INDUSTRYFLEX *line*

kvm-tec
User
Manual

INDUSTRYFLEXline Single Copper

6014i SET IND -Set

INDUSTRYFLEXline Single Fiber

6016i   IND-F Set

Full HD | C Alx | F Fiber | Single | PoF

Sound embedded | 4Units 1RU | LatencyTime 1.38ms | USB 2.0 | R Redundant Extension

PoE | 1000 Endpoints | + Expandable Endpoints Packages | Mouse glide & switch | 58°C 137°F Hot

USB memory | Sound analog opt | VGA DVI | RS 232 | Interlaced

Upgrades Industryflex included

DVI | VGA DVI | RS 232

Interface

www.kvm-tec.com

FUTURE
High-Performance KVM Systems
kvm-tec 4

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

kvm-tec4 future

flexible customized

the Productline FLEXline, media4Kconnect and 4K Ultraline are compatible in the Matrix Switching system and with the kvm-tec Gateway and Gateway2go access to virtual machines or Live pics from the Switching System are possible

future proofed

The Matrix Switching System can be extended at any time by

upgrade packages for endpoints and guarantees a super fast switching up to 2000 endpoints

secure engineered

redundant for secure critical operations and uncompressed

transmission without artefacts, non hackable - based on a unique and proprietary protocol - KVM system runs on a VLAN or a separate switch. This means a dedicated Networkmanagment

Hardware optimized

Softwarefeatures Mouse glide & Switch , 4 K Multiview Commander

flexible & scalable USB, Video and Sound Channel managing

4 single or 4 dual FLEXline Extender in 1 RU – saves space in the rack

High performance KVM Solutions and Matrix Switching Systems up to 2000 endpoints

and the best -   kvm-tec solutions convince by a sensational price-performance ratio and are produced in Europe

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Congratulations on the purchase of your new INDUSTRYFLEXline IND/IND-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 INDUSTRYFLEXline IND and IND-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 INDUSTRYFLEXline IND/IND-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 INDUSTRYFLEXline IND/IND-F KVM Extender is referred to as 'product' or 'extender'. The IND/PC is referred to as the 'local unit' (CPU) and the IND/Monitor is referred to as the 'remote unit' (CON).

1.2 SAFETY INSTRUCTIONS

WARNING! Read and understand all safety instructions.

- Follow all the instructions. This will avoid accidents, fire, explosions, electric shocks or other hazards that may result in damage to property and/or severe or fatal injuries. Please ensure that everyone who uses the product has read and followed these warnings and instructions.
- Keep all safety information and instructions for future reference and pass them on to subsequent users of the product.
- The manufacturer is not liable for cases of material damage or personal injury caused by incorrect handling or non-compliance with the safety instructions. In such cases, the warranty will be voided.
- This product is not intended for use by persons (including children) with restricted physical, sensory or intellectual capability or lack of experience and/or knowledge, unless they are supervised by a person who is responsible for their safety or provides them with instructions on how to use the product.
- **DANGER!** Not for use in potentially explosive environments.
- **DANGER!** Be vigilant at all times, and always take care around this product. Do not use electrical equipment if you are lacking in concentration or awareness, or are under the influence of drugs, alcohol or medication. Even a moment of inattentiveness can lead to serious accidents and injuries when using electrical equipment. Check the product and the cables for any damage before use. If there is any visible damage, a strong odour, or excessive overheating of components unplug all the connections immediately and stop using the product.
- **DANGER!** The 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.

- 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.

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1.3 TECHNICAL SPECIFICATIONS

Type:	KVM Extender (local unit and remote unit)
Model:	INDUSTRYFLEXline IND copper
	INDUSTRYFLEXLINE IND-F fiber
Power supply input voltage:	100 - 240 V; 50/60 Hz AC
Power supply output:	12V; 2A (external power supply)
Power requirement:	6W per extender (excluding attached USB devices)
Operating temperature range:	0 ℃ to 55 ℃ / 32 °F to 131 °F
Storage temperature range:	−25 ℃ to 80 ℃ / −13 °F to 176 °F
Relative humidity:	max. 80% (non-condensing)
Storage humidity:	max. 80% (non-condensing)
Casing Material:	Anodized aluminium
Dimensions:	approx. 109 x 43 x 107,5 mm / 4.29 x 1.69 x 4.23 inch
Weight:	local unit 1005g/ 2,21 LB
	remote 890g/4.17 lb
Expected product life:	82 820 hours / 9.5 years

## 1.4 INDUSTRYFLEXLINE EXTENDER SINGLE COPPER

Local Extender (CPU)
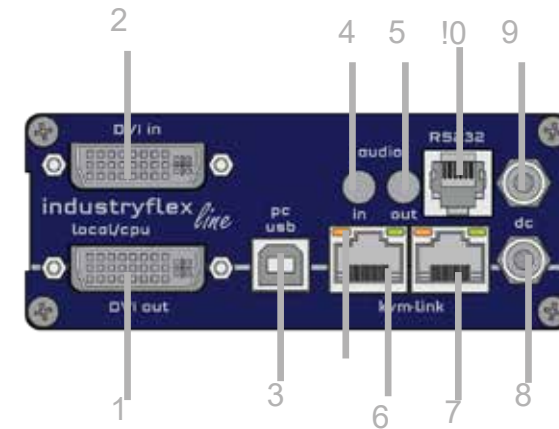
Nr.	Name	Function
1	dvi-out	DVI conenction to monitor
2	dvi - in	DVI conection to PC
3	USB	USB to PC
4	audio in	Audio in from PC
5	audio out	Audio out to PC
6	kvm-link	Network cable redundant
7	kvm-link	Network cable
8	dc	connection for 12 V 2A power supply redundant
9	dc	connection for 12 V 2A power supply
10	RS232	RS 232 connection

LED STATUS

yellow	LINK ok
green	Video ok
green blinking	Video and USB activity

Remote Extender (CON)
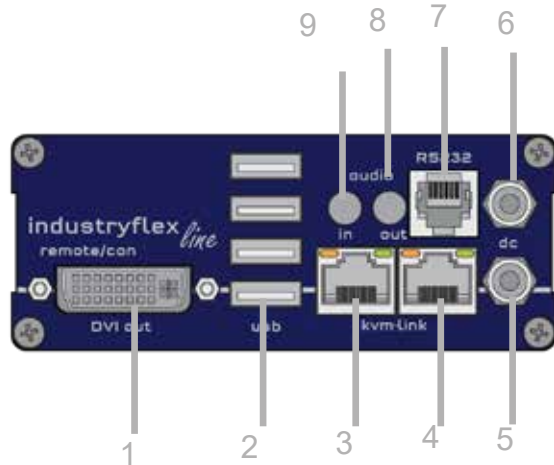
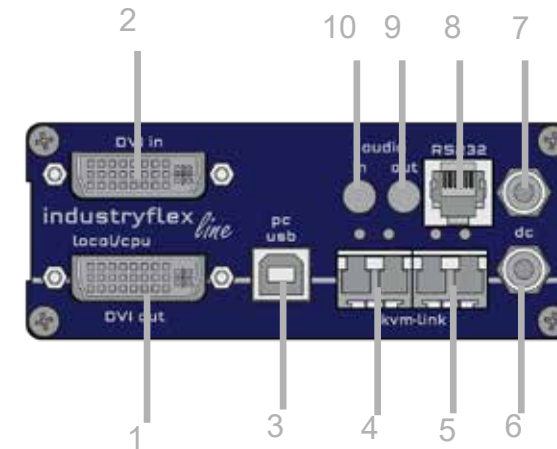| Nr.	Name	Function
1	DVI out	DVI to monitor .
2	USB	USB from keyboard and mouse
3	kvm-link	connection for CAT5/6/7 cable redundant
4	kvm-link	connection for CAT5/6/7 cable
5	dc	connection for 12 V 2A power supply redundant
6	dc	connection for 12 V 2A power supply
7	RS232	RS232 connection
8	audio out	Audio to loudspeaker
9	audio in	Audio in from microphone ....

LED STATUS

yellow	LINK ok
green	Video ok
green blinking	Video and USB activity

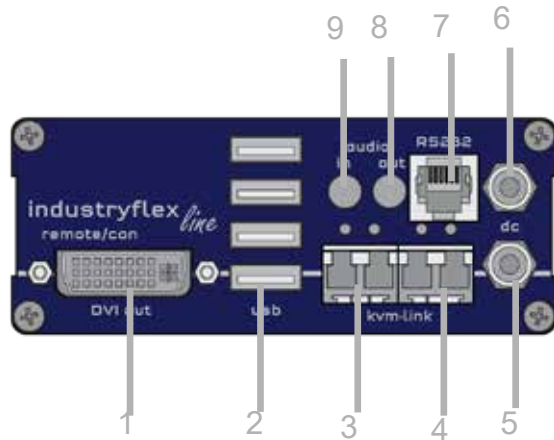## 1.5 INDUSTRYFLEXLINE EXTENDER SINGLE FIBER

Local Extender (CPU)

Nr.	Name	Function
1	dvi-out	DVI connection to monitor
2	dvi-in	DVI connection from PC
3	USB	USB to PC
4	kvm-link	Network cable redundant
5	kvm-link	Network cable
6	dc	connection for 12 V 2A power supply redundant
7	dc	connection for 12 V 2A power supply
8	RS232	RS 232 connection
9	audio out	Audio out to PC
10	audio in	Audio in from PC

LED STATUS

yellow	LINK ok
green	Video ok
green blinking	Video and USB activity

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Remote Extender (CON)

Nr.	Name	Function
1	DVI out	DVI connection to monitor .
2	USB	USB from keyboard and mouse
3	kvm-link	connection for Fiber cable redundant
4	kvm-link	connection for Fiber cable
5	dc	connection for 12 V 2A power supply redundant
6	dc	connection for 12 V 2A power supply
7	RS232	RS232 connection
8	audio out	Audio to loudspeaker
9	audio in	Audio in from microphone ...

LED STATUS

yellow	LINK ok
green	Video ok
green blinking	Video and USB activity

1.6 PRODUCTELEMENTS INDUSTRYFLEXLINE BACKPANEL

BACKSIDE

Nr.	Name	Function
1	LED Status	Display of LED Status
2	Reset	Button for Reset

1.7 ABOUT THE STATUS LED

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

Colour	Blinking	Physical Link	Active Connection	Video Extended	USB Initialisation	USB 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 Succedded
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

Meaning of LED indicators

2.1 UNPACKING AND CHECKING THE CONTENTS

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

• Make sure that the packaging contains the following content:

INDUSTRYFLEXline single copper
Delivery content - Local (CPU)
1 x IND local (CPU)
1 x wall power supply unit l 12V 2A (EU-plug or INT. plug)
1 x DVI - DVI cable 1,8m (5.9ft)
1 x USB cable 1,8m (5.9ft)
4 x rubber feet

Delivery Content - Remote (CON)
1 x IND remote (CON)
1 x wall power supply unit l 12V 2A (EU-plug or INT. plug)
4 x rubber feet

INDUSTRYFLEXline single fiber
Delivery Content - Local (CPU)
1 x IND-F local (CPU)
1 x wall power supply unit l 12V 2A (EU-plug or INT. plug)
1 x DVI - DVI cable 1, 8m/5.9ft
1 x USB cable 1, 8m/5.9 ft.
2 x SFP Module-Multimode up to 500m/1640ft
alternativ with Single-Mode up to 20km/12mi (item no 6855)
4 x rubber feet

Delivery Content - Remote (CON)
1 x IND-F remote (CON)
1 x wall power supply unit l 12V 2A (EU-plug or INT. plug)
2 x SFP Module Multimode up to 500m/1640 ft.
alternativ with Single-Mode upt to 20km)/12mi
4 x rubber feet

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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:

Rackmounting kit RMK-FLEX-F   Part Nr. 6232 RMK-FLEX-F
Rack mounting kit RMK-F for mounting FLEXline Extender. 4 Single or Dual Extender. It consists of a19" rack shelf and an alu-faceplate.

Rackmountingkit RMK- FLEX- FN - T   Part-Nr. 6232 RMK- FLEX-FN
Rack mounting kit RMK-F for mounting FLEXline Extender. 4 Single or Dual Extender. It consists of a19" rack shelf and an alu-faceplate and a power supply

Under table mounting kit   Part Nr 6231 UMK-FLEX
The Under Desk Mounting kit is for underdesk mounting of FLEXline Extender.

Din rail Mounting   Part-Nr. 6235 DINMK-FLEX
The DIN rail mounting is used for space-saving installation in control cabinets or on DIN rails. The attachment to the IND extenders is possible in several ways.

Vesa Mounting   Part-Nr. 6236 VH-FLEX
The robust VESA mounting is used to attach an extender to a monitor with existing VESA mounting points. The Extender becomes one unit with the monitor and saves a lot of space and cable clutter. The VESA mounting kit can be combined with an existing monitor mounting.

