



Check out
our Installation Channel:

master
line

kvm-tec
User
Manual



Masterline MVX
6701 SET
6701L CPU/LOCAL
6701R CON/REMOTE

Masterline fiber MVX-F
6801 SET
6801L CPU/LOCAL
6801R CON/REMOTE



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Let's connect!
KVM can be so *simple*
kvm-tec

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Congratulations on the purchase of your new Masterline MVX1/MVX1-F KVM Extender. You have bought a high quality extender. These instructions are part of this product. They contain important information regarding safety, use and disposal for every user of the Masterline MVX1 and MVX1-F KVM Extender. Please familiarise yourself with the information within prior to using your product. Use the product only in the manner as described and for the areas of application as stated. When passing the product to a third party be sure to also supply all instructions and other relevant documentation. Following proper use and maintenance, your Masterline MVX1/MVX1-F KVM Extender will bring you joy for many years to come.

1.1 INTENDED USE

This product is intended to be used USB - and Videosignals over huge distances This product is intended for professional use. The product should not be used in potentially explosive environments.

The product may only be used according to the instructions as described in this manual. All use, other than that described in this manual, is seen as unintended use. Modifications in the course of technological progress are reserved. In these user instructions the Masterline MVX1/MVX1-F KVM Extender is referred to as 'product' or 'extender'. The MVX1/PC is referred to as the 'local unit' and the MVX1/Monitor is referred to as the 'remote unit'.

1.2 Safety Instructions

WARNING! Read and understand all safety instructions.

- Follow all the instructions. This will avoid accidents, fire, explosions, electric shocks or other hazards that may result in damage to property and/or severe or fatal injuries. Please ensure that everyone who uses the product has read and followed these warnings and instructions.
- Keep all safety information and instructions for future reference and pass them on to subsequent users of the product.
- The manufacturer is not liable for cases of material damage or personal injury caused by incorrect handling or non-compliance with the safety instructions. In such cases, the warranty will be voided.
- This product is not intended for use by persons (including children) with restricted physical, sensory or intellectual capability or lack of experience and/or knowledge, unless they are supervised by a person who is responsible for their safety or provides them with instructions on how to use the product.
- **DANGER!** Not for use in potentially explosive environments.
- **DANGER!** Be vigilant at all times, and always take care around this product. Do not use electrical equipment if you are lacking in concentration or awareness, or are under the influence of drugs, alcohol or medication. Even a moment of inattentiveness can lead to serious accidents and injuries when using electrical equipment. Check the product and the cables for any damage before use. If there is any visible damage, a strong odour, or excessive overheating of components unplug all the connections immediately and stop using the product.
- **DANGER!** The MVX1-F KVM Extender is a Class 1 Laser Product 1 according to DIN 40008/EN and VDE 0837.
- If the product is not installed and used in accordance with this manual, it may cause disruptive interference with radio or television reception or affect other electronic products in residential areas.
- Use shielded cables only to connect the components in order to avoid such interference. Non-compliance invalidates the permission to operate this product.
- Only the mains adapter included with the product should be used as the power supply. Do not use other adapters.
- Prior to connecting to the mains, make sure your local mains voltage matches the rating indicated on the product.
- The product must be connected to a permanent and earthed AC wall socket.

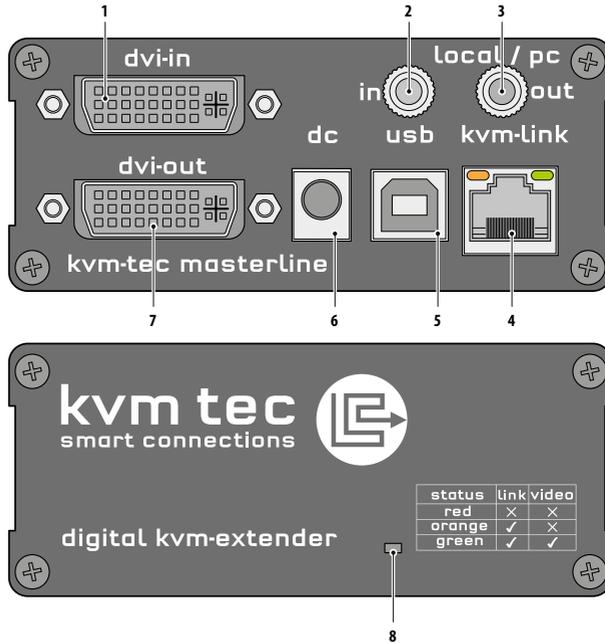
- Protect cables from being strained, pinched or buckled and place them in a way to prevent people from tripping over the cord.
- In particular, ensure to avoid damage to the mains adapter.
- Use the product with a suitable, properly installed and easily accessible mains power socket. Make sure the product can be disconnected from the power socket at all times.
- Unplug the product during electrical storms or when not in use.
- **DANGER!** Never touch the adapter with wet hands.
- Use the product within the specified performance limits.
- Keep the product away from flammable materials such as curtains and drapes.
- Protect the mains adapter from use by third parties (particularly children). Keep the unused mains adapter in a dry, elevated or locked location away from children.
- Do not place the product near heaters.
- Do not drop or hit the product.
- Unplug all connections before cleaning the product. Do not use wipes or chemicals as these could damage the surface. Wipe the housing with a damp cloth. Electrical/ electronic parts must not be cleaned.
- Alterations to the product and technical modifications are not permitted.

1.3 TECHNICAL SPECIFICATIONS

Type:	KVM Extender (local unit and remote unit)
Model:	Masterline MVX1/MVX1-F KVM Extender
Power supply input voltage:	100 - 240 V; 50/60 Hz AC
Power supply output:	12V 2A (external power supply)
Power requirement:	6W per extender (excluding attached USB devices)
Operating temperature range:	0 °C to 45 °C / 32 °F to 113 °F
Storage temperature range:	-25 °C to 80 °C / -13 °F to 176 °F
Relative humidity:	max. 80% (non-condensing)
Storage humidity:	max. 80% (non-condensing)
Casing Material:	Anodized aluminium
Dimensions:	approx. 97,5 x 41 x 103,5 mm / 3.83x 1.57 x 4.7 inch "
Weight:	local unit 302g/0.66lbs. remote 291g/0.64lbs
Expected product life:	82 820 hours / 9.5 years
Laser MVX1-F:	Class 1 Laser Product 1 according to DIN 40008/EN and VDE 0837

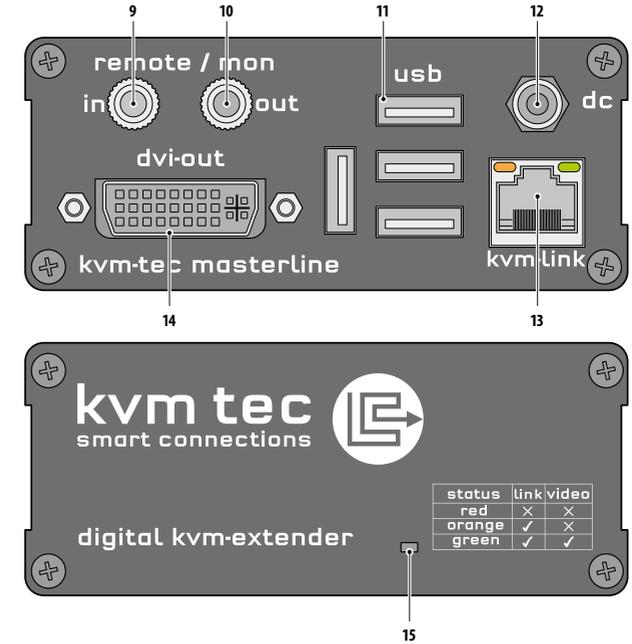
1.4 ABOUT YOUR MASTERLINE EXTENDER

Local Extender (CPU)



Nr.	Name	Function
1	dvi-in	DVI connection to PC
2	in	Audio In from PC
3	out	Audio Out to PC
4	kvm-link/ RJ45 socket	Connection for CAT5/6/7 cable or fibre cable
5	usb	USB connection
6	dc	Connection for 12 V power supply
7	dvi-out	DVI connection to monitor
8	Power/Status LED	Displays the status of the extender

Remote Extender (CON)



Nr.	Name	Function
9	in	Audio In from microphone etc.
10	out	Audio Out to speakers etc.
11	usb	USB connections (e.g. for keyboard and mouse)
12	dc	Connection for 12 V power supply
13	kvm-link/ RJ45 socket	Connection for CAT5/6/7 cable or fibre cable
14	dvi-out	DVI-D connection to monitor
15	Power/Status LED	Displays the status of the extender

1.5 Meaning of LED indicators

The Status LED (8/15) can light red, orange or green. Table 1 shows the meaning of each colour. Also see chapter *Troubleshooting*.

		Normal Operation							
Colour	Blinking	Physical Link	Active Connection	Video Extended	USB Initialisation	UBS Data Received	Identify Command	Autoupdate Mode	
Main LED									
Red	-	Yes	No	No				Update Failed	
Red	Slow	No	No	No					
Orange	-	Yes	Yes	No					
Orange	Fast							Update in Progress	
Green	-	Yes	Yes	Yes				Update Succeeded	
Green	V. fast				Yes**				
Red/Green	V. fast						Yes		
RJ45 Socket LEDs *									
Yellow	-	No							
Yellow	Slow	Yes							
Green	-			Yes					
Green	V. fast					Yes			

* MVX only

** Rem. Only

Table 1: Meaning of LED indicators

2.1 UNPACKING AND CHECKING THE CONTENTS

Before using the product for the first time it should be checked for damage. In case of damage due to transport inform the carrier immediately. Before delivery the product is checked for its function and its operating safety.

- Make sure that the packaging contains the following content:

- A. 1x MVX1/local extender/CPU
 - B. 1x MVX1/remote extender/CON
 - C. 1 x wall power supply unit I 12V 2A (EU-plug or INT plug)
 - D 1 x DVI - DVI cable 1,8m/5.9ft
 - E 1 x USB cable 1,8m/5.9ft
 - F 1 x VGA-DVI cable 1,8m/5.9ft (opt)
 - G 2 x Audio cable 1,8m /5.9ft (opt)
 - I 8 x mounting pads
- 1 x SFP Module Multimode up to 500m/1640 ft.
alternativ with Single-Mode up to 20km/12mi ItemNr6831

2.2 MOUNTING OPTIONS

2.2.1 MOUNTING PADS AND RUBBER FEET

The mounting pads and rubber feet can be used to hold the extenders in place and prevents them from sliding and falling.

To attach the mounting pads or rubber feet:

1. Remove the protection layer from the **mounting pads** or **rubber feet** (G).
2. Attach the **mounting pads** or **rubber feet** (G) to the bottom the units.

2.2.2 MOUNTING KITS (OPTIONAL)

The following mounting kits are available:

Rack Mounting Kit RMK-F - Part No. 6130

The rack mounting kit RMK-F is for mounting kvm-tec Smartline SVX and Masterline MVX extenders. It consists of a 19" rack shelf and an alu-faceplate.

Rack Mounting Kit RMK-FN - Part No. 6131

The rack mounting kit RMK-FN is for assembling kvm-tec Smartline SVX and Masterline MVX extenders. It consists of 19" Rack Shelf, an alu-faceplate and a power supply.

Rack Mounting Kit RMK-FRN - Part No. 6132

The rack mounting kit RMK-FRN is used to mount kvm-tec Smartline SVX and Masterline MVX extenders. It is equipped with rack shelf, faceplate and 2 power supply units, which are summarized in a redundancy module.

Under Desk Mounting Kit - Part No. 6135

The Under Desk Mounting kit is for underdesk mounting of the SVX and MVX extender.

Din Rail Mounting Kit - Part No. 6136

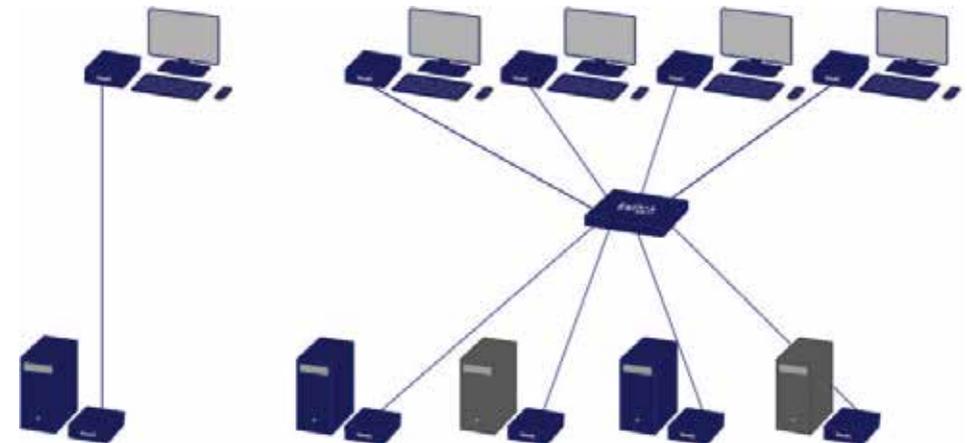
The DIN rail mounting is used for space-saving installation in control cabinets or on DIN rails. The attachment to the SVX and MVX extenders is possible in several ways.

