## **USER GUIDE**

ACXC SERIES

# DKM COMPACT II SWITCHES

24/7 TECHNICAL SUPPORT AT 1.877.877.2269 OR VISIT BLACKBOX.COM

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#### **TABLE 1-1. SPECIFICATIONS**

SPECIFICATION	DESCRIPTION
Fiber Optic Switch Connectors	Console Ports: (16 - 160) LC duplex fiber optic ports (2) Network ports (2) Power supply (1) Grounding
Cat-X Switch Connectors	Console Ports: (16 - 160) Cat-X ports (2) Network ports (2) Power supply (1) Grounding
LED interface	1. To show PC port selection status 2. To show PC port connection status
Storage Temperature	-25 to 60 °C (-13 to 140 °F)
Operating Temperature	5 to 45 °C (41 to 113 °F)
Max Operating Humidity	Max. 80% non-condensing
Heat Dissipation	Corresponds to power consumption in Watt (W)
Power	Input: 100-240 VAC, 3A, 50/60Hz Output: 12V, 12.5A
Dimensions 1RU chasis	442 x 449 x 44 mm(17.4" x 17.7" x 1.7")
Dimensions 2RU chasis	442 x 449 x 90 mm (17.4" x 17.7" x 3.5")
Dimensions 4RU chasis	442 x 449 x 177 mm (17.4" x 17.7" x 7.0")
Weight 1 RU Chasis	7.7 kg (17 lb)
Weight 2 RU Chasis	11 kg (24.3 lb)
Weight 4 RU Chasis	19 kg (41.9 lb)
Certifications	FCC Class A, CE



#### 2.1 INTRODUCTION

The DKM Compact II KVM Matrix Switches come in sizes of 1, 2, and 4 RU with the intended use to establish connections from consoles (monitor, keyboard, mouse, and other peripheral devices) to various sources (computer, CPU). These switches support the capability to facilitate 1G and 3G technology within a single frame, they support modern applications with a combination of HD and 4K video resolutions in a very economical way. Their custom-design chassis allows for future field upgradability, so you can scale your system from 40 ports to 80 ports or even up to 160 ports to meet your business needs. CATx DKM Switches enable you to extend KVM signals up to 140 meters (459 feet) over standard CATx cable. If you're using CATx 3G, you can extend signals up to 100 meters (328 feet). Fiber DKM Switches enable you to extend KVM signals up to 400 meters (1312 feet) over standard multimode fiber or even 10 kilometers (6.2 miles) over single mode fiber. Hybrid DKM Switches enable you to extend KVM signals up to 10 kilometers (6.2 miles) over singlemode fiber or 400 meters (1312 feet) over multimode fiber. They also allow you to extend KVM signals up to 140 meters (459 feet) over standard CATx cable. If you're using CATx 3G, you can extend signals up to 100 meters (528 feet). If one of these standard switches don't meet your requirements, we can create custom versions specific to your application.

#### 2.2 FEATURES

- Choose catx, fiber, or mixed configurations for 1g or 3g
- Maximum configuration of up to 160 independent ports that can be defined and switched either as a console or cpu
- Compatible with upcoming 1g/3g, ipv6
- Modular design is easy to scale and maintain
- Compatible with all Black Box DKM kvm extenders
- · Has redundant power supply unit and network interface connections
- Versatility: with only 3 types of chassis and only 5 types of i/o modules, an almost endless number of customer specific Black Box matrix switches are possible

#### 2.3 WHAT'S INCLUDED

Your package should contain the following items. If anything is missing or damaged, contact Black Box Technical Support at 877-877-2269 or info@blackbox.com

- (1) 1,2, or 4 RU DKM Compact II Matrix Switch
- (2) IEC 320, C13 to 3 Prong, Power Cords w/ Locking mechanism (6.5 feet)
- (1) Pair of mounting ears
- (1) 4-Pack of rubber feet (1) DB9-F to RJ45 adapter





#### 2.4 INSTALLATION EXAMPLES

#### SingleHead Installation.

The following section shows common installation configurations of the DKM.



Figure 2-4.1 Installation Example (example Single-head installation)

#### **TABLE 2-4.1. FRONT PANEL SWITCH COMPONENTS**

NUMBER IN FIGURE 2-2	COMPONENT	DESCRIPTION
1	Source (computer, CPU)	Source machine examples: computer, CPU
2	CPU Units	CPU Units
3	Interconnected cable	Interconnected cable to connect devices to switch
4	DKM Compact II KVM Matrix Switch	DKM Compact II KVM Matrix Switch
5	CON Units	Console Units
6	Console (monitor, keyboard, mouse)	Console units examples: monitor, keyboard, mouse





#### Single-Head Installation with Multi-Screeen Control

When using Multi-Screen Control, switching control between up to eight connected sources (computers, CPUs) can be performed at one sink with only one connected mouse or keyboard. In a Single-Head installation, the sink can consist of up to eight monitors. In a matrix system, Multi-Screen Control can be set up at multiple sinks.



Figure 2-4.2 Installation Example (example Single-head installation)

#### TABLE 2-4.2. FRONT PANEL SWITCH COMPONENTS

NUMBER IN FIGURE 2-2	COMPONENT	DESCRIPTION
1	Source (computer, CPU)	Source machine examples: computer, CPU
2	CPU Units	CPU Units
3	Interconnected cable	Interconnected cable to connect devices to switch
4	DKM Compact II KVM Matrix Switch	DKM Compact II KVM Matrix Switch
5	CON Units	Console Units
6	Console (monitor, keyboard, mouse)	Console units examples: monitor, keyboard, mouse



When using Multi-Screen Control, switching control between up to eight connected sources (computers, CPUs) can be performed at one sink with only one connected mouse or keyboard. In a Dual-Head installation, the sink can consist of up to sixteen monitors when operating Dual-Head Sources. In a matrix system, Multi-Screen Control can be set up at multiple sinks.

#### **Dual-Head Installation with Multi-Screen Control**



Figure 2-4.3 Installation Example (example Single-head installation)

#### TABLE 2-4.3. FRONT PANEL SWITCH COMPONENTS

NUMBER IN FIGURE 2-2	COMPONENT	DESCRIPTION
1	Source (computer, CPU)	Source machine examples: computer, CPU
2	CPU Units	CPU Units
3	Interconnected cable	Interconnected cable to connect devices to switch
4	DKM Compact II KVM Matrix Switch	DKM Compact II KVM Matrix Switch
5	CON Units	Console Units
6	Console (monitor, keyboard, mouse)	Console units examples: monitor, keyboard, mouse

Keep in mind that any signal source can be switched to any number of monitors that will show the video signal at the same time. If required, audio can be switched as well.





#### 2.5 **PRODUCT RANGE - STANDARD SYSTEM**

#### 2.5.1 DKM COMPACT II KVM MATRIX FLEX FIBER 1G

PART NO.	DESCRIPTION	RACKUNIT
ACXC16F-1G	DKM COMPACT II SWITCH 16-PORT, FIBER 1G	1 RU
ACXC24F-1G	DKM COMPACT II SWITCH 24-PORT, FIBER 1G	1 RU
ACXC32F-1G	DKM COMPACT II SWITCH 32-PORT, FIBER 1G	1 RU
ACXC40F-1G	DKM COMPACT II SWITCH 40-PORT, FIBER 1G	1 RU
ACXC48F-1G	DKM COMPACT II SWITCH 48-PORT, FIBER 1G	2 RU
ACXC64F-1G	DKM COMPACT II SWITCH 64-PORT, FIBER 1G	2 RU
ACXC80F-1G	DKM COMPACT II SWITCH 80-PORT, FIBER 1G	2 RU
ACXC120F-1G	DKM COMPACT II SWITCH 120-PORT, FIBER 1G	4 RU
ACXC128F-1G	DKM COMPACT II SWITCH 128-PORT, FIBER 1G	4 RU
ACXC144F-1G	DKM COMPACT II SWITCH 144-PORT, FIBER 1G	4 RU
ACXC160F-1G	DKM COMPACT II SWITCH 160-PORT, FIBER 1G	4 RU





#### 2.5.2 DKM COMPACT II KVM MATRIX FLEX FIBER 3G

PART NO.	DESCRIPTION	RACK UNIT
ACXC16F-3G	DKM COMPACT II SWITCH 16-PORT, FIBER 3G	1 RU
ACXC24F-3G	DKM COMPACT II SWITCH 24-PORT, FIBER 3G	1 RU
ACXC32F-3G	DKM COMPACT II SWITCH 32-PORT, FIBER 3G	1 RU
ACXC40F-3G	DKM COMPACT II SWITCH 40-PORT, FIBER 3G	1 RU
ACXC48F-3G	DKM COMPACT II SWITCH 48-PORT, FIBER 3G	2 RU
ACXC64F-3G	DKM COMPACT II SWITCH 64-PORT, FIBER 3G	2 RU
ACXC80F-3G	DKM COMPACT II SWITCH 80-PORT, FIBER 3G	2 RU
ACXC120F-3G	DKM COMPACT II SWITCH 120-PORT, FIBER 3G	4 RU
ACXC128F-3G	DKM COMPACT II SWITCH 128-PORT, FIBER 3G	4 RU
ACXC144F-3G	DKM COMPACT II SWITCH 144-PORT, FIBER 3G	4 RU
ACXC160F-3G	DKM COMPACT II SWITCH 160-PORT, FIBER 3G	4 RU

#### 2.5.3 DKM COMPACT II KVM MATRIX FLEX HYBRID 1G

PART NO.	DESCRIPTION	RACK UNIT
ACXC24FH16-1G	DKM COMPACT II SWITCH 40-PORT, HYBRID 1G	1 RU
ACXC24FH40-1G	DKM COMPACT II SWITCH 64-PORT, HYBRID 1G	2 RU
ACXC40FH24-1G	DKM COMPACT II SWITCH 64-PORT, HYBRID 1G	2 RU
ACXC40FH40-1G	DKM COMPACT II SWITCH 80-PORT, HYBRID 1G	2 RU
ACXC80FH40-1G	DKM COMPACT II SWITCH 120-PORT, HYBRID 1G	2 RU
ACXC80FH80-1G	DKM COMPACT II SWITCH 160-PORT, HYBRID 1G	4 RU
ACXC120FH40-1G	DKM COMPACT II SWITCH 160-PORT, HYBRID 1G	4 RU

#### 2.5.4 DKM COMPACT II KVM MATRIX FLEX HYBRID 3G

PART NO.	DESCRIPTION	RACKUNIT
ACXC24FH16-3G	KVM Matrix 40-Port, Hybrid 3G	1 RU
ACXC24FH40-3G	KVM Matrix 64-Port, Hybrid 3G	2 RU
ACXC40FH24-3G	KVM Matrix 64-Port, Hybrid 3G	2 RU
ACXC40FH40-3G	KVM Matrix 80-Port, Hybrid 3G	2 RU
ACXC80FH40-3G	KVM Matrix 120-Port, Hybrid 3G	2 RU
ACXC80FH80-3G	KVM Matrix 160-Port, Hybrid 3G	4 RU
ACXC120FH40-3G	KVM Matrix 160-Port, Hybrid 3G	4 RU

#### 2.5.5 DKM COMPACT II KVM MATRIX FLEX GRID CAT X 1G AND FIBER 1G

PART NO.	DESCRIPTION	RACKUNIT
ACXC40-1G-2RU	DKM COMPACT II SWITCH 40-PORT, CAT X 1G, CUSTOM DESIGN, 2 RU	2 RU
ACXC40-1G-4RU	DKM COMPACT II SWITCH 40-PORT, CAT X 1G, CUSTOM DESIGN, 4 RU	4 RU
ACXC40F-1G-2RU	DKM COMPACT II SWITCH 40-PORT, FIBER 1G, CUSTOM DESIGN, 2 RU	2 RU
ACXC40F-1G-4RU	DKM COMPACT II SWITCH 40-PORT, FIBER 1G, CUSTOM DESIGN, 4 RU	4 RU
ACXC24F16-1G-2RU	DKM COMPACT II SWITCH 40-PORT, HYBRID 1G, CUSTOM DESIGN 2 RU	2 RU
ACXC24F16-1G-4RU	DKM COMPACT II SWITCH 40-PORT, HYBRID 1G, CUSTOM DESIGN 4 RU	4 RU





#### 2.5.6 DKM COMPACT II KVM MATRIX FLEX HYBRID 1G

PART NO.	DESCRIPTION	RACK UNIT
ACXC24FH16-1G	DKM COMPACT II SWITCH 40-PORT, HYBRID 1G	1 RU
ACXC24FH40-1G	DKM COMPACT II SWITCH 64-PORT, HYBRID 1G	2 RU
ACXC40FH24-1G	DKM COMPACT II SWITCH 64-PORT, HYBRID 1G	2 RU
ACXC40FH40-1G	DKM COMPACT II SWITCH 80-PORT, HYBRID 1G	2 RU
ACXC80FH40-1G	DKM COMPACT II SWITCH 120-PORT, HYBRID 1G	2 RU
ACXC80FH80-1G	DKM COMPACT II SWITCH 160-PORT, HYBRID 1G	4 RU
ACXC120FH40-1G	DKM COMPACT II SWITCH 160-PORT, HYBRID 1G	4 RU

#### 2.5.7 DKM COMPACT II KVM MATRIX FLEX HYBRID 3G

PART NO.	DESCRIPTION	RACK UNIT
ACXC24FH16-3G	KVM Matrix 40-Port, Hybrid 3G	1 RU
ACXC24FH40-3G	KVM Matrix 64-Port, Hybrid 3G	2 RU
ACXC40FH24-3G	KVM Matrix 64-Port, Hybrid 3G	2 RU
ACXC40FH40-3G	KVM Matrix 80-Port, Hybrid 3G	2 RU
ACXC80FH40-3G	KVM Matrix 120-Port, Hybrid 3G	2 RU
ACXC80FH80-3G	KVM Matrix 160-Port, Hybrid 3G	4 RU
ACXC120FH40-3G	KVM Matrix 160-Port, Hybrid 3G	4 RU

#### 2.5.8 DKM COMPACT II KVM MATRIX FLEX HYBRID 3G

PART NO.	DESCRIPTION	RACK UNIT
ACXC40-1G-2RU	DKM COMPACT II SWITCH 40-PORT, CAT X 1G, CUSTOM DESIGN, 2 RU	
ACXC40-1G-4RU	DKM COMPACT II SWITCH 40-PORT, CAT X 1G, CUSTOM DESIGN, 4 RU	
ACXC40F-1G-2RU	DKM COMPACT II SWITCH 40-PORT, FIBER 1G, CUSTOM DESIGN, 2 RU	
ACXC40F-1G-4RU	DKM COMPACT II SWITCH 40-PORT, FIBER 1G, CUSTOM DESIGN, 4 RU	
ACXC24F16-1G-2RU	DKM COMPACT II SWITCH 40-PORT, HYBRID 1G, CUSTOM DESIGN 2 RU	
ACXC24F16-1G-4RU	DKM COMPACT II SWITCH 40-PORT, HYBRID 1G, CUSTOM DESIGN 4 RU	

#### 2.5.9 DKM COMPACT II KVM MATRIX FLEX FIBER 1G

PART NO.	DESCRIPTION	RACK UNIT
ACXC16F-1G	KVM Matrix 16-Port, Fiber 1G	1 RU
ACXC24F-1G	KVM Matrix 16-Port, Fiber 1G	1 RU
ACXC32F-1G	KVM Matrix 16-Port, Fiber 1G	1 RU
ACXC40F-1G	KVM Matrix 16-Port, Fiber 1G	1 RU
ACXC48F-1G	KVM Matrix 16-Port, Fiber 1G	2 RU
ACXC64F-1G	KVM Matrix 16-Port, Fiber 1G	2 RU
ACXC80F-1G	KVM Matrix 16-Port, Fiber 1G	2 RU
ACXC120F-1G	KVM Matrix 16-Port, Fiber 1G	4 RU
ACXC128F-1G	KVM Matrix 16-Port, Fiber 1G	4 RU
ACXC144F-1G	KVM Matrix 16-Port, Fiber 1G	4 RU
ACXC160F-1G	KVM Matrix 16-Port, Fiber 1G	4 RU





#### 2.5.10 DKM COMPACT II KVM MATRIX FLEX FIBER 3G

PART NO.	DESCRIPTION	RACK UNIT
ACXC16F-3G	KVM Matrix 16-Port, Cat X 1G	1 RU
ACXC24F-3G	KVM Matrix 24-Port, Cat X 1G	1 RU
ACXC32F-3G	KVM Matrix 32-Port, Cat X 1G	1 RU
ACXC40F-3G	KVM Matrix 40-Port, Cat X 1G	1 RU
ACXC48F-3G	KVM Matrix 48-Port, Cat X 1G	2 RU
ACXC64F-3G	KVM Matrix 64-Port, Cat X 1G	2 RU
ACXC80F-3G	KVM Matrix 80-Port, Cat X 1G	2 RU
ACXC120F-3G	KVM Matrix 120-Port, Cat X 1G	4 RU
ACXC128F-3G	KVM Matrix 128-Port, Cat X 1G	4 RU
ACXC144F-3G	KVM Matrix 144-Port, Cat X 1G	4 RU
ACXC160F-3G	KVM Matrix 160-Port, Cat X 1G	4 RU



#### 2.6 DEVICE VIEWS

#### 2.6.1 OVERVIEW 16-PORT DKM COMPACT MATRIX SWITCH

Figure 2-6.1 shows the front panel of the 1RU 16-Port DKM Compact Matrix Switch supporting fiber optic. Figure 2-6.1.1 shows

the front panel of the 1RU 16-Port DKM Compact Matrix Switch supporting Cat-X connection. Figure 2-6.1.2 shows the back panel. Tables 2-6.1 and 2-6.1.1 describe the components.



FIGURE 2-6.1. FRONT PANEL - ACXC16-1G & ACXC16-3G



FIGURE 2-6.1.1. FRONT PANEL - ACXC16F-1G & ACXC16F-3G

#### **TABLE 2-6.1. FRONT PANEL SWITCH COMPONENTS**

NUMBER IN FIGURE 2-2	COMPONENT	DESCRIPTION
1	(1) I/O-Ports 1 to 8	I/O-Ports for connecting devices
2	(1) I/O-Ports 9 to 16	I/O-Ports for connecting devices
3	(1) Network port 1 (RJ45)	Network port
4	(1) Network port 2 (RJ45)	Network port
5	(1) Reset button	Switch Reset







#### FIGURE 2-6.1.2. BACK PANEL 16-PORT

#### **TABLE 2-6.1.1. BACK PANEL SWITCH COMPONENTS**

NUMBER IN FIGURE 2-2	COMPONENT	DESCRIPTION
1	Power supply (standard)	Power supply
2	Power supply (redundancy)	Power supply
3	Grounding	Power grounding

#### 2.6.2 OVERVIEW 24-PORT DKM COMPACT MATRIX SWITCH

Figure 2-6.2 shows the front panel of the 1RU 24-Port DKM Compact Matrix Switch supporting fiber optic. Figure 2-6.2.1 shows

the front panel of the 1RU 24-Port DKM Compact Matrix Switch supporting Cat-X connection. Figure 2-6.2.2 shows the back panel. Tables 2-6.2 and 2-6.2.1 describe the components.



#### **TABLE 2-6.2. FRONT PANEL SWITCH COMPONENTS**

NUMBER IN FIGURE 2-2	COMPONENT	DESCRIPTION
1	(1) I/O-Ports 1 to 8	I/O-Ports for connecting devices
2	(1) I/O-Ports 9 to 16	I/O-Ports for connecting devices
3	(1) I/O-Ports 17 to 24	I/O-Ports for connecting devices
4	(1) Network port 1 (RJ45)	Network port
5	(1) Network port 2 (RJ45)	Network port
6	(1) Reset button	Switch Reset



FIGURE 2-6.2. FRONT PANEL - ACXC24-1G & ACXC24-3G



FIGURE 2-6.2.1. FRONT PANEL - ACXC24F-1G & ACXC24F-3G







FIGURE 2-6.2.2 BACK PANEL 24-PORT

#### TABLE 2-6.2.1. BACK PANEL SWITCH COMPONENTS

NUMBER IN FIGURE 2-2	COMPONENT	DESCRIPTION
1	Power supply (standard)	Power supply
2	Power supply (redundancy)	Power supply
3	Grounding	Power grounding



#### 2.6.3 OVERVIEW 32-PORT DKM COMPACT MATRIX SWITCH

Figure 2-6.3 shows the front panel of the 1RU 32-Port DKM Compact Matrix Switch supporting fiber optic. Figure 2-6.3.1 shows the front panel of the 1RU 32-Port DKM Compact Matrix Switch supporting Cat-X connection. Figure 2-6.3.2 shows the back panel. Tables 2-6.3 and 2-6.3.1 describe the components.



FIGURE 2-6.3. FRONT PANEL - ACXC32-1G & ACXC32-3G



FIGURE 2-6.3.1. FRONT PANEL - ACXC32F-1G & ACXC32F-3G

#### **TABLE 2-6.3. FRONT PANEL SWITCH COMPONENTS**

NUMBER IN FIGURE 2-2	COMPONENT	DESCRIPTION
1	(1) I/O-Ports 1 to 8	I/O-Ports for connecting devices
2	(1) I/O-Ports 9 to 16	I/O-Ports for connecting devices
3	(1) I/O-Ports 17 to 24	I/O-Ports for connecting devices
4	(1) Network port 1 (RJ45)	Network port
5	(1) Network port (RJ45)	Network port
6	(1) Reset button	Switch Reset
7	(1) I/O-Ports 25 to 32	I/O-Ports for connecting devices





FIGURE 2-6.3.2 BACK PANEL 32-PORT

#### **TABLE 2-6.3.1. FRONT PANEL SWITCH COMPONENTS**

NUMBER IN FIGURE 2-2	COMPONENT	DESCRIPTION
1	Power supply (standard)	Power supply
2	Power supply (redundancy)	Power supply
3	Grounding	Power grounding



#### 2.6.4 OVERVIEW 32-PORT DKM COMPACT MATRIX SWITCH WITH GRID

Figure 2-6.4 shows the front panel of the 1RU 32-Port DKM Compact Matrix Switch supporting fiber optic with grid. Figure 2-6.4.1 shows the front panel of the 1RU 32-Port DKM Compact Matrix Switch supporting Cat-X connection with grid. Figure 2-6.4.2 shows the back panel. Tables 2-6.4 and 2-6.4.1 describe the components.



FIGURE 2-6.4. FRONT PANEL - ACXC32-1G-GRID



FIGURE 2-6.4.1. FRONT PANEL - ACXC32F-1G-GRID

#### **TABLE 2-6.4. FRONT PANEL SWITCH COMPONENTS**

COMPONENT	DESCRIPTION
(1) I/O-Ports 1 to 8	I/O-Ports for connecting devices
(1) I/O-Ports 9 to 16	I/O-Ports for connecting devices
(1) Grid port 1	Grid port 1
(1) Network port 1 (RJ45)	Network port
(1) Network port 2 (RJ45)	Network port
(1) Reset button	Switch Reset
(1) I/O-Ports 25 to 32	I/O-Ports for connecting devices
(1) I/O-Ports 33 to 40	I/O-Ports for connecting devices
	COMPONENT   (1) I/O-Ports 1 to 8   (1) I/O-Ports 9 to 16   (1) Grid port 1   (1) Network port 1 (RJ45)   (1) Network port 2 (RJ45)   (1) Reset button   (1) I/O-Ports 25 to 32   (1) I/O-Ports 33 to 40







#### FIGURE 2-6.4.2 BACK PANEL 32-PORT WITH GRID

#### **TABLE 2-6.4.1. FRONT PANEL SWITCH COMPONENTS**

NUMBER IN FIGURE 2-2	COMPONENT	DESCRIPTION
1	Power supply (standard)	Power supply
2	Power supply (redundancy)	Power supply
3	Grounding	Power grounding



#### 2.6.5 OVERVIEW 40-PORT DKM COMPACT MATRIX SWITCH

Figure 2-5 shows the front panel of the 1RU 40-Port DKM Compact Matrix Switch supporting fiber optic. Figure 2-6.5.1 shows the front panel of the 1RU 40-Port DKM Compact Matrix Switch supporting Cat-X connection. Figure 2-6.5.2 shows the front panel of the 1RU 40-Port DKM Compact Matrix Switch supporting mixed fiber optic and Cat-X connection ports. Figure 2-6.5.3 shows the back panel. Tables 2-6.5 and 2-6.5.1 describe the components.



FIGURE 2-6.5. FRONT PANEL - ACXC40-1G & ACXC40-3G



FIGURE 2-6.5.1. FRONT PANEL - ACXC40F-1G & ACXC40F-3G

#### **TABLE 2-6.5. FRONT PANEL SWITCH COMPONENTS**

NUMBER IN FIGURE 2-2	COMPONENT	DESCRIPTION
1	(1) I/O-Ports 1 to 8	I/O-Ports for connecting devices
2	(1) I/O-Ports 9 to 16	I/O-Ports for connecting devices
3	(1) Grid port 17 to 24	Grid port 1
4	(1) Network port 1 (RJ45)	Network port
5	(1) Network port 2 (RJ45)	Network port
б	(1) Reset button	Switch Reset
7	(1) I/O-Ports 25 to 32	I/O-Ports for connecting devices
8	(1) I/O-Ports 33 to 40	I/O-Ports for connecting devices







#### FIGURE 2-6.5.2. FRONT PANEL - ACXC24F16-1G



FIGURE 2-6.5.3 BACK PANEL 40-PORT

#### TABLE 2-6.5.1. FRONT PANEL SWITCH COMPONENTS

NUMBER IN FIGURE 2-2	COMPONENT	DESCRIPTION
1	Power supply (standard)	Power supply
2	Power supply (redundancy)	Power supply
3	Grounding	Power grounding





#### 2.6.6 OVERVIEW 48-PORT DKM COMPACT MATRIX SWITCH

Figure 2-6.6 shows the front panel of the 2RU 48-Port DKM Compact Matrix Switch supporting fiber optic. Figure 2-6.6.1 shows the front panel of the 2RU 48-Port DKM Compact Matrix Switch supporting Cat-X connection. Figure 2-6.6.2 shows the back panel. Tables 2-6.6 and 2-6.6.1 describe the components.



FIGURE 2-6.6. FRONT PANEL - ACXC48-1G & ACXC48-3G



FIGURE 2-6.6.1. FRONT PANEL - ACXC48F-1G & ACXC48F-3G

#### **TABLE 2-6.6. FRONT PANEL SWITCH COMPONENTS**

NUMBER IN FIGURE 2-2	COMPONENT	DESCRIPTION
1	(1) I/O-Ports 1 to 8	I/O-Ports for connecting devices
2	(1) I/O-Ports 41 to 48	I/O-Ports for connecting devices
3	(1) Grid port 9 to 16	I/O-Ports for connecting devices
4	(1) Grid port 49 to 56	I/O-Ports for connecting devices
5	(1) Grid port 17 to 24	I/O-Ports for connecting devices
б	(1) Grid port 57 to 64	I/O-Ports for connecting devices
7	(1) Network port 1 (RJ45)	Network port
8	(1) Network port 2 (RJ45)	Network port
9	(1) Reset button	Switch Reset





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FIGURE 2-6.6.2 BACK PANEL 48-PORT

#### **TABLE 2-6.6.1. FRONT PANEL SWITCH COMPONENTS**

NUMBER IN FIGURE 2-2	COMPONENT	DESCRIPTION
1	Power supply (standard)	Power supply
2	Power supply (redundancy)	Power supply
3	Grounding	Power grounding



#### 2.6.7 OVERVIEW 64-PORT DKM COMPACT MATRIX SWITCH

Figure 2-6.7 shows the front panel of the 2RU 64-Port DKM Compact Matrix Switch supporting fiber optic ports. Figure 2-6.7.1 shows the front panel of the 2RU 64-Port DKM Compact Matrix Switch supporting Cat-X connection ports. Figure 2-6.7.2 and 2-6.7.3 show the front panel of the 2RU 64-Port DKM Compact Matrix Switch supporting mixed fiber optic and Cat-X connection ports. Figure 2-7.4 shows the back panel. Tables 2-6.7 and 2-6.7.1 describe the components.



FIGURE 2-6.7 FRONT PANEL - ACXC64-1G & ACXC64-3G



FIGURE 2-6.7.1. FRONT PANEL - ACXC64F-1G & ACXC64F-3G









FIGURE 2-6.7.2. FRONT PANEL - ACXC24F40-1G & ACXC24F40-3G



FIGURE 2-6.7.3. FRONT PANEL - CXC40F24-1G & CXC40F24-3G



#### **TABLE 2-6.7. FRONT PANEL SWITCH COMPONENTS**

NUMBER IN FIGURE 2-2	COMPONENT	DESCRIPTION
1	(1) I/O-Ports 1 to 8	I/O-Ports for connecting devices
2	(1) I/O-Ports 41 to 48	I/O-Ports for connecting devices
3	(1) I/O-Ports 9 to 16	I/O-Ports for connecting devices
4	(1) I/O-Ports 49 to 56	I/O-Ports for connecting devices
5	(1) I/O-Ports 17 to 24	I/O-Ports for connecting devices
б	(1) I/O-Ports 57 to 64	I/O-Ports for connecting devices
7	(1) Network port 1 (RJ45)	Network port
8	(1) Network port 1 (RJ45)	Network port
9	(1) Reset button	Switch Reset
10	(1) I/O-Ports 25 to 32	I/O-Ports for connecting devices
11	(1) I/O-Ports 33 to 40	I/O-Ports for connecting devices



#### FIGURE 2-6.7.4 BACK PANEL 64-PORT

#### **TABLE 2-6.7.1. FRONT PANEL SWITCH COMPONENTS**

NUMBER IN FIGURE 2-2	COMPONENT	DESCRIPTION
1	Power supply (standard)	Power supply
2	Power supply (redundancy)	Power supply
3	Grounding	Power grounding





#### 2.6.8 OVERVIEW 80-PORT DKM COMPACT MATRIX SWITCH

Figure 2-8 shows the front panel of the 2RU 80-Port DKM Compact Matrix Switch supporting fiber optic ports. Figure 2-8.1 shows the front panel of the 2RU 80-Port DKM Compact Matrix Switch supporting Cat-X connection ports. Figure 2-8.2 shows the front panel of the 2RU 80-Port DKM Compact Matrix Switch supporting mixed fiber optic and Cat-X connection ports. Figure 2-8.3 shows the back panel. Tables 2-8 and 2-8.1 describe the components.



FIGURE 2-6.8. FRONT PANEL -ACXC80-1G & ACXC80-3G



FIGURE 2-6.8.1. FRONT PANEL -ACXCF80-1G & ACXCF80-3G



FIGURE 2-6.8.2. FRONT PANEL -ACXC40F40-1G & ACXC40F40-3G

NUMBER IN FIGURE 2-2	COMPONENT	DESCRIPTION
1	(1) I/O-Ports 1 to 8	I/O-Ports for connecting devices
2	(1) I/O-Ports 41 to 48	I/O-Ports for connecting devices
3	(1) I/O-Ports 9 to 16	I/O-Ports for connecting devices
4	(1) I/O-Ports 49 to 56	I/O-Ports for connecting devices
5	(1) I/O-Ports 17 to 24	I/O-Ports for connecting devices
6	(1) I/O-Ports 57 to 64	I/O-Ports for connecting devices
7	(1) Network port 1 (RJ45)	Network port
8	(1) Network port 2 (RJ45)	Network port
9	(1) Reset button	Switch Reset
10	(1) I/O-Ports 25 to 32	I/O-Ports for connecting devices
11	(1) I/O-Ports 65 to 72	I/O-Ports for connecting devices
12	(1) I/O-Ports 33 to 40	I/O-Ports for connecting devices
13	(1) I/O-Ports 73 to 80	I/O-Ports for connecting devices

#### **TABLE 2-6.8. FRONT PANEL SWITCH COMPONENTS**

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FIGURE 2-6.8.3 BACK PANEL 80-PORT

#### **TABLE 2-6.8.1 FRONT PANEL SWITCH COMPONENTS**

NUMBER IN FIGURE 2-2	COMPONENT	DESCRIPTION
1	Power supply (standard)	Power supply
2	Power supply (redundancy)	Power supply
3	Grounding	Power grounding

#### 2.6.9 OVERVIEW 120-PORT DKM COMPACT MATRIX SWITCH

Figure 2-6.9 shows the front panel of the 2RU 120-Port DKM Compact Matrix Switch supporting fiber optic ports. Figure 2-9.1 shows the front panel of the 2RU 64-Port DKM Compact Matrix Switch supporting Cat-X connection ports. Figure 2-9.2 show the front panel of the 2RU 64-Port DKM Compact Matrix Switch supporting mixed fiber optic and Cat-X connection ports. Figure 2-9.3 shows the back panel. Tables 2-9 and 2-9.1 describe the components.



FIGURE 2-6..9.1. FRONT PANEL -ACXC40F40-1G & ACXC40F40-3G



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FIGURE 2-9.2. FRONT PANEL -ACXC40F40-1G & ACXC40F40-3G

#### **TABLE 2-6.9. FRONT PANEL SWITCH COMPONENTS**

NUMBER IN FIGURE 2-2	COMPONENT	DESCRIPTION
1	(1) I/O-Ports 1 to 8	I/O-Ports for connecting devices
2	(1) I/O-Ports 41 to 48	I/O-Ports for connecting devices
3	(1) I/O-Ports 9 to 16	I/O-Ports for connecting devices
4	(1) I/O-Ports 49 to 56	I/O-Ports for connecting devices
5	(1) I/O-Ports 17 to 24	I/O-Ports for connecting devices
б	(1) I/O-Ports 57 to 64	I/O-Ports for connecting devices
7	(1) Network port 1 (RJ45)	Network port
8	(1) Network port 2 (RJ45)	Network port
9	(1) Reset button	Switch Reset
10	(1) I/O-Ports 25 to 32	I/O-Ports for connecting devices
11	(1) I/O-Ports 65 to 72	I/O-Ports for connecting devices
12	(1) I/O-Ports 33 to 40	I/O-Ports for connecting devices
13	(1) I/O-Ports 73 to 80	I/O-Ports for connecting devices
14	(1) I/O-Ports 81 to 88	I/O-Ports for connecting devices
15	(1) I/O-Ports 89 to 96	I/O-Ports for connecting devices
16	(1) I/O-Ports 97 to 104	I/O-Ports for connecting devices
17	(1) I/O-Ports 105 to 112	I/O-Ports for connecting devices
18	(1) I/O-Ports 113 to 120	I/O-Ports for connecting devices





#### FIGURE 2-6.9.3 BACK PANEL 120-PORT

#### **TABLE 2-6.9.1 FRONT PANEL SWITCH COMPONENTS**

NUMBER IN FIGURE 2-2	COMPONENT	DESCRIPTION
1	Power supply (standard)	Power supply
2	Power supply (redundancy)	Power supply
3	Grounding	Power grounding





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## 2.6.10 OVERVIEW 128-PORT DKM COMPACT MATRIX SWITCH

Figure 2-10 shows the front panel of the 2RU 128-Port DKM Compact Matrix Switch supporting fiber optic ports. Figure 2-10.1 shows the front panel of the 2RU 64-Port DKM Compact Matrix Switch supporting Cat-X connection ports. Figure 2-10.2 shows the back panel. Tables 2-10 and 2-10.1 describe the components.



