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Enterprise KVM Solutions by ATEN

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**ATEN®**  
Simply Better Connections™

# Application Guide

Matrix KVM Solution for  
Professional Presentation Systems



## 📌 *Transmitting Multiple Video Sources to Multiple Locations*

Compared to traditional printed or static advertising, modern audio-video advertising not only easily catches the eye, it more accurately delivers corporate imaging or product marketing information to the target audience. An increasing number of large corporations have set up multiple showrooms to display their products and to broadcast their corporate information or product introduction videos. In addition to corporate showrooms, venues such as theaters, convention centers, exhibition halls, museums, or libraries, need to present different videos to several showrooms, each targeted at a different audience.

What each of these venues have in common is the need to broadcast multiple video sources to multiple locations, so that each member of the audience can view a specific video depending on the room he is in. Since achieving this requires different content displayed in different locations, it would be of great benefit if there were a professional solution that enabled the centralized control of multiple video source devices and flexibly distributed their output to specifically targeted showrooms.

On the other hand, for some applications a single video output may need to be displayed in multiple locations simultaneously. Under these circumstances, the ability to easily broadcast a single video source to multiple displays is of great benefit to administrators. In still other applications, the video content may include interactive capability in which the audience can select suitable content according to the video instructions by clicking a mouse or pressing keys on the keyboard.

In addition to real-time, high quality video, audio output is another critical component that must be included when introducing a video distribution solution.

## 📌 *Mission*

For all of the applications described above, ATEN's mission is to develop a solution that offers centralized single console management of video source servers in tandem with distributing their video content for display at multiple locations. Considering the fact that these venues are typically large, the solution also needs to offer distance extension coupled with real-time video transmission. The video quality must be maintained over long-distance transmissions, and an audio signal should be carried in addition to the keyboard, mouse and video signals. Since transmitting a single video output to multiple displays may be required, offering various port operation modes is another key point that must be considered when developing this solution. Other important issues that must be included are comprehensive management functionality and expansion capability.

## 📌 Solution

### **Multiple Control, Ultimate Security** **Matrix KVM Switch**

*KM0532/KM0932 5/9-Console 32-Port Matrix KVM Switch*

*KM0032 32-Port Matrix Expansion KVM Switch*



ATEN Matrix KVM Switches are designed for modern data centers that require reliable, high security access and control of multiple servers. With non-blocked access and flexible expansion support, Matrix KVM switches offer high quality video sessions for secure, real-time control of your entire data center devices.

With automatic skew compensation and Auto Signal Compensation (ASC) techniques, Matrix KVM switches provide greatly enhanced video quality via Cat 5e/6 cabling – 1280x1024 @60Hz for up to 300 meters. The industry's first full screen Graphical User Interface offers a tree view list of installed devices – providing smooth navigation and convenient access and control – not only saving on training time and costs; but increasing user efficiency, as well.

The KM0932/KM0532 is the first Matrix KVM Switch to offer both audio and virtual media features. Being audio enabled, the sound output and beeps from the servers allow administrators to identify and troubleshoot system problems easily. The sound capability is also ideal for presentation facilities, or studio applications. The Virtual Media function allows USB storage devices to be shared among all the servers – allowing operators to perform file transfers or install applications and OS patches from a single console – reducing down-time and saving maintenance costs.

Servers can be power controlled remotely when the Matrix KVM Switch is used in conjunction with ALTUSEN's PN0108 Power Over the NET™ power management device. Its Power Association function enables the switch's KVM ports to be associated with a PN0108's power outlets – allowing power management of the server attached to the port from the switch's interface. If a server has a dual power supply, secondary power association support lets you associate a second outlet port and synchronize the operation for both power supplies.

The Matrix KVM switch is designed with dual power supplies, to minimize downtime and offer 24/7 reliability to ensure the highest level of availability for your server room or data center. With high availability, high reliability, high integration, and high security, an ATEN Matrix KVM Switch is the best solution for large server rooms and data centers.

