G&D DVIMUX8-PS/2

Installation and Operation

About this manual

This manual has been carefully compiled and examined to the state-of-the-art.

G&D neither explicitly nor implicitly takes guarantee or responsibility for the quality, efficiency and marketability of the product when used for a certain purpose that differs from the scope of service covered by this manual.

For damages which directly or indirectly result from the use of this manual as well as for incidental damages or consequential damages, G&D is liable only in cases of intent or gross negligence.

Caveat Emptor

G&D will not provide warranty for devices that:

- Are not used as intended.
- Are repaired or modified by unauthorized personnel.
- Show severe external damages that was not reported on the receipt of goods.
- Have been damaged by non G&D accessories.

G&D will not be liable for any consequential damages that could occur from using the products.

Proof of trademark

All product and company names mentioned in this manual, and other documents you have received alongside your G&D product, are trademarks or registered trademarks of the holder of rights.

Contents

Safety instructions

Please read the following safety instructions carefully before you start operating the G&D product. The instructions well help in avoiding damages to the product and in preventing possible injuries.

Keep this manual handy for all persons who will be using this product.

Follow all warnings or operating instructions which are on the device or stated in this user manual.

⚠ **Beware of electric shocks**

To avoid the risk of electric shock, do not open the device or remove the covers. If service is required, please contact our technicians.

⚠ **Disconnect the main power plug or the power supply before installation**

Before installation, ensure that the device has been disconnected from the power source. Disconnect the main power plug or the power supply of the device.

⚠ **Ensure constant access to the power plugs**

During the installation of the devices, ensure that the power plugs remain accessible.

⚠ **Avoid tripping hazards**

Avoid tripping hazards while laying cables.

⚠ **Only use a grounded voltage source**

Operate this device by using a grounded voltage source.

⚠ **Use only the provided G&D power pack**

Operate this device with the provided G&D power pack or with the power pack listed in the manual.

⚠ **Operate the device only in designated areas.**

The devices are designed for indoor use. Avoid exposure to extreme cold, heat or humidity.

The »DVIMUX8-PS/2« KVM switch

The *DVIMUX8-PS/2* KVM switch enables you to operate up to eight computers via one console.

The console is provided with a PS/2 keyboard, a PS/2 mouse and a digital and/or analog monitor. The computers connected to the KVM switch are operated from the installed console.

The switching between computers takes place either via the pushbuttons on the front panel, configurable key combinations, or a serial device which is connected to the *Service* port.

The front panel of the device provides two USB interfaces to connect a USB keyboard and/or a USB mouse to the console.

> **NOTE:** The KVM switch emulates a full keyboard and mouse on each channel and therefore guarantees error-free booting and a secure operation at all time.

Package Contents

- 1 × *DVIMUX8-PS/2* KVM switch (basic or multi-channel variant)
- 1 × *DVI-Divider* adapter per supported video channel
- 1 × 19" RM-Set-435
- 1 × data cable (*Update-Cable-2*)
- 1 × power cable
- 1 × »Installation and Operation« manual

> **NOTE:** To install the devices to a 19" rack, the scope of delivery of the multi-channel devices contains rackmount sets (19" RM-Set-435).
>
> The devices can be installed with both the front panel or the back panel facing forwards.

A corresponding KVM cable is required in order to connect the computers to the KVM switch. The appropriate KVM cable sets available are listed on page 31.

Installation

Overview of the interfaces

The front panel of the KVM switch

The front panel of the KVM switch provides two USB interfaces to connect a USB keyboard and/or mouse.

> **NOTE:** The PS/2 interfaces to connect both console keyboard and console mouse (on the back panel of the KVM switch) and the USB interfaces on the front panel of the device can be used *simultaneously*.

The front panel also provides a *Service* port. This port is used for operating the setup menu (see *Operating the setup menu* on page 15 ff.), for switching the active channel via a serial device and for carrying out firmware updates.
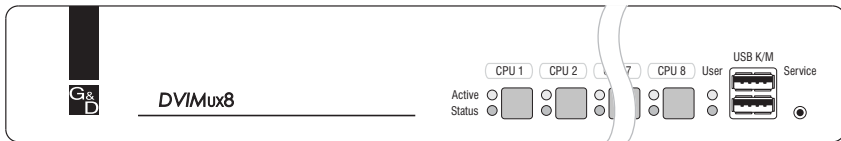
Figure 1: Front view of the KVM switch

The active channel can be selected by using one of the eight buttons on the front panel. The front panel also provides several LEDs (see *Status displays* on page 8).

The back panel of the KVM switch

The back panel of the KVM switch provides interfaces to connect the console devices and the computers. The following page contains a detailed description of these interfaces.

Setting up the device

1. Ensure that the computers, which are to be connected to the KVM switch, are turned off. If the computers are provided with both keyboards and mouses, unplug the cables of the input devices from the PS/2 interfaces.

2. Place the KVM switch between the computers and the console. Please mind the maximum cable length of five metres between the KVM switch and the computers which are to be connected.

3. Before installing the KVM switch, decide which button on the front panel of the device should be assigned to which computer.

Connecting the console devices

> **ADVICE:** Connect the cables of the console and the computers preferably block by block and from the bottom up. By doing so, you will avoid already connected cables blocking your view of the interfaces.
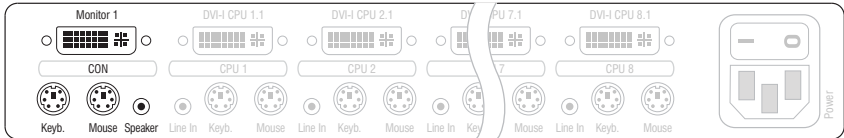
Figure 2: Interfaces to connect the console devices

Keyb.: Plug the connection cable of the PS/2 keyboard in this socket.