2.3 INSTALLING THE EXTENDER

WARNING! Read and understand all safety information before installing the product.

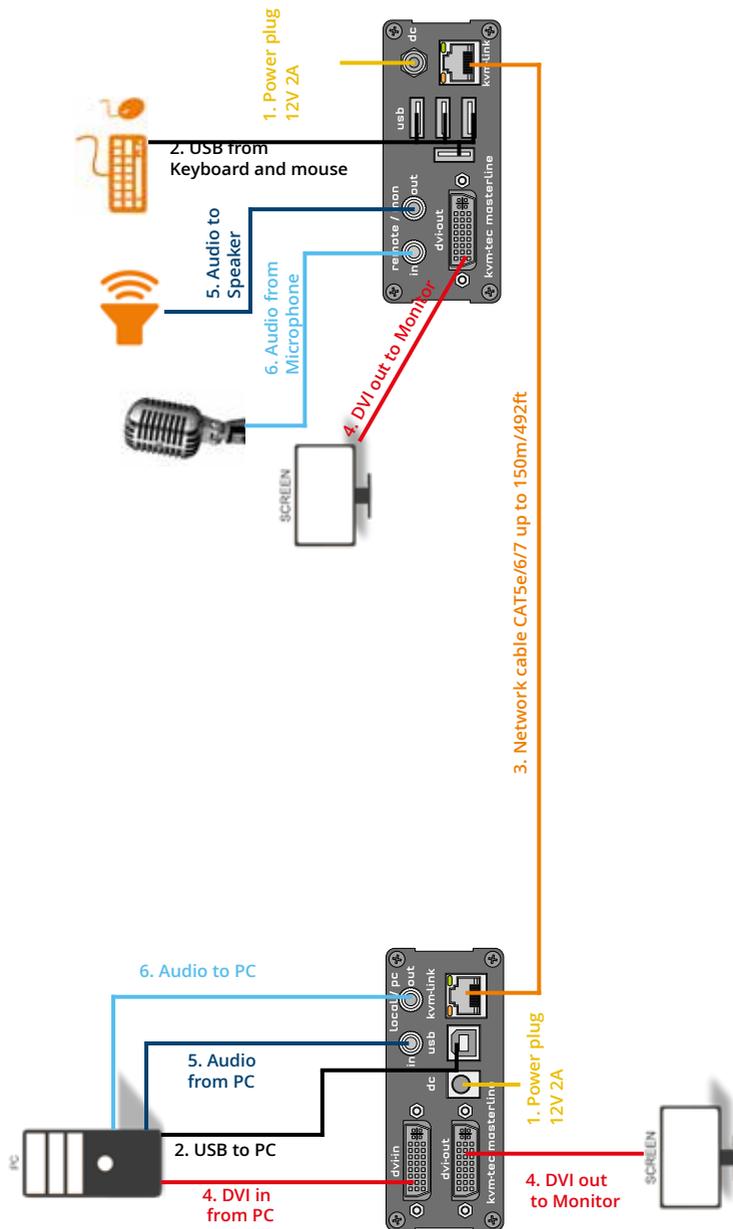
The units can be set up to access one host computer, or to access numerous host computers. In the case of the latter, an additional Network Switch must be installed. With a Network Switch, each user can gain quick access to any of the required computers.

point to point connection



2. INSTALLATION OF THE EXTENDER

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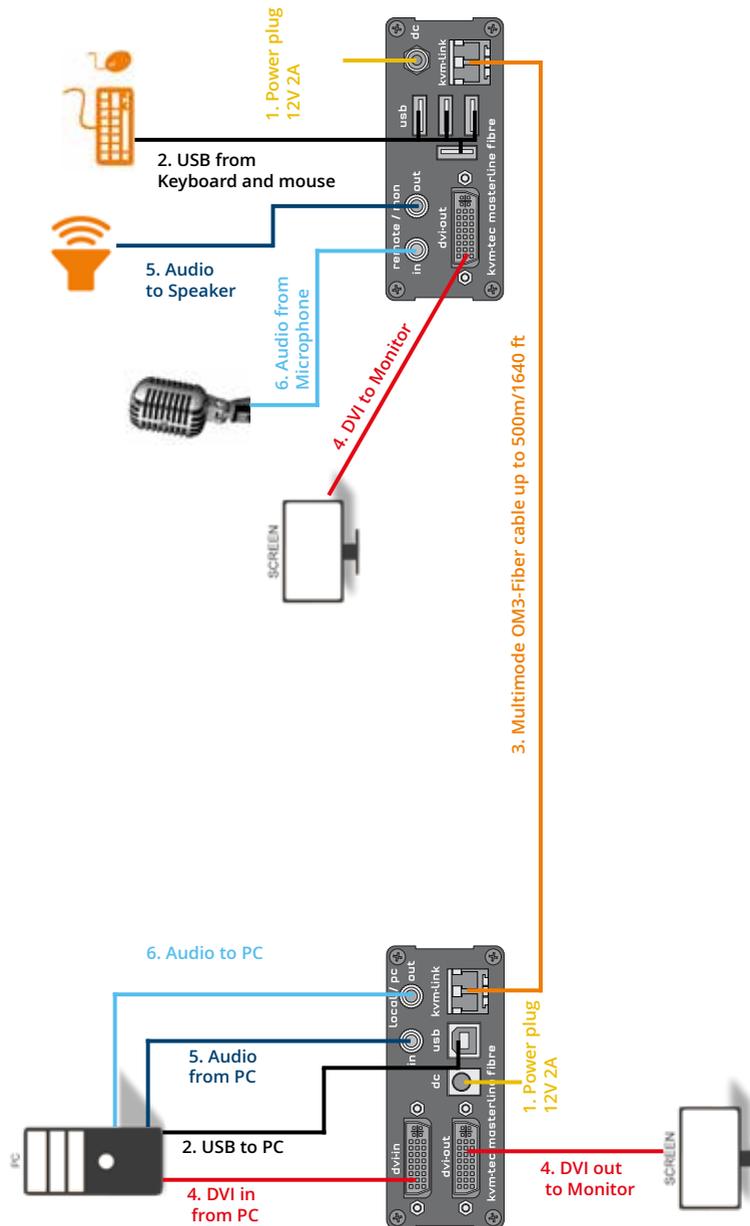
Quick Installation MVX1 Masterline local / CPU - remote/ CON

1. Connect the CON / Remote and the CPU / Local Unit to the included 12V 1A power supply.
2. Now connect the USB cable to a USB port on your PC and connect the other end of the USB cable to the CPU / Local Unit. Connect keyboard and mouse to the CON / Remote Unit.
3. Connect the CPU / Local and the CON / Remote Unit with a network cable.
4. Now connect the DVI cable to the DVI socket of the PC and the other end to the DVI socket of the CPU / Local Unit (DVI-in). Then connect the monitor to the CON / Remote Unit with a DVI cable.
5. Then connect PC audio out with the audio cable to Local Audio in. Then connect audio / out via the audio cable
6. Almost done! Now connect the audio cable Local Audio / out to the PC Audio in and Remote Audio / out with the audio cable to the microphone.

HAVE FUN - your kvm-tec Extender is now in use for many years (MTBF approx 10 years)

2. INSTALLATION OF THE EXTENDER

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Quick Installation MVX1-F FIBER MASTERLINE

local / CPU – remote/ CON

1. Connect the CON / Remote and the CPU / Local Unit to the included 12V 1A power supply.
2. Now connect the USB cable to a USB port on your PC and connect the other end of the USB cable to the CPU / Local Unit. Connect keyboard and mouse to the CON / Remote Unit.
3. Connect the CPU / Local and the CON / Remote Unit with a OM3-fiber cable.
4. Now connect the DVI cable to the DVI socket of the PC and the other end to the DVI socket of the CPU / Local Unit (DVI-in). Then connect the monitor to the CON / Remote Unit with a DVI cable.
5. Then connect PC audio out with the audio cable to Local Audio in. Then connect audio / out via the audio cable
6. Almost done! Now connect the audio cable Local Audio / out to the PC Audio in and Remote Audio / out with the audio cable to the microphone

HAVE FUN - your kvm-tec Extender is now in use for many years (MTBF approx 10 years)

2.4 STARTUP

To start up the system without switch:

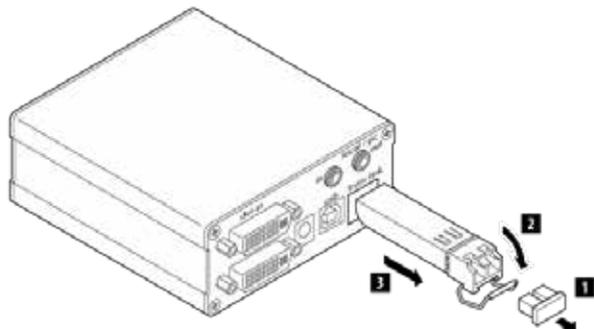
1. Make sure that the two monitors and the computer are switched on.
2. If you are using a Network Switch, connect the power supply to an earthed wall socket.
3. Connect both extender **power supplies (C)** to an earthed wall socket. Both extenders will start an initialisation process. The red status LED blinks a few seconds. After a few seconds the status LED lights green. The monitor will display your computer's desktop or any open applications.

2.5 REPLACING THE SFP MODULE

The MVX1-F is delivered with a multimode SFP module.

To replace an SFP module with a different SFP module:

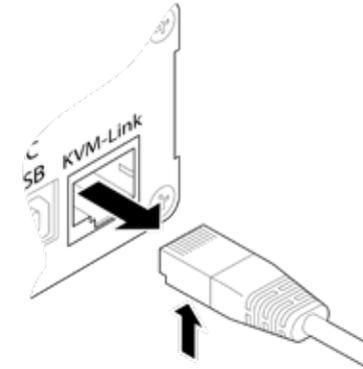
1. Remove the black dust protector from the SFP module.
2. Pull the metal latch of the SFP module forwards until it is at a right angle.
3. Replace the SFP module with the other module. Put the metal latch back in position. Only use SFP modules from kvm-tec, or recommended by kvm-tec.



2.6 REMOVING A CATX CABLE

To remove a CATx cable:

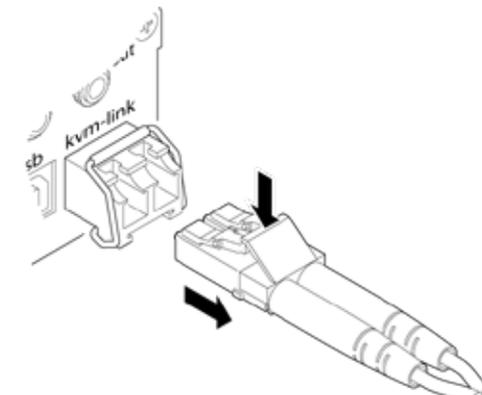
- Press the latch down and slowly pull the cable out.



