dedicated KVM switch and rackmount screen technology

User Manual

Matrix Cat6 IP KVM

Cat5M-IP1613 / IP1624

Cat5M-IP3213 / IP232-4

Matrix Cat6 KVM

Cat5M-216 / 1603 / 1604

Cat5M-232 / 3203 / 232-4

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Legal Information

First English printing, August 2022

Information in this document has been carefully checked for accuracy; however, no guarantee is given to the correctness of the contents. The information in this document is subject to change without notice. We are not liable for any injury or loss that results from the use of this equipment.

Safety Instructions

Please read all of these instructions carefully before you use the device. Save this manual for future reference.

- Unplug equipment before cleaning. Don't use liquid or spray detergent; use a moist cloth.
- Keep equipment away from excessive humidity and heat. Preferably, keep it in an air-conditioned environment with temperatures not exceeding 40º Celsius (104º Fahrenheit).
- When installing, place the equipment on a sturdy, level surface to prevent it from accidentally falling and causing damage to other equipment or injury to persons nearby.
- When the equipment is in an open position, do not cover, block or in any way obstruct the gap between it and the power supply. Proper air convection is necessary to keep it from overheating.
- Arrange the equipment's power cord in such a way that others won't trip or fall over it.
- If you are using a power cord that didn't ship with the equipment, ensure that it is rated for the voltage and current labeled on the equipment's electrical ratings label. The voltage rating on the cord should be higher than the one listed on the equipment's ratings label.
- Observe all precautions and warnings attached to the equipment.
- If you don't intend on using the equipment for a long time, disconnect it from the power outlet to prevent being damaged by transient over-voltage.
- Keep all liquids away from the equipment to minimize the risk of accidental spillage. Liquid spilled on to the power supply or on other hardware may cause damage, fire or electrical shock.
- Only qualified service personnel should open the chassis. Opening it yourself could damage the equipment and invalidate its warranty.
- If any part of the equipment becomes damaged or stops functioning, have it checked by qualified service personnel.

What the warranty does not cover

- Any product, on which the serial number has been defaced, modified or removed.
- Damage, deterioration or malfunction resulting from:
  - ☐ Accident, misuse, neglect, fire, water, lightning, or other acts of nature, unauthorized product modification, or failure to follow instructions supplied with the product.
  - ☐ Repair or attempted repair by anyone not authorized by us.
  - ☐ Any damage of the product due to shipment.
  - ☐ Removal or installation of the product.
  - ☐ Causes external to the product, such as electric power fluctuation or failure.
  - ☐ Use of supplies or parts not meeting our specifications.
  - ☐ Normal wear and tear.
  - ☐ Any other causes which does not relate to a product defect.
- Removal, installation, and set-up service charges.

Regulatory Notices Federal Communications Commission (FCC)

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

Any changes or modifications made to this equipment may void the user's authority to operate this equipment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Re-position or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

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Cat5M-IP3213 Cat5M-IP232-4

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< Part. 2 > Matrix Cat6 KVM

Cat5M-216 Cat5M-1603 Cat5M-1604
Cat5M-232 Cat5M-3203 Cat5M-232-4

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Before Installation

- It is very important to mount the equipment in a suitable cabinet or on a stable surface.
- Make sure the place has a good ventilation, is out of direct sunlight, away from sources of excessive dust, dirt, heat, water, moisture and vibration.

Unpacking

The equipment comes with the standard parts shown in package content. Check and make sure they are included and in good condition. If anything is missing, or damaged, contact the supplier immediately.

Installation for standalone KVM

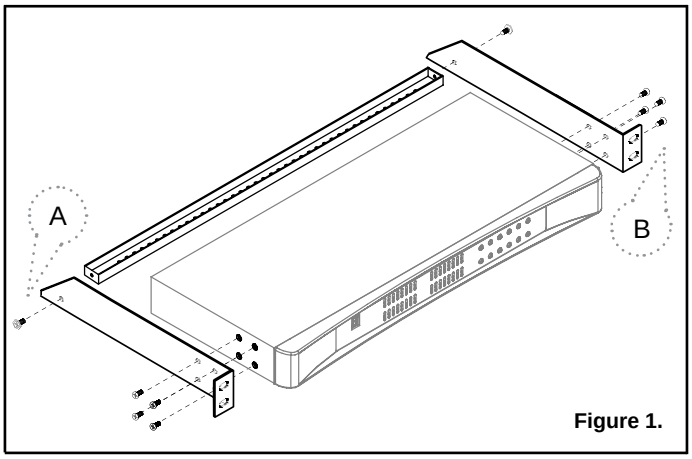


Figure 1.

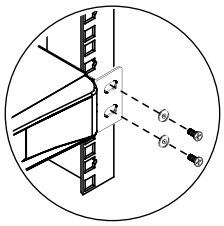
Screw A: 2 pcs

M3.2 x 4.5 mm

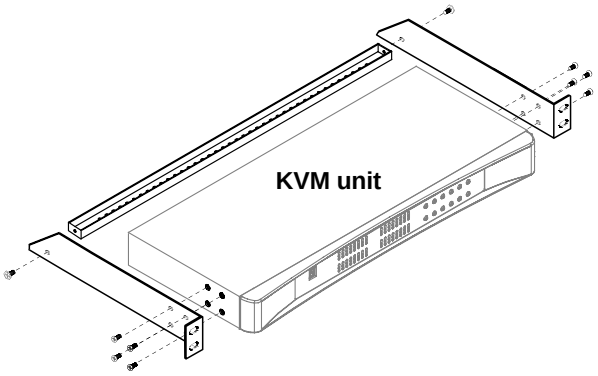
Screw B: 8 pcs

M4 x 10 mm

- Install each bracket using screws provided shown in **Figure 1.**
- Fix the KVM into the rack

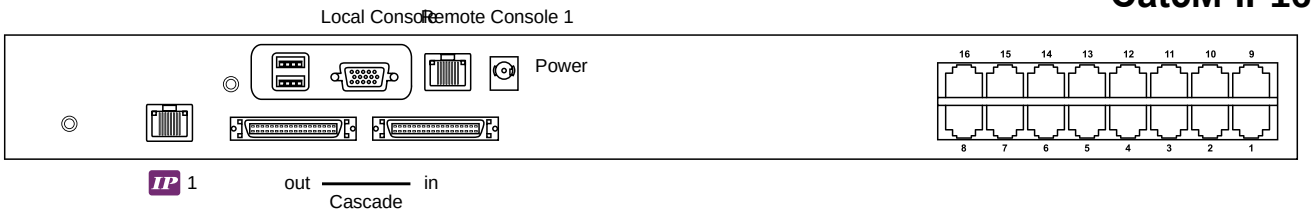


Cat5M-IP1613/IP1624/IP3213/IP232-4

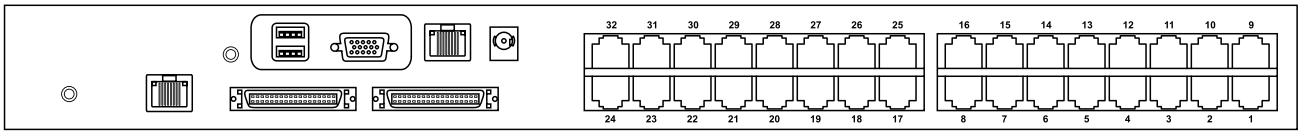


- Cat5M-IP1613 or Cat5M-IP3213 or Cat5M-IP3213 or Cat5M-IP232-4 KVM unit x 1
- Mounting set w/ bracket & screws x 1
- Power adapter w/ power cord (for KVM) x 1
- Receiver box for remote console x 1
- Power adapter w/ power cord (for receiver) x 1
- CE-6 6ft Combo KVM cable for receiver box x 1

