

KE8950/KE8952 Product Guide

Enterprise Product Department
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▶ **KE8950/KE8952 Introduction**



- Description: 4K HDMI KVM over IP Extender
- MSRP: KE8950(1T+1R) \$3290 KE8952(1T+1R) \$3590
- Release Date: Q3 2017
- Key features:
 - HDMI compatible with HDCP up to **4K 3840 x 2160 @30Hz** (4:4:4)
 - **SFP port for use with fiber-optic transceivers** , provides the option to use an optical Ethernet network interface up to 10 km
 - **PoE** allows the KE8952 to receive power and communications over a single Ethernet cable
 - Extender mode (1 x 1) or Matrix mode (m x n)
 - Instant Fast Port Switching
 - Multi-Display and Video Wall application
 - Secured data transmission (**AES-128** bit encryption)
- The difference between KE8950/8952 is PoE (KE8952)

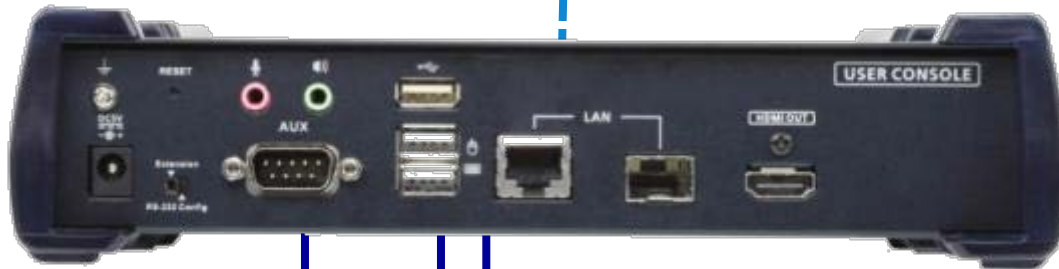
▶ KE8950/8952 Transmitter



KE8950/8952 Receiver

ATEN

LAN



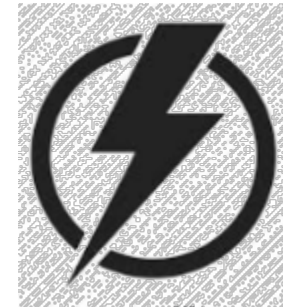
HDMI Amazing Video 4K Resolution

1 HDMI Inputs up to 3840 x 2160 @30HZ 4:4:4

SFP optical module

SFP optical module
transmission distance up to **10km**

Multi-Mode module 2A-136G 550m
Single-Mode module 2A-137G 10km



comply with 802.3at

2017/11/16

KE Series Comparison



Model	KE6900ST	KE6900	KE6940	KE8950	KE8952
Video Resolution	DVI-D	DVI-I	2*DVI-I	HDMI	HDMI
	1920*1200@60Hz	1920*1200@60Hz	1920*1200@60Hz	3840*2160 @30Hz	3840*2160 @30Hz
HDCP	N	N	N	1.4	1.4
Audio	N	Y	Y	Y	Y
Mouse Emulation	Y	Y	Y	Y	Y
Tx Local Console	N	Y	Y	Y	Y
Fast Switching	Y	Y	Y	Y	Y
Dual Video Interface	N	N	Y	N	N
Mixed sources	Y	Y	Y	Y	Y
Video Wall	Y	Y	Y	Y	Y
RS-232	Y	Y	Y	Y	Y
OSD	N	Y	Y	Y	Y
Virtual media	Y	Y	Y	Y	Y
Virtual USB	N	Y	Y	Y	Y
PoE	N	N	N	N	Y
LAN	1 Gbps	1 Gbps	1 Gbps	1 Gbps	1 Gbps
SFP	N	N	N	Y SM to 10km MM to 550m	Y SM to 10km MM to 550m
IR control	N	N	N	N	N
Cable included	DVI-D USB (TX)	DVI-D USB (TX)	DVI-D USB(TX)	HDMI-USB(TX)	HDMI USB(TX) No power adapter
MSRP(1T or 1R)	\$699	\$1,099	\$1,499	\$1,645 MM fiber \$95 SM fiber \$175	\$1,795 MM fiber \$95 SM fiber \$175

▶ *What makes KE Series Different?*





► Configuration Flexibility



Receiver Local OSD

RS-232 or Telnet

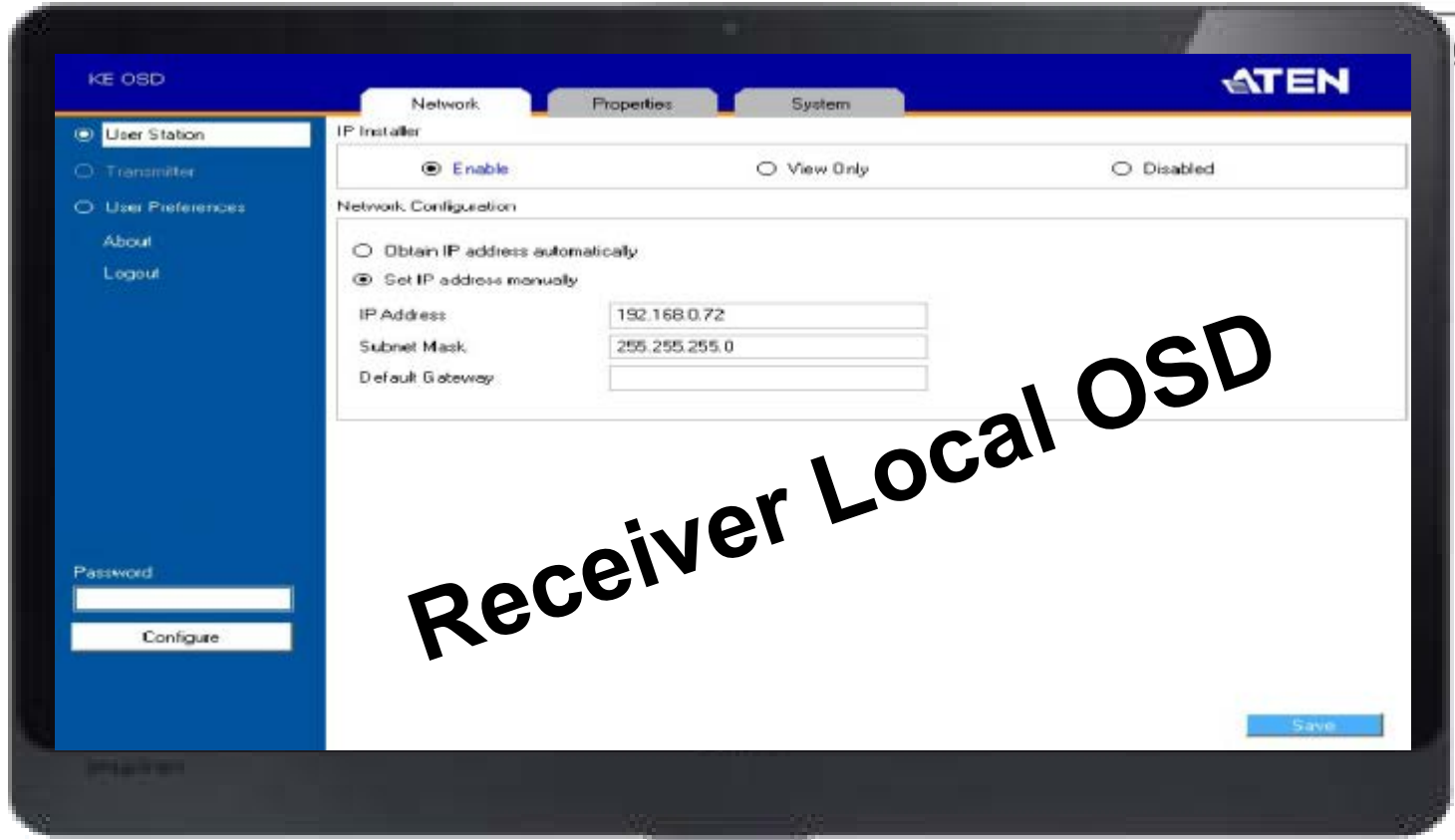
CCKM Matrix Manager



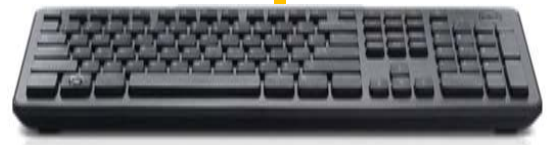
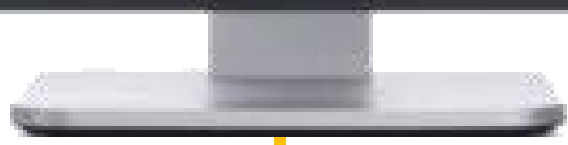
Multiple Ways for Configuration



Configuration – Receiver Local OSD



Receiver Local OSD



Configuration Flexibility – Matrix Manager



Matrix Manager

Dashboard Device Management User Management System Logs Maintenance

User Stations Transmitters Channels Profiles Video Wall Preview Test Welcome to the Matrix Manager

