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USER-MANUAL

Matrixline 2000 KVM Extender over IP

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MATRIXLINE MX

6711L CPU/LOCAL

6711R CON/REMOTE

MATRIXLINE FIBER MX-F

6811L CPU/LOCAL

6811R CON/REMOTE

Check out our
Installation Channel:



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1. INTRODUCTION

Congratulations on the purchase of your new Masterline MX/MX-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 Matrixline MX2000 and MX2000-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 Matrixline MX2000/MX2000-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 Matrixline MX/MX-F KVM Extender is referred to as 'product' or 'extender'. The MX/PC is referred to as the 'local unit' and the MX/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 MX-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. INTRODUCTION

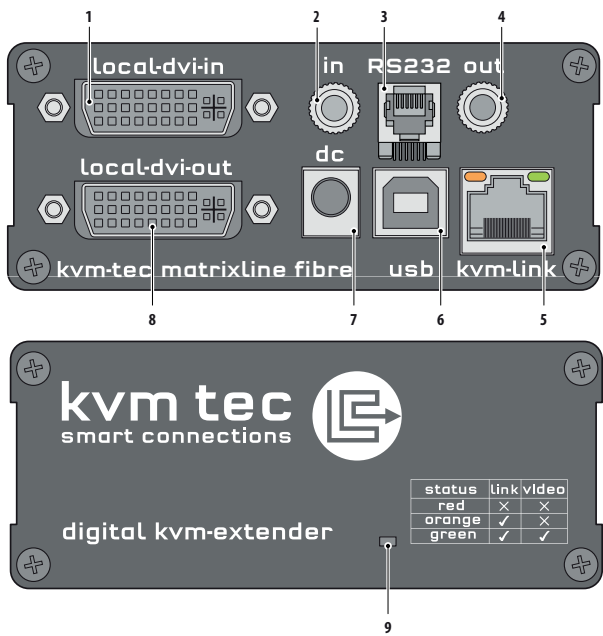
1.3 TECHNICAL SPECIFICATIONS

Type:	KVM Extender (local unit and remote unit)
Model:	Matrixline MX2000 und Matrixline 2000 Fiber MX-F KVM Extender
Power supply input voltage:	100 - 240 V; 50/60 Hz AC
Power supply output:	12V; 1A (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. INTRODUCTION

1.4 PRODUCT ELEMENTS

Local Extender (CPU)

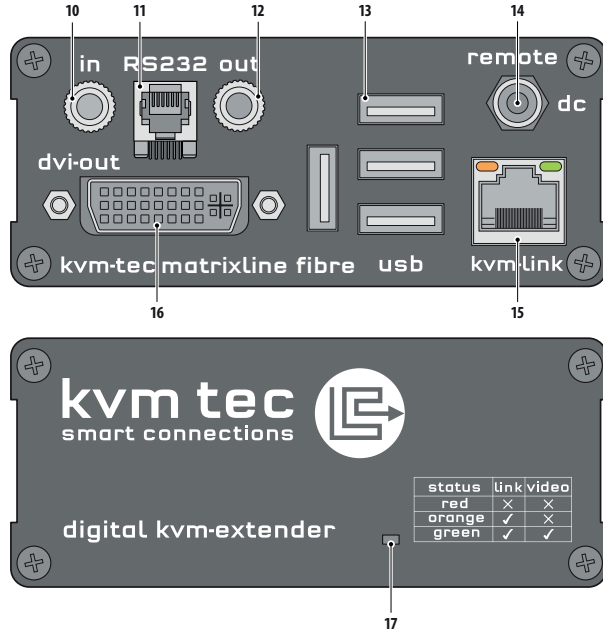


Nr.	Name	Function
1	dvi-in	DVI connection to PC
2	in	Audio In from PC
3	out	Audio Out to PC
4	kvm-link/ RJ45 socket	Connection for CAT5/6/7 cable or fiber cable
5	usb	USB connection
6	dc	Connection for 12 V power supply
7	dvi-out	DVI connection to monitor
8	Power/Status LED	Displays the status of the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

1. INTRODUCTION

1

Remote Extender (CON)



Nr.	Name	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 fiber cable
----	-----------------------	--

14	dvi-out	DVI-D connection to monitor
----	---------	-----------------------------

15	Power/Status LED	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		

* MX only

** Rem. Only

Table 1: Meaning of LED indicators

2. INSTALLATION OF THE EXTENDER

2.1 UNPACKING AND CHECKING THE CONTENTS

2

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 MX 2000/local extender/CPU
- B. 1x MX 2000/remote extender/CON

LOCAL /CPU Unit

- 1 x wall power supply unit I 12V 1A (EU-plug or INT plug)
- 1 x DVI - DVI cable 1,8m/5.9ft
- 1 x USB cable 1,8m/5.9ft
- 1 x VGA-DVI cable 1,8m/5.9ft (opt)
- 2 x Audio cable 1,8m /5.9ft (opt)
- 1 x RJ11 to Sub9 (RS232) Adapter
- 1 x RS 232 extension cable 1,8m/5.9ft
- 4 x rubber feet
- 4 x mounting pads

REMOTE/CON Unit

- 1 x wall power supply unit I 12V 1A (EU-plug or INT plug)
- 1x RJ11 to Sub9 (RS232) Adapter
- 4 x rubber feet
- 4 x mounting pads

MX 2000 Fiber SFP Module pro unit

- 1 x SFP Modul-Multimode module up to 500m/1640 ft
(alternativ with Single-Mode up to 20km/12 mi ItemNr 6855)

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 Marixline 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 Matrixline 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 Matrixline 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 MX 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 MX extenders is possible in several ways.

