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Application Guide

Digital KVM Extension Solution

for Production Line

Manufacturing and Production System Management

Concurrent with developments in IT, most factories have adopted modern and automated production line technology. More and more systems have been designed to control manufacturing processes and efficient management solutions are essential. The distances between production lines in factories can be long, and it is inefficient for administrators to travel all over a plant to monitor or maintain systems on each production line individually. A management solution where the status and system data of each production line is transmitted to a control room for centralized management would be a great benefit.

Furthermore, a lot of people pass in and out of factory buildings, and the harsh environments of many plants, such as extreme heat or dust, are not always suitable for sensitive computer equipment. So locating computerized management systems at the production line itself may be unsafe or even hazardous. In addition, if further testing equipment is required at the production line – such as for IT products, LCD monitors, and more -- the amount of systems to be integrated on site becomes unwieldy and thus management becomes problematic.

In this situation, the demand for extending the distance between console and server increases. The network infrastructure of most factories is configured so that most control and management processes are operated via a network. So a solution that utilized an existing network environment for improving working efficiency would be ideal. Flexibility is also major concern for a factory in adopting a new solution, since further production lines may be added in the future or current ones upgraded. Serial functionality is also a prerequisite for a new solution, since the majority of production line systems use the serial interface for control. Finally, excellent video quality is also required in some production lines, such as in LCD panel manufacturing.

Mission

ATEN's challenge is to offer an efficient extension solution which enables users to locate the system equipment in a safe place or extend the console to a control room for centralized management. Achieving this in tandem with taking advantage of existing LAN environments to minimize installation costs is an important consideration. Furthermore, offering a flexible and expandable solution that ensures high quality video signals to be obtained despite long-distance transmissions is also a mission goal.

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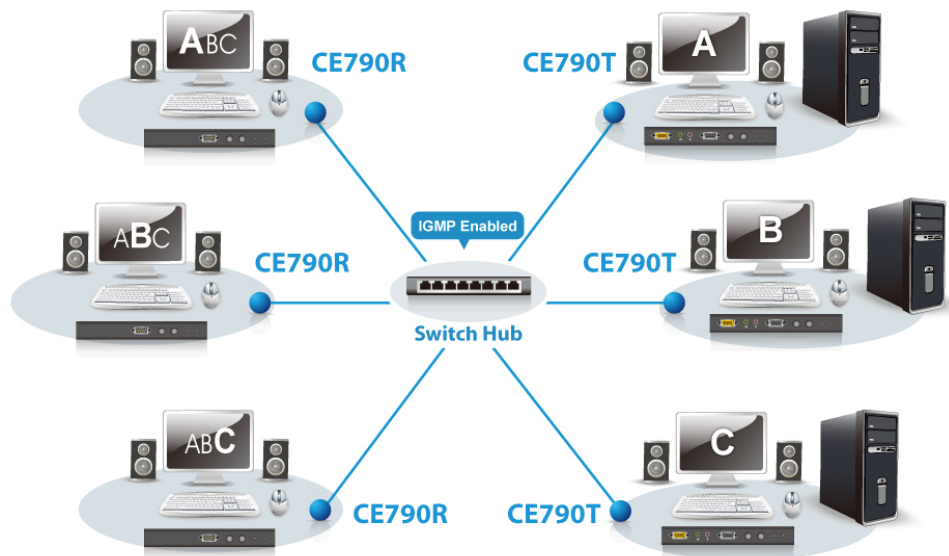Simply Better Connections™

Solution

UNLIMITED ACCESS from Anywhere Over the Intranet
CE790 Digital KVM Extender

ATEN CE790 Digital KVM Extension Solution Allows Unlimited Access and Complete Control of Your Computing Resources Over the Intranet

The CE790 is an IP based KVM Extender system with RS-232 serial functionality that allows access to a computer system from a remote USB console (USB keyboard, monitor, and USB mouse) located anywhere on your existing network infrastructure.

The CE790 system consists of a transmitter (CE790T) that connects to the computer system and a receiver (CE790R) that is located on the user's desk. For even greater flexibility, any number of transmitters can be configured with any number of receivers, providing access and control of various computing resources from any number of remote consoles via a standard TCP/IP network. Furthermore, the CE790 supports high quality digital audio and video streaming transmissions, ensuring that users obtain superior A/V signals from anywhere on the Intranet with no distance limitation. Each unit is assigned a unique IP address and connects via a single Cat 5e cable, making the CE790 Digital KVM Extender system perfect for use in the installation where you need multiple consoles in conveniently accessible locations, such as control rooms.