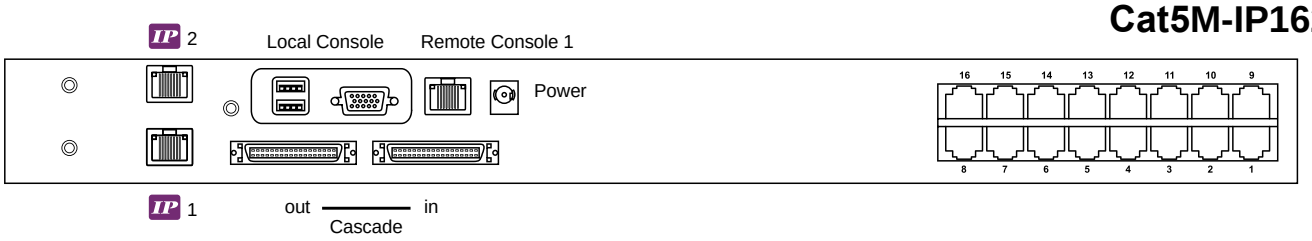
Cat5M-IP1613



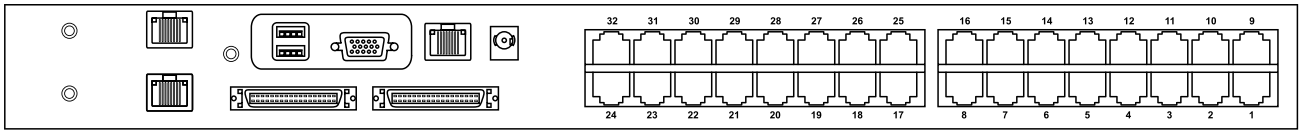
Cat5M-IP3213



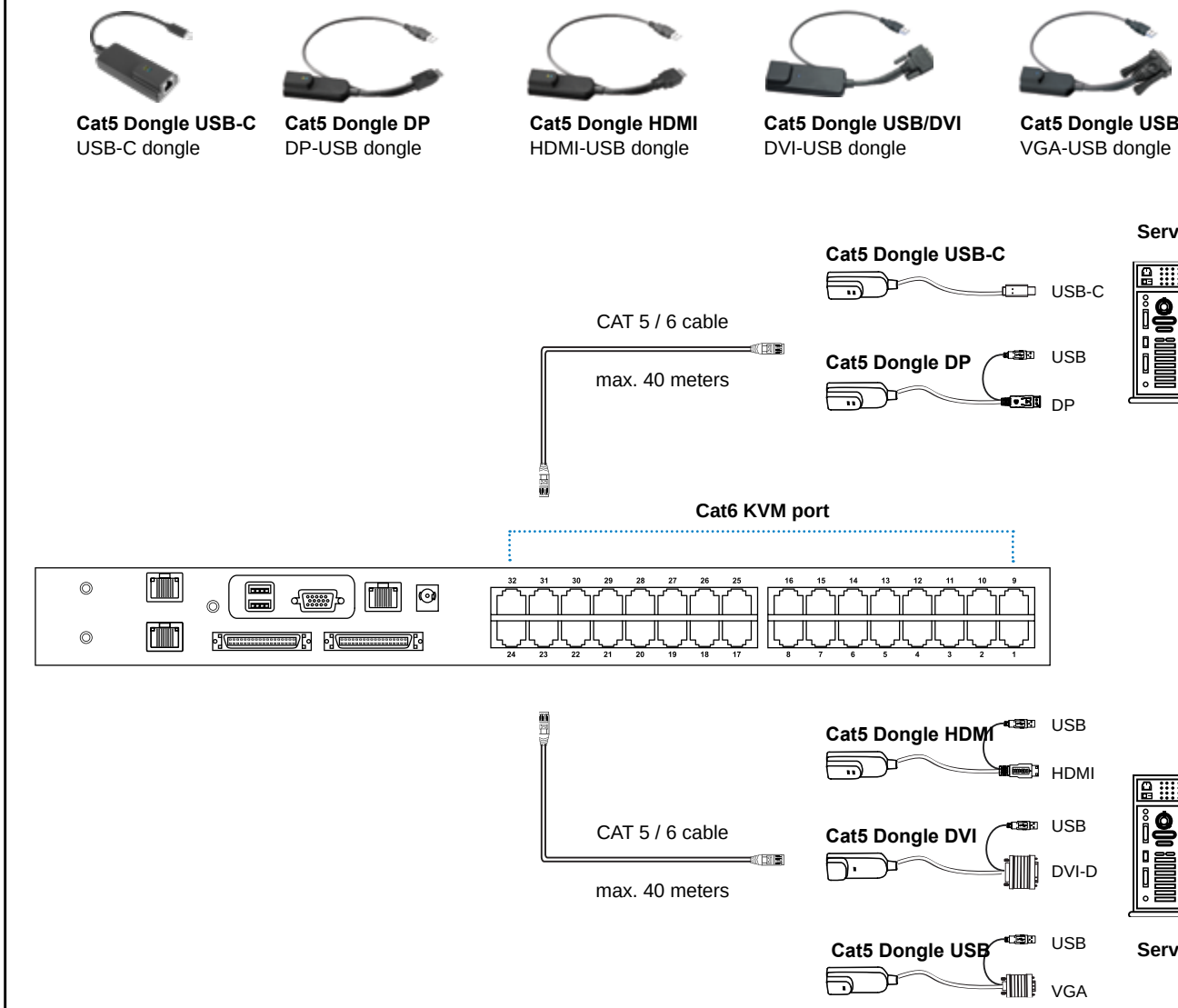
Cat5M-IP1624



Cat5M-IP232-4



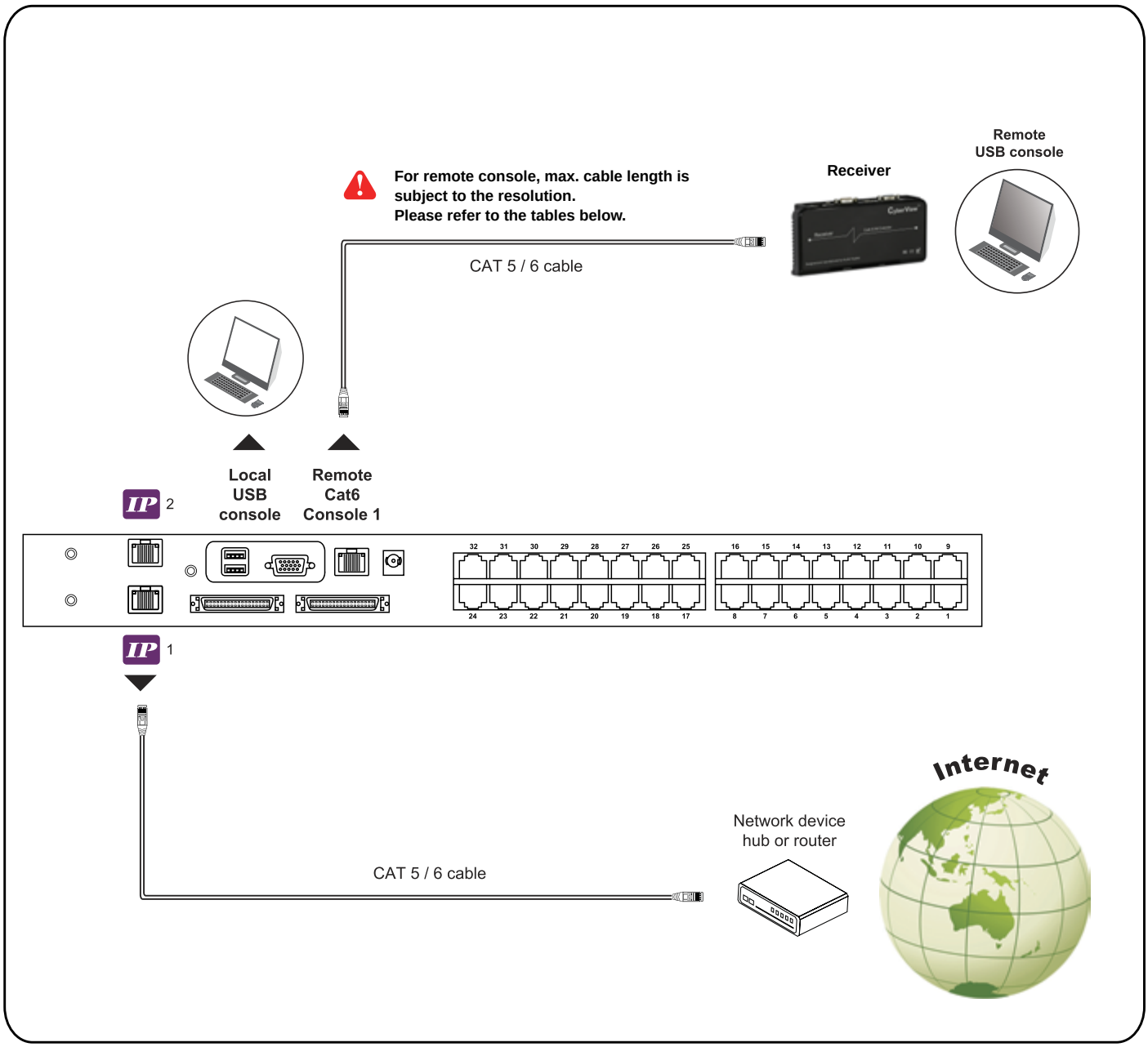
< 1.2 > KVM port & Cat6 dongle connection



Cat6 Dongle

Resolution Support	Frequency (Hz)
1920 x 1080	60
1600 x 1200	60
1440 x 900	60
1280 x 1024	60
1024 x 768	60 / 70 / 75

< 1.3 > IP, Remote & Local console connection



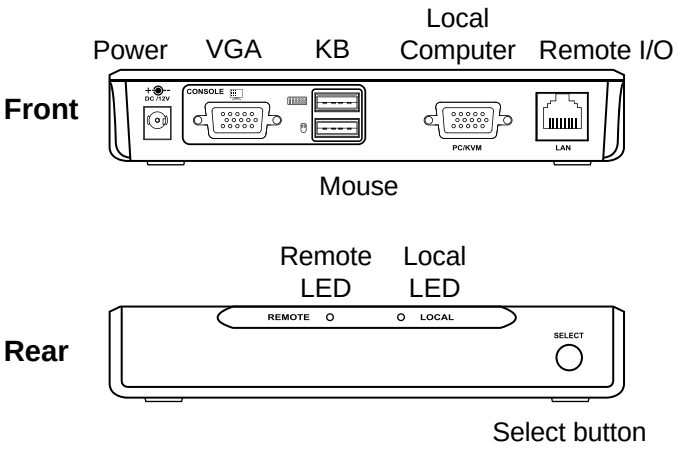
IP Console

Resolution Support	Frequency (Hz)
1920 x 1080	60
1920 x 1200	60
1600 x 1200	60
1280 x 1024	60
1024 x 768	60