FIGURE 2-6.10 FRONT PANEL - ACXC128-1G & ACXC128-3G







FIGURE 2-6.10.1 FRONT PANEL - ACXC128-1G & ACXC128-3G





### **TABLE 2-6.10. FRONT PANEL SWITCH COMPONENTS**

NUMBER IN FIGURE 2-2 COMPONENT		DESCRIPTION
1	(1) I/O-Ports 1 to 8	I/O-Ports for connecting devices
2	(1) I/O-Ports 41 to 48	I/O-Ports for connecting devices
3	(1) I/O-Ports 9 to 16	I/O-Ports for connecting devices
4	(1) I/O-Ports 49 to 56	I/O-Ports for connecting devices
5	(1) I/O-Ports 17 to 24	I/O-Ports for connecting devices
б	(1) I/O-Ports 57 to 64	I/O-Ports for connecting devices
7	(1) Network port 1 (RJ45)	Network port
8	(1) Network port 2 (RJ45)	Network port
9	(1) Reset button	Switch Reset
10	(1) I/O-Ports 25 to 32	I/O-Ports for connecting devices
11	(1) I/O-Ports 65 to 72	I/O-Ports for connecting devices
12	(1) I/O-Ports 65 to 72	I/O-Ports for connecting devices
13	(1) I/O-Ports 65 to 72	I/O-Ports for connecting devices
14	(1) I/O-Ports 81 to 88	I/O-Ports for connecting devices
15	(1) I/O-Ports 121 to 128	I/O-Ports for connecting devices
16	(1) I/O-Ports 89 to 96	I/O-Ports for connecting devices
17	(1) I/O-Ports 129 to 136	I/O-Ports for connecting devices
18	(1) I/O-Ports 97 to 104	I/O-Ports for connecting devices
19	(1) I/O-Ports 65 to 72	I/O-Ports for connecting devices



#### FIGURE 2-6.10.2 BACK PANEL 128-PORT

## TABLE 2-6.10.1. FRONT PANEL SWITCH COMPONENTS

NUMBER IN FIGURE 2-2	COMPONENT	DESCRIPTION
1	Power supply (standard)	Power supply
2	Power supply (redundancy)	Power supply
3	Grounding	Power grounding







## 2.6.11 OVERVIEW 144-PORT DKM COMPACT MATRIX SWITCH

Figure 2-6.11 shows the front panel of the 4RU 144-Port DKM Compact Matrix Switch supporting fiber optic ports. Figure 2-6.11.1 shows the front panel of the 4RU 144-Port DKM Compact Matrix Switch supporting Cat-X connection ports. Figure 2-6.11.2 shows the back panel. Tables 2-6.11 and 2-6.11.1 describe the component.



FIGURE 2-6.11. FRONT PANEL - ACXC80F80-1G & ACXC80F80-3G







FIGURE 2-6.11.1. FRONT PANEL - ACXC144F-1G & ACXC144F-3G







#### **TABLE 2-6.11. FRONT PANEL SWITCH COMPONENTS**

NUMBER IN FIGURE 2-2	COMPONENT	DESCRIPTION
1	(1) I/O-Ports 1 to 8	I/O-Ports for connecting devices
2	(1) I/O-Ports 41 to 48	I/O-Ports for connecting devices
3	(1) I/O-Ports 9 to 16	I/O-Ports for connecting devices
4	(1) I/O-Ports 49 to 56	I/O-Ports for connecting devices
5	(1) I/O-Ports 17 to 24	I/O-Ports for connecting devices
6	(1) I/O-Ports 57 to 64	I/O-Ports for connecting devices
7	(1) Network port 1 (RJ45)	Network port
8	(1) Network port 1 (RJ45)	Network port
9	(1) Reset button	Switch Reset
10	(1) I/O-Ports 25 to 32	I/O-Ports for connecting devices
11	(1) I/O-Ports 65 to 72	I/O-Ports for connecting devices
12	(1) I/O-Ports 33 to 40	I/O-Ports for connecting devices
13	(1) I/O-Ports 73 to 80	I/O-Ports for connecting devices
14	(1) I/O-Ports 81 to 88	I/O-Ports for connecting devices
15	(1) I/O-Ports 121 to 128	I/O-Ports for connecting devices
16	(1) I/O-Ports 89 to 96	I/O-Ports for connecting devices
17	(1) I/O-Ports 129 to 136	I/O-Ports for connecting devices
18	(1) I/O-Ports 97 to 104	I/O-Ports for connecting devices
19	(1) I/O-Ports 137 to 144	I/O-Ports for connecting devices
20	(1) I/O-Ports 105 to 112	I/O-Ports for connecting devices
21	(1) I/O-Ports 113 to 120	I/O-Ports for connecting devices





FIGURE 2-6.11.2 BACK PANEL 144-PORT







## 2.6.12 OVERVIEW 160-PORT DKM COMPACT MATRIX SWITCH

Figure 2-6.12 shows the front panel of the 4RU 160-Port DKM Compact Matrix Switch supporting fiber optic ports. Figure 2-6.12.1 shows the front panel of the 4RU 64-Port DKM Compact Matrix Switch supporting Cat-X connection ports. Figure 2-6.12.2 and 2-6.12.3 show the front panel of the 4RU 64-Port DKM Compact Matrix Switch supporting mixed fiber optic and Cat-X connection ports. Figure 2-6.12.4 shows the back panel. Tables 2-6.12 and 2-6.12.1 describe the components.



FIGURE 2-6.12.1. FRONT PANEL - ACXC160F-1G & ACXC160F-3G





FIGURE 2-6.12.2 FRONT PANEL - ACXC120F40-1G & ACXC120F40-3G



FIGURE 2-6.12.3 FRONT PANEL - ACXC80F80-1G & ACXC80F80-3G



### **TABLE 2-6.12. FRONT PANEL SWITCH COMPONENTS**

NUMBER IN FIGURE 2-2 COMPONENT DESCRIPTION		DESCRIPTION
1	(1) I/O-Ports 1 to 8	I/O-Ports for connecting devices
2	(1) I/O-Ports 41 to 48	I/O-Ports for connecting devices
3	(1) I/O-Ports 9 to 16	I/O-Ports for connecting devices
4	(1) I/O-Ports 49 to 56	I/O-Ports for connecting devices
5	(1) I/O-Ports 17 to 24	I/O-Ports for connecting devices
б	(1) I/O-Ports 57 to 64	I/O-Ports for connecting devices
7	(1) Network port 1 (RJ45)	Network port
8	(1) Network port 2 (RJ45)	Network port
9	(1) Reset button	Switch Reset
10	(1) I/O-Ports 25 to 32	I/O-Ports for connecting devices
11	(1) I/O-Ports 65 to 72	I/O-Ports for connecting devices
12	(1) I/O-Ports 33 to 40	I/O-Ports for connecting devices
13	(1) I/O-Ports 73 to 80	I/O-Ports for connecting devices
14	(1) I/O-Ports 81 to 88	I/O-Ports for connecting devices
15	(1) I/O-Ports 121 to 128	I/O-Ports for connecting devices
16	(1) I/O-Ports 89 to 96	I/O-Ports for connecting devices
17	(1) I/O-Ports 129 to 136	I/O-Ports for connecting devices
18	(1) I/O-Ports 97 to 104	I/O-Ports for connecting devices
19	(1) I/O-Ports 137 to 144	I/O-Ports for connecting devices
20	(1) I/O-Ports 105 to 112	I/O-Ports for connecting devices
21	(1) I/O-Ports 145 to 152	I/O-Ports for connecting devices
22	(1) I/O-Ports 113 to 120	I/O-Ports for connecting devices
23	(1) I/O-Ports 153 to 160	I/O-Ports for connecting devices



FIGURE 2-6.12.4 BACK PANEL 160-PORT

## **TABLE 2-6.12.1 FRONT PANEL SWITCH COMPONENTS**

NUMBER IN FIGURE 2-2	COMPONENT	DESCRIPTION
1	Power supply (standard)	Power supply
2	Power supply (redundancy)	Power supply
3	Grounding	Power grounding







## 2.7 STATUS INDICATIONS AT THE DEVICE

# 2.7.1 STATUS LEDS FOR DEVICE STATUS



FIGURE 2-7.1 FRONT SIDE LEDS FOR DEVICE STATUS

### TABLE 2-7.1 FRONT PANEL LEDS FOR DEVICE STATUS

NUMBER IN FIGURE 2-2	COMPONENT	DESCRIPTION
1	LED 1	Power Supply 1 Status
2	LED 2	LPower Supply 2 Status



# 2.7.2 STATUS LEDS FOR LINK CONNECTION, 1G CAT X



#### FIGURE 2-7.2 FRONT SIDE LEDS FOR DEVICE STATUS

### TABLE 2-7.2 FRONT PANEL LEDS FOR DEVICE STATUS

NUMBER IN FIGURE 2-2 COMPONENT		DESCRIPTION
1	LED 1	Link status LED for upper port
2	LED 2	Link status LED for upper port

### Status LEDs at the I/O Ports, 1G Cat XDevice Status (CPU Module)

When an interconnection is established, the LEDs light up in the following sequence:

LED 1 / 2	DESCRIPTION	
Off	No connection detectecd	
Orange	Connection via interconnection cable ok, extender detection is running	
Red	Invalid device / Error detecting device	
Green / None	The extender is having issues being detected or a non compatible device is connected	

#### \*An interconnection failure is indicate as follows:

LED 1 / 2	DESCRIPTION
Flashing Orange	Extender is not detected







# 2.7.3 STATUS LEDS FOR LINK CONNECTION, 3G CAT X



FIGURE 2-7.3 FRONT SIDE LEDS FOR DEVICE STATUS

### **TABLE 2-7.1 FRONT PANEL LEDS FOR DEVICE STATUS**

NUMBER IN FIGURE 2-2	COMPONENT	DESCRIPTION
1	LED 1	Link status LED 1 for lower port
2	LED 2	Link status LED 2 for lower port
3	LED 3	Link status LED 1 for upper port
4 LED 4		Link status LED 2 for upper port

# Status LEDs at the I/O Ports, 3G Cat $\boldsymbol{X}$

When an interconnection is established, the LEDs light up in the following sequence:

LED 1 / 3	LED 2 / 4	DESCRIPTION
Off	Green	No connection detectecd
Orange	Green	Connection via interconnection cable ok, extender detection is running
Red	Green	Invalid device / Error detecting device
Green / None	Green	The extender is having issues being detected or a non compatible device is connected

#### \*An interconnection failure is indicate as follows:

LED 1 / 2	LED 1 / 2	DESCRIPTION
Flashing Orange	Off	Extender is not detected



# 2.7.4 STATUS LEDS FOR LINK CONNECTION, FIBER



## TABLE 2-7.4. FRONT SIDE - STATUS LEDS FOR NETWORK CONNECTION

NUMBER IN FIGURE 2-2	COMPONENT	DESCRIPTION
1	LED 1	Link status LED 1 for lower port
2	LED 2	Link status LED 2 for lower port
3	LED 3	Link status LED 1 for upper port
4	LED 4	Link status LED 2 for upper port

## Status LEDs at the I/O Ports. Fiber

When an interconnection is established, the LEDs light up in the following sequence:

LED 1 / 3	LED 2 / 4	DESCRIPTION
Off	Green	No connection detectecd
Orange	Green	Connection via interconnection cable ok, extender detection is running
Red	Green	Invalid device / Error detecting device
Green / None	Green	The extender is having issues being detected or a non compatible device is connected

#### \*An interconnection failure is indicate as follows:

LED 1 / 2	DESCRIPTION
Flashing Orange	Extender is not detected





# 2.7.5 STATUS LEDS FOR NETWORK CONNECTION



### FIGURE 2-7.5 FRONT SIDE LEDS FOR DEVICE STATUS

### TABLE 2-7.5. FRONT SIDE - STATUS LEDS FOR NETWORK CONNECTION

NUMBER IN FIGURE 2-2	COMPONENT	DESCRIPTION
1	LED 1	Activity status LED network connection 2
2	LED 2	Link status LED network connection 2
3	LED 3	Activity status LED network connection 1
4	LED 4	Link status LED network connection 1

## Status LEDs at the I/O Ports, 1G Cat XDevice Status (CPU Module)

When an interconnection is established, the LEDs light up in the following sequence:

POS.	LED	LED 1 / 2	DESCRIPTION
	Activity	Off	No network connection available or data traffic not active
1/3 Status (orange)	On	Network connection available, data traffic active	
	Link	Off	No network connection available
2/4 Status (green)	On	network connection available	



# 2.7.6 STATUS LEDS FOR POWER SUPPLY



### FIGURE 2-7.6 FRONT SIDE LEDS FOR DEVICE STATUS

### TABLE 2-7.1. FRONT SIDE - STATUS LEDS FOR NETWORK CONNECTION

NUMBER IN FIGURE 2-2	COMPONENT	DESCRIPTION
1	LED 1	Power Supply 1 is deted and getting power
2	LED 2	Power Supply 2 is deted and getting power

### **LEDs for Power Supply**

POS.	LED	LED 1 / 2	DESCRIPTION
1		On	Power supply available
1	1 AC Input 1	Off	No power supply available
		On	Power supply available
2 AC Input 1	Off	No power supply available	



# 3.1 ACCESS OPTIONS

The following options are available to configure and operate the DKM Compact Matrix Switch:

ACCESS OPTIONS	DESCRIPTION
OSD	Via OSD (On-Screen-Display) you can configure the basic settings of the matrix operating system, query several states, and control several functions by keyboard commands during normal use.
On	The DKM Java Utility (below referred to as "management software") is available as a single executable program file (desktop) does not require installation. The management software can be downloaded from the link http://www.blackbox.com Advanced settings can be configured on the DKM operating system using the management software: • Advanced configuration • Extended monitoring options • System update (firmware update) • Local backup option • Documentation





## 3.2 ACCESS OPTIONS

### 3.2.1 COMMAND MODE

The extender modules include a command mode that allows access to the matrix and to control several functions by keyboard commands during normal use.

To access the command mode, use a keyboard sequence (Hot Key) at the keyboard of a CON Unit plugged in the matrix.

To quit the command mode, press the <Esc> key to exit the command mode.



The command mode will be deactivated automatically if there is no keyboard command executed within 10 seconds

The following spellings are used for keyboard commands:

ACCESS OPTIONS	DESCRIPTION
<key></key>	Description of a key on the keyboard
<key> + <key></key></key>	Press keys simultaneously
<key>, <key></key></key>	Press keys successively
2x <key></key>	Press key quickly, twice in a row (like a mouse double-click)



To enter and exit the command mode and additionally change the hot key, the following keyboard commands are available.

ACCESS OPTIONS	DESCRIPTION
Enter command mode (default)	2x <left shift=""> (Hot Key)</left>
Exit command mode	<esc></esc>
Change Hot Key	, , <0>, , <c>, <new code="" hot="" key="">, <enter></enter></new></c>

The Hot Key to enter the command mode can be changed. The following table lists the Hot Key codes for the available Hot Keys.

HOT KEY CODE	HOT KEY
0	Freely Selectable
2	2x <scroll></scroll>
3	2x <left shift=""></left>
4	2x <left ctrl=""></left>
5	2x <left alt=""></left>
6	2x <right shift=""></right>
7	2x <right ctrl=""></right>
8	2x <right alt=""></right>

# **CHAPTER 3: DESCRIPTION**



NOTICE

In a combined KVM matrix/TC Switch (ACX1004 / ACX1008...) configuration, select different Hot Keys for extender modules connected to the KVM matrix (e.g., 2x <Left Shift>) and the U-Switch (e.g., 2x <Right Shift>).

#### Set freely selectable Hot Key (exemplary)

To set a freely selectable Hot Key (e.g., 2x <Space>), use the following keyboard sequence: <current Hot Key>, <c>, <0>, <Space>, <Enter>

#### Set Hot Key for direct OSD access

Next to the Hot Key for standard functions, a second Hot Key can be exclusively set for opening the OSD directly.

To select a Hot Key from the Hot Key table for a direct opening of the OSD, use the following keyboard sequence:

<current Hot Key>, <f>, <Hot Key Code>, <Enter>

To select a freely selectable Hot Key (e.g., <Space>) for opening OSD directly, use the following keyboard sequence:

<current Hot Key>, <f>, <0>, <Space>, <Enter>

#### **Delete Hot Key for direct OSD access**

To delete the Hot Key for direct OSD access, use the following keyboard sequence. <current Hot Key>, <f>, <0>, <Del>, <Enter>

#### **Reset Hot Key**

To set a Hot Key back to default settings, press the key combination <Right Shift> + <Del> within 5 s after plugging in a keyboard.

### 3.2.2 OSD KEYBOARD CONTROL

Via OSD (On-Screen-Display) you set the basic configuration of the matrix operating system, query several states, and control several functions by keyboard commands during normal use. To enter the OSD of the matrix, connect a keyboard to a CON Unit of an extender.

ACCESS OPTIONS	DESCRIPTION
<hot key="">, <o></o></hot>	Open OSD
<esc></esc>	Exit OSD (in the main menu)
<left shift=""> + <esc></esc></left>	Exit Sub OSD (within the menus)



# **CHAPTER 3: DESCRIPTION**



#### NOTICE

If the OSD is closed with one of the keyboard commands mentioned above, possible changes are not saved. For information on saving changes, see configuration descriptions from chapter 7.10, from page 129.

#### Entering the OSD and the Main Menu

1. Start the command mode with the Hot Key (see chapter 3.2.4, page 60).

2. Press the <o> key to open the OSD. You will see a list of all available CPUs as a start menu.

3. Press the <Esc> key to enter the main menu.

\*If the Enable **CPU Selection option** is enabled in the **Configuration** menu, the selection list for switching CPU devices will be opened initially. This list can be skipped by pressing the <F7> **key**.

#### Leaving the OSD

Press the <Esc> key in the main menu or simultaneously <Left Shift> + <Esc> anywhere within the OSD.

The OSD will be closed without any further changes and the currently active CPU connection will be displayed.

## 3.2.3 OSD KEYBOARD CONTROL

The following keyboard commands are available for the navigation and configuration within the menus:

KEYBOARD COMMANDS	FUNCTION
<cursor left=""></cursor>	Input field: cursor left
	In menus: next input field
<cursor right=""></cursor>	Input field: cursor right
	In menus: previous input field
<cursor up=""></cursor>	In input fields: line up (with wrap around)
	In menus: line up (without wrap around)
<cursor down=""></cursor>	In input fields: line down (with wrap around)
	In menus: line down (without wrap around)
<page up=""></page>	Previous page in menus with more than one page
	Next page in menus with more than one page



KEYBOARD COMMANDS	FUNCTION
<page down=""></page>	Next page in menus with more than one page
<tab></tab>	In menus with input fields: next input field
<left shift=""> + <tab></tab></left>	In menus with input fields: previous input field
<+>	Next option in selection fields
	In the CPU selection list with cursor on a CPU Group: expand members of a group
<->	Previous option in selection fields
	In the CPU selection list with cursor on a CPU Group: collapse members of a group
<cursor down=""></cursor>	Switching in selection fields between two conditions, e.g., between ON / OFF or
	Y (Yes) / N (No)
	In menus: line down (without wrap around)
<space></space>	Switching in selection fields between two conditions, e.g., between ON / OFF or
	Y (Yes) / N (No)
<enter></enter>	In menus with input fields: save data
	In menus: select menu item
	With buttons: confirm selected button
<esc></esc>	In menus with input fields: cancel data input without saving
	In menus with selection fields: go back to the superior menu

# 3.2.4 OSD MENU STRUCTURE

The general layout of the OSD is structured into three areas:

- upper status area (topmost two text lines)
- working area
- · lower status area (lowest two text lines)



# **CHAPTER 3: DESCRIPTION**



	F10:Login
Henu	
Switch	
Macro List Extended Switch	
Status	
Assignments Configuration	
About	
	Shift+FSC = Close
	UTTE LUG UTUSE

#### FIGURE 3-2.4. OSD MAIN MENU

The following functions are available in most of the menus:

BUTTON	FUNCTION
Cancel	Reject changes
Okay	Apply changes (temporary storage of the active configuration in the volatile
	memory of the matrix).

#### NOTICE

#### Possible loss of configuration changes

By clicking the **Okay** button, changes are applied to the active configuration and saved in the volatile memory of the matrix. In the event of a sudden power failure, these changes are lost. To save changes permanently: Save the configuration changes into the active configuration (**Save**, see chapter 5.10.1, page 134), save a predefined configuration (**Save as**..., from chapter 5.10.1 page 135, or perform a restart (see

chapter 7.10 page 315).

# 3.2.5 OSD SORT FUNCTION

Lists and tables in the OSD offer a sorting function for fast and smooth search. The following sorting functions are available:

KEYBOARD COMMANDS	FUNCTION
<f1></f1>	Sort ID numbers in descending order by pressing the keyboard command once. Sort ID numbers in ascending order by pressing the keyboard command twice (ID).
<f2></f2>	Sort ID names in descending order by pressing the keyboard command once. Sort ID names in ascending order by pressing the keyboard command twice (Name).
<f3></f3>	Go to the next result in the list of results of the search field (Next).
<f4></f4>	Go to the previous result in the list of results of the search field ( <b>Previous</b> ).
<f5></f5>	Refresh the currently shown list ( <b>Refresh)</b> .
<f6></f6>	Jump between the search field and the list of results (Find).
<f8></f8>	Show unavailable CPUs
<f9></f9>	Activate search function from the beginning of the name (Compare).

## 3.3 CONTROL OPTIONS VIA MANAGEMENT SOFTWARE

## 3.3.1 MANAGEMENT SOFTWARE TOOLBAR

The menu structure of the management software is subdivided into various sections:



FIGURE 3-3.1 MANAGEMENT SOFTWARE MENU STRUCTURE



### TABLE 2-14. FRONT SIDE - STATUS LEDS FOR NETWORK CONNECTION

NUMBER IN FIGURE 2-2	DESCRIPTION
1	Menu Bar (top line)
2	Toolbar (second line)
3	Tab bar ( third line)
4	Task area (left menu section)
5	Working area (right menu section)
6	Status bar (bottom line)

BUTTON	FUNCTION
Apply	Confirm changes (temporary storage of the active configuration in the volatile
	memory of the matrix)
Cancel	Reject changes

NOTICE	
Possible loss of configuration changes By clicking the <b>Apply</b> button changes are applied to the active configuration and saved in the volatile memory of the matrix. In the event of a sudden power failure, these changes are lost. To save changes permanently: Save the configuration changes into the active configuration ( <b>Remote Save</b> , see chapter 5.10.1 page 135), save a predefined configuration ( <b>Save as</b> ) (see from chapter 5.10.1, page 136), or perform a restart (see from chapter 7.10 page 315).	

### Information for Operating and for Support Functions

The operation of the management software is intuitive and corresponds to the user interface of common operating systems.

• Help texts:

The management software contains its own support function. The integrated help texts in the working area of the management software can be activated or deactivated by clicking the checkbox in the upper right corner. Auxiliary names (tooltips) for the menu items can be activated in the options.

Online help:

After calling up a function from the task area, a menu opens in the work area of the management software, sometimes with several sub-pages (tabs). An online help is available for these functions, which can be called up by pressing the F1 key on the keyboard. An internet connection and a browser are required for opening the online help (PDF file).

# **CHAPTER 3: DESCRIPTION**



## 3.3.2 MANAGEMENT SOFTWARE MENU STRUCTURE

The menu structure of the management software is subdivided into various sections:



#### FIGURE 3-3.2. MANAGEMENT SOFTWARE TOOLBAR

|--|

NUMBER IN FIGURE 2-2	DESCRIPTION
1	Load locally saved configuration
2	Save configuration locally
3	Update configuration
4	Connect to the matrix
5	Disconnect from the matrix
6	Activate/deactivate the edit mode
7	Save active configuration (online mode)
0	Show predefined configuration saved on the
8	matrix (online mode)
9	Save predefined configuration on the matrix
	(online mode)
10	Monitoring (online)
11	Flash update for single devices
12	Overview of devices in the subnet (online mode)
13	System check
14	Save status locally





# 3.3.3 MANAGEMENT SOFTWARE MOUSE CONTROL

The following mouse commands are selectable for menu functions:

MOUSE CONTROL	FUNCTION
Priliminary mouse click	Menu selection, marking
Double-click priliminary mouse button	Open function specific selection menus
Secondary mouse button	Open context specific selection menus

# 3.3.4 MANAGEMENT SOFTWARE KEYBOARD CONTROL

The following keyboard commands are available for the navigation and configuration within the menus:

KEYBOARD COMMANDS	FUNCTION
<cursor left=""></cursor>	Cursor to the left
<cursor right=""></cursor>	Cursor to the right
<cursor up=""></cursor>	Line up
<cursor down=""></cursor>	Line down
<cursor up=""></cursor>	In input or status menus with more than one page: previous page
<page down=""></page>	In input or status menus with more than one page: next page
<page tab=""></page>	In input menus: next field
<left shift=""> + <tab></tab></left>	In input menus: previous field
<space></space>	<ul> <li>Switch in selection fields between two conditions (checkmark or not).</li> <li>Open already highlighted fields with editing or selecting possibility.</li> </ul>
<enter></enter>	<ul> <li>Select menu item</li> <li>In menus: Save data</li> </ul>
<ctrl> + <tab></tab></ctrl>	<ul> <li>Leave tables</li> <li>Jump from tables into the next field</li> </ul>
<ctrl> + <left Shift&gt; + <tab></tab></left </ctrl>	<ul> <li>Leave tables</li> <li>Jump from tables into the previous field</li> </ul>

\*Various functions within the menus in the menu bar can be executed with the provided keyboard commands (e.g., press <Ctrl> + <S> to execute **Save**) that are listed to the right of the respective menu item.

# **CHAPTER 3: DESCRIPTION**



## 3.3.5 MANAGEMENT SOFTWARE RELOAD OPTIONS

The information shown in the management software can be reloaded in different ways:

- Press the <F5> key on the used keyboard.
- Click the **Reload** menu item in the toolbar.
- Click Edit >Reload in the drop-down menu of the menu bar.

• Activate the Automatic Reload option by clicking the **Automatic Reload** checkbox in the right panel of the **View >Matrix** menu under **Options**.

# 3.3.6 MANAGEMENT SOFTWARE CONTECT FUNCTION

The management software offers several context functions that support user-friendly and effective operation. The context functions are described in the respective chapters.

CONTEXT FUNCTION	ACTION	RESULTS		
Execute context function	Click with the right mouse button on a field.	A context menu opens and displays functions available for the corresponding filed (if existing).		
	Click with the left mouse button on the desired function.	The desired function is executed.		

# 3.3.7 MANAGEMENT SOFTWARE SORT FUNCTION

Lists and tables in the management software offer a sorting function for fast and smooth search. An active filter is indicated by an arrow in the header.

SORT FUNCTION	ACTION	RESULTS		
Ascending sort	Click with the left mouse button once on the header of the column to be sorted.	<ul> <li>The column is sorted in ascending order.</li> <li>The sort of status is indicated by an arrow pointing upwards.</li> </ul>		
Decending sort	Click with the left mouse button twice on the header of the column to be sorted.	<ul> <li>The column is sorted in descending order.</li> <li>The sort is displayed by an arrow that points downwards.</li> </ul>		
Cancel sort	Click with the left mouse button once or twice on the head of the sorted column.	The arrow displayed disappears.		



# 3.3.8 MANAGEMENT SOFTWARE FILTER FUNCTION

Lists and tables in the management software offer a filter function that supports a fast and smooth search. The filter entry field is located above the header. An active filter is indicated by a green filter symbol in the filter entry field.

FILTER FUNCTION	ACTION	RESULTS		
Active filter	Click with the left mouse button in the filter entry field above the header. Write the word or part of a word to be filtered.	<ul> <li>The filter results are shown immediately.</li> <li>The filter symbol is displayed in green.</li> </ul>		
Cancel filter	Delete the text in the filter entry field.	<ul> <li>The list or table shows the complete content.</li> <li>The filter symbol is displayed in gray.</li> </ul>		

# 3.3.9 MANAGEMENT SOFTWARE FILTER FUNCTION

The management software is equipped with a report function that shows the current switching status and all relevant parts of the matrix configuration in a PDF file.

\* The report function can be used in both online and offline mode of the management software.

To create a report, proceed as follows:

1. Select **File > Report**... in the menu bar.

1. A selection dialog appears.

2. Select contents that should be included in the report (Matrix View, EXT Units, CPU Devices, CON Devices and Users).

3. Click the **Next** > button to confirm the selection.

Configuration Report		×
Steps	Define Content	
1. Define Content	✓ Matrix View	
2. Save Report	✓ System	
	✓ Assignment	
	✓ EXT Units	
	CPU Devices	
	CPU Groups	
	✓ IP Session Config	
	✓ CON Devices	
	✓ Access Control	
	✓ Favorites	
	✓ Macros	
	GPIO	
	✓ User	
	✓ Access Control	
	✓ Favorites	
	✓ Macros	
	✓ User Groups	
	✓ Access Control	
	✓ Extender Modules	
	Select All	
	< Back Novta Einich	Cancel

FIGURE 3-3.9. MANAGEMENT SOFTWARE FILE - REPORT - DEFINE CONTENT

4. Navigate to the preferred location for storage of the report.

5. Click the **Finish** button to confirm the report.

The report will be created as a PDF file.



# **CHAPTER 3: DESCRIPTION**

Configuration Report							×
Steps	Save Report						
Define Content     Save Report	Look jn: 👔	_Matrix 1.pdf	•			Ш	Ø
	File <u>N</u> ame:	Report_02.pdf					
	Files of <u>Type</u> .	(*.par)	<	<u>B</u> ack ►	lext > E	inish	Cancel

### FIGURE 3-3.10. MANAGEMENT SOFTWARE FILE - REPORT - SAVE REPORT

# 4.1 INSTALLATION

NOTICE	
Please verify that interconnect cables, interfaces, and handling of the devices comply with the requirements (see chapter 10, page 314).	

\* First-time users are recommended to set up the system in a test environment that is limited to a single room. This makes it easier to identify and solve any cabling problems, and experiment with your system more conveniently.



# 4.2 PREPARING THE MATRIX FOR RACK MOUNTING

NOTICE

Due to the construction of a matrix with 16, 32 and 40 ports into a 19" rack, it is recommended to use an additional subfloor below the matrix. It should be used in addition to the provided mounting brackets.

The supplied mounting brackets are required for mounting the KVM matrix switch.

1. For front rack mounting, remove the front and middle screws on both sides of the cover.

2. For rear rack mount, remove the rear and middle screws on both sides of the cover.

3. Mount the mounting bracket in the desired position using the screws on the cover/chassis.



# 4.3 SETTING UP THE MATRIX

## 4.3.1 PREREQUISITES FOR FAILURE-FREE INSTALLATION OF A MATRIX SETUP

\* To achieve the best possible performance and results with the matrix system, we recommend using the supplied cables. If you need a replacement, please use the spare parts specified for this device, which can be requested from the manufacturer if required.

\*To achieve a failure-free installation of a matrix system, we recommend to first establish a point-to-point connection between a CPU Unit and a CON Unit before connecting to the matrix as follows: Source (computer, CPU) - CPU Unit - Link - CON Unit - console (monitor, keyboard, mouse) Ensure that this most simplistic setup works. Then continue as follows.

1. First connect the CPU Unit to the source (computer, CPU) by using the provided connection cables.

2. Connect the CPU Unit to the CON Unit by using the interconnect cables (Cat X or fiber).

3. Connect the monitor, keyboard, and mouse to the CON Unit.

4. Connect the power supply units to the CPU Unit and CON Unit.

5. Power up the CPU Unit and CON Unit.

6. Boot the source (computer, CPU) and check that everything works correctly.

## 4.3.2 INITIAL COMMISSIONING OF THE MATRIX

1. Connect the monitor, keyboard, and mouse to a functionally tested CON Unit.

2. Connect the CON Unit to an I/O port of the matrix by using the interconnect cables (Cat X or fiber).

3. Connect the matrix and the CON Unit to the power supply.

4. Power up the matrix and wait until the boot process is finished (status LED flashes green).

5. Open the OSD via keyboard command 2x <Left Shift>, <o>. The **Caps Lock** and **Scroll Lock** LEDs on the keyboard are flashing, and the OSD is opened on the display showing the KVM List view.

6. Press the **<ESC>** key to enter the advanced menus. The OSD can be operated via keyboard and mouse.

7. Select **Configuration** in the main menu.

8. Login with administrator rights (see chapter 5.5, page 98).

9. Configure initially as requested (see from chapter 5.5, from page 99).

Optional: Establish a network connection between the matrix and the management software to set an extended configuration (from chapter 5.6, page 106).

The default IP address is 192.168.100.99 and DHCP is deactivated.

\*After the configuration of the system it is recommended to save the configuration by selecting Configuration > Save (see chapter 7.10.1, page 129) and restart the matrix by selecting Restart Matrix (see chapter 7.10 page 315).

\*When installing several matrices at the same time, it is strongly recommended to install them in sequence and to assign unique IP addresses to avoid IP address conflicts



## 4.4 CONNECTING THE MATRIX TO THE SINK (CONSOLE) AND THE SOURCES (COMPUTER, CPUS)

## 4.4.1 CONNECTING THE SINK (CONSOLE) TO THE MATRIX

- 1. Connect the monitor, keyboard, and mouse to the CON Unit.
- 2. Connect the CON Unit to an I/O port of the matrix by using the interconnect cables (Cat X or fiber).
- 3. Connect the matrix and the CON Unit to the power supply.
- 4. Connect the power supply units to the CON Unit.
- 5. Establish the power supply to the CON Unit.

6. Check the basic function of the CON Unit by opening the OSD via keyboard command <Hot Key>, <0>.

## 4.4.2 CONNECTING THE SOURCES (COMPUTER, CPU) TO THE MATRIX

- 1. Connect the source (computer, CPU) to the CPU Unit by using the provided connection cables.
- 2. Connect the CPU Unit to the matrix using the interconnect cables (Cat X or fiber).
- 3. Connect the power supply units to the CPU Unit.
- 4. Establish the power supply to the CPU Unit.

## 4.5 CONNECTING THE MATRIX VIA MANAGEMENT SOFTWARE

#### NOTICE

Connection to the matrix blocked

Synchronization directories or offline directories require special attention regarding the firewall settings, e.g., Windows: roaming directories. If blocked by the firewall, no connection to the matrix can be established. Save the management software in a locally available directory.