2.3 INSTALLING THE EXTENDER

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

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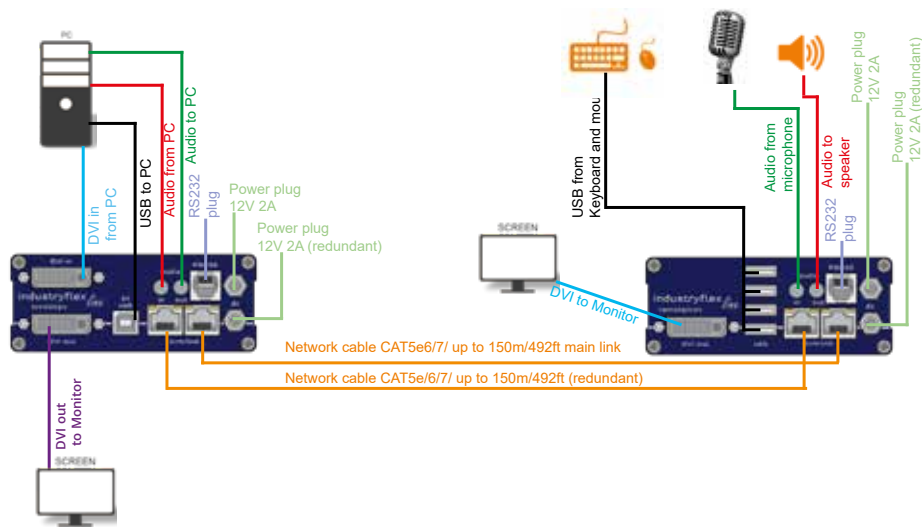
point to point connection & Matrix Switching System

Misprints, errors and technical changes reserved   Misprints, errors and technical changes reserved

2.5 QUICK INSTALLATION INDUSTRYFLEXLINE SINGLE FIBER
local / CPU – remote / CON
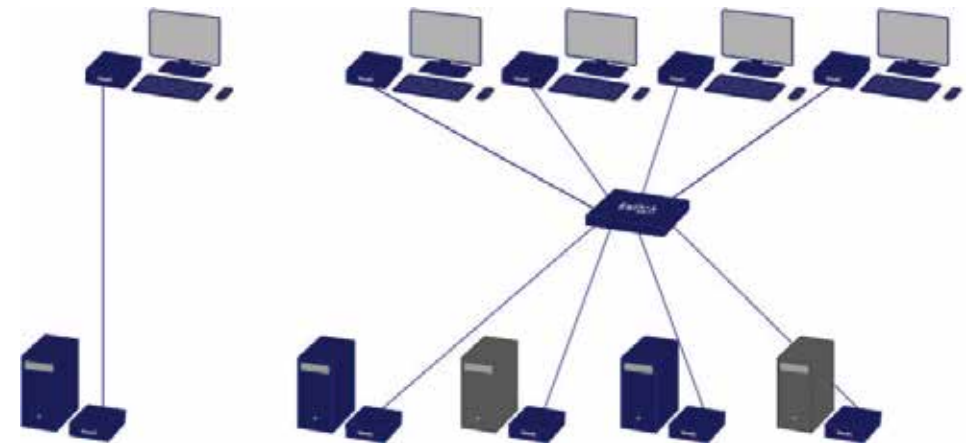
2.4 QUICK INSTALLATION INDUSTRYFLEXLINE SINGLE
local / CPU – remote / CON

Network cable CAT5e6/7/ up to 150m/492ft main link

Network cable CAT5e/6/7/ up to 150m/492ft (redundant)

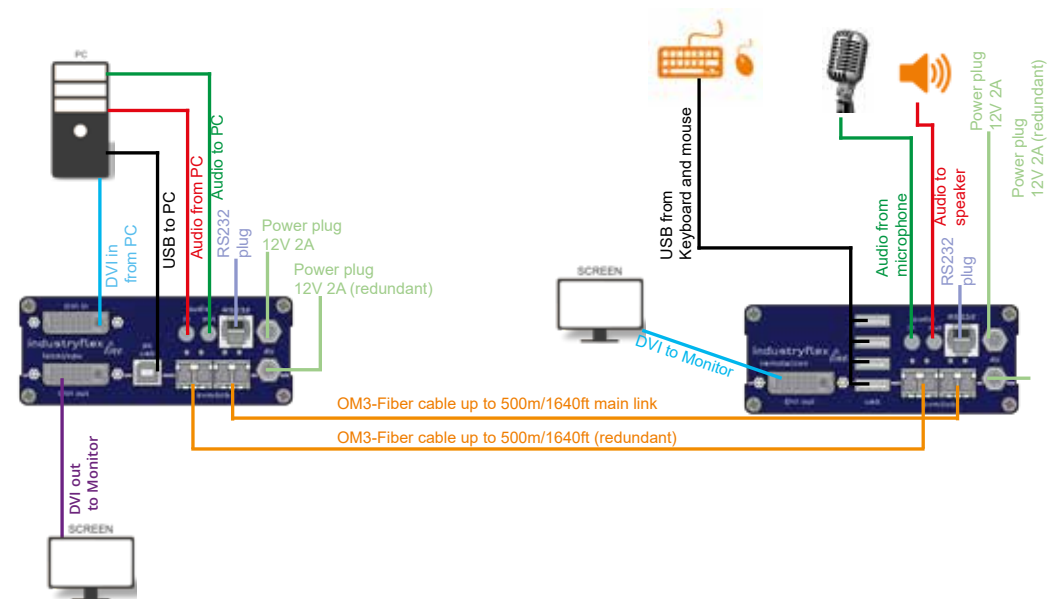OM3-Fiber cable up to 500m/1640ft main link

OM3-Fiber cable up to 500m/1640ft (redundant)

1. Connect the CON / Remote and the CPU / Local Unit to the included 12V 2A power supply.
2. Now connect the USB cable to a USB port on your PC and connect the other end of the USB cable to the CPU / Local Unit. Connect keyboard and mouse to the CON / Remote Unit.
3. Connect the CPU / Local and the CON / Remote Unit with a network cable.
4. Now connect the DVI cable to the DVI socket of the PC and the other end to the DVI socket of the CPU / Local Unit (PC-in).
5. Almost done! Connect the audio cable local audio/out to the PC audio/in and remote audio/out with audio cable to the microphone
6. Using a switch: Connect all endpoints to the switch. Ensure that all connections have a bandwith of 1Gbit/sec. For video sharing the network has to support IGMP snooping.

1. Connect the CON / Remote and the CPU / Local Unit to the included 12V 2A power supply.
2. Now connect the USB cable to a USB port on your PC and connect the other end of the USB cable to the CPU / Local Unit. Connect keyboard and mouse to the CON / Remote Unit.
3. Connect the CPU / Local and the CON / Remote Unit with a network cable.
4. Now connect the DVI cable to the DVI socket of the PC and the other end to the DVI socket of the CPU / Local Unit (PC-in).
5. Connect PC audio/out with the audio cable to local audio/in. Connect audio/out via the audio cable.
6. Almost done! Connect the audio cable local audio/out to the PC audio/in and remote audio/out with audio cable to the microphone
7. Using a switch: Connect all endpoints to the switch. Ensure that all connections have a bandwith of 1 Gbit/sec. For video sharing the network has to support IGMP snooping.

2.6 START UP

**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 displays your computer's desktop or any open applications.

2.7 REPLACING THE SFP MODULE

The IND-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.
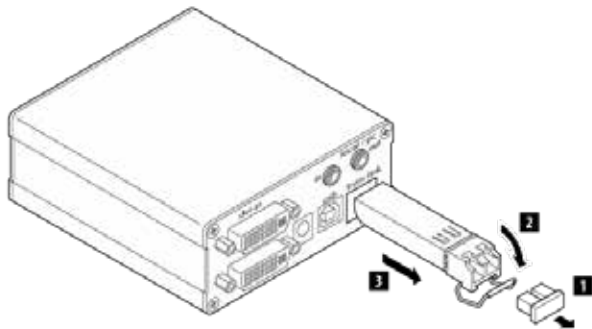
2.8 REMOVING A CATX CABLE

To remove a CATx cable:
• Press the latch down and slowly pull the cable out.
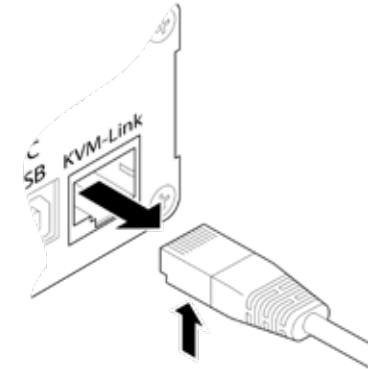
2.9 REMOVING A FIBER CABLE

To remove a fiber cable:
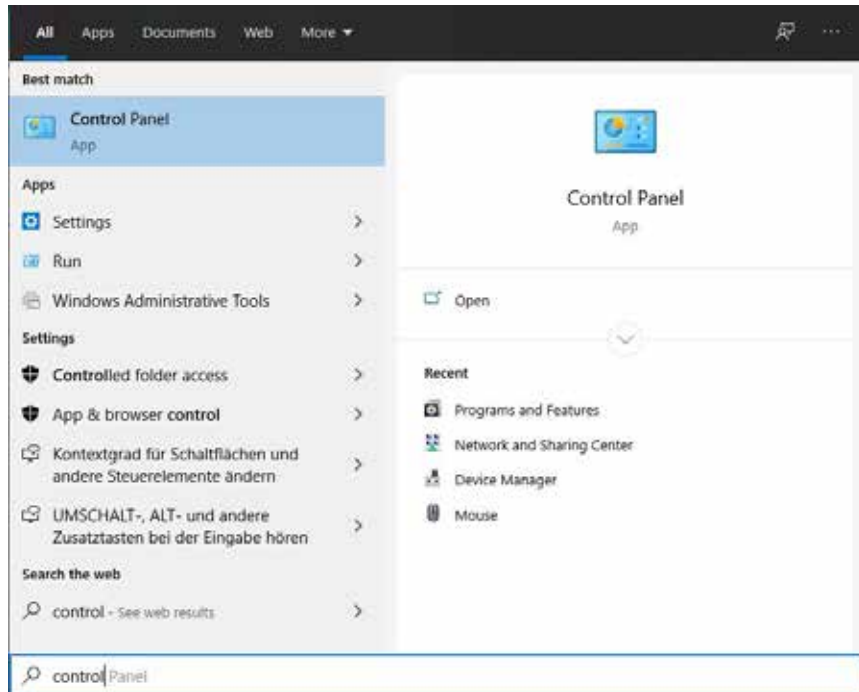• Press the latch down and slowly pull the cable out.

Misprints, errors and technical changes reserved
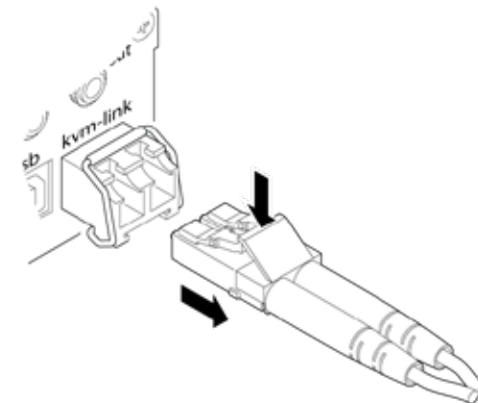
2.10 BEST PRACTICE FOR WINDOWS 10