2.7 REMOVING A FIBER CABLE

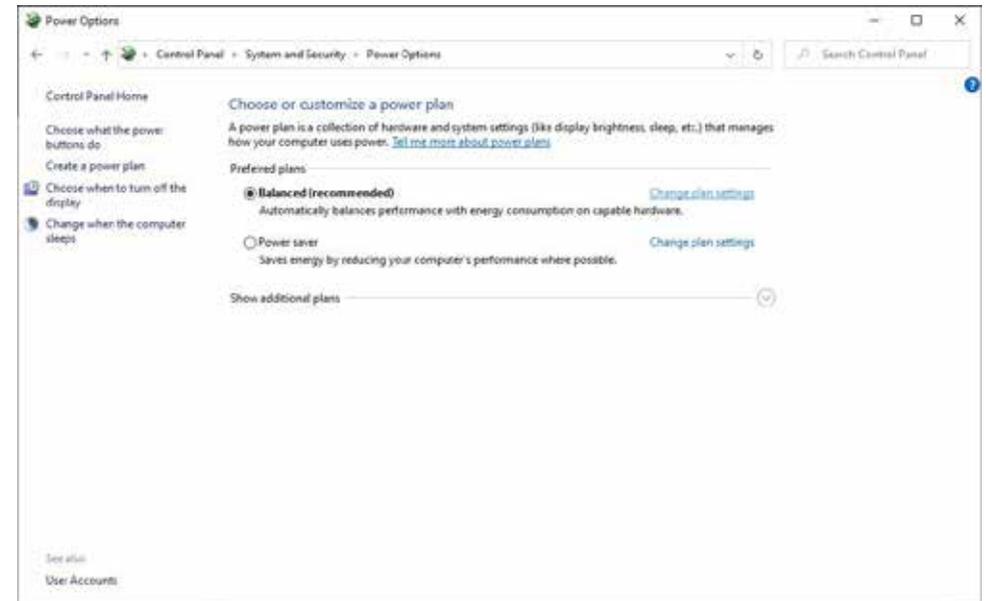
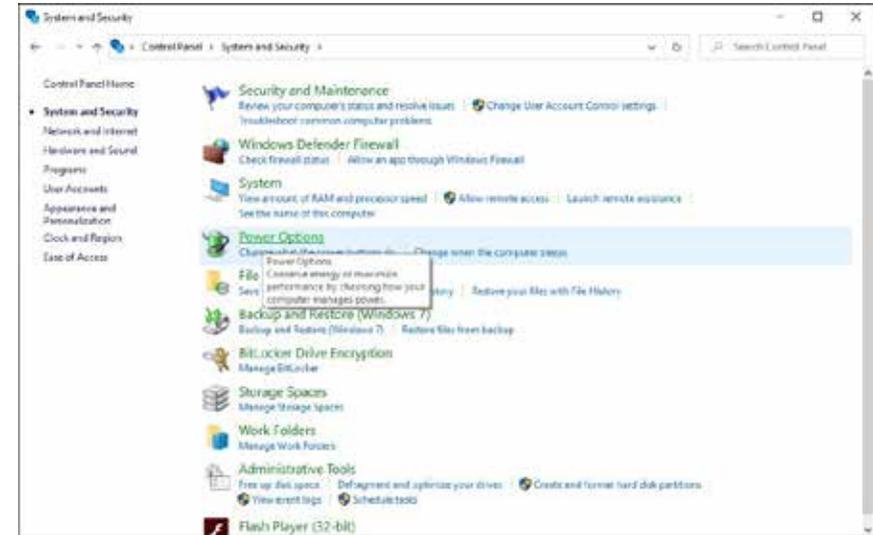
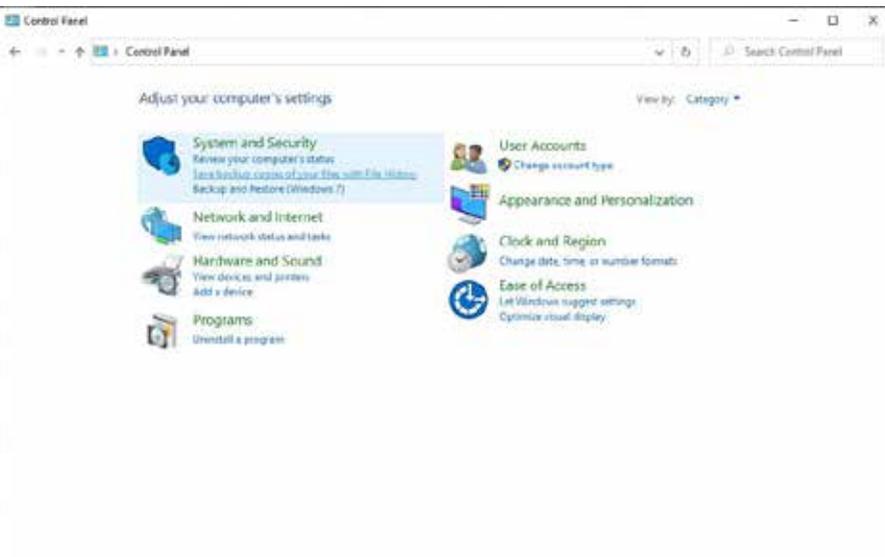
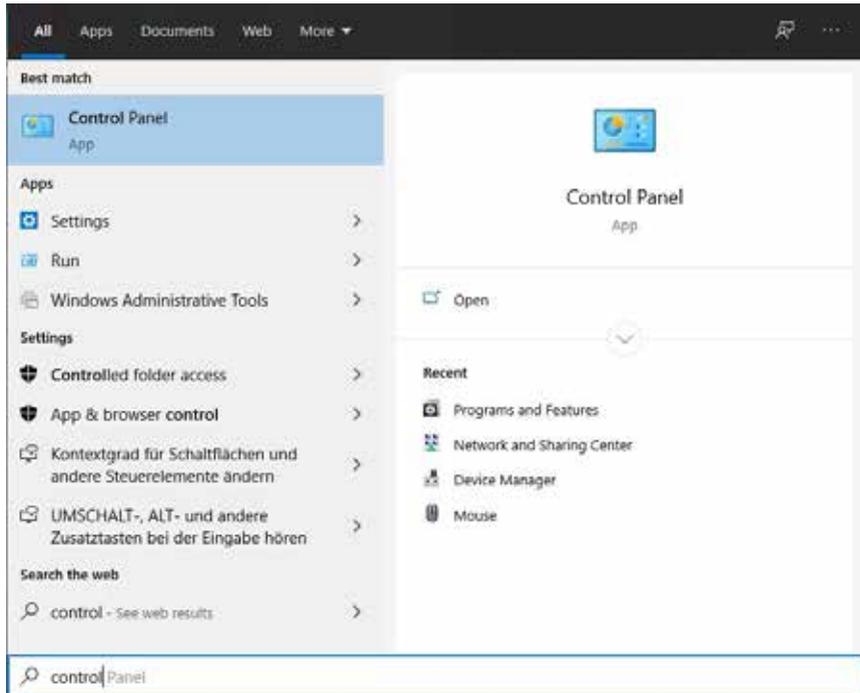
To remove a fiber cable:

- Press the latch down and slowly pull the cable out.

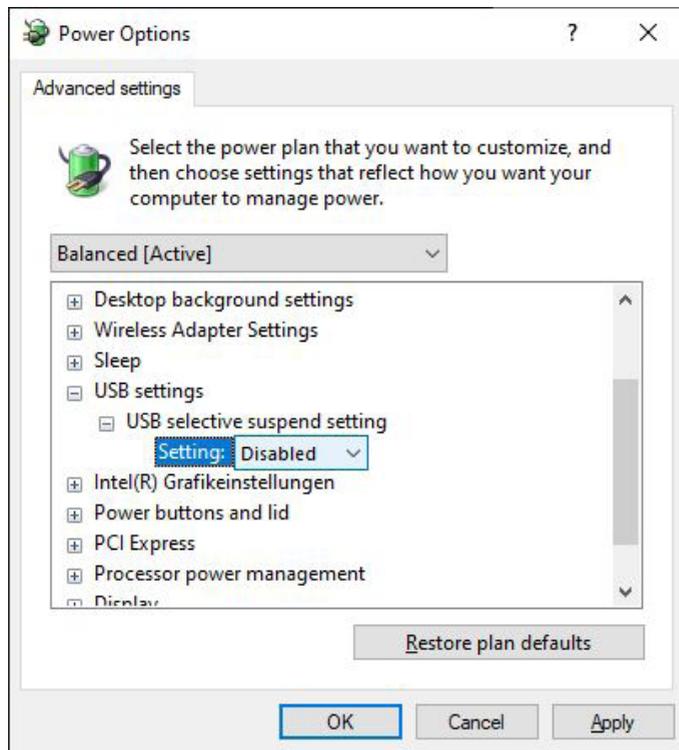
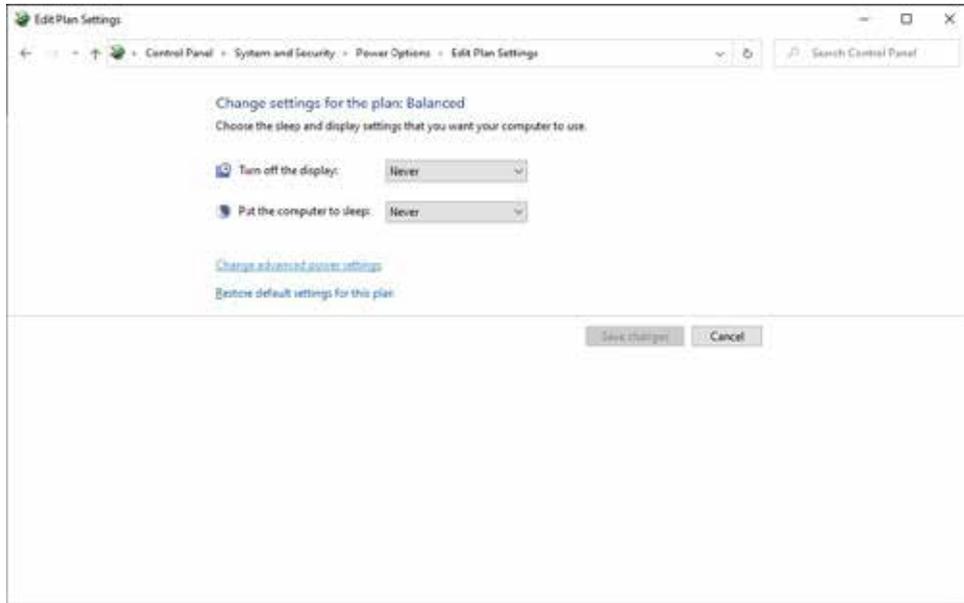


2.8 BEST PRACTICE FOR WINDOWS 10

Disable USB Energy Savings in Windows 10



2. INSTALLATION OF THE EXTENDER



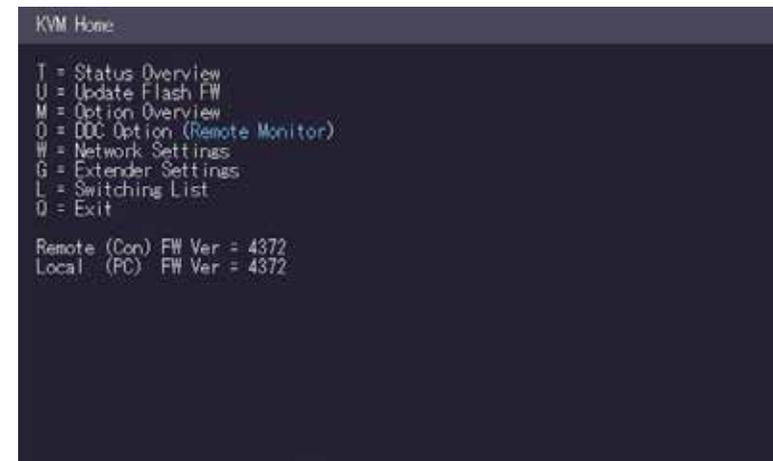
3. EXTENDER MENU/SETTINGS

3.1 USING THE ON SCREEN MENU

Use the monitor and keyboard to get access to the main menu.

To access the main menu:

1. Make sure the extenders, the monitors and the computer are switched on.
2. Press the **Scroll Lock** key on your keyboard quickly five times. The **main menu** appears with an overview of the sub-menus.
3. To access a sub-menu press the applicable key.



In the main menu, you can make the following settings by pressing the to select the corresponding letter.

T	Status Overview	Menu Status / Current Status:
U	Update Flash FW	Update firmware
M	Option Overview	Overview of all upgrades
O	DDC Option	DDC Option Fixed ice position 1020 x 1080
W	Network Settings	Network Settings
G	ExtenderSettings	Settings Extender
L	Switching List	List of all extenders in the switching system
Q	Exit	Exit

3.2 STATUS MENU



In the "Status Menu" the current status of the extender connection is displayed. It provides information on the connection itself as well as resolution of the video channel, and USB-status.

The enabled options and the current FW-version is displayed in the left top corner.

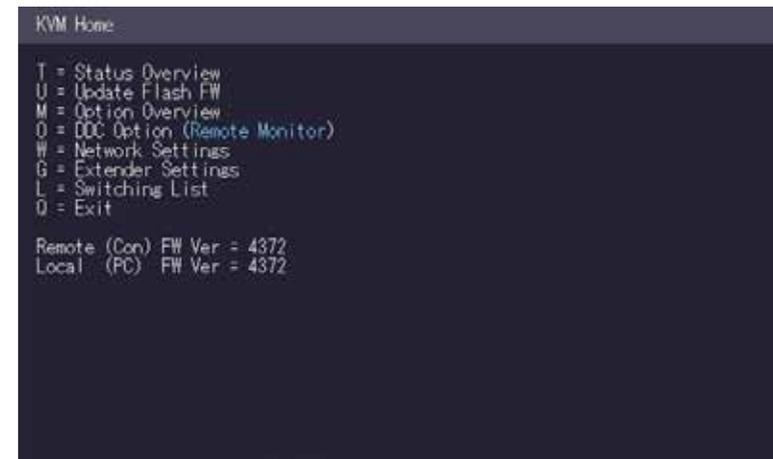
Link status shows whether there is a physical connection available. **Connection** indicates if kvm data is currently able to be transmitted.

Video and USB show if data is currently being transmitted.