User Stations
KE8950R1
KE8950R71
KE8950R60

Unmanaged User Stations

User Station Video Group

Network Properties System Permissions

IP Installer

Enabled View Only Disabled

Network Configuration

Obtain IP address automatically
 Set IP address manually

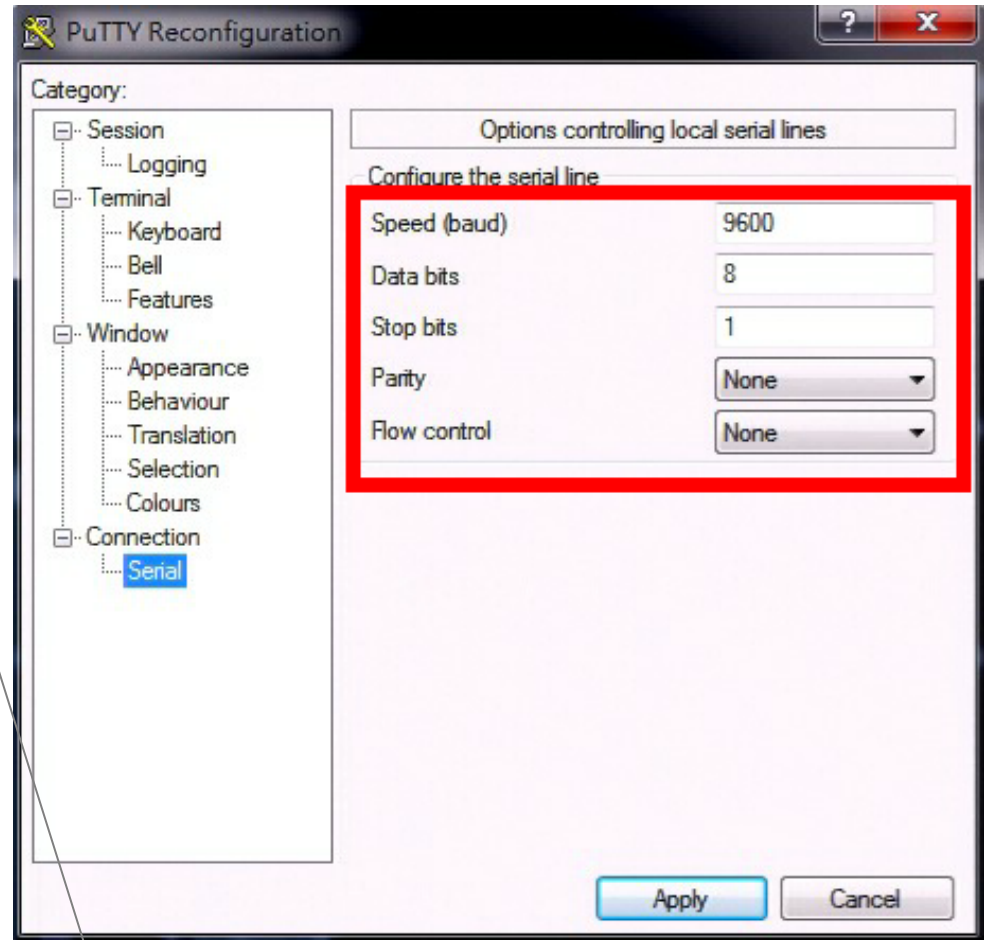
IP Address: 192.168.0.70
Subnet Mask: 255.255.255.0
Default Gateway: 192.168.0.254

Through Matrix Manager

Configuration Flexibility – RS232



- Text Menu through RS232



***Don't forget to switch to RS-232 Config setting**

Configuration Flexibility – RS232



Text Menu through RS232

```
COM6 - PuTTY  
Welcome to ATEN KE  
Copyright (c) 2009-  
--Press U/u to s  
--Press ENTER to s
```

```
COM6 - PuTTY  
Welcome to ATEN KE8950 User Station  
Copyright(c) 2009-2013 ATEN International Co., Ltd.  
--Press U/u to start CLI session  
--Press ENTER to start TextMenu :  
Password:*****  
+++++  
KE8950 User Station  
-- -- -- -- --  
User Station Confiuration  
+++++  
1. Network  
2. Properties  
3. System  
  
Q. Logout  
Select one: █
```

Configuration Flexibility - Telnet



- Through Telnet port 23

```
192.168.0.71 - PuTTY

Welcome to ATEN KE6940 User Station
Copyright(c) 2009-2013 ATEN International Co., Ltd.

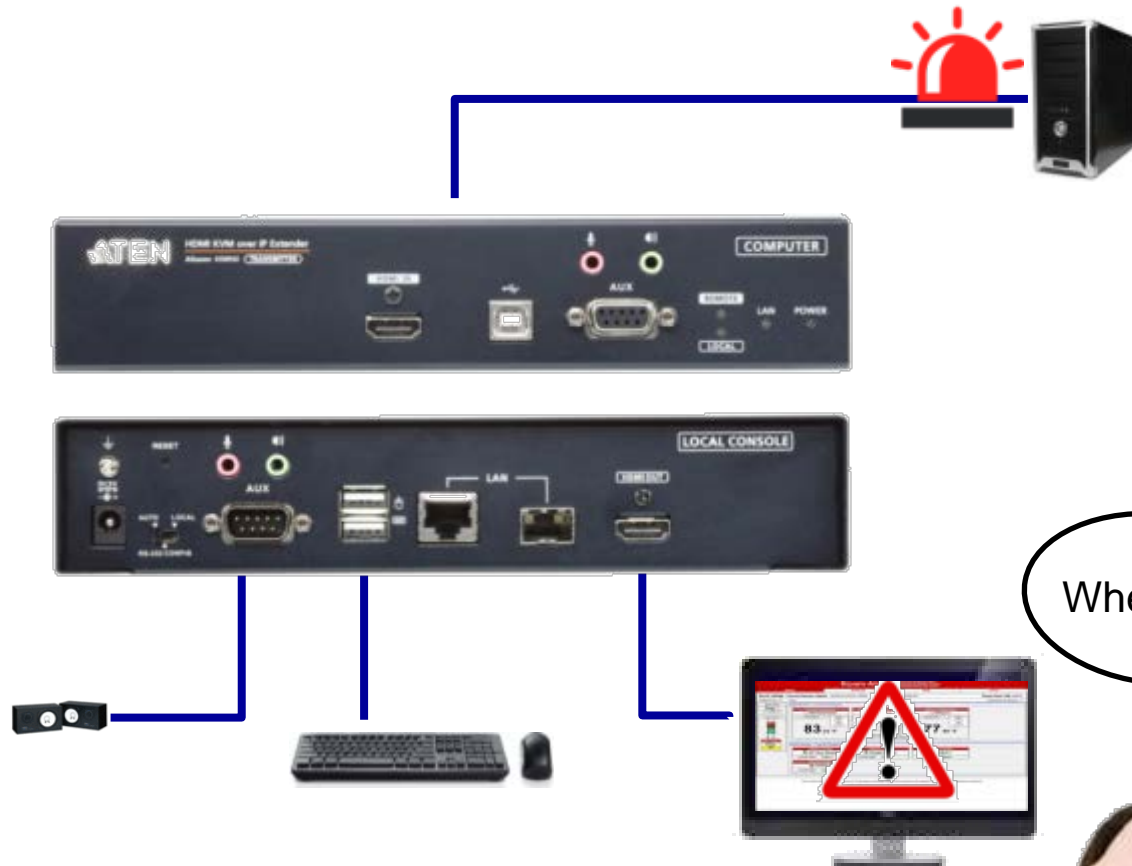
Password:*****

+++++
KE6940 User Station
  -- -- -- -- --
      User Station Confiuration
+++++
  1. Network
  2. Properties
  3. System

  Q. Logout

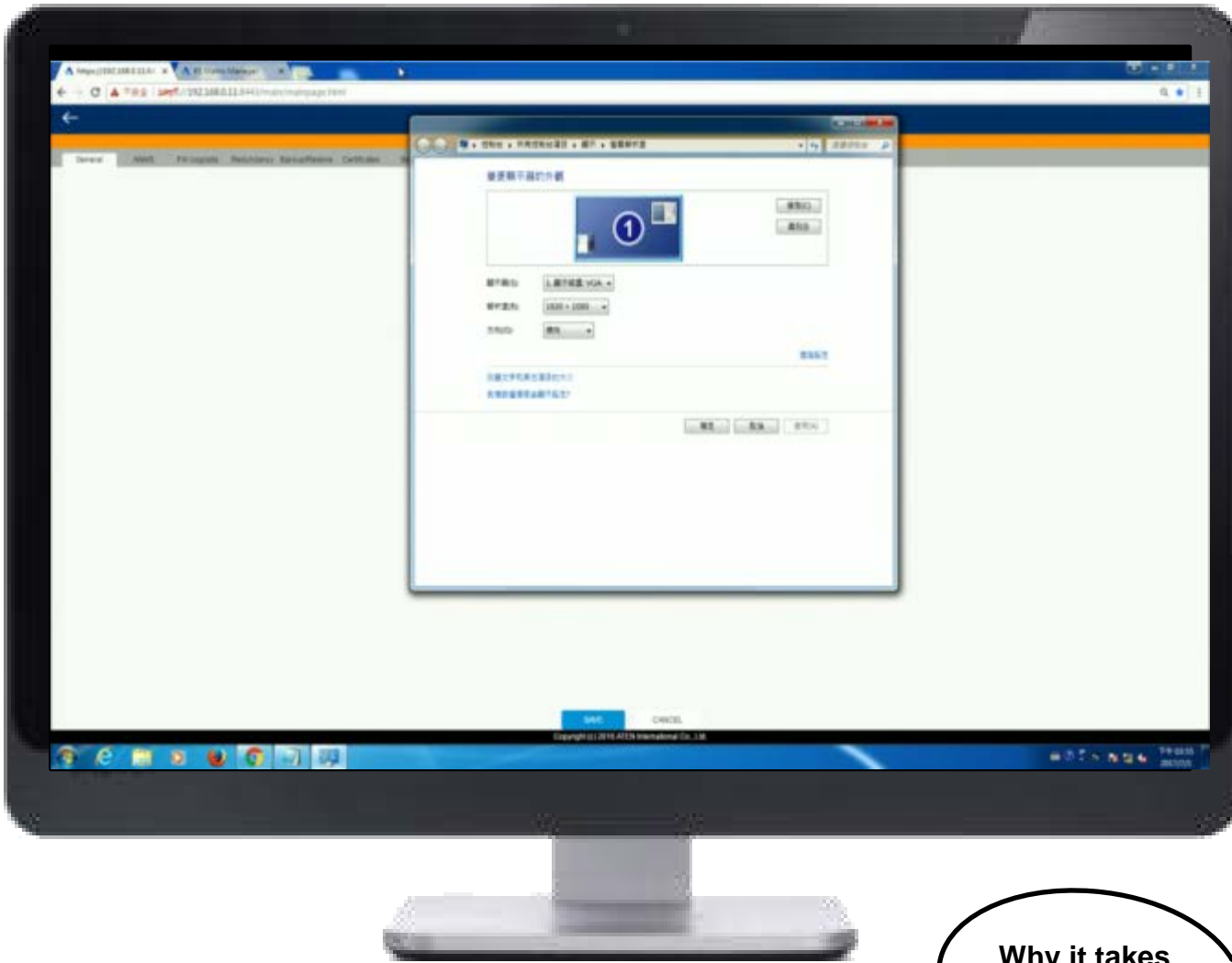
Select one: █
```

KE8900/8952 Transmitter Local Console



Local console => Emergency operation

Fast Switching



Resolution 1920 x 1080

Why it takes that long?