Mouse: Plug the connection cable of the PS/2 mouse in this socket.

> **NOTE:** You can also connect a USB keyboard and/or a USB mouse to the **USB K/M** interfaces on the front panel of the device.
>
> The PS/2 interfaces (on the back panel of the KVM switch) as well as the USB interfaces on the front panel of the device can be used for connecting both console keyboard and console mouse.

Speaker: Connect the speakers to this interface for output of audio signals at the active computer.

Monitor 1: Plug the monitor's DVI-I cable to this interface.

> **NOTE:** If you purchased the multi-channel variant of the KVM switch, connect the additional monitors to the **Monitor 2** interface.

Connecting the computers

> **IMPORTANT:** KVM cable sets are required to connect the computers to the KVM switch. All available KVM cable sets are listed on page 31.
>
> Assign the cable sets to the different computers and have them available for installation.

> **NOTE:** To connect the (maximum eight) computers to the KVM switch, the interfaces as shown below are available for each computer.
>
> The label (e.g. **CPU 1**) assigns the interface to a specific computer and to the correspondent button on the front panel.
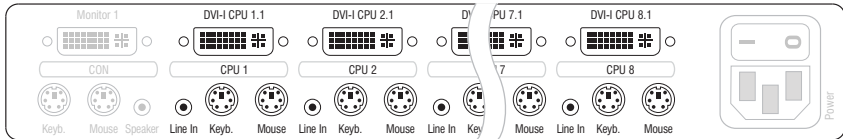
Figure 3: Interfaces to connect the computers

Line In: If the audio signals of the computers are to be output over the speakers which are connected to the KVM switch, use one of the audio connection cables (*Audio-M/M*) to connect the computer's *Line Out* interface to this interface.

Keyb.: Use the purple plug of a *Twin-PS/2* cable to connect the purple PS/2 socket (keyboard) to this interface.

Mouse: Use the green plug of a *Twin-PS/2* cable to connect the green PS/2 socket (mouse) of the computer to this interface.

DVI-I CPU: If the computer is equipped with a DVI-D video output, use a digital video cable (*DVI-D-DL-M/M*). If the computer has an analog VGA output, use an analog video cable (*VGA-M/DVI-A-M*).

Connect the (first) video output of the computer to this interface.

> **NOTE:** If you purchased the multi-channel variant of the KVM switch, connect the **DVI-I CPU x.2** interface to the corresponding video output of the computer.

Connecting the power supply
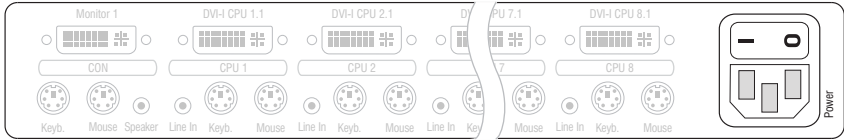
Figure 4: Interfaces to connect the power supply

Power: Connect the power cable (*PowerCable-2 Standard*) to a power outlet and the *Power* socket of the KVM switch.

Further information

Support of digital and analog video signals

Computers that provide digital *or* analog video signals can be connected to the KVM switches of the *DVIMUX8* series. The signal type (digital *or* analog) that is transmitted from computer to KVM switch is displayed unaltered on the connected monitor.

Uniform signal type within one video channel

Install a console monitor that can display the uniform signal type of the computer's video channels (only digital *or* analog).

> **EXAMPLE:** The video signal of all computers is digitally (DVI signals) transmitted to the KVM switch. A digital monitor is required to display the signals on the console monitor.

Different signal types within one video channel

If digital (e.g. via *CPU 1*) as well as analog (e.g. via *CPU 2*) video signals of different computers are transmitted on the same video channel, a *DVI-Divider* adapter must be connected to the *Monitor x* interface of the KVM switch.

The adapter provides both DVI and VGA output. Connect both outputs of the adapter to the console monitor.

> **NOTE:** Choose a monitor which can process digital as well as analog video data. Such monitors provide a DVI *and* a VGA interface.

Depending on the input signal, modern monitors usually switch the signal type independently. Otherwise, the switching from digital to analog signal processing (and vice versa) must take place manually by the user.

Start-up

Turn on the *Power* switch on the back panel of the KVM switch.

As soon as the device is supplied with power, the green *User* LED lights up. The KVM switch is now ready for use.

Status displays

The LEDs on the front panel of the device enable you to control the operational status at all times.

Section	LED	Status	Meaning
CPU 1...8	Active	on	The KVM switch is currently active on this channel. All inputs are forwarded to this computer.
		off	The channel is currently inactive.
	Status	on	The computer is ready for operation.
		off	No computer is connected or the computer is turned off.
User	Active	on	The keyboard is properly and completely initialised.
		slow blinking	The LED blinks after the device is turned on and until the keyboard is initialised
		blinking	The setup mode of the KVM switch is active.
	Status	on	The KVM switch is supplied with the necessary voltage.
		off	The KVM switch is turned off or is not supplied with the necessary voltage. If necessary, check the proper connection of the power supply cable.

Switching between the computers

The user can either use the eight buttons on the front panel of the device or key combinations to switch between different computers.

Keyboard and mouse inputs are forwarded to the active computer. The video signal of the active computer is displayed on the console monitor.

Switching via buttons

How to use the buttons on the device to switch to a certain channel:

▪ Press the button of the channel you wish to activate.

