smart Easy
FULL HD - KVM EXTENDER OVER IP
Tune in the easy KVM World

EASYLINE
smartEasy
Single in copper
Dual in copper

www.kvm-tec.com

MANUAL
V10522
Check out our Installation Channel:
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1. INTRODUCTION

Congratulations on the purchase of your new smartEASY 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 smartEASY 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 smartEASY 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 smartEASY Extender is referred to as ‘product’ or ‘extender’. The smartEASY is referred to as the ‘local unit’ CPU and the SE/Monitor is referred to as the ‘remote unit’ / CON.
1. INTRODUCTION

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.
- If the product is not installed and used in accordance with this manual, it may cause disruptive interference with radio or television reception or affect other electronic products in residential areas.
- Use shielded cables only to connect the components in order to avoid such interference. Non-compliance invalidates the permission to operate this product.
- Only the mains adapter included with the product should be used as the power supply. Do not use other adapters.
- Prior to connecting to the mains, make sure your local mains voltage matches the rating indicated on the product.
- The product must be connected to a permanent and earthed AC wall socket.

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

Typ: KVM Extender local/CPU Unit and remote/CON Unit

Modell: smartEASY single SE1 KVM Extender
        smartEASY dual SE2 KVM Extender

Spannungsversorgung: 100 - 240 V; 50/60 Hz AC

Power supply: 12VDC1A, external power supply

Power Input: 6W pro Extender (without USB devices)

Operation environment: 0 °C to 45 °C / 32 to 113 °F

Storage environment: -25°C to 80 / -13 to 176 °F

Relative Luftfeuchtigkeit: max. 80% (non condensing)

Humidity for storage: max. 80% (non condensing)

Housing material: anodized aluminum

Dimension: 109 x 43 x 107,5 mm/ 4.29 x 1.69 x 4,23 inch

Weight: 295 g/0,65 lb Local/CPU / 295g/0,65 lb Remote /CON

Shipment weight: 1005g/2,21 lb per set single
        1895 g / 4,17 lb Dual

MTBF: 82,820 calculated hours / 10 years

1.4 ABOUT THE PRODUCT - SMARTEASY SINGLE

Remote /CON Extender

<table>
<thead>
<tr>
<th>Nr.</th>
<th>Name</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>dvi-out</td>
<td>DVI connection to monitor</td>
</tr>
<tr>
<td>2</td>
<td>USB</td>
<td>USB to Keyboard, mouse</td>
</tr>
<tr>
<td>3</td>
<td>kvm-link</td>
<td>Networkcable</td>
</tr>
<tr>
<td>4</td>
<td>dc</td>
<td>Connection 12V1A power supply</td>
</tr>
</tbody>
</table>

LED STATUS

yellow: LINK ok
green: Video ok
green blinking: Video and USB activity
1. INTRODUCTION

1.5 PRODUCT ELEMENTS - SMARTEASY DUAL

<table>
<thead>
<tr>
<th>Nr.</th>
<th>Name</th>
<th>Function</th>
<th>LED STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>DVI out sec</td>
<td>DVI to Monitor</td>
<td>yellow</td>
</tr>
<tr>
<td>2</td>
<td>DVI out main</td>
<td>DVI to Monitor</td>
<td>green</td>
</tr>
<tr>
<td>3</td>
<td>USB</td>
<td>USB to PC</td>
<td>blinking</td>
</tr>
<tr>
<td>4</td>
<td>kvm-link</td>
<td>Connection for CAT5/6/7 cable</td>
<td>Video ok</td>
</tr>
<tr>
<td>5</td>
<td>dc</td>
<td>Connection power supply 12V1A</td>
<td>Video and USB activityx</td>
</tr>
</tbody>
</table>

Remote/CON Extender

<table>
<thead>
<tr>
<th>Nr.</th>
<th>Name</th>
<th>Function</th>
<th>LED STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>DVI out sec</td>
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<td>DVI to Monitor</td>
<td>green</td>
</tr>
<tr>
<td>3</td>
<td>USB</td>
<td>USB to PC</td>
<td>blinking</td>
</tr>
<tr>
<td>4</td>
<td>kvm-link</td>
<td>Connection for CAT5/6/7 cable</td>
<td>Video ok</td>
</tr>
<tr>
<td>5</td>
<td>kvm-link</td>
<td>Connection for CAT5/6/7 cable</td>
<td>Video and USB activityx</td>
</tr>
<tr>
<td>6</td>
<td>dc</td>
<td>Connection power supply 12V1A</td>
<td></td>
</tr>
</tbody>
</table>
**1. INTRODUCTION**