Global Settings

General

Matrix Manager Name:

Description:

Network Ports

HTTP Port:

HTTPS Port:

Device Port:

Allowed Access Mode

View Only

Share

Occupy

Exclusive

User Station Login Settings

Login Required

Non-Authorized User:

Security

Enforce Password History

Fast Switching

Fast Switching:

Global Device Properties

Properties

Occupy Timeout: sec (1-240)

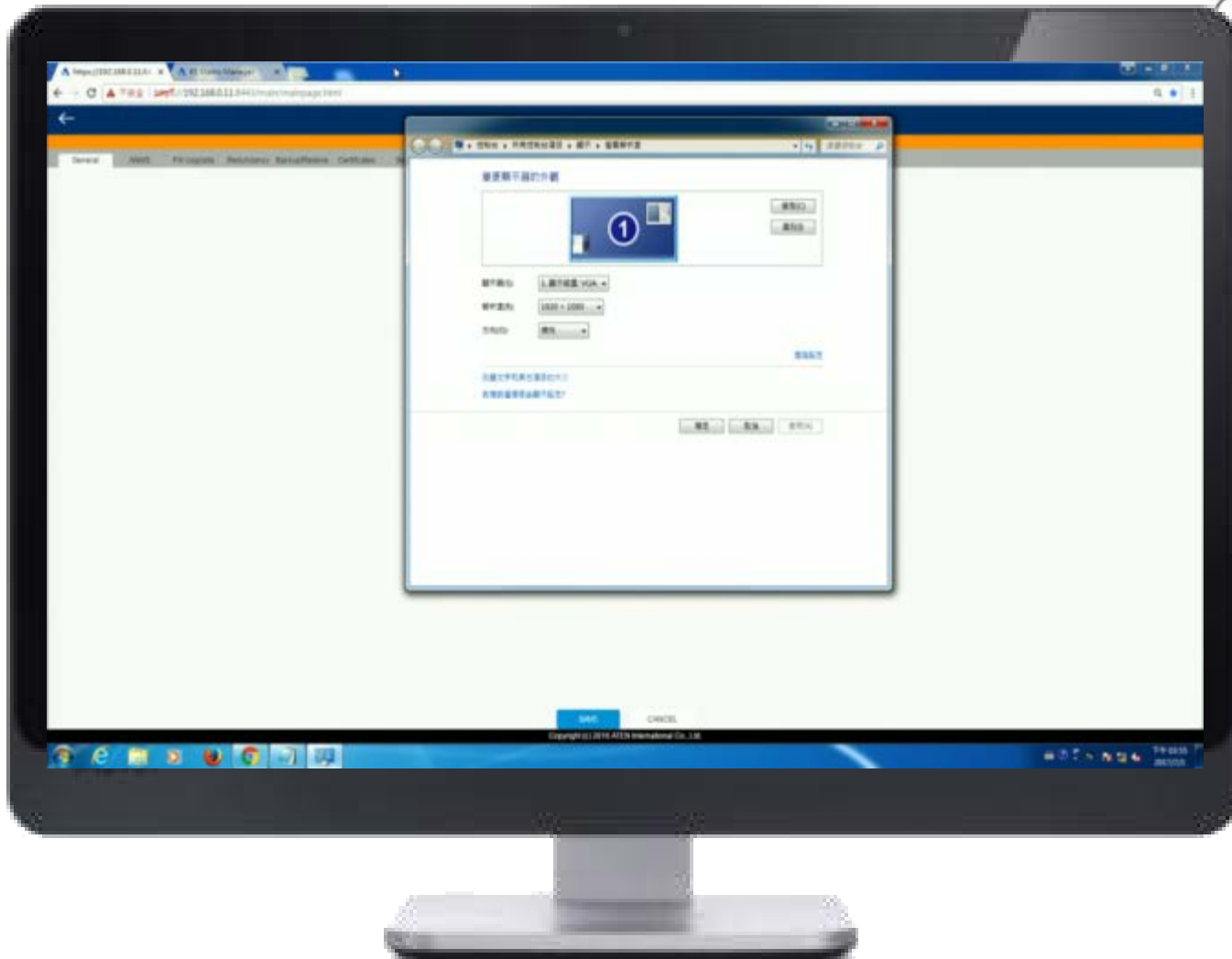
EDID Mode Selection:

Beeper: Enable

Sync

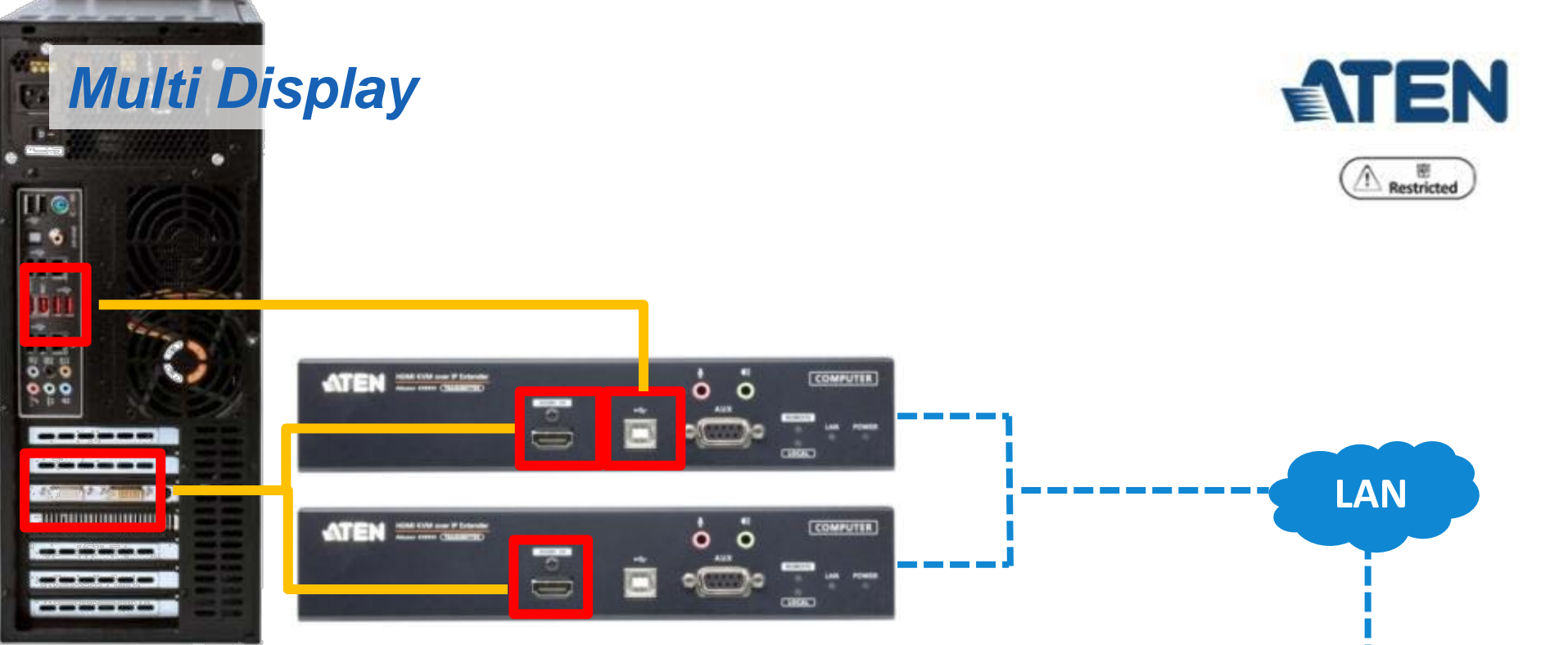


Fast Switching



Resolution 1920 x 1080

Multi Display





Dashboard



Device Management



User Management



System



Logs



Maintenance

User Stations

- KE8950R1
- KE8950R71
- KE8950R60

Unmanaged User Stations

User Station Video Group

MultiDisplay1

User Station Video Group

General

Name: MultiDisplay1

Description: 1 2 3

User Station Video Group

Video 1 : KE8950R71

Video 2 : KE8950R60

Video 3 : KE8950R1

Video 4 : KE8950R71
KE8950R60

Add a Video Group

Save



Logout

Channels

- KE8950T67
- KE8950T1
- KE8950T61
- GroupTX
- VirtualTX
- VirtualTX1
- GroupTX1
- VirtualTX2
- MultiDisplay**

Channel Groups

Logout

Channel Info | Groups | Permissions

General

Name: Location:

Description:

Source Stream

KVM Transmitter:

Video 2 :

Video 3 :

Video 4 :

Allowed Access Mode

View Only Share Occupy Exclusive

Create a new Channel and setup Video/Audio/USB/Serial Source from Transmitters

Connection Page 1

Profile Page 1

Push Content Page 1

Pull Content Page 1

Channel Name	Description	Connect				
KE8950T67	[VAUS]	Exclusive	Occupy	Share	View Only	Exit
KE8950T1	[VAUS]	Exclusive	Occupy	Share	View Only	Exit
KE8950T61	[VAUS]	Exclusive	Occupy	Share	View Only	Exit
GroupTX	[M]	Exclusive	Occupy	Share	View Only	Exit
VirtualTX	[VAUS]	Exclusive	Occupy	Share	View Only	Exit
VirtualTX1	[VAUS]	Exclusive	Occupy	Share	View Only	Exit
GroupTX1	[M]	Exclusive	Occupy	Share	View Only	Exit
VirtualTX2	[VAUS]	Exclusive	Occupy	Share	View Only	Exit
MultiDisplay	[VAUS]	Exclusive	Occupy	Share	View Only	Exit

Login KE Receiver and Click MultiDisplay Channel

VideoWall



Video Walls
└ VideoWall1

Logout

Video Wall Settings | Schedule | Permissions show name on user stations: On | Off

Name: VideoWall1
Description:
Source Channel:
Number of Displays: 2 x 2
Bezel Dimension: (unit: mm)
Scale Mode: Stretch Fit Width Fit Height

Video Wall Layout:

1.1 KE8950R1:1	1.2 KE8950R1:2
2.1 KE8950R60	2.2 KE8950R71:1

Device Management -> Video Wall

KE takes advantage of multicasting packets. When network switch receives packets, it simultaneously sends them to all selected KE devices.