Switching via key combinations

How to use key combinations to switch to a specific channel:

▪ Press **Hotkey + Select key** on the console keyboard.
  The default settings allow you to switch between channels by pressing **Ctrl** and the select keys **1** to **8**.

> **IMPORTANT:** Switching between the channels takes place if the pressed key combination is released.

> **NOTE:** If one of these key combinations interferes with a key combination of an installed application program, the key combination of the KVM switch can be adjusted (see page 18).

Switching via step keys

IMPORTANT: Step keys are deactivated in the default settings. Information on how to enable this function are provided on page 23.

Alternative to using *select keys* to switch between channels connected to the KVM switch is to use the *step keys* to switch the channels in ascending or descending order.

IMPORTANT: The active *step keys* depend on the selected *select keys*. The following table lists the step keys depending on the active select keys.

Select keys	»Back« step key	»Forward« step key
1...8	9	0
NUM 1...8	NUM 9	NUM 0
A...H	I	K
F1...F8	F9	F10

How to use step keys to switch to a certain channel:

1. Press **Hotkey+»Back« step key** or **Hotkey+»Forward« step key** on the console keyboard.

Switching via serial device

The channels can be switched via a serial device connected to the *Service* port of the KVM switch. The serial device can either be a special keypad or a computer which is terminal emulator operated.

IMPORTANT: Use the following connection settings and the switching commands of the KVM switch to successfully switch the channel with a serial end device.

Connection settings

Use the following connection settings for the serial end device to establish a serial connection to the KVM switch.

- Bits per second: 115.200 | *or*: 9.600 (see page 26)
- Data bits: 8
- Parity: none
- Stop bits: 1
- Flow control: none

Enabling the »Switch« mode

> **IMPORTANT:** The *Service* port of the KVM switch can be used to operate the setup menu as well as to switch between the channels with a serial device.
>
> Switching of channels via the serial device is possible only if the **Switch** mode is active!

If necessary, change the standard mode (see page 27) of the *Service* port to this mode if you want to switch channels via the serial device immediately after starting the KVM switch.

An alternative to switching to the **Switch** mode is to enter the »!« command during operation.

Switching commands

The following commands are provided for switching the channel:

Command	Channel
1!	1
2!	2
3!	3
4!	4
5!	5
6!	6
7!	7
8!	8
<!	switch to previous channel
>!	switch to next channel

> **ADVICE:** Use the »?!« command to show the currently accessing channel.

> **NOTE:** The serial device carries out the command *directly* after it is sent.
>
> A message (see below) informs the serial device concerning the success or failure of the switching of channels.

Messages

The KVM switch confirms the successful execution of a command and otherwise sends a meassage.

Message	Meaning
In[x] All	switching to channel [x] successful
E01	invalid channel number (out of range)
E06	channel switching failed
E10	invalid command
E13	invalid value (out of range)
RS232 mode enabled	switch mode (RS232) enabled

Configuration

The configuration of the KVM switch can optionally be changed in the setup mode or in the setup menu:

▪ Enable the *setup mode* using the console keyboard. You can change the configuration via special setup keys.

▪ The *setup menu* is operated with a terminal emulator and provides a user interface to configure the device.

> **NOTE:** The PS/2 mouse (see page 30) can only be enabled or reset in the *setup mode*.
>
> The PS/2 keyboard type can only be selected in the *setup menu*.

Overview of the functions and default settings

The following table lists functions that can be configured as well as their default settings of the KVM switch.

Detailed description of the functions is given in the following pages:

Function	Default	Page
Using single or double hotkeys	single hotkeys	17
Changing the single hotkey	**Ctrl**	18
Changing the double hotkey	**Ctrl+Shift**	19
Changing the select keys	**1** to **8**	20
Enabling/Disabling the hotkey delay	7 seconds	21
Resetting the defaults		22
Auto-accessing the first channel	disabled	23
(De)activating the switching via front buttons	enabled	23
(De)activating the switching via hotkeys	enabled	24
(De)activating the switching via step keys	disabled	25
Changing the bitrate of the Service port	115.200	26
Changing the standard mode of the Service port	switch	27
Changing the scan code set of a PS/2 keyboard	scan code set 2	28
Selecting the PS/2 keyboard type	default	29
Enabling or resetting a PS/2 mouse		30

Basic operation of the setup mode as well as the setup menu is explained in the following pages.

All functions that can be configured for the KVM switch are described in detail from page 17 on.

Operating the setup mode

The setup mode can be enabled using the console keyboard. After enabling, the configuration of the KVM switch can be changed by using various step keys.

> **NOTE:** Only one setup function can be performed after the calling of the setup mode. If you want to perform more functions, please restart the setup mode.

How to enable the setup mode:

▪ Press the **Hotkey+Backspace** (Standard: **Ctrl+Backspace**) key combination to enable the setup mode.

> **NOTE:** The successful activation of the setup mode is displayed by the blinking **NUM**, ⇩ and **Scroll** control LEDs on the keyboard. Additionally, the yellow *User* LED will blink at the KVM switch.

> **IMPORTANT:** The key combination for enabling the setup mode needs to be pressed for *seven seconds*.
>
> After the first call of the setup mode, the hotkey delay can be disabled by pressing the setup key **8** (see page 21).

How to perform a setup function:

▪ After enabling the setup mode, press one of the setup keys described on the following pages.

How to end the setup mode without performing a function:

▪ Press **ESC** to end the setup mode.

Operating the setup menu

The setup menu provides a convenient alternative to view and edit the configuration of the KVM switch.

The switch can be operated through the setup menu which both easy operation and adjustment of several settings within a session.

