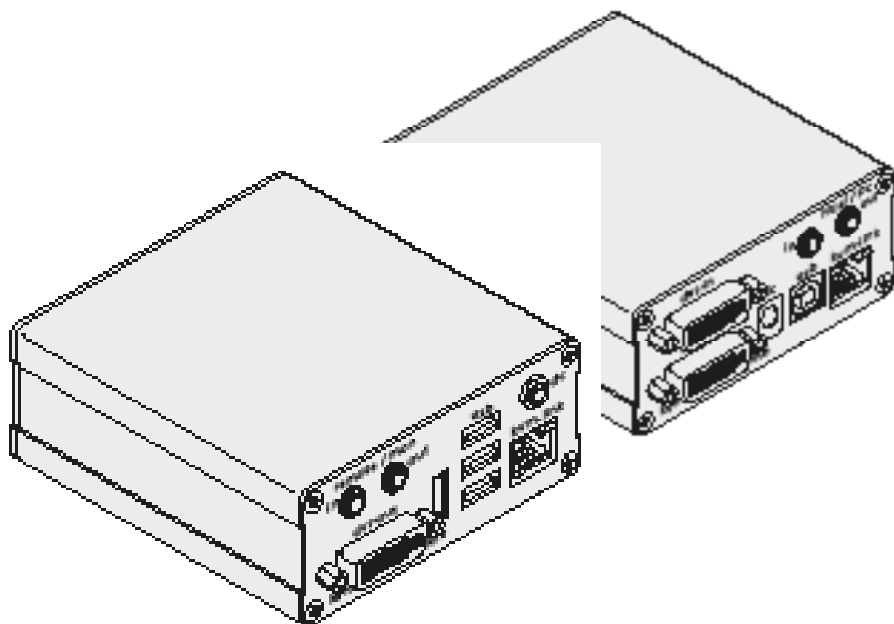




# INSTRUCTION MANUAL



## MASTERLINE MVX1/MVX1-F KVM EXTENDER

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# 1. INTRODUCTION

**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 as a device to increase the distance that a keyboard, monitor and mouse can be placed from a computer. 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. INTRODUCTION

## 1.2 SAFETY INSTRUCTIONS

1

### **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.

# 1. INTRODUCTION

- 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

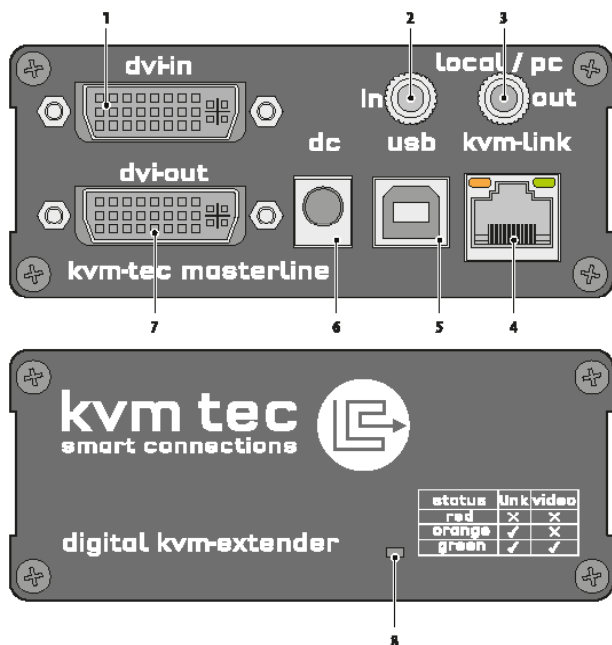
Type:	KVM Extender (local unit and remote unit)
Model:	Masterline MVX1/MVX1-F KVM Extender
Power supply input voltage:	100 - 240 V; 50/60 Hz AC
Power supply output:	12V; 1A (external power supply)
Power requirement:	5W per extender (excluding attached USB devices)
Operating temperature range:	0 °C to 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. 98 x 41 x 106 mm / 3.9 x 1.6 x 4.2"
Weight:	approx. 540 g / 19 oz. per set
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

Manual Vers 4.01 /4352

# 1. INTRODUCTION

## 1.4 PRODUCT ELEMENTS

### Local Extender (CPU)

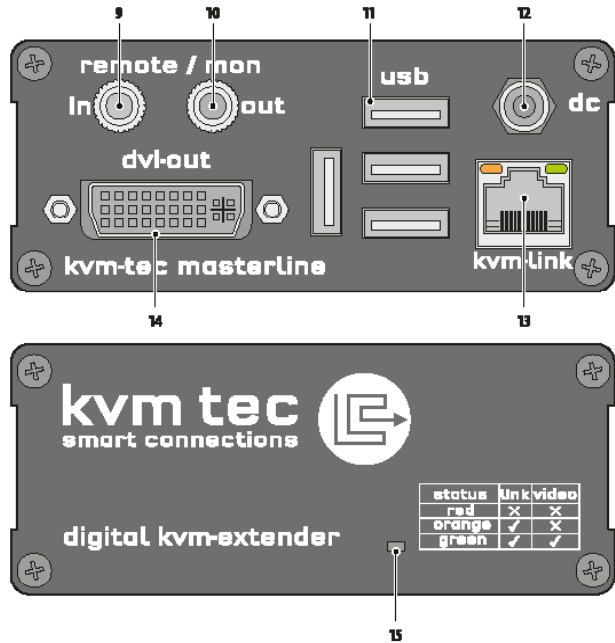


Nr.	Name	Function
1	dvi-in	DVI connection to PC
2	in	Audio In from PC
3	out	Audio Out to PC
4	kvm-link/ RJ45 socket	Connection for CAT5/6/7 cable or fibre cable
5	usb	USB connection
6	dc	Connection for 12 V power supply
7	dvi-out	DVI connection to monitor
8	Power/Status LED	Displays the status of the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

# 1. INTRODUCTION

1

## Remote Extender (CON)



### Nr. Name

- 9 in
- 10 out
- 11 usb
- 12 dc
- 13 kvm-link/ RJ45 socket
- 14 dvi-out
- 15 Power/Status LED

### Function

- Audio In from microphone etc.
- Audio Out to speakers etc.
- USB connections (e.g. for keyboard and mouse)
- Connection for 12 V power supply
- Connection for CAT5/6/7 cable or fibre cable
- DVI-D connection to monitor
- Displays the status of the extender

# 1. INTRODUCTION

## 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. INSTALLATION OF THE EXTENDER

### 2.1 UNPACKING AND CHECKING THE CONTENTS

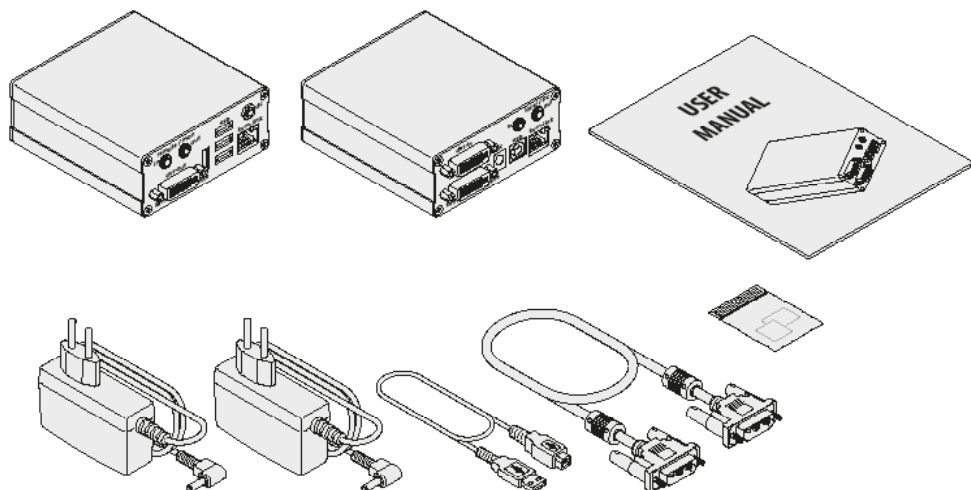
Before using the product for the first time it should be checked for damage. In case of damage due to transport inform the carrier immediately. Before delivery the product is checked for its function and its operating safety.