## >> Console Modules & KVM Adapter Cables

The Matrix KVM Switch's modular design – using console modules to link the console devices (keyboards, monitors, and mice) to the switch, and KVM Adapter Cables to link the switch to the servers – allows for a high degree of platform and interface integration. You can have PS/2 and USB interfaces; Win, Linux, Mac, and Sun platforms; all working together smoothly on the same installation. The use of RJ-45 connectors and Cat 5e/6 cabling eliminates bulky traditional cables, and makes for more reliable throughput and a neat, efficient, uncluttered work environment.

### Console Modules



#### KA7230

##### PS/2-USB Console Module

- PS/2 and USB interface
- RS-232 Port
- Dual RJ-45 Ports
- External PC Port



#### KA7240

##### Virtual Media PS/2-USB Console Module

- PS/2 and USB interface
- RS-232 Port
- Dual RJ-45 Ports
- External PC Port
- Virtual Media Port
- Audio Ports
- Automatic Skew Compensation



### KVM Adapter Cables



Function	Model Number
For PS/2 computers	KA7120, KA9120
For Sun legacy computers	KA7130, KA9130
For serial devices	KA7140, KA9140
For USB computers (including Sun and Mac)	KA7170, KA9170
For USB computers – Virtual Media and Audio support	KA7176

## Application

### >> Assigning Dedicated Video Content to each showroom

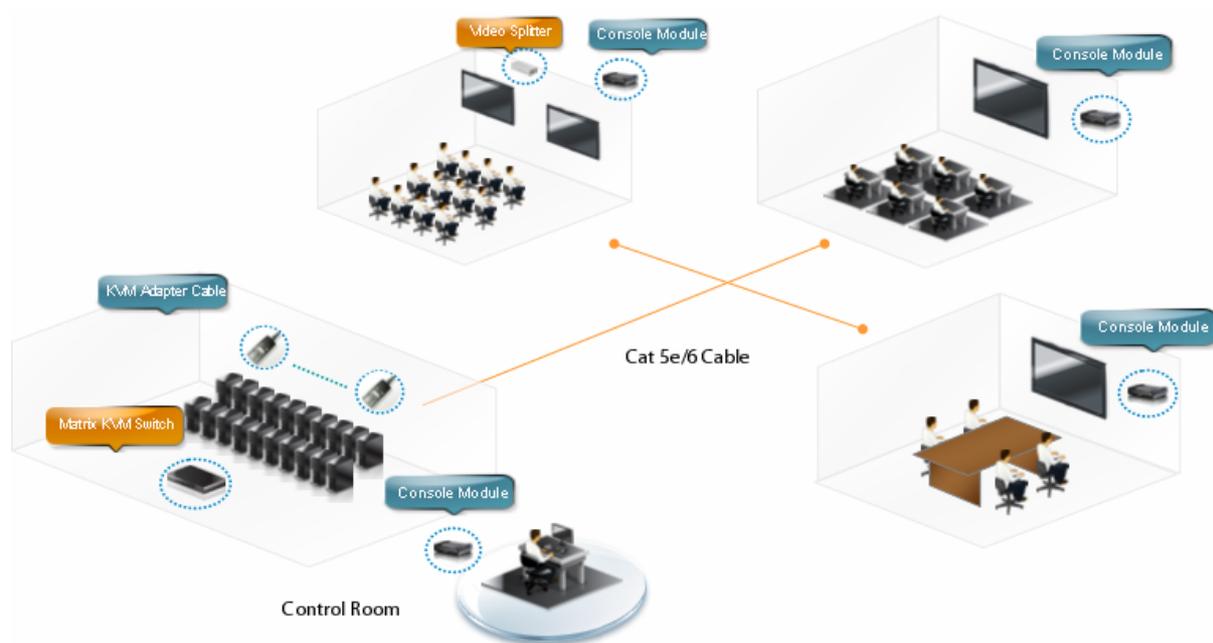
#### Applications: Large Corporations, Theaters, Convention Centers, Exhibition Halls, Museums, Libraries

With ATEN's Matrix KVM Switch solutions, the video source servers can be located in a secure room for centralized management. Each of the target displays – located in widely distributed showrooms – can be connected to the Matrix KVM Switch's console modules in order to receive real-time, high-quality video signals from the video source servers. An administrator is able to access and control each of the servers via his administrator's console that is connected to the Matrix KVM Switch.