Disable USB Energy Savings in Windows 10

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Misprints, errors and technical changes reserved
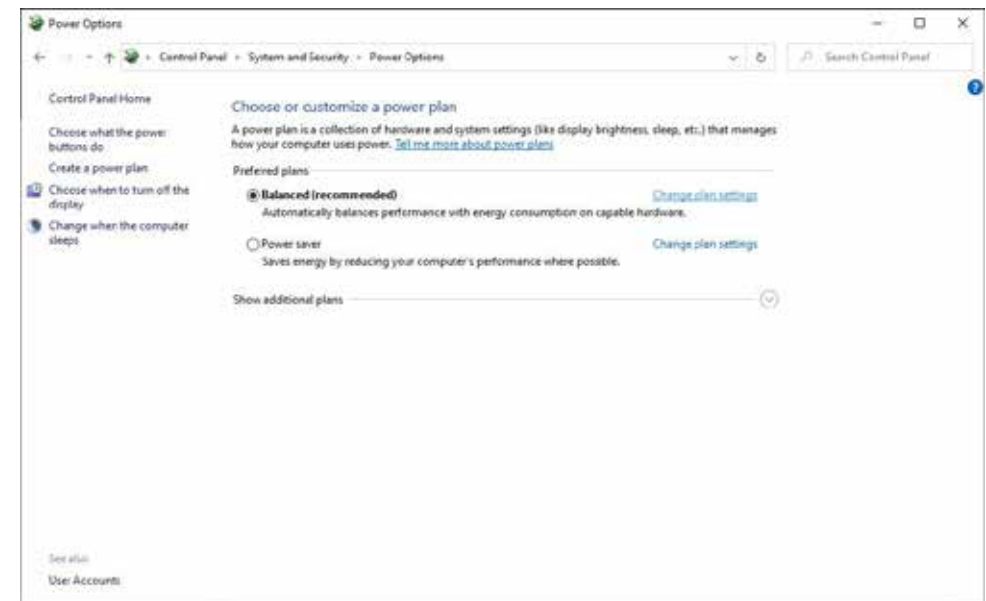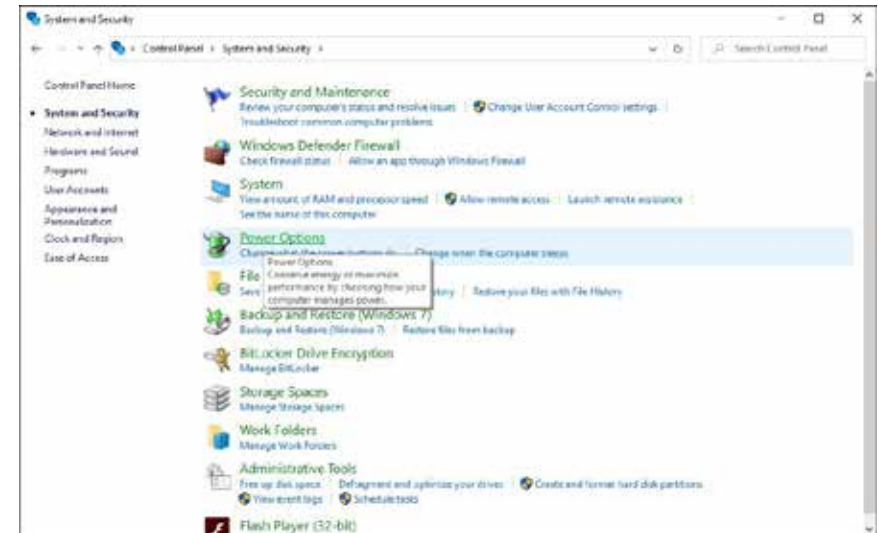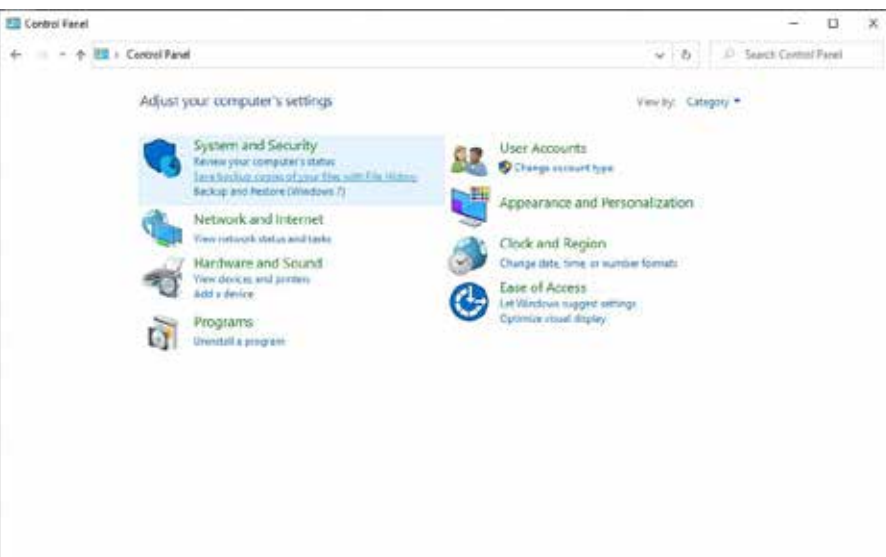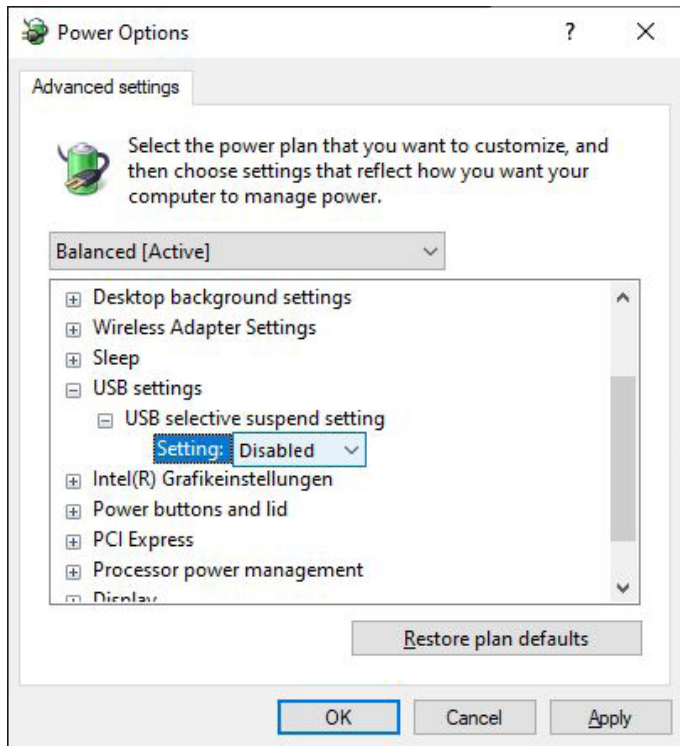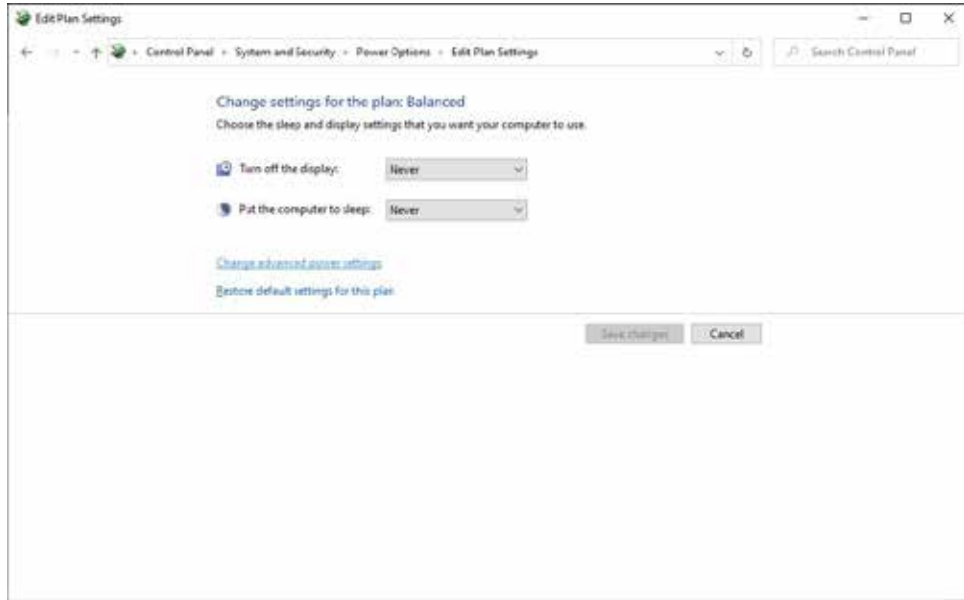
3.1 USING THE ON SCREEN MENU

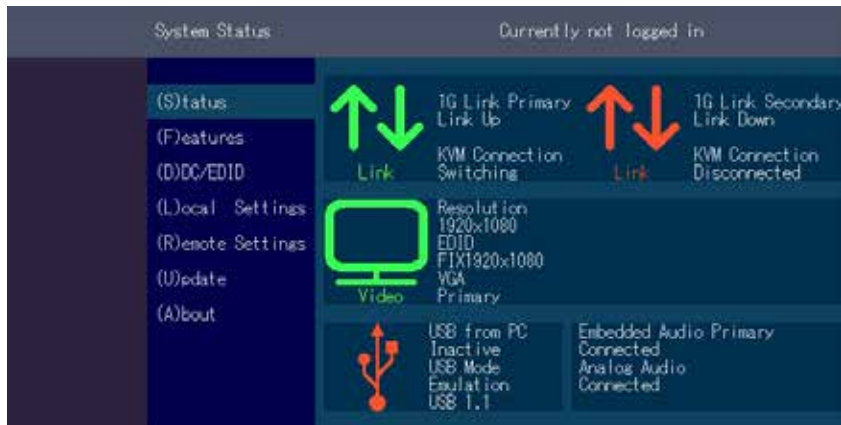Use the monitor and keyboard to use the main menu.

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.
3. If your keyboard doesn't have a Scroll Lock key, open the on-screen keyboard. Select Start > Settings > Ease of Access > Keyboard.
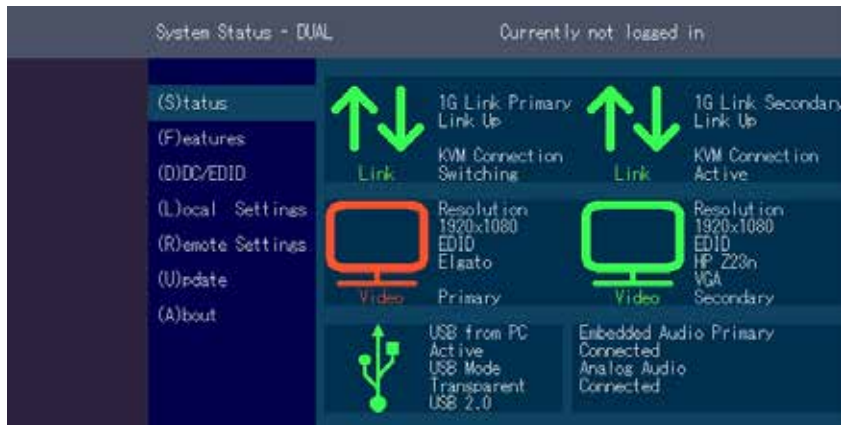4. The **main menu** appears with an overview of the sub-menus.
5 To open a sub-menu press the applicable key.
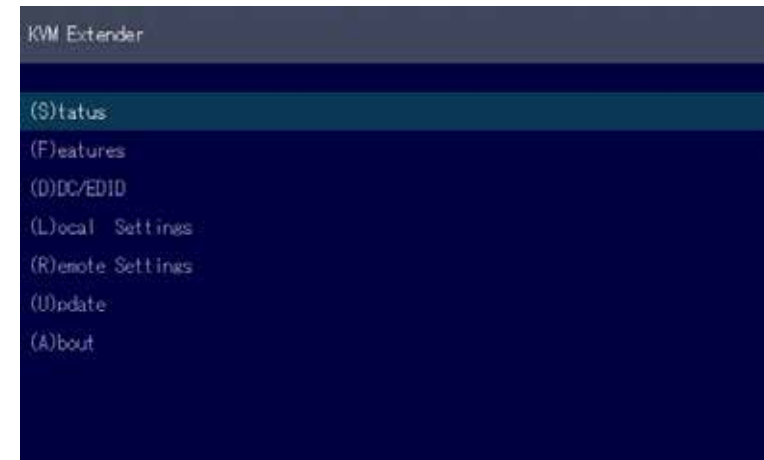
Main menu Short Cuts :

S	Status Overview	Menu Status / current Status
U	Update Flash FW	Firmware update
F	Features Overview	Overview all Features
D	DDC Option	DDC Option Fixe Setting 1020 x 1080
L	Local Settings	Setting local Overview
R	Remote Settings	Setting remote Overview
A	About Overview	Overview all Upgrades
Q	Exit	Close the OSD

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Misprints, errors and technical changes reserved

3.2 SYSTEM STATUS

single

dual

In the status overview 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 firmware-version is displayed in the left top corner.
Link status shows whether there is a physical connection available. **Connected** indicates if kvm data is currently able to be transmitted.
Video and USB show if data is currently being transmitted.

3.3 VIEWING THE CURRENT FIRMWARE VERSION

Under „A" - About the currently installed firmware version of the remote (CON) and local (CPU) Extender is displayed (e.g. ‚4267')

You will find the screenshot in menu item 3.10

3.4 FEATURES MENU

By pressing the **F** button the Features menu is displayed
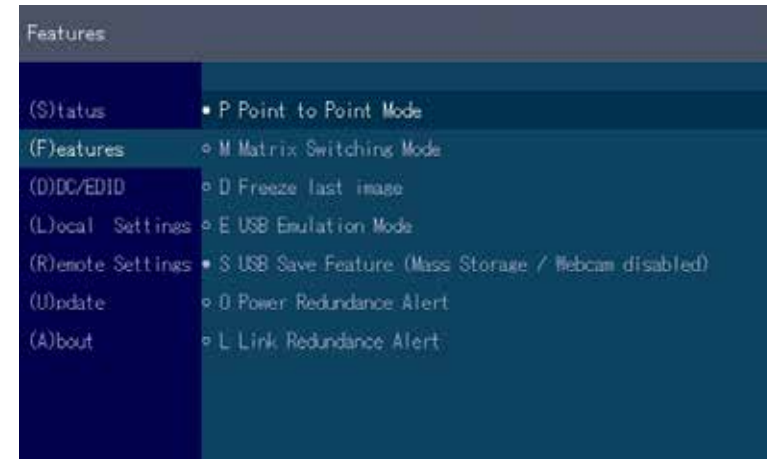
Features Menu

P	Point to Point Mode	Enabled/Disabled
		(Point to Point excludes itself with Matrix mode)
M	Matrix Switching Mode	Disabled/Enabled
S	USB Save Feature	(mass storage usable) Disabled/Enabled
D	Freeze last Image	(Disabled)Disabled/Enabled
E	USB Emulation Mode	(Disabled) Disabled/Enabled
O	Power Redundance Alert	
L	Link Redundance Alert	