The management software is available as a single executable program file (desktop) that does not require installation.

Save the management software in a locally available directory.


### Requirements

If you want to use the management software on Windows operating systems with integrated Java Runtime, the following requirements must be fulfilled:

COMPUTER / SOFTWARE / NETWORK		RESULTS
Free memory	RAM	Recommended: 512 MB
Operating system	Microsoft	Windows 8, Windows 8.1, Windows 10
Management software with integrated Java Runtime	DKM Java Utility	Downloaded from http://www.blackbox.com
Network connection	-	Available between computer and matrix

If you want to use the management software without integrated Java Runtime, the following requirements must be fulfilled:

COMPUTER / SOFTWARE / NETWORK		RESULTS
Free memory	RAM	Recommended: 512 MB
Operating system	Microsoft	Windows 8, Windows 8.1, Windows 10
operating operation	DKM Java Utility	Downloaded from http://www.blackbox.com
Specification	Java	Installed: Oracle Java Runtime Environment (JRE) 1.8.x or higher Strongly recommended: Oracle Java 1.8 update 152, or higher. (https://adoptopenjdk.net, https://github.com/ojdkbuild/ojdkbuild
Management software	DKM Java Utility	Downloaded from http://www.blackbox.com
Network connection	-	Available between computer and matrix

\* Contact your system administrator concerning JRE and network connection.



### 4.5.1 SETTING UP NETWORK AND FIREWALL RELEASES

#### **Releasing Netowkr Ports**

The following ports are used by the matrix depending on the configuration and have to be released at the security gateway if necessary. The ports will only have to be released if you want to use the respective function.

FUNCTION	PORT
FTP	21 / TCP
DNS	53
SNTP	123 / UDP
SNMP	161/162 / both UDP
LDAP	389 (636 for SSL)
Syslog	514 / UDP
API	5555 / TCP (5565 for SSL)
Broadcast	5556 / UDP (5566 for SSL)
Matrix Grid	5557 / TCP (5576 for SSL)

#### **Releasing Java Application in the Firewall**

If using the management software, the Java application (file javaw.exe) has to be released in the firewall settings to use the management software. Contact your administrator to configure the firewall settings accordingly.

Using the management software with integrated Java Runtime, no firewall modification is necessary.

## 4.5.2 CONNECTING THE COMPUTER TO THE MATRIX

NOTICE	
For a connection between computer and matrix via switch or hub, parallelly assembled network cables are required. Only use a network connection between computer and the matrix that is not primarily used for streaming audio or video data.	

Connect the network cable to the RJ45 ports of computer and matrix.





## **CHAPTER 4: INSTALLATION**



### 4.5.3 STARTING THE MANAGEMENT SOFTWARE

Open the management software by a double-click on the program icon on the desktop or the file in the directory.

The management software starts in offline mode.



#### FIGURE 4-5.3 MANAGEMENT SOFTWARE OFFLINE MODE

There are two options to connect to a matrix.

- Via a known IP address
- Via Device Finder

## **CHAPTER 4: INSTALLATION**



### 4.5.4 CONNECTING TO THE MATRIX WITH KNOWN IP ADDRESS

Open the management software by a double-click on the program icon on the desktop or the file in the directory.

The management software starts in offline mode.

\* At least FTP rights are required.

\*Up to twelve connections between the matrix and the management software can be established at the same time due to a limitation of available sockets.

To connect to a matrix when the IP address is known, proceed as follows:

1. Open the management software.

2. Click the Connect menu item in the tool bar. An access window appears.

3. Enter the IP address according to the network configuration of the matrix (see chapter 6.4.6, page 163). By default, the IP address of the matrix is 192.168.100.99 and DHCP is deactivated.

4. Enter the username and password of the administrator (see chapter 6.5, page 177). By default, the username is admin, and the password of the administrator is admin.

5. Click the Login button to confirm your entries.

Connect	×
Hostname / IP Address	192.168.100.99
User	admin
Password	*****
	Login C <u>a</u> ncel

FIGURE 4-5.4.1 MANAGEMENT SOFTWARE DIALOG CONNECT

\*The data must be entered each time the network connection is re-established. Alternately, the data can be entered and stored in the management software under Extras > Options (see chapter 6.3.1, page 150).





### 4.5.5 CONNECTING TO THE MATRIX VIA DEVICE FINDER

\* At least FTP rights are required.

\*Up to twelve connections between the matrix and the management software can be established at the same time due to a limitation of available sockets.

The **Device Finder** offers the possibility to find all matrices that are in the same subnet. This is useful, for example if the IP address of a specific matrix is unknown and should be accessed via IP.

Dev	ce Finder				×
Ava	lable devices within the l	ocal network		Broadcast/Multicast	255 . 255 . 255 . 255
	Device	Name	IP Address	MAC Address	
01	DPSWITCH-01	Standard	192.168.100.79	00:21:5F:07:00:0C	Connect
02	DPSwitch_Support	Testgerät-02	192.168.100.57	00:21:5F:07:00:0E	Connect

#### FIGURE 4-5.5.1 MANAGEMENT SOFTWARE MENU DEVICE FINDER

The following device information is shown in the Device Finder:

INFORMATION	DESCRIPTION
Broadcast/Multicast	Search parameters for finding devices. Search via broadcast: 255.255.255.255 (default). Input for search within a multicast group: multicast address (chapter 6.4.6, page 163)
Device	Name of the device
Name	Name of the active configuration
IP Address	Current IP address of the device
MAC Address	MAC address of the device
Туре	Type of the device

## **CHAPTER 4: INSTALLATION**



\* The last column of the Device Finder can be used to access the respective matrix directly clicking the Connect button.

\*Up to twelve connections between the matrix and the management software can be established at the same time due to a limitation of available sockets.

To find and access a device, proceed as follows:

1. Click the menu item Device Finder in the tool bar.

2. For searching within a multicast group, enter the multicast address. By default, the search is set via broadcast: 255.255.255.255.

3. Click the Connect button in the last column of the Device Finder to establish direct access to the respective device within the same subnet.

4. Enter the username and password of the administrator (see chapter 6.5, page 177). By default, the username is admin, and the password of the administrator is admin.

5. Click the Login button to confirm your entries.

### 5.1 CONFIGURATION VIA OSD

#### NOTICE

#### Possible loss of configuration changes

By clicking the **Okay** button, changes are applied to the active configuration and saved in the volatile memory of the matrix. In the event of a sudden power failure, these changes are lost. To save changes permanently: It is save the configuration changes into the active configuration (**Save**, see chapter 5.10.1, page 134), as we needed application (**Save**, see chapter 5.10.2, page 134).

save a predefined configuration (**Save as**..., from chapter 5.10.2, page 135), or perform a restart (see chapter 7.10.1, page 315).

#### NOTICE

A change in system-relevant parameters (e.g., change of the IP address) is immediately displayed in the OSD. To initialize system-relevant configuration changes on the matrix, the matrix must be restarted. The restart of the matrix may take several minutes, and the matrix is not available during the restart.



### 5.2 PASSWORD RESET

All configuration or assignment settings can only be configured with administrator rights. The following login data is saved in the factory settings:

FILED	ENTRY
User	admin
Password	admin

To access the configuration menu, proceed as follows:

1. Press the <F10> key in the main menu of the OSD. The login mask appears.

2. Enter the login data of the administrator\* To log out a user, press the <F10> key again. When leaving the configuration or assignment menu, the administrator is logged out automatically.

Login User Password
Cancel Okay

#### FIGURE 5-2.1.1 MANAGEMENT SOFTWARE MENU DEVICE FINDER

NOTICE	
For security reasons, please change the administrator password as soon as possible (see chapter 5.4.1, page 80).	

## 5.3 OVERVIEW CONFIGURATION MENU

Various system functions and options are available in the configuration menu. In addition, the following functions can be called up here: save (as active or predefined configuration) and shutdown, restart, or reset to factory settings.



ANTI ANTI COM	
0pen	
System Access Switch Network H1	
Dote+Time SNMP	
Matrix Grid	
EXT Units CPU Devices CON Devices REM Access User Data	
CON Macros User Macros	
Save as	
Shut down IO Board Restart ID Board Restart CPU Board	
Shut down Matrix Restart Matrix Factory Reset	

#### FIGURE 5-3.1.1 OSD MENU CONFIGURATION

### 5.4 SYSTEM SETTINGS

### 5.4.1 SETTING SYSTEM CONFIGURATION

The parameters for the system configuration are set in this menu:



FIGURE 5-4.1.1. OSD MENU CONFIGURATION - SYSTEM



COMPUTER / SOFTWARE / NETWORK		RESULTS
Device	Text	Enter the device name of the matrix (default: SWITCH_01)
Name	_	Enter the name of the configuration that is used to save the
	lext	current settings (default: Standard)
	_	Additional text field to describe the configuration (default:
Info	lext	Factory settings)
Sub Matrix	Y	If the matrix is defined as a sub matrix in the OSD, the user will lose control. Control can be recovered by using the keyboard command <hot key="">, <s>, <o>. The OSD for the matrix that has been defined as sub matrix will be reopened.</o></s></hot>
	Ν	Function not active (default)
	N.	Starting the matrix after a restart or a switch-on with the default
Less ID footb	Y	configuration.
Load Default	N	Starting the matrix after a restart or a switch-on with the last
	N	saved configuration (default).
		Save the current configuration of the matrix in the flash memory
Auto Save	Y	periodically. Note: During the save operation, the matrix will not react to commands. Saving takes place every 600 seconds if changes of the configuration or switching operations have been executed in the meantime.
	Ν	Function not active (default)
	Y	Send all switching commands performed in the matrix as an echo via serial interface.
Enable COM Echo		controller via serial interface.
	Ν	Function not active (default)
Enable LAN Echo	Y	Send all switching commands performed in the matrix as an echo via LAN connection. Note: This function should be enabled when using a media controller via LAN connection or when using stacking with two or more matrices.
	N	Function not active (default)
Enable Redudancy	Y	Automatically switch to the second link of a connected redundant CON Unit when losing the primary link of a CPU Unit (default). Note: This function will have to be activated: • for a single matrix when using redundant link connections, • for both matrices in a fully redundant setup.
	Ν	Function not active
Synchronize	Y	Synchronize the sub matrix to the switch status of the master matrix.
	N	Function not active (default)

FIGURE 5-2.1. OSD MENU CONFIGURATION



COMPUTER / SOFT	WARE/NETWORK	RESULTS
Echo Only	Y	Synchronize the matrix according to the echo of a second matrix. Note: This is a bidirectional synchronization where both matrices have to be configured as Synchronize with the Master IP of the respective other matrix.
	Ν	Function not active (default)
Master IP Address	Υ	Set the network address of the master matrix (default: 000.000.000)
Invalid IO-Boards	Y	Keep I/O boards with incorrect or invalid firmware online in the matrix. Note: To keep an I/O board with wrong or damaged firmware online in the matrix, the maintenance mode of the matrix will be activated.
	Ν	Shut down I/O boards with incorrect or invalid firmware automatically (default).
Enable old Echos	γ	Translate current switching command (implemented since V02.09) internally into the old, already known switching commands and send them as echo.
	Ν	Function not active (default)
Remove IO-Boards	Y	Note: Only for DKM enterprise 576: Shut down of I/O boards if the second controller board is not available. Connection will be disconnected.
Keep Gridlines	Υ	Function not available in the firmware described in this manual
	Ν	Function not active

### **OSD Data CPU**

COMPUTER / SOFT	WARE/NETWORK	RESULTS
Horizontal Mouse Speed [1/x]	1 to 9	Adjust the horizontal mouse speed, 1 = slow, 9 = fast (default: 4)
Vertical Mouse Speed [1/x]	1 to 9	Adjust the vertical mouse speed, 1 = slow, 9 = fast (default: 5)
Double-click Time [ms]	Text	Adjust the time slot for a double-click (default: 200)
Keyboard Layout	100 to 800	Set the OSD keyboard layout according to the keyboard used (default: German (DE))
Hot Key	Region	Set the OSD keyboard layout according to the keyboard used (default: German (DE))
Load Default	Keyboard command	Call the command mode via keyboard sequence (default: 00)
Fast Key	Keyboard command	Open the OSD via direct access (default: 00) How often the shortcut key has to be pressed depends on the specified key: 1x for function keys or print key, 2x for all other keys



### **Settings for Global Hot Key and Fast Key**

FIELD	ENTRY	DESCRIPTION
Hot Key / Fast Key	00	No global Hot Key / Fast Key defined, no modification of the extender module.
	01 to FE	Overwrite the Hot Key / Fast Key of the extender module with the entered value of the global Hot Key / Fast Key.
	FF	Deactivate the Hot Key / Fast Key of the extender module

Valid values for the Hot Key and the Fast Key are USB-HID keyboard scan codes according to US keyboard layout. To set modifier keys for the Hot Key and the Fast Key use the following values:

ENTRY	MODIFIER KEY
F0	Left CTRL
F1	Left SHIFT
F2	Left ALT
F4	Right CTRL
F5	Right SHIFT
F6	Right ALT

Hot Key or Fast Key set in the CON EXT Units have priority over the global settings.

To set the parameters for the system configuration, proceed as follows:

- 1. Select **Configuration > System** in the main menu.
- 2. Modify the desired settings.
- 3. Click the **Okay** button to confirm your entries

FIGURE 5-3.1. OSD MENU CONFIGURATION



### 5.4.2 ENABLING AUTOMATIC CREATION OF CPU AND CON DEVICES

Settings for automatic creation of CPU and CON Devices when a new CON extender module or CPU extender module is connected are set in this menu.



FIGURE 5-4.2.1 OSD MENU CONFIGURATION -SYSTEM - AUTOMATIC ID

#### The following parameters can be configured:

COMPUTER / SOFT	WARE/NETWORK	RESULTS
		Automatic creation of a new CPU or CON Device if new
Enable Auto Config	Y	extender modules are connected (default)
Enable Auto Config	N	Function not active
ID Real CPU Device	Text	Initial value of the automatic ID for real CPUs (default: 1000)
ID Virtual CPU Device	100 to 800	Initial value of the automatic ID for virtual CPUs (default: 2000)
ID Real CON Device	Region	Initial value of the automatic ID for real CONs (default: 3000)
ID Virtual CON Device	Numerical	Initial value of the automatic ID for virtual CONs (default: 4000)





To set the parameters for the system configuration, proceed as follows:

- 1. Select **Configuration > System** in the main menu.
- 2. Modify the desired settings.
- 3. Click the **Okay** button to confirm your entries.

## 5.4.3 SETTING ACCESS CONFIGURATION

The access configuration is set in this menu.

Force User Login Enable User ACL Enable CON ACL OR User/CON ACL AND User/CON ACL	N N N N N N	Require user login to enter OSD Enable CPU Access Control List for all users Enable CPU Access Control List for all CON devices OR user and CON Access Control List (extend access) AND user and CON Access Control List (reduce access)
Enable new User Enable new CON	: N N	
Auto Disconnect OSD Timeout [sec] Auto Logout [min]	: N : 0 : 0	Disconnect CON from CPU upon opening the OSD Specify inactivity time to quit OSD automatically Specify inactivity time for automatic user legal
Keep CPU Show CPU	: N N	Keep CPU connection after Auto Logout Show CPU connection info on all CON units
		Cancel Okay

FIGURE 5-4.3.1 OSD MENU CONFIGURATION - ACCESS

### The following parameters can be configured:

COMPUTER / SOFT	WARE/NETWORK	RESULTS
Force User Login	Y	The user has to login with a username and a password once to enter OSD. Thereafter the user remains logged in until he explicitly logs out or an auto logout is affected. Note: When the Force User Login function is activated and a user is logged in, only the user favorites are available. The CON favorites are not accessible.
	Ν	Function not active (default)
Enable User ACL	Y	CPU Device access is restricted according to the permissions in the ACL (Access Control List). • User login is required. • Switching by keyboard Hot Keys requires a prior login.
	Ν	Function not active (default)
Enable CON ACL	Y	CPU Device access is restricted according to the permissions in the respective CON Device ACL (Access Control List). No login required
	Ν	Function not active (default)
OR User/CON ACL	Y	The user obtains the sum of access rights from the CON Device and his personal access rights after logging in (extended access)
	Ν	Function not active (default)
AND User/CON ACL	Y	The user obtains the common divisor of access rights from the CON Device and his personal access rights after logging in (reduced access)
	Ν	Function not active (default)
	Y	Newly created users automatically receive access to all CPUs
Enable new User	Ν	Function not active (default)
Enable new CON	Y	Newly created CON Devices automatically receive access to all CPU Devices
	Ν	Function not active (default)
	Y	Upon opening the OSD, the console will be automatically
Auto Disconnect		disconnected from the current CPU Device.
	N	Function not active (default)
OSD Timeout [sec]	0 to 999 seconds	Period of inactivity after which OSD will be closed automatically. • Select 0 seconds for no timeout • (default: 0 seconds)
Auto Logout [min]	0 to 999 seconds	<ul> <li>Period of inactivity of a logged-in user at a CON Device after which he will be automatically logged out.</li> <li>In addition to the logout process, a complete disconnection from the connected CPU Device occurs under Full Access and Private Mode.</li> <li>Select 0 minutes for an automatic user logout when leaving OSD.</li> <li>Using the setting -1 allows the user to be logged in permanently, until a manual logout is executed.</li> <li>The timer is not active as long as the OSD is open (default: 0 minutes).</li> </ul>







COMPUTER / SOFT	WARE/NETWORK	RESULTS
Keep CPU	Y	Keep the connection to the CPU Device active in the background after Auto Logout. After a new login there is no need to re-connect to the CPU Device.
	N	Function not active (default)
Show CPU	Y	Permanently show the name of the currently connected CPU Device in the Connection Info box.
	N	Function not active (default)

To set the parameters for the system configuration, proceed as follows:

- 1. Select Configuration > System in the main menu.
- Modify the desired settings.
- 3. Click the Okay button to confirm your entries.

#### 5.4.4 SETTING SWITCH CONFIGURATION

This menu enables shared operation of a CPU Device by two or more CON Devices. A CPU Device can be controlled by only one CON Device at a time but can be taken over successively by other CON Devices. Control of a CPU Unit by a CON Unit is relinquished after the expiration of an inactivity timer associated with the controlling CON Device. The mouse or keyboard may also be used to take over control.

\* To allow a smooth and accurate function of the shared operation, you should use identical mice and keyboards. They should be connected to the same USB-HID ports of each CON Unit. The alternative is using the USB-HID Ghosting (see chapter 6.8.1, page 204). When taking over control within 10 s, any assigned USB 2.0 extender modules if available, will not be switched due to security and stability aspects. The shared operation will be deactivated between CON Devices with a different priority as well as the

Release Time.

The switching parameters are set in this menu.



The switching parameters are set in this menu.

Enable Video Sharing : Y Force Connect : Y Force Disconnect : N	Allow shared video access to CPU Enforce full KVM access to CPU, other consoles retain video Enforce full KVM access to CPU, disconnect other consoles
CPU Auto Connect : N CPU Timeout [min]: 0	Connect to next available CPU, requires keyboard or mouse Specify inactivity time at currently connected CPU after which CPU will be disconnected automatically
Keyboard Connect : Y Mouse Connect : Y Release Time [sec]: o	Enable CPU control requests by keyboard activity Enable CPU control requests by mouse activity Specify inactivity time to accept CPU control requests from other consoles
facro Single Step : N	Execute macros in single step mode
	Cancel Okay

FIGURE 5-4.4.1. OSD MENU CONFIGURATION - SWITCH

The following parameters can be configured:

COMPUTER / SOFT	WARE/NETWORK	RESULTS
Enable Video Sharing	Y	The user can switch to any CPU Device as an observer, including ones that are already assigned to another user (observer without keyboard/mouse access). Note: Switching with the <space> key, not with the <enter> key. The operator only will be informed if further users connect as an observer to the CPU Device that is connected to his CON Device, if the option Update Connection Info is activated for his CON EXT Unit.</enter></space>
	Ν	Function not active (default)
Force Connect	Y	Extension of Force Connect: If the user connects as an operator to a CPU Device already related to another user, the previous user will be disconnected. Note: To share K/M control Force Disconnect has to be deactivated and Enable Video Sharing has to be activated.
	Ν	Function not active (default)
Force Disconnect	Y	If a CON Device is not connected to a CPU Device, you can establish an automatic connection to the next available CPU Device by hitting any key or mouse button.
	Ν	Function not active (default)



COMPUTER / SOFT	WARE / NETWORK	RESULTS
CPU Auto Connect	Y	If a CON Device is not connected to a CPU Device, you can establish an automatic connection to the next available CPU Device by hitting any key or mouse button.
or or vite connect	Ν	Function not active (default)
CPU Timeout [min]	0 to 999 minutes	Period of inactivity after which a CON Device will be automatically disconnected from its current CPU Device (default: 0 minutes)
Kouhaard Connact	Y	Activate request of K/M control by keyboard event (key will be lost)
	Ν	Function not active (default)
Mouse Connect	Υ	Activate request of K/M control by mouse event
	Ν	Function not active (default)
Release Time [sec]	0 to 999 seconds	Period of inactivity of a connected console after which K/M control can be requested by other consoles connected to the CPU Device. Note: Set 0 for an immediate transfer in real-time. Only one console can have keyboard and mouse control at a time. The other consoles that are connected to the same CPU Device have a Video Only status (default: 10 seconds)
	Y	Execute macro commands sequentially
Macro Single Step	Ν	Function not active (default)

To configure shared operation, proceed as follows:

- 1. Select **Configuration > Switch** in the main menu.
- 2. Activate the Enable Video Sharing function.
- 3. Activate the Force Connect function.
- 4. Activate the **Keyboard Connect** function if taking over control by a keyboard event should be possible.
- 5. Activate the **Mouse Connect** function if taking over control by a mouse movement should be possible.
- 6. Define a **Release Time** of inactivity (0 to 999 seconds) after which KVM control can be taken over.
- 7. Click the **Okay** button to confirm your settings.

**Keyboard Connect** and / or **Mouse Connect** are only effective if **Force Connect** and / or **CPU Auto Connect** are activated.

If the **Keyboard Connect** and / or **Mouse Connect** options are enabled, the **Keyboard Connect** and/or **Mouse Connect** will not take effect until the time interval entered in the **Release Time** has elapsed.

## 5.4.5 SETTING NETWORK CONFIGURATION

#### NOTICE

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To initialize system-relevant configuration changes, the matrix must be restarted. Restarting the matrix can take several minutes and the matrix is not available during the restart.

#### NOTICE

Consult your system administrator before modifying the network parameters. Otherwise, unexpected results and failures can occur in combination with the network.

#### NOTICE

The Syslog function starts logging after the matrix or controller card is restarted if the Syslog function has been activated in this menu.

#### To configure shared operation, proceed as follows:

Dual Interface DHCP IP Address Subnet Mask Gateway Multicast	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	
letwork Services		
API Service #1 Grid Service #1 SSL Services #1	: Y Enable API Service port (5555/5565) : Y Enable Grid Service port (5557/5567) : N Enable SSL for API and Grid communication	
Syslog #1 Syslog Server	: N Enable Sucled Server #1 : 000 .000 .000 .000 :514	
Syslog #2 Syslog Server	: N Enable System #2 : 000 .000 .000 :514	
LDAP LDAP TLS/SSL LDAP Server LDAP Base DN	N Enable authentication with Active Directory Server N Enable Transport Layer Security for Active Directory access 000 .000 .000 .000 :389	
og Levels		
Trace	: DEB N INF N NOT Y WAR Y ERR Y	

#### FIGURE 5-4.5. OSD MENU CONFIGURATION - NETWORK





The following parameters can be configured:

#### Network Interface #1

COMPUTER / SOFT	WARE / NETWORK	RESULTS
	Y	Redundant network connection is deactivated
Dual Interface	Ν	Redundant network connection is activated (default)
CPU Timeout [min]	Y	The network settings are automatically supplied by a DHCP server. Note: If DHCP is activated and there is no physical network connection available, the boot times might increase.
	Ν	Function not active (default)
IP Address	Byte	Input of the IP address if DHCP is not active (default: 192.168.100.99)
Subnet Mask	Byte	Input of the subnet mask in the form "255.255.255.0" if DHCP is not active (default: 255.255.255.0)
Gateway	Byte	Input of the subnet mask in the form "192.168.1.1" if DHCP is not active
MAC Address	Byte	Cannot be changed, is retrieved automatically
Multicast	Byte	Input of the Multicast address if there is a Matrix Grid in use within a Multicast group (default: 255.255.255.255)

### **Network Services**

COMPUTER / SOFT	WARE / NETWORK	RESULTS
	Y	LAN interface at the matrix activated for access via management software (default, API service port 5555/5565)
API Service #1	Ν	Function not active
Grid Service #1	Y	Activate Grid interface at the matrix for access via management software (Grid Service Port 5557/5567).
	N	Function not active (default)
SSL Services #1	Y	Activate SSL encryption for API, management software (API), and Matrix Grid communication.
	Ν	Function not active (default)

The following parameters can be configured:

### Network Interface #1

COMPUTER / SOFT	WARE/NETWORK	RESULTS
Υ		Syslog server for status request is active
Syslog #1/#2	Ν	Function not active (default)
Syslog Server #1/#2	Byte	Input of the IP address of the Syslog servers in the form "192.168.1.1" and of the Syslog port (default: 514)

\* The LDAP settings are explained in the chapter 7.3.6, page 79.

### Log Levels

COMPUTER / SOFT	WARE/NETWORK	RESULTS
	DEB	LAN interface at the matrix activated for access via management software (default, API service port 5555/5565)
	INF	Function not active
Trace	NOT	Activate Grid interface at the matrix for access via management software (Grid Service Port 5557/5567).
	WAR	Function not active (default)
	ERR	Activate SSL encryption for API, management software (API), and Matrix Grid communication.
Syslog #1/#2	DEB	Activate debug messages in Syslog (default: N) Note: The debug messages are exclusively for matrix diagnostics. They only should be activated after consultation with the manufacturer. Otherwise, an increased traffic of data might limit the performance of the controller board.
	INF	Activate information messages in Syslog (default: N)
	NOT	Activate notification messages in Syslog (default: Y)
	WAR	Activate warning messages in Syslog (default: Y)
	ERR	Activate error messages in Syslog (default: Y)

To set parameters for the network configuration, proceed as follows:

- 1. Select Configuration > Network in the task area.
- 2. Modify the desired settings.
- 3. Click the Okay button to confirm your entries.





### 5.4.6 SETTING SNMP FUNCTION

The SNMP function allows all function-critical and safety-critical elements of the matrix to be monitored and gueried. This function complies with the RFC 1157 conformal standard. Two SNMP servers can be used at the same time. Enabling the SNMP function, the unencrypted SNMP monitoring (SNMPv2) is activated.

An SNMPv3 User for encrypted SNMP monitoring (SNMPv3) can be set in the user settings (see chapter 6.4.8 page 167) and the login data for an SNMPv3 User at the SNMP server can be set in the default settings.

NOTICE
When using SNMP monitoring, for reasons of access security, the use of a dedicated network according to the IT-Grundschutz catalog is recommended. The read only community for the MIB file is DKM.
NOTICE

For an activation of the SNMP agent function or the SNMP server function, a restart of the matrix or the CPU board is necessary. Restarting the matrix or the CPU board can take several minutes, and the matrix is not available during the restart.

#### The settings for the SNMP monitoring are set in this menu:

Enable Traps	:	Ν		N Server #2	
Server Address	:	000	.000 .000 .000 :162	000 .000 .000 .000	:162
Status Temperature		N N		N N	
Insert Board Remove Board Invalid Board		N N N		N N N	
Insert Extender Remove Extender	::	N N		N N	
Switch Command	:	Ν		N	
Fan Tray #1 Fan Tray #2 Power Supply #1 Power Supply #2 Power Supply #3 Power Supply #4				N N N N	

The following parameters can be configured:

## **SNMP Agent**

COMPUTER / SOFTWARE / NETWORK		RESULTS
Frable		Permission for an active query of the SNMP agent for traps is granted.
Enable	Y	This activation is a prerequisite for using the SNMP server.
Read Community	Ν	The read only community for the MIB file is DKM.

### **SNMP Server**

\* A matrix configuration should only include one LDAP user and one LDAP

TRAPS	DESCRIPTION
Enchlo Trong	Activates the active sending of trap messages from the SNMP agent to the
Enable Traps	SNMP server
Comuce Address	Input of the IP address of the SNMP server in the form "192.168.1.1" and of the
Server Address	SNMP port (default: 162)
Status	Notification about matrix status
Temperature	Notification about temperature within the matrix
Insert Board*	Notification about insertion of a new I/O board into a slot
Remove Board*	Notification about removal of an I/O board out of a slot
Invalid Board*	Notification about a faulty I/O board
Insert Extender	Notification about a newly connected extender to the matrix, notification
	about a switched-on extender • Notification about a newly established link between extender and matrix
Remove Extender	<ul> <li>Notification about a removed extender from the matrix</li> <li>Notification about a switched off extender</li> </ul>
	Notification about an interrupted link between extender and matrix
Fan Tray #1	Notification about the fan status on the left side of the matrix (interface view)
Fan Tray #2	Notification about the fan status on the right side of the matrix (interface view)
Power Supply #1	Notification about the status of power supply unit #1
Power Supply #2	Notification about the status of power supply unit #2
Power Supply #3*	Notification about the status of power supply unit #3
Power Supply #4*	Notification about the status of power supply unit #4



## 5.4.7 SETTING SNMP FUNCTION

### Activating the SNMP Agent

To activate the SNMP agent, proceed as follows:

1. Select Configuration > SNMP in the main menu.

2. Set the **Enable** option to **Y** (Yes) within **SNMP Agent.** By activating this option, the permission for an active query of the SNMP agent is granted.

3. Click the **Okay** button to confirm your changes.

#### **Activate SNMP Traps**

To activate active reporting of the SNMP traps, proceed as follows:

1. Select Configuration > SNMP in the main menu.

This function allows an active transmission of trap messages from the SNMP agent to the SNMP server.

- 2. Set the IP address of the SNMP server within Server Address.
- 3. Activate the requested traps by enabling them to Y (Yes).
- 4. Click the Okay button to confirm your changes.

FIGURE 5-3.6. OSD MENU CONFIGURATION - NETWORK



## 5.4.8 DATE AND TIME

The parameters for the system configuration are set in this menu, based on Simple Network Time Protocol (SNTP):

SNTP Client : N SNTP Server : 000 .0	nable the synchronisation with a network time server
Time Zone : GNT+0	0 Select your line zone
eal Time Clock	
Date : 01 /01 /00	Entor the date with formal MM/DD/VV MM - month (112) DD - dey (131) VV - year (099)
Day : 01	Enter the day of the week 1 = Monday 2 = Tuesday 7 = Sunday
Time : 00 :00 :00	Enter the time with formal hhimmiss $bh = hours (020)$ an - minutes $(059)$ as - seconds $(059)$
	Set RTC Cancel Okay

FIGURE 5-4.8.1 OSD MENU CONFIGURATION - DATE + TIME

The following parameters can be configured:

TRAPS		DESCRIPTION		
	Y	Enable network time server synchronization		
SNTP Client	Ν	Function not active (default)		
SNTP Server	Byte	Input of the SNTP server IP address (default: 000.000.000.000)		
Time Zone	Region	Set your specific time zone		



FIELD		ENTRY	DESCRIPTION		
	MM	1 to 12	Enter month		
Date*	DD	1 to 12	Enter Date		
	YY 1 to 12		Enter Year		
Day		1 to 7	Enter day of the week		
	hh	0 to 23	Enter hour		
Time	mm	0 to 59	Enter minute		
	dd	0 to 59	enter second		
* Date format according to the English notation.					

### **Configuring the Time Server**

To configure a time server, proceed as follows:

- 1. Select **Configuration > Date+Time** in the main menu.
- 2. Set the SNTP Client option to Y (Yes).
- 3. Enter the IP address of your SNTP server into the **SNTP Server** field.
- 4. Select your time zone in the **Time Zone** field.
- 5. Click the **Okay** button to confirm your settings.
- 6. Restart the matrix.
- The system time will now be provided by the SNTP server.

### Configuring the Real Time Clock without Time Server

To set the real time clock without using SNTP, proceed as follows:

- 1. Select **Configuration > Date+Time** in the main menu.
- 2. Set the current date in the **Date** field.
- 3. Set the current Day in the **Day** field.
- 4. Set the current time in the **Time** field.
- 5. Click the **RTC** button to confirm your settings.

The real time clock is now provided.

FIGURE 5-3.7 OSD MENU CONFIGURATION - SNMP





### 5.5 USER SETTINGS

You have the option to configure the following user settings:

### 5.5.1 USER SETTINGS

New users and their user settings and permissions are set in this menu.

Configuration	F1:ID F2:Name F3:Next F4:Previous F5:Refresh F6:Find H	9:Compare ESC
User List	User Data	
00001 admin	ID/Priority : 1 /999 ( LDAP User/C AD Synchron Full Name Password : ***** Repeat Password : *****	Group : N Group : N Nized : N
	Member of Group : not assigned AD group 10	ocked : N
	Administrator : Y Super User : Y Power User : Y LDAPZAD Info SNMP User : N	
	Auto Connect : N	
CPIL Access Control List		
Full access	Video access No access	New U. New G.
01001 CF0_010190037		New LU New LG
		Edit
		Delete
		LEancell
		Ckay
Litter a name to find an item		

FIGURE 5-5.5.1 OSD MENU CONFIGURATION - USER DATA

The following functions are available:

	DESCRIPTION
New U.	Create a new user
Edit	Edit an existing user
Delete	Delete an existing user
Cancel	Reject changes
Okay	Confirm the changes of an existing user or the creation of a new user account

The following keyboard commands are available:

	DESCRIPTION
<f></f>	Add highlighted CPU to list Full Access
<٧>	Add highlighted CPU to list Video Access
<n></n>	Add highlighted CPU to list No Access

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The following parameters can be configured:

		DESCRIPTION	
ID/ Priority	Numerical	User ID / User priority	
Name	Text	Username (case sensitive) Note: A username can consist of up to 32 characters.	
Full Name	Text	Optional: personal username (case sensitive, up to 32 characters)	
Password	Text	User password (case sensitive, input of minimum 8 characters up to 16 characters)	
Repeat Password	Text	Repeat user password (case sensitive)	
Member of Group	Selection	Define the assignment to a user group	
		Permission for system configuration and all switching	
Administrator	Y	operations • User has administrator rights	
	N	Function not active	
Super User	Y	Permission to switch any CON Device to any CPU Device in Extended Switching	
	N	Function not active	
Power User	Y	<ul> <li>User has user rights</li> <li>Permission to switch CON Devices to CPU Devices s in Extended Switching according to the CON or User ACL, but not in Private Mode.</li> </ul>	
	Ν	Function not active	
	Y	Permission to use SNMPv3 (encrypted)	
SNMP User	Ν	Function not active	
	Y	Re-establish the previous user connection after login	
Auto Connect	Ν	Function not active	
AD group locked	Y	Lock synchronization of group attribute for an Active Directory user. This setting is required for a manual change of user groups for a specific Active Directory user.	
	N	Function not active (default)	

- 1. Select **Configuration > User Data** in the main menu.
- 2. Modify the desired settings.
- 3. Click the **Okay** button to confirm your entries.