3.3 DETERMINE THE CURRENT FIRMWARE VERSION

To view the firmware version:

- Make sure the **main menu** is open. The currently installed firmware versions of the remote and local units are displayed below (e.g. '4267')

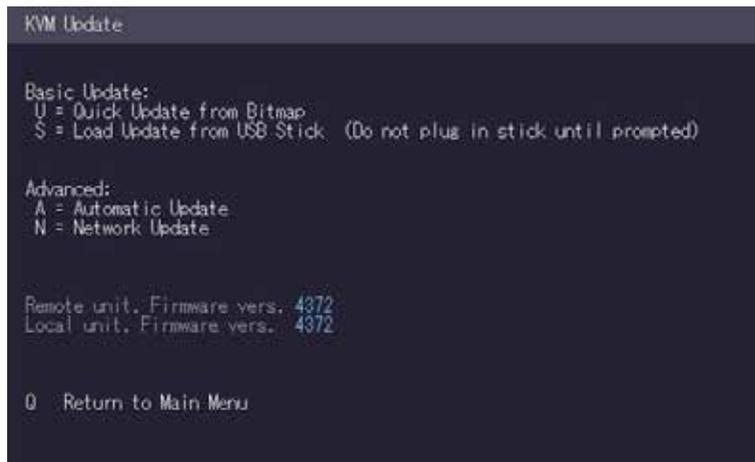


3.4 PERFORMING A FIRMWARE UPDATE

The latest version of the firmware can be downloaded from <http://www.kvm-tec.com/en/support/firmware-download.html>. Each update file is accompanied by a detailed description of the update process.

There are four ways to perform an update:

1. update via a bitmap image
2. update from the USB stick
3. automatic update
4. network update

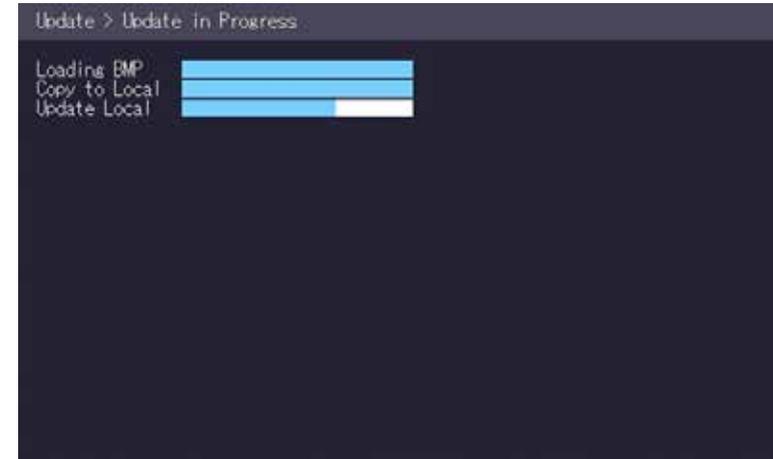


To perform a firmware update:

1. Make sure the **main menu** is open.
2. Press the **U** key. The **Update** menu appears.
 - Press the **N** key to do a network update.
 - Press the **A** key to do an automatic update.
 - Press the **U** key to do a direct update.
 - Press the **S** key to do a USB Update.
 - Press the **Q** key to return to the main menu.

3.4.1 UPDATE VIA A BITMAP IMAGE

The file will be output from an image and will be copied and stored to the currently connected extenders.



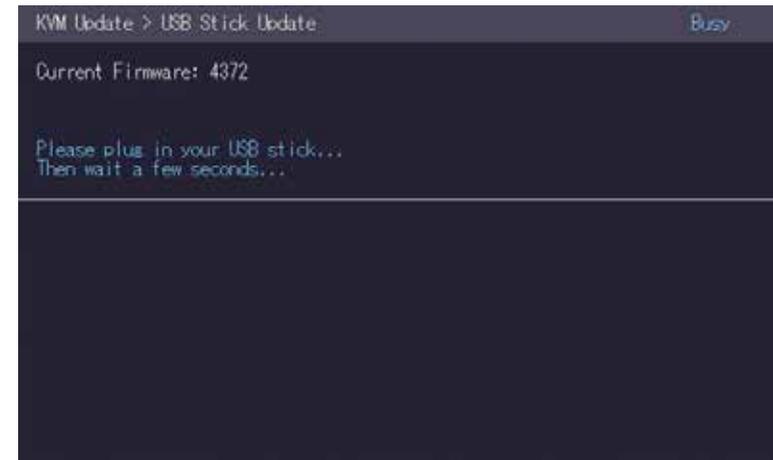
Wait until all 3 phases of the update have been completed and make sure that you have Never unplug or plug in the devices during the update.

3.4.2 UPDATE WITH USB STICK

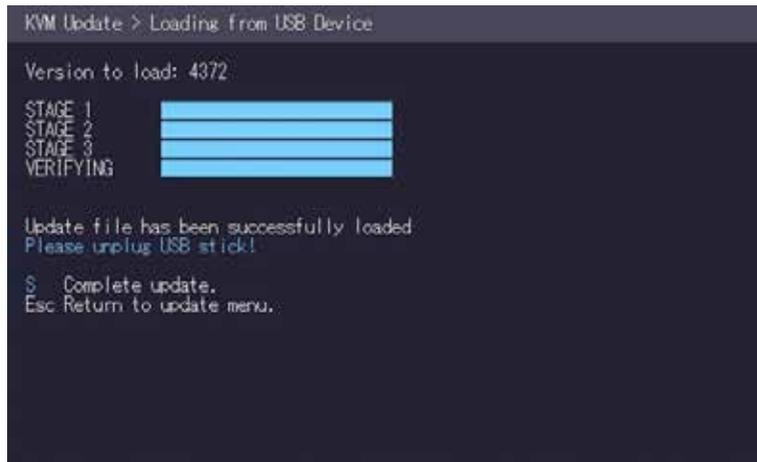
For the update of the USB Stick the following steps are necessary:



1. you receive the message that you can plug in the USB stick.
2. copy the update file (ending in .kvm) to the USB stick
3. make sure that the update file is directly on the stick and that it is not in any subdirectory
4. the USB stick must be formatted with FAT-32



Plug in the USB stick and wait for a moment

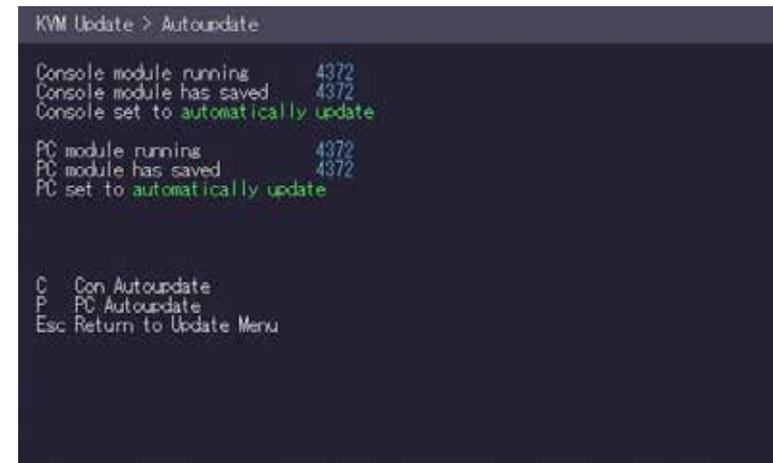


Wait until all 4 phases have been completed.

3.4.3 PERFORMING AUTOUPDATE

You can select in the menu which part should be updated.

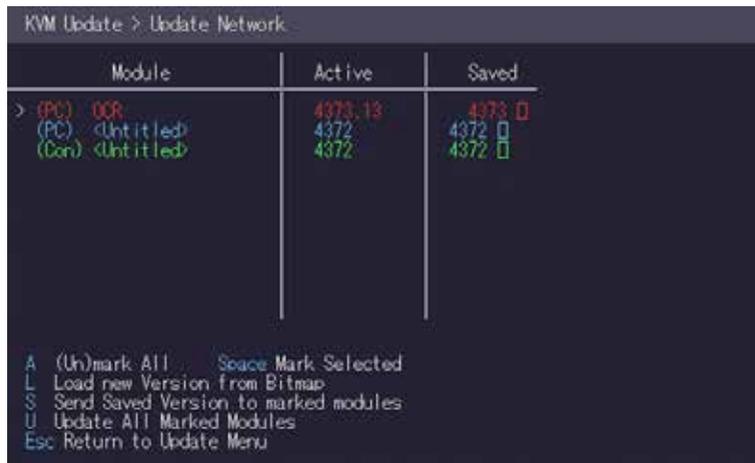
As soon as the devices are connected, the firmware is copied from one unit to the other.



The flashing of the LEDs indicates that the update process has been completed (the LEDs are then green)

3.4.4 PERFORMING NETWORK UPDATE

In the network update the devices that are updated can be marked.

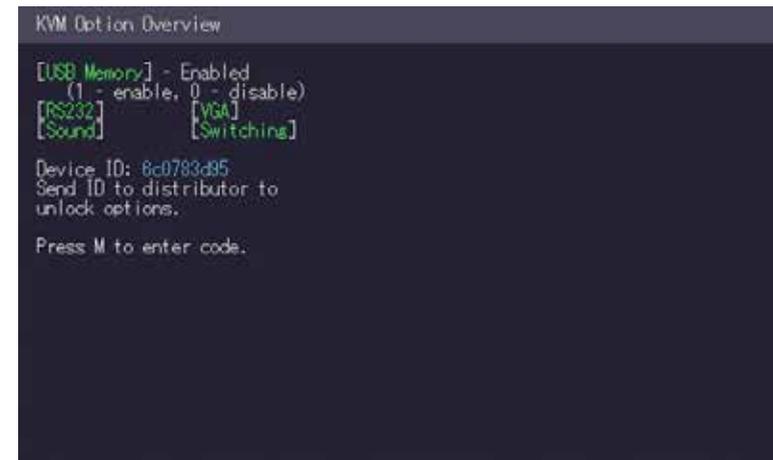


The information is then sent to the marked units. During this process the devices can still be in operation. As soon as all updates have been transmitted, the marked devices can be restarted and start with the new firmware.

3.5 UNLOCK AN UPGRADE

1. Make sure that the **main menu** is open.
2. press the **M** button. The **Options Overview** menu opens. The **device ID** will be order the unlock code from your supplier
3. order the activation code from your supplier by entering the 9-digit device ID and enter the serial number of the KVM Extender.
4. press the **M** key to enter the unlock code.
5. enter the unlock code of the supplier.
6. the Extender will automatically restart.

To confirm that the option has been unlocked, return to the **Options menu. Overview** and make sure that the corresponding option is now green.



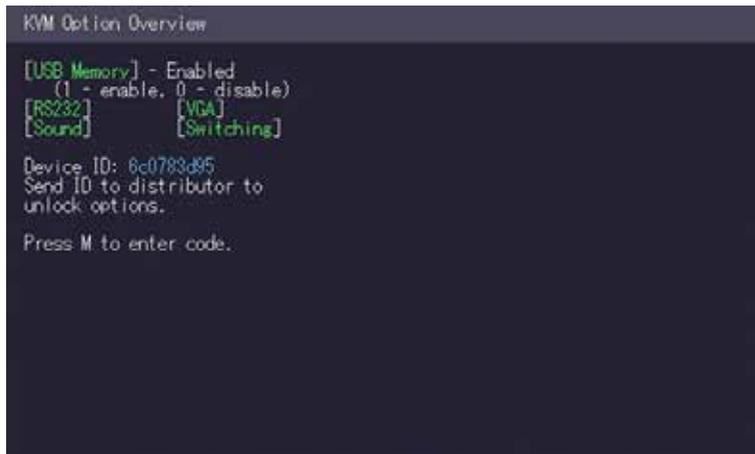
The information is then sent to the marked units. During this process the devices can still be in operation. As soon as all updates have been transmitted, the marked devices can be restarted and start with the new firmware.

3.6 ENABLE OR DISABLE THE USB MEMORY UPGRADE

The USB Memory Upgrade allows the user to enable or disable the memory upgrade. When the USB Memory upgrade is enabled, USB flash storage and external storage devices can be accessed via the extender. If your extender was provided with the USB Memory upgrade you can enable and disable at any time.

To enable or disable the USB Memory upgrade:

1. Make sure the **main menu** is open.
2. Press the **M** key. The **Options Overview** menu opens. The current USB Memory status is displayed (Enabled or Disabled).
3. Press **1** to enable or **0** to disable the USB Memory upgrade



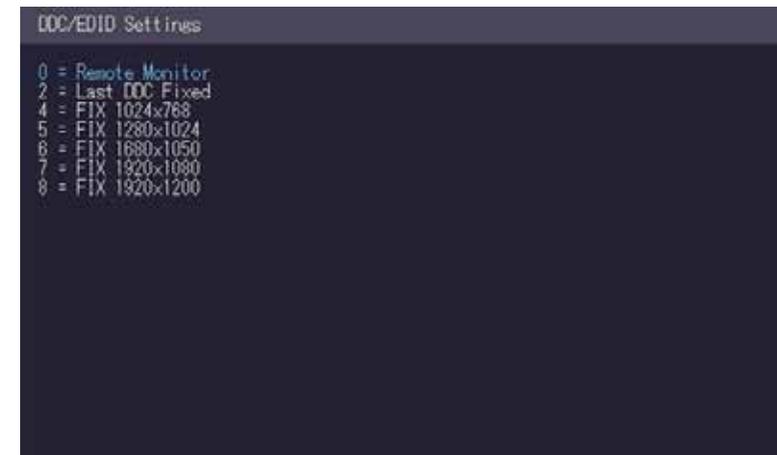
The kvm-tec feature „USB save“ prevents the intrusion of viruses via the USB interface. by deactivating mass storage devices.