Local /CPU Extender

**1.5 PRODUCT ELEMENTS - SMARTFLEX BACKSIDE**

<table>
<thead>
<tr>
<th>Nr.</th>
<th>Name</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>dvi-in second</td>
<td>DVI connection from PC</td>
</tr>
<tr>
<td>2</td>
<td>dvi-in main</td>
<td>DVI connection to PC</td>
</tr>
<tr>
<td>3</td>
<td>USB</td>
<td>USB to PC</td>
</tr>
<tr>
<td>4</td>
<td>kvm-link</td>
<td>Connection for CAT5/6/7 cable</td>
</tr>
<tr>
<td>5</td>
<td>kvm-link</td>
<td>Connection for CAT5/6/7 cable</td>
</tr>
<tr>
<td>6</td>
<td>dc</td>
<td>Connection 12V1A power supply</td>
</tr>
</tbody>
</table>

**LED STATUS**

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

- Function: Display the status of the extender
- Button for reset
1.6 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:

**smartEASY Single**

- **Local/CPU Unit**
  - 1 x SE1 local/CPU
  - 1 x wall power supply unit 12 V 1A (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

- **Remote / CON Unit**
  - 1 x SE1 remote/CON
  - 1 x wall power supply unit 12 V 1A (EU-plug or Int plug)
  - 4 x rubber feet

**smartEASY Dual**

- **Local/CPU Unit**
  - 1 x SE2 local/CPU
  - 1 x wall power supply unit 12 V 1A (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

- **Remote / CON Unit**
  - 1 x SE2 remote/CON
  - 1 x wall power supply unit 12 V 1A (EU-plug or Int plug)
  - 4 x rubber feet

---

**1.5 ABOUT THE STATUS LED**

LED Status Update:

<table>
<thead>
<tr>
<th>Colour</th>
<th>Light display</th>
<th>Autoupdate mode</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>flashing quickly</td>
<td>Update running</td>
</tr>
<tr>
<td></td>
<td>shiny</td>
<td>Update failed</td>
</tr>
<tr>
<td></td>
<td>shiny</td>
<td>Update successful</td>
</tr>
</tbody>
</table>

Meaning LED displays:

<table>
<thead>
<tr>
<th>Colour</th>
<th>Light display</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>shiny</td>
<td>Only network connection available</td>
</tr>
<tr>
<td></td>
<td>flashing quickly</td>
<td>No active connection</td>
</tr>
<tr>
<td></td>
<td>shiny</td>
<td>No video signal</td>
</tr>
<tr>
<td></td>
<td>shiny</td>
<td>everything works</td>
</tr>
</tbody>
</table>

You will find a detailed error description in the chapter [First Aid](#).
1. INTRODUCTION

2. INSTALLATION OF THE EXTENDER

1.7 MOUNTING OPTIONS

1.7.1 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.

1.7.2 MOUNTING KITS (OPTIONAL)

The following mounting kits are available:

Rackmounting RMK-EASY-F Part Nr. 6232 RMK-FLEX-F
The rack mounting kit RMK-EASY-F is for mounting kvm-tec smartEASY single and dual extenders. It consists of 19" rack shelf and an alu-faceplate.

Rackmounting RMK-EASY-FN - T Part Nr. 6232 RMK-EASY-FN
The rack mounting kit RMK-EASY-FN is for assembling kvm-tec smartEASY extenders. It consists of 19" Rack Shelf, an alu-faceplate and a power supply. For 4 Single or dual Extender in one Rack

Under table mounting kit Part Nr 6231 UMK EASY
The Under Desk Mounting kit is for underdesk mounting of the MX extender.

Din Rail mounting Part-Nr. 6235 DINMK-EASY
The DIN rail mounting is used for space-saving installation in control cabinets or on DIN rails. The attachment to the smartEASY Extenders is possible in several ways.

Vesa mounting Part-Nr. 6236 VH-EASY
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.

2.1 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
Quick Installation smartEASY Single  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. Connect the cable to the DVI socket of the PC and the other end to the DVI socket of the CPU / Local Unit (PC-in 1).
5. If you are using a switch: Connect all endpoints to the switch. Ensure that all connections have a bandwidth of 1Gbit/sec. For video sharing the network has to support IGMP snooping.