A full screen GUI allows the administrator to conveniently navigate and access all the servers on the installation, at the same time as it enables him to specify a number of different port operation modes for the servers. In addition, each console module provides an RS-232 port which can be used to establish a serial terminal login. With a serial terminal login an administrator can control the KVM port access for all consoles connected to switch – any console can be assigned to access any KVM port.

An extra KVM port on the console module allows an administrator to connect his own computer – independent of the server room deployment – to the console. In this way, he can work on his own computer at the same time that he is managing the server room deployment. With virtual media support, it also allows the administrator to access and manage the distant servers as easily as if they were actually in front of them.

Finally, if more than one display device is installed in a showroom, an ATEN Video Splitter can be integrated in a Professional Presentation installation to duplicate the video signal from the source server to the showroom displays.



## Benefits

### Multiple Inputs and Outputs

Matrix KVM Switches allow 5 or 9 consoles to access up to 32 target devices while only taking up 1U of rack space. With multiple inputs and outputs, multiple servers housed in a secure, centralized control room can connect to multiple displays located in widely distributed showrooms.

### Distance Extension

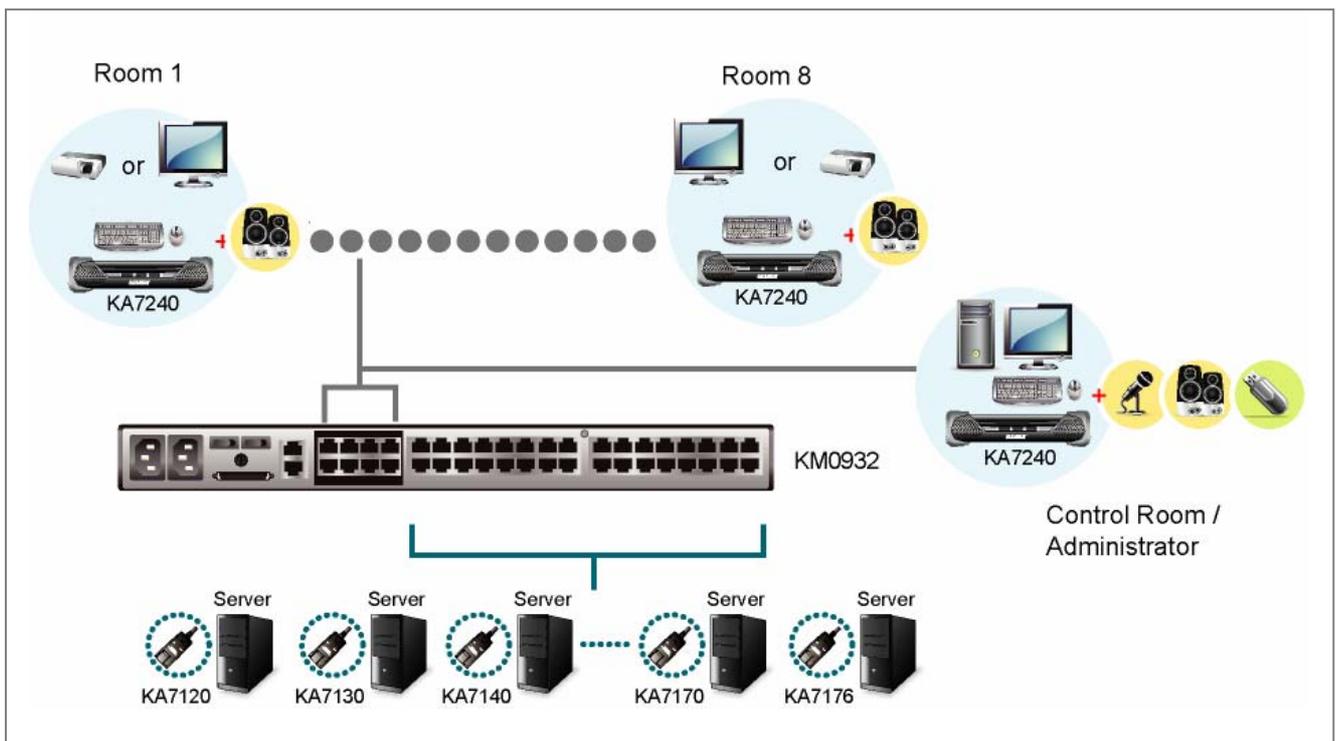
Matrix KVM Switches simplify cabling requirements and reduce costs by using Cat 5e/6 cable to connect the Console Modules to the switch, and the switch to the KVM Adapter Cables. This permits the distance between the consoles and the servers to be extended – up to 300 meters with 1280x1024@60Hz video resolution – allowing the distance between the video servers and the showrooms to be flexibly configured according to your needs.