- Make sure that the packaging contains the following content:

- A. 1x MVX1/local extender/CPU
- B. 1x MVX1/remote extender/CON
- C. 2x Power supply 12V; 1A
- D. 1x DVI cable
- E. 1x USB cable
- F. 1x User manual
- G. 4x Mounting Pads and 4x Rubber Feet

MVX1 F

1 x SFP Module Multimode up to 500 m ( 1640 ft)



## 2. INSTALLATION OF THE EXTENDER

### 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. 6937](#)

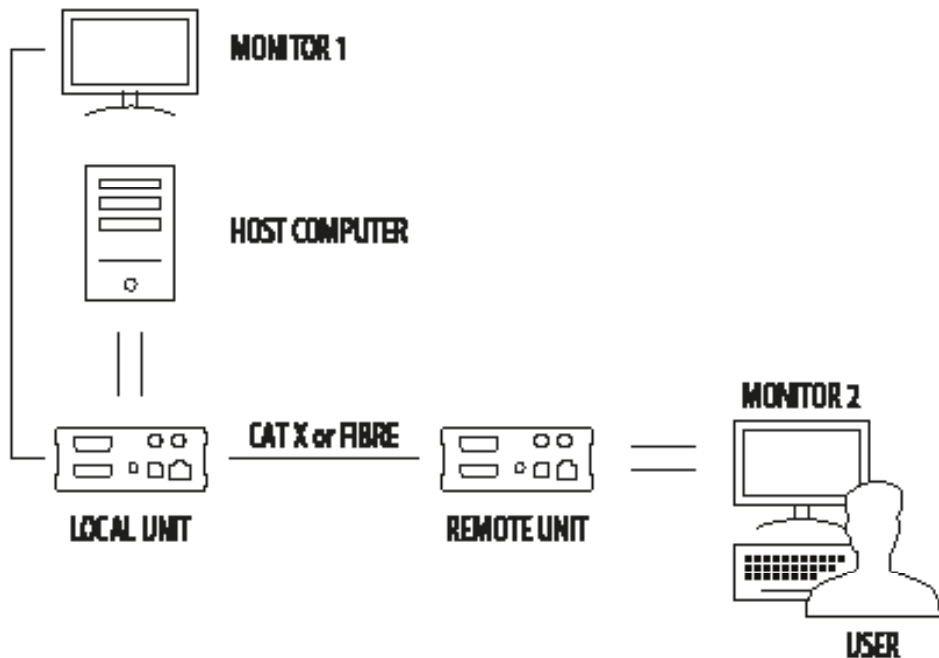
The Under Desk Mounting kit is for underdesk mounting of the SVX and MVX extender.

## 2. INSTALLATION OF THE EXTENDER

### 2.3 INSTALLING THE EXTENDER

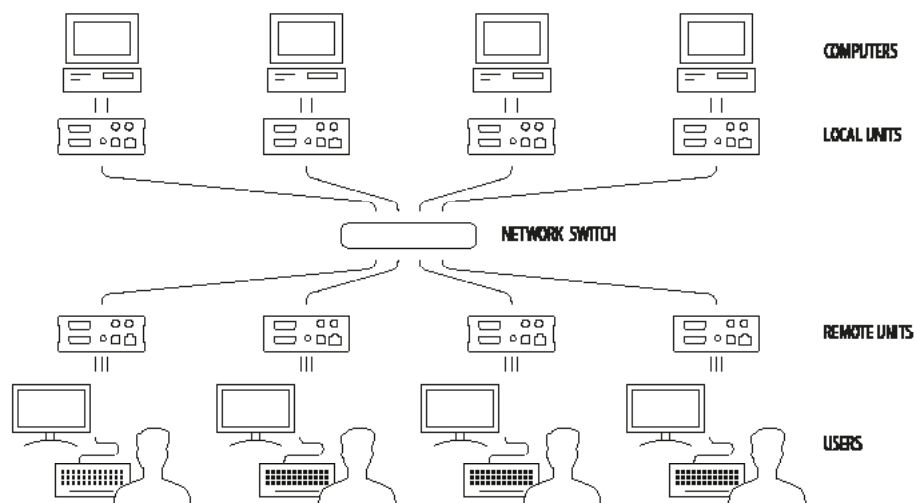
**WARNING!** Read and understand all safety information before installing the product.

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.



Single setup

## 2. INSTALLATION OF THE EXTENDER



**Network Switch Setup**



## 2. INSTALLATION OF THE EXTENDER

### To install the product with/without Network Switch:

1. Position the **MVX1/local unit/CPU** (A) close to the host computer.
2. Position the **MVX1/remote unit/CON** (B) at the desired location.
3. If you are using a Network Switch, position the device between the **MVX1/local unit/CPU** and the **MVX1/remote/CON/ unit**. Note: the maximum distance between the MVX1 units with CATx cable is 100 meter. The maximum distance between the MVX1-F extenders with fibre cable in the single mode is 20 kilometer, with multimode is 500 meter.
4. Connect a monitor to the **DVI-out** (7) on the **MVX1/local/CPUunit** (A).
5. Connect one end of the supplied **DVI-cable** (D) to the **DVI-in** (1) on the **MVX1/local unit** (A).
6. Connect the other end of the supplied **DVI-cable** (D) to the DVI connection on your computer.
7. Connect one end of the supplied **USB cable** (E) to the **USB connection** (5) on the **MVX1/local unit** (A).
8. Connect the other end of the supplied **USB cable** (E) to a USB port on your computer.
9. Connect a second monitor to the **DVI-out** (14) on the **MVX1/remote /CON unit** (B).
10. Connect a keyboard to a **USB port** (11) on the **MVX1/remote/CON unit** (B).
11. Connect a mouse to a **USB port** (11) on the **MVX1/remote/CON unit** (B)
12. Do one of the following, depending on your model and configuration:
  - For the MVX1 with Network Switch (see chapter *Requirements* for cable requirements):
    - Connect one end of a CATx cable (not included) to the **kvm-link port** (4) on the **MVX1/local unit** (A). Make sure that the plug is latched.
    - Connect the other end of the CATx cable to one of the two CATx ports on the Network Switch.
    - Connect the end of a second CATx cable (not included) to the **kvm-link port** (4) on the **MVX1/remote unit** (A). Make sure that the plug is latched.
    - Connect the other end of the second CATx cable to the other CATx port on the Network Switch.
  - For the MVX1 without Network Switch (see chapter *Requirements* for cable requirements):
    - Make sure the dust protectors on the Network Switch and Extenders have been removed.
    - Connect one end of the CATx cable (not included) to the **kvm-link port** (4) on the **MVX1/local unit** (A). Make sure that the plug is latched.
    - Connect the other end of the CATx cable to the **kvm-link port** (4) on the **MVX1/remote unit** (A). Make sure that the plug is latched.

