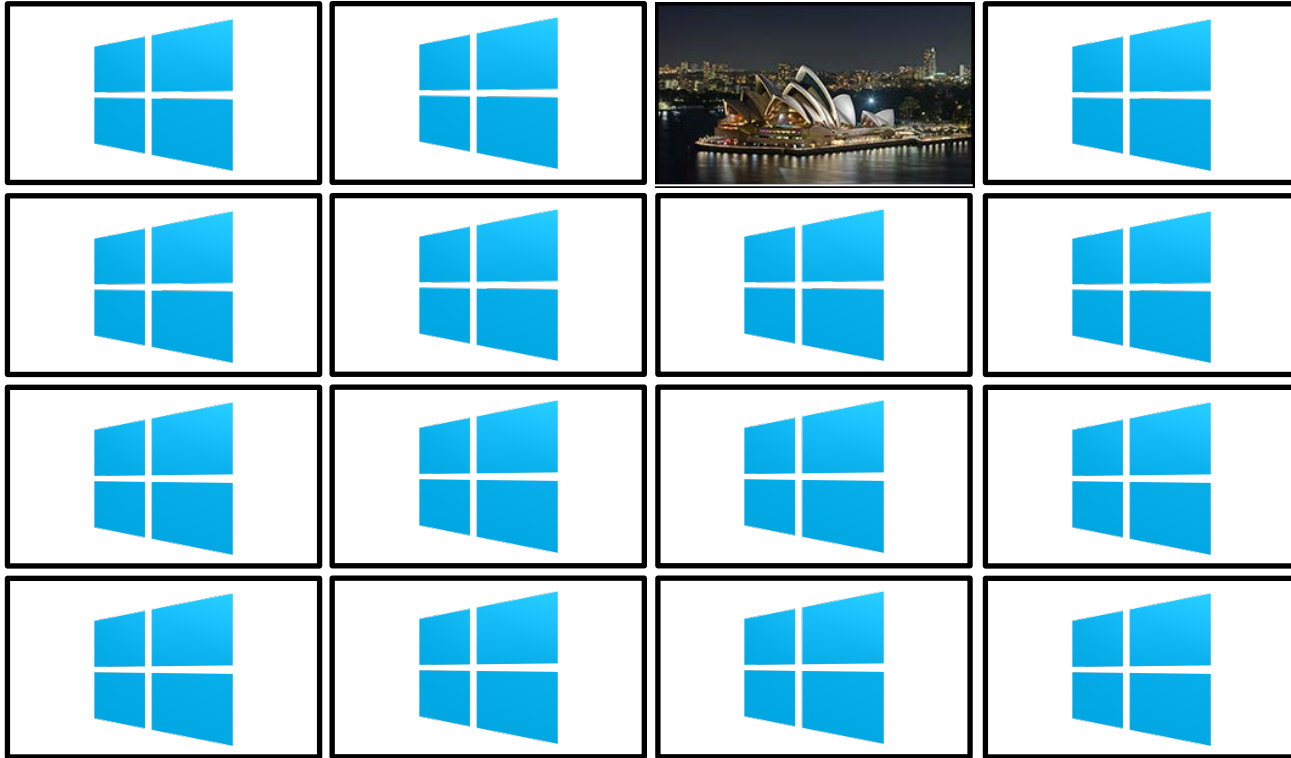
# NVIDIA NVS 810 with Mosaic

## One large logical desktop without complexity or app modification

# Mosaic Scalability

## NVIDIA NVS 810 and Quadro at 4K resolution[1]

| | Number of displays from a single system with Mosaic | | | | |
| --- | --- | --- | --- | --- | --- |
| | Up to 2 | Up to 4 | Up to 8 | Up to 12 | Up to 16 |
| NVS 810 | 1 Board | 1 Board | 1 Board | 2 Boards | 2 Boards |
| M6000 | 1 Board | 1 Board | 2 Boards | 3 Boards | 4 Boards |
| M5000 | 1 Board | 1 Board | 2 Boards | 3 Boards | 4 Boards |
| M4000 | 1 Board | 1 Board | 2 Boards | 3 Boards | 4 Boards |
| K1200 | 1 Board | 1 Board | 2 Boards | 3 Boards | 4 Boards |