VideoWall Scheduling



Matrix Manager



User Stations | Transmitters | Channels | Profiles | Video Wall | **View Test**

Welcome to the Matrix Manager

show name on user stations: On | Off

Video Wall Setting | **Schedule** | Permissions

Name:

Description:

Access Mode: View Only Share Occupy

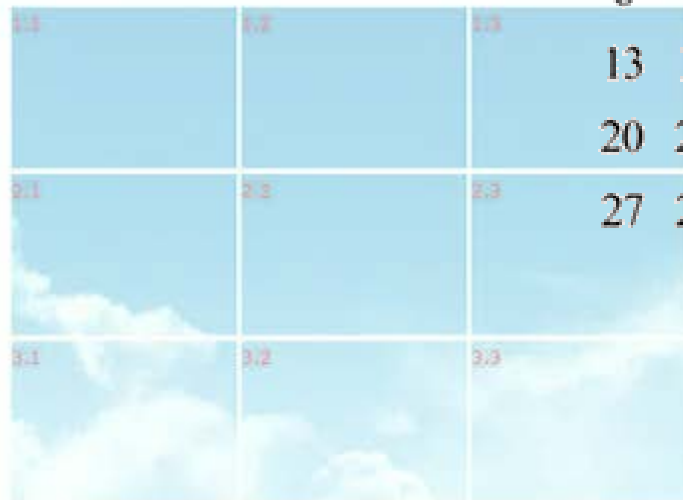
Source Channel:

Number of Displays: x

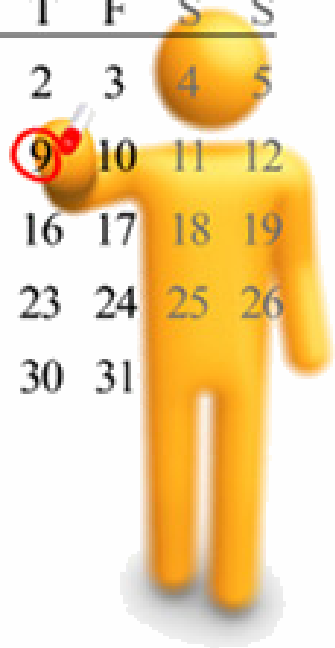
Bezel Dimension: x (unit: mm)

Scale Mode: Stretch Fit Width Fit Height

Video Wall Layout:



M	T	W	T	F	S	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		



Logout

Connect

Disconnect

Save

Advance Security



AES-128 bit Encryption on Video/KB/MS/USB Data

Command Line Interface



- CLI through RS-232

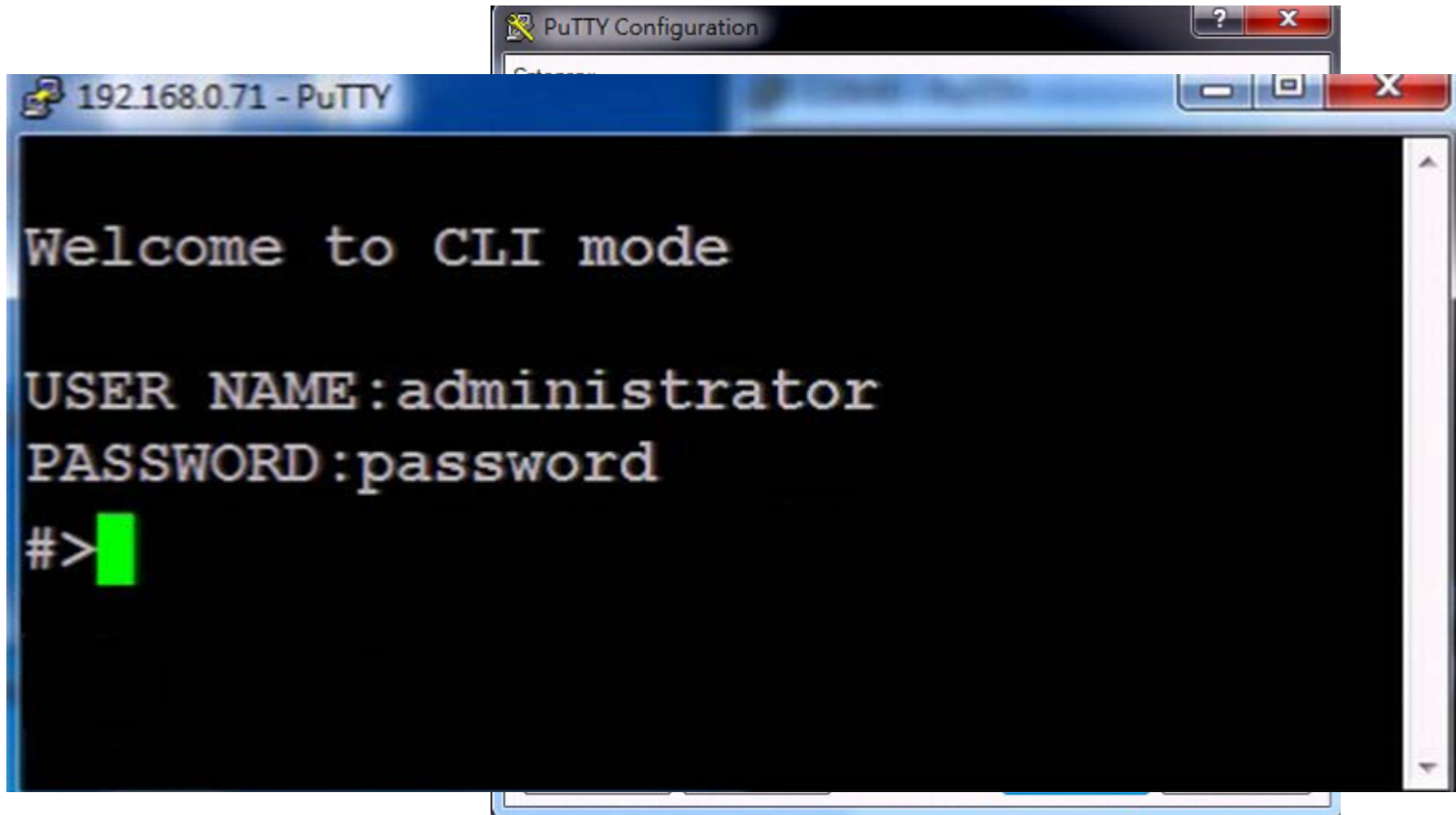
The image shows two overlapping PuTTY terminal windows. The larger window in the foreground displays the following text:

```
COM6 - PuTTY  
Welcome to ATEN KE8950 User Station  
Copyright(c) 2009-2013 ATEN International Co., Ltd.  
  
--Press U/u to start CLI session  
--Press ENTER to start TextMenu :  
Welcome to CLI mode  
  
USER NAME:administrator  
PASSWORD:  
#>
```

The smaller window in the background shows the same text, but with a red rectangular box highlighting the lines: "--Press U", "--Press EN", and "Welcome to CLI mode".

▶ *Command Line Interface*

- CLI through Telnet port 9130

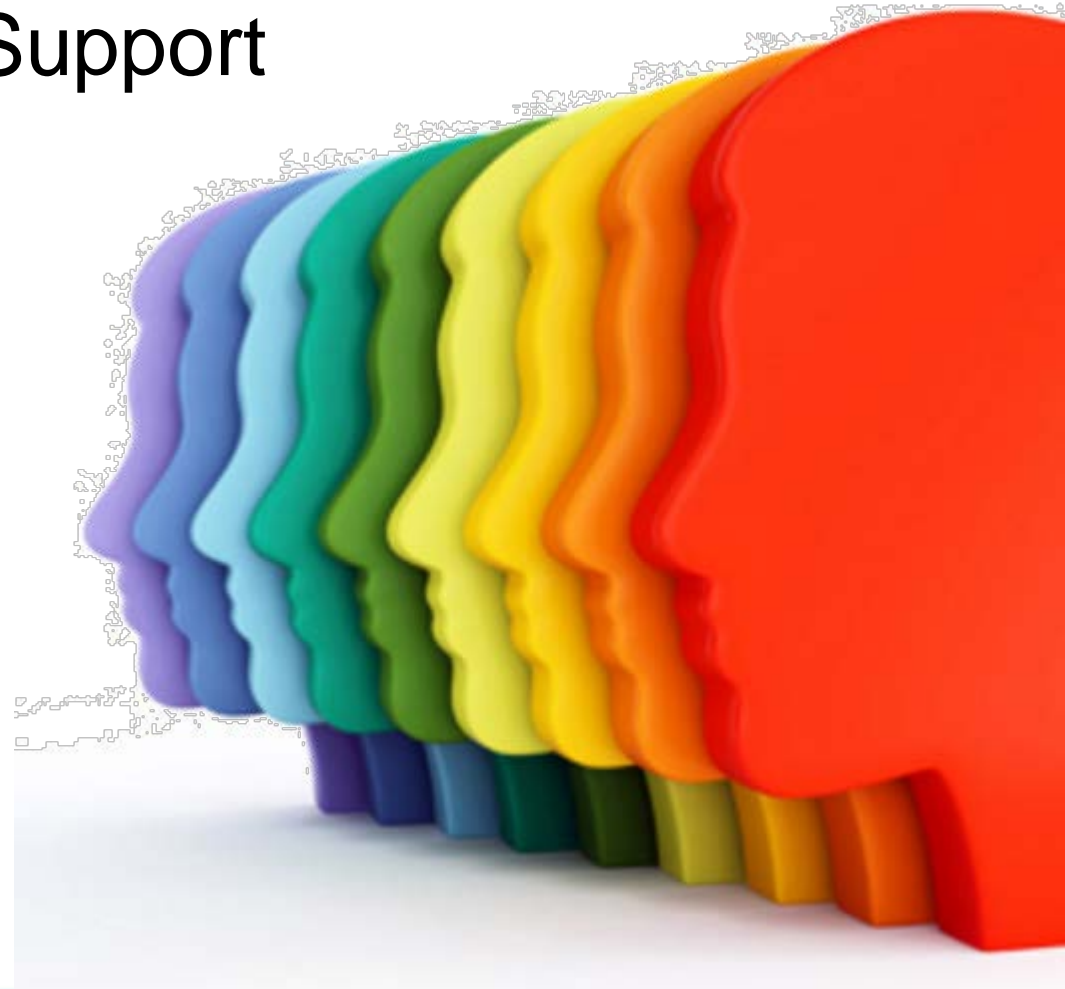


The image shows a PuTTY terminal window titled "192.168.0.71 - PuTTY". The terminal output is as follows:

```
Welcome to CLI mode  
USER NAME:administrator  
PASSWORD:password  
#>
```

The prompt "#>" is followed by a green cursor bar. A "PuTTY Configuration" window is partially visible in the background.