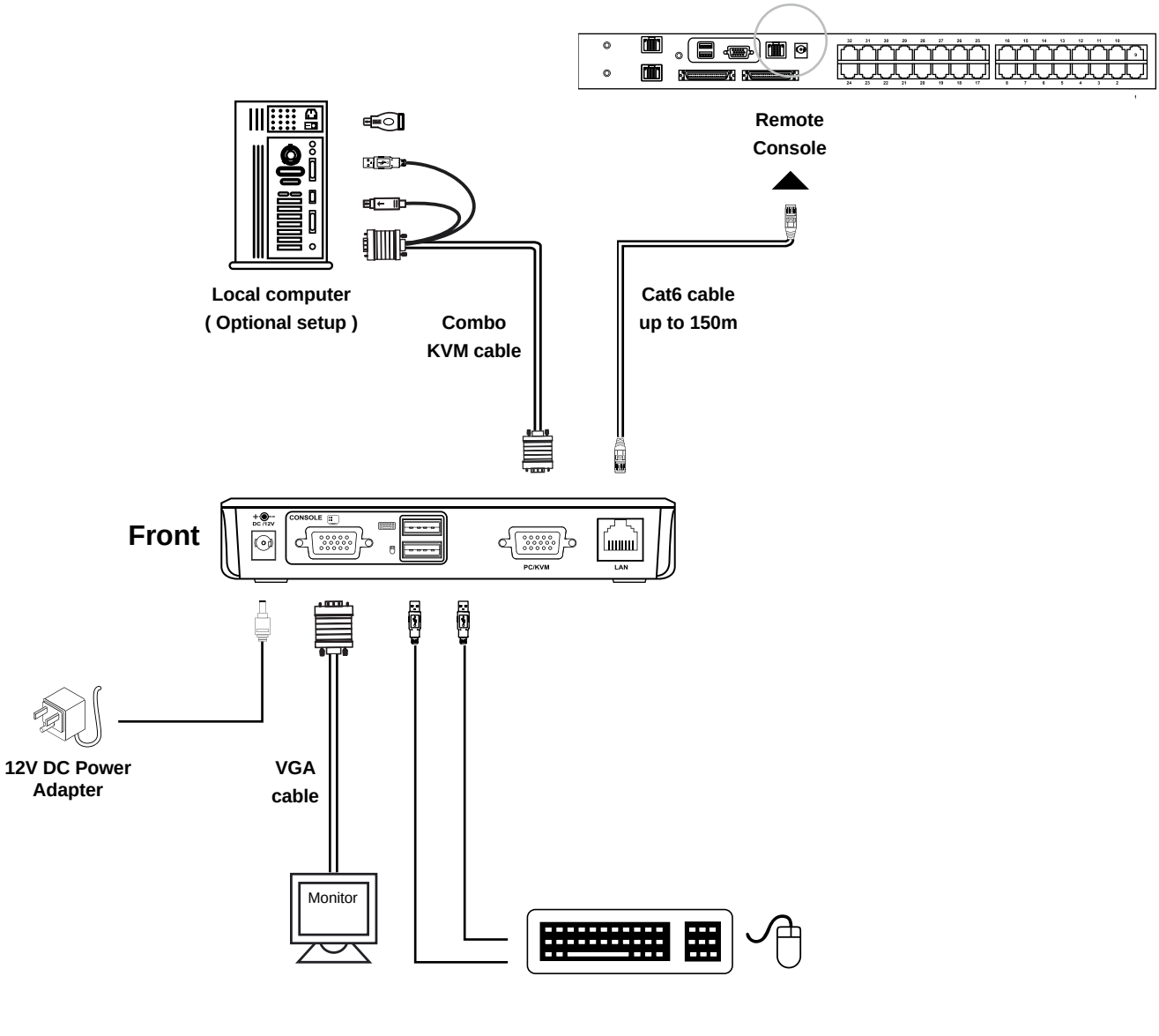
Remote Console

Resolution Support	Frequency (Hz)	Max. Cat6 Cable Length (M)
1920 x 1080	60	50
1920 x 1200	60	50
1600 x 1200	60	100
1440 x 900	60	100
1280 x 1024	60	150
1024 x 768	60 / 70 / 75	150

Receiver



The receiver provides a hotkey function for remote console. Please refer to P.21



Please make sure to follow the below steps to setup your KVM IP properly.

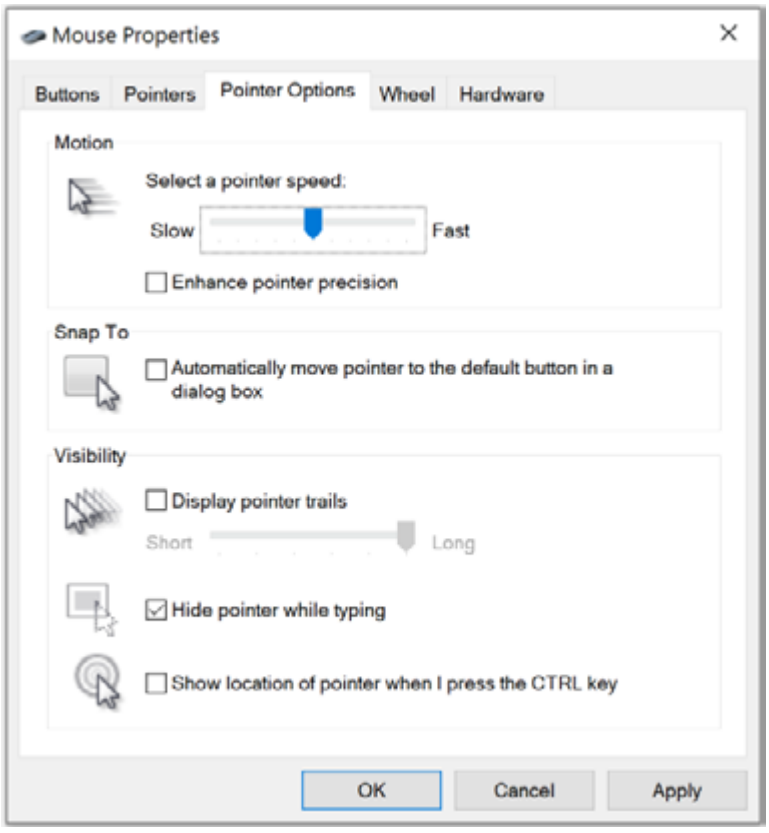
I. Configure the target server

The target server is the server that connected to the IP KVM Switch. Before use IP remote access, you need to turn off mouse acceleration of all target servers. Please refer to below for Windows operating system.

Mouse setting

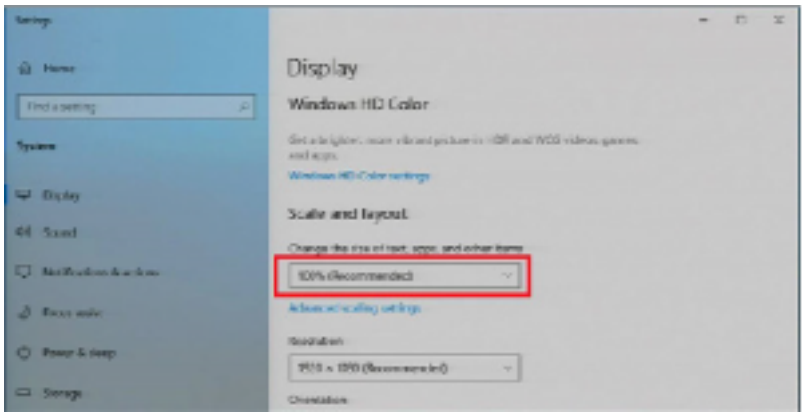
From the Control Panel, double-click the Mouse icon to open the Mouse Properties dialog box.

1. Move the pointer speed slider to the default of 50%.
   (the middle of the slider or the sixth tick from the left).
2. Uncheck "*Enhance pointer precision*".
3. Uncheck "*Automatically move pointer to the default button in a dialog box*" & "*Display pointer trails*".
4. Windows enables mouse acceleration by default. Make sure you are logged in to windows to check mouse synchronization.
5. Mouse acceleration can only be turned off on a per Windows user basis. If you log in to Windows with a different user name, then you will have to configure mouse properties separately for that user as well.



Change display scaling setting 100%

1. Open Settings.
2. Click on System.
3. Click on Display.
4. Under the “Scale and layout” section, select the scale 100%.



II. Logging in to IP KVM

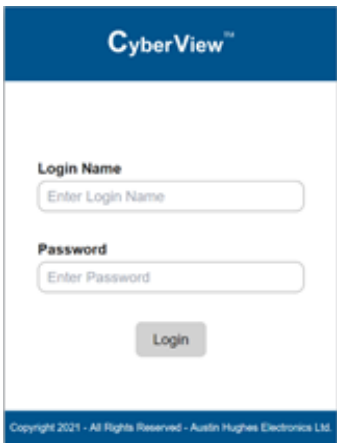
The default IP address is as below:
IP address: 192.168.1.22
Subnet mask: 255.255.255.0
Gateway: 192.168.1.1

IP KVM model with single IP port:
- Default address 192.168.1.22

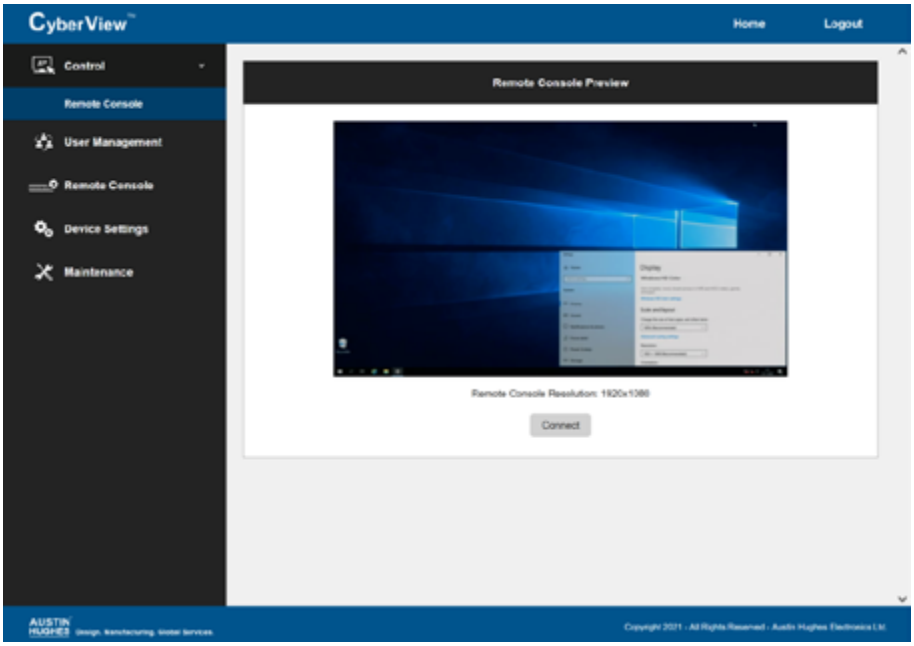
IP KVM model with dual IP ports:
- The 1st IP address 192.168.1.22
- The 2nd IP address 192.168.1.23

To log in to the IP KVM do as follows:

1. Open the browser on the client, in the address bar, enter the default IP KVM address (192.168.1.22)



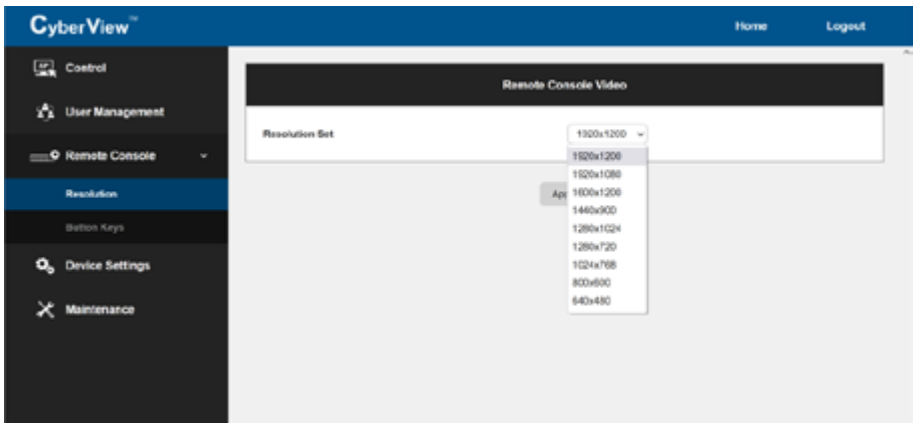
2. In login dialog box, enter the user name and password, then click **Login**, the default user name is **super** and the default password is **pass**.
3. The IP KVM GUI is displayed, and the navigation bar is on left-side.