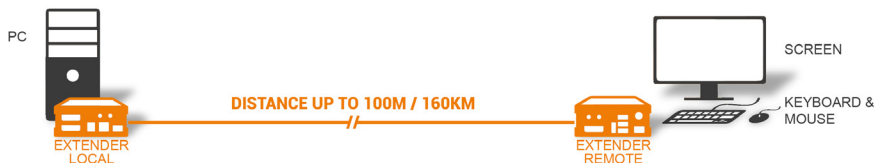
2. INSTALLATION OF THE EXTENDER

2.3 INSTALLING THE EXTENDER

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

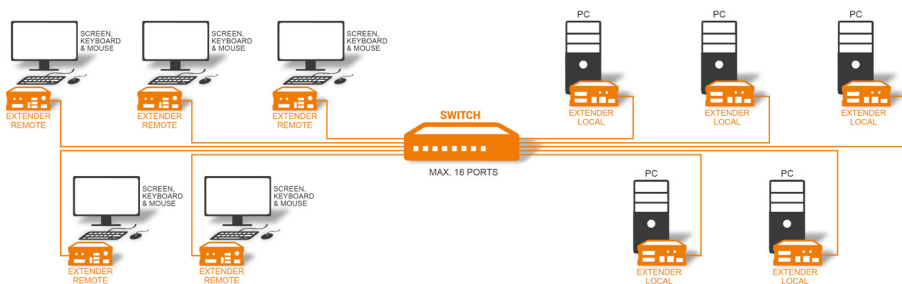
The units can be set up to access one host computer, or to access numerous host computers. In the case of the latter, an additional Network Switch must be installed. With a Network Switch, each user can gain quick access to any of the required computers.