## 2. INSTALLATION OF THE EXTENDER

- For the MVX1-F with Network Switch (see chapter *Requirements* for cable requirements):

**WARNING! The MVX1-F is a Class 1 Laser Product. Avoid exposure to the beam!**

- Make sure the dust protectors have been removed from the SFP modules. Connect one end of a fibre cable (not included) to the **kvm-link port** (4) on the **MVX1/local /CPU unit** (A). Make sure that the plug is latched.
- Connect the other end of the fibre cable to one of the two fibre ports on the Network Switch.
- Connect the other end of the second fibre cable (not included) to the other fibre port on the Network Switch.
- Connect the other end of the second fibre cable to the **kvm-link port** (13) on the **MVX1/remote unit** (B).

- For the MVX1-F without Network Switch (see chapter *Requirements* for cable requirements):

**WARNING! The MVX1-F is a Class 1 Laser Product. Avoid exposure to the beam!**

- Make sure the dust protectors have been removed.
- Connect one end of a fibre cable (not included) to the **kvm-link port** (4) on the **MVX1/local unit** (A). Make sure that the plug is latched.
- Connect the other end of the fibre cable to the **kvm-link port** (13) on the **MVX1/remote unit** (B).

17. If you are using a Network Switch, connect your other work stations (remote extenders) and computers (local extenders) with the Network Switch (see chapter *Requirements* for switching requirements).
18. If you are using a Network Switch, connect the **Power supply** to the AC connection on the Network Switch.
19. Connect a **Power supply** (C) to the **DC connection** (6) on the **MVX1/local unit** (A).
20. Connect the other **Power supply** (C) to the **DC connection** (12) on the **MVX1/remote unit** (B).

## 2. INSTALLATION OF THE EXTENDER

### 2.4 STARTUP

#### To start up the system without switch:

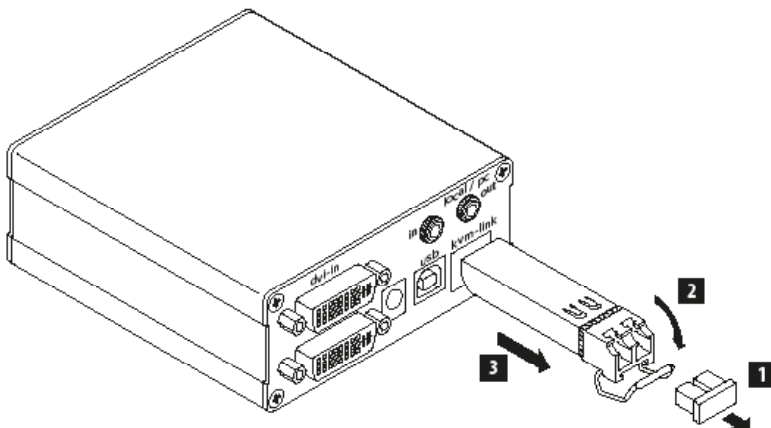
1. Make sure that the two monitors and the computer are switched on.
2. If you are using a Network Switch, connect the power supply to an earthed wall socket.
3. Connect both extender **power supplies** (C) to an earthed wall socket. Both extenders will start an initialisation process. The red status 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.

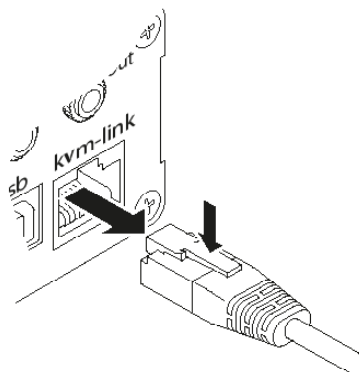


## 2. INSTALLATION OF THE EXTENDER

### 2.6 REMOVING A CATX CABLE

**To remove a CATx cable:**

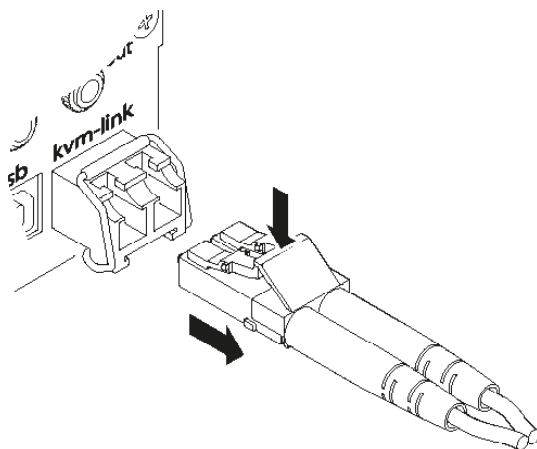
- Press the latch down and slowly pull the cable out.



### 2.7 REMOVING A FIBRE CABLE

**To remove a fiber cable:**

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



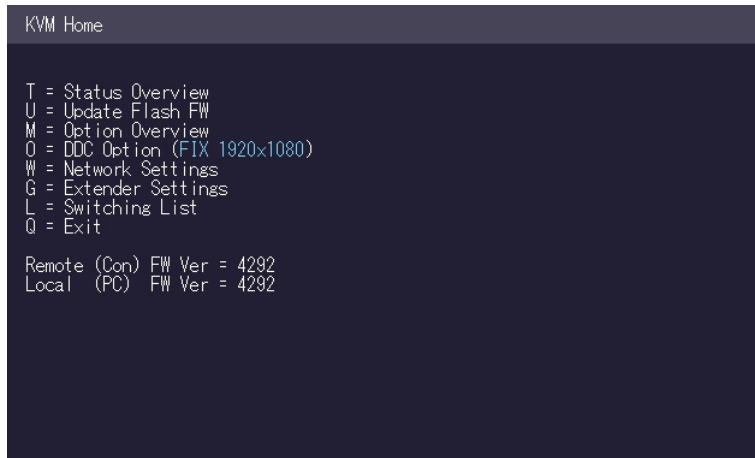
## 3. EXTENDER MENU/SETTINGS

### 3.1 HOW TO ACCESS THE MAIN 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.



## 3. EXTENDER MENU/SETTINGS

### 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 HOW 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')

```
KVM Home

T = Status Overview
U = Update Flash FW
M = Option Overview
O = DDC Option (FIX 1920x1080)
W = Network Settings
G = Extender Settings
L = Switching List
Q = Exit

Remote (Con) FW Ver = 4292
Local (PC) FW Ver = 4292
```

## 3. EXTENDER MENU/SETTINGS

### 3.4 HOW TO PERFORM A FIRMWARE UPDATE

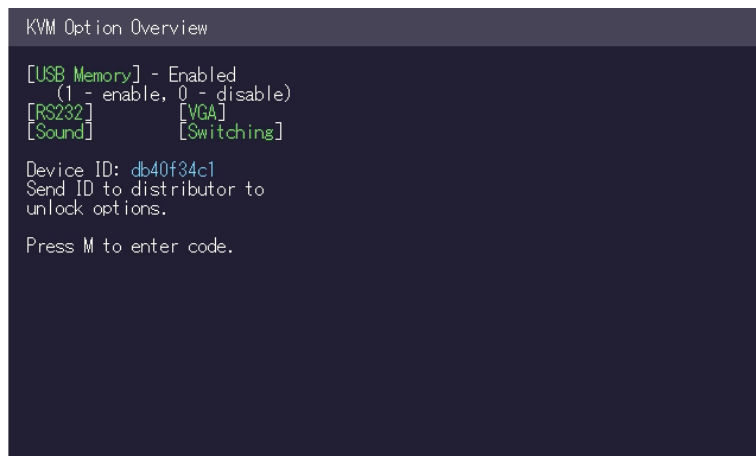
The latest version of the firmware can be downloaded from <http://www.kvm-tec.com/en/support/firmware-download.html>. Each update file is accompanied by a detailed description of the update process. Consult the Update Manual for more information.