* The CE790 can be installed in point to point, point to multipoint and multipoint to multipoint configurations. Multipoint configurations require a separate purchase - contact your dealer for details.
* In multipoint configurations, the IGMP (Internet Group Management Protocol) function of your network switches/hubs should be enabled to avoid deterioration of data throughput. If you do   not know how to enable IGMP, please contact your network administrator.

⊗ Basic Application - Point-to-Point Configurations

>> Locating a Server at the Production Line and Extending its Console to the Office
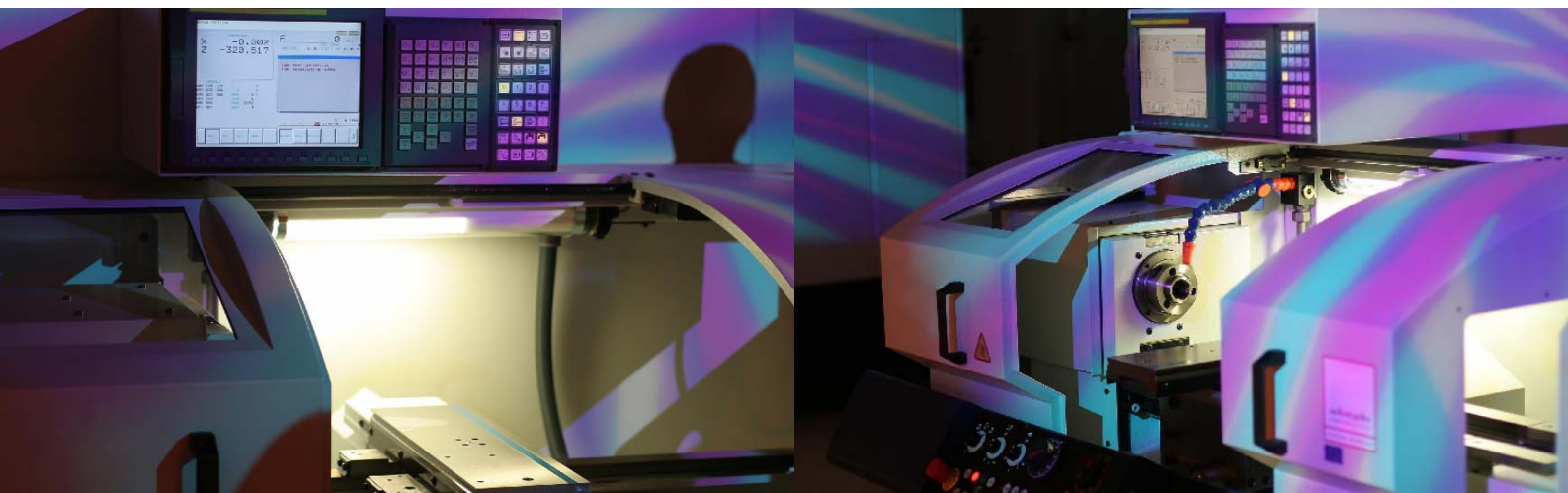
Connect a transmitter (CE790T) to the server which is located at the production line, and install one receiver

(CE790R) for its console in your office. Then plug the LAN cable into the transmitter and receiver's RJ-45 sockets.

You are ready to control and monitor the server from your office. We know that you may need to control the

computer on your desk simultaneously, so integrating an ATEN compatible KVM switch in the installation enables

you to control two computing resources via a single console.

