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# Kramer Matrix Switchers

Modular and Fixed Pro AV Solutions

[KramerAV.com](http://KramerAV.com)

# Highlights at a Glance

## ■ **Expand Easily**

Kramer modular matrix switchers are expandable in groups of 2 inputs and/or 2 outputs to 16x16, 4 inputs and/or 4 outputs to 32x32 or in groups of 8 inputs and/or 8 outputs to 64x64.

## ■ **Flexible Infrastructure Conversion**

Copper, fiber and twisted pair can be used at the same time based on which input/output cards you choose.

The matrix receives digital or VGA signals from compatible Kramer transmitters and sends converted signals to compatible Kramer receivers.

## ■ **HDCP Compliant**

Kramer's modular matrix switcher system is fully HDCP compliant.

## ■ **Equalization & Re-Klocking™ Technology**

Kramer equalization & re-Klocking™ technology rebuilds the digital signal to travel longer distances.

## ■ **EDID Capture**

Copies and stores EDID from a display device.

## ■ **Dynamic Portprocessing™ Technology**

Each port adjusts its color space, color depth and audio presence based on the maximum capabilities of the display.

## ■ **Flexible Control Options**

Controlling is easy and versatile via the front panel, IR remote, RS-232 (K-Router™ Windows®-based software included), and Ethernet.

## ■ **Internal Test Pattern Generator**

The test pattern generator provides a first-go/no-go indication. It tests the inputs and outputs of the router from the source to the switcher and from the switcher to the display, without sacrificing a real source. It also highlights an additional built-in monitor port where any inputs can be routed.

## ■ **Future Proof**

Systems can be reconfigured by adding or removing modules or changing signal types. New cards are constantly being developed with the most up-to-date formats and technologies.

## ■ **Redundant Power Supply**

The VS-1616DN-EM, VS-3232DN-EM and VS-6464DN-EM include an optional redundant power supply for mission critical installations.

## ■ **A Complete System Can Include All Module Types**

A fully integrated modular matrix system can include DVI, HDMI™, HDCP (HDMI over DVI), VGA, HDBaseT (including XTRA range), HDBaseT Lite, HDMI with analog/digital audio, dual-link DVI, DVI over fiber, HDMI over twisted pair, and HDMI over fiber in a 16x16, 32x32 or 64x64 frame.

For more information, visit us at: [www.KramerAV.com](http://www.KramerAV.com)

# Complete Line of Modular Matrix Switchers

Any Format. Any Wire. Any AV Application.

Whatever the size, environment or complexity of your installation, Kramer modular matrix switchers provide optimal AV customization. Purchase a standalone unit. Add whatever formats you need.

## ■ Three Expandable Frame Sizes: 16x16, 32x32, 64x64

- VS-1616DN-EM: 2 inputs or outputs per I/O card
- VS-3232DN-EM: 4 inputs or outputs per I/O card
- VS-6464DN-EM: 8 inputs or outputs per I/O card

## ■ Built-In Test Pattern Generator

Test all inputs and outputs across the entire signal path from source to display. The built-in test pattern generator keeps you from sacrificing an input for testing or purchasing an expensive external test generator.

## ■ Convenient Variety of Control Options

Kramer's modular digital matrix switchers include front panel buttons, IR, RS-232 via touch screen controller or PC, and Ethernet.

