

**ALTUSEN™**  
Enterprise KVM Solutions by ATEN

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**ATEN®**  
Simply Better Connections™

# Application Guide

## Matrix KVM Solution for Test Labs



## ↓ **Build a Professional Product Testing Lab**

As society increasingly relies on IT resources to improve the overall quality of life, an increasing number of products have been brought to market to help bring about that end. Since these IT products must be readily available, reliable, and secure, it is essential that each of them, whether hardware or software, must be thoroughly tested under practical conditions before being launched on the market. Since so many products need to be tested, however, and the tests are usually long and complicated, many companies are reluctant to outsource their testing to a professional test lab. Instead, they have chosen to create their own, specialized, test facilities.

Building and maintaining a professional test lab can be a daunting undertaking, since they must be set up with a number of non-compatible systems, several network options, and a wide diversity of management devices. There is also the effort involved in creating and running the tests, storing and analyzing the results, and tracking bugs, in addition to administrating the systems and network.

Other considerations include: 1) although the number of servers found in a professional test lab are many, the number of testing engineers that operate them is limited – each of them will be required to access and control multiple servers; 2) in order to successfully complete their tasks, the engineers may find it necessary to work in collaboration with each other; 3) the test procedures are distributed among several different servers and systems, and 4) the servers are usually centralized in a specific location, while the engineers are often dispersed – operating in several non-contiguous locations while performing their critical operations.

## ↓ **Mission**

For a Test Lab environment, ATEN's mission is to develop a solution that enables multiple consoles to control multiple servers. Since there are such a large number of servers and other IT devices running on such a wide variety of platforms in a test lab, multiplatform support and serial device compatibility are key functional requirements. In addition, since the engineers are located in several non-contiguous areas while performing their critical operations it is essential that the solution provides secure access and high quality data throughput between the consoles and the servers over extended distances – real-time, high quality video, audio and mouse response is of the utmost importance. Finally, to meet the need for collaboration, the solution has to allow an engineer to exclusively control or share access with other engineers. As an added benefit, the solution should also support virtual media in order to facilitate software distribution and updates, as well as reduce down-time and save maintenance costs.

## 📌 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



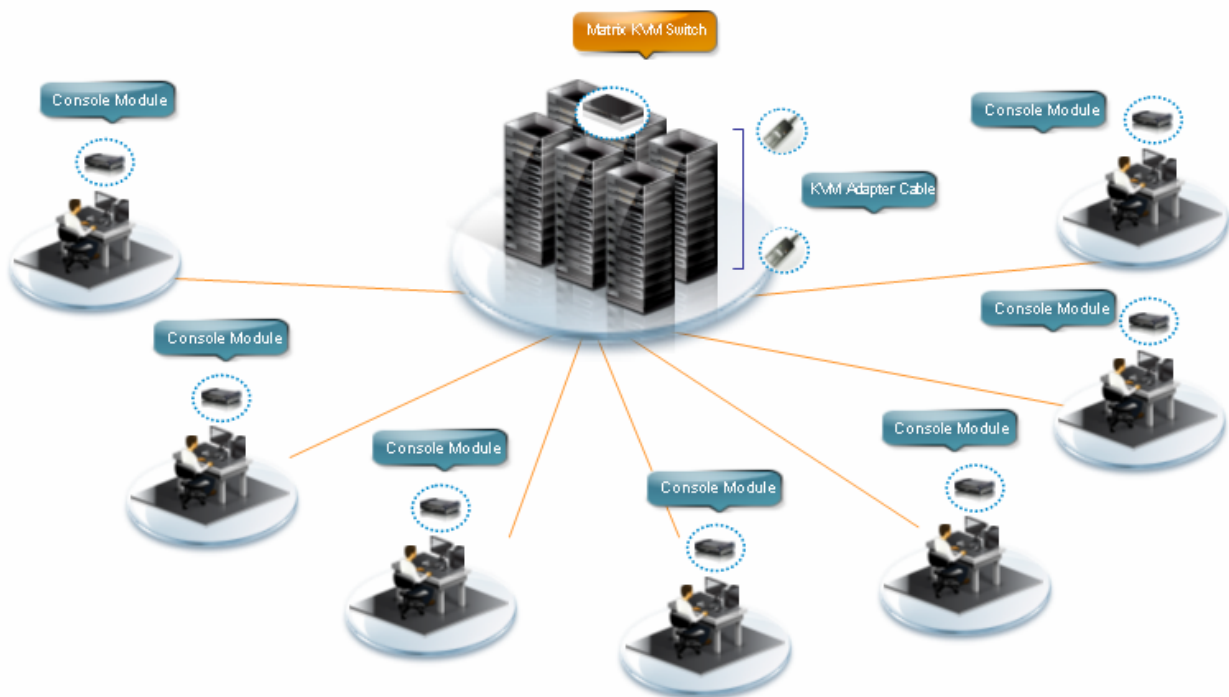
Function	Model Number
For PS/2 computers	KA7120, KA9120
For Sun legacy computers	KA7130, KA9130
For serial devices	KA7140, KA9140
For USB computers (including Sun and Mac)	KA7170, KA9170
For USB computers – Virtual Media and Audio support	KA7176