The setup menu can be operated via any terminal emulator (e.g. *HyperTerminal* or *PuTTY*). Use the supplied service cable to connect the computer on which the terminal emulator is installed with the *Service* port of the device.

How to establish a connection within the terminal emulator:

1. Start any terminal emulator (e.g. *HyperTerminal* or *PuTTY*).

2. Establish a new connection in the terminal emulator and enter the following settings:

   - Bits per second: 115.200 | *or*: 9.600 (see page 26)
   - Data bits: 8
   - Parity: none
   - Stop bits: 1
   - Flow control: none

3. Use the provided data cable (*Update-Cable-2*) to connect the computer to the *Service* port at the front panel of the KVM switch.

How to call up the setup menu:

1. Connect the jack plug of the serial data cable to the *Service* port at the front panel of the device.

2. Use the terminal emulator to establish the connection to the KVM switch.

   As soon as the connection is successfully established, the setup menu will be displayed in the terminal emulator (see figure on page 16).

NOTE: If the KVM switch is started while the connection is being established, the *G&D Firmware Update Utility* will be displayed briefly before the setup menu opens.

This special utility is solely used by the support team.

The setup menu lists all KVM switch settings in tabular form:

```
┌─────────────────────────────────────────┐
│ Settings for DVIMUX8                     │
├─────────────────────────────────────────┤
│▶Show System Info                  ...◀   │
│ Hotkey:                           Ctrl   │
│ Double Hotkey:                      NO   │
│ Select Key:                       1..8   │
│ Hotkey Delay:                      Yes   │
│ Set System Defaults                ...   │
│ Select Ch.1 after Power up:         No   │
│ Select Channel via Front Button:   Yes   │
│ Select Channel via Hotkey:         Yes   │
│ Select Channel via Step Key:     9 | 0   │
│ Service RS232 Bitrate:          115200   │
│ Service RS232 Startup Mode: Setup Menu   │
│ PS/2 Scancode Set:                   2   │
│ PS/2 Keyboard Type:           Standard   │
│ USB Keymode:                       ...   │
├─────────────────────────────────────────┤
│ 'Space': Toggle          'S': Save       │
└─────────────────────────────────────────┘
```

The right column displays the active setting of the respective function.

Menu items with submenus containing more settings are indicated with three dots (...) in the right column.

> **NOTE:** The **USB-Keymode** settings of the different channels are only relevant for USB variants of the KVM switch and are therefore not described in this manual.

How to operate the setup menu:

1. Use the **Arrow↑** or **Arrow↓** keys to select the desired menu item.

   The active entry is marked with angular ▶ arrows ◀.

2. Depending on the type of menu item, following action(s) can be carried out:

   ▪ Menu items whose settings are displayed in the right column can be changed by pressing the **Space** key (repeatedly).

   ▪ A menu item that has a sub-dialogue available can be opened by pressing **Enter**.

> **NOTE:** The following pages provide detailed information on how to change a certain function.

Configuration settings

Using single or double hotkeys

If many application programs with key combinations are operated on one computer or if different G&D devices are used in one cascade, the number of available key combinations might be restricted.

In such a case, it is appropriate to apply double hotkeys.

How to enable single or double hotkeys:

Setup Mode	1. Press **Hotkey+Backspace** (default: **Ctrl+Backspace**) simultaneously to enable the setup mode. If the hotkey delay is active, press the key combination for *seven seconds*. 2. Press one of the setup keys listed below to enable the use of single or double hotkeys: **S** ‣ enables single hotkeys **A** ‣ disables double hotkeys

Setup Menu	1. Use the terminal emulator to establish a connection to the KVM switch. If the setup menu is not displayed, the *Switch* mode of the service port is enabled. Enter »#!« to switch to the setup menu. 2. Use the **Arrow↑** or **Arrow↓** keys to select the **Double Hotkey** entry. 3. Press the **Space** key (repeatedly) to enable the use of single or double hotkeys: **No** ‣ enables single hotkeys **Yes** ‣ disables double hotkeys 4. Press the **S** key to save your settings.

Depending on your settings, the active hotkey is converted into a double hotkey (or vice versa):

Single Hotkey	Double Hotkey
Ctrl	Ctrl+Shift
Alt	Alt+Shift
Alt Gr	Alt Gr+Ctrl
Win	Win+Ctrl
Shift	Shift+Win

Changing the single hotkey

Press the hotkey and the `Backspace` key simultaneously to start the setup mode of the KVM switch. Pressing the hotkey and the select key simultaneously enables the switching of channels.

If an application program or another G&D device uses the same hotkey within the cascade, the hotkey can be changed.

> **NOTE:** The single hotkey `Ctrl` is preset at default.

How to change the current hotkey:

<table>
<tr><td rowspan="1">Setup Mode</td><td>

1. Press the `Hotkey`+`Backspace` (default: `Ctrl`+`Backspace`) simultaneously to activate the setup mode.

   If the hotkey delay is active, press the key combination for *seven seconds*.

2. Press one of the setup keys listed below to enable a certain hotkey:

`Ctrl`	‣ enables *Ctrl* hotkey
`Alt`	‣ enables *Alt* hotkey
`Alt Gr`	‣ enables *Alt Gr* hotkey
`Win`	‣ enables *Win* hotkey
`Shift`	‣ enables *Shift* hotkey

</td></tr>
</table>

<table>
<tr><td rowspan="1">Setup Menu</td><td>

1. Use the terminal emulator to establish a connection to the KVM switch.

   If the setup menu is not displayed, the *Switch* mode of the service port is enabled. Enter »`#!`« to switch to the setup menu.