36-bit Deep Color Support



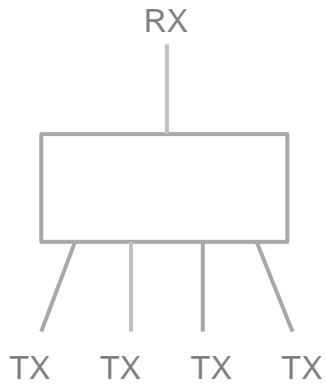
KE's Versatility



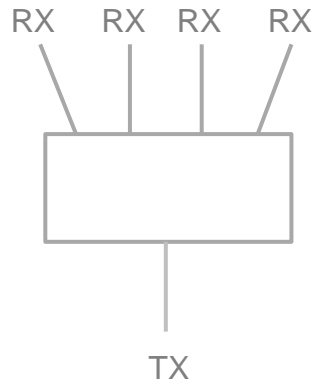
Console



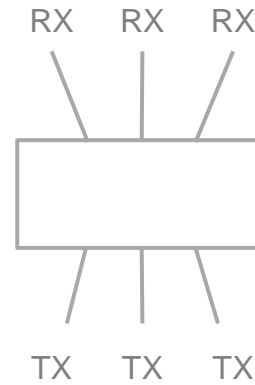
PC



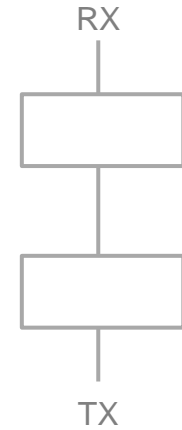
KVM Switch



Computer Sharing Device



Matrix



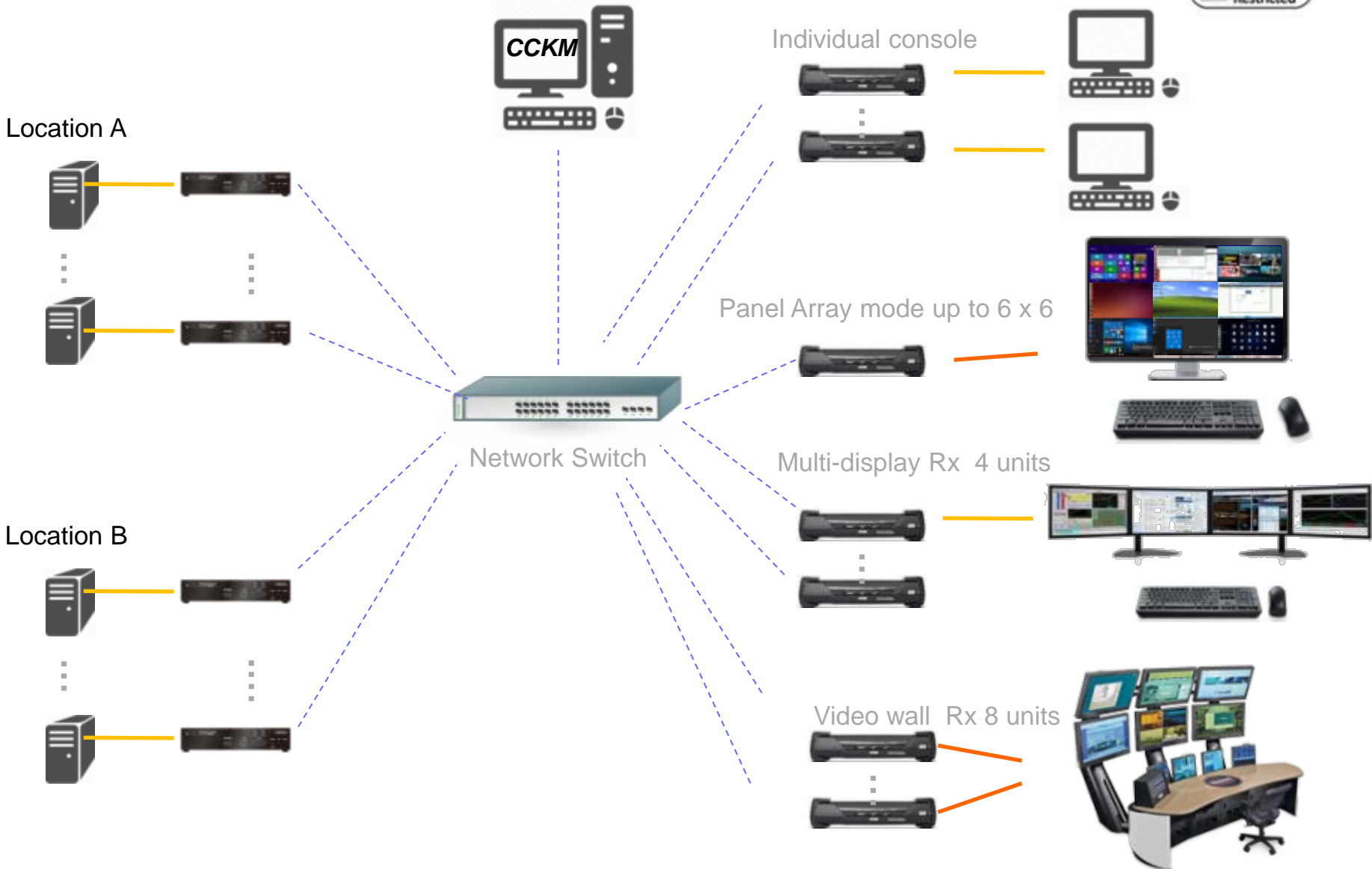
Extender



KE Matrix System



KE Matrix System Topology



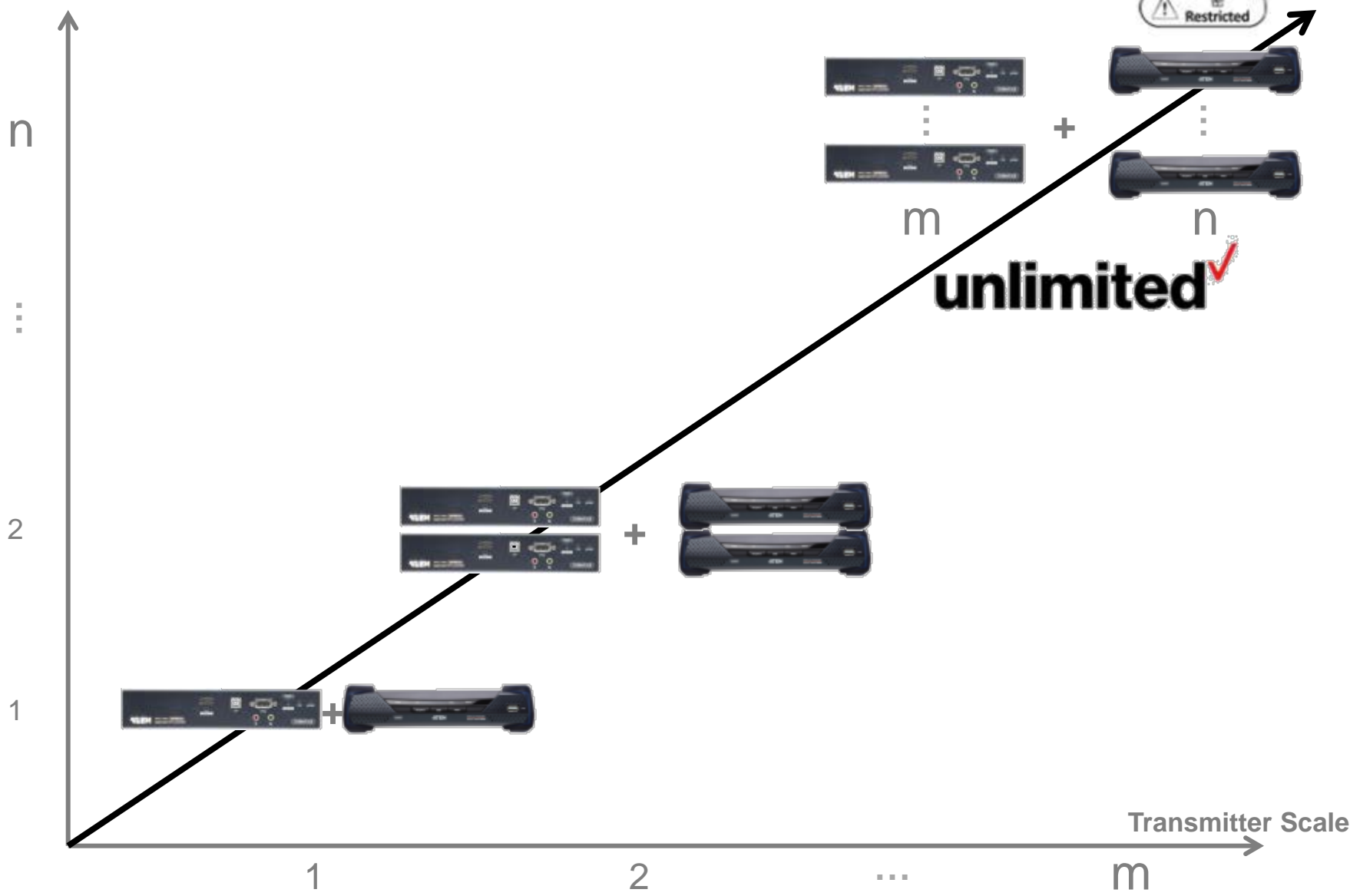