3.4.1 POINT TO POINT

You can switch the Point to Point mode on and off by pressing the „P" key

ATTENTION - if the point to point mode is activated, the switching mode cannot be activated
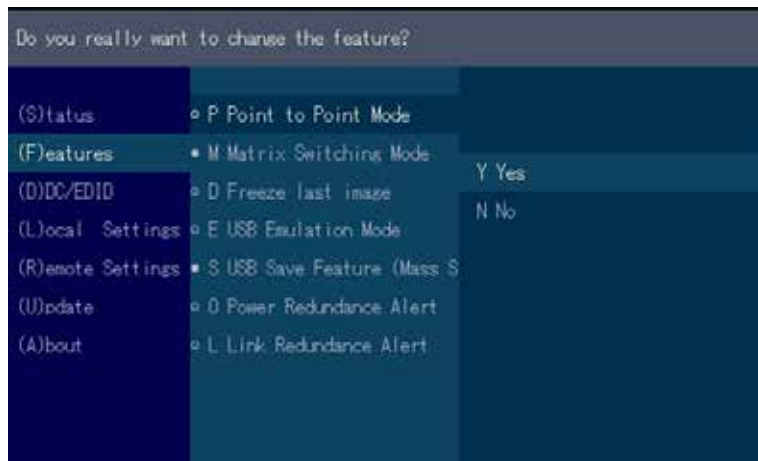
3.4.2 MATRIX SWITCHING MODE

By pressing the „M" button you can switch the Matrix Switching Mode off and on

3.4.3 USB SAVE FEATURE

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

By pressing the key „S" you can switch the USB save feature on and off

3.4.4 DISPLAY THE LAST RECEIVED IMAGE „FREEZE LAST IMAGE"

With the „ freeze the last image" function, the last image received can be displayed instead of a black screen when the remote extender (CON) is disconnected from the local extender (CPU).
To show that it is the last image received, the frame of the image will blink red.
To enable or disable the „Freeze last image „ function: 1. from the Extender Settings menu,
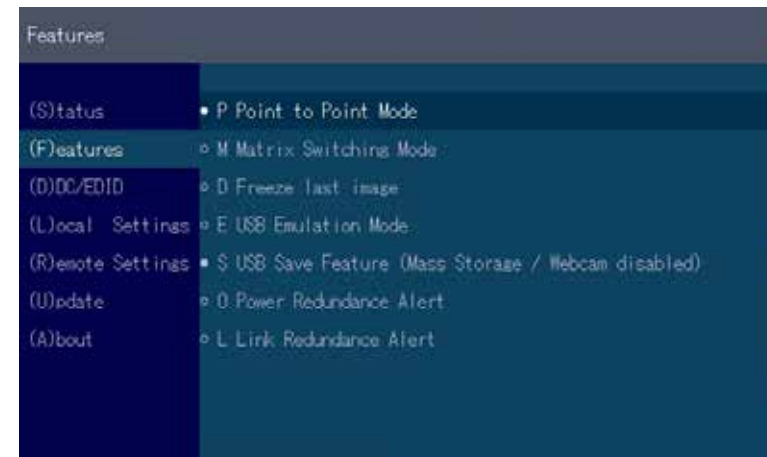
press the **F** button. The Features Settings menu is displayed.
Press the **D** button to enable or disable the function.
Press **ESC** to return to the main menu.
Press **I** to enable or disable the function.
Press **ESC** to return to the main menu

Misprints, errors and technical changes reserved   Misprints, errors and technical changes reserved

3.4.5 USB EMULATION MODE

When this mode is set, the local extender emulates a keyboard and mouse always connected to the PC. The result is switching from one PC to another PC without any switching delay. Emulation Mode is restricted to mouse and keyboard only.

3.4.6 POWER REDUNDANCE ALERT AND LINK REDUNDANCE ALERT

Our Masterflex and Maxflex single devices are redundant. Should one port fail, the other port immediately takes over. In such a case you will receive an alarm and can see which port has failed.
Power Redundance Alert (Only for devices with two DC sockets):
„SEC POWER LOST" / „PRIM POWER LOST"

Link Redundance Alert (Only for single devices with two RJ45 jacks):
„PRIM LINK LOST" / „SEC LINK LOST" / „BOTH LINK LOST"
Oder
„SEC LINK ERROR" with active redundancy
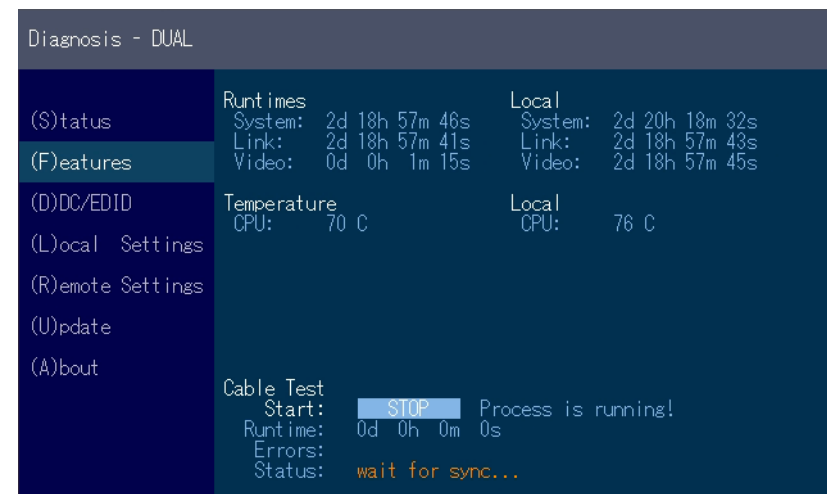„PRIM LINK ERROR" with active redundancy.
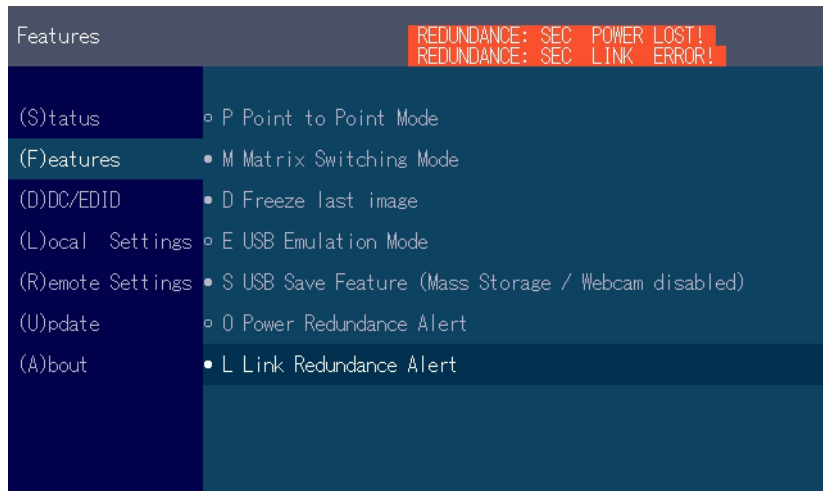
3.4.7 DIAGNOSIS MENU

In the Diagnosis menu, the runtimes of the individual connected channels are displayed. Both Remote Unit and Partner Local Unit are listed.
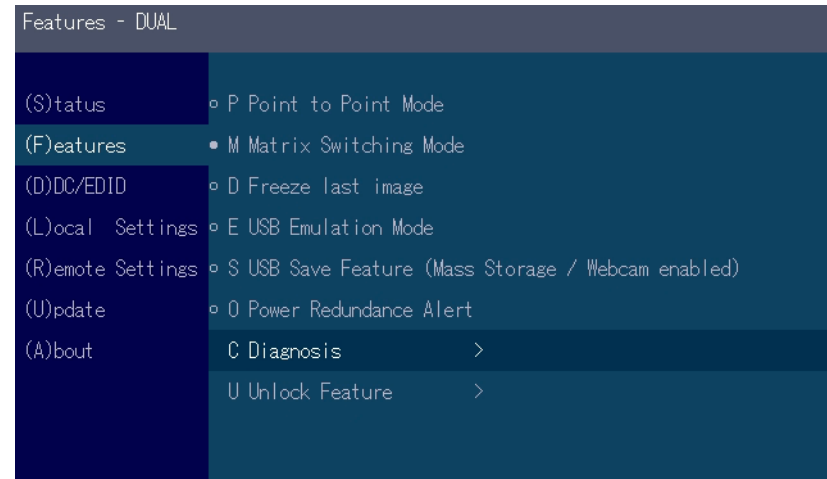
Additionally you get the CPU temperature information of both units.
Another feature is the cable test

Misprints, errors and technical changes reserved

Misprints, errors and technical changes reserved

As soon as a connection to the partner has been established, the test can be started with the „Enter" key or the arrow key on the right „→".

After a valid synchronization process, the test is started and the test run time and errors are displayed.

The test can be ended at any time by pressing the "Enter" or "→" key. If no error has occurred, the status reports: "Test OK! If errors occurred during the test, the status displays the sum of all errors that occurred.

3.5 DDC MENU

The DDC Information menu allows the user to specify which DDC information is used by the PC. Definition of the DDC information used by the PC:

1. make sure that the main menu is open.

Press the D button and the DDC option menu will be displayed.

- Press 0 to display the DDC information of the monitor connected to the remote (CON) Extender is connected.

- Press 2 to save the current DDC information. The system will applies the same settings after restarting the Extender

- Press the keys 4 to 8 to use a predefined resolution, which is saved.

3. press ESC to return to the main menu

Misprints, errors and technical changes reserved

Misprints, errors and technical changes reserved

3.5.1 DDC MAIN (SINGLE)

3.5.2 DDC SECOND (DUAL)

Misprints, errors and technical changes reserved

3.6 EXTENDER SETTINGS

The Extender Settings menu allows the user to change a number of other settings. Select one of the three options (VGA, Audio and RS232) to enter the submenu. The other four can be activated or deactivated by pressing the corresponding button.
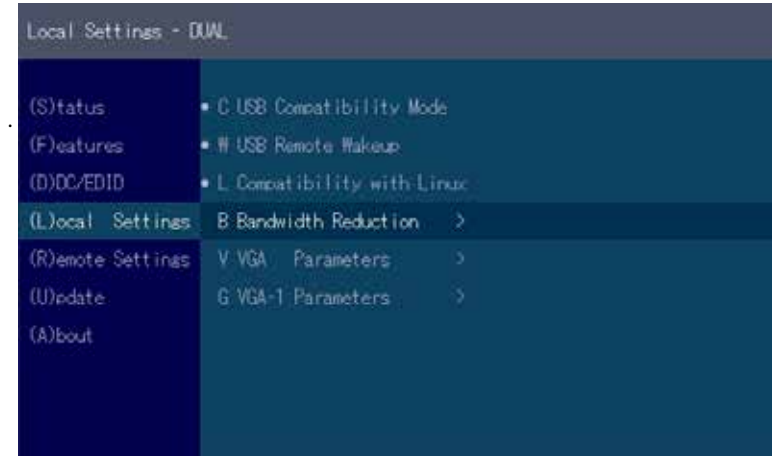Display the Extender Settings menu:
1. Make sure that the main menu is open.
2. Press the L button. The Local Settings menu is displayed.
3. Press the R button. The Remote Settings menu is displayed.
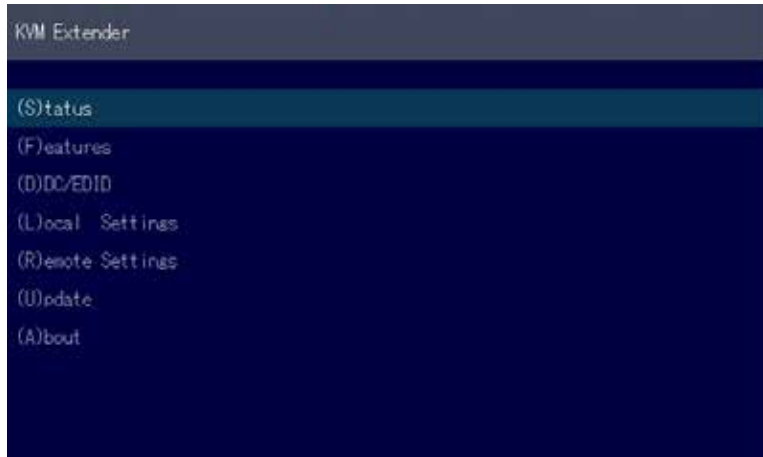
3.6.1 LOCAL SETTINGS

View the local or remote Extender settings:
- Press the L button to display the Local Setting menu.

C	USB Compatibility Mode	Disabled/Enabled
W	USB Remote Wakeup	Disabled/Enabled
L	Compatibility with Linux	Disabled/Enabled
B	Bandwidth Reduction	
V	VGA Parameters	
G	VGA-1 Parameters	

Misprints, errors and technical changes reserved

3.6.2 USB COMPATIBILITY MODE

SSome PC's require a USB FullSpeed (USB 1.1) connection at startup.
Our extenders are detected as USB HUB's - this may cause some PC's to abort the boot process.
This can be avoided with the USB Compatibility Mode.