2. Use the `Arrow↑` or `Arrow↓` keys to select the `Hotkey` entry.

3. Press the `Space` key (repeatedly) to enable a certain hotkey:

`Ctrl`	‣ enables *Ctrl* hotkey
`Alt`	‣ enables *Alt* hotkey
`Alt Gr`	‣ enables *Alt Gr* hotkey
`Win`	‣ enables *Win* hotkey
`Shift`	‣ enables *Shift* hotkey

4. Press the `S` key to save your settings.

</td></tr>
</table>

Changing the double hotkey

If the use of double hotkeys is enabled (see page 17), press the double hotkey and the **Backspace** key simultaneously to start the setup mode of the KVM switch. Switching of channels takes place by pressing the double hotkey and a select key at the same time.

If an application program or another G&D device uses the same hotkey within the cascade, the hotkey can be changed.

How to change the current double hotkey:

Setup Mode	
	1. *Requirement:* enabling of the double hotkeys (see page 17).
	2. Press **Double hotkey+Backspace** (default: **Ctrl+Shift+Backspace**) simultaneously to enable the setup mode.
	If the hotkey delay is active, press the key combination for *seven seconds*.
	3. Press one of the setup keys listed below to activate the desired double hotkey:
	Ctrl ‣ enables *Ctrl+Shift* double hotkey
	Alt ‣ enables *Alt+Shift* double hotkey
	Alt Gr ‣ enables *Alt Gr+Ctrl* double hotkey
	Win ‣ enables *Win+Ctrl* double hotkey
	Shift ‣ enables *Shift+Win* double hotkey

Setup Menu	
	1. *Requirement:* enabling of the double hotkeys (see page 17).
	2. Use the terminal emulator to establish a connection to the KVM switch.
	If the setup menu is not displayed, the *Switch* mode of the service port is enabled. Enter »**#!**« to switch to the setup menu.
	3. Use the **Arrow↑** or **Arrow↓** keys to select the **Hotkey** entry.
	4. Press the **Space** key (repeatedly) to enable the desired double hotkey:
	Ctrl+Shift ‣ enables *Ctrl+Shift* double hotkey
	Alt+Shift ‣ enables *Alt+Shift* double hotkey
	Alt Gr+Ctrl ‣ enables *Alt Gr+Ctrl* double hotkey
	Win+Ctrl ‣ enables *Win+Ctrl* double hotkey
	Shift+Win ‣ enables *Shift+Win* double hotkey
	5. Press the **S** key to save your settings.

Changing the select keys

In the default settings, use the enabled select keys **1** to **8** to switch between the computers that are connected to the KVM switch.

For instance, you can switch to computer 2 by pressing **Hotkey+2** (default: **Ctrl+2**).

How to choose a different select key set:

<table>
<tr>
<td rowspan="6">Setup Mode</td>
<td>

1. Press **Hotkey+Backspace** (default: **Ctrl+Backspace**) simultaneously to enable the setup mode.

   If the hotkey delay is active, press the key combination for *seven seconds*.

2. Press one of the setup keys shown below to activate the desired set of select keys to switch between computers 1 to 8:

1	‣ enables select keys *1, 2, 3, 4, 5, 6, 7, 8*
NUM 1	‣ enables select keys *NUM 1, [...],NUM 7, NUM 8*
Z	‣ enables select keys *A, B, C, D, E, F, G, H*
F1	‣ enables select keys *F1, F2, F3, F4, F5, F6, F7, F8*

</td>
</tr>
</table>

<table>
<tr>
<td rowspan="6">Setup Menu</td>
<td>

1. Use the terminal emulator to establish a connection to the KVM switch.

   If the setup menu is not displayed, the *Switch* mode of the service port is enabled. Enter »**#!**« to switch to the setup menu.

2. Use the **Arrow↑** or **Arrow↓** keys to select the **Select Keys** entry.

3. Press the **Space** key (repeatedly) to enable the particular set of select keys to switch between computers 1 to 8:

1...8	‣ enables select keys *1, 2, 3, 4, 5, 6, 7, 8*
NUM 1...8	‣ enables select keys *NUM 1, [...],NUM 7, NUM 8*
A...H	‣ enables select keys *A, B, C, D, E, F, G, H*
F1...F8	‣ enables select keys *F1, F2, F3, F4, F5, F6, F7, F8*

4. Press the **S** key to save your settings.

</td>
</tr>
</table>

Enabling/Disabling the hotkey delay

Press the **Hotkey+Backspace** (default: **Ctrl+Backspace**) key combination for seven seconds in order to start the setup mode in the default settings.

You can disable the hotkey delay if you want to start the setup mode immediately after pressing the key combination.

How to enable/disable the hotkey delay:

Setup Mode	1. Press **Hotkey+Backspace** (default: **Ctrl+Backspace**) simultaneously to enable the setup mode. If the hotkey delay is active, press the key combination for *seven seconds*. 2. Press one of the setup keys listed below to enable/disable the hotkey delay: **7** ‣ enables hotkey delay **8** ‣ disables hotkey delay

Setup Menu	1. Use the terminal emulator to establish a connection to the KVM switch. If the setup menu is not displayed, the *Switch* mode of the service port is enabled. Enter »#!« to switch to the setup menu. 2. Use the **Arrow↑** or **Arrow↓** keys to select the **Hotkey Delay** entry. 3. Press the **Space** key (repeatedly) to enable/disable the hotkey delay: **Yes** ‣ enables hotkey delay **No** ‣ disables hotkey delay 4. Press the **S** key to save your settings.