2



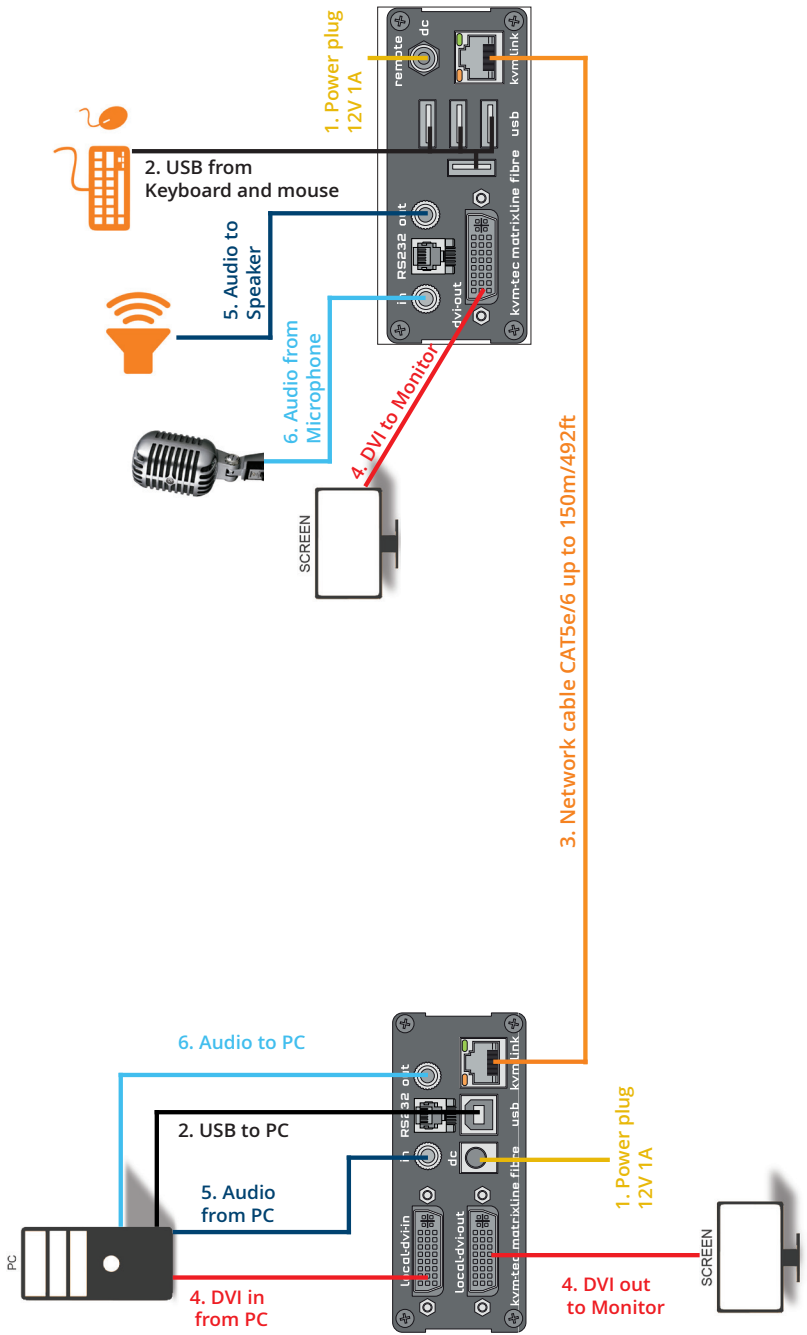
point to point connection

5 x 5 MATRIX



Set up for Switching Sysetm up to 480 endpoints

2. INSTALLATION OF THE EXTENDER



2. INSTALLATION OF THE EXTENDER

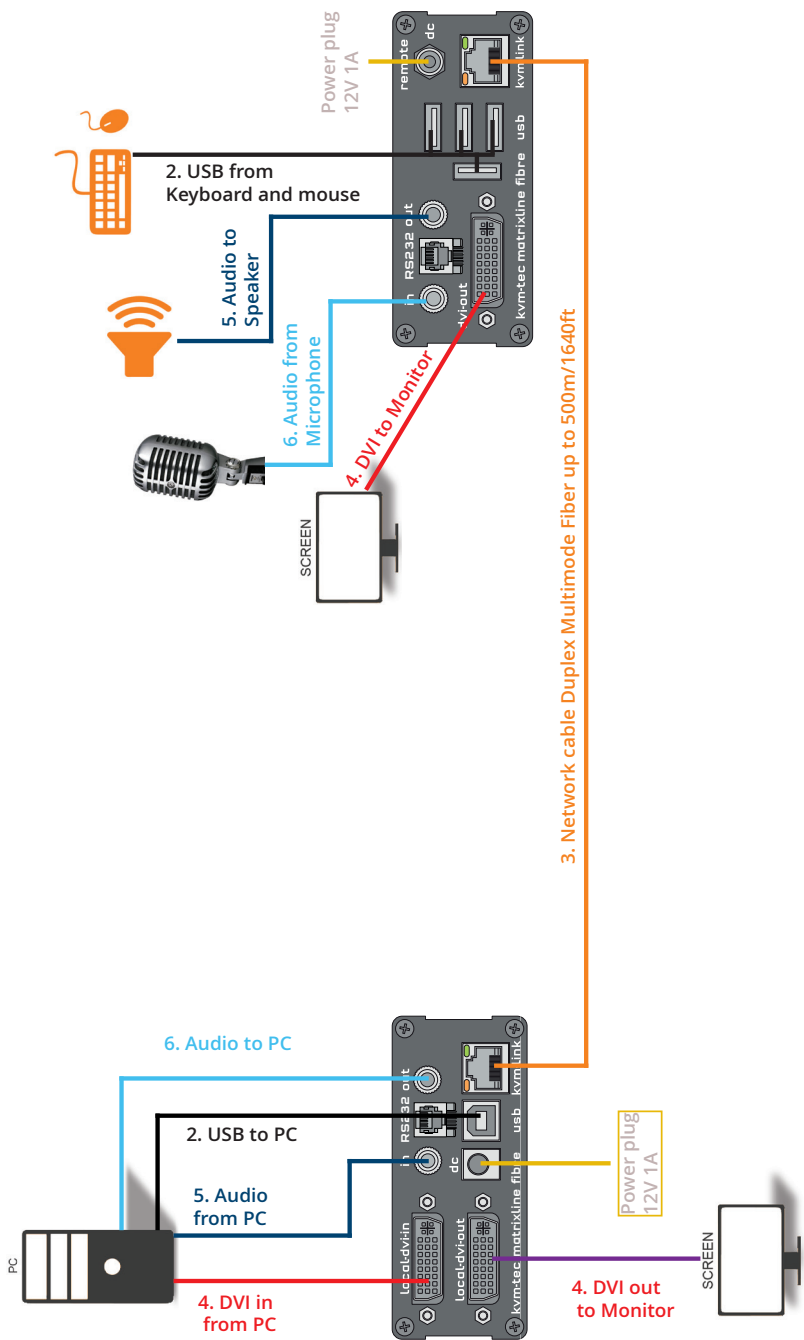
Quick Installation MX2000 MASTERLINE

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 HDMI-DVI cable to the DVI socket of the PC and the other end to the HDMI socket of the CPU Local Unit (PC-in). Then connect the monitor with the HDMI-DVI cable to the CON / Remote Unit.

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

2. INSTALLATION OF THE EXTENDER



2. INSTALLATION OF THE EXTENDER

Quick Installation MX2000 MASTERLINE FIBER 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 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. INSTALLATION OF THE EXTENDER

2.4 STARTUP

To start up the system without switch:

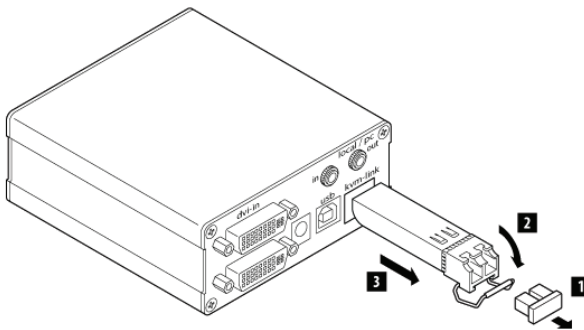
1. Make sure that the two monitors and the computer are switched on.
2. If you are using a Network Switch, connect the power supply to an earthed wall socket.
3. Connect both extender **power supplies (C)** to an earthed wall socket. Both extenders will start an initialisation process. The red status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

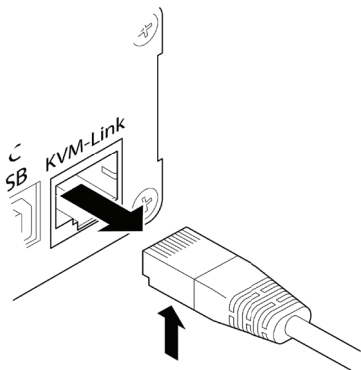


2. INSTALLATION OF THE EXTENDER

2.6 REMOVING A CATX CABLE

To remove a CATx cable:

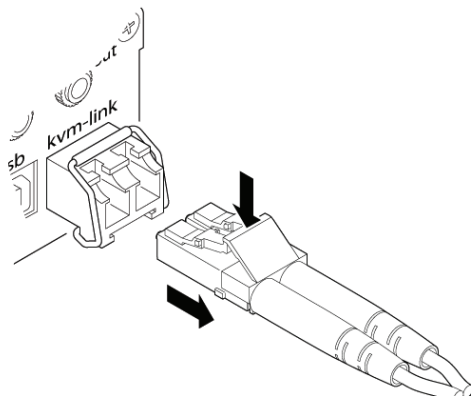
- Press the latch down and slowly pull the cable out.