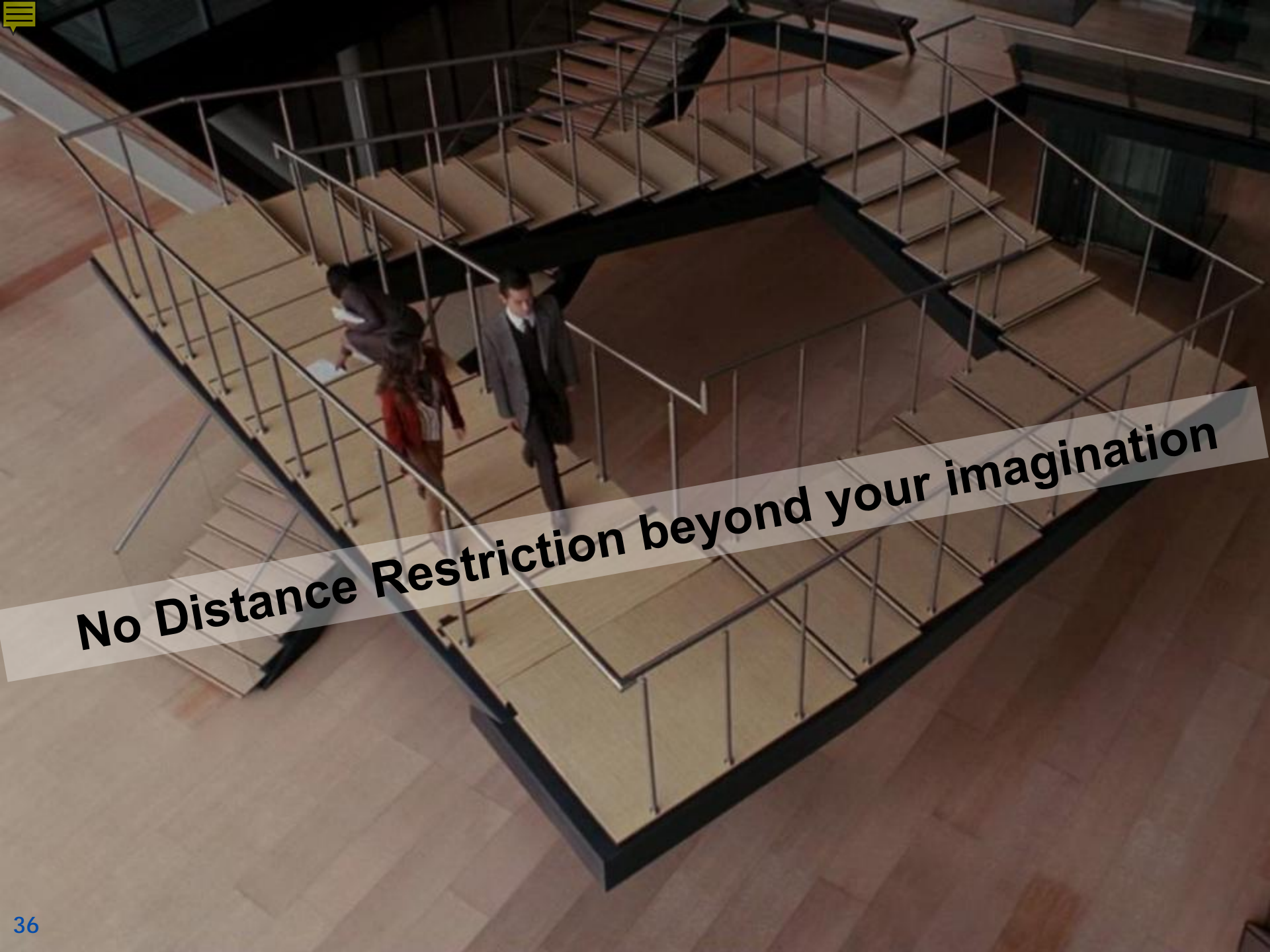
▶ Unlimited Transmitters Receivers Combination



Receiver Scale

Combination Scale out



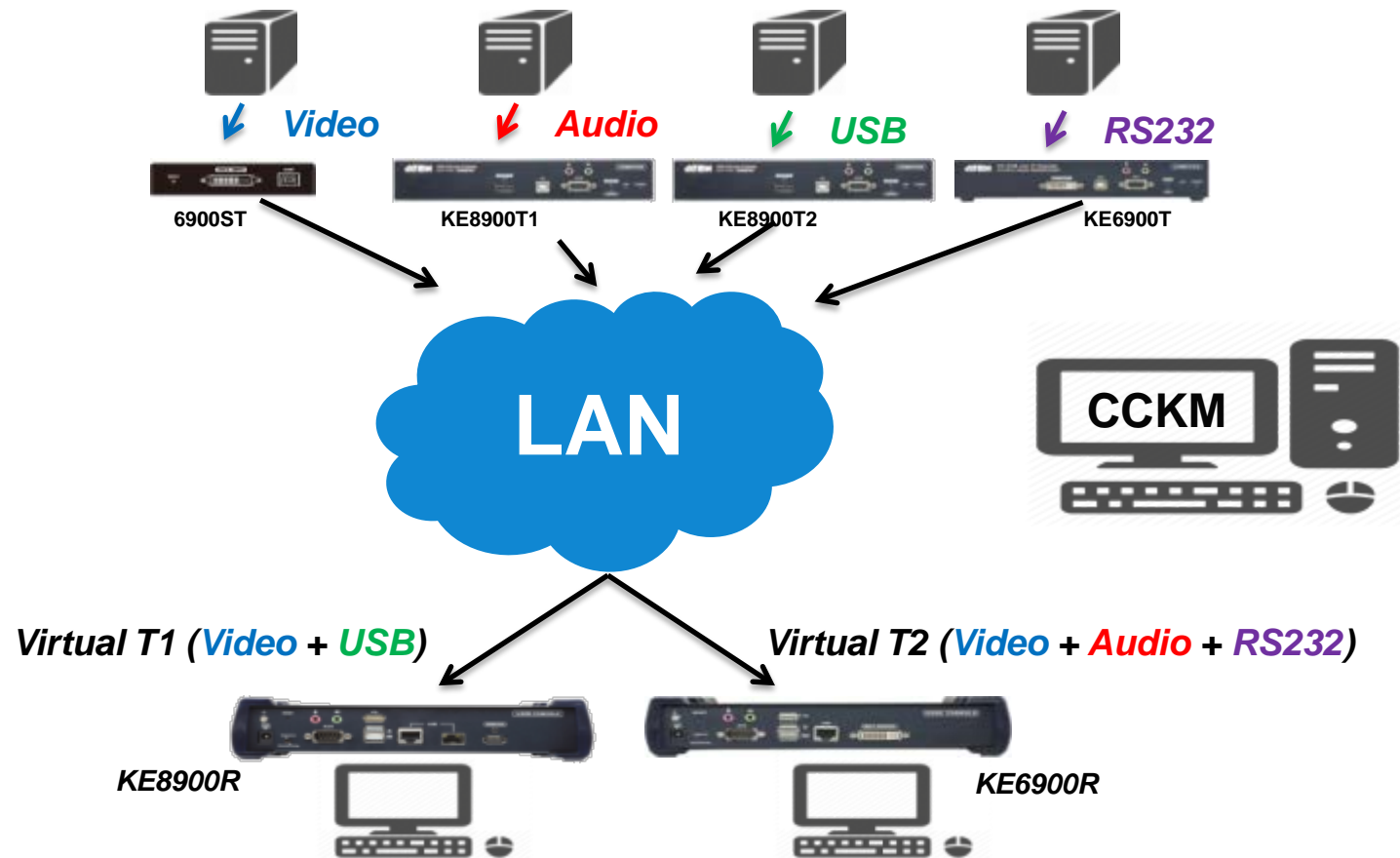


No Distance Restriction beyond your imagination

Virtual Transmitter(Channel)



Virtual Transmitter => Video, Audio, USB, RS232 from different Transmitter



▶ All Video Format Supported



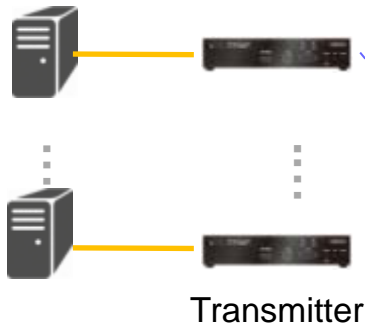
Analog and Digital Video Signal(**RGB** & **YCbCr**)