### 5.5.2 USER FAVORITE LIST

Individual favorite lists of CPUs that will be switched frequently can be created for different users in this menu. A favorite list can contain up to 32 different CPU Devices (from firmware V3.05). The switching of the favorites is done via keyboard commands (see chapter 7.2.1, page 274).

User Favorites	F1:ID F2:Name F3:Next F	4:Provious F5:Refresh F6:Find E9:Contain ESC
CPU Devices 01001 CPU_010190037	Favorites/CPU Data User 00001 admin User Favorites 01 02	CPU device A1AA1 CPU_A1A190A37 CPU assigned CON connected
	03 04 05 06 07 08 09 10 11 12 13 13 14 15 16	Status EXT list
Use key ≤a) to add a CPU to	war list	Cancel Okay

FIGURE 5-5.2.1 OSD MENU CONFIGURATION - USER FAVORITES

To create a favorites list for your own user, proceed as follows:

- 1. Select Assignments > User Favorites in the main menu.
- 2. Select a CPU Device to be moved to the favorites list on the User Favorites list.
- 3. Press the <a> key to move a CPU Device to the favorites list.
- To remove a CPU Device from the favorite list, press the <r> key.
- 4. Optional: press the <+> or <-> key to change the order of the CPU Devices within the favorites list.
- 5. Click the **Okay** button to confirm the settings.



### 5.5.3 USER MACROS

In this menu macro commands for switching, disconnection or user administration can be created. Macro commands are created for each user separately. A macro can execute up to 16 switching commands successively.

The execution of the macros is done via Hot Key and the <F1> to <F16> function keys (see chapter 7.2.2, page 275).

\* To execute user macros the user has to be logged in to the matrix.

enfiguration	F1:ID F2:Name F3:Nex1 F4:Previous F5:F	Refresh F6:Find F9:Compare ESC
User List	User Macros	
00001 admin	Key: F01 Parameter #1	Parameter #2
Macro Data	not used not used	
Parameter #1		
Parameter #2		Disarcol I

FIGURE 5-5.2.1 OSD MENU CONFIGURATION - USER MACROS

The following parameters can be configured:

FIELD	SELECTION	DESCRIPTION
	Connect (P1=CON, P2=CPU)	Set a bidirectional connection from CON Device P1 to CPU Device P2
	Connect Video (P1=CON, P2=CPU)	Set a Video Only connection from CON Device P1 to CPU Device P2
	Disconnect (P1=CON)	Disconnect the CON Device P1
	Logout User	Logout the current user
	Assign CPU (P1=VCPU, P2=RCPU)	Assign a Virtual CPU Device to a Real CPU Device
Function	Assign CON (P1=RCON, P2=VCON)	Assign a Real CON Device to a Virtual CON Device
(01 to 16)	Push (P1=CON)	The user's Full Access connection is forwarded to CON Device
	Push Video (P1=CON)	The video signal of the current connection (Full Access or Video Only) is forwarded to CON Device P1. The user's connection remains unchanged (Full Access or Video Only).
	Get (P1=CON)	The user's CON Device gets a Full Access connection to the CPU Device that is currently connected to CON Device P1. The connection of CON Device P1 is changed into a Video Only connection.
	Get Video (P1=CON)	The user's CON Device gets a Video Only connection to the CPU Device that is currently connected to CON Device P1. The connection of CON Device P1 remains unchanged (Full Access or Video Only).
	Login User console P2	Login a certain user P1 at CON Device P2
P1	CON or CPU Device	Name of CON Device or CPU Device
P2	CON or CON Device	Name of CON Device or CPU Device

\* The macros can also be used to switch to CPU groups.

To create a macro for the selected user, proceed as follows:

1. Select via **Configuration > User Macros** in the main menu the user for which a user macro has to be created.

2. Select in the **Key** field the function key for which a macro has to be created.

3. Select the position in the Key list where a macro command is to be inserted.

4. Select a macro command in the Macro Data field.

5. Set the necessary parameters **P1** and **P2** (e.g., CON Devices or CPU Devices) for the selected macro command.

6. Click the Okay button to confirm your selection.

7. Repeat the process for further macro commands if necessary.



### 5.5.4 USER GROUPS

The KVM matrix allows to bundle the users of a configuration into User Groups. The groups can be used to subdivide the users logically or thematically. As an application example you can group all power users together. The configuration of User Groups at the same times increases the clarity of the configuration.

\* To execute user macros the user has to be logged in to the matrix.

Configuration	F1:ID F2:Name F3:Next F4:Previous F5:Refro	esh F6:Find F9:Compare ESC
User List	User Data	
00001 admin	ID/Priority : 1 /999 Name : admin Full Name : Password : *****	Group : N LDAP User/Group : N AD Synchronized : N
	Member of Group : not assigned	AD group locked : N
	Administrator : Y Super User : Y Power User : Y SNMP User : N	
	Auto Connect : N	
CPU Access Control List	Video access No access	New U. New G.
		New LU New LG
		Edit
		<b>Element</b>
		LEancel
		Okey
Entor a name to find an item		

#### FIGURE 5-4.4.1 OSD MENU ASSIGNMENTS - USER DATA

BUTTON	DESCRIPTION
New G.	Create a new group
Edit	Edit an existing user
Delete	Delete an existing user
Cancel	Reject changes
Okay	Apply changes

BUTTON	DESCRIPTION
<f></f>	Add highlighted CPU to list Full Access
<v></v>	Add highlighted CPU to list Video Access
<n></n>	Add highlighted CPU to list No Access

To create and configure a User Group, proceed as follows:

- 1. Select **Configuration > User Data** in the main menu.
- 2. Click the New G. button.
- 3. Enter a group name into the field Name.
- 4. Click the **Okay** button to confirm the group creation.

To assign a user to a group, proceed as follows:

- 1. Select **Configuration > User Data** in the main menu.
- 2. Select the user to be assign to a User Group.
- 3. Select the User Group for the assignment in the field **Member of Group u**sing the cursor up and down keys.
- 4. Click the **Okay** button to confirm the group creation.



### 5.6 **EXTENDER SETTINGS**

The matrix automatically recognizes every extender module, physically connected to the matrix with a direct cable connection, reads out its serial number and creates EXT Units automatically. This is the Flex Port function of the matrix. Dual-Head extender modules will be recognized as two independent EXT Units.

Add-on modules are not created as independent EXT Units. The data of add-on modules is included in one EXT Unit together with the associated extender module. All EXT Units are managed in this menu. This includes the creation of new EXT Units and the deletion of existing EXT Units.

nfiguration	F1:II	F2:Name	F3:Next F4.Previous	F5:Refresh	F6:Find F	9:Compare	ES
EXT Units	- 1	EXT Data		_	_		
010100007 FUT 910100007		ID : Name :	10190037 EXT_010190037	CPU/CO 01001	Vassigned CPU_010190	 1037	1
010191923 EXT_010191923	188	Fixed :	N Port 172 ; 9	<b>X</b> 0	Universal	÷ 11	
	I	General Horizon Vertica Double Keyboar Video m	OSD Data tal mouse speed [1/x] nouse speed [1/x] click time ims] d layout ode	4 5 200 German Variab	Hotkey Fastkey DE,129 Le	: 1 : 00	
EXT Tune		Extende Enable Update Display Horizon Vertica	r OSD Data CPU selection connection info connection info time [sec] tal position l position	·····································			
Input Signals	CH1 (	.#2 0	utput Signals	C#1	C#2	New	
DVI/VGA-CPU (video) HID-CON (keyb., mouse) Audio (analog, digital) RS232 (serial) USB-CON (embedded) USB-CON (standalone) Universal-CON Cascade-CON			VI/VGA-CON (video) ID-CPU (keyb., mouse. udio (analog. digital S232 (serial .) SB-CPU (embedded) SB-CPU (standalone) niversal-CPU ascade-CPU	j) <b>4</b>		Edit Delata Cantel	

FIGURE 5-6.1. OSD MENU CONFIGURATION - EXT UNITS

### The following functions are available

BUTTON	FUNCTION
New	Create a new EXT Unit
Edit	Edit an existing EXT Unit
Delete	Delete an existing EXT Unit
Cancel	Reject changes
Okay	Apply changes

BUTTON		FUNCTION	
		Numerical value of the KVM extender module ID.	
ID	-	The ID is provided by the extender module (serial number) and cannot be changed.	
Name	Text	Name of the EXT Unit	
Fixed	Y	Create an EXT Unit with a fixed port assignment (default)	
	N	Function not active (default)	
Port 1/2	1 to 160 (depending on the matrix)	<ul> <li>Port 1: port number of the matrix the extender module is currently connected</li> <li>Port 2: redundant port number of the matrix the extender module is currently connected</li> </ul>	

\*The settings for the General OSD Data are described in chapter 5.8.2, page 111.





### 5.7 CONFIGURING AN USB 2.0 EXTENDER

This chapter helps you to configure and use your USB 2.0 EXT Units. USB 2.0 EXT Units can be configured for independent switching or can be assigned to already existing CON Devices or CPU Devices

EXT Units		EXT Data				
PL8199837 EKT 918198837		ID : 10193037 Namo : EXT_010190337		CPU/CON assigned 01081 CPU_818190037		
EL0191923 EKT_010191923	- 11	F1:00	sd : 🗵 🛛 Port 172 : 9	(i)	Universal	: N
EXT Type		Gen Hori Veri Dout Keyt	eral OSO Data izontal mouse speed [L/x] ical mouse speed [l/x] ole click time [ms] operd Layout so mode	s 200 German Variab	Hotkay Fastkey DE.129	
		Extender 050 Data Enable GPU selection Enable connection info Update connection info Display time [sec] Horizontal position Vertical position				
Input Signals	CH1.	C#2	Output Signals	C#1	C#2	Rev
DVE/VGA-CPU (video) HID-CON (keyb., mouse) Hudio (analog. digital) RS232 (corial) USB-CON (embedded) USB-CON (standalone) Universal-CON	12222	T. N.	BVI/VGA-CON (video) HID-CPU (keyo., moase.) Hudio (analo), digital) RS232 (corial .) USB-CPU (embedded) USB-CPU (standalone) Universal-CPJ	1.0	TANKANA	

#### FIGURE 5-7.1. OSD MENU CONFIGURATION -CPU DEVICES

NOTICE

The connection of a fixed port extender module (e.g., USB 2.0) to a Flex Port can cause unintended results. EXT Units for USB 2.0 extender modules have to be created manually (see chapter 5.6, page 106).




To configure a USB 2.0 EXT Unit, proceed as follows:

- 1. Select **Configuration > EXT** Units in the main menu.
- 2. Click the **New** button.
  - An EXT Unit with an eight-digit ID will be created, starting with digit 9.
- 3. Enter an appropriate name for the EXT Unit in the Name field.
- 4. Enter the port number of the matrix the USB 2.0 extender module is currently connected into the **Port** field.
- 5. To configure the created extender as a CON Unit:
  - 5.1. Set the USB-CON (standalone) option to Y (C#1 in the Input Signals column).
  - 5.2. Click the **Okay** button to confirm the setting.
- 6. To configure the created extender as a CPU Unit:
  - 6.1. Set the USB-CPU (standalone) option to Y (C#1 in the Output Signals column).
  - 6.2. Click the **Okay** button to confirm the setting.
- 7. Click the Okay button to confirm the settings.
- 8. Restart the I/O board to activate the USB fixed port for the new EXT Unit.

After restart of the I/O board, the parameters and settings of the USB 2.0 extender module are shown in the respective EXT Unit.

- 9. The USB 2.0 CPU/CON EXT Unit has to now be either assigned to an existing CPU/CON Device or a new CPU/CON Device has to be created for the assignment:
  - for a CPU Device see chapter 5.8.1, page 111,
  - for a CON Device see chapter 5.9.3, page 122
- 10. If you use parallel operation within the matrix, set the **Release Time** in the **System Settings > Switch** menu to **10 s** or more (see chapter 6.4.5, page 162).
- 11. Restart all I/O boards on which USB 2.0 EXT Units have been configured or alternatively restart the matrix.

The USB 2.0 EXT Units are now configured and can be used.

\*Manually created EXT Units are always set as fixed port EXT Units. This configuration is necessary if you want to switch, e.g., USB 2.0 connections via the matrix. To make a fixed port available again for Flex Port EXT Units after deleting a fixed port EXT Unit, a restart of the I/O board is necessary.



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### 5.8 CONFIGURING CPU SETTINGS

### 5.8.1 SETTING CPU DEVICES

New CPU Devices are configured in this menu including their assignment to EXT Units. The assignment helps to describe and switch more complex computer configurations (e.g., Quad-Head with USB 2.0) in the matrix.

figuration	F1:10 F2:Name F3:Next F4:Pre	vious F5:Refresh F6:Find F9:Compare E
PU Devices	CPU Data	
	10 : 1001	Group : N
01001 CPU_010190037	Name : CPU_01019	0037 Remote Access : N Virtual Operice : N
	Member of Group : not assig Member of Switch: not assig Remote CPU : not assig CPU assigned :	ned ned ned not assigned
	Allow Private : N Force Private : N FIX Color Reference : N	2 Step Access : N Exclusive Access : N MSC disabled : N CPU Colors : on
	EXT available	EXT assigned 010190037 0009 EXT_010190037
New R. New V. New G.	New S. New SP. New I	PC New SES.

### FIGURE 5-8.1.1 OSD MENU CONFIGURATION - CPU DEVICES

The following parameters can be configured:

FIELD	ENTRY	FUNCTION	
ID	Text	Create a new real CPU Device	
Name	Text	Edit an existing CPU Device	
Member of Group	Selection	Assign the CPU Device to a group	
Member of Switch	Selection	Assign the CPU input to the respective CPU Switch	
Remote CPU	Selection	Assign an IP CPU Device to the respective IP CPU extender unit	
CPU assigned	-	ID and name of the assigned Virtual CPU Device, cannot be changed, is retrieved automatically	
Oraun	Y	Automatically set if the CPU Device is assigned to a CPU Group	
Group	N	Function not active (default)	
Remote CPU	Y	Automatically set for a CPU Switch (484 Series)	
CPU assigned	Ν	Function not active (default)	
	Y	Automatically set for an IP CPU Device	
Remote Access	Ν	Function not active (default)	
Vietual Davias	Y	Automatically set for a Virtual CPU Device	
Virtual Device	Ν	Function not active (default)	
Allow Drivete	Y	Allow switching to the respective CPU Device in Private Mode	
Allow Private	Ν	Function not active (default)	
Forme Drivete	Y	Force switching to the respective CPU only in Private Mode	
Force Private	Ν	Function not active (default)	
Fix Color	Y	Force showing a colored frame when switching to the respective CPU. You can select between 7 colors.	
Reference	Y	Activate a reference CPU Device that inherits both Device and extender settings to any CPU Unit that is connected to the matrix for the first time. Note: It is recommended to activate the reference setting for one single CPU Device only.	
	Ν	Function not active (default)	
2 Step Access	Y	Open a pop-up window after switching to the particular CPU Device. In the background a Video Only connection will be established. A confirmation in the pop-up window is required to establish a Full Access connection to the CPU Device.	
	N	Function not active (default)	



FIELD	ENTRY	FUNCTION
Y Exclusive Access		Activate an access limitation for the case that a CPU Device is already connected via Full Access connection. When having the same priorities, any additional access to the CPU Device can only be established with a Video Only connection. Having a lower priority any additional connection is not possible. Only when having a higher priority, an additional Full Access connection can be established, and K/M control can be taken over.
	Ν	Function not active (default)
	Y	Assign the CPU Device to a group
MSC disabled	N	Activate Multi-Screen Control function
CPU Colors	Selection list	The CPU Device name will be highlighted according to the color setting for text and background. You can select between 16 colors.

To create a CPU Device, proceed as follows:

#### 1. Select **Configuration > CPU Devices** in the main menu.

2. Click the **New R.** button to create a new real CPU Device or click the **New V.** button to create a new virtual CPU Device.

- 3. Enter a CPU Device name into the field Name.
- 4. Click the Okay button.

The CPU Device is created now.

To assign an extender unit to a CPU Device, proceed as follows:

- 1. Select **Configuration > CPU Devices** in the main menu.
- 2. Select the CPU Device you want to assign an extender unit.
- 3. Select the extender unit for the assignment in the EXT available list.
- 4. Click the Okay button.

The CPU Device is assigned to the CPU Device now.

BUTTON	FUNCTION
New R	Create a new real CPU Device
Edit	Edit an existing CPU Device
Delete	Delete an existing CPU Device
Cancel	Reject changes



### 5.8.2 SETTING CPU GROUPS

The KVM matrix allows to bundle the CPU Devices of a configuration into CPU groups. The groups can be used to subdivide the CPU Devices logically or thematically. As an application example you can group all CPU Devices together that are connected to a specific matrix in a matrix grid. The configuration of CPU groups at the same times increases the clarity of the configuration.

Configuration	E1:ID E2:Name	F3:Next F4:Previou	s F5:Refresh E6:Eind E9:Compare ESC
01001 CPU_010190037	ID Name Member of Grow Member of Swi Remote CPU CPU assigned Allow Private Force Private FIX Color Reference EXI available	: 1001 : CPU_010190037 tch: not assigned not assigned : N : N : N	Group : N Switch : N Newote Access : N Virtual Device : N not assigned
New R. New V. New O Edit Delete	S.I New S.I New	w SP. New IPC	New SES

FIGURE 5-8.2.1 OSD MENU CONFIGURATION - CPU DEVICES



The following functions are available:

BUTTON	DESCRIPTION
New G.	Create a new CPU group
Edit	Edit an existing CPU Group
Delete	Delete an existing CPU Group
Cancel	Reject changes
Okay	Apply changes

BUTTON		FUNCTION	
ID	Text	Ident number of the CPU Group	
Name	Text	Name of the CPU Groupt	
Member of Group	Selection	Assign the CPU Device to a group	
	Y	Function not active (default)	
Group N		<ul> <li>Port 1: port number of the matrix the extender module is currently connected</li> <li>Port 2: redundant port number of the matrix the extender module is currently connected</li> </ul>	

To create a CPU Group, proceed as follows:

- 1. Select **Configuration > CPU Devices** in the main menu.
- 2. Click the New G. button.
- 3. Enter a CPU Group name into the field Name.
- 4. Click the Okay button.

The CPU Group is created now.

To assign a CPU Device to a group, proceed as follows:

- 1. Select **Configuration > CPU Devices** in the main menu.
- 2. Select the CPU Device you want to assign to a CPU group.
- 3. Select the CPU Group for the assignment in the field **Member of Group** using the cursor up and down keys.
- 4. Click the **Okay** button.

The CPU Device is assigned to the CPU Group now.



### 5.8.3 CONFIGURATION CPU SWITCH

The CPU Switch (484 Series) is an 8:1 port concentrator for up to eight sources (computer, CPU) attached via VGA and USB-HID (K/M). This CPU Switch can be specifically configured for a use with a KVM matrix. The configuration allows to individually switch the up to eight input signals via OSD.

figuration	F1:ID F2:Name F3:Next F4:Previou	us F5:Refresh F6:Find F9:Compare
PU Devices 01001 CPU_010190037	CPU Data IO : 1001 Name : CPU 01019003 Member of Group : not assigned not assigned CPU assigned : Allow Private : N FORCE Private : N FIX Color : N Reference : N EXT available	Group : N Switch : N Virtual Device : N not assigned 2 Step Access : N Exclusive Access : N MSC disabled : N MSC disabled : N CPU Colors : on EXT assigned 010190037 0009 EXT_010190037
New R. New V. New G. Edit Delete	New S. New SP. New IPC	Non SES

#### FIGURE 5-8.3.1 OSD MENU CONFIGURATION - CPU DEVICES

BUTTON	DESCRIPTION	
New S.	Create a new CPU Switch (484 series)	
New SP.	Create a CPU extender unit for a CPU Switch	
Edit	Edit an existing CPU Device	
Delete	Delete an existing CPU Group	
Cancel	Reject changes	
Okay	Apply changes	



The following parameters can be configured:

FIELD	ENTRY	DESCRIPTION
ID	Text	Numerical value of the KVM extender module ID. The ID is provided by the extender module (serial number) and cannot be changed.
Name	Text	Name of the EXT Unit
Member of Switch	Selection	Assign the CPU input to the respective CPU Switch
	Y	Automatically set for a CPU Switch (484 Series)
Switch	Ν	Function not active (default)

Further parameters are described in chapter 5.8.1, page 110.

To create a CPU Group, proceed as follows:

- 1. Select **Configuration > CPU Devices** in the main menu.
- 2. Click the New S. button.

A new CPU Switch will be created.

- 3. Enter a CPU Switch name into the field Name.
- 4. Assign an extender unit to the CPU Switch into the field EXT assigned.
- 5. Click the New SP. button.
- A new CPU (input) for a CPU Switch will be created (Port 1).
- 6. Assign the created CPU input to a CPU switch in the field Member of Switch.
- 7. Repeat the steps 5. and 6. for each input port in use at the CPU Switch.
- 8. Click the **Okay** button.

The CPU Switch is now configured and can be individually switched via OSD.



#### VIRTUAL CPU DEVICE 5.8.4

In this menu, either one or more Virtual CPU Devices can be assigned to a Real CPU Device. With a Virtual CPU Device, the effort of switching several CON Devices to the same CPU Device can be reduced.

If several CON Devices are connected to a Virtual CPU Device that is assigned to a Real CPU Device, you only have to change the Real CPU Device once and all consoles will receive the video signal of the new Real CPU Device.

\*One Real CPU Device can be assigned to several Virtual CPU Devices.

Virtual CPU Devices	1:ID F2:Name F3:	Next F4:Previous	F5:Refresh F6	6:Find F9:Contair	ESC
Virtual Devices		Real Devic	es		
02001 utetus] CBU 101002 CBU	020000719	01002 CD	01 020000/19		
02002 virtual_CPU_2	000000417	01001 CP	U_040069455		
				Edit	11
				Delete	
				Derete	
				Cancel	11.
				Blanu	а.
-					
Select an assignment					

FIGURE 5-8.4.1 OSD MENU CONFIGURATION - VIRTUAL CPU DEVICES





The following functions are available:

BUTTON	DESCRIPTION
New V.	Create a new virtual CPU Device
Edit	Edit an existing CPU Device
Delete	Edit an existing CPU Device
Cancel	Reject changes
Okay	Apply changes

For an assignment of Virtual CPU Devices to Real CPU Devices, proceed as follows:

1. Select **Assignments > Virtual CPU** Devices in the main menu.

2. Select the Virtual CPU Device in the **Virtual Devices** list that has to be assigned to a Real CPU Device.

3. Click the **Edit** button.

4. Select the Real CPU Device in the **Real Devices** list that has to be assigned to the selected Virtual CPU Device.

5. Click the **Okay** button to confirm the assignment.

The selected Virtual CPU Device is assigned to the Real CPU Device.



#### 5.9 CONFIGURING CONSOLE SETTINGS

Connecting a CON Unit to the matrix creates an EXT Unit in the matrix, reading the serial number of the CON Unit. An Ext Unit has to be assigned to a CON Device.

Switching operation is only possible between CON Device and CPU Device. All steps to create switchable CON Devices are described in this chapter. Several Real CON Devices can be assigned to a Virtual CON Device to reduce operation efforts (see chapter 5.8.6, page 106).

#### 5.9.1 OSD CONFIGURATION FOR MOUSE AND KEYBOARD

The OSD configuration for mouse and keyboard is made in this menu. The settings for mouse and keyboard are console-specific and can be set separately for each console.



FIGURE 5-9.1.1 OSD MENU CONFIGURATION - EXT UNITS



The following parameters can be configured:

FIELD	ENTRY	FUNCTION
Hor. Speed 1/x	1 to 9	Adjustment of the horizontal mouse speed, 1 = slow, 9 = fast (default: 4)
Ver. Speed 1/x	1 to 9	Adjustment of the vertical mouse speed, 1 = slow, 9 = fast (default: 5)
Double-click	100 to 800	Adjustment of the time slot for a double-click (default: 200 ms)
Keyboard layout	Region	Set the OSD keyboard layout according to the used keyboard (default: German (DE))
Video Mode	Variable or specific resolution	Resolution that is used when opening OSD

To change the settings for mouse and keyboard, proceed as follows:

- 1. Select **Configuration > EXT Units** in the main menu.
- 2. Select the console extender in the **EXT Units** list whose Extender OSD settings has to be adjusted.
- 3. Click the Edit button or press the <Enter> key to confirm the selection.
- 4. Modify the desired settings.
- 5. Click the **Okay** button to confirm your changes.

### 5.9.2 SETTING EXTENDER OSD

In this menu the parameters for the Extender OSD can be set. The settings for mouse and keyboard are console-specific and can be set separately for each console.

\*When setting the horizontal OSD position, a prefixed minus describes the orientation to the right edge of the monitor, e.g., -2 means  $2 \times 10 = 20$  pixels to this edge. When setting a vertical position, a prefixed minus describes the orientation to the bottom edge of the monitor. If the Update connection info function is deactivated, the Extender OSD only appears when switching via OSD.



	ELSID	EZENane	F3:Next F4:Previous F	5:Refresh	E6:Find F	9:Compare
XI Units	- 1	EXI Data				
618198837 EVT 818198837		ID : Name :	10190037 EKT_010190037	CPU/CO 01001	N assigned CPU_010190	 1037
010191923 EXT_010191923	788	Fixed :	N Port 1/2 : 9	13	Universal	: N
	I	General Horizon Vertical Double o Keyboard Video mo	OSD Data tal mouse speed [1/x] l mouse speed [1/x] lick time [ms] d layout ode	4 5 200 German Variab	Hotkey Fastkey DE,129 le	: 1 : 00
	ш	Extender Enable ( Enable d	- OSD Data CPU selection connection info	- N - N		
XI Ivpe		Update o Display Horizont Vertical	connection info time [sec] tal position   position	: N : 0 : 0		
XI Type Input Signals	CH1 C	Update o Display Horizon Vertical	connection info time [sec] tal position I position itput Signals	: N : 0 : 0 : 0 : 0	6#2	New
XI Type Input Signals DVL/VGA-CPU (video) HTD-CON (keybmouse) Audio (analog, digital) RS232 (serial) USB-CON (embedded) USB-CON (standalone) USB-CON (standalone)	CH1 C Y N N N N N	Update o Display Horizont Vertical M2 Du N DV N HI N At N RS N US N US	connection info time [sec] tal position 1 position stput Signals /I/VGA-CON (video) ID CPU (kevb. mouse) idio (analog, digital) 2322 (secial) SB-CPU (embedded) SB-CPU (standalone) iversal-CPU	CH1	CH2 NN NN NN NN NN	New Edit Contero



The following parameters can be configured:

FIELD	ENTRY	FUNCTION
Enable CPU selection	Υ	When executing the key sequence for opening the OSD, a selection list for switching CPU Devices will be displayed in the center of the monitor. Pressing the <f7> key within the selection list opens the standard OSD.</f7>
	Ν	Function not active (default)
Enable connection	Υ	Enable Extender OSD (default: Y)
Lindble connection	Ν	Function not active
Update connection	Υ	Update connection changes during fade-in of Extender OSD (default: Y)
info	Ν	Function not active
Display Time [sec]	0 to 999 seconds	Automatically set if the CPU Device is assigned to a CPU Group
Horizontal position	10 Pixels	Horizontal OSD position (default: -2)
Vertical position	10 Pixels	Vertical OSD position (default: 2)





To change the Extender OSD settings, proceed as follows:

- 1. Select **Configuration > EXT** Units in the main menu.
- 2. Select the console extender in the EXT Units list whose Extender OSD settings has to be adjusted.
- 3. Click the **Edit** button or press the <Enter> key to confirm the selection.
- 4. Modify the desired settings.
- 5. Click the **Okay** button to confirm your changes.

### 5.9.3 SETTING CON DEVICES

New CON Devices are created in this menu including access rights and assignment to extenders.

Configuration	F1:ID F2:Name	F3:Next F4:Previ	ious F5:Refresh F6	:Find F9:Compare	ESC
CON Devices	CON Data				1
03001 CON 010191923 03002 CON 040062140 03003 CON 040112302 03001 CON 040212434	ID/Priority Name Show Macro Li Allow User AC Force Login LOS Frame Disable OSD CPU Colors	:st: N CON 01019192 CL : N N N N N N N N N	23 Vir 23 All For Sca Por Red Ref Fix	tual Device : N ow CPU Scan : N ce CPU Scan : N n Time [sec]: 0 t Mode : N undancy Off : N erence : N color : 2000	
CPIL Access Control List		2	CKT assigned 010191923 000	1 EXT_010191923	
Full access	Video access	No	access	New R.	
		010	001 CPU_020190418	New V.	
				Delete	
				(Compared in	
				Gkau	
		_			

#### FIGURE 5-9.3.1 OSD MENU CONFIGURATION - CON DEVICES

The following functions are available:

BUTTON	DESCRIPTION
New R.	Create a real console
New V.	Create a virtual console
Edit	Edit an existing console
Delete	Delete an existing console
Cancel	Reject changes
Okay	Apply changes

The following parameters can be configured:

FIELD	ENTRY	FUNCTION	
ID	Text	ID of the CON extender unit	
		Priority of the CON Device	
Priority	0 to 999	Note: There is no K/M sharing between CON Devices with a different priority and the release time does not come into account. CON Devices only have Video Only access to a CPU Device if a CON Device with a higher priority is already switched to it.	
Name	Text	Name of the CON Device	
	Υ	Show the macro list instead of the CPU selection list	
Show Macro List	Ν	Function not active (default)	
Allow User ACL	Y	Allow activation of the User ACL at the local console	
	Ν	Function not active (default)	
LOS Frame	Y	<ul> <li>When the video signal between source (computer, CPU) and the CPU Unit or the connection between matrix and the CON Unit is lost, an orange frame will be displayed.</li> <li>When switching to a CPU without video signal, a blank screen will appear surrounded by an orange frame.</li> </ul>	
	Ν	Function not active (default)	
	Y	Automatically set for a CPU Switch (484 Series)	
Disable OSD	Ν	Function not active (default)	
ODU Oslava	Υ	Automatically set for an IP CPU Device	
CPU Colors	Ν	Function not active (default)	



### The following parameters can be configured:

FIELD	ENTRY	FUNCTION
	Y	Allow switching to the respective CPU Device in Private Mode
Allow CPU Scan	Ν	Function not active (default)
	Y	Force switching to the respective CPU only in Private Mode
Force CPU Scan	Ν	Function not active (default)
Scan Time	0 to 99 seconds	Retention period until switching to the next CPU Device
Y Port Mode		The favorite list will be replaced by a port list where the ports from 1-999 can be directly selected at each matrix or Matrix Grid. Note: The selection only works for CPU Devices and has to be made according to the switching of favorites. When using the Port Mode, CON and User favorites will be deactivated.
	Ν	Function not active (default)
	Y	Function is not active
Redundancy Off	Ν	Automatically switch to the second link of a connected redundant CON Unit when losing the primary link of a CPU Unit (default).
Reference	γ	Activate a reference CON Device that inherits both Device and extender settings to any CON Unit that is connected to the matrix for the first time. Note: It is recommended to activate the reference setting for one single CON Device only.
	Ν	Function not active (default)
Fix Color	Selection list	Show a colored frame at the CPU Device. You can select between 7 colors. The colored frame of the CPU device is displayed with priority.



To create a CON Device, proceed as follows:

1. Select **Configuration > CON** Devices in the main menu.

2. Click the  $\mbox{New R}$  button to create a new Real CON Device or click the  $\mbox{New V}$  button to create a new Virtual CON Device.

- 3. Enter a CON Device name into the field Name.
- 4. Click the **Okay** button.

The CON Device is created now.

To assign an extender unit to a CON Device, proceed as follows:

- 1. Select **Configuration > CON Devices** in the main menu.
- 2. Select the CON Device you want to assign an extender unit.
- 3. Select the extender unit for the assignment in the **EXT available** list.

4. Click the Okay button.





### 5.9.4 SETTING CON DEVICE FAVORITES

Individual favorite lists of CPUs to be switched frequently can be created for all consoles in this menu. A favorite list can contain up to 32 different CPU Devices (from firmware V3.05). The switching of the favorites is done via Hot Key using the keyboard (see chapter 7.2.1, page 274).

CON Favorites	F1:ID F2:Nome F3:Next F4:Previo	us F5:Refresh F6:Find F9:Contain ESC
CPU Devices	Favorites/CPU Data	
	CON Device 03004 CON_010190941 CON Favorites 01 01001 CPU_020190418 02 03 04 05 06 07 08 09 10 10 11 11 12 13 14 15 16	CPU device 01001 CPU_020190418 CPU assigned CON connected Status EXT list

### FIGURE 5-9.4.1 OSD MENU CONFIGURATION - CON FAVORITES



### 5.9.5 SETTING CON DEVICE MACROS

In this menu macro commands for switching, disconnection or user administration can be created. The macro commands are created for each console separately. Up to 32 macros can be configured per each CON Device.

A macro can execute up to 16 switching commands successively. The execution of the macros is done via Hot Key and the function keys <F1> to <F16> (see chapter 7.2.2, page 273).

\* The macros can also be used to switch to CPU groups.