Resetting the defaults

This function resets the default settings of the KVM switch.

> **IMPORTANT:** Performing this function reactivates the default settings of the KVM switch as shown on page 13.

How to reset the default settings:

Setup Mode	1. Press **Hotkey+Backspace** (default: **Ctrl+Backspace**) simultaneously to enable the setup mode. If the hotkey delay is active, press the key combination for *seven seconds*. 2. Press the setup key listed below to reset the default settings: **D** ‣ reset default settings

Setup Menu	1. Use the terminal emulator to establish a connection to the KVM switch. If the setup menu is not displayed, the *Switch* mode of the service port is enabled. Enter »**#!**« to switch to the setup menu. 2. Use the **Arrow↑** or **Arrow↓** keys to select the **Set System Defaults** entry. 3. Press **Enter** to reset the default settings. 4. Confirm the pop up security query with **Enter**. Pressing the **Q** key cancels the function.

Auto-accessing the first channel

Usually, after turning on the device, the recently active channel is accessed. The setting can be changed so that the computer connected to the first channel is automatically accessed when the device is turned on.

How to disable/enable the automatic access of the first channel after booting:

> **NOTE:** Use the setup menu to enable/disable the option to automatically access the first channel after booting the device.

Setup Menu

1. Use the terminal emulator to establish a connection to the KVM switch.

   If the setup menu is not displayed, the *Switch* mode of the service port is enabled. Enter »**#!**« to switch to the setup menu.

2. Use the **Arrow↑** or **Arrow↓** keys to select the **Select Ch.1 after Power up** entry.

3. Press the **Space** key (repeatedly) to choose between the following options:

   No   ‣ accesses the recently active channel after booting
   Yes   ‣ accesses channel 1 after booting

4. Press the **S** key to save your settings.

(De)activating the switching via front buttons

In the defaults, you can use the buttons on the front panel to switch between the computers.

If desired, you can deactivate the front buttons in the setup menu.

How to enable/disable the switching via front buttons:

> **HINWEIS:** Use the setup menu to (de)activate the switching via front buttons.

Setup Menu

1. Use the terminal emulator to establish a connection to the KVM switch and connect the serial data cable to the *Service* socket.

2. Use the **Arrow↑** or **Arrow↓** keys to select the **Select Channel via Front Button** entry.

3. Press the **Space** key (repeatedly) to choose one of the following options:

   Yes   ‣ disables the switching via front button
   No   ‣ enables the switching via front button

4. Press the **S** key to save your settings.

(De)activating the switching via hotkeys

In the defaults, you can use hotkeys to switch between the computers.

If desired, you can deactivate this kind of switching in the setup menu.

How to enable/disable the switching via hotkeys:

> **NOTE:** Use the setup menu to (de)activate the switching via hotkeys.

Setup Menu

1. Use the terminal emulator to establish a connection to the KVM switch and connect the serial data cable to the *Service* socket.

2. Use the **Arrow↑** or **Arrow↓** keys to select the **Select Channel via Hotkey** entry.

3. Press the **Space** key (repeatedly) to choose one of the following options:

   Yes ‣ disables the switching via hotkeys
   No   ‣ enables the switching via hotkeys

4. Press the **S** key to save your settings.

(De)activating the switching via step keys

Instead of using hotkeys to switch to one of the channels connected to the KVM switch, you can also use *step keys* to switch the channels in ascending or descending order.

NOTE: The use of step keys is disabled in the default settings.

After enabling the step keys, you can use the following key combinations to switch channels in ascending or descending order:

- **descending:** »back« step key (default: **Hotkey+9**)
- **ascending:** »forward« step key (default: **Hotkey+0**)

IMPORTANT: The active step keys are dependent on the selected select keys (see page 20). The following table lists the step keys depending on the active select keys.

Select keys	»Back« step key	»Forward« step key
1...8	9	0
NUM 1...8	NUM 9	NUM 0
A...D	I	K
F1...F8	F9	F10

How to disable/enable the use of step keys:

NOTE: Use the setup menu to enable or disable the usage of step keys.

Setup Menu

1. Use the terminal emulator to establish a connection to the KVM switch. Now plug the serial data cable into the service socket.

2. Use the **Arrow↑** or **Arrow↓** keys to select the **Select Channel via Step Key** entry.

3. Press the **Space** key (repeatedly) to choose between the following options:

   Off   ‣ step keys disabled
   [Step-Keys]   ‣ step keys enabled

4. Press the **S** key to save your settings.

Changing the bitrate of the Service port

The *Service* port of the KVM switch can be used both for operating the setup menu and for switching the channels with a serial device.

The *Service* port transfers a certain amount of data per time unit. The bitrate is given in *bit/s*.

> **IMPORTANT:** Transmitter and receiver of the data must use the same bitrate to ensure successful communication between the terminal emulator or a serial device and the KVM switch.

If the bitrate cannot be adjusted to the standard bitrate of the KVM switch (115.200 bit/s) in the terminal emulator or the serial device, the bitrate of the *Service* port can be modified.

How to select the bitrate of the Service port of the KVM switch:

Setup Menu

1. Use the terminal emulator to establish a connection to the KVM switch.

   If the setup menu is not displayed, the *Switch* mode of the service port is enabled. Enter »#!« to switch to the setup menu.

2. Use the **Arrow↑** or **Arrow↓** keys to select the **Service RS232 Bitrate** entry.

3. Press the **Space** key (repeatedly) to choose between the following bitrates:

   115200 ‣ serial data transmission with 115.200 bit/s
   9600   ‣ serial data transmission with 9.600 bit/s

4. Press the **S** key to save your settings.

Changing the standard mode of the Service port

The *Service* port of the KVM switch can be used both for operating the setup menu and for switching the channels with a serial device.