3.7 DEFINING WHAT DDC INFORMATION IS USED BY THE PC

The DDC Option menu allows the user to define what DDC information is used by the PC.

To define what DDC information is used by the PC:

1. Make sure the **main menu** is open.
2. Press the **O** key. The **DDC Option** menu appears.
 - Press **0** to use the DDC information from the monitor attached to the remote extender.
 - Press **2** to save the current DDC information. The system uses the same settings after the extender has been restarted.
 - Press **4** through **8** to use a predefined resolution which is saved.
3. Press **ESC** to go back to the main menu.



3.8 CHANGING THE NETWORK SETTINGS

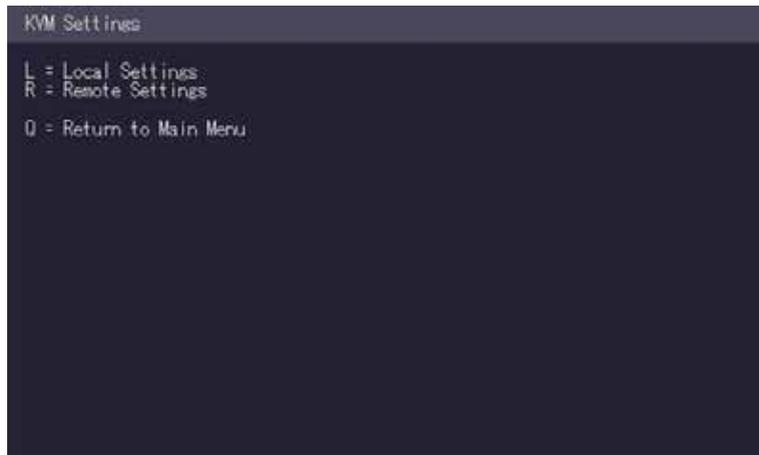
See chapter „Switching Menu Settings“.

3.9 CHANGING THE EXTENDER SETTINGS

The **Extender Settings** menu allows the user to change a range of further preferences. Three of the selections (VGA, Audio and RS232) will take you to sub-menus. The other four can be enabled or disabled by pressing the applicable key.

To access the Extender Settings menu:

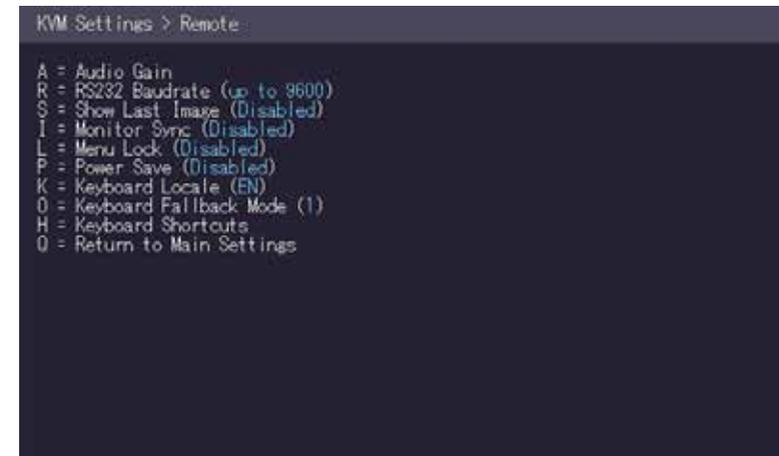
1. Make sure the **main menu** is open.
2. Press the **G** key. The **Extender Settings** menu appears.
3. The extender settings are distributed across two sub-menus: **Remote Settings** and **Local Settings**.



4. To access the local or remote extender settings:
 - Press the **L** key to access the Local Settings menu.



- Press the **R** key to access the Remote Settings menu.

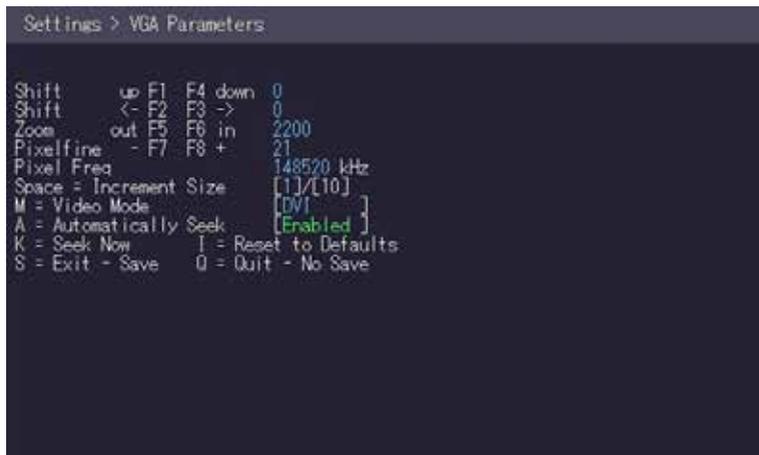


3.9.1 OPTIMIZE THE VGA PREFERENCES

The VGA preferences can be set and optimized. The VGA option does only function when it has been unlocked (see 3.4).

To optimize the VGA settings:

1. From the **Extender Settings** menu, press the **L** key. The **Local Settings** menu appears.
2. Press the **V** key. The **VGA** menu appears.
 - Press **F1** to move the display area up.
 - Press **F4** to move the display area down.
 - Press **F2** to move the display area to the left.
 - Press **F3** to move the display area to the right.
 - Press **F5** to zoom out.
 - Press **F6** to zoom in.
 - Press **space** to change the rate of the above mentioned setting. This toggles the rate of change between 1 and 10.
 - Press **M** to switch the video mode between:
 - Auto – the mode is automatically detected and set by the extender.
 - DVI – only DVI input is detected.
 - VGA – only VGA input is detected.
 - Press **K** for automatic adjustment and positioning of the image area.
 - Press **I** to reset parameters to default values.
 - Press **S** to save the settings and exit the menu.
 - Press **Q** to exit without saving.



3.9.2 ENABLE OR DISABLE THE USB COMPATIBILITY MODE

The USB compatibility mode can be enabled or disabled.

To enable/disable the USB compatibility mode:

1. From the **Extender Settings** menu, press the **L** key. The **Local Settings** menu appears.
2. Press the **U** key to enable or disable the USB compatibility mode.

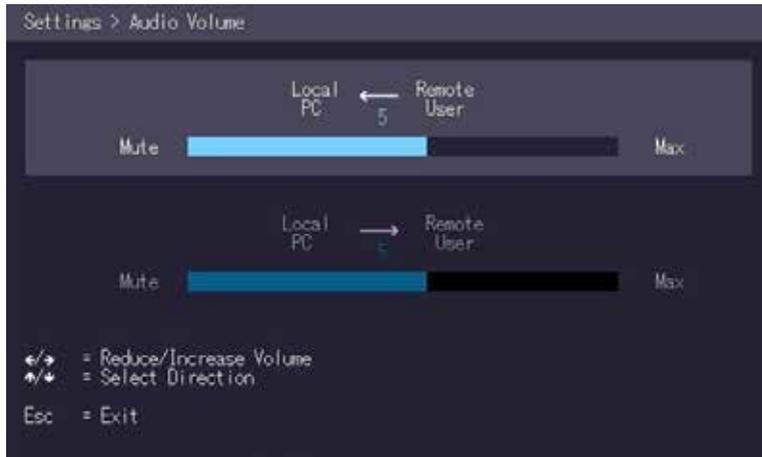


3.9.3 SETTING THE AUDIO VOLUME

The volume of the audio input (microphone) on the remote unit can be changed. The default value is 5 but can be set to any value in between 0 and 9. At 0 the audio input on the remote unit is disabled.

To set the volume:

- From the **Extender Settings** menu, press the **R** key. The **Remote Settings** menu appears.
- Press the **A** key. The **Audio Input Gain** menu appears.
 Press arrow left / right to change volume
 Press arrow up / down to set direction



3.9.4 SPECIAL VERSION FOR INDUSTRY CUSTOMERS - SETTING THE BAUDRATE

Local Unit Pinout (DCE):

Pin	Function	Direction
2	TxD	OUT
3	RxD	IN
4	DTR	IN
5	GND	—
8	CTS	OUT

Remote Unit Pinout (DTE):

Pin	Function	Direction
2	RxD	IN
3	TxD	OUT
4	DTR	OUT
5	GND	—
8	CTS	IN

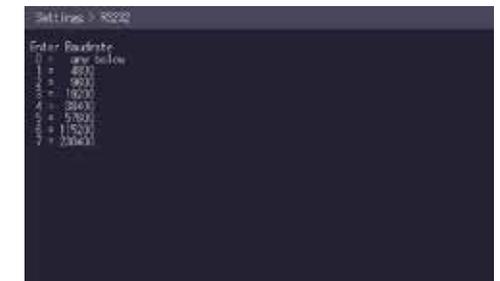
The pin numbers refer to a 9-pin D-sub plug.

The baud rate can be set in the menu. There is a universal setting for baud rates up to 9600 which transmits all different RS232 configurations transparently. For higher baud rates the following settings are available via the menu:

Baudrate	Parity	Stopbits
4800	No	1
9600	Odd	2
19200	Even	
38400	Mark	
57600	Space	
115200		
230400		

To set the baud rate:

- From the **Extender Settings** menu, press the **R** key. The **Remote Settings** menu appears.
- Press the **R** key. The **Baud Rate** menu appears.
- To select a baud rate press the applicable key. The **Enter Parity** menu opens.
- To select a parity rate press the applicable key.

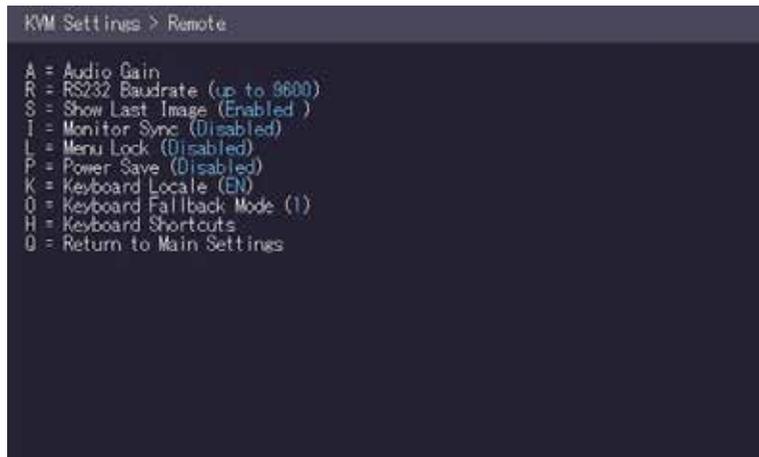


3.9.5 SHOW THE LAST RECEIVED IMAGE

With the function „show the last image“ the last received image can be used instead of a black screen, if the remote Extender (CON) is not being used by the local Extender (CPU) are separated. To show that this is the last received picture the frame of the image flashes red.

Activate or deactivate the „Show last Image“ function. 1:

1. In the **Extender Settings** menu, press the **R** button. The **Remote Settings** menu becomes Press **S** to activate or deactivate the function.
2. press **S** to activate or deactivate the function.
3. press **ESC** to return to the main menu.

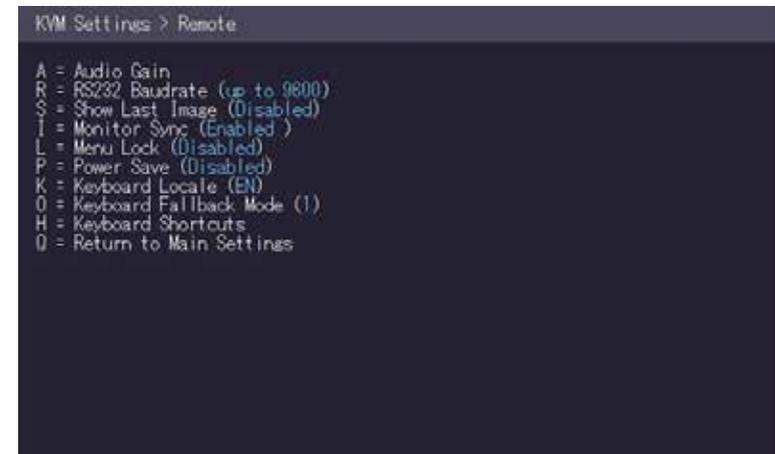


3.9.6 TURN ON OR OFF MONITOR SYNCHRONIZATION

The monitor synchronization can be turned on and off. When enabled, the refresh rate of the graphics card of the PC and that of the remote monitor are adjusted to match one another. The advantage of this is to ensure that transmission remains smooth when the screen content changes rapidly (e.g. When using multimedia applications). Not all monitors support this method so by default this option is disabled.

To turn on monitor synchronization:

1. From the **Extender Settings** menu, press the **R** key. The **Remote Settings** menu appears.
2. Press the **I** key to enable or disable the function.
3. Press **ESC** to go back to the main menu.