Configuration	F1:ID F2:Nome F3:Next F4:Previous F5:Refresh F6:Find F9:Compare E
CON Devices	CON Macros
03001 CON_010191923	Key: F01 Parameter #1 Parameter #2
Macro Data Function	not used
Parameter #1 Parameter #2	
	The second

FIGURE 5-9.5.1 OSD MENU ASSIGNMENTS - CON MACROS





FIELD	SELECTION	DESCRIPTION
	Connect (P1=CON, P2=CPU)	Set a bidirectional connection from CON Device P1 to CPU Device P2
	Connect Video (P1=CON, P2=CPU)	Set video connection from CON Device P1 to CPU Device P2
	Disconnect (P1=CON)	Disconnect the CON Device P1
	Logout User	Logout the current user
	Set Real CPU (P1=VCPU, P2=RCPU)	Assign a Virtual CPU Device to a Real CPU Device
Function	Assign CON (P1=RCON, P2=VCON)	Assign a Real CON Device to a Virtual CON Device
(01 to 16)	Push (P1=CON)	The user's Full Access connection is forwarded to CON Device P1 and is changed into a Video Only connection.
	Push Video (P1=CON)	The video signal of the current connection (Full Access or Video Only) is forwarded to CON Device P1. The user's connection remains unchanged (Full Access or Video Only).
	Get (P1=CON)	The user's CON Device gets a Full Access connection to the CPU Device that is currently connected to CON Device P1. The connection of CON Device P1 is changed into a Video Only connection.
	Get Video (P1=CON)	The user's CON Device gets a Video Only connection to the CPU Device that is currently connected to CON Device P1. The connection of CON Device P1 remains unchanged (Full Access or Video Only).
	Login User console P2	Login a certain user P1 at CON Device P2
P1	CON or CPU Device	Name of CON Device or CPU Device
P2	CPU or CPU Device	Name of CON Device or CPU Device

To create a macro for the selected console, proceed as follows:

- 1. Select **Configuration > CON Macros** in the main menu.
- 1. Select the CON Device for which a console macro is to be created.
- 2. Select in the Key field the function key (<F1> to <F32>) for which a macro should be created.
- 3. Select the respective place on the list (1 to 16) for the key that should be set with a macro key.
- 4. Select for the highlighted position on the list a macro command in the Macro Data field.
- 5. Set the necessary parameters **P1** and **P2** (e.g., CON Devices or CPU Devices) for the selected macro command.
- 6. Confirm your inputs by pressing <Enter> and repeat the process for further macro commands if necessary.



### 5.9.6 CREATING AND ASSIGNING VIRTUAL CON DEVICES

In this menu, several Real CON Devices can be assigned to a Virtual CON Device.

This function reflects changes in permission made to Virtual CON Devices onto Real CON Devices. Virtual CON Devices can be switched in the same way as Real CON Devices.

Real CON Devices that are assigned to a Virtual CON Devices that is connected to a CPU Device will receive the video signal. The last-assigned CON Device will also have control of the keyboard and mouse.

\* A Virtual CON Device can be assigned to more than one Real CON Devices.

Virtual CON Devices	F1:ID F2:None F3:Next F4:Previous F5:Refresh F6:Find F9:Contain E50	
Real Doutces	Virtual Devices	
	Coaster Coaster Licer	
Solad en espinement		

FIGURE 5-9.6.1 OSD MENU ASSIGNMENTS - VIRTUAL CON DEVICES

For an assignment, proceed as follows:

- 1. Select **Assignments > Virtual CON Devices** in the main menu.
- 2. Select the Real CON Device in the Real Devices list that has to be assigned to a Virtual CON Device.
- 3. Click the **Edit** button.
- 4. Select the virtual console in the **Virtual Devices** list that has to be assigned to the selected Real CON Device.
- 5. Click the **Okay** button to confirm the assignment The selected Virtual CON Device is assigned to the Real CON Device.



### 5.9.7 ENABLING MULTI-SCREEN CONTROL

\*Due to limited options via OSD, we recommend configuring the Multi-Screen Control only via management software to carry out the extended configuration options (from firmware V03.08), see chapter 6.9.8, page 238.

When using Multi-Screen Control, switching up to eight connected sources (computers, CPUs) can be performed at one sink with only one connected mouse and/or keyboard. The sink can consist of up to eight CON Units and accordingly up to eight monitors, or up to sixteen monitors when using Dual-Head extenders modules. In a matrix system, Multi-Screen Control can be set up at multiple sinks. The CON Units of a sink with Multi-Screen Control must all be physically connected to the same block of 8 ports on the I/O board.

One of the CON Devices is designated for USB-HID control of the connected sources, below referred to as "Control CON Device". Control CON Devices are referred to the extender modules/Ext Units within the Multi-Screen Control that are connected to keyboard and mouse for operation. If the control has to be performed via several USB-HID devices, several CON Devices have to be defined as Control CON Device.

Smooth switching of sources with the mouse is performed by dragging the mouse pointer beyond the respective display to an adjacent display in an arrangement of displays. The displays can be arranged side by side, in a grid layout, or completely freely. Alternatively, switching can be performed via keyboard commands according to the ID number in the Multi-Screen Control setup.

#### NOTICE

When using CON Units with the possibility to connect a local source (computer, CPU) in a Multi-Screen Control environment, the local switching will be disabled.

\*When configuring Multi-Screen Control via OSD, the number of supported displays is limited to four. To configure more than four displays (up to eight with Single-Head and up to sixteen with Dual-Head installation), you have to configure the Multi-Screen Control only via management software.

\*The connected sources (computer, PC) need to support absolute mouse mode. Else a specific mouse driver needs to be installed.

\*CON Units that have been already configured for Multi-Screen Control can be connected all together to other blocks of 8 ports. In this case any further configuration is not necessary, their functionality will remain as set previously.





Henuel : N	Reduce swatching to more Disable automatic switch	mi switching with botton ung with source for and ti	heat O'Us
Screen #1	Screen #2	Screen #3	Screen 14
fnabled N Control N Owner shored Frame O Sec	Endbled N Control N Owner shared Frame sec	Enabled H Control H Owner shared Frame Fisec	Enabled H Control N Owner shared Frame Sec

The following parameters can be configured:

FIELD	SELECTION	DESCRIPTION		
Enable	Y	Activate the respective display for Multi-Screen Control		
	Ν	Function not active (default)		
Control	Y	Enable the CON Device for USB-HID control of other CON Devices if access is permitted		
	Ν	Function not active (default)		
Owner	Selection	<ul> <li>Shared (default) permits the access from a Control CON Device to all other CON Devices except to another Control CON Device</li> <li>Name of the own Control CON Device to restrict access to other CON Devices</li> </ul>		
Frame	0 to 999 seconds	Time for fade in a red frame at the display with current mouse/keyboard control		

\*Configure the Multi-Screen Control at a CON Device that should be used to control USB-HID in the setup. To change or delete a Multi-Screen Control setup, you have to open the OSD of the defined Control CON Device.

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### **Configuring Multi-Screen Control**

To configure the Multi-Screen Control, proceed as follows:

- 1. Open the OSD of a CON Unit connected to an I/O board for which the connected CON Units are to be configured for Multi-Screen Control.
- 2. Select Assignments > Multi-Screen Control in the main menu.

Only the CON Ext Units connected to the selected I/O board are visible.

3. In the Arrangement field, select the layout for the CON Device you want to configure (1 x 4 or 2 x 2).

The fields for the configuration of the individual displays will be arranged accordingly.

4. Activate Manual option if the USB-HID switching is to be restricted to keyboard commands (see

chapter 7.2.6, page 276). Manual switching allows the use of multi-head consoles.

- 5. Set the Enable option to Y on all CON Devices to activate the respective display for Multi-Screen Control.
- 6. Set the Control function to Y on one or more CON Devices to be enabled as Control CON Device.
- Use the Frame function to configure a red frame, that shows the display with current mouse control, for the duration of a specified time by flashing briefly. The frame can be activated individually for each screen by using a timer > 0 seconds.

\*All Control CON Devices are enabled to control USB-HID of all other CON Devices in the setup except of another Control CON Device. To restrict the access to other CON Devices, see following section.

\* To configure Multi-Screen Control for further I/O boards via OSD, connect to the I/O board at a CON Device that should be used to control USB-HID in the setup.

### Access restriction when using multiple Control CON Devices

Dragging the mouse pointer over the display boundary is only permitted for those displays whose CON Device is enabled for access by the owner of the respective Control CON Device.

To enable access to a display for only one Control CON Device, proceed as follows:

1. Click in the Owner field of a Control CON Device and select the name of the Control CON Device.

2. Click in the **Owner** field of all Control CON Device whose display should be accessible and select the name of the respective Control CON Device.

The mouse can now be used to access those displays whose CON Device is permitted for access by the enabled Control CON Device.

### No simultaneous USB HID sharing of multiple Control CON devices.

Example: In a setup of 4 CON Devices, if CON Device 1 and 2 are each Control CON Devices and two other "non-Control CON Devices" are configured, both Control CON Devices can access the displays of CON Device 3 to 4 if they are configured with Owner = Sharing.

However, Control CON Device 1 and 2 cannot access the display of a "non-Control CON Device" at the same time. The Control CON Device that first had USB-HID control is reset to its "own" display when the second Control CON Device take over.





### **Changing Multi-Screen Control**

To change the Multi-Screen Control for a setup of a specific I/O board, proceed as follows:

- 1. Open the OSD of a Control CON Device of the specific I/O board.
- 2. Select Assignments > Multi-Screen Control in the main menu.

Only the CON Ext Units connected to the selected I/O board are visible.

- 3. Make any edits at the configuration.
- 4. Click the **Okay** button to confirm the changes.

### **Deleting Multi-Screen Control**

To delete the Multi-Screen Control for a setup of a specific I/O board, proceed as follows:

- 1. Open the OSD of a Control CON Device of the specific I/O board.
- 2. Select **Assignments > Multi-Screen Control** in the main menu.

Only the CON Ext Units connected to the selected I/O board are visible.

3. Set the **Enable** option to **N** on all CON Devices.

The Multi-Screen Control is disabled for all CON Devices of the selected I/O board.

4. Click the Okay button to confirm the changes.

### 5.10 SAVING AND ACTIVATING A CONFIGURATION

#### NOTICE

By default, the last configuration that has been saved in the permanent DKM memory will be restored after a restart of the DKM.

First starting the DKM, the factory configuration will be copied into the current configuration. You have

2 possibilities to save configuration changes:

• saving the current configuration permanently in the DKM memory (Save) or

• saving the configuration in up to 8 predefined storage locations, as well as the default configuration in the memory of the DKM **(Save as...)** 



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### 5.10.1 SAVING THE ACTIVE CONFIGURATION

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Changing or saving configurations blocks the DKM memory and leads to a freeze of all OSD menus for a few seconds. The switching connections are not affected by this freeze.

\* If you select Auto Save within the system settings an additional automatic saving of the configuration will be periodically performed (see chapter 5.4.1, page 81).

To save the current configuration permanently in the DKM storage, proceed as follows:

Select **Configuration > Save** in the main menu.

The current configuration of the DKM is permanently saved to the DKM memory.



FIGURE5-10.1.1 OSD MENU CONFIGURATION - SAVE



### 5.10.2 SAVING A PREDEFINED CONFIGURATION

In this menu the current matrix configuration is saved to predefined storage locations in the permanent memory of the matrix.

You have the possibility to save the created configuration within eight storage locations in the matrix (File #1 to File #8). Additionally, a default configuration can be saved that can be loaded as default configuration for each start of the matrix (see chapter 5.4.1, page 81). However, it does not replace the buffering of configuration.

The storage location to be overwritten by the current configuration must be selected explicitly. The current configuration will be saved to this storage location and will be shown immediately in the menu. The previously saved configuration saved to this storage location is overwritten.

Save as         Active :       Standard Factory settings         Default       Standard Factory settings         File #1       Standard Factory cottings         File #2       Standard Factory settings         File #3       Standard Factory settings         File #4       Standard Factory settings         File #5       Standard Factory settings	
Active :       Standard Factory settings         Default       Standard Factory settings         File #1       Standard Factory cottings         File #2       Standard Factory settings         File #3       Standard Factory settings         File #4       Standard Factory settings         File #5       Standard Factory settings	
Default       Standard Factory settings         File #1       Standard Factory cottings         File #2       Standard Factory settings         File #3       Standard Factory settings         File #4       Standard Factory settings         File #5       Standard Factory settings	
File #1       Standard         File #2       Standard         File #3       Standard         File #3       Standard         File #4       Standard         File #4       Standard         File #5       Standard         File #5       Standard	
File #6 Standard File #7 Standard	
File #8 Factory settings Factory settings	

#### FIGURE5-9.10.2.1 OSD MENU ASSIGNMENTS - SAVE AS..

SAVING POSITION	NAME AND DETAILED INFORMATION
Active	Name and detailed information of the current configuration are shown. This configuration can be saved (function Save, see chapter 5.9.1, page 110).
Default	Name and detailed information of the respective saved configuration are shown. This storage location can be overwritten.
File #1 to File #8	Name and detailed information of the respective saved configuration are shown. These storage locations can be overwritten.







To save the created configuration to a specific memory location, proceed as follows:

#### 1. Select Configuration > Save As... in the main menu.

#### 2. Select the required storage location (File #1 to File #8) or Default.

The current configuration is saved to this storage location and is shown immediately in the menu. The previously saved configuration saved to this storage location is deleted.

### 5.10.3 ACTIVATING A PREDEFINED CONFIGURATION

Previously saved configurations are displayed in this menu. In **Active**, the currently loaded configuration is displayed. To replace the current configuration by another configuration, in addition to the default configuration (**Default**), one out of eight further, customized configurations (**File #1 to File #8**) can be activated.

onfiguration		ES
Open		
Active :	Standard Factory settings	
Default	Standard Factory settings	
File #1	Standard Exclare	
File #2	Standard	
File #3	Standard	
File #4	Standard	
File H5	Factory settings Standard	
File #6	Factory settings Standard	
File #7	Factory settings Standard	
File #8	Factory settings Standard Factory settings	
		.Cancel Okay

FIGURE5-9.10.3.1 OSD MENU ASSIGNMENTS - OPEN ..

To activate a previously saved configuration, proceed as follows:

- 1. Select **Configuration > Open** in the main menu.
- 2. Select the desired configuration.
- 3. Click the **Okay** button to activate the selected configuration.

The selected configuration is immediately loaded and displayed in the menu as **Active.** The previously active configuration is overwritten.



### 5.11 ACTIVE DIRECTORY

The KVM matrix can be synchronized with the directory service Active Directory with regard to user authentication. This allows the user to login at the KVM matrix using login information from the Active Directory service and to contact the Active Directory Server for each authentication that does in fact the proper authentication.

The connection between KVM matrix and the Active Directory server is established via OpenLDAP and periodically synchronized every 5 minutes.

The search of users to be synchronized and automatically added to the KVM matrix configuration can either be based on a **group** or **organizational unit (OU).** In both cases a user requires to be at least assigned to one group:

- In case of the group, all users belonging to a previously defined group on the active directory server are added to the KVM matrix and synchronized. In this alternative, the organizational structure of the organizational units (OUs) is added as matrix user group to the KVM matrix configuration. This means that the organizational unit (OU) that includes the user can be found as a matrix user group in the KVM matrix configuration after the synchronization. A user can be member of up to 8 groups.
- In case of the organizational unit, all users belonging to groups that are located directly under this organizational unit are added and synchronized. The groups can also include subgroups. The structure of the groups is added to the KVM matrix configuration as user group. Each group will be represented in the KVM matrix as a user group after the synchronization. Groups that are located in sub organizational units will be ignored.

figuration			
Network Interface			_
Dual Interface DHCP IP Address Subnet Mask Gateway Multicast	N Disable redum Primary CPU Y 192 .168 .100 .099 255 .255 .255 .000 192 .168 .100 .001 255 .255 .255 .255	ndant network interface mode Secondary CPU N 9 192 168 100 098 9 255 255 255 000 192 168 100 001 5 Grid Multicast or Broadcast (255.255.255)	
Network Services			
API Service #1 Grid Service #1 SSL Services #1	Y Enable API Se Y Enable Grid S N Enable SSL fo	ervice port (5555/5565) Service port (5557/5567) or API and Grid communication	
Syslog #1 Syslog Server	N Enable Sysle 000 .000 .000 .000	9 Server #1 9 :514	
Syslog #2 Syslog Server	N 000 .000 .000 .000	a Server #2 0 : <b>514</b>	
LDAP LDAP TLS/SSL LDAP Server LDAP Base DN	N Enable authen N Enable Transp 000 .000 .000 .000	ntication with Active Directory Server port Layer Security for Active Directory access 0 1389	
Log Levels			
Trace Syslog #1 Suslog #2	DEB N INF N DEB N INF N DEB N TNF N	NOT Y WAR Y ERR Y NOT Y WAR Y ERR Y NOT Y WAR Y ERR Y NOT Y WAR Y ERR Y	el

FIGURE5-9.11.1.1 OSD CONFIGURATION - NETWORK



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\*A matrix configuration should only include one LDAP user and one LDAP group at the same time. The LDAP user and the LDAP group can be created, changed, or deleted during ongoing operation: No restart of the matrix is required.

To configure the synchronization to the Active Directory server, proceed as follows:

- 1. Select **Configuration > Network** in the main menu of the KVM matrix.
- 2. Activate at least the function LDAP and optionally LDAP TLS/SSL.
- 3. Enter the appropriate IP address and the port number in the field **LDAP Server** (default port number: 389).
- 4. Enter the LDAP Base DN into the appropriate field (e.g., dc=example, dc=com).

\*Changes done in step 2 to 4 only come into effect after a restart of the KVM matrix.

5. Select Configuration > User Data in the main menu of the KVM matrix.

ion will immediately disconnect and restart the matrix. The selected configuration is
d is shown in the menu as active configuration under Active. The previously active configuration is overwritten. natrix may take several minutes, and the matrix is not available during the restart.
F1:ID F2:Name F3:Next F4:Previous F5:Refresh F6:Find F9:Compare E
User Data
ID/Priority       1       /999       Group : N LDAP User/Group : N AD Synchronized : N         Name       :       admin         Full Name       :       ******         Repeat Password       :       ******         Member of Group       : not assigned       AD group locked : N         Administrator       :       Y         Power User       :       Y         Power User       :       N         Auto Connect       :       N
Video access No access New C. New C. New C. New C. New C. Edit Delete Cancel Okay

#### FIGURE5-9.11.1.1 OSD CONFIGURATION - USER



- 6. Click the New LU button to create a new LDAP user. This user functions as a bind user.
- 7. Enter a name into the field name Name.
- 8. Enter the Common Name (CN) of the bind user into the field Login Name.
- 9. Enter the password of the bind user from the Active Directory into the fields **Password** and **Repeat Password**.
- 10. Click the Okay button to confirm the creation of the user.
- 11. Stay in the menu Configuration > User Data.
- 12. Click the **New LG** button to create a new LDAP group. The group determines which users of the Active Directory server should be synchronized.
- 13. Enter a name into the field Name.
- 14. Enter either the Common Name (CN) of a group or the Common Name (CN) of an organizational unit

into the field LDAP OU=/CN= as shown below:

- OU= name of the organizational unit
- CN= name of the group

**Note:** The field entry must include either OU= or CN=.

15. Click the **Okay** button to confirm the creation of the group.

The Active Directory synchronization can be used now.

### 5.12 MATRIX CASCADING

This simple method of cascading allows a switchable connection between two matrices via so called **Tie Lines**. The Matrix Cascading does not require **Bundle 4**.

This kind of configuration may become necessary if the number of ports in the entire system has to be increased or if certain important connections should be distributed to several matrices due to reasons of redundancy.

The Tie Lines are unidirectional and can only be used in one direction according to their configuration. For a bidirectional use of the cascading, you have to configure opposite Tie Lines. To connect Tie Lines to the matrices, you have to create intended **Cascade CON Devices** and **Cascade CPU Devices** that have to be switched within the cascaded environment.

\*Define a Master Matrix. All further matrices will be configured as Sub Matrices in the configuration process. Ensure that the Tie Lines will only be connected after finishing the configuration.

### 5.12.1 DIRECTING A TIE LINE FROM THE SUB TO THE MASTER

To configure settings for using Matrix Cascading and to direct the Tie Line from the Sub to the Master, proceed as follows:

1. Open the OSD of the Master Matrix. FIGURE 2-14. BACK PANEL

#### 2. Select Configuration > EXT Units in the main menu of the Master Matrix.

2.1. Click the **New** button.

A new Extender Unit will be created.





Configuration	F1:ID F2:Name	F3:Next F4:Previous	F5:Refresh	F6:Find F9:Compare	ESC
EXT Units 010190037 EXT 010190037 010191923 EXT_010191923	EXT Data ID : Name : Fixed : General Horizor Vertica Double Keyboar Video # Extende Enable Update Display Horizor Vertica	10190037 EXT 010190037 N Port 1/2 : 9 OSD Data tal mouse speed [1/x] click time [ms] d layout tode or OSD Data CPU selection connection info connection info time [sec] tal position l position	CPU/CO 01001 /0 /0 /0 /0 /0 /0 /0 /0 /0 /0 /0 /0 /0	N assigned CPU_010190037 Universal : N Hotkey : F1 Fastkey : 00	
EXT Type				New	11
Input Signals C DVI/VGA-CPU (video) HID-CON (keyb., mouse) Audio (analog, digital) RS232 (serial) USB-CON (embedded) USB-CON (standalone) Universal-CON Cascade-CON	#1         C#2         O           N         N         N         F           N         N         N         F           N         N         N         F           N         N         N         F           N         N         N         F           N         N         N         F           N         N         N         F	utput Signals WI/VGA-CON (video) HD-CPU (keyb., mouse. Judio (analog, digita) S232 (serial) ISB-CPU (embedded) ISB-CPU (embedded) ISB-CPU (standalone) Iniversal-CPU Cascade-CPU	C#1 )	C#2 Particle For the second s	
Enter a name to find an item					

FIGURE5-9.12.1.1 OSD CONFIGURATION - EXT UNITS

- 2.2. Enter an appropriate name for the Cascading CPU Unit into the Name field.
- 2.3. Enter a port number into the **Port** field according to the required connection of the Tie Line.
- 2.4. Set the Cascade-CPU option to Y (C#1) in the Output Signals column.
- 2.5. Click the **Okay** button to confirm the creation of a Cascading CPU Unit.
- 3. Select **Configuration > CPU Devices** in the main menu of the Master Matrix.
  - 3.1. Click the **New R.** button.
  - A switchable CPU Device will be created.



nfiguration	F1:ID F2:Name F3:Next F4:Previo	us F5:Refresh F6:Find F9:Compare E
CPU Devices	CPU Data	
	ID : 1001	Group : N Switch : N
01001 CPU_010190037	Name : CPU_01019003	7 Remote Access : N Virtual Device : N
	Member of Group : not assigned Member of Switch: Remote CPU : not assigned CPU assigned :	not assigned
	Allow Private : N Force Private : N FIX Color : Reference : N	2 Step Access : N Exclusive Access : N MSC disabled : N CPU Colors : Toronoon
	EXT available	EXT assigned 010190037 0009 EXT_010190037
New R. New V. New G Edit Delete	. New S. New SP. New IPC	New SES Cancel Okay

FIGURE5-9.12.1.2 OSD CONFIGURATION - CPU DEVICES

- 3.1. Enter an appropriate Cascading CPU Device into the Name field.
- 3.2. Select the previously configured Cascading CPU Unit in the Extender available list.
- 3.3. Press the <a> key to move the Cascading CPU Unit to the EXT assigned list.
- The assignment is displayed in the **Extender assigned** list.
  - 3.4. Click the **Okay** button to confirm the assignment.
- 4. Open the OSD of the Sub Matrix.
- 5. Select **Configuration > EXT** Units in the main menu of the Sub Matrix.
  - 5.1. Click the **New** button.

A new Extender Unit will be created.





Configuration	F1:ID F2:Na	me F3:Next F4:Previous	F5:Refresh	F6:Find F9:Compare	ESC
EXT Units	EXT Da	ta			- 11
010100007 FUT 010100007	ID Name	10190037 EXT_010190037	CPU/CO 01001	N assigned CPU_010190037	I.
010190037 EXT_010190037 010191923 EXT_010191923	Fixed	: N Port 1/2 : 9	/8	Universal : N	
	Gener Horiz Verti Doubl Keybo Video	al OSD Data ontal mouse speed [1/x] cal mouse speed [1/x] e click time [ms] ard layout mode	I : 4 5 200 German Variab	Hotkey : F1 Fastkey : 00 DE,129 le	l
	Exten Enabl Enabl Updat Displ Horiz Verti	der OSD Data e CPU selection e connection info e connection info ay time [sec] ontal position cal position	N N 0 0		
EXT Type					10.
Input Signals C	#1 C#2	Output Signals	C#1	C#2	а.
DVI/VGA-CPU (video) HID-CON (keyb., mouse) Audio (analog, digital) RS232 (serial) USB-CON (embedded) USB-CON (standalone) Universal-CON Cascade-CON	Y NN NN NN NN NN	DVI/VGA-CON (video) HID-CPU (keyb., mouse. Audio (analog, digital RS232 (serial) USB-CPU (embedded) USB-CPU (standalone) Universal-CPU Cascade-CPU	L) N N N N N N N	N N N N N N Cancel N N Okay	
Enter a name to find an item					

FIGURE5-9.12.1.3 OSD CONFIGURATION - EXT UNITS

- 5.2. Enter an appropriate name for the Cascading CON Unit into the **Name** field.
- 5.3. Enter a port number into the Port field according to the required connection of the Tie Line.
- 5.4. Set the Cascade-CON option to Y (C#1) in the Input Signals column.
- 5.5. Click the Okay button to confirm the creation of a Cascading CON Unit.
- 6. Select **Configuration > CON Devices** in the main menu of the Sub Matrix.
  - 6.1. Click the New R. button.

A switchable CON Device will be created.



Configuration	F1:ID F2:Name F3:Nex	t F4:Previous	F5:Refresh F6:Find	F9:Compare	ESC
CON Devices 03001 CON 010191923 03002 CON 040062140 03003 CON 040112302 03001 CON_040212434	CON Data ID/Priority : 30 Name : CO Show Macro List: M Allow User ACL : M Force Login : M LOS Frame : M Disable OSD : M CPU Colors : -	04 <b>2</b> 0 N 010191923	Virtual I Allow CPU Force CPU Scan Time Port Mode Redundanc Reference Fix Color EXT assigned 010191923 0001 EXT	Device : N J Scan : N J Scan : N e Isec]: 0 e : N cy Off : N e : N	
CPU Access Control List Full access	Video access	No. acc 01001	ess CPU_020190418	New R. New V. Edit Delete Cancel	

FIGURE5-9.12.1.4 OSD CONFIGURATION - CON DEVICES

- 6.2. Enter an appropriate name for the Cascading CON Device into the Name field.
- 6.3. Press the <a> key to move the Cascading CON Unit to the **EXT assigned** list.
  - The assignment is displayed in the **Extender assigned** list.
- 6.4. Click the **Okay** button to confirm the assignment.

7. Select **Configuration > System** in the main menu of the Sub Matrix.

- 7.1. Set the Sub Matrix option to Y.
- 7.2. Click the **Okay** button to confirm the Sub Matrix option.

\*The OSD of the Sub Matrix will immediately freeze and will be only accessible by using the keyboard command <Hot Key>, <s>, <o>.

8. Restart all I/O boards (see chapter 7.11.3, page 321) on which any Master/Sub CON Units or CPU Units have been configured or alternatively restart the matrix (see chapter 7.11.1, page 320).



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Device : SWITCH_01 Name : Standard		Host name for network environment Name of current matrix configuration
Into : Factory se Sub Matrix Load Default Auto Save Enable COM Echo Enable LAN Echo Enable Redundancy Synchronize Echo Only Master IP Address	N N N N N N N N N N N N N N N N N N N	Allow hotkey control in cascaded environment Load always default configuration Save matrix status automatically Echo all switch commands via COM ports Echo all switch commands via LAN ports Enable automatic switching for redundant extenders Synchronize matrix with master matrix Synchronize matrix with echo only
Enable Auto Config ID Real CPU Device ID Virt. CPU Device ID Real CON Device ID Virt. CON Device	1001 2001 3001 4001	Assign new extender to a new CPU or CON unit Start ID for automatic assignment of real CPU devices Start ID for automatic assignment of virtual CPU devices Start ID for automatic assignment of real CON devices Start ID for automatic assignment of virtual CON devices
Invalid IO-Boards Enable old Echos Remove IO-Boards Keep Gridlines		Keep IO-Boards with invalid firmware online for update Echo internal switch commands with old format Remove IO-Boards while missing the secondary controller boar Keep gridlines connected while waiting for grid master
SD Data CPU Horizontal mouse spec Vertical mouse spece Double click time [m	eed [1/ 1 [1/x]	x]: 4 Global Keys : 5 Hotkey : F1 Cancel : 200 Fastkey : 00

FIGURE5-9.12.1.5 OSD CONFIGURATION - SYSTEM

9. Connect the Tie Lines to the matrices. Ensure that each **Cascade CON Device** on one matrix is connected to **Cascade CPU Device** on the other matrix to achieve switchability between two matrices.

The Matrix Cascading is now configured and can be used. Additional Tie Lines are configured accordingly. The use of cascading is described in chapter 6.11, page 247.

### 5.12.2 DIRECTING A TIE LINE FROM THE MASTER TO THE SUB

To configure settings for using Matrix Cascading and to direct the Tie Line from the Sub to the Master, proceed as follows:

1. Open the OSD of the Master Matrix.

2. Select **Configuration > EXT Units** in the main menu of the Master Matrix.

2.1. Click the **New** button.

A new Extender Unit will be created.


Configuration	F1:ID F2:Name	F3:Next F4:Previous	F5:Refresh	F6:Find F9:Compare	ESC
EXT Units	EXT Data ID : Name : Fixed : General Horizon Vertica Double Keyboar Video m Extende Enable Update Display Horizon Vertica	10190037 EXT 010190037 N Port 1/2 : 9 OSD Data tal mouse speed [1/x] l mouse speed [1/x] click time [ms] d layout ode r OSD Data CPU selection connection info connection info time [sec] tal position l position	CPU/COM 01001 0 /0 200 35 200 36 37 37 37 37 37 37 37 37 37 37 37 37 37	N assigned PPU_010190037 Universal : N Hotkey : F1 Fastkey : 00 DE,129 Le	
Input Signals C DVI/VGA-CPU (video) HID-CON (keyb., mouse) Audio (analog, digital) RS232 (serial) USB-CON (embedded) USB-CON (standalone) Universal-CON Cascade-CON	H1 CH2 O N N N H N N N H N N N R N N N U N N U N N U N N U N N U	utput Signals VI/VGA-CON (video) ID-CPU (keyb., mouse. udio (analog, digital S232 (serial) SB-CPU (embedded) SB-CPU (standalone) niversal-CPU ascade-CPU	C#1 )	C#2 N N N N N N N N N N N N N	
Enter a name to find an item					

FIGURE5-9.12.2.1 OSD CONFIGURATION - EXT UNITS

- 2.2. Enter an appropriate name for the Cascading CON Unit into the **Name** field.
- 2.3. Enter a port number into the **Port** field according to the required connection of the Tie Line.
- 2.4. Set the Cascade-CON option to Y (C#1) in the Input Signals column.
- 2.5. Click the **Okay** button to confirm the creation of a Cascading CON Unit.
- 3. Select **Configuration > CON Devices** in the main menu of the Master Matrix.
  - 3.1. Click the **New R.** button.
  - A switchable CON Device will be created.





Configuration	F1:ID F2:Name F3:Next F4:Previous	F5:Refresh F6:Find F9:Compare ESC
CON Devices 03001 CON 010191923 03002 CON_040062140 03003 CON_040112302 03001 CON_040212434	CON Data ID/Priority : 3004 Z0 Name : CON 010191923 Show Macro List: N Allow User ACL : N Force Login : N LOS Frame : N Disable OSD : N CPU Colors : commence	Virtual Device : N Allow CPU Scan : N Force CPU Scan : N Scan Time Isec]: 0 Port Mode : N Redundancy Off : N Reference : N Fix Color :
CPU Access Control List	EXT available	EXT_assigned 010191923 0001 EXT_010191923
Full access	Video access No acc 01001	ess CPU_020190418 Edit Delete Cancel
Enter a name to find an iter		Okay

FIGURE5-9.12.2.2 OSD CONFIGURATION - CON DEVICES

- 3.2. Enter an appropriate name for the Cascading CON Device into the Name field.
- 3.3. Select the previously configured Cascading CON Unit in the Extender available list.
- 3.4. Press the <a> key to move the Cascading CON Unit to the EXT assigned list.
- The assignment is displayed in the **Extender assigned** list.
- 3.5. Click the **Okay** button to confirm the assignment.



4. Open the OSD of the Sub Matrix.

5. Select **Configuration > EXT** Units in the main menu of the Sub Matrix.

5.1. Click the **New** button.

A new Extender Unit will be created.

- 5.2. Enter an appropriate name for the Cascading CPU Unit into the Name field.
- 5.3. Enter a port number into the Port field according to the required connection of the Tie Line.

5.4. Set the Cascade-CPU option to Y (C#1) in the Output Signals column.

5.5. Click the **Okay** button to confirm the creation of a Cascading CPU Unit.

Configuration	F1:ID F2:Name	F3:Next F4:Previous	F5:Refresh F6:Find F9:Compare	ESC
CPU Devices	CPU Data			
01001 CPU_010190037	ID Name Member of Gr Member of Sw Remote CPU	: <u>1001</u> : <u>CPU_010190037</u> oup : not assigned itch: not assigned not assigned	Group : N Switch : N Remote Access : N Virtual Device : N not assigned	
	CPU assigned Allow Privat Force Privat FIX Color Reference	: e : N e : N : N	2 Step Access : N Exclusive Access : N MSC disabled : N CPU Colors : common	l
			010190037 0009 EXT_010190037	
New R. New V. New G. Edit Delete	New S. N	ew SP. New IPC		I.
criter a name to find an item				

FIGURE5-9.12.2.3 OSD CONFIGURATION - CPU DEVICES

- 6.1. Enter an appropriate name for the Cascading CPU Device into the Name field.
- 6.2. Press the <a> key to move the Cascading CPU Unit to the **EXT assigned** list.

The assignment is displayed in the **Extender assigned** list.

6.3. Click the **Okay** button to confirm the assignment.

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7. Select Configuration > System in the main menu of the Sub Matrix.

#### 7.1. Set the **Sub Matrix** option to **Y**.

7.2. Click the Okay button to confirm the Sub Matrix option.

\*Define a Master Matrix. All further matrices will be configured as Sub Matrices in the configuration process. Ensure that the Tie Lines will only be connected after finishing the configuration

guration System	
Device : <mark>SWITCH_01</mark> Name : Standard Info : Factory s	Host name for network environment Name of current matrix configuration settings
Sub Matrix Load Default Auto Save Enable COM Echo Enable LAN Echo Enable Redundancy Synchronize Echo Only Master IP Address	<ul> <li>N Allow hotkey control in cascaded environment</li> <li>N Load always default configuration</li> <li>N Save matrix status automatically</li> <li>N Echo all switch commands via COM ports</li> <li>N Echo all switch commands via LAN ports</li> <li>Y Enable automatic switching for redundant extenders</li> <li>N Synchronize matrix with master matrix</li> <li>N Sunchronize matrix with echo only</li> <li>000 .000 .000</li> </ul>
Enable Auto Config ID Real CPU Device ID Virt. CPU Device ID Real CON Device ID Virt. CON Device	<ul> <li>Assign new extender to a new CPU or CON unit</li> <li>1001 Start ID for automatic assignment of real CPU devices</li> <li>2001 Start ID for automatic assignment of virtual CPU device</li> <li>3001 Start ID for automatic assignment of real CON devices</li> <li>4001 Start ID for automatic assignment of virtual CON device</li> </ul>
Invalid IO-Boards Enable old Echos Remove IO-Boards Keep Gridlines	: N Keep IO-Boards with invalid firmware online for update : N Echo internal switch commands with old format : N Remove IO-Boards while missing the secondary controller bo : N Keep gridlines connected while waiting for grid master
OSD Data CPU Horizontal mouse spec Vertical mouse spec	peed [1/x]: 4 Global Keys ed [1/x] : 5 Hotkey : F1 Cance
Double click time [	ms] : 200 Fastkey : 00

FIGURE5-9.12.2.4 OSD CONFIGURATION - SYSTEM

8. Restart all I/O boards (see chapter 7.11.3, page 321) on which any Master/Sub CON Units or CPU Units have been configured or alternatively restart the matrix (see chapter 7.11.2, page 320).