## Application

### >> Matrix KVM Solution for Test Labs

In a Matrix KVM configuration, 9 independent KVM consoles can be located in several areas up to 300m away from the servers which are centralized in a specific area. Each of the consoles is able to access and control all of the servers on the installation. The installation utilizes Cat 5e/6 cabling to support data communications over such an extended distance – allowing secure access and high quality audio/video sessions. Since the Matrix KVM Switch uses Console Modules and KVM Adapter Cables, it provides a high degree of platform and interface integration. Win, Linux, Mac, and Sun platforms, using PS/2 and USB interfaces, can all be integrated and work together smoothly on the same installation.

An extra KVM port on the console module allows an engineer 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 the Matrix KVM Switch's additional features, such as virtual media, and a built-in RS-232 port, the Matrix KVM Solution allows operators to access and manage the distant servers as easily as if they were actually in front of them.



## Benefits

### Secure Distance Extension

Use of Cat 5e/6 cable to connect the Console Modules to the Matrix KVM Switch, and the switch to the KVM Adapter Cables, simplifies the cabling layout and is far more cost-efficient than using the bulky, expensive, cables typically used with KVM switches. The greatest benefit comes from being able to extend the distance between the consoles and the servers to up to 300m – permitting all widely located consoles to easily and conveniently control and access the servers that are located in a centralized, specific area.

### Multiplatform Support

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; PC, Mac, Sun, and Serial platforms; all