2.7 REMOVING A FIBER CABLE

To remove a fiber cable:

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



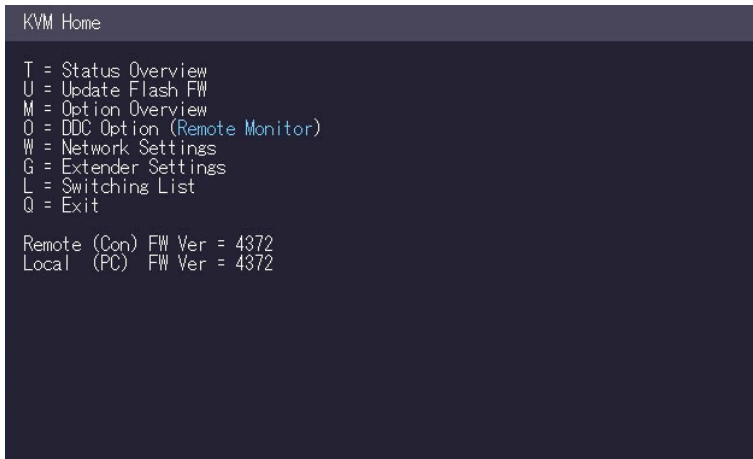
3. EXTENDER SETTINGS

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.



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. EXTENDER 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.

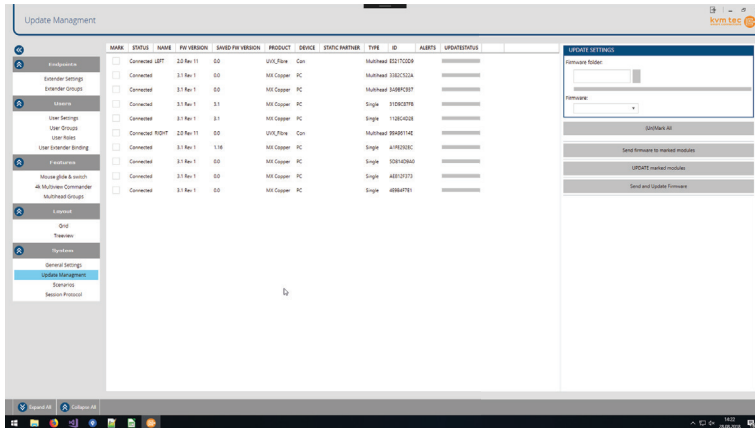
3.3 DISPLAY OF FIRMWARE VERSION

- Make sure that the main menu is open. The currently installed firmware version of the remote (CON) and local (CPU) extender is displayed below (e.g. ,4267’).

3. EXTENDER SETTINGS

3.4 PERFORMING A FIRMWARE UPDATES VIA THE SWITCHING MANAGER

Update management is carried out via the Switching Manager software included in the delivery see **User Manual Switching Manager 2000 chapter 9.2 (p 44)**



In this view, all extenders for which a firmware update is to be performed are displayed. This function displays a list of the extenders that are assigned to the Switching Manager. Updating the extenders in the system is a two-step process. In the first step the firmware is loaded onto the device and in the second step the update is performed. All extenders in the system file can also be updated together. For the update, activate the Settings window and select the folder from which the firmware file is to be uploaded. The list of bitmaps is displayed under MX Firmware. Then transfer the firmware and the update will be done in two steps. 1:

1. send the firmware to the Extender.

It takes about 2 minutes until the firmware is loaded into the Extender. The bar on the right in the column the main window fills blue

2. is the update.

ATTENTION Only if the bar is grey, the update is finished.

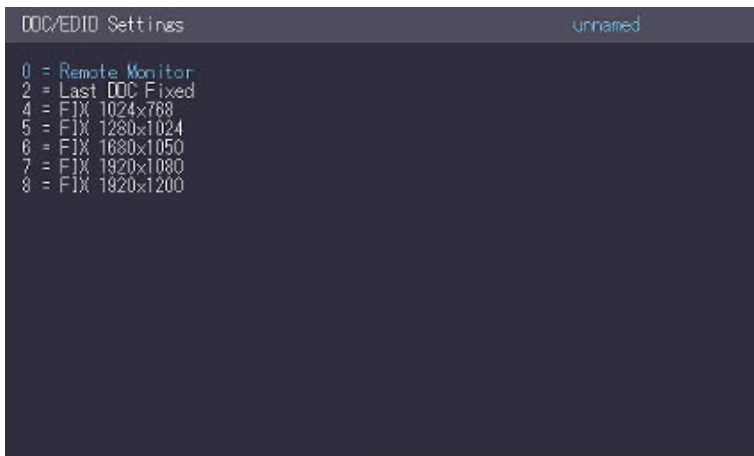
3. EXTENDER SETTINGS

3.5 DDC MENÜ

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:

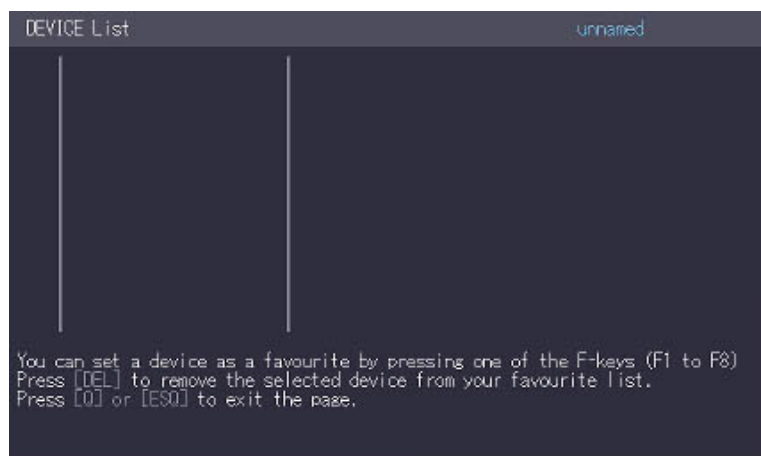
1. Make sure the **main menu** is open.
2. Press the **O** key. The **DDC Option** menu appears.
 - Press **0** to use the DDC information from the monitor attached to the remote extender.
 - Press **2** to save the current DDC information. The system uses the same settings after the extender has been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



3. EXTENDER SETTINGS

3.6 DISPLAY UNIT LIST

Available devices to which the user can connect are displayed here. wc verfügbaren Geräte angezeigt, mit denen sich der Benutzer verbinden kann.