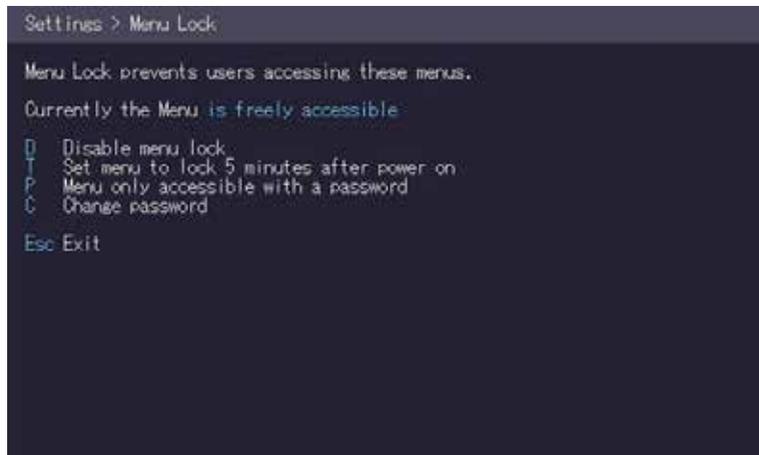


3.9.7 LOCKING THE MAIN MENU

The extender menu can be locked. When enabled, the extender locks 5 minutes after start up to prevent unauthorized access.

To lock or unlock the menu:

1. From the **Extender Settings** menu, press the **R** key. The **Remote Settings** menu appears.
2. Press the **L** key. The **Menu Lock** Menu appears.

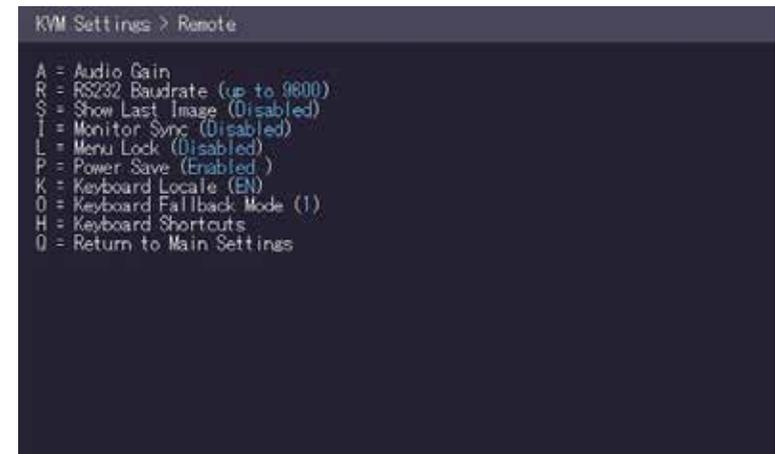


3.9.8 USING POWER SAVING MODE

The power saving mode lets the extender turn off its video out when the remote extender does not receive a video signal for more than a minute.

To turn on or off the power saving mode:

1. From the **Extender Settings** menu, press the **R** key. The **Remote Settings** menu appears.
2. Press the **P** key to enable or disable the power saving mode.
3. When in power saving mode, press any key to return to the menu.

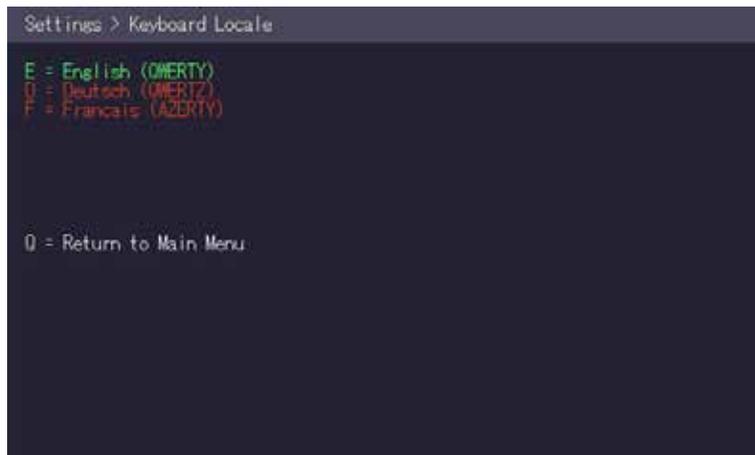


3.9.9 SELECTING YOUR TYPE OF KEYBOARD

The **Keyboard Locale** menu lets you switch between keyboard layouts for navigating the on screen display menu (OSD). You can choose between French (Azerty), English (Qwerty) and German (Qwertz).

To select a keyboard layout:

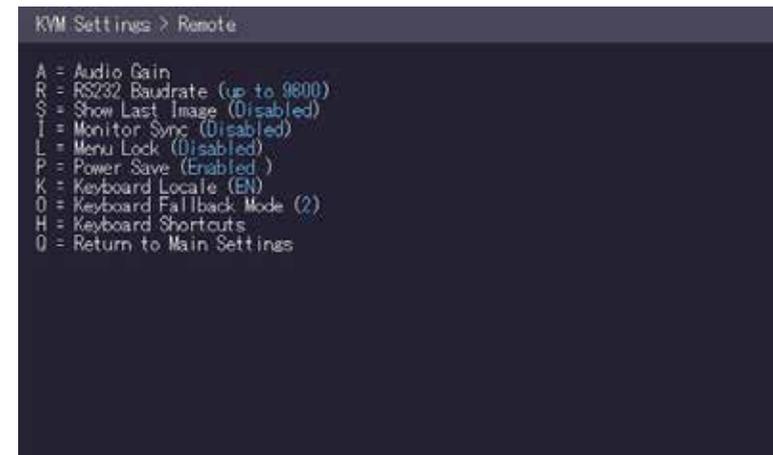
1. From the **Extender Settings** menu, press the **R** key. The **Remote Settings** menu appears.
2. Press the **K** key. The **Keyboard Locale** menu opens:
 - Press **E** to select English (QWERTY)
 - Press **D** to select German (QWERTZ)
 - Press **F** to select French (AZERTY)



3.9.10 CHANGING THE KEYBOARD FALLBACK MODE

To change the keyboard fallback mode:

1. From the **Extender Settings** menu, press the **R** key. The **Remote Settings** menu appears.
2. Press the **O** key to change the keyboard fallback mode to 0, 1 or 2.

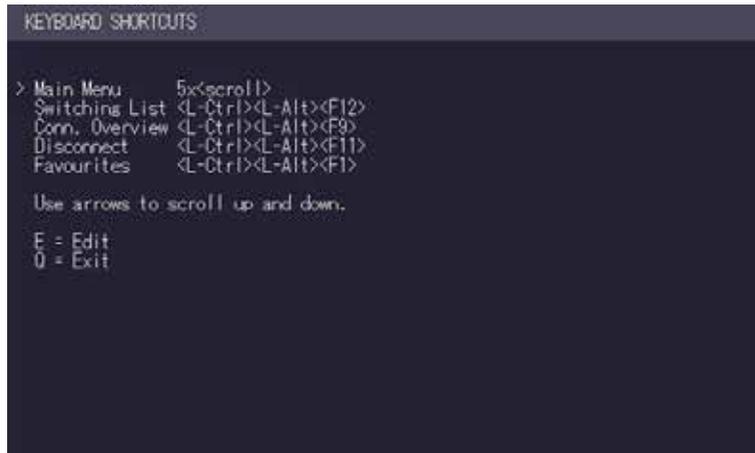


3.9.11 CHANGING KEYBOARD SHORTCUTS

The **Keyboard Shortcuts** menu lets you edit the preferred shortcuts for common commands.

To edit the shortcuts:

1. From the **Extender Settings** menu, press the **R** key. The **Remote Settings** menu appears.
2. Press the **H** key. The **Keyboard Shortcuts** menu opens.
3. Use the arrows to select a command.
4. Press **E** to edit the shortcut.
 - To edit:
 - Press a single key. Edit the frequency with left and right arrows.
 - OR -
 - Press a key combination



3.10 SWITCHING BETWEEN DIFFERENT COMPUTERS

The menu for switching between different computers is accessible via a USB keyboard connected to the remote unit.

1. Press **Ctrl+Alt+F12** (this is the default keyboard shortcut but may be changed. See "How to change keyboard shortcuts"). The **switching** menu opens. The **switching** menu lists all the local units connected to the switching network.
 - Blue indicates the computer with which you are currently connected. The status is listed as "conn'd".
 - White indicates a computer which is currently connected to by another work station (Remote unit). The status is listed as "in use".
 - Green indicates a computer in the switching network that isn't connected to any work station (Remote unit). The status is listed as "free".
 - Red indicates a computer which was once in the switching network but isn't currently available. This usually indicates that the Extender has been disconnected from the network. If this is the case the computer can be removed from the switching menu with the "delete" key.
2. Use the arrow up and arrow down keys, or PGUP and PGDOWN keys, to select a local extender. Press **enter**. The system switches to the selected computer.
 - The left column defines the favourites menu and provides each computer with a favourite number. Each favourite number corresponds to a hot-key combination that can be used to quickly connect to the desired computer without having to access the switching menu. For example favourite "1" has the hot-key combination "Ctrl+Alt+F1" For favourite "2" this is "Ctrl+Alt+F2" and so on up to favourite "8" with "Ctrl+Alt+F8". All other computers can still be accessed via the switching menu. To change the order of the computers in this list, select the computer then press a number key **1** through **8** to shift it to that number.
 - If the password system is active, the user currently logged in is displayed at the bottom. You can manually logout by pressing the "x" key or disconnect from the current PC by pressing the „d" key.

3.11 SHARING VIDEOS

The Video Sharing option allows you to share your screen with other users on the network. Ensure that the switch you are using has IGMP Snooping capabilities, and that this is turned on (most switches have this off by default).

What happens with the control over the local extender depends on the initial state. There are two main use-cases which can both be controlled in the **MASTER VIEW connections overview menu**. Note that this capability is not available in combination with the password security system.

To share a video:

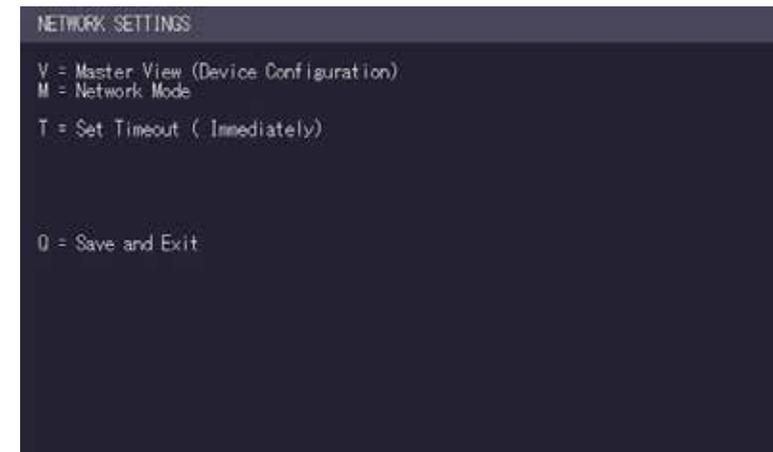
1. Make sure the **main menu** is open.
2. Press Ctrl+Alt+F10. The **MASTER VIEW connections overview menu** opens.
3. Choose one of the following:
 - To mirror a screen to other consoles:
 - Press the **P** key on the keyboard of the extender that should display the user's screen. In this case „P“ stands for „push to screen“. Such a command is only valid if the console which initiates the mirroring is currently connected to a local unit and has video and the other remote unit is “free” (marked green).
 - To see the screen of other consoles on the network:
 - Press the **G** key on the keyboard of the extender that should display the user's screen. The key „G“ stands for „get screen“. If the console unit from which this command is executed currently has a partner, a disconnect is executed before the video of the other local unit is displayed. If the selected local extender currently isn't connected, a regular connection including USB, etc. is established.

4.1 ACCESS THE NETWORK SETTINGS MENU (MASTER VIEW AND NETWORK MODE)

The **Network Settings** menu includes the preferences and settings for the Switching Option. Note: this menu is only available when the Switching Option has been unlocked (see chapter „How to unlock an Option“).

To access the Network Settings menu (Master View and Network Mode):

1. Make sure the **main menu** is open (see chapter „How to access the main menu“)
2. Press the **W** key. The **Enter User/Password** window opens.



3. Log in with your user name and password. The **Network Setting** menu opens. Note: in order to prevent unauthorised access to the Network Settings, this option is protected by a user/password combination. Access is only allowed for users with administrator rights. The factory settings provide an administrator user with User: admin and Password: admin. The Master View option allows the administrator to view, add, edit or remove user, console and computer information.

Press the **V** key to access the Master View menu.