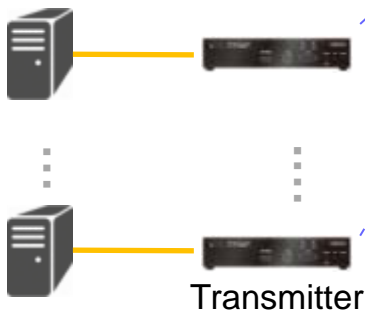
Centralized Management



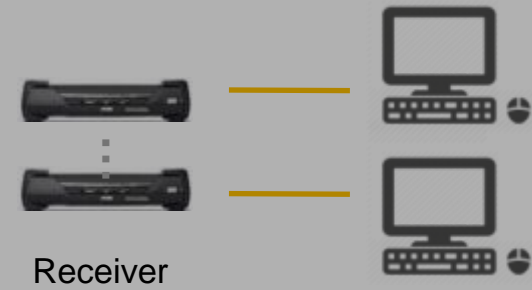
Location A



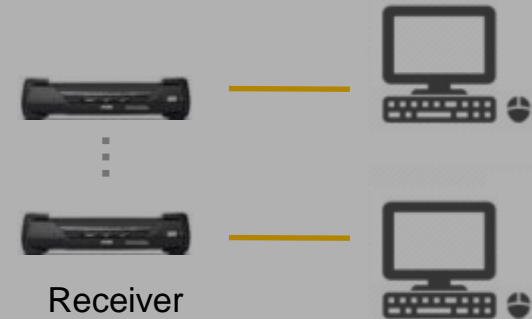
Location B



Control Room A



Control Room B



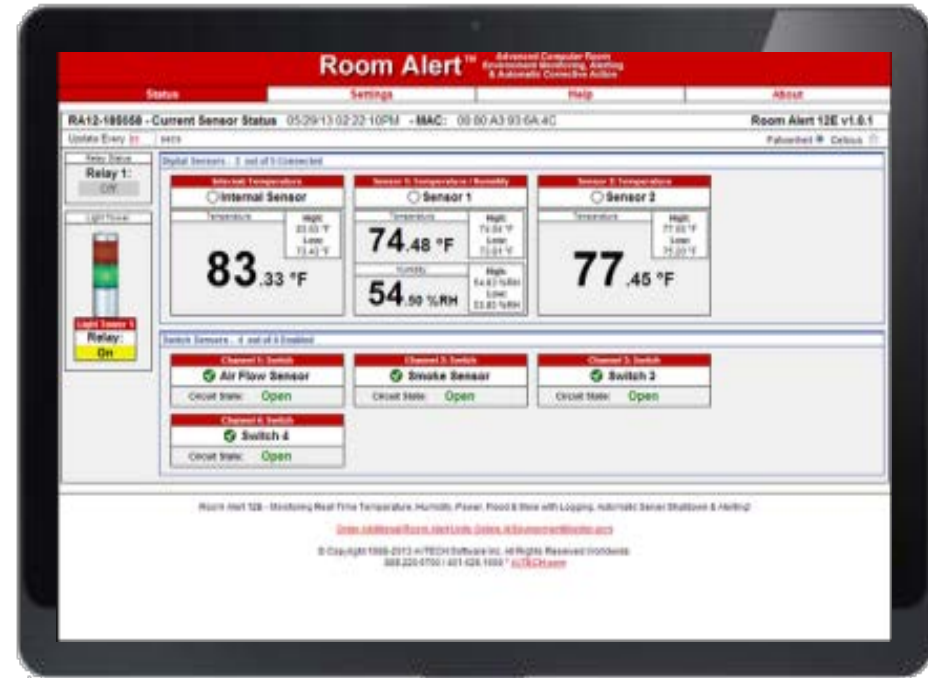
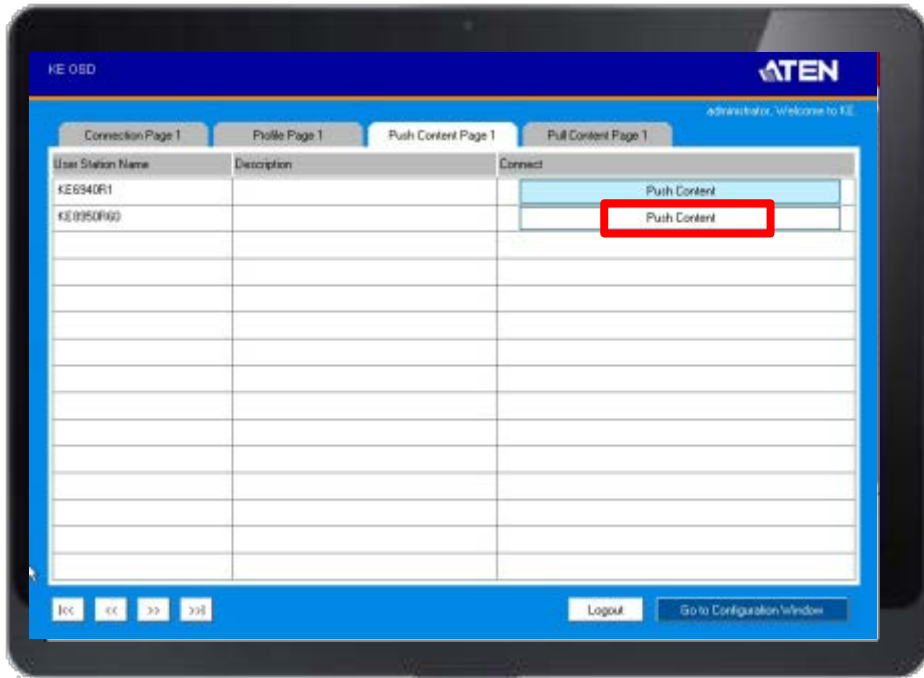
Array Mode



Simultaneously Real-Time Video Preview

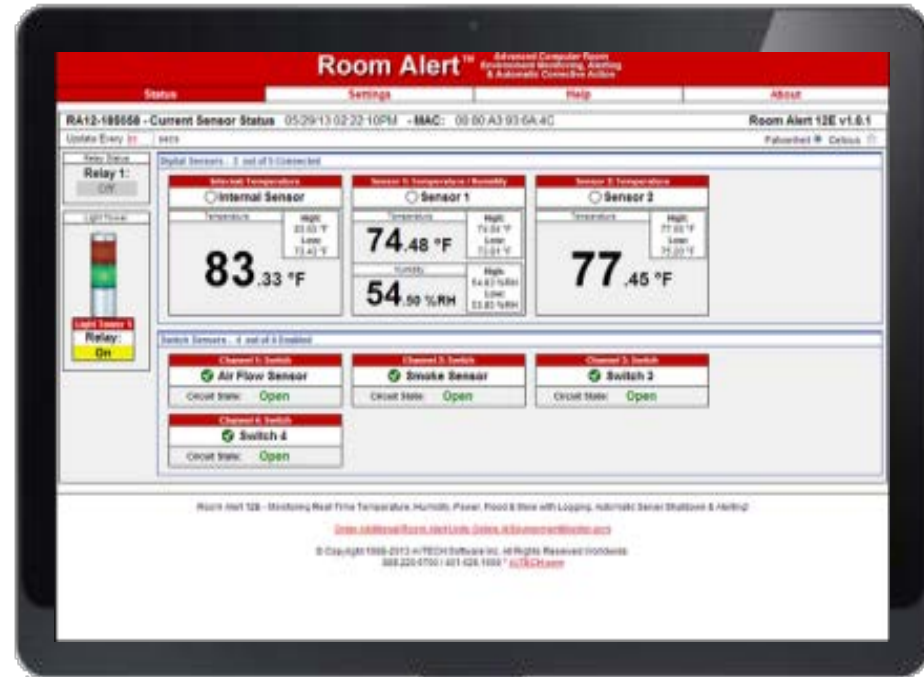
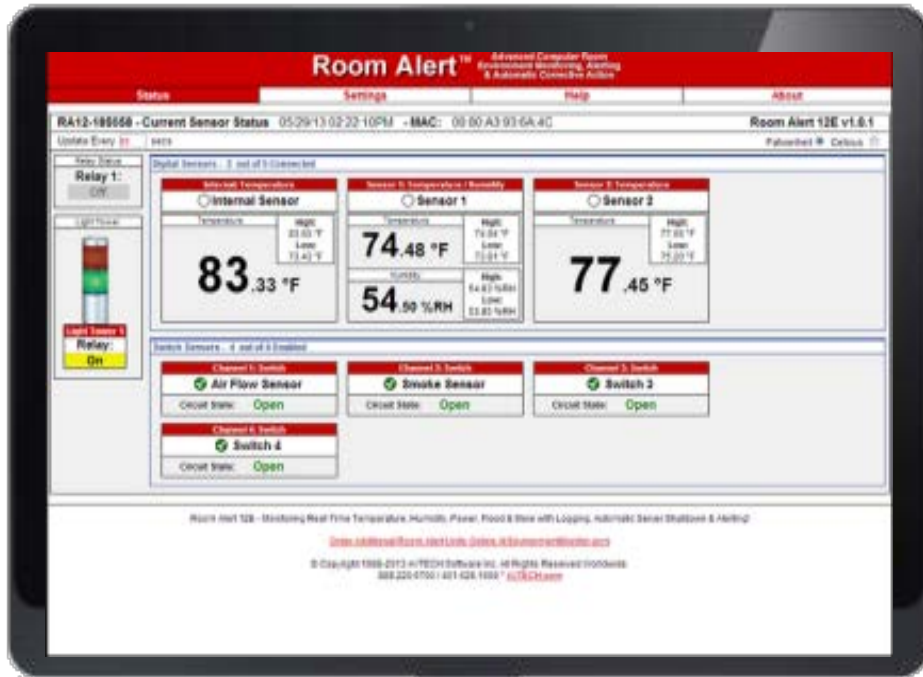


Push & Pull



Push

Push & Pull



Pull



KE Series Comparison



Model	ATEN KE8950/KE8952	Avocent HMX 6000	ADDER ALIF 2002T/2000R 2112T	Gefen EXT-DVIKVM- LANTX/RX	Gefen EXT-HDKVM- LANTX/RX
Video Resolution	HDMI	DVI-D Dual Link	DVI-D Dual Link	DVI-D	HDMI
	3840*2160 @30Hz	2560*1600@60Hz	2560*1600@60Hz	1920*1200 @60Hz	1920*1200 @60Hz
HDCP	1.4	N	Y	N	Y
Audio	Y	Y	Y	Y	Y
Mouse Emulation	Y	Y	Y	Y	Y
TX Local Console	Y	VNC(6210T)	VNC(2112T)	N	N
Fast Switching	Y	Y	Y	N	N
Multi Display	Y	Y	Y	N	N
Video Wall	Y	N	N	N	N
RS-232	Y	Y	Y	Y	Y
OSD	Y	Y	Y	Y	Y
CLI	Y(RS232 and Telnet)	Y(RS-232)	N	Y(Telnet)	Y(Telnet)
Video Encryption	Y	Y	N	?	?
Virtual media	Y	Y	Y	Y	Y
Virtual USB	Y	Y	Y	Y	Y
PoE	N/Y	N	N	N	N
LAN	1 Gbps	1 Gbps	1 Gbps	1 Gbps	1 Gbps
SFP	Y	Y	Y	N	N
	SM to 10km MM to 550m	SM to 10km MM to 550m	SM to 10km MM to 500m		
IR control	N	N	N	Y	Y
MSRP(1T or 1R)	\$1,645/\$1795 MM fiber \$95 SM fiber \$175	6200 \$1645 6210 \$1845 MM fiber \$100 SM fiber \$185	2002 \$1550 2112T \$1750 MM fiber \$95 SM fiber \$175	Tx \$499 Rx \$429	Tx \$579 Rx \$449

▶ Application



What kind of application is a fit for KE Series?