3. EXTENDER SETTINGS

3.7 FAVORITE LIST

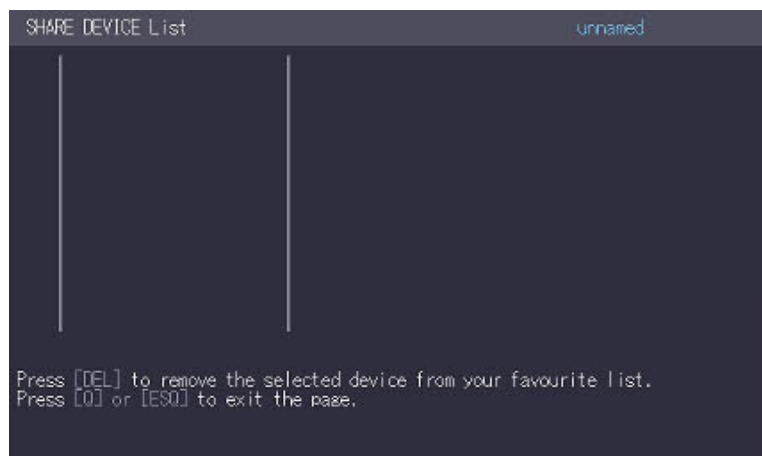
A total of 8 favorites can be defined. Connecting these 8 favorites is possible with shortcuts from 1-8.



3. EXTENDER SETTINGS

3.8 SHARE LIST

Displays all extenders that can be shared. The current screen of the work center can be shared with other remote units via this list.



3. EXTENDER 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.

3

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 SETTINGS

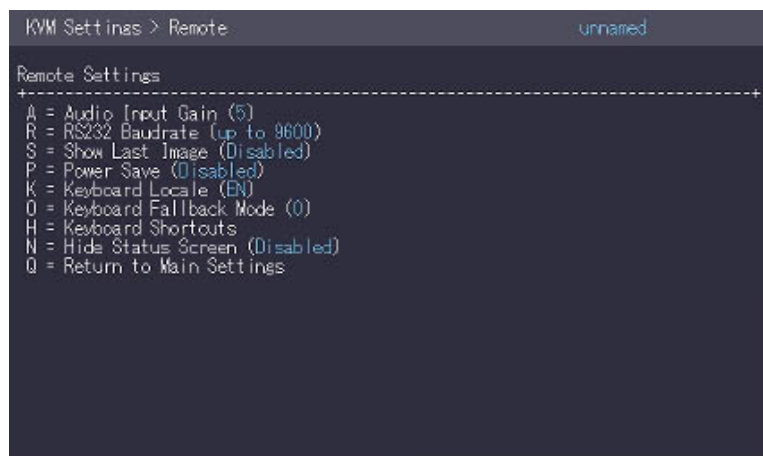
3.9.1 CHANGING LOCAL SETTINGS



Display local or remote extender settings:

- Press the **L** button to display the Local Setting menu.

3.9.2 CHANGING REMOTE SETTINGS



- Press **R** button to display the Remote Setting menu

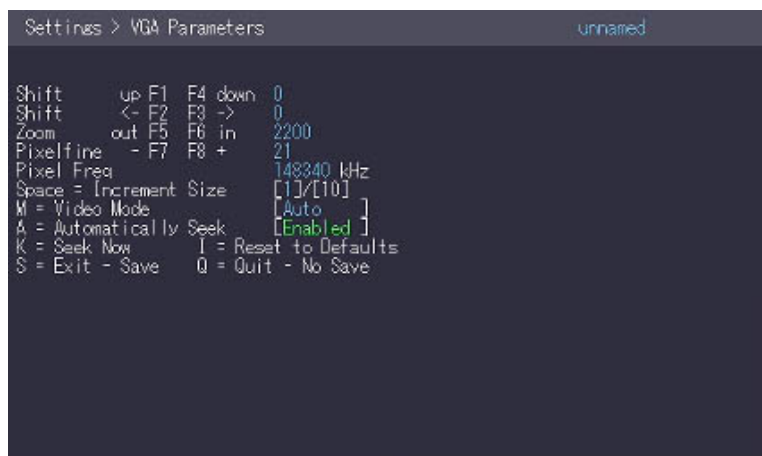
3. EXTENDER SETTINGS

3.9.3 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.



3. EXTENDER SETTINGS

3.9.4 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 arrow left / right to change volume
Press arrow up / down to set direction



3. EXTENDER SETTINGS

3

3.9.5 CONFIGURE A BAUD RATE FOR THE SERIAL RS232 CONNECTION

```
Settings > RS232                                     unnamed
Enter Baudrate
0 = any below
1 = 4800
2 = 9600
3 = 19200
4 = 38400
5 = 57600
6 = 115200
7 = 230400
```

Setting the baud rate with activated RS232 upgrade

1. In the extender settings menu, press the **R** button. The Remote Settings Menu is displayed.
2. Press the **R** button. The Baud Rate menu is displayed.
3. To select a baud rate, press the **corresponding key**.
4. The **Enter Parity menu** opens.
5. Press the **appropriate button** to select a parity rate.