#### 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.

### 3.5 HOW TO UNLOCK AN OPTION

1. Make sure the **main menu** is open.
2. Press the **M** key. The **Options Overview** menu opens. The **device ID** will be shown.



```
KVM Option Overview

[USB Memory] - Enabled
              (1 - enable, 0 - disable)
[RS232]       [VGA]
[Sound]       [Switching]

Device ID: db40f34c1
Send ID to distributor to
unlock options.

Press M to enter code.
```



### 3. EXTENDER MENU/SETTINGS

3. Order the unlock code from your supplier by providing them with the 9-character **device ID** and the serial number of your KVM-extender.
4. Press **M** key to enter the unlock code.
5. Enter the unlock code your supplier provided.
6. The extender will automatically restart.
7. To confirm the Option has been unlocked return to the **Options Overview** menu and check that the relevant Option is now displayed in green.

#### KVM Option Overview

```
[USB Memory] - Enabled
               (1 - enable, 0 - disable)
[RS232]       [VGA]
[Sound]       [Switching]

Device ID: db40f34c1
Enter the code you were sent:
Code = -----
```

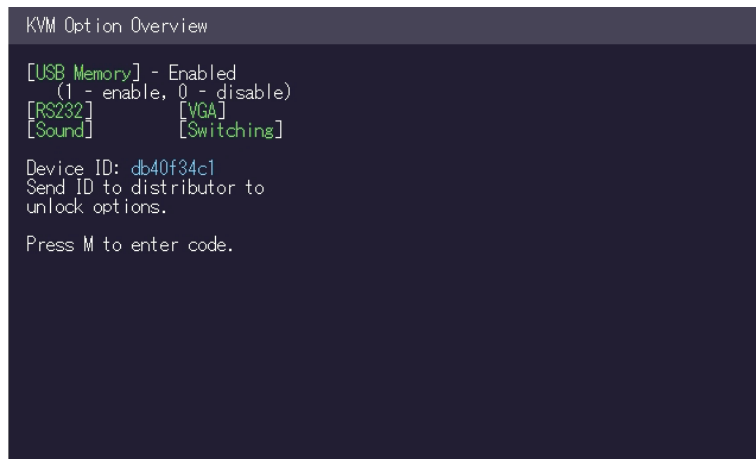
## 3. EXTENDER MENU/SETTINGS

### 3.6 HOW TO ENABLE OR DISABLE THE USB MEMORY OPTION

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

#### To enable or disable the USB Memory Option:

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 Option.

A screenshot of a terminal window titled "KVM Option Overview". The text displayed is as follows:

```
KVM Option Overview

[USB Memory] - Enabled
               (1 - enable, 0 - disable)
[RS232]       [VGA]
[Sound]       [Switching]

Device ID: db40f34c1
Send ID to distributor to
unlock options.

Press M to enter code.
```

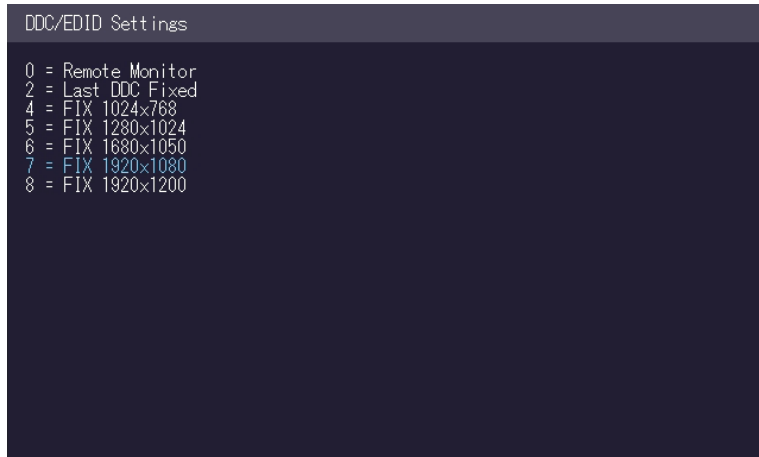
## 3. EXTENDER MENU/SETTINGS

### 3.7 HOW TO DEFINE 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 HOW TO CHANGE THE NETWORK SETTINGS

See chapter „Switching Menu Settings“.

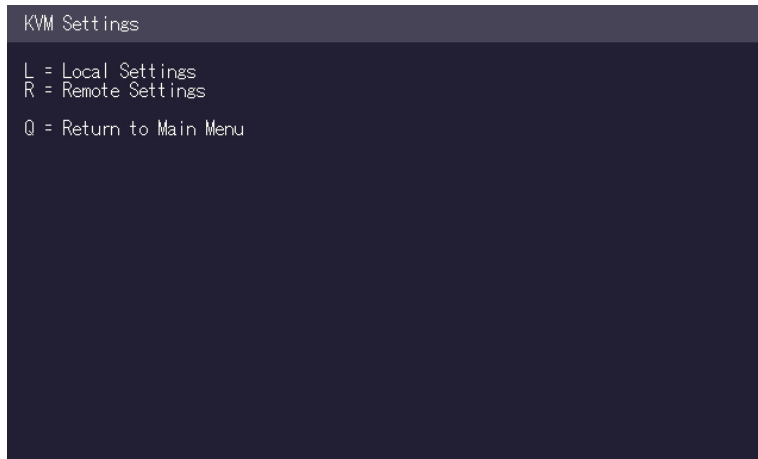
## 3. EXTENDER MENU/SETTINGS

### 3.9 HOW TO CHANGE 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**.

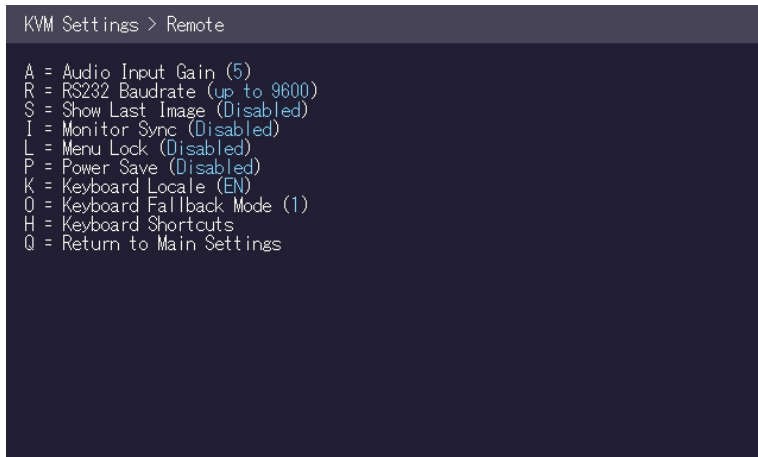


### 3. EXTENDER MENU/SETTINGS

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. EXTENDER MENU/SETTINGS

### 3.9.1 HOW TO OPTIMIZE 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.

```
Settings > VGA Parameters

Shift      up F1  F4 down 40
Shift      <- F2  F3 -> 131
Zoom       out F5  F6 in  2200
Pixelfine  - F7  F8 +    0
Pixel Freq 148340 kHz
Space = Increment Size [1]/[10]
M = Video Mode [DVI]
A = Automatically Seek [Enabled]
K = Seek Now I = Reset to Defaults
S = Exit - Save Q = Quit - No Save
```