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

Quick Installation smartEASY Dual  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 cable to the DVI socket of the PC and the other end to the DVI socket of the CPU / Local Unit (PC-in 1).
5. Now connect the cable to the DVI socket of the PC and the other end to the DVI socket of the CPU / Local Unit (PC-in 2). Then connect the monitor with the DVI cable to the CON / Remote Unit.
6. If you are using a switch: Connect all endpoints to the switch. Ensure that all connections have a bandwidth of 1Gbit/sec. For video sharing the network has to support IGMP snooping.

HAVE FUN - your kvm-tec Extender is now in use for many years (MTBF approx 10 years)
2.4 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.

2.5 REMOVING A CATX CABLE

To remove a CATx cable:
- Press the latch down and slowly pull the cable out.
2. INSTALLATION OF THE EXTENDER
3. EXTENDER SETTINGS

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 from the PC. 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  1920 x 1080
L Local Settings  Setting local
R Remote Settings  Setting remote
A About Overview  Overview Extender
With „ESC“  Close the OSD

3.2 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

3.3 FEATURES

By pressing the F button the Features menu is displayed

Features Menu
The individual menu items are described in more detail in chapter 4 (page 52).
3. EXTENDER SETTINGS

3.4 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.

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. EXTENDER SETTINGS

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.
2. Press the O button and the DDC option menu will be displayed.
3. Press 0 to display the DDC information of the monitor connected to the remote (CON) Extender is connected.
4. Press 2 to save the current DDC information. The system will applies the same settings after restarting the Extender
5. Press the keys 4 to 8 to use a predefined resolution, which is saved.

3. press ESC to return to the main menu

### 3.5.1 DDC MAIN (SINGLE)

<table>
<thead>
<tr>
<th>DDC/EDID Settings Main - DUAL</th>
<th>Current Setting Remote Main</th>
</tr>
</thead>
<tbody>
<tr>
<td>Status</td>
<td>1 Remote Main</td>
</tr>
<tr>
<td>Features</td>
<td>2 Set current DDC as Fixed</td>
</tr>
<tr>
<td>(D)DC/EDID</td>
<td>3 FIX 1024 x 768</td>
</tr>
<tr>
<td>(L)ocal Settings</td>
<td>4 FIX 1280 x 1024</td>
</tr>
<tr>
<td>(R)emote Settings</td>
<td>5 FIX 1920 x 1080</td>
</tr>
<tr>
<td>(U)pdate</td>
<td>7 FIX 1920 x 1080</td>
</tr>
<tr>
<td>(A)bout</td>
<td>8 FIX 1920 x 1200</td>
</tr>
</tbody>
</table>

### 3.5.2 DDC SECOND (DUAL)

<table>
<thead>
<tr>
<th>DDC/EDID Settings Main - DUAL</th>
<th>Current Setting Remote Second</th>
</tr>
</thead>
<tbody>
<tr>
<td>Status</td>
<td>1 Remote Second</td>
</tr>
<tr>
<td>Features</td>
<td>2 Set current DDC as Fixed</td>
</tr>
<tr>
<td>(D)DC/EDID</td>
<td>3 FIX 1024 x 768</td>
</tr>
<tr>
<td>(L)ocal Settings</td>
<td>4 FIX 1280 x 1024</td>
</tr>
<tr>
<td>(R)emote Settings</td>
<td>5 FIX 1920 x 1080</td>
</tr>
<tr>
<td>(U)pdate</td>
<td>7 FIX 1920 x 1080</td>
</tr>
<tr>
<td>(A)bout</td>
<td>8 FIX 1920 x 1200</td>
</tr>
</tbody>
</table>
3. EXTENDER SETTINGS

3.6 EXTENDER SETTINGS

The Extender Settings menu allows the user to change a number of other settings.

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 Settings menu.

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>USB Compatibility Mode</td>
</tr>
<tr>
<td>W</td>
<td>USB Remote Wakeup</td>
</tr>
<tr>
<td>L</td>
<td>Compatibility with Linux</td>
</tr>
<tr>
<td>B</td>
<td>Bandwidth Reduction</td>
</tr>
</tbody>
</table>

C USB Compatibility Mode Disabled/Enabled
W USB Remote Wakeup Disabled/Enabled
L Compatibility with Linux Disabled/Enabled
B Bandwidth Reduction

3.6.2 USB COMPATIBILITY MODE

Some PCs require a USB FullSpeed (USB 1.1) connection at startup. However, since our extenders are normally detected as USB 2.0 HUB’s, some PCs may abort the boot process. This can be avoided with the USB Compatibility Mode.