| NVS 810 reaches 16 display Mosaic limit with only two boards |
| --- |

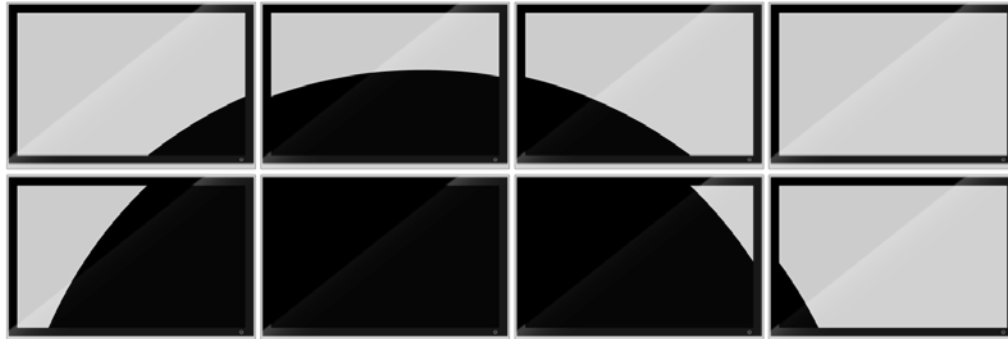[1]For use case scenarios where Quadro Sync multi-board synchronization is not required.

# Bezel Correction

## Image looks continuous by rendering under the bezel
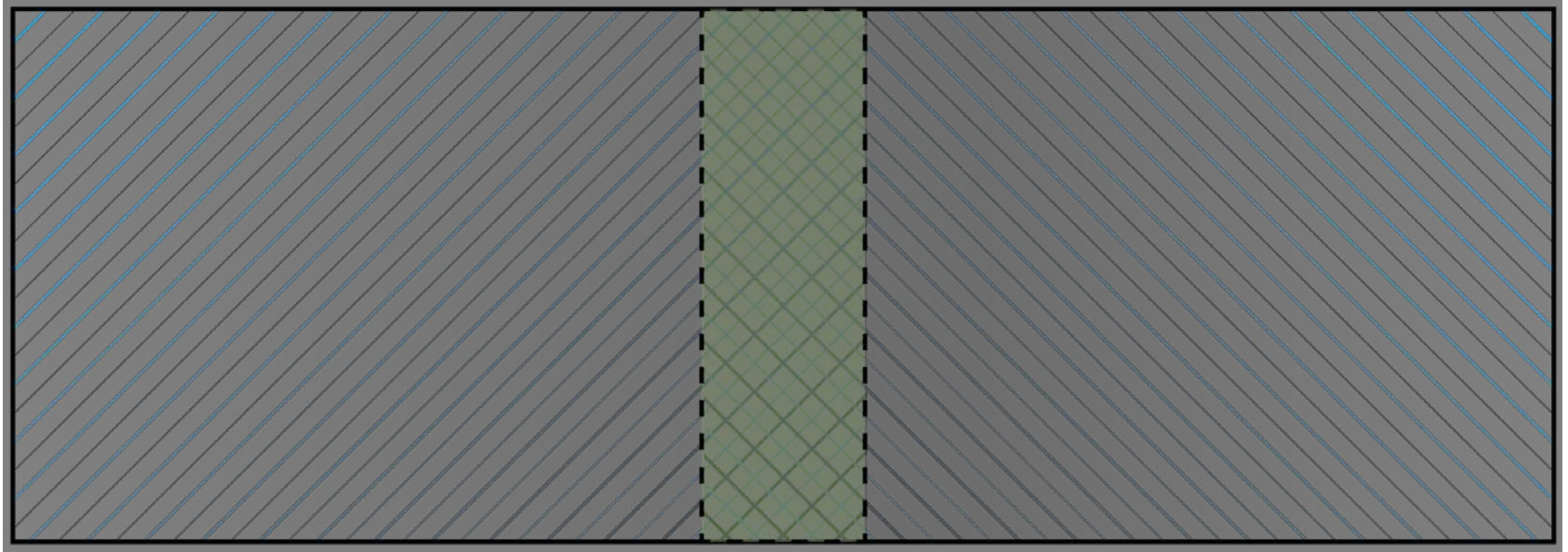


**With Bezel Correction**



**No Bezel Correction**

# Projector Overlap Correction
## Maintains proper aspect ratio and more…



**Projector Overlap**

Compensates for geometry and brightness differences between projectors to present a visually seamless image | These are known as Warp (geometry corrections) or Blend (intensity adjustments) | Mosaic + Quadro Sync compatible products have the graphics and compute performance necessary to make these adjustments in real-time.

# PNY's Service and Commitment

| | |
|---|---|
| 1 | 3 year warranty |
| 2 | Pre-sales support and configuration assistance |
| 3 | Support for all workstation brands and complex installations |
| 4 | Advanced replacement for mission-critical deployments |
| 5 | Dedicated Quadro Field Application Engineers |
| 6 | U.S. 800 number hotline and email technical support |
| 7 | Support escalation for prompt issue resolution |
| 8 | Certified software support and bug reporting |
| 9 | Published product support and training materials |
| 10 | All necessary accessories and driver software included |

NVIDIA® NVS™
AUTHORIZED PARTNER
PNY®

**Get The Advantage**

To learn more visit www.pny.com/configurator