## 3. EXTENDER MENU/SETTINGS

### 3.9.2 HOW TO 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.



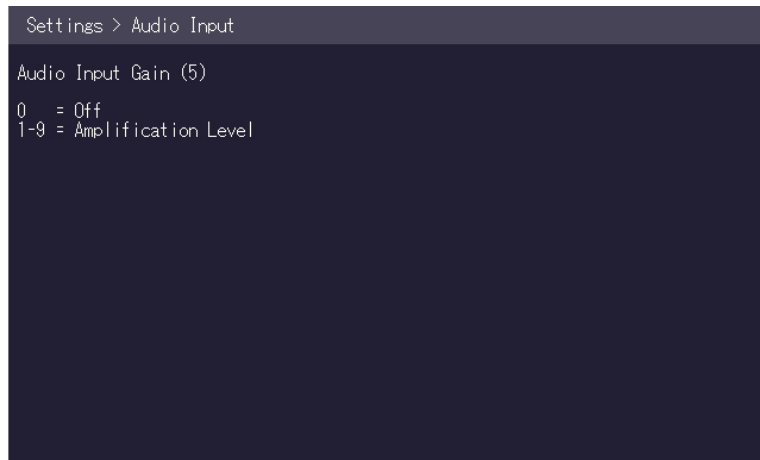
## 3. EXTENDER MENU/SETTINGS

### 3.9.3 HOW TO SET 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:**

1. From the **Extender Settings** menu, press the **R** key. The **Remote Settings** menu appears.
2. Press the **A** key. The **Audio Input Gain** menu appears.
  - Press **0** to turn off the volume.
  - Press **1-9** to set the volume.





## 3.9.4 HOW TO SET THE BAUD RATE FOR THE RS232 (SERIAL) CONNECTION

### 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

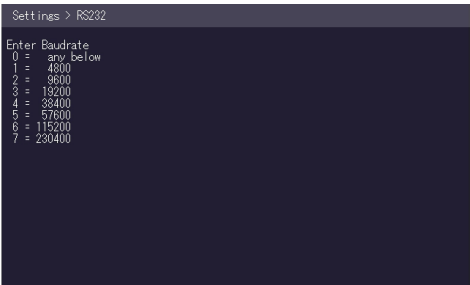
The pin numbers refer to a 9-pin D-sub plug.

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:

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



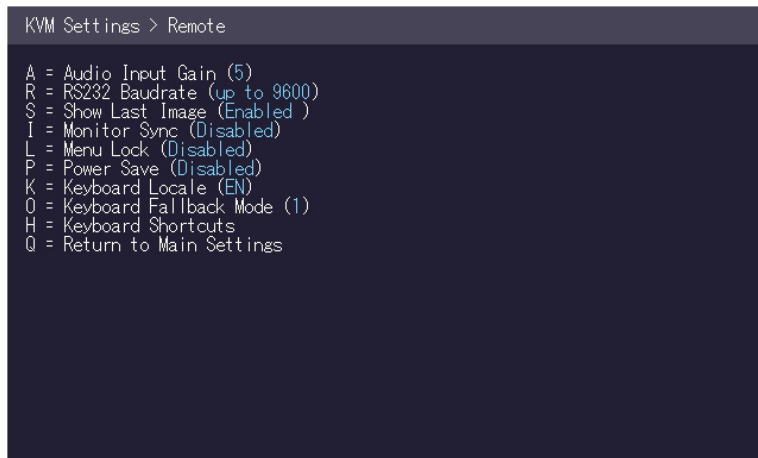
## 3. EXTENDER MENU/SETTINGS

### 3.9.5 HOW TO SHOW THE LAST RECEIVED IMAGE

This function lets you show the last image that is received instead of a black screen when the monitor extender is disconnected from the PC extender. To show that it is the last image received, the edges of the screen flash red.