9. Connect the Tie Lines to the matrices. Ensure that each **Cascade CON Device** on one matrix is connected to **Cascade CPU Device** on the other matrix to achieve switching ability between two matrices.

The Matrix Cascading is now configured and can be used.

Additional Tie Lines are configured accordingly. The use of cascading is described in chapter 6.11, page 247.

#### NOTICE

#### Possible loss of configuration changes

By clicking the **Apply** button changes are applied to the active configuration and saved in the volatile memory of the matrix. In the event of a sudden power failure, these changes are lost. To save changes permanently:

Save the configuration changes into the active configuration (**Save**, see chapter 5.10.1, page 134), save a predefined configuration (**Save as**..., from chapter 5.10.1 page 135, or perform a restart (see chapter 7.10 page 315).

#### NOTICE

A change in system-relevant parameters (e.g., change in the IP address) is immediately displayed in the management software. To initialize system-relevant configuration changes on the matrix, the matrix must be restarted. The restart of the matrix may take several minutes, and the matrix is not available during the restart.

### 6.1 CONFIGURING IN ONLINE MODE

Configurations and system settings can be edited via management software in online mode with an active connection between matrix and management software. Hereby, the following steps are necessary:

1. Connect the management software with the matrix.

The manufacturer-specific configuration (Factory Setting) saved on the matrix is loaded into management software.

2. Click the Activate Edit Mode menu item in the toolbar.

The edit mode is active. A symbol is shown in the status bar.

3. Make any edits at the configuration and system settings.

4. Click the Apply button to confirm the changes.

The changes apply immediately as current configuration in the volatile memory of the matrix.

5. Click the **Deactivate Edit Mode** menu item in the toolbar.

6. Click the **Remote Save** button to save the configuration into the active configuration to the matrix.

7. Restart the system (depending on the settings made).

#### 6.2 CONFIGURING IN OFFLINE MODE

Configuration and system settings via management software can be changed in offline mode without a direct connection between matrix and management software. Afterwards, the configuration must be uploaded to the matrix. Hereby, the following steps are necessary:

1. Connect the management software to the matrix.

The manufacturer-specific configuration (Factory Settings) saved on the matrix is loaded into management software.

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- 2. Download the configuration.
- 3. Close the connection from the management software to the matrix.
- 4. Click the Activate Edit Mode menu item in the toolbar.

The edit mode is active. A symbol is shown in the status bar.

- 5. Make any edits at the configuration and system settings.
- 6. Click the Apply button to confirm the changes.

The changes apply immediately as current configuration in the volatile memory of the matrix.

- 7. Click the **Deactivate Edit Mode** menu item in the toolbar.
- 8. Upload the configuration to the matrix and activate immediately (optional) or later.
- 9. Optionally: restart the system.

### 6.3 SETTING MANAGEMENT SOFTWARE OPTIONS

The settings of the management software can be customized and optimized to support you configure your matrix. The settings can be set in the offline mode.

\*A restart of the management software is required to activate changes in the options menu.

### 6.3.1 SETTING PROGRAM DEFAULT SETTINGS

To avoid the repeated entry of data in the management software, this data can be saved in the default settings.

Options							×
🌂 Default Settings	Style	Language	Miscellaneous	Syslog	SNMP		
IP / Hostname							
User							
Configuration Director	ory						
Firmware Directory							
Status Directory							
Import / Export Direct	tory						
Preset Directory							
						<u>O</u> k	C <u>a</u> ncel

FIGURE 6-3.1 MANAGEMENT SOFTWARE MENU EXTRAS - OPTIONS - DEFAULT SETTINGS



FIELD	DESCRIPTION
IP / Hostname	Default IP address or host name of the matrix for establishing a connection
User	Default username for establishing a connection
Configuration Directory	Default directory for configuration files
Firmware Directory	Default directory for firmware files
Status Directory	Default directory for status files
Import / Export Directory	Default directory for import and export files
Presets Directory	Default directory for macro files

To activate or set the default settings, proceed as follows:

1. Select Extras > Options in the menu bar.

The Options menu opens and shows the Default Settings tab.

- 2. Enter the appropriate data.
- 3. Click the **Ok** button to confirm your entries.
- 4. Close the management software and restart it.

### 6.3.2 SETTING FONT SIZE, TOOLTIP, AND THEME

The font size can be set in this menu and the display of tooltips for the toolbar can be activated.

- 1. Select Extras > Options in the menu bar and open the Style tab.
- 2. Select the desired font size (Normal or Large).
- 3. Click the Show Toolbar Button Text checkbox.
- A tooltip is displayed when hovering over a menu item in the toolbar.
- 4. Select the color theme for the management software (Dark (default) or Gray).
- 5. Click the **Ok** button to confirm your changes.
- 6. Close the management software and restart it..

FIGURE 2-14. BACK PANEL

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Options							×
🔧 Default Settings	Style	Language	Miscellaneous	Syslog	SNMP		
Font Size Show Toolbar Button Themes	Text	Norm ✓ Gray	al	•		<u>Q</u> k	Cancel

FIGURE 6-3.2.1 MANAGEMENT SOFTWARE MENU EXTRAS - OPTIONS - STYLE

#### 6.3.3 SETTING LANGUAGE OF THE MANAGEMENT SOFTWARE

The font size can be set in this menu and the display of tooltips for the toolbar can be activated.

The language within the management software is set in this menu. The charset must match the selected language to ensure correct representation.

- 1. Select **Extras > Options** in the menu bar and open the **Language** tab.
- 2. Select the desired language within the management software and the corresponding charset.
- 3. Click the **Ok** button to confirm your changes.
- 4. Close the management software and restart it.

Options							×
🔨 Default Settings	Style	Language	Miscellaneous	Syslog	SNMP		
Language		Default	~				
Select charset of swit	ch	Default		~			
Using the wrong char	set can	result in valu	es not displaying	properly.			
						01	Garant
						<u>O</u> k	C <u>a</u> ncel

FIGURE 6-3.3.1 MANAGEMENT SOFTWARE MENU EXTRAS - OPTIONS - LANGUAGE



### 6.3.4 SETTING AUTOSTART OF THE DEVICE FINDER

Additional options for the matrix can be enabled in this menu.

Options							×
🔧 Default Settings	Style	Language	Miscellaneous	Syslog	SNMP		
Device Finder on sta	rtup						
Name adoption (Ext Unit ↔ Device)							
Show Super Grid Vie	w						
Show powerbackplan and fan firmware	ne						
Enable single I/O boa update on compact s	ard switch						
Enable splitted firmw update (matrix and ex for master and sub p the 576 switch	vare xtender) art of						
						<u>O</u> k	C <u>a</u> ncel

#### FIGURE 6-3.4.1 MANAGEMENT SOFTWARE MENU EXTRAS - OPTIONS - MISCELLANEOUS

OPTION	DESCRIPTION
Device Finder on startup	Start the Device Finder automatically when starting the management software
Name adoption	Entered name for a device is also applied to the extender and vice versa
Show Super Grid View	Show the Super Grid option in the task area
Show power backplane and fan firmware	Show the firmware of the fans and the power backplane in the menu Status & Updates > Status- Matrix Firmware
Enable single I/O board on compact switch	Option available only for KXM compact:
Enable splitted firmware update (matrix and extender) for master and sub part of the 576 matrix	Option available only for DKM enterprise 576:





To start the Device Finder automatically when starting the management software, proceed as follows:

- 1. Select **Extras > Options** in the menu bar and open the **Miscellaneous** tab.
- 2. Activate the **Device Finder on startup** checkbox.
- 3. Click the **Ok** button to confirm your changes.
- 4. Close the management software and restart it.

After restarting the management software, the **Device Finder** appears.

### 6.4 SYSTEM SETTING

### 6.4.1 SETTING SYSTEM CONFIGURATION

The system configuration is set in this menu.

				-		×
Elle Edit Device Estras 2						
🧰 🗎 💭 📭	100					
Open Save Reload Connect	Disconnect	Activate Edit Mode Remote Sav	e Download Uptoad Monitoring Flash Update Device Finder System Check Save Status			
20210210.zip Master ×						
View	~ S	stem Settings - System				
Matrix	Ge	neral Automatic ID Global (	)SD Settings			
Port				31	J Show	w Help
Grid						
Control	De	wice	INVIA_LIVU3 Most come for subunit as immund (communicat charactery a.v. 4.7.0.0)			
Control	~					
Extended Switch	Na	ime	Kattle-Gill2			
Presets						
Status & Indatas	inf	lo	K-VM Mamin-Grid (DV033, DV071)			
status e opontes						
Status - Matrix Firmware			Description of current configuration			
Status - Extender Firmware	Su	b Matrix				
Update - Matrix Firmware			Allow hotkey control in cascaded environment			
Activate Continuation	Lo	ad Default				
Miscellaneous			When performing a cold start or a restart of the matrix, the configuration stored in Default will be always activated			
Funtam Entlines	Au	ito Save	Eng water also a density of			
system sermils		able COM Fabe	para unite muto automotory.			
System	5.0	able COM ECHO	Eche all switch commands via communication ports			
Access	5.	able I AN Echo	2			
Switch	2.0	able Crot Conv	Echo all switch commands via LAN ports			
Date and Time	En	able Redundancy	V			
Matrix Grid			Enable automatic switching for redundant extenders.			
Formation & Destroye	Sy	nchronize				
Extender & Devices	<u></u>		Synchronize matrix with master matrix			
EXT Units	Ec	ho Only				
CPU Devices			Synchronize mabix with echo only			
CON Devices	Ma	aster IP Address	0 2 0 2 0 2 0			
User Settings	^		Set the network address of the mester matrix.			
Users & Groups	lins	valid VO Boards				
Arrianmant			Requires cold start of the matrix, shallmust be OFF during normal operation			
Assignment	EB	able Old Echo				
Virtual CPU Devices			Echo internal switch commands with old format			
Virtual CON Devices	Re	move VO Boards				
Mum-screen Control			Hemove an unerge whee meaning the secondary controller board (376)	-		_
				- second	Ca	PACH!
Config reloaded			Default			

FIGURE 6-4.1.1 MANAGEMENT SYSTEM SETTINGS - SYSTEM - GENERAL



OPTION		DESCRIPTION
Device	Text	Enter the device name of the matrix (default: SWITCH_01) The device name is used as the host name in the network.
Name	Text	Enter the name of the configuration that is used to save the current settings (default: Standard)
Info	Text	Additional text field to describe the configuration (default: Factory settings)
Sub Matrix	Activated	If the matrix is defined as a sub matrix in the OSD, the user will lose control. Control can be recovered by using the keyboard command <hot key="">, <s>, <o>. The OSD for the matrix that has been defined as sub matrix will be reopened.</o></s></hot>
	Deactivated	Function not active (default)
Les d Defeult	Activated	Starting the matrix after a restart or a switch-on with the default configuration.
Load Default	Deactivated	Starting the matrix after a restart or a switch-on with the last saved configuration (default).
Auto Save	Activated	Save the current configuration of the matrix in the flash memory periodically. Note: During the save operation, the matrix will not be operational. Saving takes place every 600 seconds if changes of the configuration or switching operations have been executed in the meantime.
	Deactivated	Function not active (default)
Enable COM Echo	Activated	Send all switching commands performed in the matrix as an echo via LAN connection. Note: This function should be enabled when using a media control via LAN connection or when using stacking with two or more matrices.
	Deactivated	Function not active (default)
Enable LAN Echo	Activated	Automatically switch to the second link of a connected redundant CON Unit when losing the primary link of a CPU Unit (default) Note: This function will have to be activated for both matrices in a fully redundant setup
	Deactivated	Function not active (default)
Enable Redundancy	Activated	Automatically switch to the second link of a connected redundant CON Unit when losing the primary link of a CPU Unit (default) Note: This function will have to be activated for both matrices in a fully redundant setup
	Deactivated	Function not active
Synchronize	Activated	Synchronize the sub matrix to the switch status of the master matrix.
Synchronize	Deactivated	Function not active (default)





OPTION		DESCRIPTION
Echo Only	Activated	Synchronize the matrix according to the echo of a second matrix. Note: This is a bidirectional synchronization where both matrices have to be configured as Synchronize with the Master IP of the respective other matrix.
	Deactivated	Function not active (default)
Master IP Address	Byte	Set the network address of the master matrix (default: 000.000.000)
Invalid IO-Boards	Activated	Keep I/O boards with incorrect or invalid firmware online in the matrix. Note: To keep an I/O board with wrong or damaged firmware online in the matrix, the maintenance mode of the matrix will be activated.
	Deactivated	Function not active (default)
Enable old Echo	Activated	Translate current switching command (implemented since V02.09) internally into the old, already known switching commands and send them as echo.
	Deactivated	Function not active (default)
Remove IO-Boards	Activated	Note: Only for DKM 576: Shut down of I/O boards if the second CPU board is not available. Connection will be disconnected.
	Deactivated	Function not active (default)

To set parameters for the system configuration, proceed as follows:

- 1. Select **System Settings > System** in the task area.
- 2. Click the Activate Edit Mode menu item in the toolbar.
- 3. Modify the desired settings.
- 4. Click the **Apply** button to confirm your entries.
- 5. Click the Deactivate Edit Mode menu item in the toolbar.



## 6.4.2 ENABLING AUTOMATIC CREATION OF CPU AND CON DEVICES

Eile Edit Desice Extra 2			- 🗆 X
Qsen Save Reload Connect Disco	nnect Activate Edit Node Rem	ife Save Download Upbad Upbad Volcation Device Finder System Check Save Status	
20210210.201 master X	-		
VIEW O	System Settings - Syst		
Matrix Port Grid Control	Enable Auto Config	ana ooo daaraya	🗸 Show Help
Control 🥱	ID Deal COU Deales	Assign new EXT will to a new CPU or CON device	
Extended Switch	ID Real CPU Device	3001 Start ID for automatic assignment of real CPU devices	
Presets	ID Virtual CPU Device	2001	
Status & Updates 🔷		Start © for automatic assignment of virtual CPU devices	
Status - Matrix Firmware	ID Real CON Device	3001 Start ID for automatic assignment of real CON devices	
Update - Matrix Firmware Update - Extender Firmware Activate Configuration Miscellaneous	ID Virtual CON Device	4001 Start ID for automatic assignment of vitual CON devices	
System Settings			
System Access Switch Network Date and Time Matrix Grid			
Extender & Devices			
EXT Units CPU Devices CON Devices			
User Settings			
Users & Groups			
Assignment A			
Virtual CPU Devices Virtual CON Devices Multi-Screen Control			- Arton Cancel
		Detault	



Settings for automatic creation of CPU and CON Devices when a new extender unit is connected are set in this menu.

To set up the automatic creation of CPU Devices or CON Devices, proceed as follows:

- 1. Select **System Settings > System** in the task area.
- 2. Select the Automatic ID tab in the working area.
- 3. Click the Activate Edit Mode menu item in the toolbar.
- 4. Modify the desired settings.
- 5. Click the **Apply** button to confirm your entries.
- 6. Click the **Deactivate Edit Mode** menu item in the toolbar.

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### 6.4.3 CONFIGURING OSD

The Hot Key for accessing the command mode and the Fast Key to open the OSD are configured in this menu.

Die Odl Davies Davie A							- 0 ×
Spen. Save Relat Come	nt Disconnect Activate Edit Hode Re	mote Save Downland. Upland.	Nontoring Plash Update	Revice Pinder System Check	Sava Satus.		
20210210.2ip Master ×							
View	System Settings - Sy	stem					
Matrix Port	General Automatic ID	Global OSD Settings					🗹 Show Help
Grid Control	Hot Key	Pre-configured Hot Key	~				
Control	<u>^</u>	Keyboard sequence to acce	ss the command mode				
Extended Switch Presets	Fast Key	Pre-centigured Fast Key Keyboard sequence to acce	w as the command mode and to op	en the OSD			
Status & Updates	^						
Status - Natrix Firmware Status - Extender Firmware Update - Matrix Firmware Update - Extender Firmware Activate Configuration Miscellaneous							
System Settings	^						
Bystem Access Switch Network Date and Time Matrix Grid							
Extender & Devices	. ^						
EXT Units CPU Devices CDN Devices							
User Settings	~						
Users & Groups							
Assignment	^						
Virtual CPU Devices Virtual CON Devices Multi-Screen Control							Cancel
						Default	

#### FIGURE 6-4.1.1 MANAGEMENT SYSTEM SETTINGS - SYSTEM - GLOBAL OSD SETTINGS

OPTION		DESCRIPTION
Hot Key	Keyboard command	Calling the command mode via keyboard sequence
Fast Key	Keyboard command	Calling the command mode with only one key

To configure global OSD settings, proceed as follows:

- 1. Select System Settings > System in the task area.
- 2. Click the Activate Edit Mode menu item in the toolbar.
- 3. Select the Global OSD Settings tab in the working area.
- 4. Modify the desired settings.
- 5. Click the **Apply** button to confirm your entries.
- 6. Click the Deactivate Edit Mode menu item in the toolbar.



### 6.4.4 SETTING ACCESS CONFIGURATION

The Hot Key for accessing the command mode and the Fast Key to open the OSD are configured in this menu.

Ella Edit Davina Estras 0			- 🗆 ×
2021 0210 ziol Master X	d gieconnect Activate Edit Note Ren	The Serve Described. Upbast. Upbast. Describe Profer. System Check. Serve Status.	
Maar	· Ourtage Cattings . Ann	4.7.7	
United	system settings - Hot		J. Show Halo
Port	Loonen Collana		C straing
Grid	force they I agin		
Control	Force over cogn	Require user login to enter 050	
Control	· Enable User ACL		
Extended Switch		Enable CPU Access Control List for all users	
Pres ets	Enable Console ACI.	×	
Status & Updattes	-	Enable CPU Access/Control IList for all consoles	
Ontar - Hatty Elements	ON UNATION ACL	02 user and C/Ni Amasa Costrol List Lookevel annasa).	
Status - Entender Firmware	AND User/CONLACI		
Update - Matrix Firmware	AND OPENCOMPACE	AMD user and CDNAccess Central Let: (reduce access)	
Update - Extender Firmware	Enable New User		
Activate Configuration		Enable (R) access for new users	
Miscellaneous	Enable Now CON		
System Settings	~	Enable CPU access for new CON devices	
System	Auto-Disconnect		
Access	OFD Treasultand	Decenved censor non current c/P upon spenny be I/SU	
Switch	USD Timeout[sec]	9 Snarth isachilte tea to suit 050 asternatically (1 = daachualad)	
Date and Time-	Julo Loopet Insist		
Matrix Grid	same regressional	Specify maching the flat sufamatic user legoul (0 - immediate, -1 - untimited)	
Extender & Devices	- Keep CPU		
Diffinite		Keep-CPU-connection after Auto Lagout	
CPU Devices	Show CPU		
CONDevices		Show CPU connector into an all CDN units	
User Settings	~		
Users & Groups	_		
Annine ment			
Assignment			
Virtual CPU Devices Virtual CON Devices Multi-Screwer Control			(anti) Cancel
		Default	

#### FIGURE 6-4.4.1 MANAGEMENT SYSTEM SETTINGS - SYSTEM - ACCESS

OPTION		DESCRIPTION
Force User Login	Activated	The user has to login with a username and a password once to enter OSD. Thereafter the user remains logged in until he explicitly logs out or an auto logout is affected. Note: When using the Force User Login function, both console favorites and console macros still remain active.
	Deactivated	Function not active (default)
Enable User ACL	Activated	CPU access is restricted according to the permissions in the ACL (Access Control List). • User login is required. • Switching by keyboard Hot Keys requires a prior login.
	Deactivated	Function not active (default)



OPTION		DESCRIPTION
Enable CON ACI	Activated	CPU access is restricted according to the permissions in the respective Console ACL (Access Control List). No login required
	Deactivated	Function not active (default)
	Activated	The user obtains the sum of access rights from the console and his personal access rights after logging in (extended access)
OR USE/CON ACL	Deactivated	Function not active (default)
And User/CON ACL	Activated	The user obtains the common divisor of access rights from the console and his personal access rights after logging in (reduced access)
	Deactivated	Function not active (default)
Enchlo now Lloor	Activated	Newly created users automatically receive access to all CPUs
Ellable flew Oser	Deactivated	Function not active (default)
	Activated	Newly created CON Devices automatically receive access to all CPUs
Enable new CON	Deactivated	Function not active (default)
Auto Disconnect	Activated	Upon opening the OSD, the console will be automatically disconnected from the current CPU.
	Deactivated	Function not active
OSD Timeout [sec]	0 to 999 seconds	Period of inactivity after which OSD will be closed automatically. • Select 0 seconds for no timeout • (default: 0 seconds)
Auto Logout [min]	0 to 999 minutes	<ul> <li>Period of inactivity of a logged-in user at a console after which he will be automatically logged out.</li> <li>In addition to the logout process, a complete disconnection from the connected CPU occurs under Full Access and Private Mode.</li> <li>Select 0 minutes for an automatic user logout when leaving OSD.</li> <li>Using the setting -1 allows the user to be logged in permanently, until a manual logout is executed.</li> <li>The timer is not active as long as the OSD is open (default: 0 minutes).</li> </ul>
Keep CPU	Activated	Permanently show the name of the currently connected CPU Device in the Connection Info box.
Keep of 0	Deactivated	Function not active (default)

To set the access configuration, proceed as follows:

- 1. Select **System Settings > Access** in the task area.
- 2. Click the Activate Edit Mode menu item in the toolbar.
- 3. Modify the desired settings.
- 4. Click the **Apply** button to confirm your entries.
- 5. Click the **Deactivate Edit Mode** menu item in the toolbar.

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### 6.4.5 SETTING SWITCH CONFIGURATION

The switching parameters are set in this menu.

Die Edit Davies Diese 0			- 0 ×
Spen. Save Related Servect De	aconnect Activate Edit Note Rem	ne Save Dewrlead Uplead Wetering Plash Updele Device Prider Syntem Check Save Satus	
20210210.2p) Master ×	Custom Cattions - Cust		
New .	system settings - swit		7 Obernitele
Port	Switch Sattinos		C Ditwinep
Grid Control	Enable Video Sharing	Allow shared other property (70)	
Control	Force Connect		
Extended Switch Presets	Force Disconnect	Enforce full XVIII access to CPU, other consistes retain video	
Status & Updates		Enforce full KVIII access to CPU, other consules are disconnected	
Status - Matrix Firmware	CPU Auto Connect	Connect to next available CPU, requires keyboard or mouse	
Update - Matrix Firmware	CPU Timeout (min)	600 Rearriely instruction period at surrently revealed CRU after which CRU will be discremented automaticate (0 = dearbiaster).	
Update - Extender Firmware Activate Configuration	Keyboard Connect	aparto features presente contente professional and a star meson and metode accompanies and accompanies (c = origination)	
Miscellaneous	Mouse Connect	2	
System Settings	<b>.</b>	Enable CPU control request by recuse activity	
System Access	Release Time (sec)	0 Specify inactivity time to accept CPU control request from another console	
Switch	Macro Single Step		
Date and Time		zakczel mierce in a segel zają może	
Extender & Desires			
Extension in Connection			
CPU Devices CON Devices			
User Settings	•		
Users & Groups			
Assignment	s -		
Virtual CPU Devices Virtual CON Devices Multi-Screen Control			cost Cancel
Config reloaded		Default	

#### FIGURE 6-4.5.1 MANAGEMENT SYSTEM SETTINGS - SYSTEM - SWITCH

The following parameters can be configured:

OPTION		DESCRIPTION
Enable Video Sharing	Activated	The user can switch to any CPU Device as an observer, including ones that are already assigned to another user (observer without keyboard/mouse access). Note: Switching with the <space> key, not with the <enter> key. The operator will not be informed if further users connect as an observer to the CPU Device that is connected to his CPU Device.</enter></space>
	Deactivated	Function not active (default)
Force Connect	Activated	The user can connect to every single CPU Device as an operator, including ones that are related to another user. Note: The previous user is set to Video Only status. To share K/M control, Force Connect has to be activated.
	Deactivated	Function not active (default)



DESCRIPTION OPTION Extension of Force Connect: If the user connects as an operator to a CPU Device already related to another user, the Activated previous user will be disconnected. Note: To share K/M control Force Disconnect has to be Force Disconnect deactivated. Deactivated Function not active (default) If a CON Device is not connected to a CPU Device, you can Activated establish an automatic connection to the next available CPU Device by hitting any key or mouse button. **CPU Auto Connect** Deactivated Function not active (default) Period of inactivity after which a console will be automatically CPU Timeout [min] Activated disconnected from its current CPU Device (default: 0 minutes) Activate request of K/M control by keyboard event (key will be Activated lost) **Keyboard Connect** Deactivated Function not active (default) Activated Activate request of K/M control by mouse event Mouse Connect Deactivated Function not active (default) Period of inactivity of a connected CON Device after which K/M control can be requested by other CON Devices connected to the CPU Device. Note: Set "0" for an immediate transfer in real-time. 0 to 999 Release Time [sec] Only one CON Device can have keyboard and mouse control at seconds the same time. The other consoles that are connected to the same CPU Device have a Video Only status (default: 10 seconds) Activated Execute macro commands sequentially Macro Single Step Deactivated Function not active (default)

To set the access configuration, proceed as follows:

- 1. Select System Settings > Switch in the task area.
- 2. Click the Activate Edit Mode menu item in the toolbar.
- 3. Modify the desired settings.
- 4. Click the Apply button to confirm your entries.
- 5. Click the **Deactivate Edit Mode** menu item in the toolbar.

\* Keyboard Connect and / or Mouse Connect are only effective if Force Connect and / or CPU Auto Connect are activated.

If the **Keyboard Connect** and / or **Mouse Connect** options are enabled, the **Keyboard Connect** and/or **Mouse Connect** will not take effect until the time interval entered in the **Release Time** has elapsed.



### 6.4.6 SETTING NETWORK CONFIGURATION

 NOTICE

 To initialize system-relevant configuration changes, the matrix must be restarted. Restarting the matrix can take several minutes and the matrix is not available during the restart.

 NOTICE

 Consult your system administrator before modifying the network parameters. Otherwise, unexpected results and failures can occur in combination with the network.

#### The parameters for the network configuration are set in this menu.

Elle Edit Device Egtras 2							
🥃 🗎 💭 📭	Eleconnect Activate Edit Hode F	mote Save Devroled. Upbed. Nothering Plash Update. Device Price. System Check. Save Satura.					
20210210.zip Master ×							
View	System Settings - N	etwork					
Matrix Port	General Syslog SNU	· LOAP	✓ Show Hel				
Grid	Dual Interface						
Contral		Enable Dual Network Interface (only available in offline mode)					
Control	Network Settings - Cont	oller Board 1 (Online changes require a matrix restart)					
Extended Switch Presets	DHCP	If Dynamic configuration of network parameters via GHCP server					
Status & Updates	P Address	192 . 168 . 170 . 168					
Status - Matrix Firmware	Subnet Mask	255.255.256.0					
Status - Extender Firmware	Gateway	182. 168. 170. 1					
Update - Extender Firmware	MAC Address	00215F.04.0024					
Activate Configuration	Network Settings - Cont	Notwork Settings - Controllor Board 2 (Online changes require a matrix restart)					
Miscellaneous	DHCP	V					
System Settings	^	Dynamic configuration of network parameters via DHCP server					
System	IP Address	192 . 158 . 100 . 98					
Access	Subeet Mask	25 . 255 . 255 . 0					
Network	Gateway	192.198.100.1					
Date and Time Native Cold	MAC Address	Unknown					
Extender & Devices	A Multicast (Online chang	s require a matrix restart)					
Eviliate	Multicast	255 . 255 . 255 . 255					
CPU Devices		Orid Multicast or Broadcast (255-255-255)					
CON Devices	Network Services (Onlin	e changes require a matrix restart)					
User Settings	API Service	Funder AD accord (Bert 8588)					
Users & Groups	S SL Support	Entry Construction Exception					
Assignment	~	Enable SSL for secure communication					
Virtual CPU Devices Virtual CON Devices Multi-Screen Control	GRID Service	IV Exable GRD service					
			steen Cancel				

FIGURE 6-4.6.1 MANAGEMENT SYSTEM SETTINGS - SYSTEM - NETWORK - GENERAL

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### The following parameters can be configured:

FIELD	ENTRY	DESCRIPTION
Dual Interface	Activated	Redundant network connection is deactivated
	Deactivated	Function not active (default)

#### **Network Settings - Controller Board**

FIELD	ENTRY	DESCRIPTION
DHCP	Activated	The network settings are automatically supplied by a DNS server. Note: If DHCP is activated and there is no physical network connection available, the boot times might increase.
	Deactivated	Function not active (default)
IP Address	Byte	Input of the IP address if DHCP is not active (default: 192.168.100.95)
Subnet Mask	Byte	Input of the subnet mask in the form "255.255.255.0" if DHCP is not active (default: 255.255.255.0)
Gateway	Byte	Input of the subnet mask in the form "192.168.1.1" if DHCP is not active
MAC Address	Byte	Cannot be changed, is retrieved automatically

### **Multicast**

FIELD	ENTRY	DESCRIPTION
Multicast	Byte	Input of the Multicast address if there is a Matrix Grid in use within a Multicast group (default is broadcast: 255.255.255.255)

#### **Network Services**

FIELD	ENTRY	DESCRIPTION
API Service	Activated	LAN interface at the DKM activated for access via management software (API service port 5555)
	Deactivated	Function not active (default)
SSL Support	Activated	Activate SSL encryption for API, management software API, management software and Matrix Grid communication
	Deactivated	Function not active (default)
Grid Service	Activated	Activate Grid interface at the matrix for access via management software (Grid Service Port 5557)
	Deactivated	Function not active (default)





### 6.4.7 SETTING SYSLOG FUNCTION

The parameters for the syslog function are set in this menu:

			– 🗆 ×
Elle Edit Device Egitas 2	Deconnect Activate Edit Mode Re	mele Save Devenled Upled I Hontorty Planh Updela Device Preter System Check Save Status	
20210210.2ip  Master ×			
View	<ul> <li>System Settings - Ne</li> </ul>	etwork	
Matrix Port Grid Control	General Systeg SNM	banges require a matrix restart, except Log Level)	a I Show Help
Control	C Enable Syslog	I Easter Surger Management for strike reporting	
Extended Switch Presets	Syslog Server	192 . 198 . 170 . 155	
Status & Updates	A	214	
Status - Matrix Firmware	Log Level	Debug Info 🗹 Notice 🗹 Warning 🗹 Error 🗹	
Status - Extender Firmware Update - Matrix Firmware Update - Extender Firmware Activate Configuration Miscellaneous	Syslog Server 2 (Online o Enable Syslog Syslog Server	changes require a motht restant, except Log Level) St Enable Systeg liesauges for status reporting 162 - 168 - 170 - 81	
System Settings	Port	514	
System Access Switch Network Date and Time Matrix Grid	Log Level	Debug 🔜 knfo 🗭 Modice 🗭 Wienning 🗭 Error 🗭	
Extender & Devices	^		
EKT Units CPU Devices CON Devices			
User Settings	~		
Users & Groups			
Assignment	^		
Virtual CPU Devices Virtual CON Devices Multi-Screen Control			Cancel
		Default	

FIGURE 6-4.7.1 MANAGEMENT SYSTEM SETTINGS - SYSTEM - NETWORK - SYSLOG

The following parameters can be configured:

FIELD	ENTRY	DESCRIPTION
Enable Syslog	Activated	Syslog server to query status is active
	Deactivated	Function not active (default)
Syslog Server	Byte	Input of the IP address of the syslog servers in the form "192.168.1.1"
Port	Byte	Input of the syslog ports (default: 514)
Log Level	Debug	Activate debug messages in syslog (default: deactivated) Note: The debug messages are exclusively for matrix diagnostics. Use this function only for concrete debug cases as it is not intended for normal operation.
	Info	Activate information messages in syslog (default: deactivated)
	Notice	Activate notification messages in syslog (default: activated)
	Warning	Activate warning messages in syslog (default: activated)
	Error	Activate error messages in syslog (default: activated)

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To set parameters for the syslog function, proceed as follows:

- 1. Select **System Settings > Network** in the task area.
- 2. Click the Activate Edit Mode menu item in the toolbar.
- 3. Select the **Syslog** tab in the working area.
- 4. Modify the desired settings.
- 5. Click the Apply button to confirm your entries.
- 6. Click the **Deactivate Edit Mode** menu item in the toolbar.

#### Setting the syslog options

To set or activate the presetting, proceed as follows:

- 1. Select E**xtras > Options** in the menu bar and open the Syslog tab. 2. Enter the appropriate data.
- 3. Click the **Ok** button to confirm your entries.
- 4. Close the management software and restart it.

Options	×
🔧 Default Settings Style Langua	ge Miscellaneous Syslog SNMP
Port Log File Directory Log File Name Log File Extension Daily Log Files Maximum Log File Size [KB] Maximum Number of Log Files Acoustic Notification Autostart Open Monitoring Tab	514 WWINSERVER/USRDIR\$/User/Desktop/DKM/syslog syslog CSV 1000 10 10 Enable acoustic notification for errors Start of syslog in the background when opening the tool Start of monitoring tab when opening the tool Configure Severity Mails QK Cancel

FIGURE 6-4.7.2 MANAGEMENT SYSTEM SETTINGS - SYSTEM - NETWORK - GENERAL





OPTION	DESCRIPTION
Log File Directory	Default directory to store the log files
Log File Name	Default name of the log file
Log File Extension	Default extension for the log file
Daily Log Files	Log files are stored every 24 hours (daily)
Maximum Log File Size [KB]	Allowed maximum size of log file
Maximum Number of Log Files	Allowed maximum number of log files
Acoustic Notification	Enables acoustic notification for errors
Autostart	When starting the management software, the syslog function will be started in the background
Open Monitoring Tab	When starting the management software, the monitoring tab will be opened

\*When reaching the maximum log file size, a new log file will be created. When reaching the maximum number of log files, the oldest logfile will be overwritten with the new information.

### 6.4.8 SETTING SNMP FUNCTION

The SNMP function allows all function-critical and safety-critical elements of the matrix to be monitored and queried. This function complies with the RFC 1157 conformal standard. Two SNMP servers can be used at the same time.