3.6.3 USB REMOTE WAKE UP

The PC can be put into sleep mode and reactivated with any key.
3. EXTENDER SETTINGS

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.

3.7 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).

Selecting a keyboard layout:
2. Press the K key. The Keyboard Layout will be changed.
3. EXTENDER SETTINGS

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 S key. The Keyboard Shortcuts menu opens.
3. Use the arrows to select a command.
4. Press Enter 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 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.)

3.7.4 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 disabled in the Power Save Setting menu.

Power saving mode on and off:
1. press the R key in the main menu. The Remote Settings menu is displayed.
2. Press the P button to enable or disable the Power Saving Mode.
3. When in Power Saving Mode, press any key to return to the menu.

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.
3. EXTENDER SETTINGS

3.7.5 HIDING SYSTEM STATUS MENU

Press **H** in the Remote Settings menu.
This will remove the status screen and the image remains black.

3.7.6 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.
To change the keyboard fallback mode press the button **F**.
### 3. EXTENDER SETTINGS

#### 3.7.7 LOCK MENU

This menu protects the OSD control.

By pressing the L button, you can choose between:

- **Password**
  - OSD can only be activated by password
- **timer**
  - disable, 1min, 5min, 10min, 15min, 30min, 60min

#### 3.7.8 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.

It can be chosen between 0-50 (Standard 30)

The mouse speed can be adjusted by pressing the M button.
3. EXTENDER SETTINGS

3.7.9 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. - Hard/Medium/Soft (Standard-Medium) 

The monitor sync strength can be adjusted by pressing the V button.

3.8 UPDATE

3.8.1 FIRMWARE UPDATE WITH SWITCHING MANAGER DEMOVERSION
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.
3. EXTENDER SETTINGS

### 3.8.2 FIRMWARE UPDATE WITH USB STICK

For the update with an USB stick the following steps are necessary:

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

### 3.9 UNLOCK AN UPGRADE

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

### 3.9.1 ENABLE OR DISABLE USB MEMORY UPGRADE

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

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

3.10 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.

---

4. NETWORK SETTINGS

4.1 DISPLAY SWITCHING LIST

4.1.1 SWITCHING STATUS

The „Status Menu“ shows the current status of the Extender connection. The menu displays the information about the connection, the video channel resolution and the USB status. The link status indicates whether a connection is possible. Connected shows if the kvm files can be transferred currently. Video and USB shows if data is currently being transferred.
4. NETWORK SETTINGS

4.2 SWITCHING FEATURES MENU

Press the F key to enter the Features menu.

Features Menu

- **P** Point to Point Mode: Enabled/Disabled
  (Point to Point schließt sich mit Matrix mode aus)
- **M** Matrix Switching Mode: Disabled/Enabled
- **S** USB Save Feature: (mass storage usable) Disabled/Enabled
- **D** Freeze last Image: Disabled/Enabled
- **E** USB Emulation Mode: (Disabled) Disabled/Enabled
- **X** Easy Manager: (Disabled) Disabled/Enabled
- **B** Easy Back Bridge
- **U** Unlock Features
4. NETWORK SETTINGS

4.2.1 POINT TO POINT

By pressing the “P” key you can switch the Point to Point mode on and off.

ATTENTION - if the Point to Point mode is activated, the Switching Mode cannot be activated.

4.2.2 MATRIX SWITCHING MODE

By pressing the key “S” you can switch the Matrix Switching Mode on and off.

4.2.3 DISPLAY THE LAST RECEIVED IMAGE „FREEZE LAST IMAGE“

With the function „freeze last image“ the last received image can be displayed instead of a black screen if the remote Extender (CON) is separated from the local Extender (CPU). To indicate that this is the last received image, the frame of the image flashes red.

To enable or disable the „freeze last image“ function:
1. From the main menu, press the F key. The Features Settings menu is displayed.
2. Press D to enable or disable the function.
3. Press ESC to return to the main menu.