3. EXTENDER SETTINGS

Local Unit (CPU) Pinout (DCE):

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

Remote Unit (CON)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		

```
Settings > RS232                                     unnamed
Enter Parity
N = None
O = Odd
E = Even
M = Mark
S = Space
```

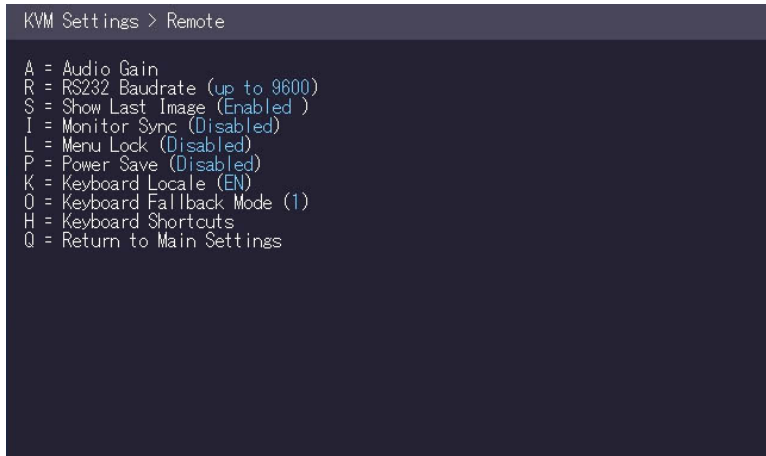
3. EXTENDER SETTINGS

3.9.6 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.



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

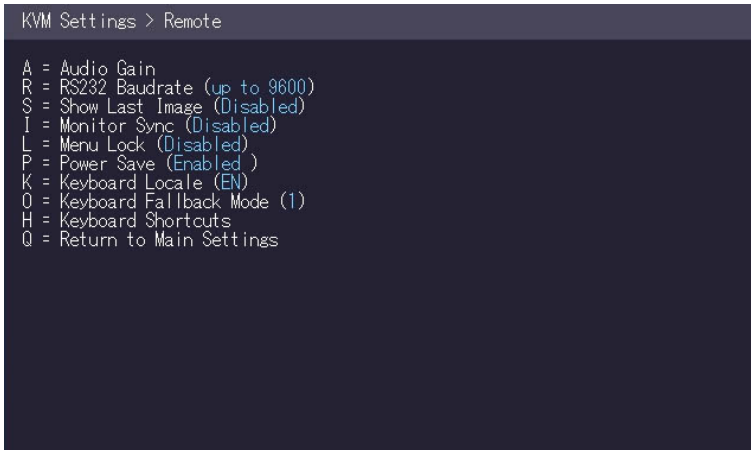
3. EXTENDER SETTINGS

3.9.7. HOW TO USE THE 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.



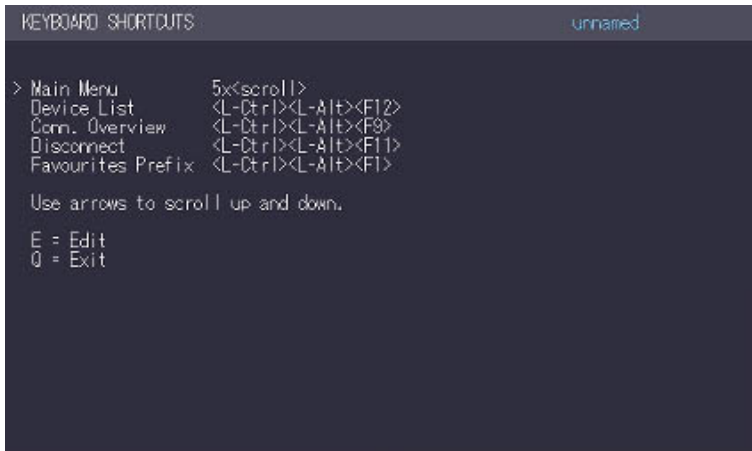
3. EXTENDER SETTINGS

3.9.8. HOW TO SELECT YOUR TYPE OF KEYBOARD

The **Keyboard Local** 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:

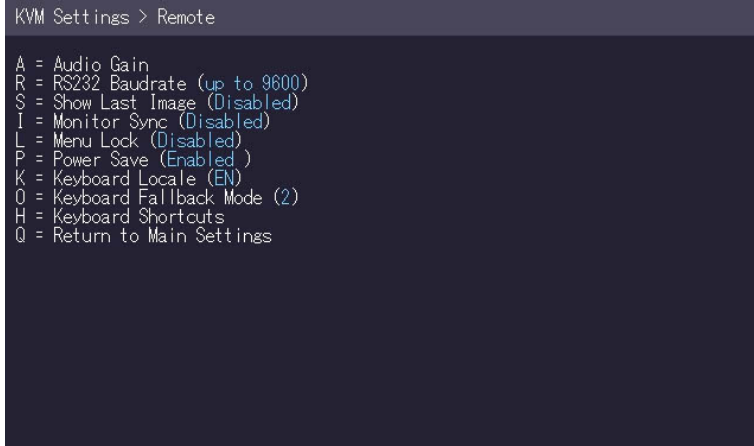
1. From the **Extender Settings** menu, press the **R** key. The **Remote Settings** menu appears.
2. Press the **K** key. The **Keyboard Locale** menu opens:
 - Press **E** to select English (QWERTY)
 - Press **D** to select German (QWERTZ)
 - Press **F** to select French (AZERTY)

A screenshot of a terminal window titled 'KEYBOARD SHORTCUTS' with a tab labeled 'unnamed'. The window displays a list of keyboard shortcuts for navigating the OSD menu. The shortcuts are: Main Menu (5x<scroll>), Device List (<L-Ctrl><L-Alt><F12>), Conn. Overview (<L-Ctrl><L-Alt><F9>), Disconnect (<L-Ctrl><L-Alt><F11>), and Favourites Prefix (<L-Ctrl><L-Alt><F1>). Below the list, it says 'Use arrows to scroll up and down.' and at the bottom, 'E = Edit' and 'Q = Exit'.