III. Configure Remote Console Resolution

The IP remote console displayed on the HTML5-based browser support multiple types of resolution, with a maximum of 1,920 x 1,200.

Click **Remote Console** and then **Resolution**, the Remote Console Video page is displayed, select the same resolution as target servers, click **Apply** to save the resolution.

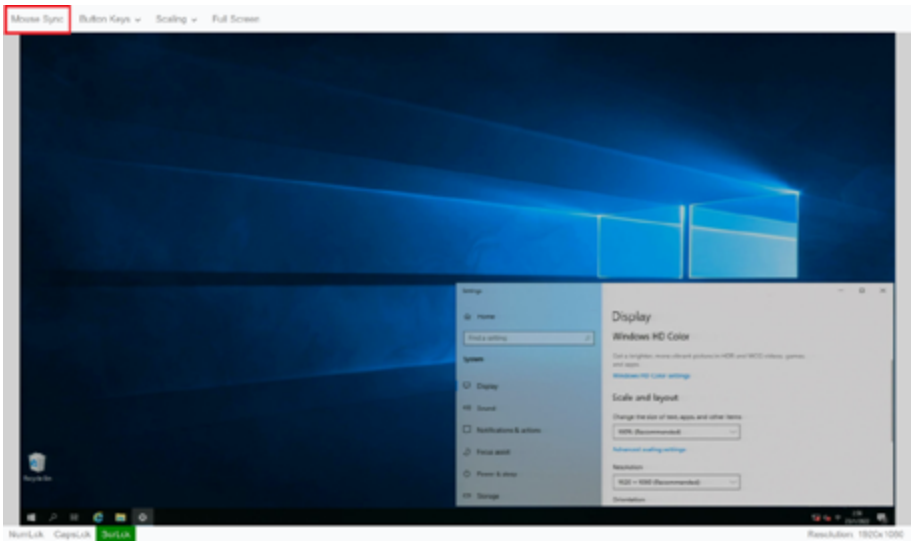


The setting is enough for intranet.
If the users access KVM GUI via internet, please ask MIS for assistance and download IP KVM user manual from the link :
www.austin-hughes.com/support/usermanual/cyberview/UM-CV-IP.pdf

IV. Launch remote console

Click **Control** and then **Remote console**, the Remote console Preview is displayed, then Click **Connect**, the remote console opens in a separate windows.

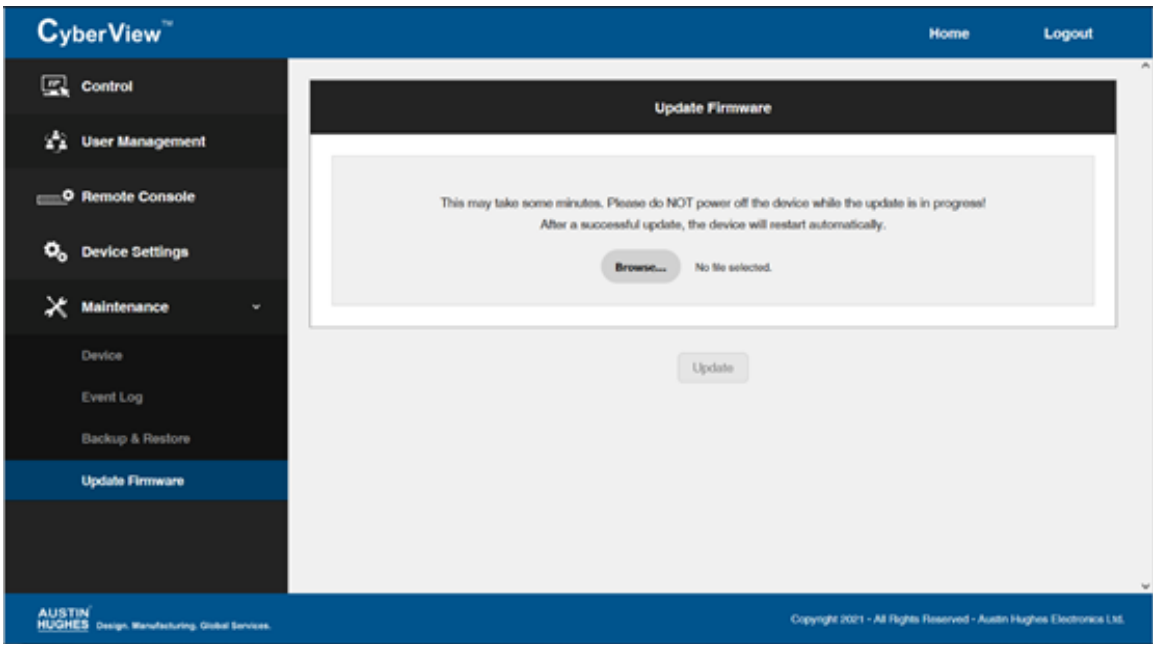
When first start, the local mouse is not synchronized with the remote mouse, it appears at a distance to each other, press the **Mouse Sync** once (positioning top left corner), the mouse will align.



< 1.5 > IP Console Firmware Update

Firmware Update Steps

1) Download the latest IP KVM firmware from the link
   http://www.austin-hughes.com/resources/software/kvm-switch
2) Login the IP KVM
3) Click < Maintenance >
4) Click < Update Firmware >
5) Click < Browse > to select the firmware file
6) Click < Update >



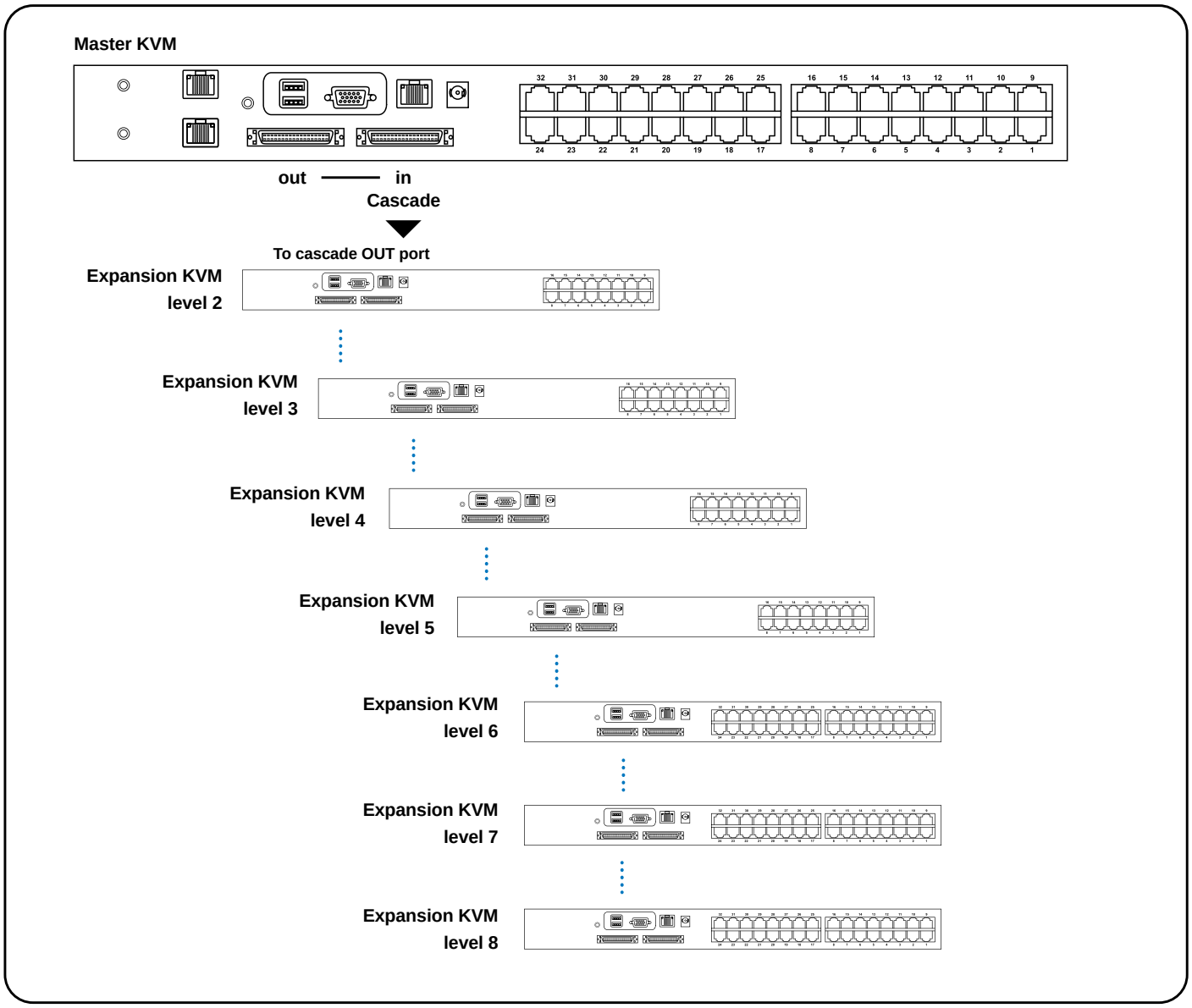
< 1.6 > KVM Cascade

- Cascade up to 8 levels, 256 servers
- Cascading multiple KVM with CMC-8 cascade cable.