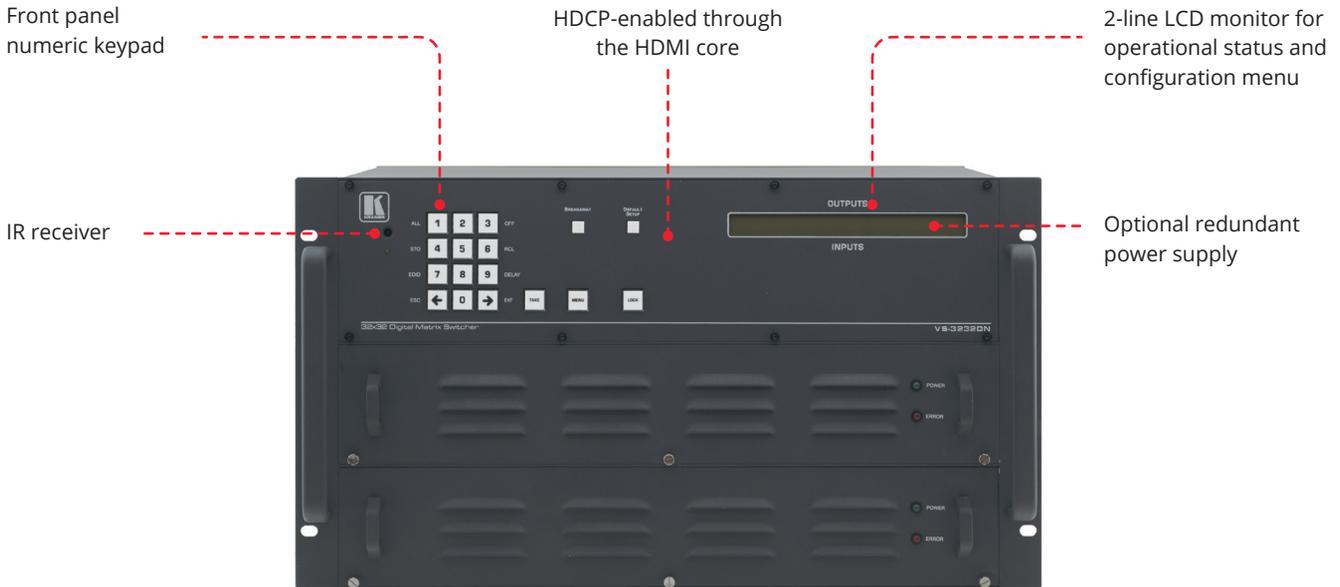
## ■ Present Solved. Future Proofed.

Our modular matrix switching approach offers a flexible solution for both current requirements and future technologies.

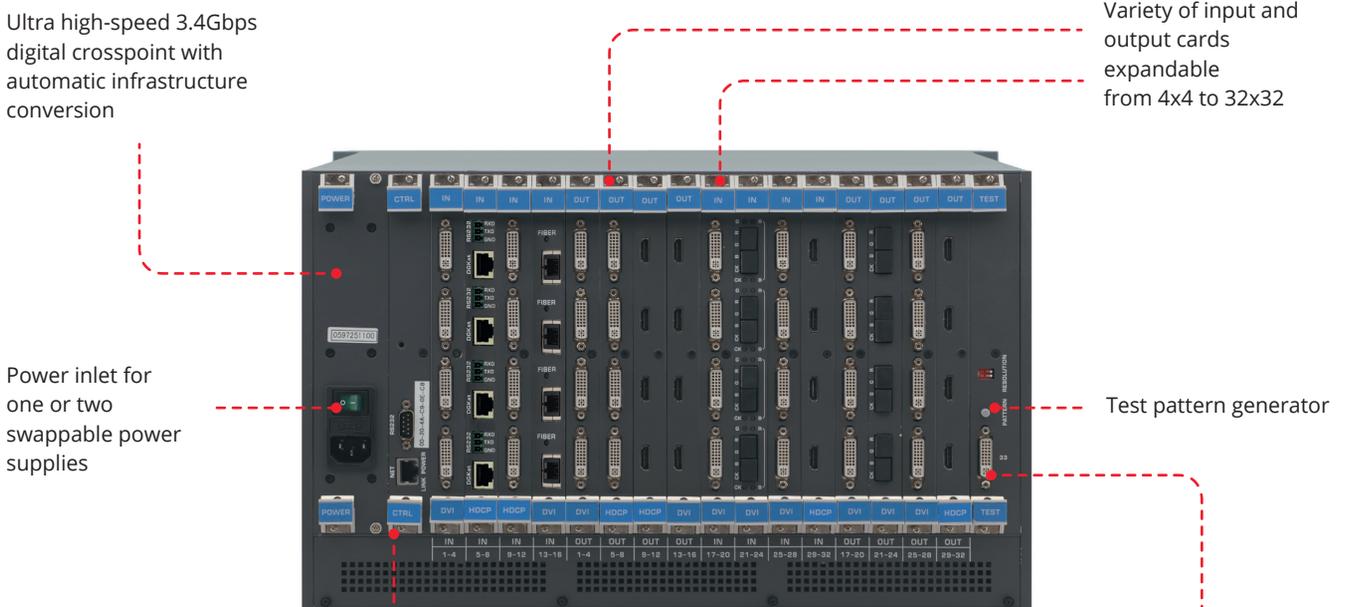


# 32x32 Frame Example Overview

Manage with **KRAMER** NETWORK



32x32 digital matrix switcher (front)



32x32 digital matrix switcher (back)

Management & communication card

Local monitoring output

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# Modular Matrix Switchers

Whatever the size, environment or complexity of your installation, Kramer modular matrix switchers offer optimal customization for all your AV needs and a complete end-to-end AV solution for both current requirements and future technologies.