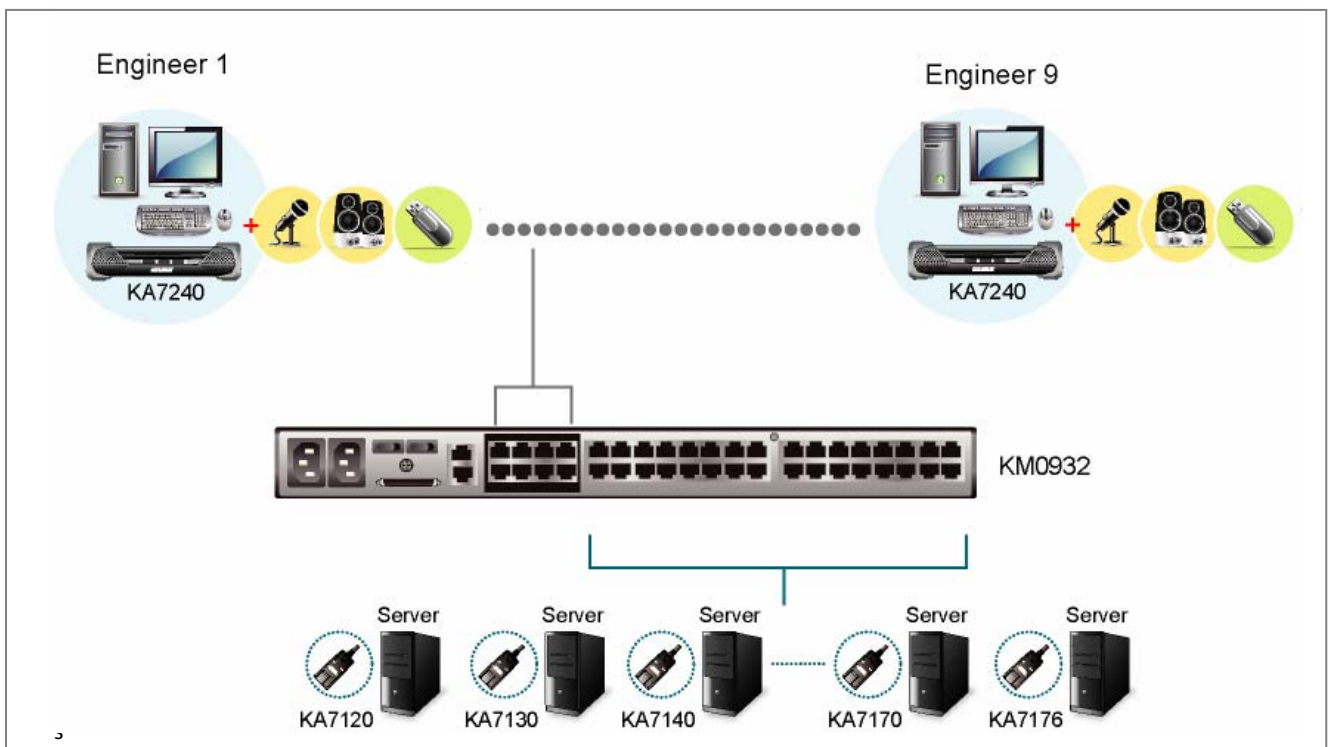
moothly on the same installation – easily supporting the variety of systems and servers typically found in a test lab.

### Console Expansion

As a company grows, its test lab requirements also grow. The Matrix KVM Switch's flexible expansion capabilities allow you add consoles and server ports as you need them. For example, the switch's Dual Root function allows you to link a second KM0932 to the first one – thereby achieving an 18-console 64-port configuration. Additional switches can also be cascaded and daisy-chained from a master Matrix KVM Switch to expand the number of servers on the installation, so that your test lab deployment costs can keep exact pace with your test lab growth.

### 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 offers convenient





navigation, access, and control to the engineers as they perform their test operations.

#### ♦ Versatile Port Operation Modes

Since in a busy test lab, multiple operators often access the servers at the same time, the Matrix KVM Solution supports versatile port operation modes: When a port is set to Exclusive Mode, the operator has exclusive viewing rights and operational control over the device connected to that port for as long as he continues to access it. Setting a port to Occupy Mode allows the first operator to access a port to view and control that port while other operators can only view it. If a port is set to Share Mode, multiple operators can view and control the port on a cooperative basis. Flexible Port Operation Modes enable users of the Matrix KVM Solution to collaborate with each other for the most efficient management solutions possible.

#### ♦ 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. The Matrix KVM Solution delivers real-time, high quality, video sessions for test lab engineers who spend long hours working on the servers as they perform their critical operations.

#### ♦ Power Association

Used in conjunction with ALTUSEN's PN0108 Power Over the NET™ power management device, a Matrix KVM Switch port can be associated with a power outlet – allowing power operation management of the server attached to the port from the switch's interface.

Managing a server's power operation from a single interface reduces maintenance time, and increases management efficiency. Power Association also supports associating a second outlet port (provided the server has a dual power supply), and permits the synchronizing the operation of both power supplies.

#### ♦ 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. Virtual Media 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.

#### ♦ 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 monitor the usage of all the consoles and all the ports. This function is ideal for displaying all of the consoles' video output for convenient monitoring of all operations, with the entire installation capable of being viewed on a port-by-port basis.

#### ♦ Audio Enabled

The Matrix KVM Switch supports audio functions for multimedia-capable devices connected with audio-capable KVM Adapter cables. Sound output and beeps from the servers can be heard on the console speakers – allowing an engineer to identify and troubleshoot system problems at an early stage, for timely resolution of audio related testing problems.



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