The USB compatibility mode can be enabled or disable .
To enable/ diable 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
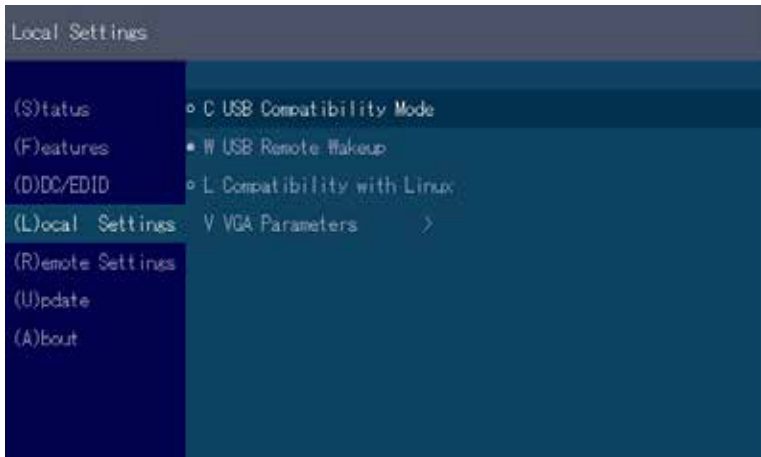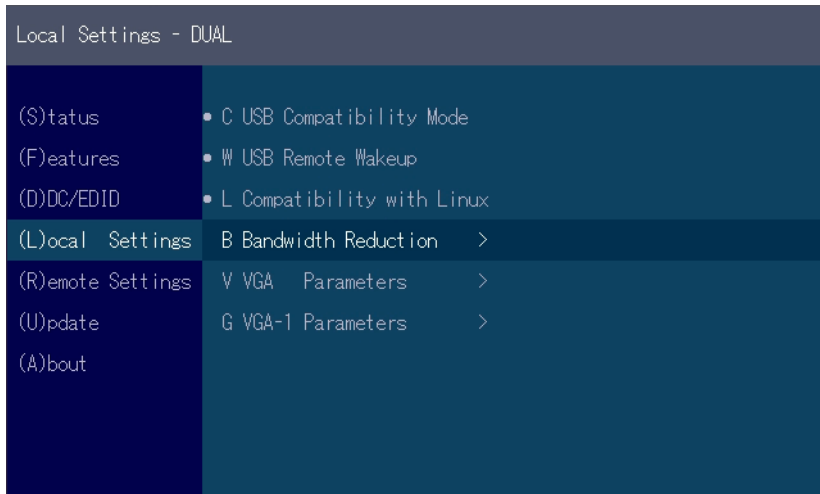
3.6.3. USB REMOTE WAKE UP

The PC can be set into sleep mode and can be reactivated with any key.

Misprints, errors and technical changes reserved   Misprints, errors and technical changes reserved
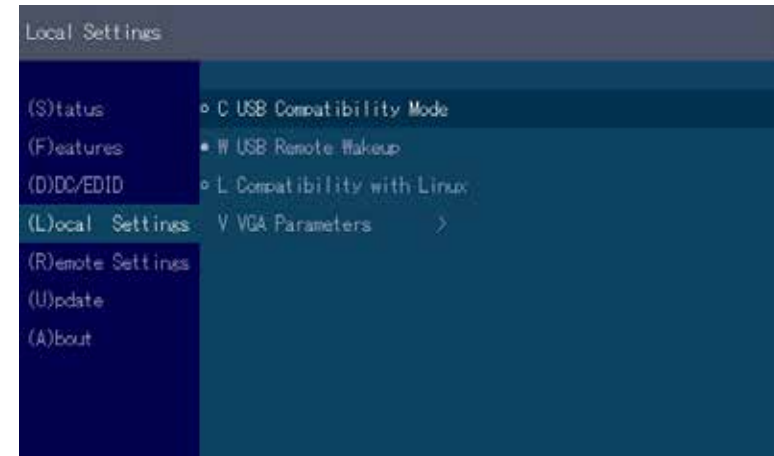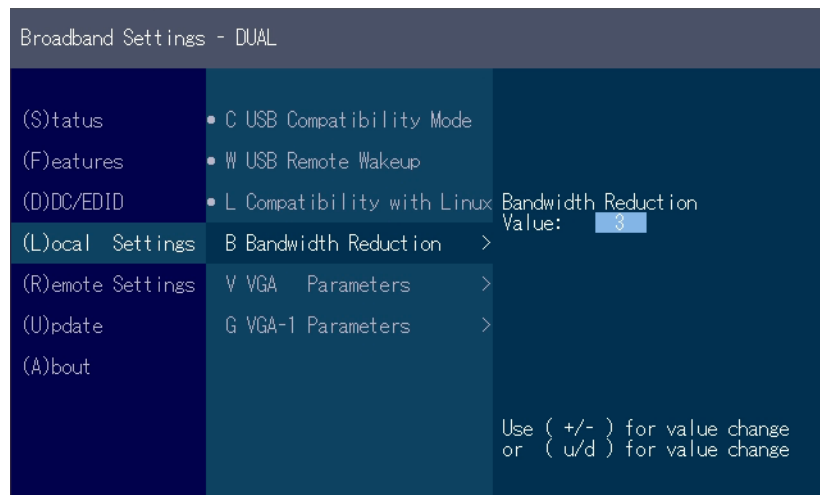
3.6.4 COMPATIBILITY WITH LINUX

Older Linux (before 2010) versions may not recognize the keyboard.
In this case please activate the Linux compatibility mode

3.6.5 BANDWIDTH REDUCTION

Here the bandwidth can be reduced. The basic setting is 0!
You can change the bandwidth with +/- or u/d.

3.6.6 VGA PARAMETERS

The VGA settings can be adjusted and optimized.
Optimize the VGA settings:
1. press the **L** button in the Extender Settings menu. The Local Settings menu is displayed.
Press the **V.** The VGA menu will be displayed

- Pressing **F1** moves the display range upwards.
- Pressing **F4** moves the display range down.
- Pressing **F2** moves the display range to the left.
- Pressing **F3** moves the display area to the right.
- Pressing **F5** reduces the image (zoom out).
- Pressing **F6** enlarges the image (zoom in).

- Pressing the space bar changes the speed of the above mentioned settings.
  The speed can be switched between 1 and 10.
- Pressing M switches the video mode between the following modes:
- Auto - the mode is automatically detected and set by the Extender.
- DVI - only the DVI input is recognized.
- VGA - only the VGA input is recognized
- Press K to automatically adjust and position the screen area.
- Press I to reset the parameters to the default values.
- Press S to save the settings and exit the menu.
- Press Q to exit without saving.

VGA Parameters

Misprints, errors and technical changes reserved
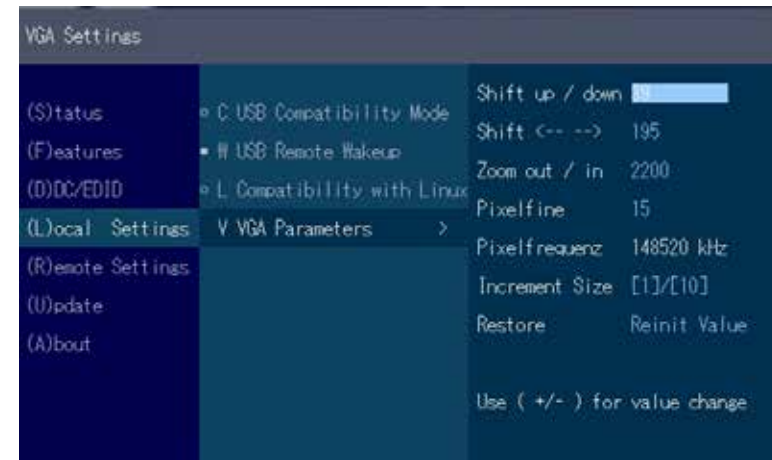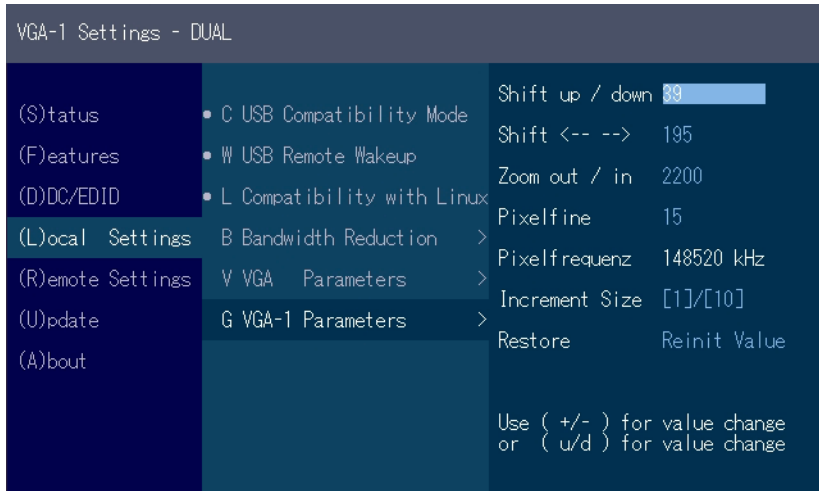
VGA-1 Parameters

3.7 REMOTE SETTINGS

• Press the **R** button to display the Remote Setting menu.
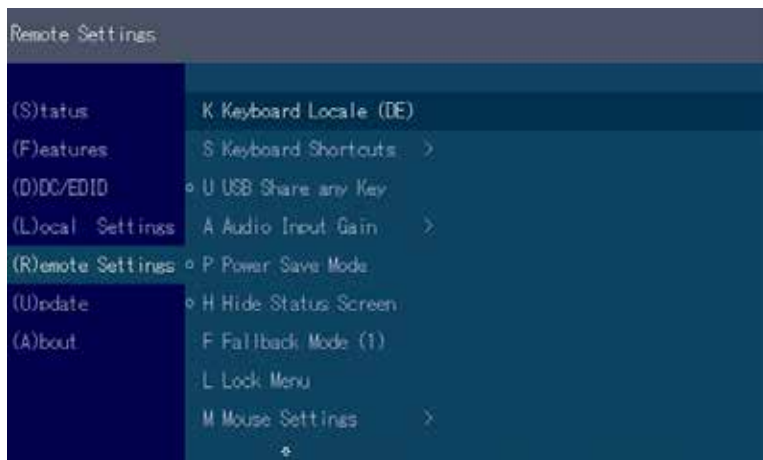
3.7.1 EDITING A KEYBOARD LAYOUT

The **Keyboard Local** menu lets you switch between keyboard layouts for navigating the on screen display menu (OSD). You can choose between French (FR), English (EN) and German (DE).

Selcting a keyboard layout:
1. Press **R** in the **Main menu**.- 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)

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Misprints, errors and technical changes reserved

3.7.2 EDITING KEYBOARD SHORTCUTS

You can change the keyboard shortcuts for common commands. You can choose your scroll speed. Edit shortcuts and change scroll speed on the Keyboard Shortcuts screen.
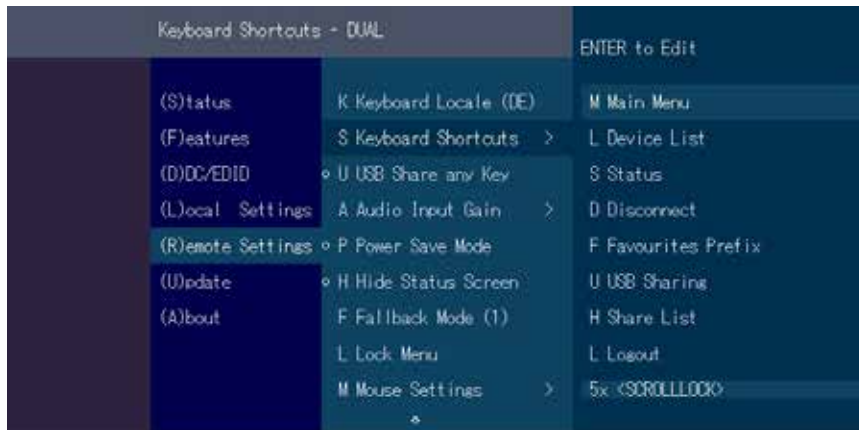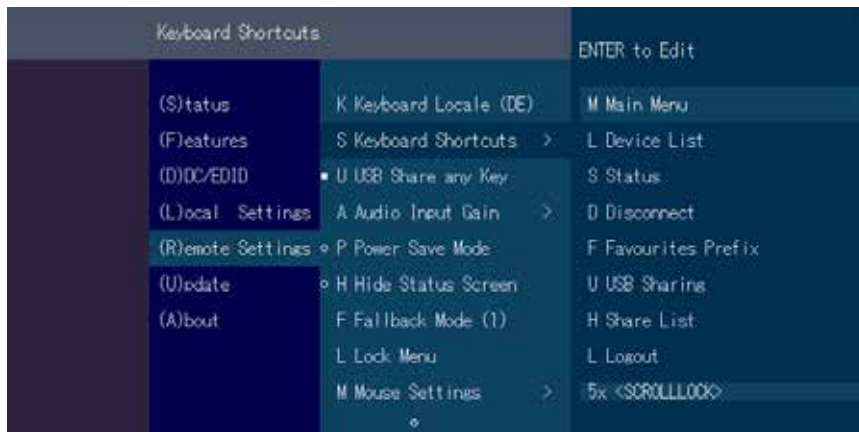
To edit the shortcuts:
1. From the **Extender Settings** menu, press the **R** key. The **Remote Settings** menu appears.
2. Press the **H** key. The **Keyboard Shortcuts** menu opens.
3. Use the arrows to select a command.
4. Press **E** to edit the shortcut.
   To edit:
   Press a single key. Edit the frequency with left and right arrows.
   OR -
   Press a key combination