Manage with **KRAMER**  
NETWORK



## VS-1616DN-EM

2x2 to 16x16 multi-format

\* A special version is available with IEC 60601-1 medical compliance

## VS-6464DN-EM

8x8 to 64x64 multi-format

## VS-3232DN-EM

4x4 to 32x32 multi-format

### Highlights

- Mix multiple signal formats in a single system: HDMI, HDBaseT, DGKat™, and fiber; distribute them using multiple cabling infrastructures
- Redundant hot swappable power supply (optional)
- Kramer Network support for switching, card status, port status, Firmware upgrades, and more
- Modular, easily replaceable, low-noise cooling system
- HDTV & HDCP compliance: DVI (HDCP), HDMI, F670, HDBaseT, HDMI with audio, and DGKat™ cards
- DGKat™ signal integration: Kramer's unique technology for converting TMDS, control and communication for signals over twisted pair cables. \*Use Kramer UNIKat cables for optimum performance.
- Max. data rate: 10.2Gbps (3.4Gbps per graphic channel) when using compatible cards

### Applications

Kramer modular matrix switchers can be used for just about any audio/video space or multiple spaces, including conference rooms, boardrooms, large hotel event rooms, sports bars, houses of worship, and public transportation venues.

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## Card Types For Modular Matrix Switchers

### Cards for the 16x16 and 32x32 Modular Chassis



UHD-IN2-F16/UHD-OUT2-F16



UHD-IN4-F32/UHD-OUT4-F32

#### UHD

- Max. data rate: 8.91Gbps (2.97Gbps per graphic channel)
- HDTV compatible; HDCP compliant
- HDMI support
- 3D pass-through
- Kramer equalization & re-Klocking™ technology



UHDA-IN2-F16/UHDA-OUT2-F16



UHDA-IN4-F32/UHDA-OUT4-F32

#### UHDA

- Analog audio embedding/de-embedding
- Max. data rate: 8.91Gbps (2.97Gbps per graphic channel)
- HDTV compatible; HDCP compliant
- HDMI support
- Audio: selectable stereo embedded/de-embedded/ARC

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### Cards for the 16x16 and 32x32 Modular Chassis



DTAxr-IN2-F16/DTAxr-OUT2-F16



DTAxr-IN4-F32/DTAxr-OUT4-F32

#### HDBaseT Extra Range with Analog Audio

- HDMI, analog audio, bidirectional RS-232, Ethernet, & IR over HDBaseT twisted pair
- Transmitter/receiver
- Max. data rate: 10.2Gbps (3.4Gbps per graphic channel)
- HDBaseT technology; HDTV compatible; HDCP compliant
- 3D pass-through
- System range: Up to 130m (430ft) at 2K, 100m (330ft) at 4K UHD



DT-IN2-F16/DT-OUT2-F16



DT-IN4-F32/DT-OUT4-F32

#### HDBaseT Lite

- HDMI, bidirectional RS-232 & IR over HDBaseT twisted pair receiver/transmitter
- Max. data rate: 10.2Gbps (3.4Gbps per graphic channel)
- HDBaseT technology; HDTV compatible; HDCP compliant
- 3D pass-through
- 2K & 4K support
- System range: Up to 70m (230ft) at 2K, 40m (130ft) at 4K UHD

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### Cards for the 16x16 and 32x32 Modular Chassis



HDBT-IN2-F16/HDBT-OUT2-F16



HDBT-IN4-F32/HDBT-OUT4-F32

#### HDBaseT Extra Range

- HDMI, bidirectional RS-232, Ethernet, & IR over HDBaseT twisted pair
- Transmitter/receiver
- Max. data rate: 6.75Gbps (2.25Gbps per graphic channel)
- HDBaseT technology; HDTV compatible; HDCP compliant
- 3D pass-through
- System range: Up to 130m (430ft) normal mode; up to 180m (590ft) ultra-mode (1080p @60Hz @24bpp) when using BC-UNIKat cables