Any Application related to **Control** is a fit for KE

KE Matrix System Application



Traffic Management
Centers



Retail Surveillance
Centers



Facility Situation
Rooms

KE Matrix System Application



Command Control Centers



Utilities Process Control Centers



Broadcasting Distribution Monitoring Systems

► *KE Matrix System Application*



Network Operation Center

Network Operation Center (NOC)



NOC in a Data Center

- **Network Operation Center (NOC)** is one or more locations where NOC engineers are on duties to ensure the smooth running and operation of the data center
- **NOC** is a type of **control room** typically for data center

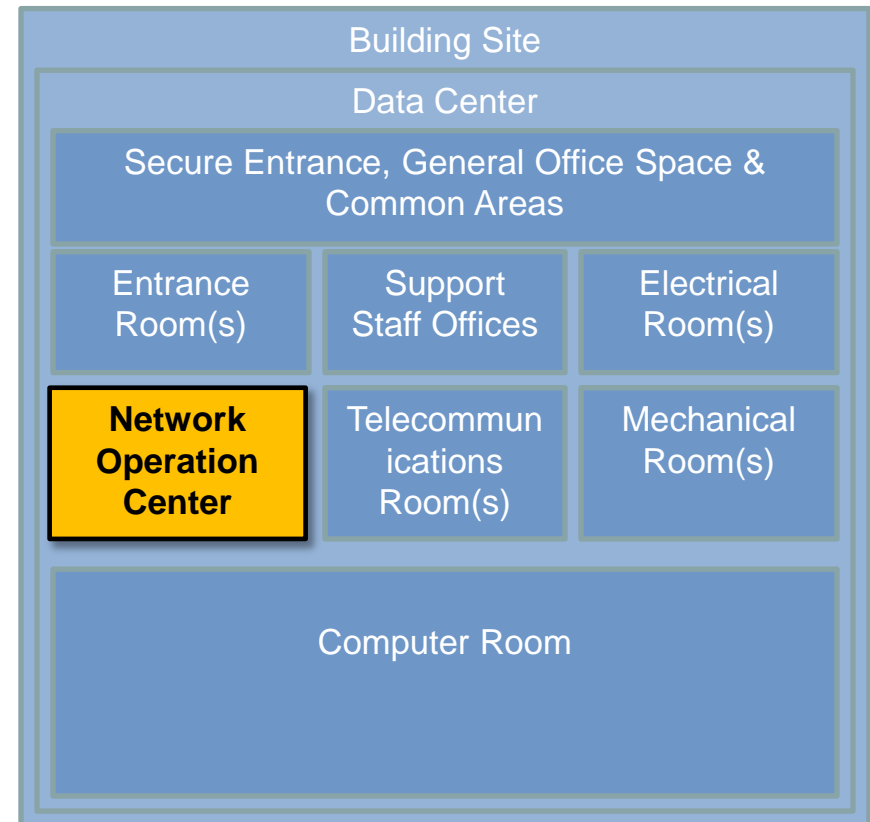


Figure: Relationship of spaces in a data center, ANSI/TIA-942



NOC Case - Before

- **Poor information integration and collaboration**
Lack of well-arranged large videowalls for collaboration and information integration.
- **Less operation efficiency**
Various equipments and displays scattered around console desks reduced operator's efficiency
- **Poor ergonomics**
Operators were also distracted by heat and noise by different computers/devices



KE Matrix System Application - NOC



NOC Case - Later

- **Improved collaboration and decision making**

Large videowalls improved information integration and enabled better collaboration. All the information was better displayed and shared.

- **Short of operation efficiency**

Equipment arrangement at each console station to be improved for better operation efficiency



KE Matrix System Application - NOC



NOC Case - NOW

- **Better collaboration and decision making**
Large videowalls improved information integration and enabled better collaboration and decision making.
- **Improved operation efficiency**
Unified and better arranged console displays helped each operator better concentrate and perform his tasks.
- **Ergonomics for better operation**
Heat and noise by computers removed from console operators for better operation environment. Computers moved away from NOC can be centrally managed



▶ KE Matrix System Application - NOC



NOC Case - Cont'd



Why is KE8950 a good fit for any Control Room?



- *Extremely high frame rate to ensure operation without latency*
- *Virtual USB can bypass USB signal directly to Tx in case of any compatibility issues.*
- *Severe access control - Admin, Super User, User*
- *Video/KB/MS/Data Encryption for Security*



Frequently
Asked
Questions





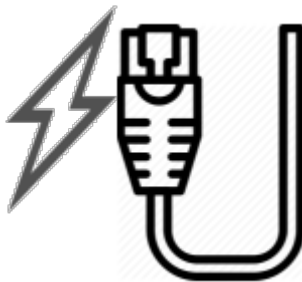
- What are the main features of KE89 Series other than KE69 Series?



4K 3840 x 2160 @30Hz (4:4:4)



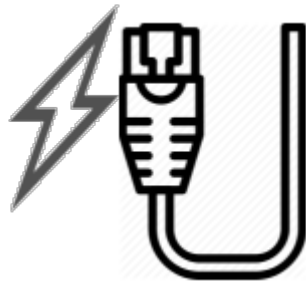
SFP port for optical Network



Power over Ethernet



- What is the difference between KE8950 and KE8952 ?



PoE



KE8952 does **NOT** come with Power Adapter

- What is the HDCP version KE89 supports?



HDCP
High Bandwidth Digital Content Protection

1.4



- What is the Strength of KE89 Series compared to our competitors?



Configuration Flexibility



Transmitter Local Console



Fast Switching



Multi Display

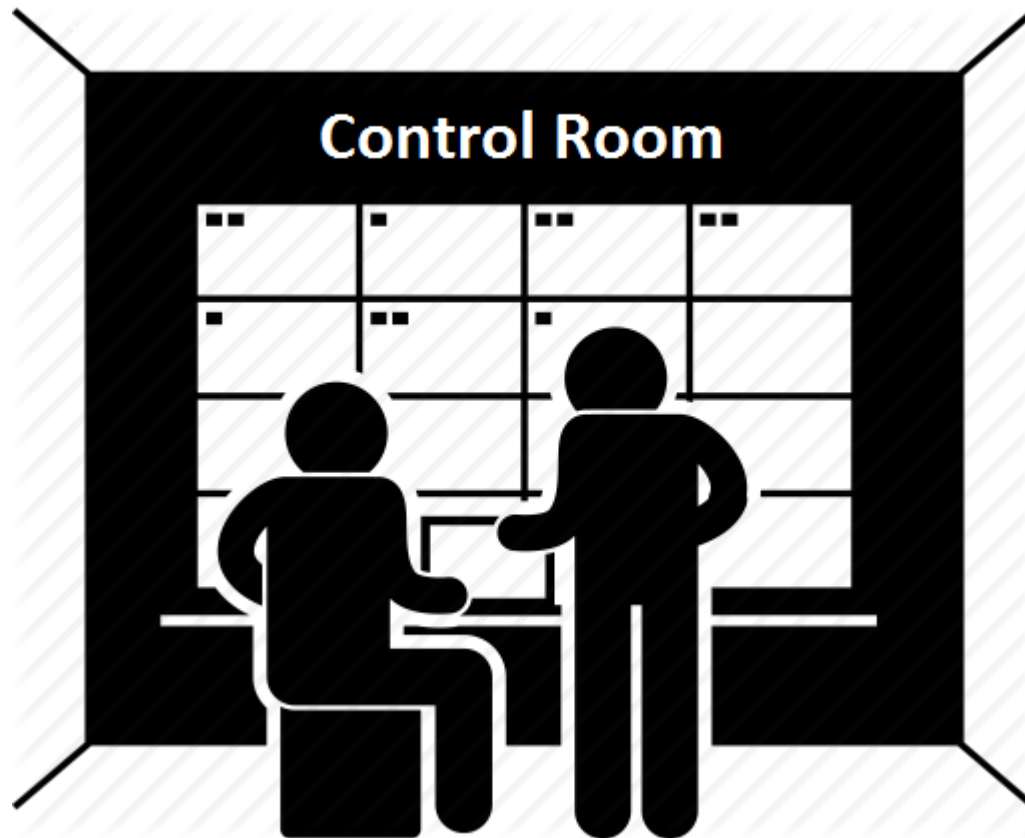


Video Wall



Deep Color 36-Bit

- What is the best application for KE ?







- What are the main features of KE89 Series other than KE69 Series?
 - DVI Dual Link 2560 x 1600
 - HDMI 4K 3840 x 2160 @30Hz (4:4:4)
 - SFP Port
 - PoE
 - Distance up to 50m



- What is the difference between KE8950 and KE8952 ?
 - DVI Dual Link 2560 x 1600
 - HDMI 4K 3840 x 2160 @30Hz (4:4:4)
 - SFP Port
 - PoE
 - Distance up to 50m

- What is the HDCP version KE89 supports?
 - 1.1
 - 1.4
 - 2.2



- What is the Strength of KE89 Series compared to our competitors?

- Configuration Flexibility
- Transmitter Local Console
- Fast Switching
- Multi Display
- Video Wall
- Deep Color 36-Bit
- All

Q&A



- What is the best application for KE ?

- Smart Home
- Shopping Mall
- Control Room

Simply Better Connections



Integrity



Caring



Ambition



Novelty

Appendix: Fiber Module 2A-136G 2A-137G Spec



	2A-136G	2A-137G
Data Rate	0.8-1.5 Gbps	0.8-1.5 Gbps
Supply Current	300mA	300mA
Power Dissipation	1000mW	1000mW
Supported Link Length on 50/125 μ m MMF	550m	N/A
Supported Link Length on 9/125 μ m SMF	N/A	10km

Appendix: Bandwidth



Model	KE8950	Environment
Firmware	V1.0.094	
1920x1080@60 1T / 1R Matrix Mode	12~20	Low (Office) Bandwidth Observation of GigaSwitch unit: (Mbps)
1920x1080@60 1T / 1R Matrix Mode	24~64	Normal (Web-browse) Bandwidth Observation of GigaSwitch unit: (Mbps)
1920x1080@60 1T / 1R Matrix Mode	160~245	High (Web-browse+Half Screen Movie) Bandwidth Observation of GigaSwitch unit: (Mbps)
1920x1080@60 1T / 1R Matrix Mode	440~520	Ultra High (Full Screen Movie) Bandwidth Observation of GigaSwitch unit: (Mbps)



Model	KE8950	Environment
Firmware	V1.4.134	
3840x2160@60 1T / 1R Matrix Mode	16	Low (Office) Bandwidth Observation of GigaSwitch unit: (Mbps)
3840x2160@60 1T / 1R Matrix Mode	32	Normal (Web-browse) Bandwidth Observation of GigaSwitch unit: (Mbps)
3840x2160@60 1T / 1R Matrix Mode	400	High (Web-browse+Half Screen Movie) Bandwidth Observation of GigaSwitch unit: (Mbps)
3840x2160@60 1T / 1R Matrix Mode	840	Ultra High (Full Screen Movie) Bandwidth Observation of GigaSwitch unit: (Mbps)