Cascaded KVMs from level 2 to 8 must be the models of Cat5M-216 / 232

When multiple matrix KVMs cascade together, the master KVM at level 1 will take all control of other Expansion KVM switches (e.g. level 2 to 8).

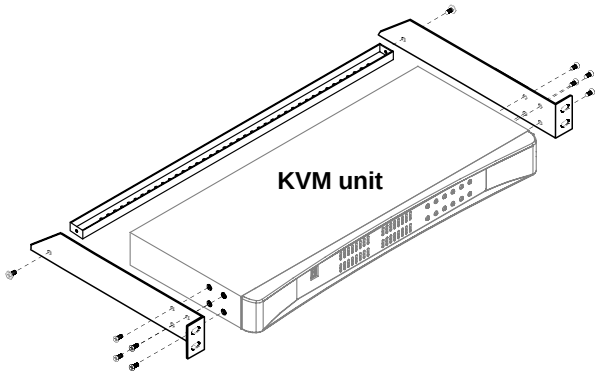
The slave matrix KVM will be as a port expansion module of the master matrix KVM, the original remote console on Expansion KVM will be sacrificed and disabled.



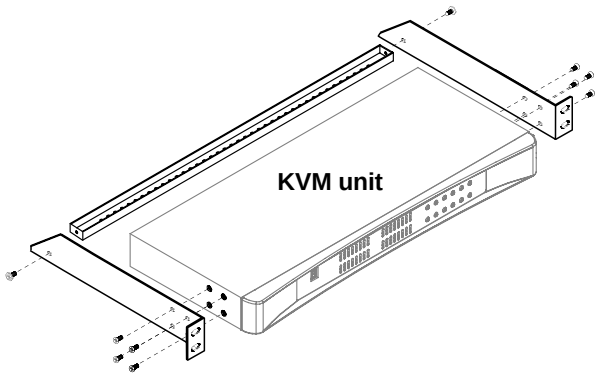
- 8ft Matrix KVM cascade cable

< 1.7 > Specifications

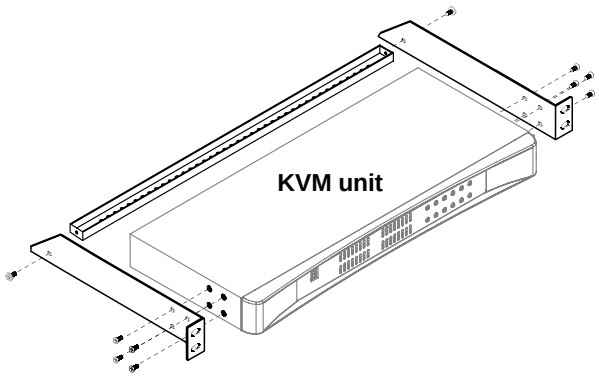
	Cat5M-IP1613 Cat5M-IP3213	Cat5M-IP1624 Cat5M-IP232-4
■ **KVM Port**		
Number of ports :	16 or 32	
Connector :	RJ-45	
Connectivity :	DVI-D / VGA connector dongle up to 40 meters (132 feet) via Cat6 / Cat5 cable	
■ **Local Console**		
Monitor port :	DB15-pin VGA	
Keyboard & mouse port :	2 x USB type connector for keyboard & mouse	
Resolution support :	16: 9 - max. 1920 x 1080 16:10 - max. 1920 x 1200 4: 3 - max. 1600 x 1200	
■ **Cat6 Remote Console**		
Number of remote port :	1	
Monitor port :	DB15-pin VGA	
Keyboard & mouse port :	2 x USB type connector for keyboard & mouse	
Remote I/O :	RJ45 via Cat5 / Cat5e / Cat6 cable up to 500 feet	
Resolution support :	16: 9 - max. 1920 x 1080 16:10 - max. 1920 x 1200 4: 3 - max. 1600 x 1200	
■ **IP Remote Console**		
Number of IP console :	1 for Cat5M-IP1613 / Cat5M-IP3213 2 for Cat5M-IP1624 / Cat5M-IP232-4	
User management :	15-user login, 1 x active user	
Browser :	Chrome, Firefox, Edge, etc.	
Security :	TLS 1.3, AES, LDAP, Active Directory (AD), HTTP(s)	
IP Access :	RJ45 Ethernet per IP console	
Resolution support :	16: 9 - max. 1920 x 1080 16:10 - max. 1920 x 1200 4: 3 - max. 1600 x 1200	
■ **Expansion :**	Up to 256 servers by 8-level cascade	
■ **Compatibility**		
Hardware :	HP / IBM / Dell PC, Server and Blade Server SUN / Mac	
OS Support :	Windows / Linux / Unix / Mac OS	
■ **Power**		
Input :	AC power adapter	
Consumption :	Max. 34W	
■ **Compliance**		
EMC :	FCC & CE	
Safety :	CE / LVD & UKCA	
Environment :	RoHS3 & REACH / WEEE	
■ **Environmental**	**Operating**	**Storage / Non-operating**
Temperature :	0 to 55°C degree	-20 to 60°C degree
Humidity :	10~90%, non-condensing	5~90%, non-condensing
Altitude :	16,000 ft	40,000 ft
Shock :	-	10G acceleration (11ms duration)
Vibration :	-	10~300Hz 0.5G RMS random vibration
■ **Product Information**		
Dimension (W x D x H) :	443 x 171 x 44 mm / 17.4 x 6.7 x 1.73 inch	
Net weight:	3 kg / 6.5 lb	
■ **Packing Information**		
Dimension (W x D x H) :	500 x 400 x 140 mm / 19.7 x 15.8 x 5.5 inch	
Gross weight:	5 kg / 11 lb	



- Cat5M-216 or Cat5M-232 KVM unit x 1
- Mounting set w/ bracket & screws x 1
- Power adapter w/ power cord (for KVM) x 1
- Receiver box for remote console x 1
- Power adapter w/ power cord (for receiver) x 1
- CE-6 6ft Combo KVM cable for receiver box x 1

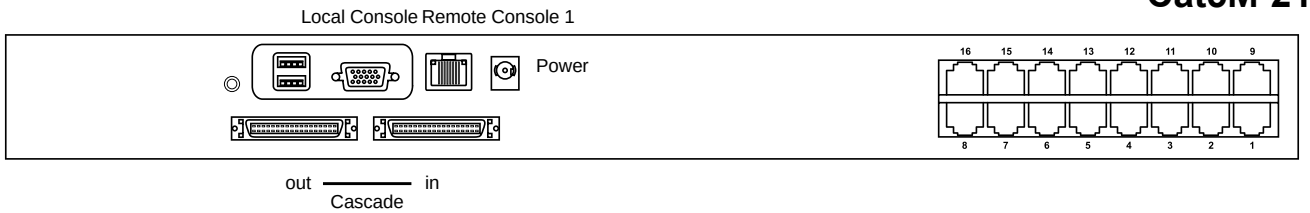


- Cat5M-1603 or Cat5M-3203 KVM unit x 1
- Mounting set w/ bracket & screws x 1
- Power adapter w/ power cord (for KVM) x 1
- Receiver box for remote console x 2
- Power adapter w/ power cord (for receiver) x 2
- CE-6 6ft Combo KVM cable for receiver box x 2

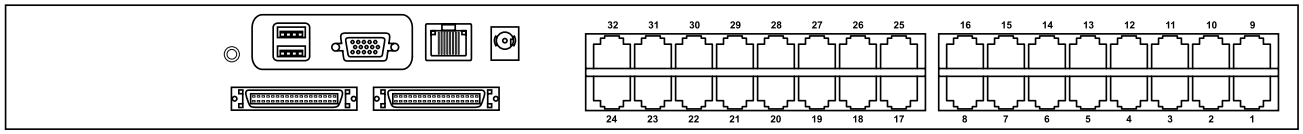


- Cat5M-1604 or Cat5M-232-4 KVM unit x 1
- Mounting set w/ bracket & screws x 1
- Power adapter w/ power cord (for KVM) x 1
- Receiver box for remote console x 3
- Power adapter w/ power cord (for receiver) x 3
- CE-6 6ft Combo KVM cable for receiver box x 3