3. EXTENDER SETTINGS

3.9.9 HOW TO CHANGE KEYBOARD FALLBACK MODE

In the Keyboard Locale menu, you can switch between keyboard layouts to navigate the On Screen Display (OSD) menu. You can choose between Francais (Azerty), English (Qwerty) and German (Qwertz).



```
KVM Settings > Remote
A = Audio Gain
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 (2)
H = Keyboard Shortcuts
Q = Return to Main Settings
```

3. EXTENDER SETTINGS

3.9.10 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

```
> Main Menu      5x<scroll>
Switching List  <L-Ctrl><L-Alt><F12>
Conn. Overview  <L-Ctrl><L-Alt><F9>
Disconnect      <L-Ctrl><L-Alt><F11>
Favourites      <L-Ctrl><L-Alt><F1>
```

Use arrows to scroll up and down.

E = Edit
Q = Exit

3.9.11 CLOSE EXTENDER MENU

So close the Extender Settings menu:

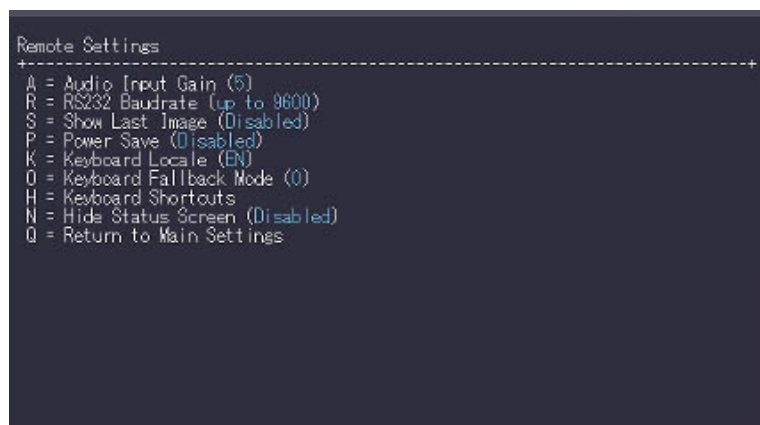
- Press **Q** to close the **Extender Settings** menu.

3. EXTENDER SETTINGS

3.9.12 HIDE DISPLAY STATUS SCREEN

Press **N** in the Remote Settings menu.

This will remove the status screen and the image chimr remains black.



3.10 HOW TO SWITCH BETWEEN DIFFERENT COMPUTERS

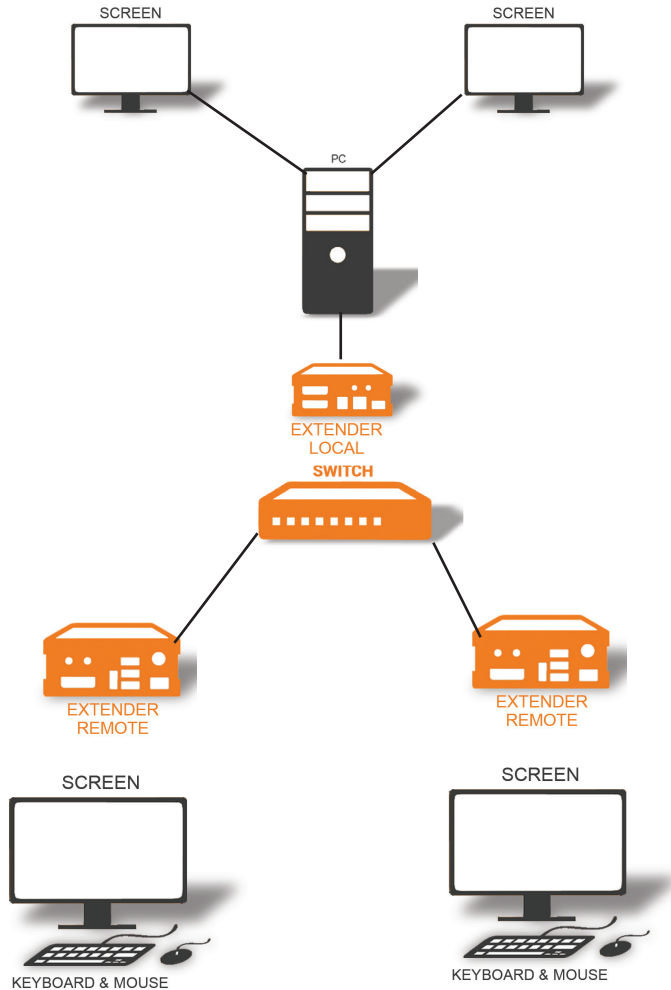
The menu for switching between different computers is possible via a connected USB keyboard, which is connected to the remote/CON unit. This function is only possible in combination with a network switch and the included software Switching Manager.

1. press **Ctrl+Alt+F12** (this is the default key combination, but it is not possible to use it) can be changed. „See chapter „Changing key combinations“).
This opens the switching menu. The switching menu lists all local/CPU units that are connected to the switching network. 2.
2. to select a local extender press arrow up and down, or **PG/UP** and **PGD/OWN** buttons.
Press Enter. The system switches to the selected Computer down.
3. with **F1 - F8** favorites can be created and selected.