**To enable or disable the Last Image Received function:**

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



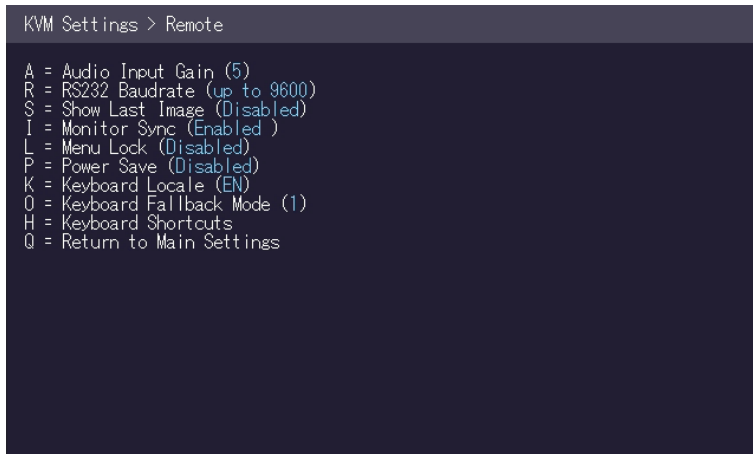
## 3. EXTENDER MENU/SETTINGS

### 3.9.6 HOW TO 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.



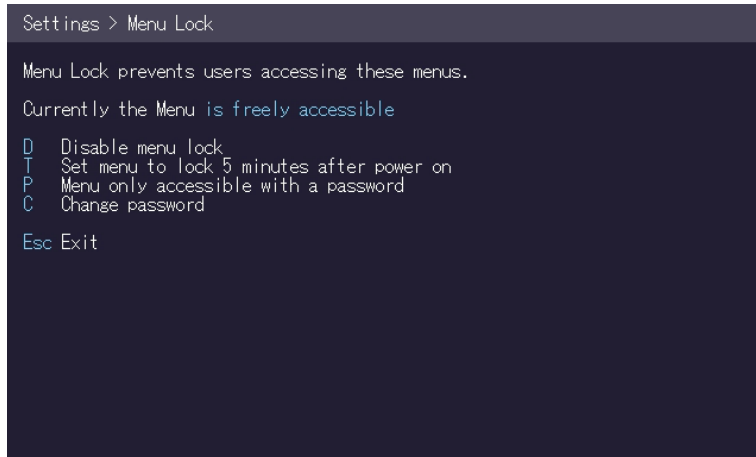
## 3. EXTENDER MENU/SETTINGS

### 3.9.7 HOW TO LOCK 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.



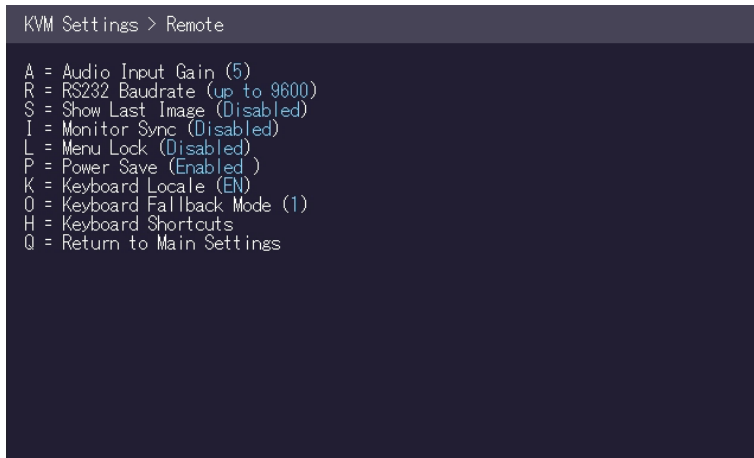
## 3. EXTENDER MENU/SETTINGS

### 3.9.8 HOW TO USE 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.



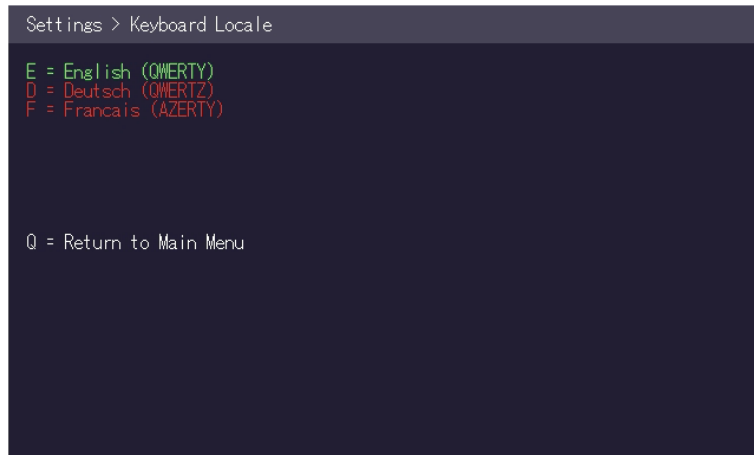
## 3. EXTENDER MENU/SETTINGS

### 3.9.9 HOW TO SELECT 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. EXTENDER MENU/SETTINGS

### 3.9.10 HOW TO CHANGE 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.

```
KVM Settings > Remote  
  
A = Audio Input Gain (5)  
R = RS232 Baudrate (up to 9600)  
S = Show Last Image (Disabled)  
I = Monitor Sync (Disabled)  
L = Menu Lock (Disabled)  
P = Power Save (Enabled)  
K = Keyboard Locale (EN)  
O = Keyboard Fallback Mode (1)  
H = Keyboard Shortcuts  
Q = Return to Main Settings
```

```
Settings > Keyboard Locale  
  
E = English (QWERTY)  
D = Deutsch (QWERTZ)  
F = Francais (AZERTY)  
  
Q = Return to Main Menu
```

## 3. EXTENDER MENU/SETTINGS

### 3.9.11 HOW TO CHANGE 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



### 3.9.12 HOW TO CLOSE THE EXTENDER SETTINGS MENU

**To close the Extender Settings menu:**

- Press **Q** to close the **Extender Settings** menu.



### 3.10 HOW TO SWITCH 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 HOW TO SHARE VIDEOS

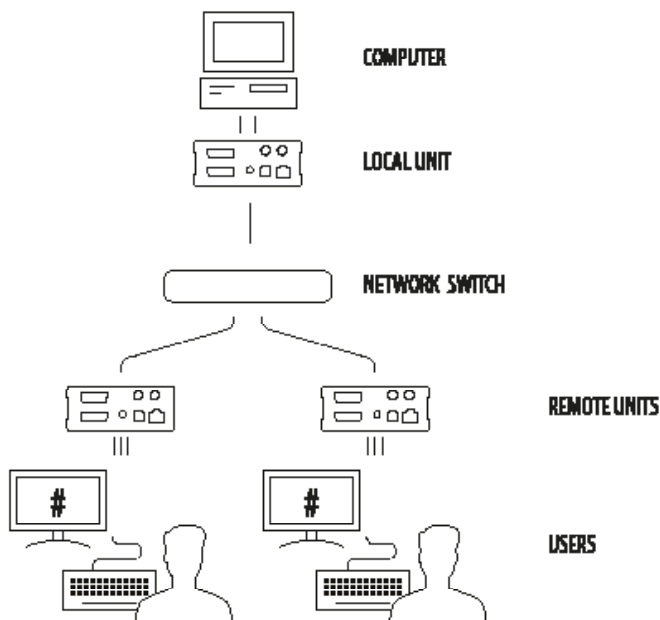
The Video Sharing option allows you to share your screen with other users on the network. Ensure that the switch you are using has IGMP Snooping capabilities, and that this is turned on (most switches have this off by default).

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.

# 3. EXTENDER MENU/SETTINGS



Video sharing setup

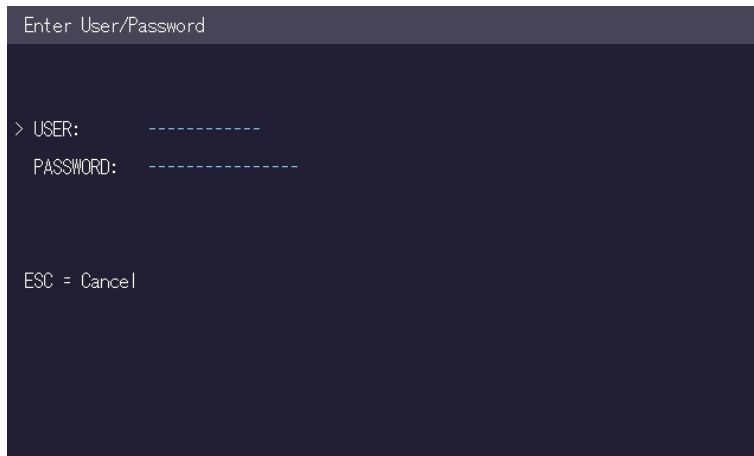
## 4. NETWORK SETTINGS

### 4.1 HOW TO 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.



```
Enter User/Password

> USER:  -----
PASSWORD: -----

ESC = Cancel
```

## 4. NETWORK SETTINGS

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.

### NETWORK SETTINGS

V = Master View (Device Configuration)

M = Network Mode

T = Set Timeout ( Immediately)

Q = Save and Exit

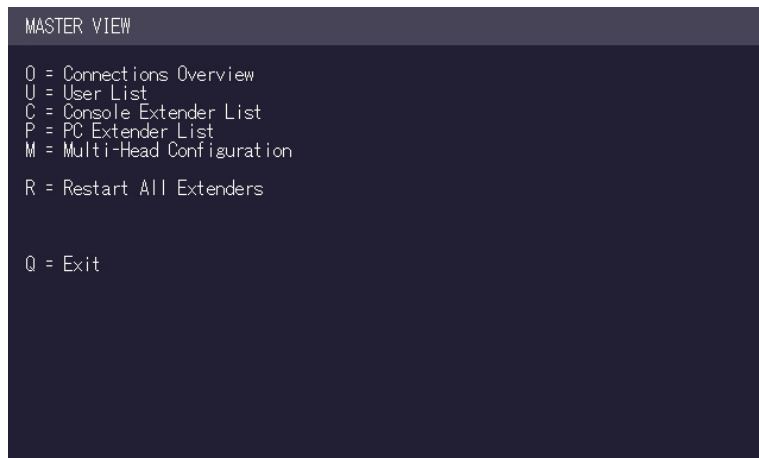
## 4. NETWORK SETTINGS

### 4.2 HOW TO FORCE 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)“).



## 4. NETWORK SETTINGS

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.

```
MASTER VIEW > connections detail

> PC:          <Untitled>
  Console:     <Untitled>
  User:        <None>

D = Force Disconnect
E = Select PC for console
Q = Exit
```