HS-OUT2-F16

#### HDMI Scaler-Switcher

- Scaled output
- HDMI, HDCP, EDID
- Immediate frame-to-frame switching support

## Cards for the 16x16 and 32x32 Modular Chassis



HAD-IN2-F16/HAD-OUT2-F16



HAD-IN4-F32/HAD-OUT4-F32



HAA-IN2-F16/HAA-OUT2-F16



HAA-IN4-F32/HAA-OUT4-F32

### HDMI with Digital Audio

- Digital audio embedding/de-embedding
- Max. data rate: 6.75Gbps (2.25Gbps per graphic channel)
- HDTV compatible; HDCP compliant
- HDMI support
- Audio: SPDIF embedding up to 5.1 compressed channels

### HDMI with Analog Audio

- Analog audio embedding/de-embedding
- Max. data rate: 6.75Gbps (2.25Gbps per graphic channel)
- HDTV compatible; HDCP compliant
- HDMI support
- Audio: selectable stereo embedded/de-embedded/ARC

## Cards for the 16x16, 32x32 and 64x64 Modular Chassis



HDCP-IN2-F16/HDCP-OUT2-F16



HDCP-IN4-F32/HDCP-OUT4-F32



HDCP-IN8-F64/HDCP-OUT8-F64



DGKat-IN2-F16/DGKat-OUT2-F16



DGKat-IN4-F32/DGKat-OUT4-F32



DGKat-IN8-F64/DGKat-OUT8-F64

### HDCP (HDMI over DVI)

- Max. data rate: 6.75Gbps (2.25Gbps per graphic channel)
- HDTV compatible; HDCP compliant
- HDMI support
- 3D pass-through
- DVI connectors
- Kramer equalization & re-Klocking™ technology

### HDMI over Twisted Pair

- 4.95Gbps (1.65Gbps per graphic channel)
- System range: Up to 90m with 1080p@60Hz using BC-UNIKat cable
- HDTV compatible; HDCP compliant; DGKat™ signal integration
- 3D pass-through
- Bidirectional local RS-232 port
- Kramer equalization & re-Klocking™ technology
- Power Connect™ system

## Cards for the 16x16, 32x32 and 64x64 Modular Chassis



F670-IN2-F16/F670-OUT2-F16



F670-IN4-F32/F670-OUT4-F32



F670-IN8-F64/F670-OUT8-F64



F610-IN2-F16/F610-OUT2-F16



F610-IN4-F32/F610-OUT4-F32



F610-IN8-F64/F610-OUT8-F64

### HDMI over Fiber (670)

- Max. data rate: 6.75Gbps (2.25Gbps per graphic channel)
- HDTV compatible; HDCP compliant
- 3D pass-through
- Compatible with 670R/T
- SC fiber connectors

### DVI over Fiber (610)

- Max. data rate: 4.95Gbps (1.65Gbps per graphic channel)
- System range: Up to 500m (1640ft)
- HDTV compatible
- Compatible with Kramer 610R/T detachable optical transmitter and receiver over LC optical cable
- Multi-mode fiber optic cable with 4 simplex or 2 duplex LC fiber connectors
- 4 LC optical connectors for R, G, B & clock
- Kramer equalization & re-Klocking™ technology

### Cards for the 16x16 and 32x32 Modular Chassis



SDIA-IN2-F16



SDIA-IN4-F32

#### SDI with Analog Audio

- Max. data rate: 3Gbps
- Multi-standard operation: SDI, HD-SDI, 3G HD-SDI
- Stereo audio embedding



VGA-IN2-F16/VGA-OUT2-F16

#### VGA

- Max bandwidth: 450MHz
- Auto or user-defined resolution detection and phase mode
- Adjustable brightness and contrast

### Cards for the 16x16, 32x32 and 64x64 Modular Chassis



DVI-IN2-F16/DVI-OUT2-F16



DVI-IN4-F64/DVI-OUT4-F64



DVI-IN8-F64/DVI-OUT8-F64

#### DVI

- Max. data rate: 4.95Gbps (1.65Gbps per graphic channel)
- DVI rev. 1.0
- HDTV compatible
- Kramer equalization & re-Klocking™ technology