NOTICE	
For an activation of the SNMP agent function or the SNMP server function, a restart of the matrix is necessary.	



The settings for the SNMP monitoring are set in this menu:

Ella Edit Davina Extras 2						– 🗆 X
Connect Denne Savas T	Insconnect Activate Edit Mode Remote	Seve Download. Upload Montor	ing Flash Update Device Finder.	System Check Save Status		
20210210.2001 Master X						
View	System Settings - Netwo	nx				
Matrix Port Grid	SNMP Acent (Online changes )	equire a matrix restart)				🗹 Shaw Help
Control	SNMP Agent	2				
Control	A Long regent	Enable SNI//P Agent for GET requests	and traps			
Extended Switch Presets	Port	181				
Status & Updates	Configured SNMPv3 User	<ul> <li>In of configured-</li> <li>SHMPv3 User can be configured in 0</li> </ul>	ser Settings			
Status - Matrix Firmware Status - Extender Firmware	Read-Only Community String	DKM Read-Only Community String				
Update - Matrix Firmware	SNMP Trap (Online changes re	quire a matrix restart)				
Update - Extender Firmware Activate Configuration	Trap Receiver 1 Trap Receive	12				
Miscellaneous	Enable Traps	N.				
System Settings	SNMP Server	192 . 168 . 170 . 155				
System	Port	102				
Access	Select All					
Network	Status	92 S	Switch Command			
Date and Time	Temperature	2	Fan Tray 1	1		
Matrix Grid	Insert I/O Board	12.	Fan Tray 2	14		
Extender & Devices	Remove I/O Board	10	Power Supply 1	12		
EXT Units	Invalid I/O Board	92	Power Supply 2	3		
CPU Devices CON Devices	Insert Extender	10	Power Supply 3	1		
User Settings	A Remove Extender	20	Power Supply 4	92.		
Users & Groups						
Assignment	~					
Virtual CPU Devices						
Virtual CON Devices Multi-Screen Control						Text Cancel
					Default	

FIGURE 6-4.8.1 MANAGEMENT SYSTEM SETTINGS - SYSTEM - NETWORK - GENERAL





The following parameters can be configured:

### **SNMP Agent**

TRAPS	DESCRIPTION
SNMP Agent	Permission for an active query of the SNMP agent for traps is granted. This activation is a prerequisite for using the SNMP server.
Port	The SNMP port is called up automatically (default: 161).
Configured SNMPv3 User	Name of the SNMP user (default: snmp)
Read-Only Community String	The read-only community string for the MIB file is DKM.

TRAPS	DESCRIPTION
Enable Traps	Activates the active sending of trap messages from the SNMP agent to the SNMP server
SNMP Server	Input of the IP address of the SNMP server in the form "192.168.1.1"
Port	Input of the SNMP port (default: 162)
Select All	Select all traps
Status	Notification about matrix status
Temperature	Notification about temperature within the matrix
Insert I/O Board	Not available*
Remove I/O Board	Not available*
Invalid I/O Board	Notification about a wrong firmware of the I/O board
Insert Extender	Notification about a newly connected extender to the matrix, notification
	about a switched-on extender • Notification about a newly established link between extender and matrix



### **SNMP Trap**

\*The SNMP agent must be activated to activate the SNMP traps.

Remove Extender	<ul> <li>Notification about a removed extender from the matrix</li> <li>Notification about a switched off extender</li> <li>Notification about an interrupted link between extender and matrix</li> </ul>
Switch Command	Notification about a performed switching operation at the matrix
Fan Tray #1	Notification about the fan status on the left side of the matrix (interface view)
Fan Tray #2	Notification about the fan status on the right side of the matrix (interface view)
Power Supply #1	Notification about the status of power supply unit #1
Power Supply #2	Notification about the status of power supply unit #2
Power Supply #3	Not available*
Power Supply #4	Not available*







#### Activating the SNMP agent

To activate the SNMP agent, proceed as follows:

- 1. Select System Settings > Network in the task area.
- 2. Click the Activate Edit Mode menu item in the toolbar.
- 3. Select the SNMP tab in the working area.
- 4. Click the **SNMP** Agent checkbox within the **SNMP Agent** area.
- By activating this option, the permission for an active query of the SNMP agent is granted.
- 5. Click the Apply button to confirm your changes.
- 6. Click the Deactivate Edit Mode menu item in the toolbar.

#### **Activating SNMP traps**

To activate active reporting of the SNMP traps, proceed as follows:

- 1. Select System Settings > Network in the task area.
- 2. Click the Activate Edit Mode menu item in the toolbar.
- 3. Select the SNMP tab in the working area.
- 4. Click the Enable Traps checkbox within the SNMP Trap area.
- 5. Enter the IP address of the SNMP server under SNMP Server.
- 6. Click the checkboxes of the desired traps to activate them.
- 7. Click the **Apply** button to confirm your changes.
- 8. Click the Deactivate Edit Mode menu item in the toolbar.

#### **Setting up SNMP options**

Presets for an SNMPv3 user can be set up for the computer on which the management software is operated are set in this menu.

- To set or activate the presetting, proceed as follows:
- 1. Select Extras > Options in the menu bar and open the SNMP tab.
- 2. Enter the appropriate data.
- 3. Click the **Ok** button to confirm your entries.
- 4. Close the management software and restart it.





Options	×
Contraction Contra	ge Miscellaneous Syslog SNMP
Port Log File Directory	162 I\WINSERVER\USRDIR\$\User\Desktop\DKM\snmp
Log File Name	snmp
Log File Extension	CSV
Daily Log Files	
Maximum Log File Size [KB]	1000
Maximum Number of Log Files	10
Acoustic Notification	Enable acoustic notification for errors
Autostart	Start of SNMP in the background when opening the tool
Open Monitoring Tab	Start of monitoring tab when opening the tool
	Configure Severity Mails Manage SNMPv3 Users
	<u>Qk</u> C <u>a</u> ncel

FIGURE 6-4.8.2 MANAGEMENT SYSTEM SETTINGS - SYSTEM - NETWORK - SNMP

To activate the SNMP agent, proceed as follows:

TRAPS	DESCRIPTION
Port	Activates the active sending of trap messages from the SNMP agent to the SNMP server
Log File Directory	Input of the IP address of the SNMP server in the form "192.168.1.1"
Log File Name	Input of the SNMP port (default: 162)
Log File Extension	Select all traps
Daily Log Files	Notification about matrix status
Maximum Log File Size [KB]	Notification about temperature within the matrix
Maximum Number of Log Files	Not available*
Autostart	When starting the management software, the SNMP function will be started in the background
Open Monitoring Tab	When starting the management software, the monitoring tab will be opened

#### Creating an SNMPv3 User for the SNMP Server

In the following menu, the login data for an SNMPv3 user can be set up for the computer on which the management software is operated (SNMP server). The SNMP server authenticates itself with the agent using this login data.





NOTICE Failed SNMP logging If the login data differs between the matrix (set up in the User menu) and the SNMP server, no SNMP traps are transmitted. Ensure the login data (username and password) in both settings are identical (see chapter 5.2 page 79).

To configure the login data for an SNMPv3 User at the SNMP server, proceed as follows:

- 1. Select Extras > Options in the menu bar and open the SNMP tab.
- 1. Click the Manage SNMPv3 Users button.
- A list appears with already created SNMPv3 users.
- 2. Click the **Add User** button.
- A dialog window appears.
- 3. Enter the required data and click the **Ok** button to confirm your entries.
- 4. Click the **Close** button to close the users list.
- 5. Click the **Ok** button in the **SNMP** tab to confirm your settings.
- 6. Close the management software and restart it.

Manage SNMPv	3 Users			×
Username	Auth Protocol	Auth Password	Priv Protocol	Priv Password
Add Use Auth Auth Priv Priv	Jser rname nentication Protoc nentication Passw acy Protocol acy Password	ol SHA rord DES		×
		Add User	<u>Q</u> k C <u>a</u> nd	elected Users
		Close		

FIGURE 6-4.8.3 MANAGEMENT SOFTWARE MENU - EXTRAS- SNMP - MANAGE SNMPV3 USERS - ADD USER



TRAPS	DESCRIPTION
Username	Activates the active sending of trap messages from the SNMP agent to the SNMP server
Authentication Protocol	Input of the IP address of the SNMP server in the form "192.168.1.1"
Authentication Password	Input of the SNMP port (default: 162)
Privacy Protocol	Select all traps
Privacy Password	Notification about matrix status

### 6.4.9 SETTING LDAP CONFIGURATION

The general LDAP settings are set in this menu.

								 7/22		~
Eile Edit Device Estras 2								_	ш	^
Connect	Disco	nnect Activate Edit Node Remote	Save Download Upload	Montoring	Device Finder System Chec	k Save Status				
20210210.zip Master X										
View	~	System Settings - Netwo	ork							
Matrix Port Grid Control		General Syssog SNMP L	DAP e a matrix restart)						√ Show F	nelp
Control	*	LDAP	Seable 1 Dalili							
Extended Switch Presets		Use TLS/SSL	Enable authentication with Act	ive Directory Server						
Status & Updates	^	LDAP Server	10 . 1 . 10 . 103							
Status - Matrix Firmware		Port	389							
Status - Extender Firmware Update - Matrix Firmware Update - Extender Firmware		Configured LDAP User	LDAP Bind User LDAP User can be configured	n User Settings						
Activate Configuration		Base DN	dc=DKM.dc=office	0.0-04						
Miscellaneous			countries on one of the information							
System Settings	^									
System Access Switch Network Date and Time Matrix Grid										
Extender & Devices	~									
EXT Units CPU Devices CON Devices										
User Settings	~									
Users & Groups										
Assignment	^									
Virtual CPU Devices Virtual CON Devices Multi-Screen Control									C	encel
							Detaut			

FIGURE 6-4.9.1 MANAGEMENT SOFTWARE MENU - SYSTEM SETTINGS - NETWORK - LDAP



The following parameters can be configured:

FIELD	ENTRY	DESCRIPTION
I DAP	Activated	LDAP for the request of information from a user administration is active
	Deactivated	Function not active (default)
lleer TI 8/881	Activated	Enable a secured transmission (transport layer security) for the Active Directory access.
USEI ILS/SSL	Deactivated	Function not active (default)
LDAP Server	Byte	Input of the IP address for the LDAP-Servers in the form "192.168.1.1" and the LDAP port (Default: 389)
Configured LDAP User	Text	Input of the LDAP Base DN according to the existing structure of the user directory
LDAP Base DN	Text	Input of the LDAP Base DN according to the existing structure of the user directory

### 6.4.10 SETTING DATE AND TIME

The parameters for the system configuration are set in this menu, based on Simple Network Time Protocol (SNTP)

The following parameters are required to create a new SNMPv3 user on the SNMP server:

			- 0 ×
Ele Edi Device Egitas 2	i geconnect Activate Edit Hode R	endis Save Downlasd. Upbad. Nontorny Plash Updale. Device Prider System Check Save Satus	
20210210.zip  Master ×			
View	<ul> <li>System Settings - D.</li> </ul>	ate and Time	
Maintx Post Grid Control	SWTP (Online changes re	equire a matrix restart) I	✓ Show Help
Control	^	Enable nativork time server synchronisation	
Extended Switch	SNTP Server	10 _ 1 _ 10 _ 30	
Presets	Time Zone	(GMT+01:00) Amsterdam, Berlin, Bern, Rome, Stockholm, Vienna 👻	
Status & Updates	A Real Time Clock		
Status - Matrix Firmware Status - Extender Firmware Update - Matrix Firmware Update - Extender Firmware Activate Configuration Miscellaneous	Date And Time	The 2021-02-11 • 09.50:08 C Get Local Time Date and time of real time clock Get local time of this computer	
System Settings	~		
System Access Switch Natwork Date and Time Mathix Grid			
Extender & Devices	^		
EXT Units CPU Devices CON Devices			
User Settings	^		
Users & Groups			
Assignment	^		
Virtual CPU Devices Virtual CON Devices Multi-Screen Control			Cancel
Config reloaded		Default	

FIGURE 6-4.10.1 MANAGEMENT SOFTWARE MENU - SYSTEM SETTINGS - DATE AND TIME





The following parameters can be configured:

### SNTP

FIELD	DESCRIPTION
Date*	Date and time of real time clock
Get Local Time	Get local time of this computer

#### **Real Time Clock**

FIELD	DESCRIPTION
Date*	Date and time of real time clock
Get Local Time	Get local time of this computer

#### Configuring the time server

To configure a time server, proceed as follows:

- 1. Select System Settings > Date and Time in the task area.
- 2. Click the Activate Edit Mode menu item in the toolbar.
- 3. Click the **SNTP** checkbox to enable the SNTP option.
- 4. Enter the IP address of your SNTP server into the SNTP Server field.
- 5. Select your time zone in the **Time Zone** field.
- 6. Click the Apply button to confirm your settings.
- 7. Restart the matrix.
- The system time is now provided by the SNTP server.
- 8. Click the Deactivate Edit Mode menu item in the toolbar.

#### Configuring the real time clock without time server

To set the real time clock without using SNTP, proceed as follows:

- 1. Select System Settings > Date and Time in the task area.
- 2. Click the **Activate Edit Mode** menu item in the toolbar.
- 3. Set the current date in the **Date and Time** section.
- 4. Set the current time in the Date and Time section.

The entered time is set immediately in the settings.

5. Option: If you want to receive the time from your currently used computer, click the **Get Local Time** button.

6. Click the Deactivate Edit Mode menu item in the toolbar.

FIGURE 2-14. BACK PANEL



### 6.5 USER SETTINGS

#### 6.5.1 SETTING USER ACCESS

en. Save Relad Sovied	Discon	mect	Activate	Edit Hode Remote Save	and. Up	and H	antoning Fi	iash Update Device Pinder	System Check Save	s Status			
0210210.zip Master ×													
ñew	^	Use	r Settin	igs - Users & Groups									
latts		User	8 Grou	ps									
Port					T								
Seid .			D	Name		: "		24		Administrator	~	syschroened	
		01	00001	USER_00001		Name		USER_00034		Super User	AD	Group Locked	
Control	^	02	00003	USER_00003		AD CN	-			Power User			
Extended Switch		03	00008	USER_00008		Passy	vord			SNMPv3 User			
Yesets		04	00010	UBER_00010		Driver		0.0		LDAD Login			
itatus & Updates	~	05	00011	USER_00011		FINAL		0.4		Late Count			
Status - Matrix Firmware		06	00012	USER_00012						Auto Connect			
Ratus - Extender Firmware		07	00013	USER_00013		CPUA	coess Contr	ol Favorites Macros					
Jpdate - Matrix Firmware		08	00015	USER_00015				Full Access		Video Access		No Access	
Jpdate - Extender Finmware		09	00015	USER_00016		0	Name		ID Nam		ID.	Name	
Ascellaneous		10	00017	USER_00017		1002	CPU 01		10 11011		1001	CPU 01001	
Contract Collinson		11	00018	USER_00018		1003	CPU 01	003			1004	CPU 01004	
system seconds	~	12	00019	USER_00019		1039	CPU 01	039			1005	CPU 01005	
System		13	00020	USER_00020		1052	CPU 01	052			1006	CPU 01005	
locess		14	00021	USER_00021							1007	CPU 01007	
letwork		15	00022	USER_00022							1008	CPU 01008	
Date and Time		16	00023	USER_00023							1009	CPU 61009	
Jatrix Grid		17	00025	USER_00025							1010	CPU 01010	
stender & Devices		18	00025	USER_00026							1011	CPU 01011	
EVELINIA		19	00027	USER_00027							1012	CPU 01012	
CPU Devices		20	00028	USER_00029							1013	CPU 01013	
CON Devices		21	00029	USER_00029							1014	CPU 01014	
iser Settinos	~	22	00030	USER_00030							1015	CPU 01015	
		23	00031	USER_00031							1016	CPU 01016	
isers a Ursups		24	00032	USER_00032							1017	CPU_01017	
lasignment	~	25	00033	USER_00033	_						1018	CPU_01018	
Intual CPU Devices		26	00034	USER_00034							1019	CPU_01019	
Intual CON Devices		27	00035	USER_00035									
		28	00038	USER_00036				Use keybeard key	s P, V, N to change the	access centrol lists. Use right I	hand mease click to	select action.	

New users and their user settings and permissions are set in this menu.

FIGURE 6-5.1.1 MANAGEMENT SOFTWARE MENU - USER SETTINGS - USERS & GROUPS - USERS

The following functions are available:

FIELD	DESCRIPTION
New User	Open a new user configuration
Delete User	Delete an existing user
Apply	Confirm the changes of an existing user or the creation of a new user account
Cancel	Reject changes





The following keyboard commands are available:

#### SNTP

FIELD	DESCRIPTION
<f></f>	Add CPU to list Full Access
<v></v>	IAdd CPU to list Video Access
<n></n>	Add CPU to list No Access

The following parameters can be configured:

OPTION	ENTRY	DESCRIPTION
ID	Numerical	Ident number of the user
Name	Text	Username (case sensitive) Note: A username can consist of up to 32 characters.
AD CN=	Text	Common name of a right group of the Active Directory
Password	Text	User password (case sensitive, input of minimum 8 characters up to 16 characters)
Priority	Value	Priority of the user
Administrator	Activated	<ul> <li>User has administrator rights</li> <li>Permission for system configuration and all switching operations</li> </ul>
	Deactivated	Function not active (default)
SuperUser	Activated	Permission to switch any console to any CPU in Extended Switching
	Deactivated	Function not active (default)
Power User	Activated	User has user rights     Permission to switch consoles to CPUs in Extended Switching according to the CON or User ACL, but not in Private Mode
	Deactivated	Function not active (default)
	Activated	Permission to use SNMPv3 (encrypted)
SNMPv3 User	Deactivated	SNMPv3 is not enabled
	Activated	LDAP User for accessing the Active Directory
LDAP Logic	Deactivated	Function not active (default)



Auto Connect	Activated	Re-establish the previous user connection after login							
	Deactivated	Function not active							
AD Synchronized	Activated	Enable synchronization with the Active Directory Note: LDAP Login has to be activated to use the synchronization							
	Deactivated	Function not active (default)							
AD Group Locked	Activated	Lock synchronization of group attribute for an Active Directory user. This setting is required for a manual change of user groups for a specific Active Directory user.							
	Deactivated	Function not active (default)							

Failed SNMP logging If the login data of the SNMPv3 user differs between the matrix and the SNMP server, no SNMP loggings are transmitted. Ensure the login data (username and password) in both settings are identical (see section on page 79).

#### **Creating a new User Account**

To create a new user, proceed as follows:

- 1. Select User Settings > Users & Groups in the task area.
- 2. Click the Activate Edit Mode menu item in the toolbar.
- 3. Click the New User button.
- 4. Select a template of an existing user if applicable (Choose template).
- 5. Click the Apply button.
- 6. Set a username.
- 7. Set a password.
- 8. Set general access permissions.
- 9. Set user permissions for CPU access (paste function).
- 10. Set user favorites for OSD access.
- 11. Click the **Apply** button to confirm the new user settings.
- 12. Click the **Deactivate Edit Mode** menu item in the toolbar.

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#### **Configuring User Access Rights**

To configure a user access rights for CPUs, proceed as follows:

- 1. Select User Settings > Users & Groups in the task area.
- 2. Click the Activate Edit Mode menu item in the toolbar.
- 3. Select a user in the **Users** list.
- 4. By clicking with the secondary mouse button once on a CPU in one of the respective access lists (Full

Access, Video Access and No Access) a context menu for selection will appear in which the

respective CPU can be moved, and the access rights can be changed. Alternatively, you can type the

key commands <F>, <V> or <N> to set the respective access rights.

5. Click the **Apply** button to confirm the changes.

6. Click the Deactivate Edit Mode menu item in the toolbar.

### 6.5.2 SETTING USER FAVORITES

Individual favorite lists of CPU Devices that will be switched frequently can be created for different users in

this menu. A favorite list can contain up to 32 different CPU Devices (from firmware V3.05).

The switching of the favorites is done via keyboard command (see chapter 7.2.1, page 274).

See Save Relaad Convec	Dia co	meet	Deactive	e Edit Mode Remete Seve	Download.	apised	Nontoring Plash Updat	n. Device Pinder. System Dr	neck. Ser	e Satus .							
View	~	Use	r Settir	ngs - Users & Groups											Edit M	ode acti	vated
Matrix Port		User	Gros	pa	Ŧ					Admin	latentar			10 Sunchronited			
Control			D	Name		1				-	100 0101			AD SHICHOLDER			
Sector 1		01	00001	USER_00001		Name		10034		Super	User			AD Group Locke	a 🗆		
Longran	~	02	00003	USER_00003		AD CN				Power	User						
Extended Switch Presets		03	00008	USER_00008		Passa	brox			SNMPv3 User							
		04	00010	USER_00010		Priorit		0		LOAP	Login						
Status & Updates	~	05	00011	USER_00011						Autor	owner!						
Status - Matrix Firmware		05	00012	USER_00012													
Status - Extender Firmware		07	00013	USER_00013		CPU A	cess Control Favori	es Hacros									
Update - Matrix Firmware		08	00015	USER_00015			CPU D	evice available					Favor	te CPU Devices			
Activate Configuration		09	00016	USER_00016		D	Name					D	Name				
Miscellaneous		10	00017	USER_00017		1001	CPU_01001				01	1005	CPU_0100	5		4	
System Settings	~	11	00018	USER_00018		1002	CPU_01002				02	1011	CPU_0101	1			
		12	00019	USER_00019		1003	GPU_01003				03	1013	CPU_0101	3			
System		13	00029	USER_00020		1004	CPU_01004				04						
Switch		14	00021	USER_00021		1005	CPU_01005				05						
Network		15	00022	USER_00022		1007	CPU_01007			**	06						×
Date and Time		16	00023	USER_00023		1008	GPU_01008				07						
Matrix Grid		17	00025	USER_00025		1009	CPU_01009			-	08						
Extender & Devices	~	18	00026	USER_00026		1010	CPU_01010				09						
EXT Units		19	00027	USER_00027		1012	CPU_01012			4	10						Ŧ
CPU Devices CON Devices		20	00028	USER_00028		1014	CPU_01014			44	11						*
		21	00029	USER_D0029		1015	CPU_01015				12						
Jser Settings		22	00030	USER_00030		1016	CPU_01016				13						
lisers & Groups		23	00031	USER_00031		1017	GPU_01017				14						
orano a oreopo		24	00035	USER_00032		1018	CPU_01018				15						
Ausignment	~	25	00033	USER_00033	_	1019	CPU_01019				16						
Virtual CPU Devices		26	00034	USER_00034		1020	GPU_01020				17						
Virtual CON Devices		27	00035	USER_00035		1021	CPU_01021						Use keys	+ and - to move CPI			
Julti-Screen Control		78	00038	AFRON MITTE										11	1	-	

FIGURE 6-5.2.1 MANAGEMENT SOFTWARE MENU - USER SETTINGS - USER & GROUPS - USERS FAVORITES


#### **Creating a Favorites List for Users**

To create a favorites list for any user, proceed as follows:

- 1. Select User Settings> Users & Groups in the task area.
- 2. Click the Activate Edit Mode menu item in the toolbar.
- 3. Select the respective user for the favorites list in the Users list.
- 4. Click the Favorites tab in the working area.

5. Select the CPU Devices in the **CPU Device available** list that should be added to the favorites list (**Favorite CPU Devices**). By pressing and holding down the <Ctrl> key at the same time, more than one CPU Device can be highlighted.

6. Click the button to move the highlighted CPU Devices to the favorites list. By clicking the button, all CPU Devices from the **CPU Device available** list will be moved to the favorites list (**Favorite CPU Devices**).

7. To remove highlighted CPU Devices from the favorites list, click the button. If you click the button, all CPU Devices will be removed from the favorites list.

8. Click the or button to change the order of the CPU Devices within the favorites list. Or press the <+> or <-> key to change the order of the CPU Devices within the favorites list.

9. Click the Apply button to confirm the changes.

10. Click the **Deactivate Edit Mode** menu item in the toolbar.

#### **Assigning Settings to other Users**

To assign settings of a user to other users, proceed as follows:

- 1. Select User Settings> Users & Groups in the task area.
- 2. Click the Activate Edit Mode menu item in the toolbar.
- 3. Click the Favorites tab in the working area.
- 4. Select the user whose settings are to be assign to another user.
- 5. Click the Assign Settings to button below the user list.
- A query to select the settings appears.
- 6. Click the checkboxes for the desired settings.
- 7. Click the **Next** button.

FIGURE 2-14. BACK PANEL





	Assign Settings to		×
Ste	eps	Select Settings	
1.	Select Settings		
2.	Assign Settings to	Priority	
		Super User	
		Power User	
		SNMPv3 User	
		Auto Connect	
		AD Group Locked	
		CPU Access Control	
		✓ Favorites	
		✓ Macros	
		Select All	
		< Back Next > Einish	Cancel

FIGURE 6-5.2.2 MANAGEMENT SOFTWARE MENU - USERS & GROUPS - USERS - SELECT SETTINGS

A query to start the assignment appears.

- 8. Select the user in the Available to assign settings to list to which the settings are to be assigned.
- By pressing and holding down the <Ctrl> key at the same time, more than one user can be highlighted.

9. Click the button to move the highlighted user to the **Assign settings to** list. By clicking the button, all users will be moved to the **Assign settings to** list.

10. To remove highlighted user from the Assign settings to list, click the button. If you click the

button, all users will be removed from the Assign settings to list.

11. Click the Finish button.

The settings are immediately assigned to the selected users.

12. Click the Deactivate Edit Mode menu item in the toolbar.



Assign Settings to						×					
Steps	Assign Settings to										
1. Select Settings	A	vailable to assign settin	gs to		Assign settings to						
2. Assign settings to	ID	Name		ID	Name						
	67	USER_00067	*	65	USER_00065						
	70	USER_00070	)	68	USER_00068						
	72	USER_00072		71	USER_00071						
	74	USER_00074									
	75	USER_00075									
	76	USER_00076	4								
	77	USER_00077									
	78	USER_00078		•							
	80	USER_00080									
			•			•					
				< Back	Next > Einish	Cancel					

FIGURE 6-5.2.3 MANAGEMENT SOFTWARE MENU - USERS & GROUPS - USERS - ASSIGN SETTINGS

#### **Copying Settings from another User**

To copy settings from a user to another user, proceed as follows:

- 1. Select Extender & Devices > EXT Units in the task area.
- 2. Click the Activate Edit Mode menu item in the toolbar.
- 3. Select the user to which the settings are to be copied. By pressing and holding down the <Ctrl> key at the same time, more than one user can be highlighted.
- 4. Click the Copy Settings from button below the user list.

A query to select the settings appears.

- 5. Click the checkboxes for the desired settings.
- 6. Click the Next button.



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	Copy Settings from		×
Ste	eps	Select Settings	
<b>1.</b> 2.	Select Settings Copy Settings from	<ul> <li>Priority</li> <li>Super User</li> <li>Power User</li> <li>SNMPv3 User</li> <li>Auto Connect</li> <li>AD Group Locked</li> <li>CPU Access Control</li> <li>Favorites</li> <li>Macros</li> <li>Select All</li> </ul>	
		< <u>B</u> ack Next> Einish	Cancel

FIGURE 6-5.2.4 MANAGEMENT SOFTWARE MENU - USERS & GROUPS - USERS - SELECT SETTINGS

A query to start the assignment appears.

- 7. Select the user in the selection list from which the settings are to be copied.
- 8. Click the Finish button.

The settings are immediately copied to the selected user.

	Copy Settings from						
Ste	ps	Copy Settin	igs from				
1. 2	Select Settings	Copy from	00001	USER_00001		<b>_</b>	
	copy counge nom		00001	USER_00001			
			00003	USER_00003			
			00008	USER_00008		_	
			00010	USER_00010			
			00011	USER_00011			
			00012	USER_00012			
			00013	USER_00013			
			00015	USER_00015			
			00016	USER_00016	45		
			00017	USER_00017			
			00018	USER_00018			
			00019	USER_00019		Ŧ	
				< <u>B</u> ack	Next >	Einish	Cance

FIGURE 6-5.2.5 MANAGEMENT SOFTWARE MENU - USERS & GROUPS - USERS - COPY SETTINGS



### 6.5.3 SETTING USER MACROS

In this menu macro commands for switching, disconnection or user administration can be created. Macro commands are created for each user separately. A macro can execute up to 16 commands successively. The execution of the macros is done via Hot Key and the <F1> to <F16> function keys (see chapter 7.2.2, page 273).

\*To execute user macros the user has to be logged in to the matrix.

	connect	Deactive	o Tuli Node Benetie Sau	Described	Uclead	Monitoring	Plash Update Device Pinder	System Check 1	Save Status				
10210.zip Master ×													
v ^	Use	er Settin	igs - Users & Grou	ips								Edit Mode	activate
ix	Use	rs Grou	ps										
				7									
		D	Name		. 0		19		Administrator		AD Synchronized	1	
(ral	01	00001	USER_00001		. Name		USER_00019		Super User		AD Group Locked		
trai ^	02	00003	USER_00003		AD CH	-			Power User				
nded Switch	03	00008	USER_00008		Passa	brow			SNMPv3 User				
a eta	04	00010	USER_00010		Delever				LDAP Login				
us & Updates 🗠	05	00011	USER_00011		Priori	4	••						
us - Matrix Firmware	06	00012	USER_00012						Auto Connect				
us - Extender Firmware	07	00013	USER_00013		CPU A	PU Access Control Favorites Macros							
late - Matrix Firmware	08	00015	USER_00015										
late - Extender Firmware	09	00015	USER_00016		Key	F1	¥ 11 12 13 14 18	10 17 10 10 11	0 010 012 010 014 010	518			
cellaneous	10	00017	USER_00017				Fundas		Di			P3	
in Failing	11	00018	USER_00018		01	-	Function		P1			P2	
tem seconds	12	00019	USER_00019		00								
lem	13	00020	USER_00020		1	Connect (F	PI=CON, P2=CPU)						
255	14	00021	USER_00021		04	Connect Vi	Idea (P1=CON, P2=CPU)						
work	15	00022	USER_00022		05	Connect Pl	t/P1=CON, P2=CPU)						
and Time	16	00023	USER_00023		05 0	Logout Us	er						
tx Grid	17	00025	USER_00025		07	Assign CP	U (P1=VCPU, P2=RCPU)						
reder & Devices	18	00025	USER_00026		08	Assign CO	N (P1=RCON, P2=VCON)						
Linits	19	00027	USER_00027		09	Push (P1=	o (PtuCON)						
J Devices	20	00028	USER_00028		10	Get (P1-C)	ON()						
Devices	21	00029	USER_00029		11	Get Video	(P1=CON)						
r Settings	22	00030	USER_00030		12								
- 1.0	23	00031	USER_00031		13								
rs a uniups	24	00032	USER_00032		14								
ignment ~	25	00033	USER_00033		15								
al CPU Devices	26	00034	USER_00034		- 1.0								
al CON Devices	27	00035	USER_00035						Copy Ki	ry Macros	R Pasta Key Macros	T Delete H	Key Macri
-Screen Control	28	00038	11958 00038										

FIGURE 6-5.3.1 MANAGEMENT SOFTWARE MENU - USER SETTINGS - USERS - MACROS





FIELD	SELECTION	DESCRIPTION
	Connect (P1=CON, P2=CPU)	Set a bidirectional connection from CON Device P1 to CPU Device P2
	Connect Video (P1=CON, P2=CPU)	Set a Video Only connection from CON Device P1 to CPU Device P2
	Disconnect (P1=CON)	Disconnect the CON Device P1
	Logout User	Logout the current user
	Set Real CPU (P1=VCPU, P2=RCPU)	Assign a Virtual CPU Device to a Real CPU Device
	Logout User	Assign a Real CON Device to a Virtual CON Device
Franklin	Set Real CPU (P1=VCPU, P2=RCPU)	Assign a Virtual CPU Device to a Real CPU Device
(01 to 16)	Set Virtual CON (P1=RCON, P2=VCON)	Assign a Real CON Device to a Virtual CON Device
	Push (P1=CON)	The user's KVM connection is forwarded to CON Device P1 and is changed to a Video Only connection.
	Push Video (P1=CON)	The video signal of the current connection (KVM or Video Only) is forwarded to CON Device P1. The user's connection remains unchanged (KVM or Video Only).
	Get (P1=CON)	The user's CON Device gets a KVM connection to the CPU Device that is currently connected to CON Device P1. The connection of CON Device P1 is changed into a Video Only connection.
	Get Video (P1=CON)	The user's CON Device gets a Video Only connection to the CPU Device that is currently connected to CON Device P1. The connection of CON Device P1 remains unchanged (KVM or Video Only).
	Login User console P2	Login a certain user P1 at CON Device P2
P1	CON or CPU Device	Name of CON Device or CPU Device
P2	CON or CON Device	Name of CON Device or CPU Device

To create a macro for the selected user, proceed as follows:

1. Select **User Settings > Users & Groups** in the task area.

- 2. Click the Activate Edit Mode menu item in the toolbar.
- 3. Select the user for which macros are to be created.
- 4. Open the Macros tab.
- 5. Select in the **Key** field the function key for which a macro has to be created.
- 6. Double-click in the **Function** column to display a list of all available commands that should be part of the macro.



7. Select the desired command in the selection list.

8. Select in the **P1** and **P2** columns the respective parameters for the macro functions (e.g., corresponding CON Devices and CPU Devices).

9. Click the **Apply** button to confirm the changes.

10. Click the Deactivate Edit Mode menu item in the toolbar.

For an efficient macro configuration, the following context functions are available:

When clicking on the **Macros** tab, macros can be assigned to other users by using the **Assign Settings to.**.. function (see description on page 218) and can be copied from other users by using the **Copy Settings from...** function (see description on page 219).

When clicking on the macro list, macros of the selected key can be copied into the cache by using the **Copy Key Macros** function. You can paste the macros from the cache into a key by using the **Paste Key Macros** function and you can reset all macros of the selected key by using the **Delete Key Macros** function.

### 6.5.4 SETTING USER GROUPS

The KVM matrix allows to bundle the users of a configuration into User Groups. The groups can be used to subdivide the users logically or thematically. As an application example you can group all power users together. The configuration of User Groups at the same times increases the clarity of the configuration.