> **IMPORTANT:** Depending on the purpose of use, the KVM extender distinguishes between the modes listed below.

The **Setup Menu** mode is enabled in the default settings of the KVM switch. In this mode, the *Setup Menu* is immediately displayed in the terminal emulator after a session is established with the KVM switch.

If you primarily use the *Service* port for switching the active channel via a serial device, it is recommendable to enable the **Switch** mode.

> **ADVICE:** The activated mode when starting the KVM extender can be changed anytime during operation:
>
> - By entering the »**#!**« command, the KVM switch changes to the **Setup menu** mode.
> - By entering the »**!**« command, the KVM switch changes to the **Switch** mode

How to choose the mode which is to be enabled when booting the KVM extender:

Setup Menu	1. Use the terminal emulator to establish a connection to the KVM switch. If the setup menu is not displayed, the *Switch* mode of the service port is enabled. Enter »**#!**« to switch to the setup menu. 2. Use the **Arrow↑** or **Arrow↓** keys to select the **Service RS232 Startup Mode** entry. 3. Press the **Space** key (repeatedly) to choose between the following options: **Setup Menu** ‣ enables *Setup Menu* mode when starting KVM extender **Switch** ‣ enables *Switch* mode when starting KVM extender 4. Press the **S** key to save your settings.

Changing the scan code set of a PS/2 keyboard

If a key is pressed on the PS/2 keyboard, the keyboard processor sends a data packet that is called scan code. The two common scan code sets (sets 2 and 3) contain different scan codes.

The KVM switch interprets all inputs of the PS/2 keyboard with scan code set 2.

If the pipe ("|") cannot be entered or if the arrow keys of the keyboard do not work as expected, it is recommended to switch to scan code set 3.

How to change the setting of the scan code set:

<table>
<tr><td>Setup Mode</td><td>

1. Press **Hotkey+Backspace** (default: **Ctrl+Backspace**) to enable the setup mode.

   If the hotkey delay is active, press the key combination for *seven seconds*.

2. Press one of the setup keys listed below to activate a particular scan code set:

   2 ‣ enables scan code set 2 for PS/2 keyboard inputs
   3 ‣ enables scan code set 3 for PS/2 keyboard inputs

3. Restart the KVM switch. After the restart, the keyboard is initialised and the selected scan code set does apply.

</td></tr>
</table>

<table>
<tr><td>Setup Menu</td><td>

1. Use the terminal emulator to establish a connection to the KVM switch.

   If the setup menu is not displayed, the *Switch* mode of the service port is enabled. Enter »#!« to switch to the setup menu.

2. Use the **Arrow↑** or **Arrow↓** keys to select the **PS/2 Scancode Set** entry.

3. Press the **Space** key (repeatedly) to activate a particular scan code set:

   2 ‣ enables scan code set 2 for PS/2 keyboard inputs
   3 ‣ enables scan code set 3 for PS/2 keyboard inputs

4. Press the **S** key to save your settings.

5. Restart the KVM switch. After the restart, the keyboard is initialised and the selected scan code set does apply.

</td></tr>
</table>

Selecting the PS/2 keyboard type

In addition to standard PS/2 keyboards, the KVM switch also supports *PixelPower Clarity (blue)* and *SKIDATA1* keyboards.

Select the keyboard type if you want to use such a keyboard at the console.

NOTE: The PS/2 keyboard type can only be selected in the setup menu.

How to select the PS/2 keyboard type:

1. Use the terminal emulator to establish a connection to the KVM switch.

   If the setup menu is not displayed, the *Switch* mode of the service port is enabled. Enter »**#!**« to switch to the setup menu.

2. Use the **Arrow↑** or **Arrow↓** keys to select the **PS/2 Keyboard Type** entry.

3. Press the **Space** key (repeatedly) to choose the keyboard type:

   PixelPower Blue ‣ *PixelPower (blue)* keyboard
   SKIDATA1   ‣ *SKIDATA1* keyboard
   Standard   ‣ standard PS/2 keyboard

4. Press the **S** key to save your settings.

(Setup Menu)

Enabling or resetting a PS/2 mouse

Compared to USB mouses, PS/2 mouses do not support hot plug technology. You can therefore insert the PS/2 plug during operation, but it may be possible that the computer does not detect the input device.

To enable or reset the PS/2 mouse, the KVM switch can be used to send a special command to the computer.

Since the commands differ depending on the mouse type and the installed operating system, four different setup keys are provided.

NOTE: A PS/2 mouse can only be reset or enabled in the setup mode.

How to enable or reset a PS/2 mouse:

Setup Mode	1. Press **Hotkey+Backspace** (default: **Ctrl+Backspace**) to enable the setup mode.
	If the hotkey delay is active, press the key combination for *seven seconds*.
	2. Press one of the following setup keys to enable or reset the PS/2 mouse:
	M ‣ enables the PS/2 mouse of a Linux PC
	I ‣ enables the PS/2 wheel mouse of a Linux PC
	E ‣ enables the PS/2 wheel mouse with additional keys of a Linux PC
	R ‣ resets the PS/2 mouse interface of a Windows PC