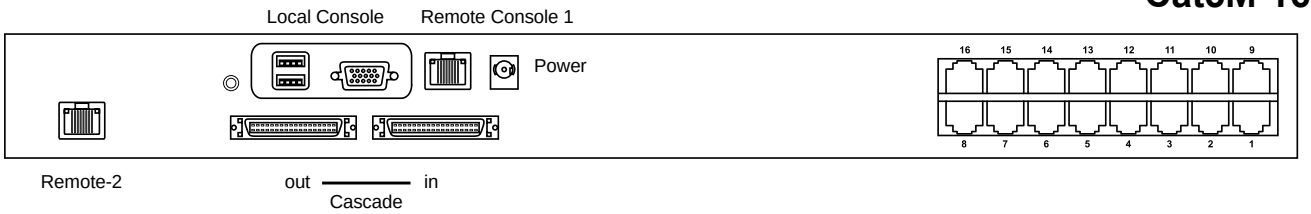
Cat5M-216



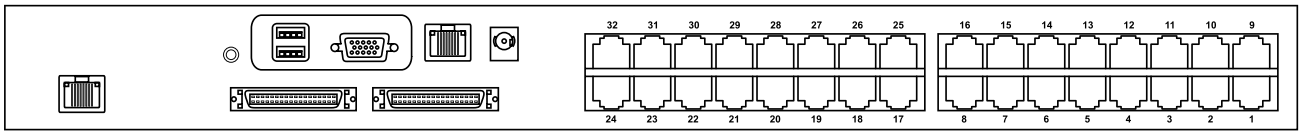
Cat5M-232



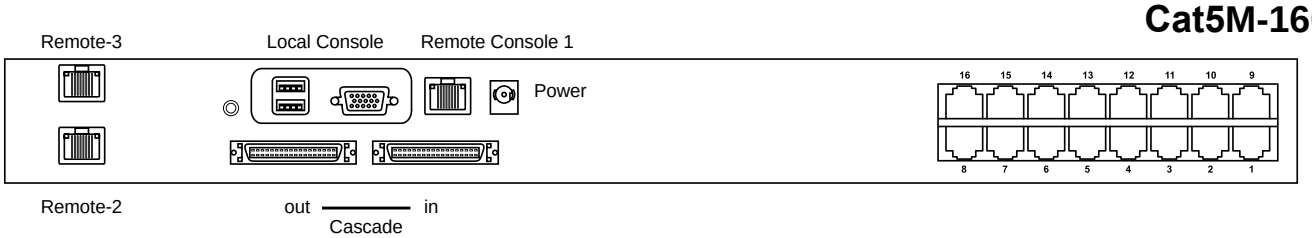
Cat5M-1603



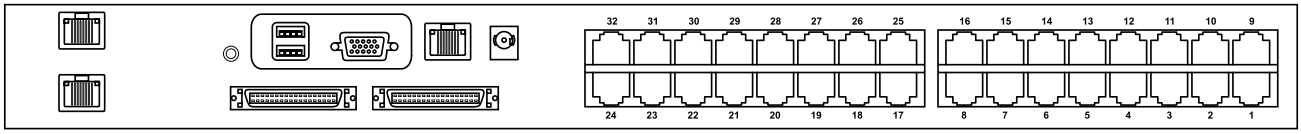
Cat5M-3203



Cat5M-1604



Cat5M-232-4



< 2.2 > KVM port & Cat6 dongle connection

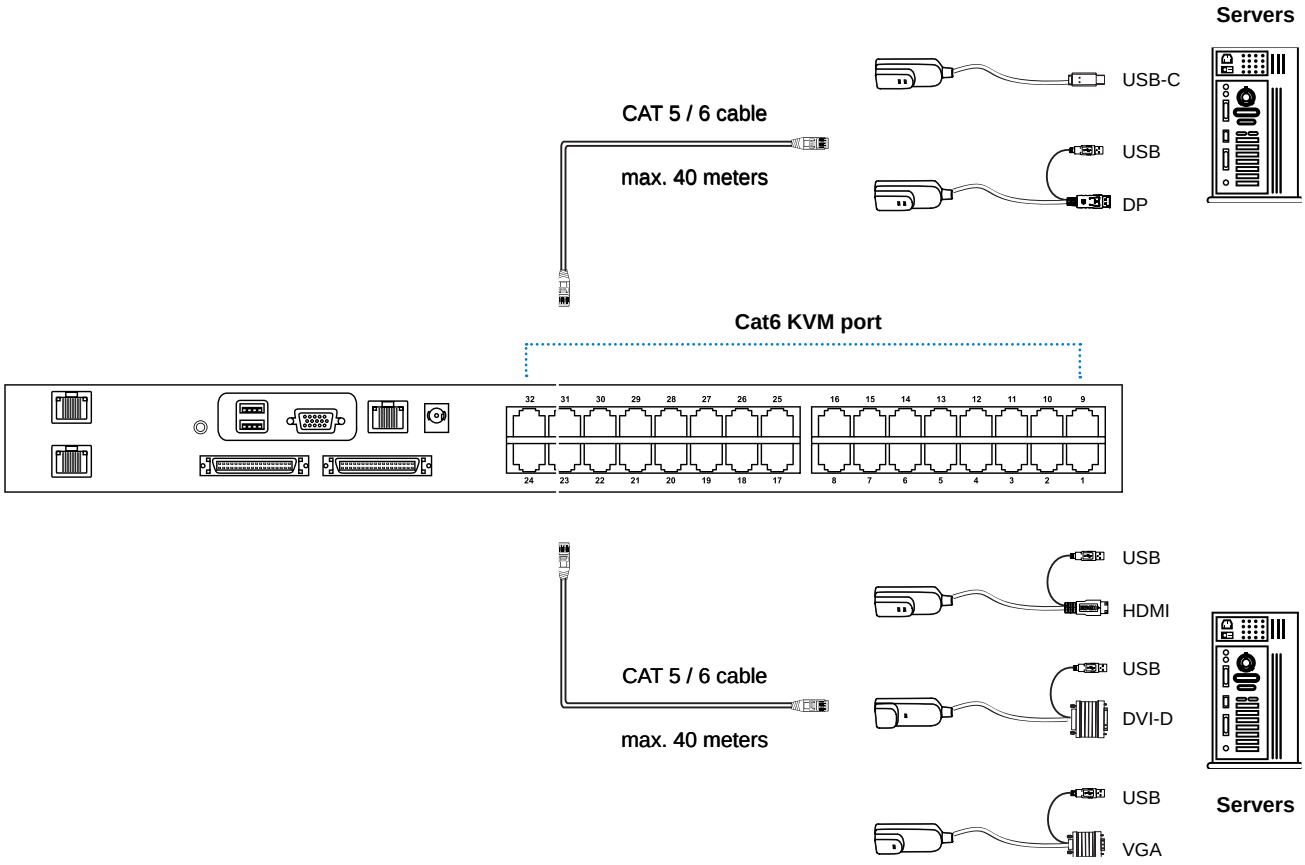
Cat5 Dongle USB-C
USB-C dongle

Cat5 Dongle DP
DP-USB dongle

Cat5 Dongle HDMI
HDMI-USB dongle

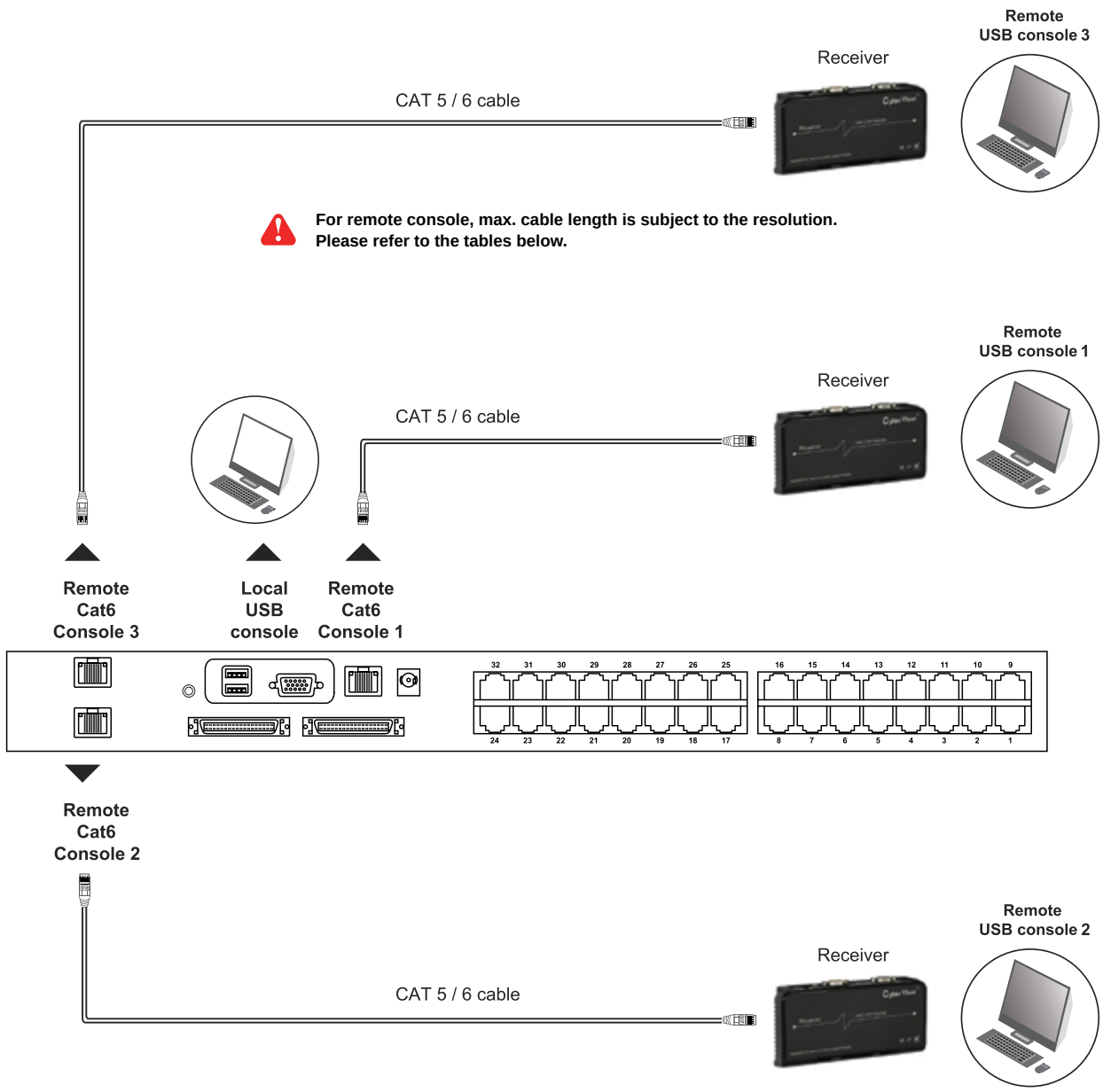
Cat5 Dongle USB DVI
DVI-USB dongle

Cat5 Dongle USB
VGA-USB dongle



Cat6 Dongle

Resolution Support	Frequency (Hz)
1920 x 1080	60
1600 x 1200	60
1440 x 900	60
1280 x 1024	60
1024 x 768	60 / 70 / 75



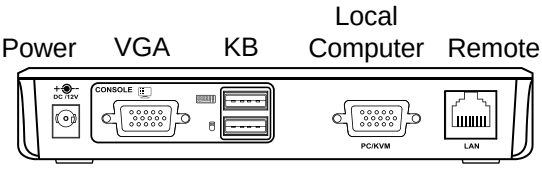
Remote Console

Resolution Support	Frequency (Hz)	Max. Cat6 Cable Length (M)
1920 x 1080	60	50
1920 x 1200	60	50
1600 x 1200	60	100
1440 x 900	60	100
1280 x 1024	60	150
1024 x 768	60 / 70 / 75	150

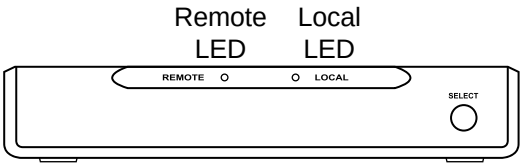
How to use a receiver to connect a remote console