3.11 VIDEO SHARING

see chapter 3.8 Share List

3. EXTENDER SETTINGS



Videosharing

4. NETWORK SETTINGS

4.1 NETWORK SETTINGS AND MANAGEMENT SWITCHING SYSTEMS

All network settings, user administration and extender management are done via the included Switching Manager software and all functions are described in the Switching Manager 2000 manual. You can download the manual from our website. www.kvm-tec.com

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4.2 CONNECTING, DISCONNECTING OR SELECT A CURRENT WORKPLACE CONNECTED DEVICES

The Overview screen provides an overview of the currently connected PCs, as well as the free PCs and consoles on the network. You can remotely cancel a connection, assign a new console to a PC, or vice versa.

Press **D** to disconnect the devices.

By pressing **P** a point-to-point connection can be activated.

Press **A** Log In Form. By entering your username and password, you can log in directly to a remote workstation.

The general user administration is done in the Switching Manager software. After logging in, the user receives his personalized lists (Devices, Favorites Lsite).



```
KVM Home                                     unnamed
T = Status Overview
O = ODC Option
L = Show Device List
F = Show Favourites
S = Show Share Device List
G = Extender Settings Menu
P = Point-To-Point Mode (Enabled )
A = Login Form
D = Disconnect from current Device

Q = Exit

Remote (Con) FW Ver = 1.17 Rev. 255
Currently not logged in.
```

5. MAINTANCE 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 support@kvm-tec.com
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 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. Connect the microphone to the Remote IN

6. TROUBLESHOOTING

Error	Cause	Solution
LED is lighting green	<i>The screen flickers, has an incorrect display</i>	Install current firmware from our homepage www.kvm-tec.com/support
LED is blinking green	<i>Different firmware or USB is not compatible</i>	Please contact the kvm-tec support team via e-mail: support@kvm-tec.com or by phone: +43 2253 81912 30
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

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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

Please, 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: + 1 213 631 3663
Toll free +1 866 586 8320
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 MVX1 und MVX1-F
Type: MX2000 - Digital KVM Extender
MX2000-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.

10. DECLARATION OF CONFORMITY

Ecodesign Directive 2009/125/EC

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. CABLE REQUIREMENTS

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. CABLE REQUIREMENTS

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 (nm) of 850 nm in multi-mode or 1310 nm TX -1550 nm RX in single-mode

12 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 and MX Matrixline KVM-extenders.

12. REQUIREMENTS NETWORK-SWITCH

Recommended Switche

SWITCH



Multiple Switch

Single Switch

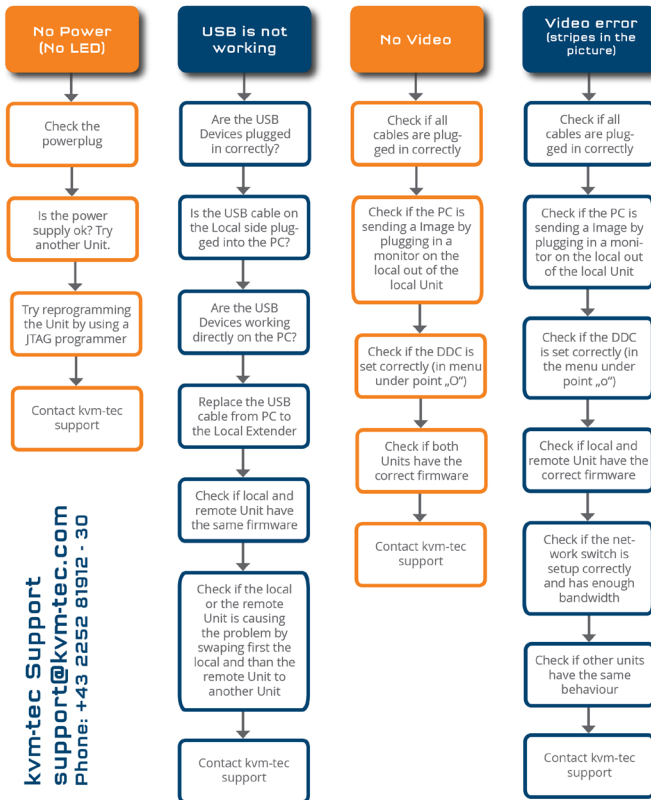
Art Nr	Item Nr	Product
	CATx SWITCHE	
6514	NS8RJ/2SFP	Network Switch 8x RJ45 1000 Base-T / 2x SFP 1G
6534	NS24RJ/4SFP	Network Switch 24x RJ45 1000 Base-T / 4x SFP 1G
6141	NS24RJ/2SFP/2SFP+	Network Switch 24x RJ45 1000 Base-T / 2x SFP 1G / 2x SFP+ 10G
6155	NS48RJ/4SFP+	Network Switch 48x RJ45 1000 Base-T / 4x SFP+ 10G
6171	NS48RJ+/2SFP+	Network Switch 48x RJ45 10G / 2x SFP+ 10G
	FIBER SWITCHE	
6146	NS24SFP/4SFP+	Network Switch 24x SFP/4x SFP+
6166	NS48SFP/4SFP+	Network Switch 48 x SFP/4x SFP+ with redundancy power supply
6151	NS32SFP+/2QSFP+	Network Switch 32 x SFP/2x QSFP+
6161	NS48SFP+/4QSFP+	Network Switch 48x SFP+ 10G / 4x QSFP+

13. FIRST AID

kvm-tec First Aid



Your Extender....



kvm-tec Support
support@kvm-tec.com
Phone: +43 2252 81912 - 30

14. EXTENDED WARRANTY



2 years warranty



Part nr 9003 Warranty extension to 5 years per set

Part nr 9002 Warranty extension to 5 years per uni

15. NOTES