3.7.3 SETTING THE AUDIO VOLUME

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

Setting 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

Misprints, errors and technical changes reserved
Misprints, errors and technical changes reserved
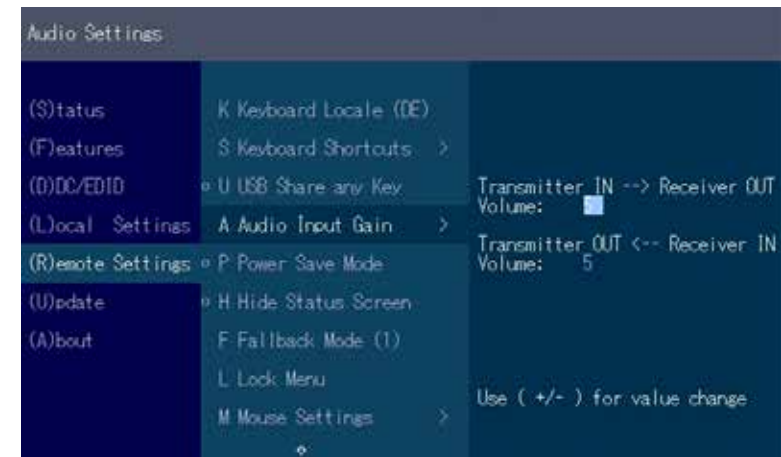
3.7.4 SETTING A BAUD RATE FOR YOUR RS232 CONNECTION

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. 2. The Baud Rate menu is displayed.
3. To select a baud rate, press the **corresponding key**.
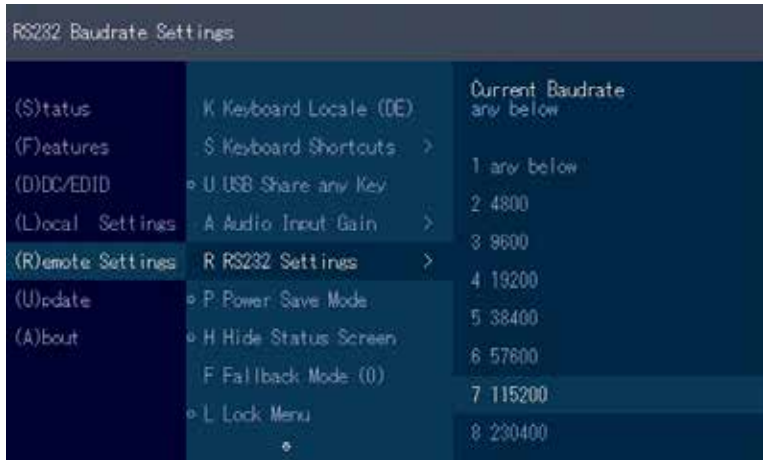4. The **Enter Parity menu** opens.
5. Press the **appropriate button** to select a parity

RS232 CONNECTOR PINNING

Local Unit (CPU) Pinout (DCE):			**Remote Unit (CON)Pinout (DTE):**		
Pin	Function	direction	Pin	Function	direction
2	TxD	OUT	2	RxD	IN
3	RxD	IN	3	TxD	OUT
4	DTR	IN	4	DTR	OUT
5	GND	—	5	GND	—
8	CTS	OUT	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.

possible baudrate
4800
9600
19200
38400
57600
115200
230400
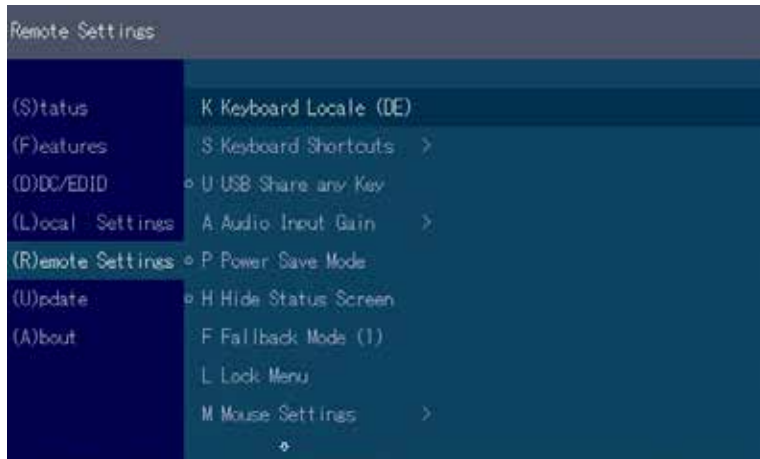
possible Parity
No
Odd
Even
Mark
Space

possible Stopbits
1
2

3.7.5 USB SHARE ANY KEY

By pressing the button „U" the USB Share any Key mode can be activated or deactivated.

If the USB share any key, the USB function can be taken over with any key.

If the function is deactivated, this works with the predefined hotkeys (see 3.7.2.)

3.7.6 USING THE POWER SAVING MODE

In power save mode, the Extender can switch off the video output. The power off delay can be set or deactivated as desired in the Power Save Setting menu.

To return from power save mode, press any key.

If the powersave mode is active, the image output at the video outputs is turned off after the time has elapsed. To reactivate the monitor, press any key on the keyboard or connect to a partner.

Misprints, errors and technical changes reserved   Misprints, errors and technical changes reserved
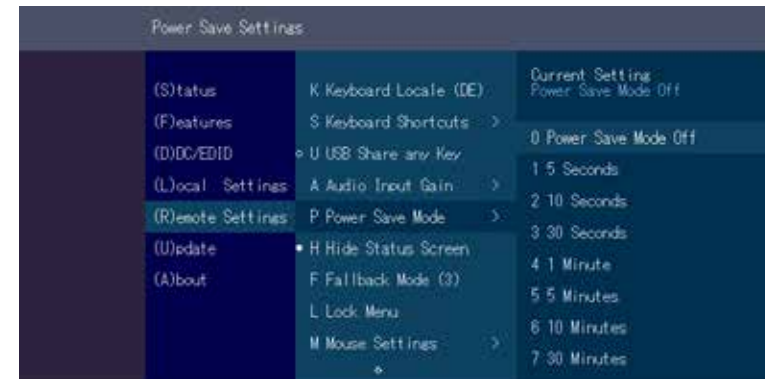
3.7.7 HIDING SYSTEM STATUS MENU

Press **N** in the Remote Settings menu.
This will remove the status screen and the image remains black.
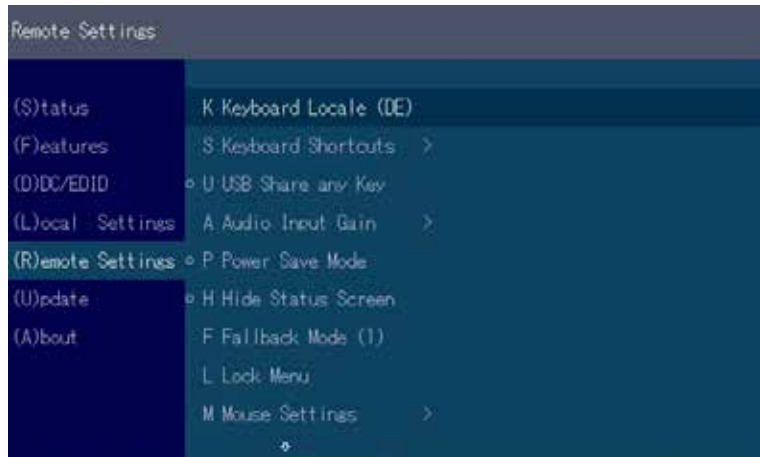
3.7.8 CHANGE KEYBOARD FALLBACK MODUS

To use the OSD menu, the keyboard on the remote device must be identified.
For most keyboards, use the 0 setting.
When using USB, some mice act like a keyboard. In this case, select fallback mode 1 or 2.

Misprints, errors and technical changes reserved Misprints, errors and technical changes reserved
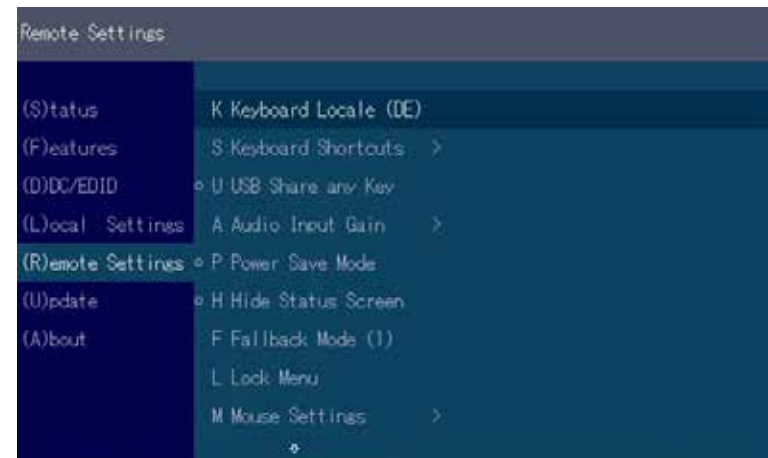
3.7.9 LOCK MENU

This menu protects the OSD control and after 5 minutes the OSD can no longer be activated.
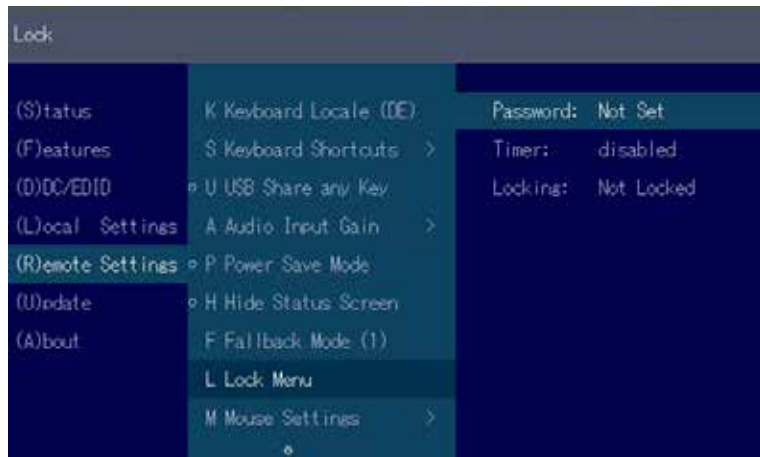
3.7.10 MOUSE SPEED

Can be used in USB Emulation mode, Mouse glide & Switch and Multiview Commander.
With this function the horizontal and vertical speed can be adjusted
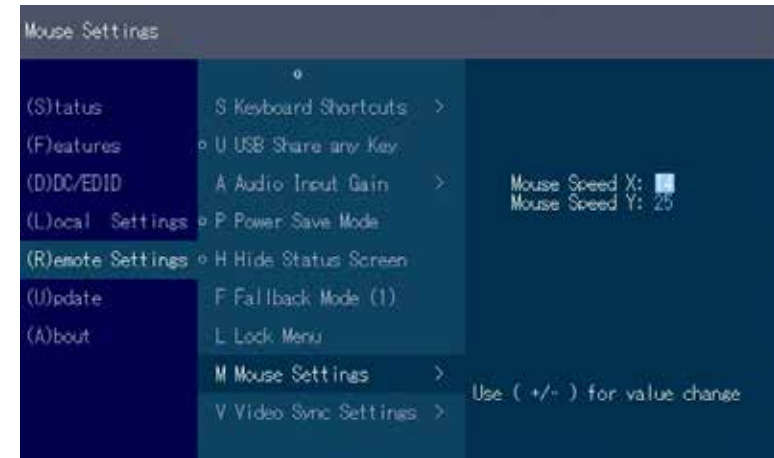
3.7.11 MONITOR SYNC STRENGTH

The frame start of the monitor is synchronized with the graphic card.
Some monitors are very sensible regarding frequency changes. Therefore the changes should be done slow and the synchronization takes a bit more time
The monitor sync strength can be adjusted between 0-3.

Misprints, errors and technical changes reserved

Misprints, errors and technical changes reserved

Single

Dual

3.8 FIRMWARE UPDATE
3.8.1 UPDATING A FIRMWARE WITH SWITCHING MANAGER

Update management is carried out via the Switching Manager software included in the delivery
see **User Manual Switching Manager 2000 chapter 10.2**
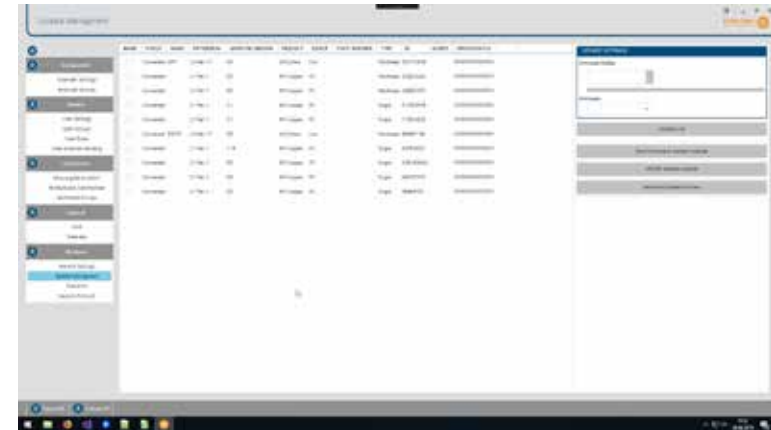
In this view, all extenders for which a firmware update is to be performed are displayed.
This function displays a list of the extenders that are assigned to the Switching Manager.
Updating the extenders in the system is a two-step process. In the first step the firmware is
loaded into the device and 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. 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.