Receiver

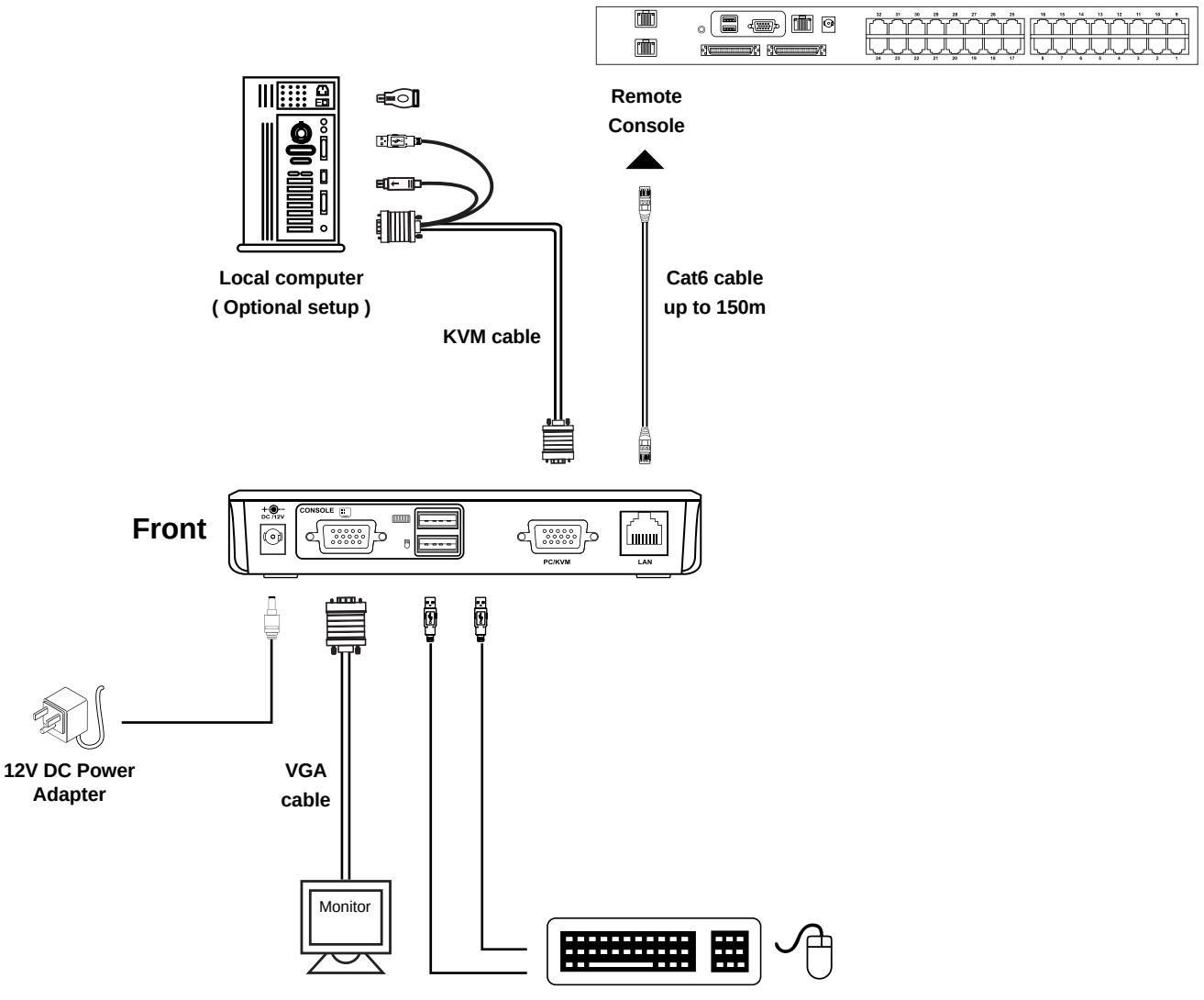
Front



Rear



The receiver provides a hotkey function for remote console. Please refer to P.21



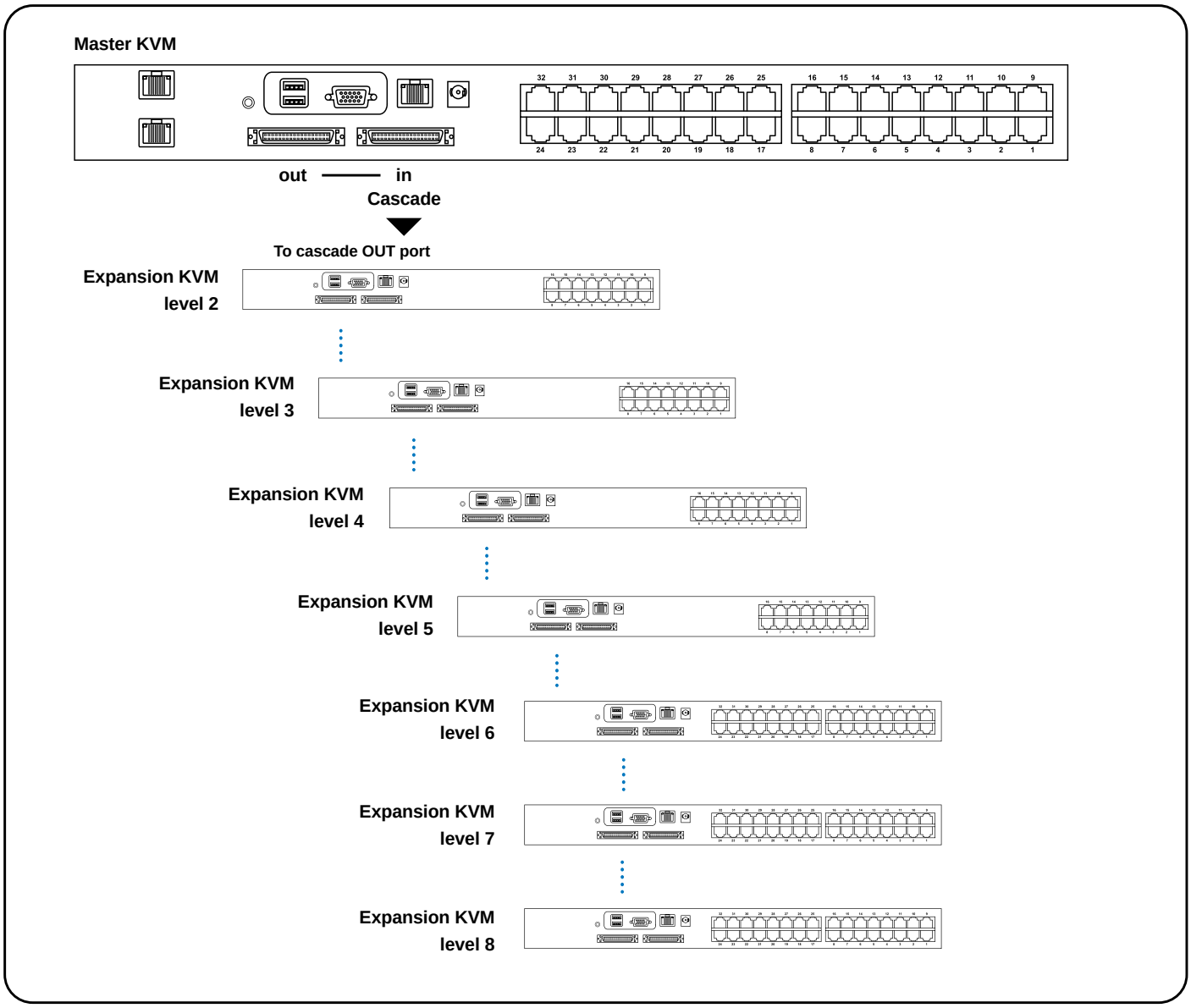
< 2.4 > KVM Cascade

- Cascade up to 8 levels, 256 servers
- Cascading multiple KVM with CMC-8 cascade cable.

Cascaded KVMs from level 2 to 8 must be the models of CatM-1602 / Cat5M-3202

When multiple matrix KVMs cascade together, the master KVM at level 1 will take all control of other Expansion KVM switches (e.g. level 2 to 8).

The slave matrix KVM will be as a port expansion module of the master matrix KVM, the original remote console on Expansion KVM will be sacrificed and disabled.



- 8ft Matrix KVM cascade cable

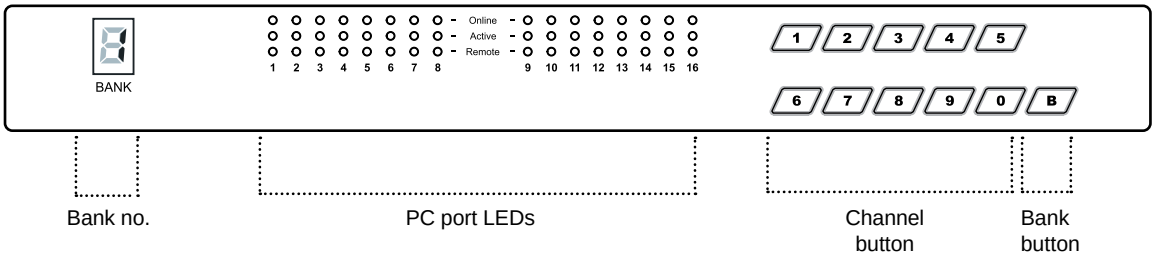
	Cat5M-216 Cat5M-232	CatM-1603 Cat5M-3203	Cat5M-1604 Cat5M-232-4
■ **KVM Port**			
Number of ports :	16 or 32		
Connector :	RJ-45		
Connectivity :	DVI-D / VGA connector dongle up to 40 meters (132 feet) via Cat6 / Cat5 cable		
■ **Local Console**			
Monitor port :	1 x DB15-pin VGA		
Keyboard & mouse port :	2 x USB type connector for keyboard & mouse		
Resolution support :	16: 9 - max. 1920 x 1080		
	16:10 - max. 1920 x 1200		
	4: 3 - max. 1600 x 1200		
■ **Cat6 Remote Console**			
Number of remote port :	1 for CatM-216 / CatM-232		
	2 for Cat5M-1603 / CatM-3203		
	3 for CatM-1604 / Cat5M-232-4		
Monitor port :	DB15-pin VGA		
Keyboard & mouse port :	2 x USB type connector for keyboard & mouse		
Remote I/O :	RJ45 via Cat5 / Cat5e / Cat6 cable up to 500 feet		
Resolution support :	16: 9 - max. 1920 x 1080		
	16:10 - max. 1920 x 1200		
	4: 3 - max. 1600 x 1200		
■ **Expansion :**	Up to 256 servers by 8-level cascade		
■ **Compatibility**			
Hardware :	HP / IBM / Dell PC, Server and Blade Server SUN / Mac		
OS Support :	Windows / Linux / Unix / Mac OS		
■ **Power**			
Input :	AC power adapter		
Consumption :	Max. 20W		
■ **Compliance**			
EMC :	FCC & CE		
Safety :	CE / LVD & UKCA		
Environment :	RoHS3 & REACH / WEEE		
■ **Environmental**	**Operating**		**Storage / Non-operating**
Temperature :	0 to 55°C degree		-20 to 60°C degree
Humidity :	10~90%, non-condensing		5~90%, non-condensing
Altitude :	16,000 ft		40,000 ft
Shock :	-		10G acceleration (11ms duration)
Vibration :	-		10~300Hz 0.5G RMS random vibration
■ **Product Information**			
Dimension (W x D x H) :	443 x 171 x 44 mm / 17.4 x 6.7 x 1.73 inch		
Net weight:	3 kg / 6.5 lb		
■ **Packing Information**			
Dimension (W x D x H) :	500 x 400 x 140 mm / 19.7 x 15.8 x 5.5 inch		
Gross weight:	5 kg / 11 lb		