Order numbers

DVIMUX2-PS/2	
A210 0091	DVIMUX2-PS/2
A210 0092	DVIMUX2-PS/2-RM

DVIMUX2-USB	
A210 0093	DVIMUX2-USB
A210 0094	DVIMUX2-USB-RM

DVIMUX4-PS/2	
A210 0053	DVIMUX4-PS/2
A210 0054	DVIMUX4-PS/2-RM
A210 0061	DVIMUX4-MC2-PS/2
A210 0062	DVIMUX4-MC2-PS/2-RM
A210 0065	DVIMUX4-MC3-PS/2
A210 0066	DVIMUX4-MC3-PS/2-RM
A210 0069	DVIMUX4-MC4-PS/2
A210 0070	DVIMUX4-MC4-PS/2-RM

DVIMUX4-USB	
A210 0055	DVIMUX4-USB
A210 0056	DVIMUX4-USB-RM
A210 0063	DVIMUX4-MC2-USB
A210 0064	DVIMUX4-MC2-USB-RM
A210 0067	DVIMUX4-MC3-USB
A210 0068	DVIMUX4-MC3-USB-RM
A210 0071	DVIMUX4-MC4-USB
A210 0072	DVIMUX4-MC4-USB-RM

DVIMUX8-PS/2	
A210 0082	DVIMUX8-PS/2
A210 0086	DVIMUX8-MC2-PS/2

DVIMUX8-USB	
A210 0084	DVIMUX8-USB
A210 0088	DVIMUX8-MC2-USB

CABLE SETS	
A610 0117	CPU-DVID-DL-PL-2
A610 0121	CPU-DVID-DL-PL-5
A610 0133	CPU-DVIA-PL-2
A610 0137	CPU-DVIA-PL-5
A610 0125	CPU-DVID-DL-U-2
A610 0129	CPU-DVID-DL-U-5
A610 0088	CPU-DVIA-U-2
A610 0089	CPU-DVIA-U-5
A610 0118	CPU-MC2-DVID-DL-PL-2
A610 0122	CPU-MC2-DVID-DL-PL-5
A610 0134	CPU-MC2-DVIA-PL-2
A610 0138	CPU-MC2-DVIA-PL-5
A610 0126	CPU-MC2-DVID-DL-U-2
A610 0130	CPU-MC2-DVID-DL-U-5
A610 0096	CPU-MC2-DVIA-U-2
A610 0097	CPU-MC2-DVIA-U-5
A610 0119	CPU-MC3-DVID-DL-PL-2
A610 0123	CPU-MC3-DVID-DL-PL-5
A610 0135	CPU-MC3-DVIA-PL-2
A610 0139	CPU-MC3-DVIA-PL-5
A610 0127	CPU-MC3-DVID-DL-U-2
A610 0131	CPU-MC3-DVID-DL-U-5
A610 0104	CPU-MC3-DVIA-U-2
A610 0105	CPU-MC3-DVIA-U-5
A610 0120	CPU-MC4-DVID-DL-PL-2
A610 0124	CPU-MC4-DVID-DL-PL-5
A610 0136	CPU-MC4-DVIA-PL-2
A610 0140	CPU-MC4-DVIA-PL-5
A610 0128	CPU-MC4-DVID-DL-U-2
A610 0132	CPU-MC4-DVID-DL-U-5
A610 0112	CPU-MC4-DVIA-U-2
A610 0113	CPU-MC4-DVIA-U-5

Technical data

DVIMUX8-PS/2		
No. of video sources	per computer/console:	1
Console	Connections per device:	1
	Connection:	directly at the device
Interfaces for console	Video:	1 × DVI-I jack
	PS/2 keyboard/mouse:	2 × PS/2 jack
	USB keyboard/mouse:	2 × USB-A jack
	Audio:	1 × 3,5 mm jack socket (Speaker)
Computer	Connections per device:	8
	Connection:	with optional cable sets at the device
Interfaces for computer	Video:	8 × DVI-I jack
	Keyboard:	8 × PS/2 jack
	Mouse:	8 × PS/2 jack
	Audio:	8 × 3,5 mm jack socket (Line Out)
Video	Signal type:	DVI-I (analog and digital video)
	Resolution (digital):	max. 1920 × 1200 @ 60 Hz
	Resolution (analog):	max. 1920 × 1440 @ 75 Hz
	Colour mode digital:	24 bit
	DDC:	Enhanced Display Data Channel
	Mixed mode:	supported (digital/analog)
Audio	Type:	analog
	Bandwidth:	22 kHz
Update	Mode:	local service jack socket
	Interface:	2,5 mm jack socket
Power supply	Type:	internal power pack
	Connection:	IEC socket (IEC-320 C14)
	Power input:	100mA@240VAC; 180mA@100VAC
Power input	Standby:	9,8W@240VAC; 9,2W@100VAC
	Operation:	11,3W@240VAC; 10,8W@100VAC
Casing	Material:	anodised aluminium
	Dimensions (W × H × D):	435 × 44 × 210 mm (desktop) 19" × 1U × 210 mm (rackmount)
	Weight:	approx. 2,2 kg
Operation environment	Temperature:	+5 to +40 °C
	Humidity:	< 80%, non-condensing
Conformity		CE, RoHs

DVIMUX8-MC2-PS/2		
No. of video sources	per computer/console:	2
Interfaces for console	Video:	2 × DVI-I jack
Interfaces for computer	Video:	8 × 2 DVI-I jacks
Power supply	Power input:	140mA@240VAC; 300mA@100VAC
Power input	Standby:	16,5W@240VAC; 16,3W@100VAC
	Operation:	18W@240VAC; 17,7W@100VAC
Casing	Dimensions (W × H × D):	435 × 66 × 210 mm (desktop) 19" × 1,5U × 210 mm (rackmount)
	Weight:	approx. 2,7 kg

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