4.2.4 USB EMULATION MODE

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

Press the E key to enter USB Emulation Mode.

4.2.5 USB SAVE FEATURE

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

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

4.2.6 TO SWITCH BETWEEN PC’S

For switching, you just need to access the switching list, with the key combination „STRG+ALT+F12“, then you can select the device.
4. NETWORK SETTINGS

4.2.7 RENAME THE DEVICES
On the Receiver unit which is activated as "Easy Manager", you select the switching list, and there is an additional entry in the OSD-Menu, where you can rename the devices.

4.2.8 EASY MANAGER ON/OFF
You can recognize whether the Easy Manager is activated or deactivated by the fact that the menu item "X" Easy Back Bridge is available in deactivated mode.

<table>
<thead>
<tr>
<th>Features</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>(S)Status</td>
<td>P Point to Point Mode</td>
</tr>
<tr>
<td>(F)Features</td>
<td>M Matrix Switching Mode</td>
</tr>
<tr>
<td>(O)Options</td>
<td>D Freeze Last Image</td>
</tr>
<tr>
<td>(L)Local Settings</td>
<td>E USB Emulation Mode</td>
</tr>
<tr>
<td>(R)Remote Settings</td>
<td>S USB Save Feature (Mass Storage / Webcam enabled)</td>
</tr>
<tr>
<td>(U)Update</td>
<td>X Easy Manager</td>
</tr>
<tr>
<td>(A)About</td>
<td>U Unlock Feature</td>
</tr>
</tbody>
</table>

4.2.9 ALL IN ONE - EASY MANAGER

EASYLINE EXTENDERS DO NOT REQUIRE A USER SYSTEM

The Remote unit in the switching system must have the „Easy Manager“ mode enabled to replace the role of the Switching Manager, the remoteExtender then takes care of the communication of the Extenders in the network.

4.2.10 MORE FEATURES
- Change the names of the devices
- Update the extender in the network (see 3.11.2)
- USB Emulation Mode can be set via this device in the whole network
4. NETWORK SETTINGS

4.2.11 FRONTBRIDGING

SWITCHING WITHOUT SWITCH
A Remote Dual can be connected to two Local Single Extenders via Point-To-Point using this function. When two monitors are connected, one Extender can be displayed on each monitor, and when driving over the edge of the screen it is easy to switch between the Local Units. With only one screen the key combination 5x Left + Control must be moved.

Features Menu:
Make sure that you are in the main menu. Press the F key to enter the Features menu.

<table>
<thead>
<tr>
<th>Features</th>
<th>DUAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>P</td>
<td>Point to Point Mode</td>
</tr>
<tr>
<td>M</td>
<td>Matrix Switching Mode</td>
</tr>
<tr>
<td>D</td>
<td>Freeze last image</td>
</tr>
<tr>
<td>E</td>
<td>USE Emulation Mode</td>
</tr>
<tr>
<td>S</td>
<td>USE Save Feature (Mass Storage / Webcam disabled)</td>
</tr>
<tr>
<td>X</td>
<td>Easy Manager</td>
</tr>
<tr>
<td>F</td>
<td>Easy Front Bridge</td>
</tr>
<tr>
<td>U</td>
<td>Unlock Feature</td>
</tr>
</tbody>
</table>

In frontbridging, one or two monitors can simultaneously display the contents of the PCs with different images and can be operated either right or left.
4. NETWORK SETTINGS

4.2.12 SYSTEM STATUS FRONTBRIDGING

The “Status Menu” displays the current status of the Extender connection. The menu displays the information about the connection, the video channel resolution and the USB status. The link status indicates whether a connection is possible. **Connected** shows if the kvm files can be transferred currently. **Video and USB** shows if data is currently being transferred.

4.2.13 CHANGE THE FRONTBRIDGING LAYOUT

**Features Menu:**
Make sure that you are in the main menu. Press the R button to access the Remote Settings. By pressing the B button “Frontbridge Layout” you can choose between horizontal or vertical.
4. NETWORK SETTINGS

4.2.14 BACKBRIDGING

SWITCHING WITHOUT SWITCH

A Local Dual can be connected to two Remote Single Extenders via Point-To-Point using this function. Since there is only one USB socket on the Local device, only one remote can access the PC at a time.

In backbridging it is possible to share from one dual local extender to two single remote extenders. For all applications that require monitoring at different locations.
4. NETWORK SETTINGS

Features Menu:
Make sure that you are in the main menu. Press the F key to enter the Features menu.