Power ON

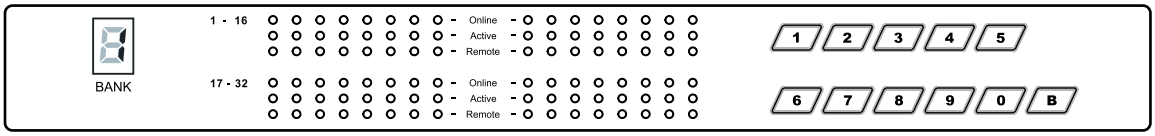
- Turn off all servers and KVM switches
- Make sure all cables / connectors are properly connected
- Recommend Power ON sequence is monitor, KVM switch finally computer

Front Panel - Port LED Indications

16 ports



32 ports



Bank no.	7-Segment BANK LED indication
PC port LEDs	***Online*** : **Blue** LED on indicating a PC is connecting to the port ***Active*** : **Green** LED on indicating a selected channel ***Remote*** : **Orange** LED on indicating the port is selecting by IP / remote console
Channel button	Press to select channel from 01 to 32
Bank button	Select the bank from 1 to 8

The password is enabled by default, the default password is “00000000” eight zeros **(Do not use “0” on number pad)**

■ **Enable password**

1. Press the KVM hotkey **Scroll Lock + Scroll Lock + U**
2. Logout the KVM by pressing the hotkey **Scroll Lock + Scroll Lock + P**
3. In SUPERVISOR level, enter “00000000” eight zeros in user name & password field **(Do not use “0” on number pad)**
4. In USER level, press **Space bar** + **Enter** in user name & password field

   Remark: Automatic logout after 10 minutes of inactivity

■ **Set your own user name & password**

1. Login the KVM in SUPERVISOR level by pressing “00000000” eight zeros in user name & password field
2. Call KVM OSD menu by pressing the KVM hotkey **Scroll Lock + Scroll Lock + Space Bar**
3. Press **F1** to the MAIN MENU
4. Select “USER SECURITY”
5. Set password in SUPERVISOR & USER level
   a. In the left-top row “S” (SUPERVISOR), press **Enter** to set your own user name & password
   b. In the row 1 to 8 (USER), press **Enter** to set your own user name & password
6. Press **Enter** to save the setting or press **Esc** to cancel the editing without any change

   Remark: a. Blank has underscore, while SPACE doesn’t have
   b. Press any alphanumeric key to move to next input item. SPACE is treated as a valid character

■ **Change your password**

1. Login the KVM in SUPERVISOR level by pressing your own user name & password
2. Call KVM OSD menu by pressing the KVM hotkey **Scroll Lock + Scroll Lock + Space Bar**
3. Press **F1** to the MAIN MENU
4. Select “USER SECURITY”
5. Change password in SUPERVISOR & USER level
   a. In the left-top row “S” (SUPERVISOR), press **Enter** to change your user name & password
   b. In the row 1 to 8 (USER), press **Enter** to change your user name & password
6. Press **Enter** to save the setting or press **Esc** to cancel the editing without any change

   Remark: a. Blank has underscore, while SPACE doesn’t have
   b. Press any alphanumeric key to move to next input item. SPACE is treated as a valid character

■ **Disable your password**

1. Press the KVM hotkey **Scroll Lock + Scroll Lock + U**
2. Logout the KVM by pressing the KVM hotkey **Scroll Lock + Scroll Lock + P**
3. You don’t need user name & password to access the KVM OSD menu

■ **Forget your password**

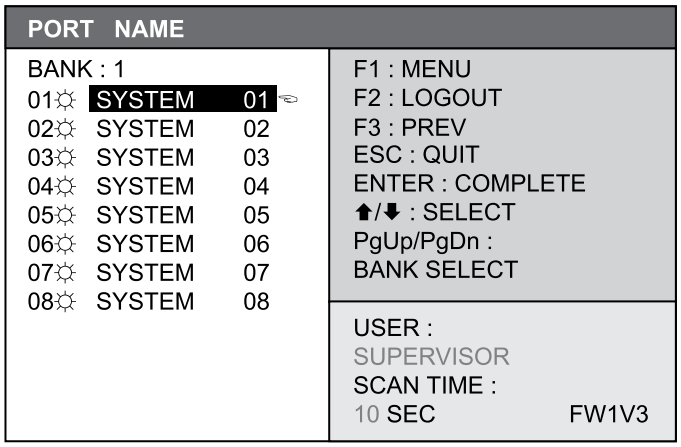
Please contact your supplier for further support

Remark:

■ You must press the KVM hotkey within 2 seconds

■ A beep sound will be heard for successful entering KVM hotkey

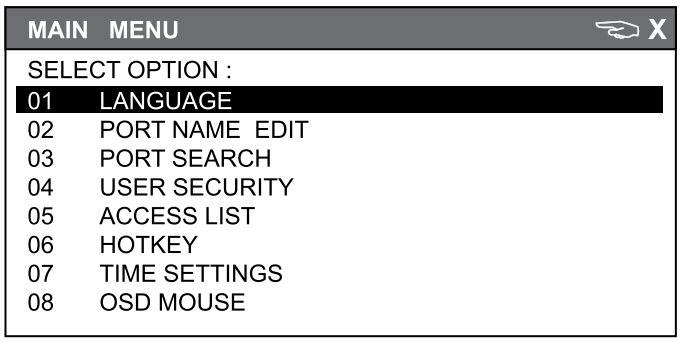
OSD Menu



OSD operation

☼ next to the system name	The PC is powered on
☜ next to the system name	The PC is selected
F1	Access F1 MAIN MENU
F2	Logout the OSD menu
F3	Previous menu
Esc	Cancel / Quit
Enter	Complete / Switch to selected port
⬆/⬇	Switch to previous or next port
PgUp/PgDn	Switch to previous bank or next bank
1 / 2 / 3 / 4	Display port 01 ~ 08 / 09 ~ 16 / 17 ~ 24 / 25 ~ 32 Remark: Display port 17 ~ 32 for 32 port model only

F1 Main Menu



01 LANGUAGE	OSD language change
02 PORT NAME EDIT	Define port name
03 PORT SEARCH	Quick searching by port name
04 USER SECURITY	Change password
05 ACCESS LIST	Define user access authority
06 HOTKEY	Change hotkey
07 TIME SETTINGS	Modify scan display time interval
08 OSD MOUSE	Modify OSD mouse speed

Local / IP Remote Console Hotkey	Function
Scroll Lock + Scroll Lock + Space Bar	Calling OSD menu
Right-button mouse + Esc	Calling OSD menu
Scroll Lock + Scroll Lock + ⬆	Switch to previous port
Scroll Lock + Scroll Lock + ⬇	Switch to next port
Scroll Lock + Scroll Lock + PgUp / PgDn	Switch to previous bank or next bank
Scroll Lock + Scroll Lock + Bank no. + Port no.	Switch to specific port
Scroll Lock + Scroll Lock + B	Turn the buzzer ON and OFF * Default the buzzer is ON
Scroll Lock + Scroll Lock + P	Logout the KVM if password security is ON. Show up the status windows

Advance hotkeys (for Supervisor login only)	
Scroll Lock + Scroll Lock + S	Activate auto-scan mode for connected servers *Press any key to exit the auto-scan mode
Scroll Lock + Scroll Lock + R	Reset all the KVM settings to factory default *Except User Security settings
Scroll Lock + Scroll Lock + U	Disable and enable password security *Default security is ON
Scroll Lock + Scroll Lock + L	To enable / disable the screen saving function and 10 minutes auto-logout *Default the screen saving is OFF

Remarks:

- Example of "**Scroll Lock** + **Scroll Lock** + Bank no. + Port no."
  - Bank No. : 1 to 8
  - Port No. : 01 to 16
  - e.g. Bank 1 Port 4 : **Scroll Lock** + **Scroll Lock** + **1** + **0** + **4**
  - e.g. Bank 2 Port 16 : **Scroll Lock** + **Scroll Lock** + **2** + **1** + **6**
- You must press the hotkey within 2 seconds
- A beep sound will be heard for successful entering
- The numeric keypad is not supported, while in OSD screen, the arrow keys, PgUp, PgDn, and Enter keys are supports

Cat6 Remote Console Hotkey	Function
Scroll Lock + Scroll Lock + C	Toggle switch between remote & local port
Scroll Lock + Scroll Lock + Q	Turn the buzzer ON & OFF *Default the buzzer is ON
Scroll Lock + Scroll Lock + S	Activate auto-scan mode for remote & local port *The scan time interval is 5 seconds
Scroll Lock + Scroll Lock + A	Auto-adjust the video signal

Intentionally
Left
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