Basic Application - Point-to-Point Configurations

>> Operating the Console at the Production Line and Locating the System Equipment in a Safe Place
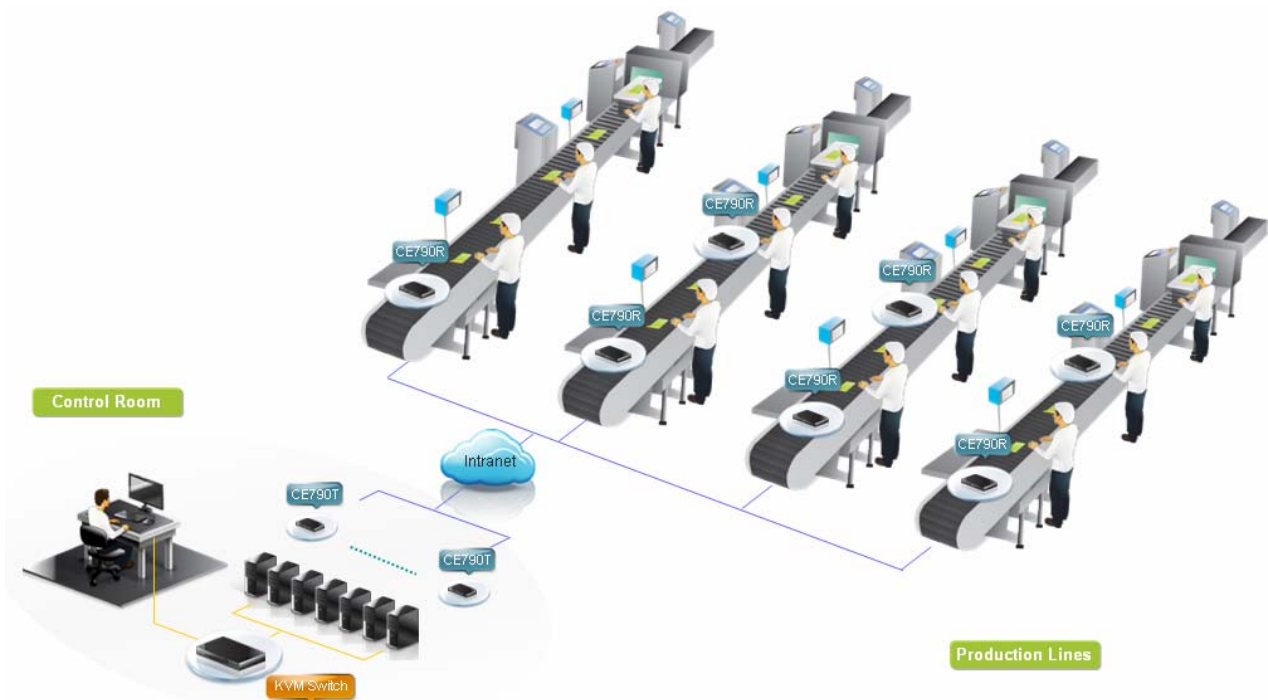
Separately connect a transmitter and a receiver for a server which is located in a safe place and a console which is installed at the production line. Then, connect the transmitter and receiver to the existing LAN. This allows an operator to control the system directly, and even obtain high quality video signals for testing at the production line, as well as keeping the server away from harsh environmental influences.

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Advanced Application - Multipoint-to-Multipoint Configurations

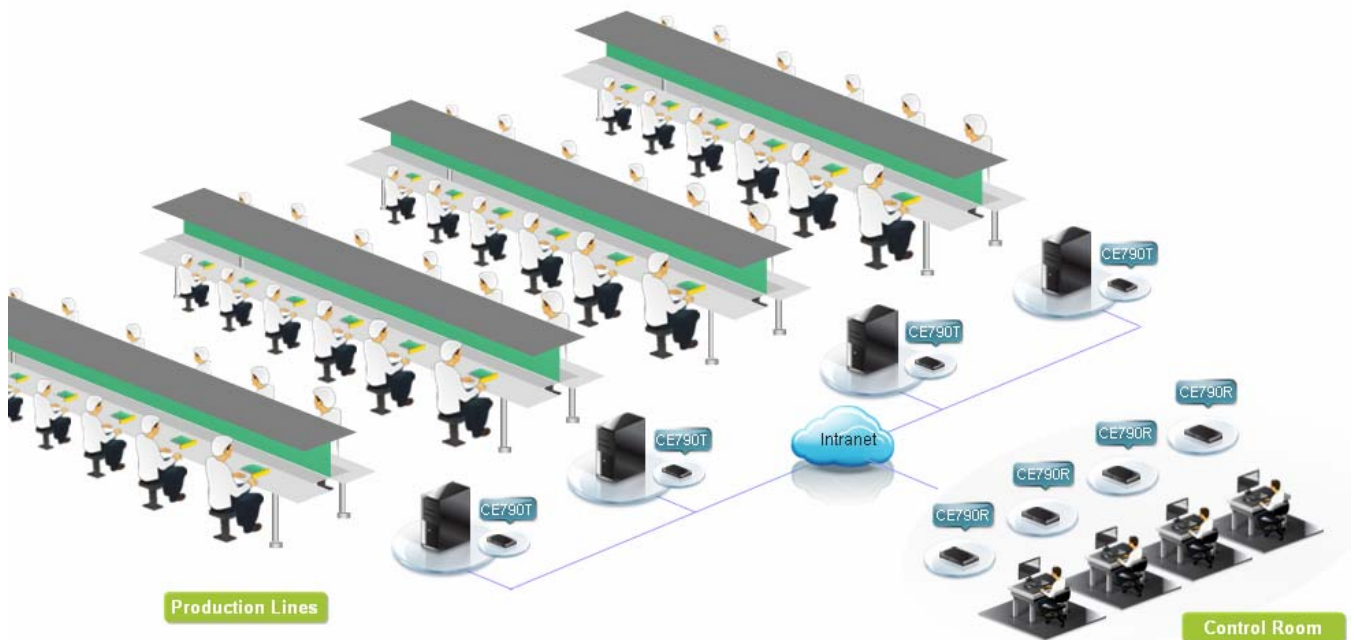### >> Implementing Control in the Production Line as well as Secure Placement of Servers