<table>
<thead>
<tr>
<th>Features</th>
<th>Backbridge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Status</td>
<td>1G Link Primary</td>
</tr>
<tr>
<td>Features</td>
<td>KVM Connection</td>
</tr>
<tr>
<td>EDID</td>
<td>Backbridge</td>
</tr>
<tr>
<td>Local Settings</td>
<td>Resolution 1920x1080</td>
</tr>
<tr>
<td>Remote Settings</td>
<td>EDID 1.4</td>
</tr>
<tr>
<td>Date</td>
<td>HDMI Primary</td>
</tr>
<tr>
<td>About</td>
<td>Embedded Audio Primary</td>
</tr>
<tr>
<td></td>
<td>Connected</td>
</tr>
</tbody>
</table>

4.2.15 SYSTEM STATUS BACKBRIDGING

The „Status Menu“ displays the current status of the Extender connection. The menu displays the information about the connection, the video channel resolution and the USB status.

The link status indicates whether a connection is possible. Connected shows if the kvm files can be transferred currently.

Video and USB shows if data is currently being transferred.

single

System Status - DUAL

<table>
<thead>
<tr>
<th>Status</th>
<th>1G Link Primary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Features</td>
<td>KVM Connection</td>
</tr>
<tr>
<td>EDID</td>
<td>Backbridge</td>
</tr>
<tr>
<td>Local Settings</td>
<td>Resolution 1920x1080</td>
</tr>
<tr>
<td>Remote Settings</td>
<td>EDID 1.4</td>
</tr>
<tr>
<td>Date</td>
<td>HDMI Primary</td>
</tr>
<tr>
<td>About</td>
<td>Embedded Audio Primary</td>
</tr>
<tr>
<td></td>
<td>Connected</td>
</tr>
</tbody>
</table>

dual
4. NETWORK SETTINGS

4.2.16. EASY CROSS MOVE - SOFTWARE FEATURE

Software Feature

Easy Cross Move is a software feature that is activated when frontbridging is used.

Both PCs can be operated with one mouse and one keyboard

2 local Units + 1 remote Unit = Easy Cross Move with 1 keyboard & 1 mouse

4.3 CHANGE THE LOCAL SETTINGS

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

<table>
<thead>
<tr>
<th>Key</th>
<th>Setting</th>
<th>Enabled/Disabled</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>USB Compatibility Mode</td>
<td>Disabled/Enabled</td>
</tr>
<tr>
<td>W</td>
<td>USB Remote Wakeup</td>
<td>Disabled/Enabled</td>
</tr>
<tr>
<td>L</td>
<td>Compatibility with Linux</td>
<td>Disabled/Enabled</td>
</tr>
<tr>
<td>B</td>
<td>Bandwidth Reduction</td>
<td></td>
</tr>
<tr>
<td>V</td>
<td>VGA Parameters</td>
<td></td>
</tr>
</tbody>
</table>

4.3.1 BANDWIDTH REDUCTION

Here the bandwidth can be reduced. Press the B key to access the settings. The basic setting is 0!

You can change the bandwidth with +/- or u/d.
4. NETWORK SETTINGS

4.4 REMOTE SETTINGS

Press the R button to display the Remote Setting menu.

K  Keyboard Locale
S  Keyboard Shortcuts
U  USB Share any Key
A  Audio Input Gain
P  Power Save Mode
H  Hide Status Screen
F  Fallback Mode
L  Lock Menu
M  Mouse Settings
V  Video Sync Settings
R  Easy Manager Sampling Rate

4.4.1 SAMPLING RATE SETTINGS

To avoid flooding the CPU, a sampling rate was implemented. This rate determines the frequency with which the manager sends heartbeats and the slaves send their inform requests.

- For efficiency: The larger the network, the higher the rate must be.
- For stability: The larger the network, the lower the rate must be.
- Once every device on the network has been detected, it is advisable to reduce.
- F5* in the switch list (with Easyline Manager) sends a broadcast to reduce ALL devices all at once.

4.5 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.