### Superior Video Quality

Matrix KVM Switches provide high video quality – up to 1280x1024@60Hz. The video signals are transmitted via Cat 5e/6 cable to permit real-time throughput and true video quality. Auto Signal Compensation (ASC), assures optimum video resolution over extended distances, while an automatic skew compensation function corrects color phase and timing errors that occur over long distance transmissions – ensuring that real-time, high-quality video signals are well displayed in the showrooms.

### Audio Enabled

The Matrix KVM Switch supports audio functions for multimedia-capable devices connected with audio-capable KVM Adapter cables. Audio support allows the audio signal to be transmitted with the video display, resulting in high-quality content in the showrooms.



### RS-232 Port Access Control

Each of the Console Modules has a built-in RS-232 port. Administrators can establish a serial terminal login to the Console Module in order to control the KVM port access for all consoles connected to switch. Any console can be assigned to access any KVM port from a single interface point. This function is extremely useful for flexibly assigning a specific video source to each showroom.

### ♦ Display Expansion

The Matrix KVM Switch's Dual Root function offers the ability to expand your number of consoles/displays by linking two KM0932 switches together – resulting in an 18-console 64-port configuration. In addition, ATEN video splitters can be used when there is more than one display in a showroom. Video splitter integration not only allows you to flexibly expand the number of displays in the showroom, it also greatly reduces the total cost of the entire installation.

### ♦ Graphical User Interface

The Matrix KVM Switch offers an intuitive, user friendly graphical user interface (GUI) for both Console and Browser-based sessions. The composite integrated tree view of all connected devices allows an administrator to conveniently access and control of all the equipment deployed on the installation.

### ♦ Versatile Port Operation Modes

The Matrix KVM Solution offers versatile port operation modes for flexible server management. In Exclusive Mode, a user can gain exclusive viewing and control rights over a device for as long as he accesses it. Occupy Mode allows the first user to access a port to control that port while others can only view it. Share Mode enables multiple users to access and control a port on a cooperative basis. With Share and Occupy Mode support, the Matrix KVM Solution enables one single video source to be displayed on multiple monitors located in different

showrooms.

### ♦ Virtual Media

Virtual Media support lets an administrator map DVD/CD-ROMs and other storage media to servers that are connected to the switch with virtual media-capable KVM adapter cables. It allows an administrator to conduct file transfers, install applications and OS patches, and perform diagnostics on multiple selected servers as easily as if he was directly in front of the servers – boosting management efficiency.

### ♦ Interactive Capability

In comparison with the usual video matrix solutions found on the market, the Matrix KVM solution supports keyboard and mouse signal transmission in addition to the A/V signals. With keyboard and mouse input support, the Matrix KVM solution offers the ability to provide interactive content. The showroom audience can perform mouse clicks or key presses according to the video instructions (for example, choosing an item from a list, or responding to a questionnaire).

#### **About Video Splitters**

A video splitter not only duplicates the video/audio signal from a single source to multiple outputs, but also boosts the signal so it can be conveyed over long distances without degradation. Since the signal is boosted, video loss is kept at a minimum and multiple splitters can be cascaded to accommodate even more output displays.



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