Connect the receivers (CE790R) connected to the console devices in the manufacturing lines and the transmitters (CE790T) located in the server room to the existing LAN. Then the operators who work at the production line can directly access the servers which are located in server room. This also allows administrators to centrally manage all the servers in the server room, where the IT administrators also can connect another console to the console ports of a compatible ATEN rack KVM switch to manage multiple servers from a single console. Moreover, with RS-232 functionality, this Digital KVM Extension solution also allows the installation of a touchscreen as the console device for operation at the production line.

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⬊ *Advanced Application - Multipoint-to-Multipoint Configurations*

>> *Centralized Management of Multiple Systems Located at Production Lines*

Install a transmitter (CE790T) for each server located at a production line and set up the consoles with the amount of receivers (CE790R) depending on the number of administrators. After connecting all the transmitters and receivers to the existing local network, the administrators who stay in the control room are able to centralize control of servers which are distributed throughout different production lines. In addition, with this flexible configuration, you are free to add a transmitter or receiver when the number of servers or administrator increases.

KVM Switches – *An Essential Server Management Device*

A KVM (Keyboard, Video and Mouse) switch is an advanced, hardware-based solution that allows centralized access to multiple computers easily and conveniently from a single keyboard, monitor, and mouse. A KVM switch is useful in an extensive range of environments, suitable for SOHO users, small and medium businesses, and large corporations. ATEN offers a wide range of KVM switch to meet various needs. Please visit our website for more product information.

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⬇ *Benefits*

- ◆ **Secure Placement, Centralized Management** – with Transmitter/Receiver module design, the Digital KVM Extension Solution allows users to extend the distance between the KVM console and PC/server.

- ◆ **Transmits over Intranet** – works over existing LAN environment – unlimited distance, no trailing smear. With this feature, the solution greatly reduces the total installation cost and time, especially in large public places.

- ◆ **Flexible Configurations** – allows flexible point-to-point, point-to-multipoint, and multipoint-to-multipoint administration. It fulfills the expansion need of console/computer by allowing the easy addition of the Transmitter/Receiver to the installation. Furthermore, it also greatly reduces maintenance time and costs.

- ◆ **Integration with KVM switch** – this solution offers flexibility and efficiency by integrating a Desktop KVM switch with the receiver for controlling the second computer source at the operator's desk or installing a rack KVM switch with the transmitters for centralized management of all servers/systems.

- ◆ **Digital Audio/Video Streaming** – This allows A/V signals transmitted through intranet to maintain an excellent quality (up to 1920 x 1080). With superior video signals support, it ideal for video-related product manufacturing lines such as LCD monitor.

- ◆ **Easy-to-use** – Provides an intuitive On Screen Display (OSD) on both the transmitter and receiver units for easy setup and operation. Also, an administrator is able to efficiently find all transmitters with the IP detection function and access to one server connected to a Transmitter through its IP address. Furthermore, with the Broadcast Mode feature which allows one single source to be displayed on multiple monitors, this solution offers more flexibility for various applications at production lines.

- ◆ **RS-232 serial functionality support** – allows users to connect to a serial terminal for configuration and serial devices such as touchscreens and barcode scanners. It's especially suitable for the factory environment where operators are unable to use a keyboard and mouse in manufacturing lines but instead use a touchscreen. Also, this functionality also offers the possibility for operators to scan the necessary data which need to be transmitted to the server located in a secure room by using barcode scanners.

- ◆ **Dual Console Operation** – allows control your computing source from both the receiver and transmitter consoles. Connecting the console devices to the console ports of a transmitter enables an administrator to manage the server conveniently and simultaneously while an operator can control from where the receiver is placed.

* The specification and pictures are subject to change without notice.

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