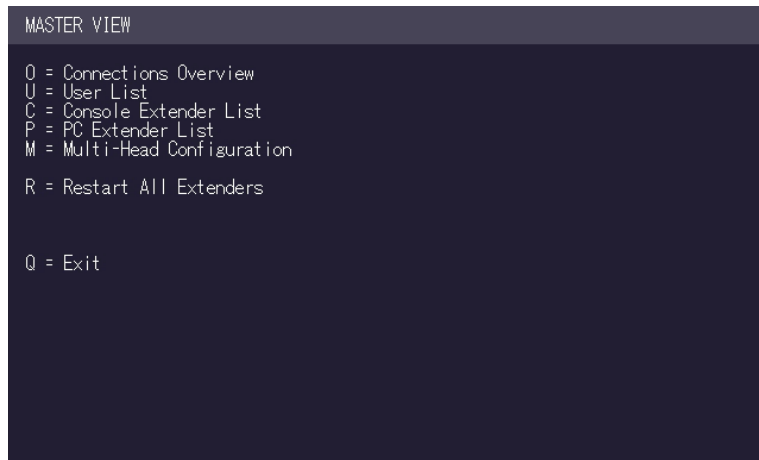
## 4. NETWORK SETTINGS

### 4.3 HOW TO MANAGE 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)“).





## 4. NETWORK SETTINGS

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.

MASTER VIEW > user list		
USER	GROUPS	RIGHTS
> admin	1	admin
A = Add I = Info		
R = Remove Q = Exit		

## 4. NETWORK SETTINGS

3. To edit a user, press the **I** key. The **User Detail** menu opens.

```
MASTER VIEW > user detail

> USER:      admin
   FULL_NAME: admin
   PASSWORD:  *****
   RIGHTS:    +++ (admin)
   GROUPS:    1
   Bound PC:  <None>

E = Edit
Q = Exit
```

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.

## 4. NETWORK SETTINGS

- **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. 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 HOW TO VIEW 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

Q = 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.

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

NAME	STATUS
> <Untitled>	this

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

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.

## 4. NETWORK SETTINGS

### 4.5 HOW TO VIEW 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.

**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)“).

```
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 **P** key. The **PC Extender List** menu opens.

## 4. NETWORK SETTINGS



NAME	GROUP	STATUS
> <Untitled>	1	conn'd

R = Remove (Disconnected Only)  
I = Info                      Q = 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

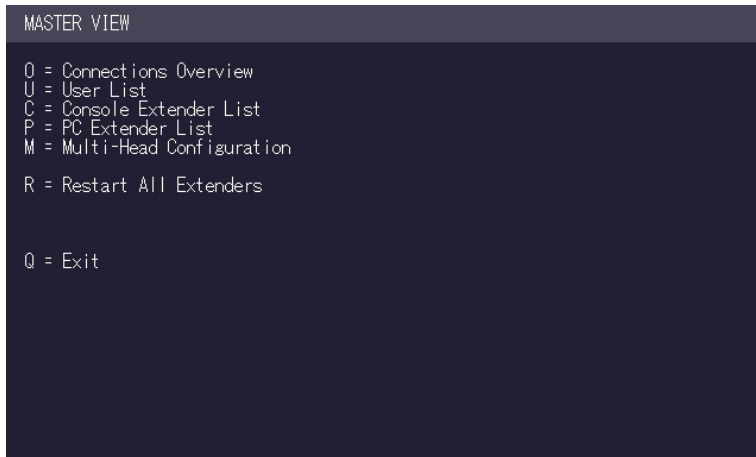
Alex, Blair and Charlie are assigned to be members of Group 1 and Group 2. Danny, Em and Frankie are assigned to be members of Group 1 and Group 3.

### 4.6 HOW TO 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.

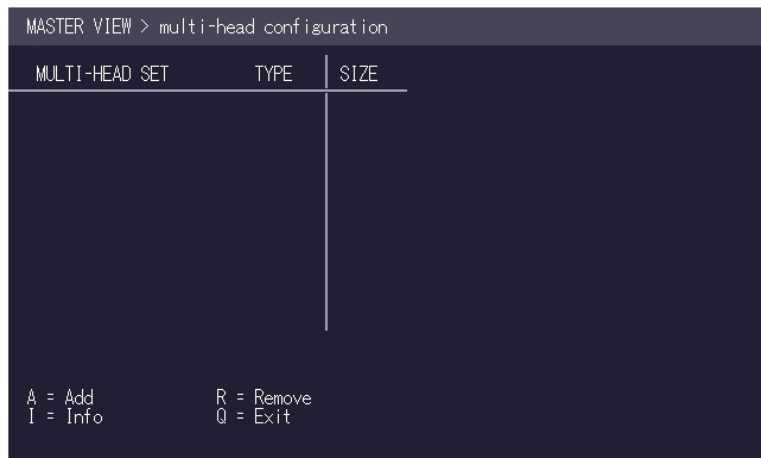
**To group individual local and remote extenders:**

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

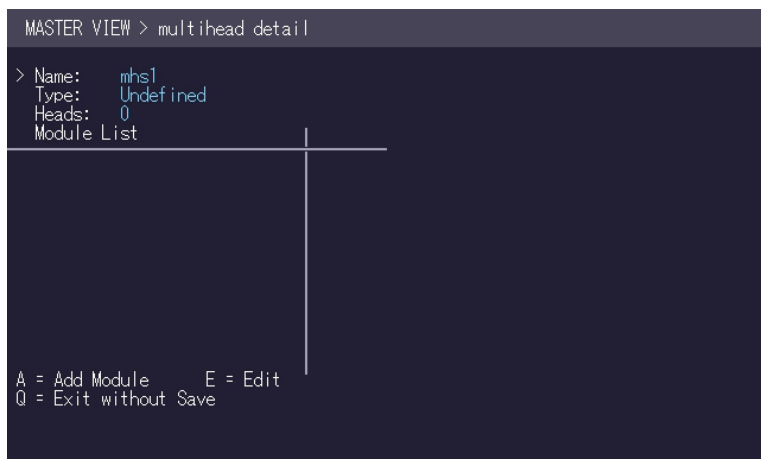


2. Press the **M** key. The **Multi-Head configuration** menu opens.

## 4. NETWORK SETTINGS



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.



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. NETWORK SETTINGS

### 4.7 HOW TO 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]

Q = Exit
```