- The Network Mode allows to define how you want the network system to operate. Each of the modes available may individually be activated or deactivated by pressing the appropriate key. You may have more than one selected depending on their function. Some modes require others, and others are incompatible with each other, but the system will automatically recognise this for you. Press the **M** key to access the Network Mode menu.

```
MASTER VIEW
O = Connections Overview
U = User List
C = Console Extender List
P = PC Extender List
M = Multi-Head Configuration

R = Restart All Extenders

O = Exit
```

4.2 DISCONNECT OR SELECT A WORKSTATION FROM THE CURRENT CONNECTED DEVICES

The Connection Overview provides an overview of the current connections as well as the free PCs and consoles on the network. You may break a connection remotely, or assign a PC a new console or vice versa.

To force disconnect or select a workstation from the current connected devices:

1. Make sure the **Master View** menu is open (see chapter „How to access the Network Settings menu (Master View and Network Mode)“).

```
MASTER VIEW
O = Connections Overview
U = User List
C = Console Extender List
P = PC Extender List
M = Multi-Head Configuration

R = Restart All Extenders

O = Exit
```

2. Press the **O** key. The **Connection Overview** menu opens.

```
MASTER VIEW > connections overview
PCs          Consoles
-----
> <Untitled> ---> <Untitled>

Ctrl+H - Help
```

3. Press the **I** key. The **Connection Details** window opens.
 - Press the **D** key to force disconnect the selected device/connection.
 - Press the **E** key or **Enter** key to select a PC or workstation to create or break a connection to that unit.
 - Press the **Q** key to exit.

4.3 MANAGING USER DETAILS, RIGHTS AND GROUPS

The Console Extender List allows you to manage user details, rights and groups.

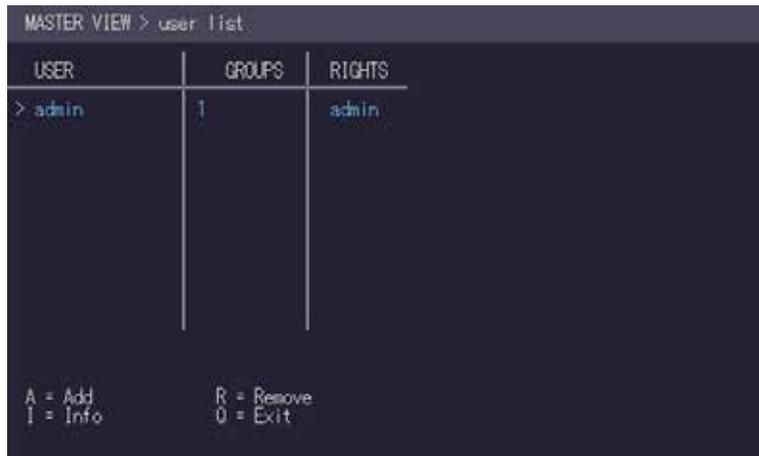
To manage user details, rights and groups:

1. Make sure the **Master View** menu is open (see chapter „How to access the Network Settings menu (Master View and Network Mode)“).
2. Press **O** to exit the menu.

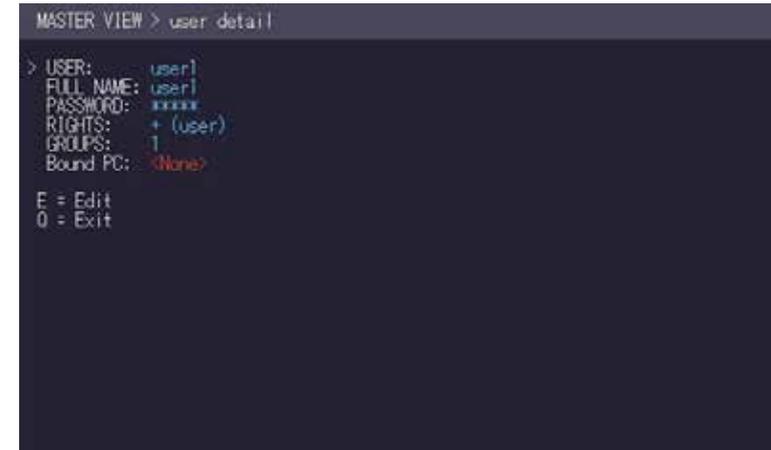
```
MASTER VIEW
O = Connections Overview
U = User List
C = Console Extender List
P = PC Extender List
M = Multi-Head Configuration
R = Restart All Extenders

Q = Exit
```

2. Press the **U** key. The **User List** menu opens.
 - Press the **A** key to add a new user.
 - Press the **R** key to delete the selected user.
 - Press the **I** key to display details about the selected user which may be edited.



Management User Details



3. To edit a user, press the **I** key. The **User Detail** menu opens.
4. Select the user detail you want to edit and press the **E** key.

- **User:** Assign each user a login name with max. 12 characters.
- **Full Name:** For clarity the full name of a user may be entered with max. 20 characters. This name is displayed when informing other users who interrupted their connection.
- **Password:** Each user requires a password for the login. Max. 16 characters.
- **Rights:** There are three types of rights: USER, MASTER and ADMIN. By pressing the **+** key the rights of the selected user can be changed. The rights control access to the Network Settings menu (only ADMIN), and which users may interrupt the connection of which other users.
- **Admin:** May interrupt connections of Masters and Users. In the case that an Admin interrupts the connection of another Admin, the interrupted Admin may reclaim the original connection. Private connections can't be interrupted.
- **Master:** May interrupt connections of Users. In the case that a Master interrupts the connection of another Master, the interrupted Master may reclaim the original connection. Admins and private connections can't be interrupted.
- **User:** In the case that a User interrupts the connection of another User, the interrupted User may reclaim the original connection. Admins, Masters and private connections can't be interrupted.
- **Groups:** Each user can join up to 8 user groups. Each computer is defined as belonging to one user group. By default all computers are in the same user group.

4. NETWORK SETTINGS

This system makes it possible to allow or deny different users access to a computer. The user's group access is set by pressing the buttons 1 – 8.

- **Bound PC:** When in User-PC Binding mode (see 4.10) each user must have a PC bound to them. That user will only be able to connect to that PC. When selected the User Detail menu, press **RETURN** a list of PCs on the network will be displayed to select from.

4.4 VIEWING THE STATUS OF ALL REMOTE UNITS

The Console Extender List allows you to view all remote units in the switching network and their current status.

To view the status of all remote extenders:

1. Make sure the **Master View** menu is open (see chapter „How to access the Network Settings menu (Master View and Network Mode)“).

```
MASTER VIEW
O = Connections Overview
U = User List
C = Console Extender List
P = PC Extender List
M = Multi-Head Configuration
R = Restart All Extenders

O = Exit
```

4. NETWORK SETTINGS

2. Press the **C** key. The **Console Extender List** menu opens.
 - “this” defines the extender which you are currently using.
 - “in use” indicates that the extender is in use.
 - “free” indicates that this extender is not busy.
3. To edit the name of an extender, press the **I** key. The **Console Extender Detail** menu opens.
4. Press the **E** key to edit the name of the extender.

```
MASTER VIEW > console extender list
```

NAME	STATUS
> <Untitled>	this

```
R = Remove (Disconnected Only)
I = Info          O = Exit
```

4.5 VIEWING THE STATUS OF ALL LOCAL UNITS

The PC Extender List allows you to view all local units in the switching network and their current status.

```

MASTER VIEW
O = Connections Overview
U = User List
C = Console Extender List
P = PC Extender List
M = Multi-Head Configuration

R = Restart All Extenders

Q = Exit
    
```

To view the status of all local units:

1. Make sure the **Master View** menu is open (see chapter „How to access the Network Settings menu (Master View and Network Mode)“).
2. Press the **P** key. The **PC Extender List** menu opens.

```

MASTER VIEW PC > extender list
NAME          GROUP  STATUS
-----
> DDR        1      discon
<Untitled>   1      conn'd

R = Remove (Disconnected Only)
I = Info                      0 = Exit
    
```

3. To edit the name, groups or status of an extender, press the **I** key. The **PC Extender Detail** menu opens.
4. Use the Up and Down Arrow keys to select the name or group of the PC unit.
5. Press the **E** key to edit the selected parameter.

Example:

There are the following 3 PC's: Department PC, Team A PC and Team B PC. The users Alex, Blair and Charlie should have access to the Department PC and the Team A PC. The users Danny, Em and Frankie should have access to the Department PC and the Team B PC.

To achieve this we assign each PC a different group:

- Department PC: Group 1
- Team A PC: Group 2
- Team B PC: Group 3

Alex, Blair and Charlie are assigned to be members of Group 1 and Group 2. Danny, Em and

Frankie are assigned to be members of Group 1 and Group 3.

4.6 SET UP DUAL-HEAD OR MULTI-HEAD SYSTEMS

If you use multiple monitors with a PC then you can group individual local and remote units together in the Multi-Head menu, making them switch as a single unit.

To group individual local and remote extenders:

1. Make sure the **Master View** menu is open (see chapter „How to access the Network Settings menu (Master View and Network Mode)“).

```

MASTER VIEW
O = Connections Overview
U = User List
C = Console Extender List
P = PC Extender List
M = Multi-Head Configuration
R = Restart All Extenders

O = Exit
    
```

2. Press the **M** key. The **Multi-Head configuration** menu opens.

```

MASTER VIEW > multi-head configuration
MULTI-HEAD SET  TYPE  SIZE
-----
A = Add          R = Remove
I = Info         O = Exit
    
```

3. Press the **A** key. The **multi-head detail** menu opens.
 - Press the **R** key to remove an extender from the multi-head set.
 - Press the **Q** key to exit.

```

MASTER VIEW > multihead detail
> Name:  mhs1
Type:   Undefined
Heads:  0
Module List
-----
A = Add Module   E = Edit
O = Exit without Save
    
```

4. Press the **A** key to add individual extenders. The extender type is automatically determined once the first extender has been selected.
5. Press the **E** key to edit the multi-head set name of max. 16 characters.

4.7 ENABLE USER GROUPS AND RIGHTS AND LOGIN ACCESS

The Passwords option allows to activate user groups and rights and login access. For more information about user groups and rights see „How to manage user details, rights and groups“.

Access to the network settings is always protected by a login and password, even when the password system is disabled.

To enable the password option:

1. Make sure the **Network Mode** menu is open (see chapter „How to access the Network Settings menu (Master View and Network Mode)“).
2. Press the **P** key to disable or enable the option.

```
NETWORK SETTINGS > modes
P = Passwords ..... [Enabled]
C = Auto Connect ..... [Disabled]
V = Private Connections ..... [Disabled]
B = User-PC Binding ..... [Disabled]
D = Discon on PC Power Down .. [Disabled]
H = Hide Info Display ..... [Disabled]
T = Reconnect on Startup .... [Disabled]
S = Video Sharing ..... [Disabled]
A = Ask User Before Discon .. [Disabled]
0 = Exit
```

4.8 AUTO-CONNECT TO A FREE COMPUTER AFTER AN INTERRUPTION

The Auto Connect option allows you to connect automatically with a free computer if your connection is interrupted by another user. This function is unavailable while using the Password System.

To enable the auto-connect option:

1. Make sure the **Network Mode** menu is open (see chapter „How to access the switching menu Master View and Network Mode)“).
2. Press the **C** key to disable or enable the option.

```
NETWORK SETTINGS > modes
P = Passwords ..... [Disabled]
C = Auto Connect ..... [Enabled]
V = Private Connections ..... [Disabled]
B = User-PC Binding ..... [Disabled]
D = Discon on PC Power Down .. [Disabled]
H = Hide Info Display ..... [Disabled]
T = Reconnect on Startup .... [Enabled]
S = Video Sharing ..... [Disabled]
A = Ask User Before Discon .. [Disabled]
0 = Exit
```

4.9 SET UP A PRIVATE CONNECTION

The Auto Connect option allows you to set up a private connection with a computer, which can't be interrupted by other users.

To enable the private connection option:

1. Make sure the **Network Mode** menu is open (see chapter „How to access the switching menu Master View and Network Mode“).
2. Press the **V** key to disable or enable the option.
3. To establish a private connection hold down **Shift** while you select a new connection (either in the switching menu or by pressing the hot-key combination (see chapter „How to switch between different computers“).

```
NETWORK SETTINGS > modes
P = Passwords ..... [Disabled]
C = Auto Connect ..... [Disabled]
V = Private Connections ..... [Enabled]
B = User-PC Bindings ..... [Disabled]
D = Discon on PC Power Down .. [Disabled]
H = Hide Info Display ..... [Disabled]
T = Reconnect on Startup .... [Disabled]
S = Video Sharing ..... [Disabled]
A = Ask User Before Discon .. [Disabled]
Q = Exit
```

4.10 ENABLE THE USER-PC BINDING MODE

To enable the User-PC Binding mode:

1. Make sure the **Network Mode** menu is open (see chapter „How to access the switching menu Master View and Network Mode“).
2. Press the **B** key to disable or enable the option.

```
NETWORK SETTINGS > modes
P = Passwords ..... [Enabled]
C = Auto Connect ..... [Disabled]
V = Private Connections ..... [Disabled]
B = User-PC Bindings ..... [Enabled]
D = Discon on PC Power Down .. [Disabled]
H = Hide Info Display ..... [Disabled]
T = Reconnect on Startup .... [Disabled]
S = Video Sharing ..... [Disabled]
A = Ask User Before Discon .. [Disabled]
Q = Exit
```

4.11 ENABLE THE DISCONNECT ON PC POWER DOWN OPTION

The Auto Connect option allows you to break the connection of any local unit that is connected to a PC that is powered down, allowing the remote unit to find a different local extender to connect to.