<table>
<thead>
<tr>
<th>Switching List</th>
<th>Easyline Manager</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nr.</td>
<td>Device</td>
</tr>
<tr>
<td>1</td>
<td>Manager</td>
</tr>
<tr>
<td>2</td>
<td>Easyline</td>
</tr>
<tr>
<td>3</td>
<td>Easyline</td>
</tr>
<tr>
<td>4</td>
<td>Easyline</td>
</tr>
<tr>
<td>5</td>
<td>Easyline</td>
</tr>
<tr>
<td>6</td>
<td>Easyline</td>
</tr>
<tr>
<td>7</td>
<td>Easyline</td>
</tr>
</tbody>
</table>

Get List

<table>
<thead>
<tr>
<th>Switching List</th>
<th>Easyline Manager</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nr.</td>
<td>Device</td>
</tr>
<tr>
<td>1</td>
<td>Easyline</td>
</tr>
<tr>
<td>2</td>
<td>Easyline</td>
</tr>
<tr>
<td>3</td>
<td>Easyline</td>
</tr>
<tr>
<td>4</td>
<td>Easyline</td>
</tr>
<tr>
<td>5</td>
<td>Easyline</td>
</tr>
<tr>
<td>6</td>
<td>Easyline</td>
</tr>
<tr>
<td>7</td>
<td>Easyline</td>
</tr>
<tr>
<td>8</td>
<td>Easyline</td>
</tr>
</tbody>
</table>

Push List
### 4. NETWORK SETTINGS

#### 4.6 CONNECTING, DISCONNECTING OR SELECTING A CURRENT WORKPLACE CONNECTED DEVICES

The Overview display gives an overview of the currently connected PCs as well as the free PCs and consoles in the network. You can disconnect a connection remotely, or assign a new console to a PC, or vice versa.

Press D to disconnect the devices
Pressing P activates a point to point connection

#### Error Cause Solution

<table>
<thead>
<tr>
<th>Error</th>
<th>Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>LED is not lighting</td>
<td>The devices get no power</td>
<td>Is the power supply connected? (white box)</td>
</tr>
</tbody>
</table>
| 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 |

#### 5. TROUBLESHOOTING & FIRST AID

4.6 CONNECTING, DISCONNECTING OR SELECTING A CURRENT WORKPLACE CONNECTED DEVICES

The Overview display gives an overview of the currently connected PCs as well as the free PCs and consoles in the network. You can disconnect a connection remotely, or assign a new console to a PC, or vice versa.

Press D to disconnect the devices
Pressing P activates a point to point connection
5. TROUBLESHOOTING & FIRST AID

### 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?
- 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 swapping first the local and then 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 menu under point „O“)
- Check if local and remote Unit have the correct firmware
- Contact kvm-tec support

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 - 30

6. MAINTANCE & CARE

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.
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 Unit

8. CABLE REQUIREMENTS

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-568B (common) pairs.
- Errorneous 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-568B.
- 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

<table>
<thead>
<tr>
<th>Pin</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Orange/White</td>
</tr>
<tr>
<td>2</td>
<td>Orange</td>
</tr>
<tr>
<td>3</td>
<td>Green/White</td>
</tr>
<tr>
<td>4</td>
<td>Blue</td>
</tr>
<tr>
<td>5</td>
<td>Blue/White</td>
</tr>
<tr>
<td>6</td>
<td>Green</td>
</tr>
<tr>
<td>7</td>
<td>Brown/White</td>
</tr>
<tr>
<td>8</td>
<td>Brown</td>
</tr>
</tbody>
</table>
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.

10. CONTACTS & PHONE / EMAIL

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

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

**kvm-tec Inc. USA Sales** p+1 213 631 3663 & +43 225381912-22
email: officeusa@kvm-tec.com

**kvm-tec ASIA-PACIFIC Sales** p +9173573 20204
email: sales.apac@kvm-tec.com

**kvm-tec China Sales** - P + 86 1360 122 8145
email: chinasales@kvm-tec.com

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**KVM-TEC**
Gewerbepark Mitterfeld 1 A
2523 Tattendorf
Austria
www.kvm-tec.com

**IHSE GmbH**
Benzstr.1
88094 Obertueringen
Germany
www.ihse.com

**IHSE USA LLC**
1 Corp.Dr.Suite Cranbury Nj 08512
USA
www.ihseusa.com

**IHSE GMBH Asia**
158Kallang Way,#07-13A
349245 Singapore
www.ihse.com

**IHSE China Co.,Ltd**
Room 814
Building 3, Kezhu Road
Guangzhou PRC
www.ihse.com.cn