## 4. NETWORK SETTINGS

### 4.8 HOW TO 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]

Q = Exit
```

## 4. NETWORK SETTINGS

### 4.9 HOW TO 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 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]

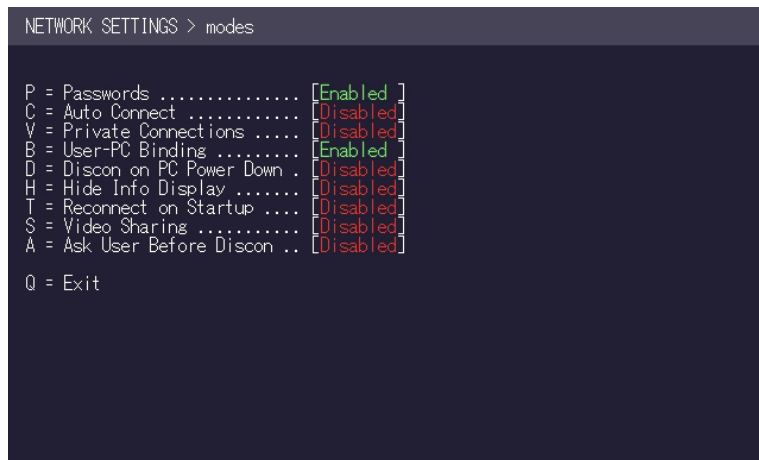
Q = Exit
```

## 4. NETWORK SETTINGS

### 4.10 HOW TO 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.



## 4. NETWORK SETTINGS

### 4.11 HOW TO 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 Binding ..... [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]

Q = Exit
```

## 4. NETWORK SETTINGS

### 4.12 HOW TO 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 Binding ..... [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]

Q = Exit
```

## 4. NETWORK SETTINGS

### 4.13 HOW TO 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 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]

Q = Exit
```

### 4.14 VIDEO SHARING

See chapter „How to share videos“.

## 4. NETWORK SETTINGS

### 4.15 HOW TO 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 - Time in mins

Press ESC to exit
```



## 5. MAINTENANCE AND CARE

**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.

## 6. TROUBLESHOOTING

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 <a href="mailto:support@kvm-tec.com">support@kvm-tec.com</a>
LED is lighting in orange	<i>No picture on the monitor</i>	Check if the local (PC) cable is connected well. Check if the remote (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 <b>O</b> 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>	<b>Establish audio connection:</b> plug stereo-jack to the audio output of the PC (green) connection with local: IN remote: headset OUT <b>Establish microphone connection:</b> plug stereo-jack to the microphone input of the PC (pink) connection with local OUT. Connect the microphone to the Remote IN

Error	Cause	Solution
<b>LED is lighting green</b>	<i>The screen flickers, has an incorrect display</i>	Install current firmware from our homepage <a href="http://www.kvm-tec.com/support">www.kvm-tec.com/support</a>
<b>LED is blinking green</b>	<i>Different firmware or USB is not compatible</i>	Please contact the kvm-tec support team via e-mail: <a href="mailto:support@kvm-tec.com">support@kvm-tec.com</a> or by phone: +43 2253 81912 30
<b>LED are lighting differently</b>	<i>Different firmware</i>	<b>To enter on screen menu/check firmware version:</b> To enter the On screen menu, press the <b>Scroll Lock</b> 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 <b>e-mail to <a href="mailto:support@kvm-tec.com">support@kvm-tec.com</a></b>

## 7. DISPOSAL



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.

## 8. 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.

## 9. SUPPORT

If you have any questions about our products, please contact your dealer.

kvm-tec electronic gmbh  
Gewerbepark Mitterfeld 1A  
2523 Tattendorf  
Austria  
Phone: 0043 (0) 2253 81 912  
Fax: 0043 (0) 2253 81 912 99  
Email: support@kvm-tec.com  
Web: www.kvm-tec.com

kvm-tec Inc.  
67 Camino Del Oro  
Rancho Santa Margerita  
CA 92688  
phone: +1 213631 3663  
Email: officeusa@kvm-tec.com  
Web: www.kvm-tec.com

kvm-tec Chinasales email chinasales@kvm-tec.com

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

# 10. DECLARATION OF CONFORMITY

## EU DECLARATION OF CONFORMITY

Manufacturer: KVM-TEC Electronic GmbH  
Gewerbepark Mitterfeld 1A, 2523 Tattendorf, Austria  
Commercial register number: FN 272328h LG Wr. Neustadt

I hereby declare that the device

Product: Masterline SVX und SVX-F  
Type: SVX - Digital KVM Extender  
SVX-F - Digital KVM Extender Fiber

fulfils following EU Directive and European standards listed within:

### **EMC/EMV - EU Directive 2014/30/EU and 2014/35/EU**

2014/35/EU low voltage directive

2014/30/EU EMV directive

The device was tested in a typical application with a PC.

### **RoHS II - EU Directive 2011/65/EU**

Certificate according to RoHS II Directive 2011/65 / EU

We hereby certify that all our products are manufactured and packaged in accordance with RoHS II 2011/65/EU and PFOS 2006/122EG directives.

### **REACH - Regulation (EG) No. 1907/2006**

For our products, we only use commercially available, well-known components from well-known manufacturers, which do not exceed the thresholds for Substances of Very High Concern (SVHC) and do not fall into the obligations for the production and placing on the market of substances / chemicals for pre-registration or registration (ECHA) fall.

### **Ecodesign Directive 2009/125/EC**

# 10. DECLARATION OF CONFORMITY

In particular, the limits of the following standards are observed:

EN 55032:2012 Class A \*

EN 55024:2010

EN 61000-3-2:2014

EN 61000-3-3:2013

EN 60950-1:2006+A2:2013, IEC 60950:2005

LASER CLASS 1: EN 60825-1:2007 compatible with IEEE 803.3z

Signed for and on behalf of: KVM-TEC Electronic GmbH

Place and date of issue: Tattendorf, 2018-05-09

Name, Function, Signature: Ing. Dietmar Pfurtscheller, CEO/Geschäftsführer



# 11. REQUIREMENTS FOR CABLES

## 11.1 REQUIREMENTS FOR CAT5E/6/7 CABLES

A Cat5/6/7 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

## 11.2 REQUIREMENTS FIBER CABLES

### 11.2.1 MULTI-MODE (STANDARD)

A Multi-Mode fibre cable should meet the following requirements:

- Maximum length should be 500 m. The MVX1-F includes a fibre Multimode – SFP Module which allows a transmission distance of up to 500 m.
- Dedicated fibre connection cable type Duplex Multimode 50/125µ (OM2), LC connector

### 11.2.2 SINGLE-MODE (OPTIONAL)

A fibre Single-Mode – SFP Module cable should meet the following requirements:

- Up to 20 km transmission distance.
- Requires dedicated fibre connection: cable type Duplex Singlemode with LC connector

A fibre Single-Mode – SFP Module BiDi cable should meet the following requirements:

- Up to 20 km transmission distance.
- Requires dedicated fibre connection: cable type Singlemode with LC connector  
Wavelength (λ) of 850 nm in multi-mode or 1310 nm TX -1550 nm RX in single-mode

# 11. REQUIREMENTS FOR CABLES

## 11.3 REQUIREMENTS NETWORK SWITCH

The entire switching network system requires its own dedicated network. For security reasons it cannot be integrated into an existing company network.

The network switch must fulfil the following specifications:

**1 Gigabit Switch, with true port to port transfer rates of 1 Gigabit/second**

The following switches have all been tested and verified to work with all features of kvm-tec electronic's SVX Smartline and MVX Masterline KVM-extenders.

Brand	Model	Port Count		
		1G CATx	1G SFP	10G SFP+
D-Link	DGS-1210-24	24	4	
D-Link	DGS-1210-52	48	4	
D-Link	DGS-1510-20	16	2	2
D-Link	DGS-1510-28	24	2	2
D-Link	DGS-1510-52X	48		4
TP-Link	TL-SG1016DE	16		
TP-Link	TL-SG108E	8		





## 12. NOTES

# 12. NOTES