To enable the PC Power Down option:

1. Make sure the **Network Mode** menu is open (see chapter „How to access the switching menu Master View and Network Mode“).
2. Press the **D** key to disable or enable the option.

```
NETWORK SETTINGS > modes
P = Passwords ..... [Disabled]
C = Auto Connect ..... [Enabled]
V = Private Connections ..... [Disabled]
B = User-PC Bindings ..... [Disabled]
D = Discon on PC Power Down .. [Enabled]
H = Hide Info Display ..... [Disabled]
T = Reconnect on Startup .... [Enabled]
S = Video Sharing ..... [Disabled]
A = Ask User Before Discon .. [Disabled]
O = Exit
```

4.12 HIDE INFO DISPLAY

To hide the info display during startup:

1. Make sure the **Network Mode** menu is open (see chapter „How to access the switching menu Master View and Network Mode“).
2. Press the **H** key to disable or enable the option.

```
NETWORK SETTINGS > modes
P = Passwords ..... [Disabled]
C = Auto Connect ..... [Disabled]
V = Private Connections ..... [Disabled]
B = User-PC Bindings ..... [Disabled]
D = Discon on PC Power Down .. [Disabled]
H = Hide Info Display ..... [Enabled]
T = Reconnect on Startup .... [Disabled]
S = Video Sharing ..... [Disabled]
A = Ask User Before Discon .. [Disabled]
O = Exit
```

4.13 RECONNECT ON STARTUP

To reconnect on startup:

1. Make sure the **Network Mode** menu is open (see chapter „How to access the switching menu Master View and Network Mode“).
2. Press the **T** key to disable or enable the option.

```
NETWORK SETTINGS > modes
P = Passwords ..... Disabled
C = Auto Connect ..... Disabled
V = Private Connections ..... Disabled
B = User-PC Bindings ..... Disabled
D = Discon on PC Power Down ..... Disabled
H = Hide Info Display ..... Disabled
T = Reconnect on Startup ..... Enabled
S = Video Sharing ..... Disabled
A = Ask User Before Discon .. Disabled
O = Exit
```

4.14 VIDEO SHARING

See chapter „How to share videos“.

4.15 SET THE PASSWORD TIMEOUT

When the password system is activated you can define under what circumstances the user will be required to re-enter their login details when switching.

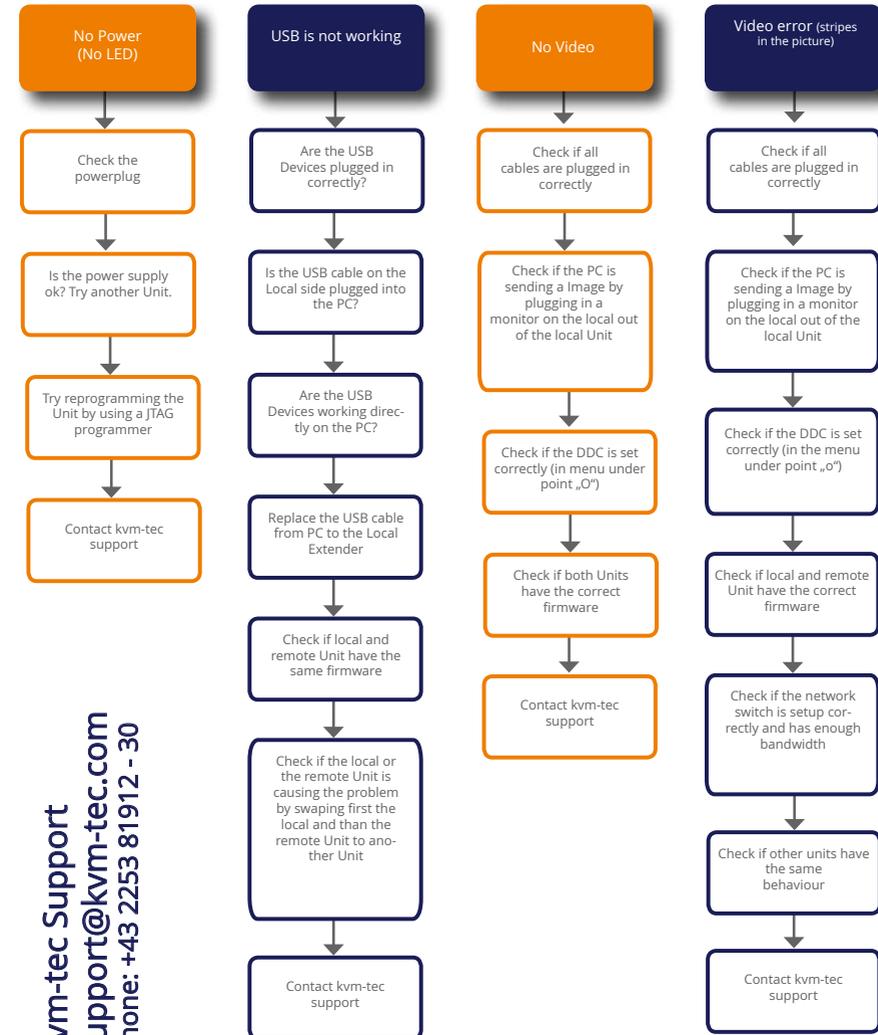
- I – Immediately: User and password must be re-entered for each switch.
- N – Never: User and password are not required to be re-entered until the current user logs out. See chapter „How to switch between different computers“.
- T – Time in min: You define the number of minutes since the last switch before the user and password details are required again to switch.

```
NETWORK SETTINGS > timeout
See product manual
for explanation.
I - Immediately
N - Never
> T - 30 mins
Press ESC to exit
```

Error	Cause	Solution
LED is not lighting	<i>The devices get no power</i>	Is the power supply connected? (white box)
LED is lighting in red	<i>No connection between Loc and Rem</i>	Check if the RJ45/network cable is connected well. (Clicking noise when plugging in) Control both, if it does not work please send an e-mail to support@kvm-tec.com
LED is lighting in orange	<i>No picture on the monitor</i>	Check if the local/CPU (PC) cable is connected well. Check if the remote/CON (monitor) cable is connected well. If everything is connected well but no function appears, reconnect power supply again. If the menu is visible, press the O key and choose the resolution of the monitor. Then press the assigned number on your keyboard.
LED is lighting green	<i>Screen occurs but the keyboard is not working</i>	Plug out/in USB of keyboard and wait until driver is installed (after few seconds). Check all USB connections on both sides (Local and Remote) If it is still not working, plug out/in DC once more
LED is lighting green	<i>No audio</i>	Establish audio connection: plug stereo-jack to the audio output of the PC (green) connection with local: IN remote: headset OUT Establish microphone connection: plug stereo-jack to the microphone input of the PC (pink) connection with local OUT
LED is lighting green	<i>The screen flickers, has an incorrect display</i>	Install current firmware from our homepage www.kvm-tec.com/support/firmware-download
Error	Cause	Solution
LED is blinking green	<i>Different firmware or USB is not compatible</i>	e-mail to support@kvm-tec.com
LED are lighting differently	<i>Different firmware</i>	To enter on screen menu/check firmware version: To enter the On screen menu, press the Scroll Lock key five times in quick succession. The currently installed firmware version is displayed below the menu If firmware update does not work, please send an e-mail to support@kvm-tec.com



smart connection



kvm-tec Support
support@kvm-tec.com
 Phone: +43 2253 81912 - 30

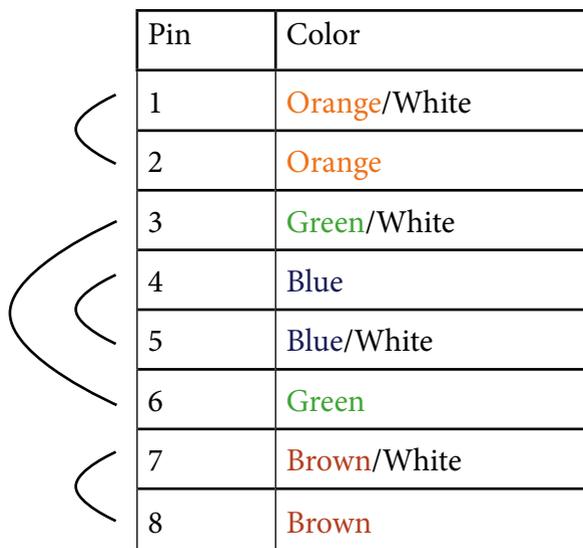
6. REQUIREMENTS FOR CABLES

6.1 REQUIREMENTS FOR CAT5E/6/7 CABLES

A Cat5e/6/7 cable should meet the following requirements:

- The pins are connected 1:1. Caution: the cable pairs must be twisted to EIA/TIA- 568A (rare) or EIA/TIA-568 B (common) pairs.
- Erroneous assignments cannot be found with a simple cable tester.
- The pins for the green pair of wires are not adjacent to one other.
- The cable must at the very least meet the CAT5 specifications and be suitable for Gigabit transmission.
- The cable should meet one of the following standards: Class D ISO/IEC 11801:2002 or EN 50173-1:2002. Schema EIA/TIA-568 B.
- Only use shielded installation cable with min. cross section of 24 AWG throughout the length.
- The shield should be contiguous and connected to both ends. A shielded patch cable is allowed for connection to the device.

Schema EIA/TIA-568 B



Pin	Color
1	Orange/White
2	Orange
3	Green/White
4	Blue
5	Blue/White
6	Green
7	Brown/White
8	Brown

7. REQUIREMENTS NETWORK

7. REQUIREMENTS NETWORK SWITCH

The entire switching network system requires its own separate network. For security reasons, it cannot be integrated into an existing corporate network.

The network switch must meet the following specifications:

1 Gigabit switch, with a port-to-port transfer rate of 1 Gigabit/second.

The following switches have all been tested and verified to work with all kvm-tec extenders.

Network requirements Matrix System UDP Version

The KVM-TEC Matrix Switching System communicates via IP between the individual endpoints (local/CPU or remote/CON), as well as with the KVM-TEC Switching Manager, Gateway2Go and API. Sharing of videos is realized via the IGMP function of the switch via multicast.

Each endpoint joins a multicast group, even if only one connection is established. This process is repeated cyclically so that the switch keeps the multicast group active.

One exception is the Gateway2Go, which uses unicast and communicates via UDP just like the other devices.

The following UDP ports are required for the transmission:

Port Number 53248 (0xD000) to 53260 (0xD00C)

and Port Number 50000 (0xC350)

These ports must be taken into account when configuring the firewall. For the connection via WAN a secured VPN connection is necessary.

The KVM-TEC Matrix system supports DHCP management of IP addresses, static IP addresses are possible, internal default address range and assignment of IP addresses via a DHCP server. To meet all these requirements, the use of Layer 3 switches is recommended.

Recommended Switches



7.1 RECOMMENDED SWITCHES

An up-to-date list of all recommended switches can be found on our website under Switching System - Recommended Switches.

https://www.kvm-tec.com/fileadmin/user_upload/Produkte/Switching/Switching_Box_eng/NETGEAR_recommended_Switche_EN_01.pdf

CAUTION! Do not use solvent-containing cleansers. Do not use wipes, alcohols (e.g. spiritus) or chemicals as these could damage the surface.

To clean the product:

- Clean the product with a maintenance product for synthetic material, which is available in specialized shops.



This symbol on the product, the accessories or packaging indicates that this product must not be treated as unsorted municipal waste, but must be collected separately! Dispose of the product via a collection point for the recycling of waste electrical and electronic equipment within the EU and in other European countries that operate separate collection systems for waste electrical and electronic equipment.

By disposing of the product in the proper manner, you help to avoid possible hazards for the environment and public health that could otherwise be caused by improper treatment of waste equipment. The recycling of materials contributes to the conservation of natural resources. Therefore do not dispose of your old electrical and electronic equipment with the unsorted municipal waste.

The packaging is made of environmentally friendly materials, which may be disposed through your local recycling facilities. By disposing of the packaging and packaging waste in the proper manner, you help to avoid possible hazards for the environment and public health.

9. WARRANTY & EXTENDED WARRANTY

Warranty lasts 24 months from the date of purchase. The defect product has to be sent back to the manufacturer or your supplier within 2 weeks. The warranty becomes void in case of:

- External forceful impact
- Inappropriate maintenance
- Violating the operating instructions
- Damage by lightning

Always contact us first before sending back the product.



2 years standard warranty



Part nr 9003 Warranty extension to 5 years per UNIT
Part nr 9002 Warranty extension to 5 years per SET

10. CONTACT ADDRESS

If you have any questions about our products, please contact kvm-tec or your dealer.

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Web: www.kvm-tec.com

Find our newest updates and FAQs on our homepage: <https://www.kvm-tec.com/en/support/overview-support/>

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