Misprints, errors and technical changes reserved
Misprints, errors and technical changes reserved

3.8.2 FIRMWARE UPDATE WITH USB STICK

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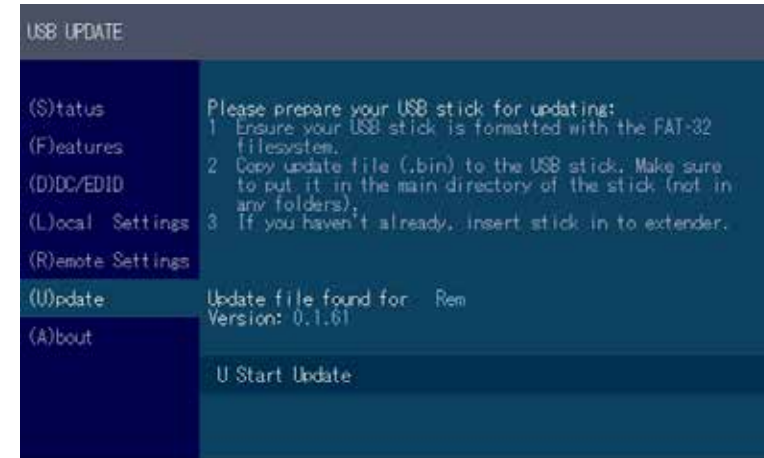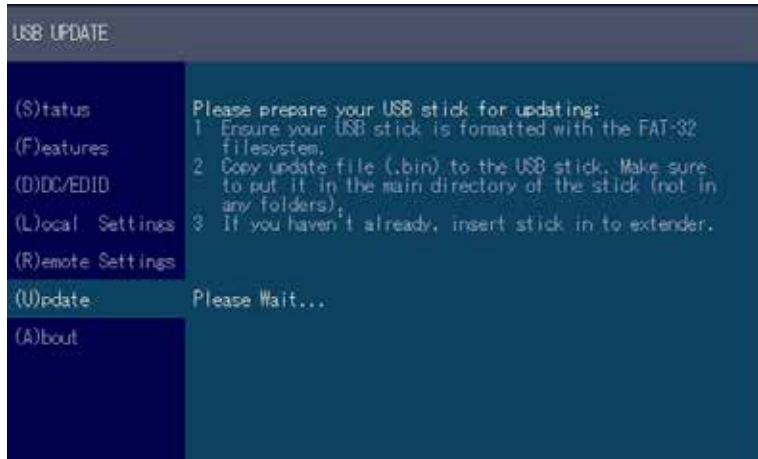
1. you receive the message that you can plug in the USB stick.
2. copy the update file (ending in .kvm) to the USB stick
3. make sure that the update file is directly on the stick and that it is not in any subdirectory
4. the USB stick must be formatted with FAT-32

Misprints, errors and technical changes reserved   Misprints, errors and technical changes reserved
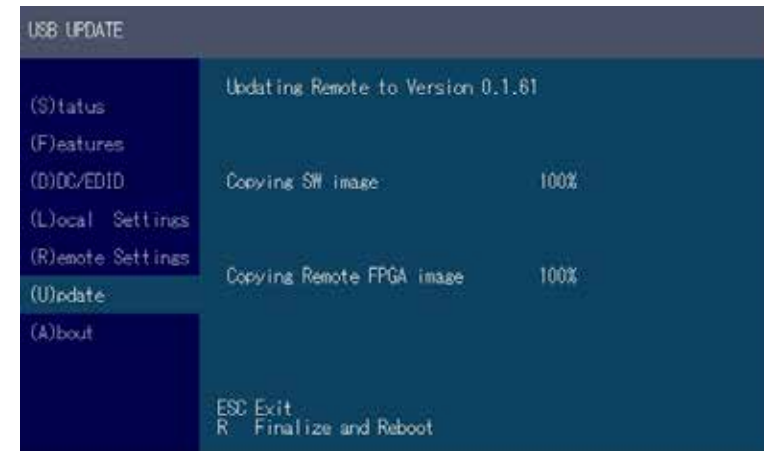
3.9 ABOUT THIS DEVICE

By pressing the „A" button, or by selecting the arrow keys, you can access the info menu, where you can obtain information about hardware and software versions, as well as the activated upgrades. You can also see the current firmware version here.
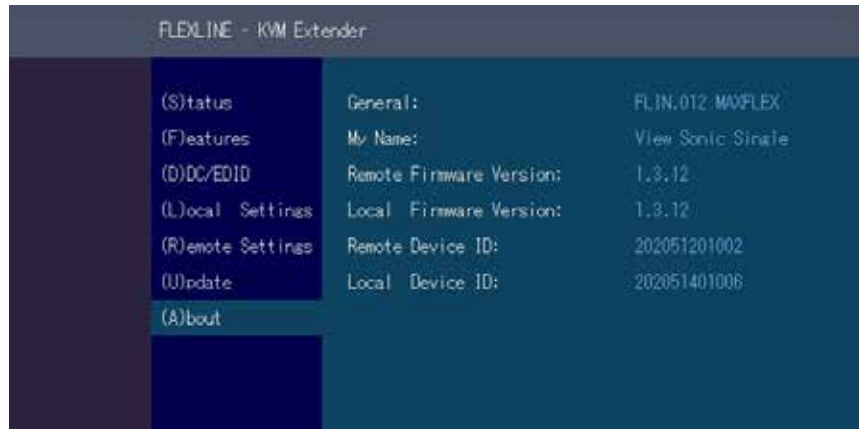
single
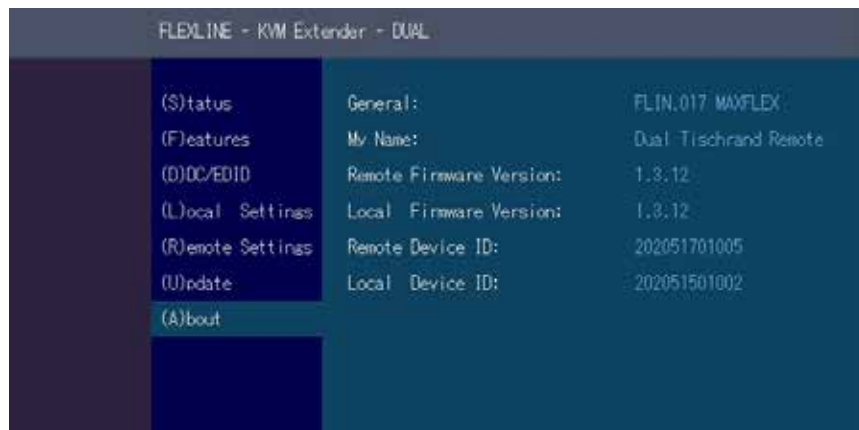
dual

4. 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

4.1 DISPLAY SWITCHING LIST

Available devices that the user can connect to are displayed here.
<u>Create shortcut:</u>
You can create a shortcut with the following key combination „Strg+Alt+Print"

Misprints, errors and technical changes reserved   Misprints, errors and technical changes reserved
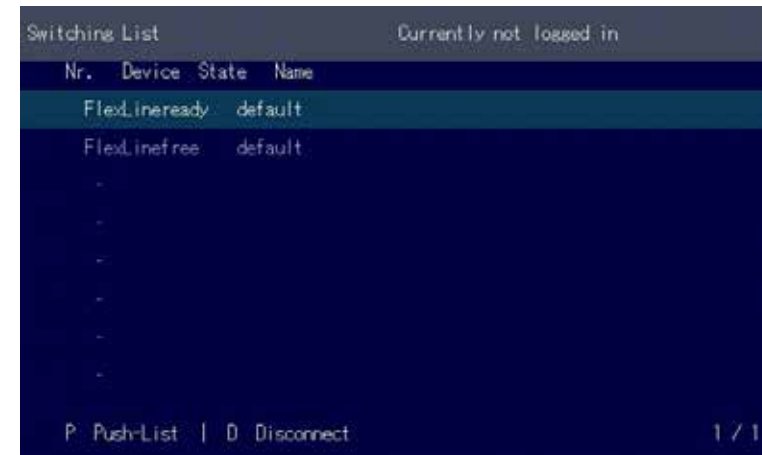
4.2 PUSH / GET LIST

Display of all extenders that can be shared. The current image of the workstation can be shared with other remote units via this list
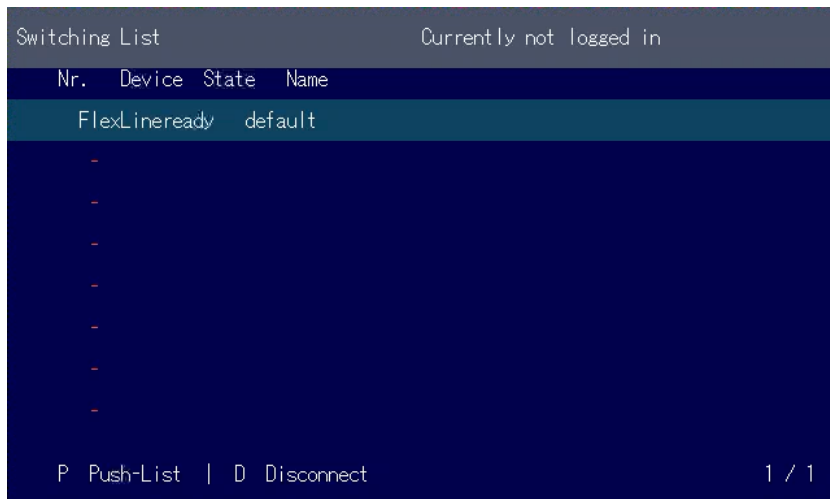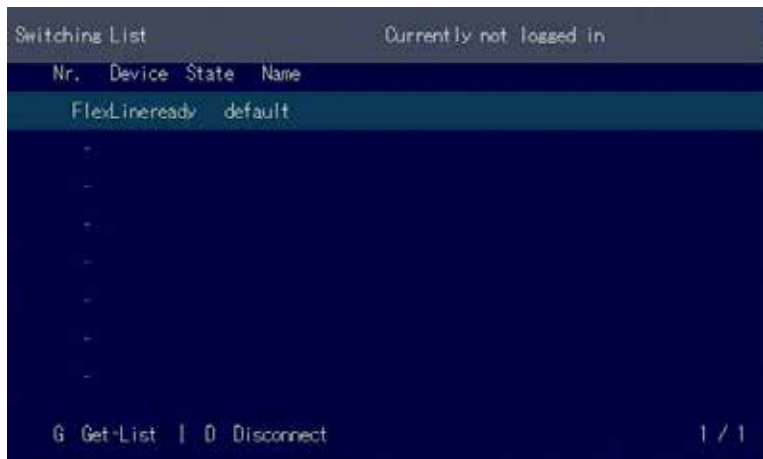
4.3 FAVORITE LIST

A total of 8 favourites can be defined. The connection of these 8 favourites is possible with shortcuts from 1-8

Misprints, errors and technical changes reserved

Misprints, errors and technical changes reserved
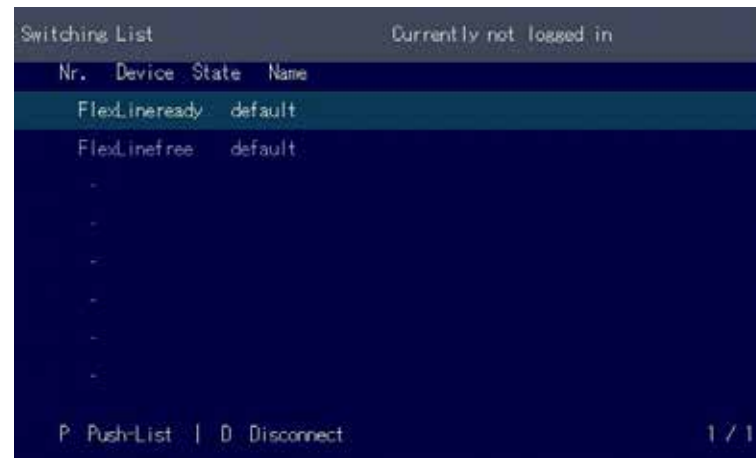
4.4 CONNECTING, DISCONNECTING OR SELECTING A CURRENT WORKPLACE CONNECTED DEVICES

Logging in to the local PC in the main menu, press **A**.
Enter your username and password.
Disconnecting from an encoder in the main menu, press **D**.
Enabling a direct connection
If you are not connected through a network switch, you can connect directly to an encoder with point-to-point mode.
In the main menu, press **P**. After logging in, the user receives his personalized lists (Devices, Favorites List).