DL-IN1-F16/DL-OUT1-F16



DL-IN2-F32/DL-OUT2-F32

#### Dual Link DVI

- Dual-link DVI
- DVI rev. 1.0
- HDTV compatible
- Kramer equalization & re-Klocking™ technology

\* Dual-link DVI cards have half the inputs and outputs of the other cards

### Cards for the 16x16, 32x32 and 64x64 Modular Chassis



VGAA-IN2-F16/VGAA-OUT2-F16



VGAA-IN4-F32/VGAA-OUT4-F32



VGAA-IN8-F64/VGAA-OUT8-F64

#### VGA with Analog Audio

- Max. data rate: 4.95Gbps (1.65Gbps per graphic channel)
- HDTV compatible
- Analog audio over breakaway connector



AAD-IN2-F16/AAD-OUT2-F16



AAD-IN4-F32/AAD-OUT4-F32

#### Analog & Digital Audio

- Analog audio over balanced connector
- Digital audio over S/PDIF RCA connector

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## 4K60 HDMI Matrix Switchers

This family offers powerful 4K60 matrix switchers with a wide variety of sizes. Optional auto switching modes along with support for Kramer Step-in™ functionality (via DIP-31 auto switchers) give you tremendous flexibility and cost-effective scalability. Some products include audio embedding and de-embedding.



**VS-42UHD**  
4x2 4K60 4:2:0 HDMI  
Automatic Matrix Switcher

**VS-44UHD**  
4x4 4K60 4:2:0  
Matrix Switcher

**VS-48UHD**  
4x8 4K60 4:2:0  
Matrix Switcher

**VS-62H**  
6x2 4K60 4:2:0 HDMI  
Automatic Matrix Switcher

**VS-66UHD**  
6x6 4K60 4:2:0  
Matrix Switcher

**VS-84UHD**  
8x8 4K60 4:2:0  
Matrix Switcher

**VS-88UHD**  
8x8 4K60 4:2:0  
Matrix Switcher

### Highlights

- Embedded web pages for remote configuration and operation
- Versatile control options: RS-232, Ethernet, IR remote control, optional remote IR receiver, contact closure, and front-panel buttons
- Internal pattern generator
- Max. data rate: Up to 8.91Gbps (2.97Gbps per graphics channel)
- HDCP 1.4 compliant
- Breakaway HDMI and analog audio routing to two balanced audio ports

### Applications

The 4K60 HDMI matrix switcher family is designed for multiple-display installations such as conference rooms, lecture halls and hotel lobbies.

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# 4K60 4:4:4 HDMI Matrix Switchers

Powerful 4K60 matrix switchers giving you tremendous flexibility and cost-effective scalability.



## VS-42H2

4x2 4K HDR HDCP 2.2  
Matrix Switcher

## VS-44H2A

4x4 4K HDR HDCP 2.2  
Matrix Switchers with  
Audio De-embedding

## VS-88H2

8x8 4K HDR HDCP 2.2  
Matrix Switchers

### Highlights

- Active source detection for priority, last-connected automatic and manual switching
- HDCP 2.2 compliant
- Embedded web pages for remote configuration and operation
- Versatile control options: RS-232, Ethernet, IR remote control, contact closure, and front-panel buttons
- Max. data rate: Up to 17.82 Gbps (5.94 Gbps per graphics channel)

### Applications

The 4K60 HDMI matrix switcher family is designed for multiple-display installations such as conference rooms, lecture halls and hotel lobbies.

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## 4K60 HDMI Matrix Switchers with Analog Audio

This family offers powerful 4K60 matrix switchers with audio embedding and de-embedding. Optional auto switching modes along with support for Kramer Step-in™ functionality (via DIP-31 auto switchers).



### VS-44UHDA

4x4 4K60 4:2:0 HDMI  
Matrix Switcher with Audio  
Embedding/De-embedding

### VS-88UHDA

8x8 4K60 4:2:0 HDMI  
Matrix Switcher with Audio  
Embedding/De-embedding

### Highlights

- Highly flexible independent audio matrix with ARC support
- Step-in over HDMI
- Active source detection for priority, last-connected automatic and manual switching
- Embedded web pages for remote configuration and operation
- Versatile control options: RS-232, Ethernet, IR remote control, optional remote IR receiver, contact closure, and front-panel buttons
- Internal pattern generator
- Size – Standard 19" (1U). Rack ears included.