4.5 SEARCHBOX-FUNCTION

In the list view you can search for the different extenders
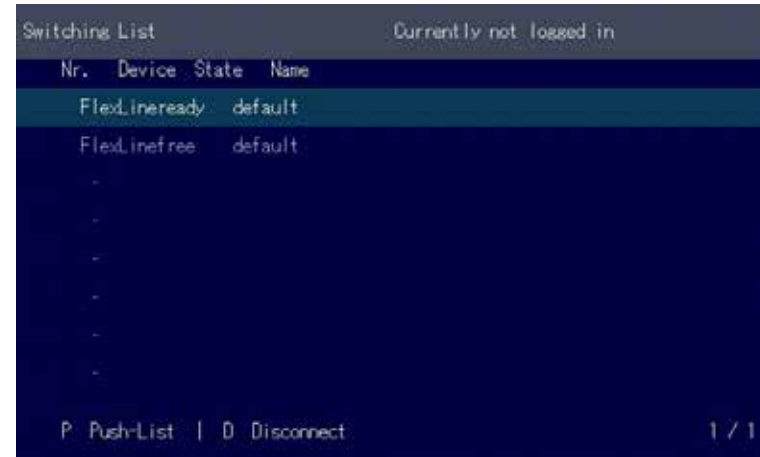
In the list view you can see all available extenders. To search for specific Extenders, you must press the „TAB" key. Now you can enter a string to search for the Extender you want to see. Press the Return key, you should now see a reduced list of Extenders.

4.6 IP MANAGEMENT

The KVM extenders from kvm-tec support three different addressing methods. The IP Management menu is only accessible in the active "Matrix Switching Mode" under Features.
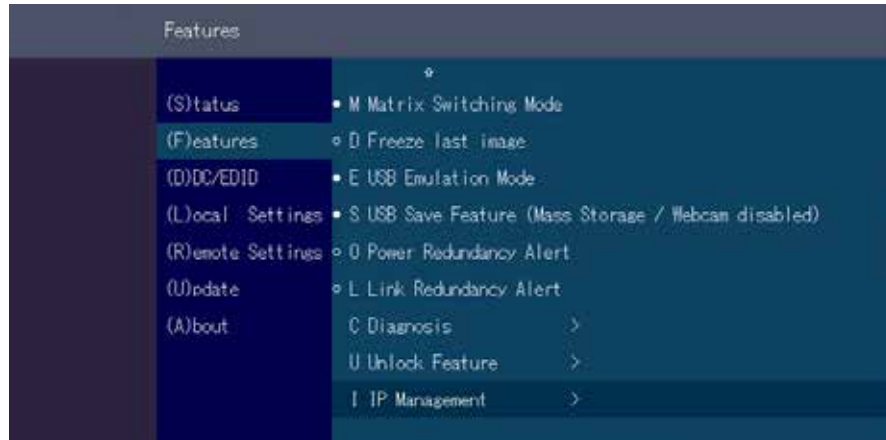
Default

In default mode, each Extender generates an IP address using the ID number to avoid number collisions in the network.
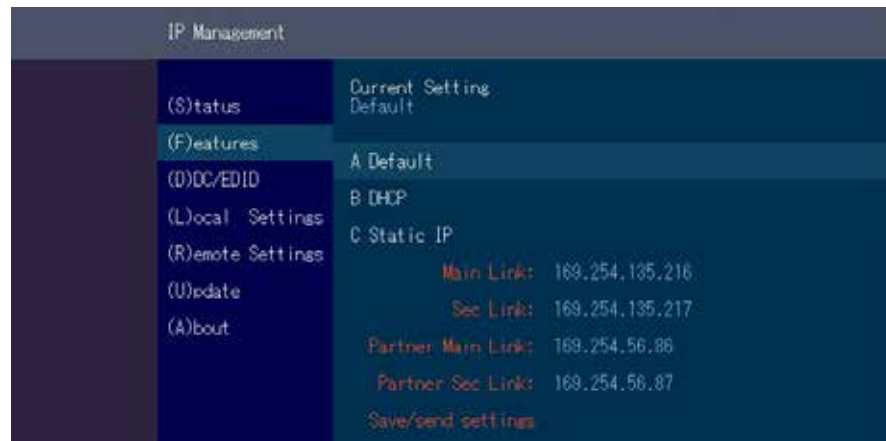
DHCP

The KVM extenders from kvm-tec support the DHCP protocol (Dynamic Host Configuration Protocol). This allows the assignment of network addresses by a DHCP server.
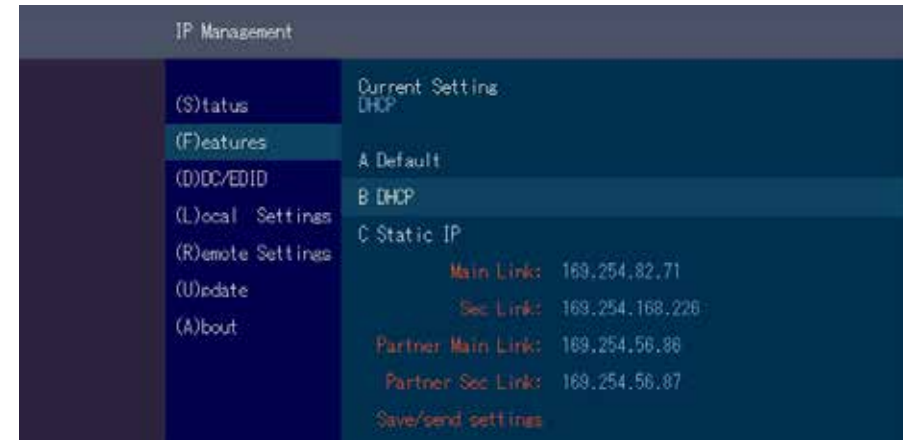
Static IP

In Static-IP mode the IP addresses can be assigned via the OSD. It is necessary to be connected to a local partner to be able to transmit IP addresses.
The blue values show the currently assigned IP addresses. With the arrow keys up / down you can overwrite the respective IP address. The addresses can be overwritten by entering a valid 12-digit number. E.g.: for the IP address 10.0.0.1 the 12-digit number 010.000.000.001 must be entered in the OSD. The separator points are added automatically.

Misprints, errors and technical changes reserved
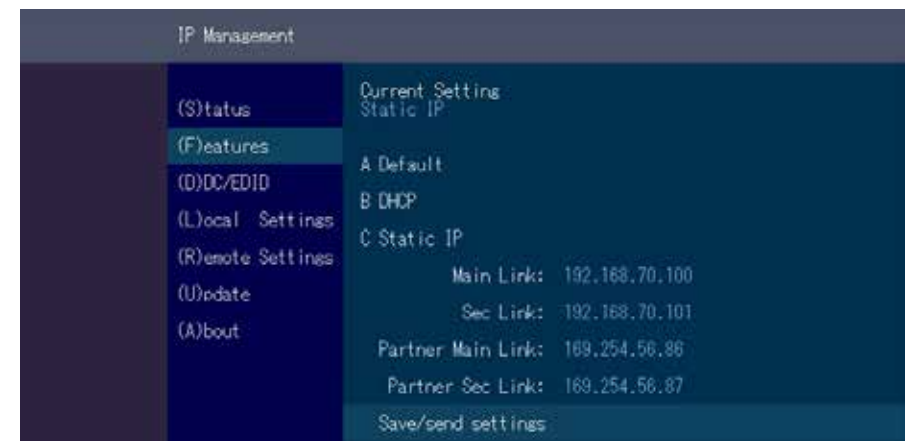
If all four IP addresses are overwritten, "Save/send settings" must be used to transmit the new values to the extenders.
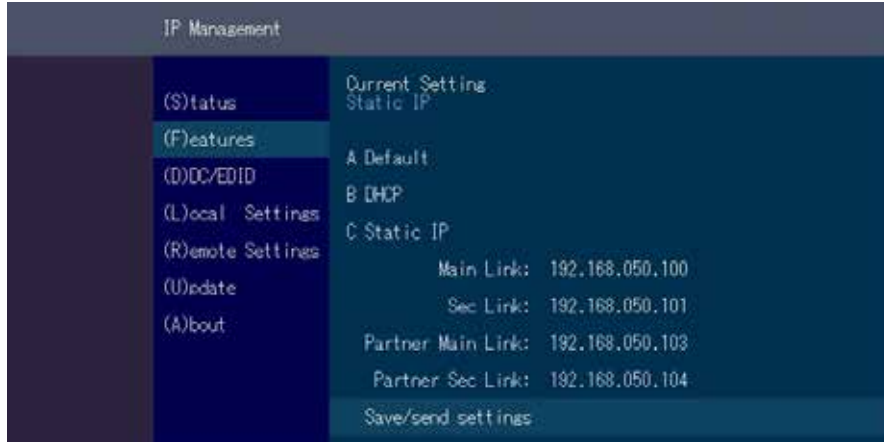
Static IP addresses can only be overwritten in Static IP mode.

Error	Cause	Solution
LED is not lighting	*The devices get no power*	Is the power supply connected? (white box)
LED is light in red	*No connection between Loc and Rem*	Check if the RJ45/network cable is connected well. (Clicking noise when plugging in) Control local and remote , if it does not work - please send an e-mail to support@kvm-tec.com
LED is light in orange	*No picture on the monitor*	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 light green	*Screen occurs but the keyboard is not working*	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 light green	*No audio*	**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
LED is light green	*The screen flickers, has an incorrect display*	Install current firmware from our homepage www.kvm-tec.com/support
LED is blinking green	*Different firmware or USB is not compatible*	Please contact the kvm-tec support team via e-mail: support@kvm-tec.com or by phone: +43 2253 81912 30
LED light differently	*Different firmware*	**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

First Aid

kvm-tec

smart connection

☐ ☐ ☐

No Power (No LED)
↓
Check the powerplug
↓
Is the power supply ok? Try another Unit.
↓
Try reprogramming the Unit by using a JTAG programmer
↓
Contact kvm-tec support

USB is not working
↓
Are the USB Devices plugged in correctly?
↓
Is the USB cable on the Local side plugged into the PC?
↓
Are the USB Devices working directly on the PC?
↓
Replace the USB cable from PC to the Local Extender
↓
Check if local and remote Unit have the same firmware
↓
Check if the local or the remote Unit is causing the problem by swaping first the local and than the remote Unit to another Unit
↓
Contact kvm-tec support

No Video
↓
Check if all cables are plugged in correctly
↓
Check if the PC is sending a Image by plugging in a monitor on the local out of the local Unit
↓
Check if the DDC is set correctly (in menu under point „O")
↓
Check if both Units have the correct firmware
↓
Contact kvm-tec support

Video error (stripes in the picture)
↓
Check if all cables are plugged in correctly
↓
Check if the PC is sending a Image by plugging in a monitor on the local out of the local Unit
↓
Check if the DDC is set correctly (in the menu under point „o")
↓
Check if local and remote Unit have the correct firmware
↓
Check if the network switch is setup correctly and has enough bandwidth
↓
Check if other units have the same behaviour
↓
Contact kvm-tec support

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

We are here for you to answer your questions about installation?
Manual download www.kvm-tec.com
or
kvm-tec Installationchannel on our homepage
personally +43 2253 81912

You Tube

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6. MAINTANCE AND CARE

6.1 EXTENDER CARE

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

6.2 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.

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7. WARRANTY

7.1 STANDARD WARRANTY

The warranty period is 24 months from the date of purchase. The warranty expires in case of:

- External effort
- improper maintenance
- Violation of the operating instructions
- lightning damage

Please, contact us first before returning the product.

7.2 EXTENDED WARRANTY

2 years standard warranty

Art Nr 9003 warranty extension to 5 years
per Set

Art Nr 9002   warranty extension to 5 years
per Unit

8.1 REQUIREMENTS FOR CAT5E/6/7 CABLES

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

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

Schema EIA/TIA-568 B

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

8.2 REQUIREMENTS FIBER CABLES

8.2.1 MULTI-MODE (STANDARD)

A Multi-Mode fiber cable should meet the following requirements:
- Maximum length should be 500 m. The IND-F includes a fiber Multimode – SFP Module which allows a transmission distance of up to 500 m.
- Dedicated fiber connection cable type Duplex Multimode 50/125µ (OM3), LC connector

8.2.2 SINGLE-MODE (OPTIONAL)

A fiber Single-Mode – SFP Module cable should meet the following requirements:
- Up to 20 km transmission distance.
- Requires dedicated fiber connection: cable type Duplex Singlemode with LC connector

A fiber Single-Mode – SFP Module BiDi cable should meet the following requirements:
- Up to 20 km transmission distance.
- Requires dedicated fiber connection: cable type Singlemode with LC connector Wavelength (□) of 850 nm in multi-mode or 1310 nm TX -1550 nm RX in single-mode

9. REQUIREMENTS NETWORK SWITCH

The entire switching network system requires its own separate network. For security reasons, it cannot be integrated into an existing corporate network.
The network switch must meet the following specifications:
1 Gigabit switch, with a port-to-port transfer rate of 1 Gigabit/second.
The following switches have all been tested and verified to work with all kvm-tec extenders.

Network requirements Matrix System UDP Version

The KVM-TEC Matrix Switching System communicates via IP
between the individual endpoints (local/CPU or remote/CON), as well as with the KVM-TEC Switching Manager, Gateway2Go and API. Sharing of videos is realized via the IGMP function of the switch via multicast.
Each endpoint joins a multicast group, even if only one connection is established. This process is repeated cyclically so that the switch keeps the multicast group active.
One exception is the Gateway2Go, which uses unicast and communicates via UDP just like the other devices.

The following UDP ports are required for the transmission:

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

and Port Number 50000 (0xC350)

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

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

9.1 RECOMMENDED SWITCHES

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

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

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

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