### Applications

The 4K60 HDMI matrix switcher family is designed for multiple-display installations such as conference rooms, lecture halls and hotel lobbies.

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# 4K HDMI/HDBaseT Matrix Switchers

Kramer 4K HDMI/HDBaseT matrix switchers offer complete AV solutions for switching, distribution, distance, and control in one multi-purpose package that unclutters the rack.



## VS-44DT

4x4 4K60 4:2:0  
HDMI/HDBaseT  
Extended-reach  
with PoE

## VS-62DT

6x2 4K60 4:2:0  
HDMI/HDBaseT  
Long-reach  
with PoE

## VS-622DT

6x2 4K60 4:2:0  
HDMI/HDBaseT  
with PoE, Power  
Amplifier & Maestro  
Room Automation

## VS-84UT

8x4 4K60 4:2:0 HDMI/  
HDBaseT 2.0 Matrix  
Switcher & Master Room  
Controller with PoE,  
Power Amplifier & Maestro  
Room Automation

## VS-88UT

8x8 4K60 4:2:0 HDMI/  
HDBaseT 2.0 Matrix  
Switcher and Master Room  
Controller with PoE, Power  
Amplifier & Maestro  
Room Automation

### Highlights

- Versatile combination of HDBaseT and HDMI inputs/outputs
- PoE provider
- Flexible control options: Embedded web server, Ethernet, RS-232, IR (remote included)
- HDTV & HDCP compliant

### Applications

This family is ideal for long-distance installations such as large hotel event rooms with floating walls, large conference rooms and lecture halls.

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# 1080p HDMI/HDBaseT Matrix Switcher

The VS-88DT matrix switcher routes up to eight HDMI and IR inputs to any or all of eight HDMI or HDBaseT and IR outputs for connection to compatible HDBaseT receivers like the TP-580RXR.



## VS-88DT

8x8 HDMI to HDMI or HDBaseT  
Matrix Switcher

### Highlights

- HDMI & HDBaseT support
- HDTV & HDCP compliant
- Max. data rate: 6.75Gbps (2.25Gbps per graphic channel)
- Flexible control options: Embedded web server, RS-232, IR remote (included), software application

### Applications

The VS-88DT is used for applications such as collaborative classrooms, hotel lobbies and rental and staging.

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# Seamless Matrix Switchers with Video Wall

Kramer 4K HDMI/HDBaseT matrix switchers offer complete AV solutions for switching, distribution, distance, and control in one multi-purpose package that unclutters the rack.



## VSM-4x4A

4x4 with Seamless Switching,  
Multi-scaling & Audio De-embedding

## VSM-4x4HFS

4x4 with Seamless Matrix Switching  
& Multi-scaling

### Highlights

- Operation modes: Seamless matrix switcher, video wall, dual display (PIP/P&P), and quad display
- PixPerfect™ scaling: Kramer's precision pixel mapping and advanced scaling technology
- Flexible control options: Front-panel buttons, IR remote control with on-screen display (OSD), RS-232, built-in web browser (Ethernet)
- 4 HDMI inputs and 4 scaled HDMI outputs
- Bezel correction options: In video wall mode

### Applications

These seamless matrix switchers are designed for presentation environments that require a variety of multi-source display options to either a single output or multiple outputs.

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## About Kramer

Kramer has been on the leading edge of Pro AV innovation for over 35 years. With hundreds of employees and partners serving thousands of customers across six continents, we remain committed to delivering smart technology products and solutions for a wide variety of markets and applications.

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## AV Beyond The Box

At our core, we are a technology company dedicated to finding better, smarter solutions, not bigger boxes. At Kramer, we go beyond the box with end-to-end solutions that blend cutting-edge cloud technologies, advanced software and time-tested hardware. The result is that our customers get the solutions they need without paying extra for features they don't need.

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## Customer Support

Our reputation is based on providing game-changing innovation for over three decades. We stand behind every product we ship and pride ourselves on maintaining personal relationships with our customers. That's what sets us apart from our competitors.



# AV BEYOND THE BOX



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