															- 0	×
Elle Edit Device Estras 2			_			_			_	-						
🗖 🖪 🖸 📭			0	- <b>T</b> - <b>T</b>		τ.			×							
Open. Save Reload Connect	t Deco	meet	Deactivate Edit Mode	e Remete Save   Downlo	ed. Up	beak	Monitoring	Plash Updale Device Pinder Sys	sten Check !	Save Status						
202102102001 Washer		-														
View	~	Use	er Settings - Use	ers & Groups										Edit	Mode act	ivated
Mahix		Use	ra Groupa													
Port					T	10		61		LDAP Logi						
Control			D	Name	•			CROUR ADDRS		AD President	-					
Control	~	01	B & 00002	GROUP_00002		san		Grebur_00001		AD SHELE	orupod					
		02	<b>600004</b>	GROUP_00004		info										
Extended Switch Presets		03	E & 00005	GROUP_00005		User	Assignment	CPU Access Control								
FIRSED		04	10	GROUP_00006				Liseri@rous susiable					Line (Crown)	baseloned		
Status & Opdates	~	05	E . 00007	GROUP_00007				Nama					Name	Issigned		
Status - Matrix Firmware		00	E 45 00009	GROUP_00009			00001	USER 00001				~	martie			
Status - Extender Firmware		07	E 4 00014	GROUP_00014		1 in	00084	USER 00084								
Updale - Extender Firmware		00	to and coords	CROUP_00024												
Activate Configuration		10	E M ontes	CROUP_00046												
Miscellaneous		44	the sale opened													
System Settings	~	12	88, 00351	CROUP DOINT	- 1											
System		13	E M 00063	GROUP 00063	- 14											
Access					- 18											
Switch																
Network Data and Time										•						
Matrix Grid																
Extender & Devices	~									- 4						
CARRIER & LETTERS										44						
EXT UNIS																
CON Devices																
User Settings	~															
Users & Groups																
Assignment	~															
Virtual CPU Devices Virtual CON Devices Multi-Screen Control																
												New G	roup Delete	group	Apply	Cancel
						_										
											Defaul		-			

FIGURE 6-5.4.1 MANAGEMENT SOFTWARE MENU - USER SETTINGS - USERS -& GROUPS - GROUPS





FIELD	DESCRIPTION					
New Group	Create a new group					
Delete User	Delete an existing group					
Apply	Apply changes					
Cancel	Reject changes					

BUTTON	FUNCTION
New Group	Assign selected user to a user group
Delete User	Assign all available users to a user group
Apply	Remove selected user from a user group
Cancel	Remove all users from a user group

#### **Creating a User Group**

To create and configure a User Group, proceed as follows:

- 1. Select User **Settings > Users & Groups** in the task area.
- 2. Click the Activate Edit Mode menu item in the toolbar.
- 3. Click the **Groups** tab in the working area.
- 4. Click the New Group button.

A selection dialog appears.

- Select Create a standard Group in the selection box.
- 5. Click the **Apply** button.
- 6. Enter a group name into the field Name.
- 7. Click the **Apply** button to confirm the group creation.
- 8. Click the **Deactivate Edit Mode** menu item in the toolbar.



#### **Assigning a User Group**

To assign a user to a group, proceed as follows:

- 1. Select User Settings > Users & Groups in the task area.
- 2. Click the Activate Edit Mode menu item in the toolbar.
- 3. Click the Groups tab in the working area.
- 4. Select the User Group to be assigned with a user.
- 5. Select a user in the list User/Group available that should be assigned to the User Group. By pressing

and holding down the <Ctrl> key at the same time, more than one User can be highlighted.

6. Click the button to move the highlighted user to the User Group list (User/Group assigned). By clicking the button, all users from the list User/Group available will be moved to the list User/Group assigned.

7. To remove highlighted users from the User Group list, click the button. If you click the button, all Users will be removed from the User Group list.

- 8. Click the Apply button to confirm the group creation.
- 9. Click the **Deactivate Edit Mode** menu item in the toolbar. The user is assigned to the User Group now.

### 6.6 MAIN EXTENDER SETTINGS

### 6.6.1 EXTENDER SETTINGS

The matrix automatically recognizes every physical extender module with a direct cable connection to the matrix, reads their serial number and creates Ext Units automatically. This is the Flex Port function of the matrix. Dual-Head KVM extenders will be recognized as two independent Ext Units.

Add-on modules are not created as independent Ext Units. The data of add-on modules is included in one extender unit together with the associated KVM extender. All Ext Units are managed in this menu. This includes the creation of new Ext Units and the deletion of existing Ext Units.

#### NOTICE

The connection of a fixed port extender unit (e.g., USB 2.0) to a Flex Port can cause unintended results. Ext Units for USB 2.0 extender modules have to be created manually (see chapter 6.6.5, page 174).





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en Save Relad Convect	Deconnec	Activate Edit I	lode Remote Save	Dewniced.	Uplead.	Monitoring	Plash Up	odale Device Pinde	System Check Se	nve Statun			
ñew	~ E	xtender & De	vices - EXT Unit	ts									
Jahrix							Y	ID	42483248		CPU Assigned	D1025 CPU 01005	
hoit		ID	Name	Port	Red Pert	Туре		:			cr o mingrite		
ind	01	020190801	EXT_020190801	63		CON		Name	EXT_040103318				
ontral	02	010231458	EXT_010231458	127	0	CPU		Port	70		Redundant Port	86	
Instruction	· 03	040163323	EXT_040163323	135		CPU		Fixed					
dended Switch	04	010190300	EXT_010198380	133		CON		Location					
via eta	05	6 040163320	EXT_040163320	136		CPU			Device: KVM DV0	23		Device: NVN_DV03	
atus & Updates	~ 06	06 040163326 EX	EXT_040163326	134		CON		Link 1	L/O board: 9	9	Link 2	1/0 board: 11	
atur - Mattis Demonstra	07	010198381	EXT_010198381	121		CON			L/O board ports	10		I/G BOARS port: 4 Natrix port: 66	
atus - Extender Firmware	06	040163322	EXT_040183322	124	-	CPU							
odate - Matrix Firmware	06	040163318	EXT_040153318	70	86	CPU		Extender Type	Firmware Version	Parametera	USB-HID Ghosting ED	D	
date - Extender Firmware	10	010184096	EXT_010184098	122	0	CON						-	
svale Configuration	11	040073657	EXT_040073657	120		CPU		Type				Standard View	ExpertVie
scellaneous	12	010198384	EXT_010198384	119		CPU			Name		Basic	PartA	PartB
stern Settings	· 12	010309573	EXT_010309573	118		CON		DWHDNIVGA	ideo _}		14		
stem	14	040163302	EXT_040163302	117		CON		HD (keyboard,	nouse _)		10		
cess	15	040163321	EXT_040153321	152		CPU .		Analog Audio				10	
vitch	16	040163319	EXT_040163319	151		CPU		Digital Audio					
dwork.	17	040153301	EXT_040153301	150		CON		R\$232/R\$422	aurial)			121	
Reand Time	18	040163303	EXT_040163303	149		CON		USB-CPU (em)	edded)				12
	15	010231054	EXT_010231854	139	0	CPU		USB-CPU (star	(anotab				
tender & Devices	20	010198383	EXT_010198383	140		CPU		Universal-CPU					
(T Units	21	040163324	EXT_040163324	138		CON		Cascade-CPU					
PU Devices	22	040163325	EXT_040163325	137		CON							
DIVID EVIDES	23	040077291	EXT_040077291	155		CPU							
er Settings	^ 2l	040000939	EXT_040000039	153		CON							
ters & Groups	25	010135668	EXT_010135668	156		CPU							
aicoment	~ 21	010209387	EXT_010209387	154	0	CON							
	27	010309742	EXT_010309742	257		CPU							
		040163313	EXT_040163313	297		CON							
tual CPU Devices	20												
fual CPU Devices fual CON Devices #IScreen Control	21	010302796	EXT_010302798	258		CPU							

FIGURE 6-5.4.2 MANAGEMENT SOFTWARE MENU - USER SETTINGS - USERS -& GROUPS - GROUPS

The following parameters are recognized automatically:

FIELD	ENTRY	DESCRIPTION
ID	Text	Numerical value of the extender unit ID (KVM extenders: ID is provided by the extender module (serial number) and cannot be changed)
Name	Text	Name of the extender unit
Port	1 to 160 (depending on the matrix)	Port number of the extender unit



FIELD	ENTRY	DESCRIPTION
Fixed	Activated	Numerical value of the extender unit ID (KVM extenders: ID is provided by the extender module (serial number) and cannot be changed)
	Deactivated	Function not active
CPU/CON Assigned	-	Assigned CPU Device or CON Device
Redundant Port	1 to 160 (depending on the matrix)	Port number of the extender unit

### 6.6.2 EXTENDER TYPE

To display extender types, proceed as follows:

- 1. Select Extender & Devices > EXT Units in the task area.
- 2. Select the extender unit to be displayed.

The extender type is displayed on the right side of the working area.

- The **Basic** column stands for the extender of the selected extender unit.
- The Part A or Part B column stand for the add-on module of the selected extender unit.

- N C -		•	•	H	-				<b>V</b>	4				
20210210.sp Master X	c: Linc	CR NHC1	Cencevers con	THOOR REPORT SAVE	JOATONC.	. upoac	wontoring   rissin	upperseDevice Fr	der synem check	Sava Sasta				
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Matrix							т					Income and		
Port			ID 4	Name	Port	Red Port	Туре	1	40079400		CPU Assigned	01012 CPU,	TS FHD (MUN	
Grid		27	010218839	CON_83	154		CON .	Name	CPU_VGA_02					
Control		28	012345679	CPU_Raspi_02	336		CPU	Port	145					
Control	~	29	020201214	IP-CPU_05_v2_DH	104	D	IP CPU	Fixed						
Extended Switch		30	030000419	CPU_02	0		CPU	Location						
Presets		31	040000059	EXT_040000859	D		CON		Devices TEST-A	-E161				
Status & Updates	- 0	32	040000927	CON_11	67	0	CON	Link 1	1/0 beards	19				
		33	040000932	IP-CPU_01_CATs	D		IP CPU		1/0 heard port	145				
Status - Matter Firmwale		34	040015300	CON_82	157		CON		Participantes					
Update - Matrix Firmware		35	040069452	CPU_03	219		CPU	Extender Type	<b>Firmware Version</b>	Parameters	USB-HD Ghosting	EDID		
Update - Extender Firmware		36	040069453	CPU_04	223		CPU							
Activate Configuration		37	040069455	CPU_01	0		CPU	Type					Standard View	ExpertView
Miscellaneous		38	040076855	CPU_VGA_02	145		CPU		Name		Basic	PartA		PatB
System Settings	~	39	040076860	CPU_VGA_01	137		CPU	DVINDMINGA	video)		10			
System		40	040113350	CON_89	65	D	CON	HD (keyboard,	mouse)		1			
Access		41	040131237	CPU_Raspi_07	341		CPU	Analog Audio				12		
Switch		42	040131238	CPU_Raspi_08	342		CPU	Digital Audio						
Network		43	040131230	CPU_Raspi_09	343		CPU	R5232R5422	(aerial)			197		
Date and time Matrix Grid		-44	040131240	CPU_Raspi_06	340		CPU	USB-CPU (em/	pedided)					1
and the other		45	040131241	CPU_Raspl_05	339		CPU	USB-CPU (star	idalene)					
Extender & Devices	^	45	040131242	CPU_Raspi_04	338		CPU	Universal-CPU						
EXT Units		47	040131243	CPU_Raspl_03	337		CPU	Cascade-CPU						
CPU Devices		48	040131245	CPU_Raspi_01	335		CPU							
CONDIVIDIA		49	040131246	CPU_Raspl_10	344		CPU							
User Settings	~	50	040131932	CON_04	158	D	CON							
Users & Groups		61	040137566	IP-CPU_02_CATx	0		IP CPU							
Assignment	~	52	040166854	IP-CPU_04_Fiber	72	D	IP CPU							
Victori CBU Devices		53	040167519	IP-CPU_03_Fiber	70	86	IP CPU							
Virtual CON Devices		54	090000097	US82.0_CON	97		USB 2.0 CON							
Multi-Screen Control		**	4	19883 8 881	1.0.0									
			aion Satimos t	Coor Sellings	from	Restart	Extender				Ne	VUnit Delete	UNI	Carriel

FIGURE 6-6.2.1 MANAGEMENT SOFTWARE MENU - EXT UNITS - EXPERT VIEW - EXTENDER TYPE





### 6.6.3 EXTENDER FIRMWARE VERSION

To display extender unit information or to modify settings, proceed as follows:

- 1. Select Extender & Devices > EXT Units in the task area.
- 2. Select the extender unit to be displayed.
- 3. Click the Firmware Version tab on the right side of the working area.

The Firmware Version overview is displayed on the right side of the working area.

Save Relad Connec	Discon	and l	Deactivate Edit	Mode Remele Save	T	Uplead	Monitoring Flat	th Update	Device Find	er., System Check, Save S	a la		
210210.zp Master ×	1												
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atix .							7	m		43075345	CBII Assistant	01017	CELL 12 EMD INC.4
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d		27	010210839	CON_03	154		CON	A Nor	ne	CPU_VGA_02			
ntrai		28	012345679	CPU_Raspl_02	336		CPU	Por	1	145			
trol	~	29	020201214	IP-CPU_05_12_DH	104	0	IP CPU	Fixe	d				
ended Switch		30	030003419	CPU_02	0		CPU	Loc	ation				
sets		31	040000859	EXT_040000659	0		CON			Device: TEST-A-E160			
tus & Updates	~	32	040000927	CON_11	67	0	CON	Uni	1	L/O board: 19			
han Habir Domester		33	040000932	IP-CPU_01_CATX	0		IP CPU			I/O board port: 1 Matrix port: 145			
tus - Extender Firmware		34	040015300	CON_02	157		CON						
tate - Matrix Firmware		35	040069452	CPU_03	219		CPU	Exte	nder Type	Firmware Version Parar	telers USB-HID Chosting	EDID	
late - Extender Firmware		36	040059453	CPU_04	223		CPU			Name	Туре		Version
vate Configuration		37	040069455	CPU_01	0		CPU	01	EXTICPU		EXT		F01.51.191202
cellaneous		38	040076855	CPU_VGA_02	145	-	CPU	02	HIDCPU		HID		F04.03.201112
tem Settings	~	38	040075860	CPU_VGA_01	137		CPU	03	EXTINSO		HSD.		802.00.191011
tem		40	040113350	CON_09	65	0	CON	04	ANASER		SAX		B04.10.101026
***		41	040131237	CPU_Raspi_07	341		CPU	05	USBEFS		USB		800.60.140325
tch		42	040131238	CPU_Raspi_08	342		CPU	05	CONVER	J	GPU		F01.52.200306
work		43	040131239	CPU_Raspi_09	343		CPU						
a and Time		44	040131240	CPU_Raspl_06	340		CPU						
	-	45	040131241	CPU_Raspl_05	339		CPU						
ender & Devices	~	46	040131242	CPU_Raspl_04	338		CPU						
Units		47	040131243	CPU_Raspl_03	337		CPU						
U Devices		48	040131245	CPU_Raspl_01	335		CPU			0			
N D WICKS		49	040131246	CPU_Raspi_10	344		CPU			1.0	HER LAND		1
ar Settings	~	50	040131932	CON_04	158	0	CON				" 🔳 🖸 🔃	111 × (c)	1
ers & Groups		51	040137566	IP-OPU_02_CATX	0		IP CPU						
ignment	~	52	040165854	IP-CPU_04_Fiber	72	0	IP OPU						
		53	040167519	IP-CPU_03_Fiber	70	85	IP CPU						
al CPU Devices		54	090000057	USB2.0_CON	97		USB 2.0 CON						
-Screen Control		**	4					•					
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FIGURE 6-6.3.1 MANAGEMENT SOFTWARE MENU - EXTENDER & DEVICES - EXT UNITS - FIRMWARE VERSION

\*Add-on modules are shown together with the associated KVM extender in one extender unit.





### 6.7 CREATING AN USB 2.0 EXTENDER

This chapter helps you to configure and use your USB 2.0 Ext Units. USB 2.0 Ext Units can be configured for independent switching or can be assigned to already existing KVM extenders.

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atrix						Ť	ID	93500.474	CPU Assigned	DRD44 CPU DRD44	
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nd	18	040163303	EXT_040163303	149		CON	Name	EXT_00000424			
ontrol	19	010231854	EXT_010231854	139	0	CPU	Port	424			
etrol ^	20	010198383	EXT_010198383	140		CPU	Fixed	12 N			
dended Switch	21	040163324	EXT_040163324	130		CON	Location				
esets	22	040163325	EXT_040163325	137		CON		Device: KVM_DV01			
atus & Updates 🔷	23	040077291	EXT_040077291	155		CPU	Link 1	I/O board: 33			
atus - Matrix Firmware	24	040000939	EXT_040000939	153		CON		Natrix port: 264			
tatus - Extender Firmware	25	010135668	EXT_010135668	156		CPU					
pdate - Matrix Firmware	26	010209387	EXT_010209387	154	0	CON	Extender Type	Firmware Version USB-HID G	hosting EDID EDID 2		
date - Extender Firmware	27	010309742	EXT_010309742	257		CPU	Tes II				
tivate Configuration	28	040163313	EXT_040153313	297		CON	Type	0820000		Standard Vew	Expertive
iscellaneous	29	010302796	EXT_010302796	258		CPU		Name	Basic	PartA	PartB
stem Settings	30	040163314	EXT_040163314	290		CON	DWHDMWGA()	ideo)			
stem	31	010309739	EXT_010309739	259		CPU	HED (heyboard, r	nouse)			
C#88	32	040163311	EXT_040163311	96		CON	Analog Audio		10		
vitch	33	010309746	EXT_010309745	260		CPU	Digital Audio				
Hwork	34	010302831	EXT_010302831	300		CON	R\$232/R\$422()	serial)			10
ani ang rime atix Grid	35	010287351	EXT_010287351	261		CPU	USB-CPU (emb	edded)			
instant Products	36	040163312	EXT_040163312	301		CON	USB-CPU (stan	falone)	10		10
tender & ventues	37	010308970	EXT_010308970	262		CPU	Universal-CPU				
(T Units	38	040163310	EXT_040163310	302		CON	Cascade-CPU				
PU Devices	39	010308973	EXT_010306973	264		CPU					
	40	040163309	EXT_040163309	303		CON					
er Sellings	41	040073656	EXT_040073656	263		CPU					
sers & Groups	42	040163308	EXT_040163308	0		CON					
A themas	43	040127994	EXT_040127994	265		CPU					
tual CBU Devices	44	010309561	EXT_010309561	D		CON					
fual CON Devices	45	010302804	EXT_010302804	266		CPU					
ulti-Screen Control	45	090000424	EXT_000000424	424	-	USB 2.0 CPU					

To configure a USB 2.0 extender unit, proceed as follows:

- 1. Select **Extender & Devices > EXT** Units in the task area.
- 2. Click the Activate Edit Mode menu item in the toolbar.
- 3. Click the **New Unit** button.

A selection dialog appears.

4. Select **Choose template** in the selection box if you want to use a template for a **USB 2.0 CON Unit or a USB 2.0 CPU Unit.** 

An extender with an eight-digit ID will be created, starting with digit 9.

- 5. Enter an appropriate name to the extender in the **Name** field.
- 6. Enter the port number of the matrix physically connected to the USB 2.0 extender unit into the Port field.
- 7. Click the Apply button to confirm the settings.
- A dialog appears to restart the I/O board.
- 8. Click the **Yes** button to restart the I/O board to activate the USB fixed port for the new unit. FIGURE 6-7.1 MANAGEMENT SOFTWARE MENU - EXTENDER & DEVICES - EXT UNITS -EXTENDER TYPE - USB 2.0





FIGURE 6-7.1.1 MANAGEMENT SOFTWARE DIALOG - ACTIVE USB FIXED PORT

After restart of the I/O board, the parameters and settings of the USB 2.0 extender module are shown in the working area of the respective extender unit.

- 9. The USB 2.0 CPU/CON extender unit now has to be either assigned to an existing CPU/CON Device or a new CPU/CON Device has to be created for the assignment:
  - for a CPU Device see chapter 5.8.1, page 111,
  - for a **CON Device** see chapter 5.9.3, page 122
- 10. If you use parallel operation within the matrix, set the Release Time in the System Settings > Switch

menu to 10 s or more (see chapter 6.4.5, page 162).

11. Restart all I/O boards on which USB 2.0 extenders have been configured or alternatively restart the matrix.

The USB 2.0 Ext Units are now configured and can be used.

\*Manually created Ext Units are always set as fixed port extenders. This configuration is necessary if you want to switch, e.g., USB 2.0 connections via the matrix. To make a fixed port available again for Flex Port Ext Units after deleting a fixed port extender unit, a restart of the I/O board is necessary.

### 6.7.1 SETTING CPU DEVICES

New CPU Devices are configured in this menu including their assignment to Ext Units.

The assignment helps to describe and switch more complex computer configurations (e.g., Quad-Head with USB 2.0) in the matrix.





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India		01		1001	CPU_01	001	4	Name		CPU_01	021			CON	Connect	bat	03019 C	DN_03019			
etrol	~	02	8	1002	CPU_01	002		Virtual De	vice					CPU	Celors		-	¥ 01 ····	¥		
dended Switch		03		1003	CPU_01	003		Allow Prin	ste	~				Exch	ISIVE AC	cess					
esets		04		1004	CPU_01	004		Force Pre	vate					MSC	Disables	d					
atus & Updates	~	05		1005	CPU_01	005		Ex frame	Color	-		~			-						
Jatus - Matrix Firmware		05		1006	CPU_01	005		Defense	- Const												
atus - Extender Firmware		07	8	1007	CPU_01	007		Helerenc	•	(10 1	merence :	set)									
pdate - Matrix Firmware		08		1000	CPU_01	800		2 Step Ac	cess												
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stem		13	8	1013	CPU_01	013	1									02					
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etwork		15	8	1015	CPU_01	015										04					
ale and Time		16	80	1016	CPU_01	016									++-	05					
atrix Grid		17	8	19017	CPU_01	017										05					
tiender & Devices	~	18		1018	CPU_01	018										07					
(T Units		19	8	1010	GPU_01	019										08					
PU Devices		20	80	1020	CPU_01	020									4						
ON Devices		21		11021	CPU_01	021									44						
ier Settings		22	8		CPU_01																
sers & Groups		23		1023	CPU_01	Log Contraction															
alignment.		24		1924	CPU_01	1005															
all and all a second	~	-		1125	CPU_01																
tual CPU Devices		270		11420	090_01	0.073															
Isai CON Devices		21	-	11027	020_01	U.C.F												Use keys # and - h	minute and an	der	
A A A A A A A A A A A A A A A A A A A		200		1320		event .								-						_	

FIGURE 6-8.1.6 MANAGEMENT SOFTWARE MENU - EXTENDER & DEVICES - EXT UNITS - ASSIGNMENT FINISHED

FIELD	DESCRIPTION
New Device	Create a new CPU Device
Delete	Delete a new CPU Device
Apply	Confirm a created CPU Device
Cancel	Reject changes
	Assign selected Ext Units to a CPU Device
	Assign all available Ext Units to a CPU Device
	Remove selected Ext Units from a CPU Device
	Change assignment number of extender unit upwards
	Change assignment number of extender unit downwards
Deactivate	Change assignment number of extender unit to first position
Reset	Change assignment number of extender unit to last position
	Change assignment number of extender unit upwards
	Change assignment number of extender unit downwards





The following parameters can be configured:

OPTION	ENTRY	DESCRIPTION
ID	Text	Ident number of the user
Name	Text	Username (case sensitive) Note: A username can consist of up to 32 characters.
	Activated	Allow switching to the respective CPU Device in Private Mode
Virtual Device allow Private	Deactivated	User password (case sensitive, input of minimum 8 characters up to 16 characters)
Force	Activated	Force switching to the respective CPU Device only in Private Mode
Private	Deactivated	Function not active (default)
Fix Frame Color	Selection list	Force showing a colored frame when switching to the respective
Reference	Activated	Activate a reference CPU Device that inherits both CPU Device and extender unit settings to any CPU Unit that is connected to the matrix for the first time. Note: It is recommended to activate the reference setting for one single CPU Device only.
	Deactivated	Function not active (default)
2 Step Access	Activated	Open a pop-up window after switching to the particular CPU Device. In the background a Video Only connection will be established. A confirmation in the pop-up window is required to establish a Full Access connection to the CPU Device.
	Deactivated	Function not active (default)
CPU Assigned	-	ID and name of the assigned Virtual CPU Device, cannot be changed, is retrieved automatically
CON Connected	-	ID and name of the connected CON Device, cannot be changed, is retrieved automatically
CPU Colors	Selection list	The CPU Device name will be highlighted according to the color setting for text and background. You can select between 16 colors.
Exclusive Access	Activated	Activate an access limitation for the case that a CPU Device is already connected via Full Access connection. When having the same priorities, any additional access to the CPU Device can only be established with a Video Only connection. Having a lower priority any additional connection is not possible. Only when having a higher priority, an additional Full Access connection can be established, and K/M control can be taken over.
	Deactivated	Function not active (default)
	Activated	Multi-Screen Control function deactivated
MSC disabled	Deactivated	Multi-Screen Control function activated



#### **Creating a new CPU Device**

To create a new CPU Device, proceed as follows:

- 1. Select Extender & Devices > CPU Devices in the task area.
- 2. Click the Activate Edit Mode menu item in the toolbar.
- 3. Click the **New Device** button.

A selection dialog appears.

 Select a real CPU (Create a standard CPU) or a virtual CPU (Create a virtual CPU) or a template of an existing CPU (Choose template) in the Choose template selection box.

Note: A template is only available if there is at least one existing CPU Device.

- 5. Click the **OK** button.
- A new CPU Unit will be created.
- 6. Determine all parameters that are relevant for the CPU Device.
- 7. Click the Apply button to confirm the creation of the CPU Device.
- 8. Click the Deactivate Edit Mode menu item in the toolbar.

#### Accessing a new CPU via Matrix

To access a new CPU Device via matrix, an assignment of one or more CPU Ext Units is required. Proceed as follows:

- 1. Select Extender & Devices > CPU Devices in the task area.
- 2. Click the Activate Edit Mode menu item in the toolbar.
- 3. Select the new CPU Device in the CPU Devices list.
- 4. Select an extender unit in the Extender available list that you want to assign to the CPU Group. By pressing and holding down the <Ctrl> key at the same time, more than one extender unit can be highlighted.
- 5. Click the button to move the highlighted Ext Units to the Extender assigned list. By clicking the

button, all available Ext Units from the **Extender available** list will be moved to the **Extender assigned** list.

The assignments are displayed in the **Extender assigned** list.

6. Click the or button to change the order of the Ext Units within the Extender assigned list.

Or press the <+> or <-> key to change the order of the Ext Units within the Extender assigned list.

- 7. Click the **Apply** button to confirm the assignment.
- 8. Click the Deactivate Edit Mode menu item in the toolbar.

#### Removing an Extender Unit Assignment





To remove an extender unit assignment, proceed as follows:

- 1. Select Extender & Devices > CPU Devices in the task area.
- 2. Click the Activate Edit Mode menu item in the toolbar.
- 3. Select a CPU Device in the CPU Devices list.
- 4. Select one or more Ext Units in the Extender assigned list.
- 5. To remove highlighted Ext Units from the Extender assigned list, click the button. If you click the

button, all CPU Devices will be removed from the Extender assigned list.

- 6. Click the **Apply** button to confirm the removal.
- 7. Click the Deactivate Edit Mode menu item in the toolbar.

#### 6.7.2 SETTING CPU GROUPS

The KVM matrix allows to bundle the CPU Devices of a configuration into CPU groups. The groups can be used to subdivide the CPU Devices logically or thematically. As an application example you can group all CPU Devices together that are connected to a specific matrix in a matrix grid. The configuration of CPU groups at the same times increases the clarity of the configuration.



FIGURE 6-8.3.1 MANAGEMENT SOFTWARE MENU - EXTENDER & DEVICES - CPU DEVICES - CPU GROUPS



#### **Creating a new CPU Group**

To create a CPU Group, proceed as follows:

- 1. Select Extender & Devices > CPU Devices in the task area.
- 2. Click the Activate Edit Mode menu item in the toolbar.
- 3. Select the CPU Groups tab in the working area.
- 4. Click the New Group button.

A selection dialog appears.

 Select a standard Group (Create a standard Group) or a LDAP Group (Create a LDAP Group) or a template of an existing Group (Choose template) in the Choose template selection box.
 Note: A template is only available if there is at least one existing Group.

6. Click the **OK** button.

- 7. Enter a group name into the field Name.
- 8. Click the **Apply** button to confirm the creation of the group.
- 9. Click the Deactivate Edit Mode menu item in the toolbar.

### **Assigning a CPU Group**

To assign a CPU Device to a CPU Group, proceed as follows:

- 1. Select Extender & Devices > CPU Devices in the task area.
- 2. Click the Activate Edit Mode menu item in the toolbar.
- 3. Select the CPU Groups tab in the working area.
- 4. Select the CPU Group to be assigned with a CPU Device.

5. Select a CPU Device in the list **CPU/Group available** that you want to assign to the CPU Group. By pressing and holding down the <Ctrl> key at the same time, more than one CPU Device can be highlighted.

6. Click the button to move the highlighted CPU Devices to the **CPU/Group assigned** list. By clicking the button, all CPU Devices from the CPU Device available list will be moved to the **CPU/Group assigned** list.

7. To remove highlighted CPU Devices from the CPU/Group assigned list, click the button. If you click the button, all CPU Devices will be removed from the CPU/Group assigned list.

- 8. Click the Apply button to assign the CPU Device to the CPU Group.
- 9. Click the Deactivate Edit Mode menu item in the toolbar.







### 6.8.4 ASSIGNING VIRTUAL CPU DEVICES

In this menu, either one or more Virtual CPU Devices can be assigned to a Real CPU Device. With a Virtual CPU Device, the effort of switching several CON Devices to the same CPU Device can be reduced. If several CON Devices are connected to a Virtual CPU Device that is assigned to a Real CPU Device, you only have to change the Real CPU Device once and all consoles will receive the video signal of the new Real CPU Device.

\*One Real CPU Device can be assigned to several Virtual CPU Device.



#### FIGURE 6-8.4.1 MANAGEMENT SOFTWARE MENU - ASSIGNMENT - VIRTUAL CON DEVICES

FIELD	DESCRIPTION
Send	Send assignments to the matrix
Reload	Reload changes

For an assignment, proceed as follows:

- 1. Select Assignment > Virtual CPU Devices in the task area.
- 2. Click the Activate Edit Mode menu item in the toolbar.
- 3. Select a Virtual CPU Device in the Virtual CPU list.
- 4. Double-click in the **Real CPU** column to display a list of all available Real CPU Devices.
- 5. Select a Real CPU Device in the selection list.
- 6. Click the **Send** button to send the assignment to the matrix.
- 7. Click the Deactivate Edit Mode menu item in the toolbar.

The selection boxes in the **Real CPU** column contain a filter function for an easy selection of a single CPU Device from a larger pool of CPU Devices.

The management software offers the option to switch directly from the **Assignment** menu to the definition menu to check specific settings for the respective Real CPU Device or Virtual CPU Device.

Click with the secondary mouse button on the respective Real CPU Device or Virtual CPU Device and

select Open CPU Device in the context menu.

The definition menu for the CPU Device settings is opened (see chapter 6.8.2, page 208).





### 6.8 CONFIGURE CONSOLE SETTINGS

Connecting a CON Unit to the matrix creates an extender unit in the matrix, reading the serial number of the CON Unit. An extender unit has to be assigned to a CON Device. Switching operation is only possible between CON Device and CPU Device. All steps to create switchable CON Devices are described in this chapter. Several Real CON Devices can be assigned to a Virtual CON Device to reduce operation efforts (see chapter 6.9.6, page 235).

### 6.8.1 CONFIGURING FOR MOUSE AND KEYBOARD USED IN THE EXTENDER OSD

en gave Ralcad Connect Dac		Activate Edit I	tode Remete Save C	tewnicad	Uplead I	Iontoring Pl	B under	ate Device Pinder	System Check 1	Save Status			
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ww ^	Ext	ender & De	vices - EXT Units										
lahtx							T		100000101		CON Assesse	4 01012 CON 42	
lait		ID	Name	Port	Red. Port	Type	1				CONVENIEN	and and a	
and	24	010155403	CON_MV_3.4	0		CON	•	Name	CON_12				
contrai	25	010155411	CON_NV_4.1	0		CON		Port	0				
iontrol o	26	010155420	CON_MV_4.2	0		CON		Fixed					
xtended Switch	27	010155419	CON_MV_4.3	0		CON		Location					
ives ets	28	010182231	CON_MV_4.4	0		CON							
tatus & Updates 🗠	29	010218839	CON_03	Ú.		CON		Link 1					
Ratus - Matrix Firmware	30	040131932	CON_04	0	0	CON							
tatus - Extender Firmware	31	010207759	CON_01	0	0	CON					-		
ipdate - Matrix Firmware	32	040015300	CON_02	0		CON		Extender Type	Firmware Version	General OSD Data	Extender OSD	Data Parameters	
Ipdale - Extender Firmware	33	040000932	IP-CPU_01_CATX	0		IP CPU		Horizontal Mos	se Speed [1]x]	4 0			
ctivate Configuration	34	012345579	CPU_Raspi_02	0		CPU			an observation?				
	35	040069455	CPU_01	0		CPU		Vertical Mouse	speed [104]	0 v			
ystem Settings	36	030000419	CPU_02	0		CPU		Double Click Ti	me (ma)	200 \$			
lystem	37	040069452	CPU_03	0		CPU		Keyboard Layo	ut	German (DE, 129)	*		
CCBSS	38	040089453	CPU_04	0		CPU		Video Mode		Variable	~		
witch letwork	38	010172819	CPU_05	0		CPU		Host Mare		Dra coofin and Lint k	100 20		
late and Time	40	010189131	CON_05	0		CON		nativey		Pre-consigures mouv	uti +		
fatrix Grid	41	010135474	CON_05	0		CON		Fast Key		Custom Key	✓ HD St	an Code: 0x68	
xtender & Devices	42	040166854	IP-CPU_04_Fiber	0	0	IP CPU							
VT Links	43	010209391	CON_07	0	0	CON							
PU Devices	44	010209382	CON_08	0	0	CON							
ON Devices	45	040113350	CON_09	0	0	CON							
ser Settines	46	010195808	CON_10	0	0	CON							
	47	040000927	CON_11	0	0	CON							
isers & uroups	48	010000101	CON_12	0	-	CON							
asignment A	49	020201214	IP-CPU_05_02_DH	1 0	0	IP CPU							
Viual CPU Devices	50	040167519	IP-CPU_03_Fiber	0	0	IP OPU							
Vitual CON Devices	51	040137566	IP-CPU_02_CATX	0		IP CPU							
fulli-Screen Control	52	010209378	ValWall_TRx	0	D	CPU							

The OSD configuration for mouse and keyboard is made in this menu.

FIGURE 6-9.1.1 MANAGEMENT SOFTWARE MENU - EXTENDER & DEVICES - EXT UNITS - GENERAL OSD DATA



The following parameters can be configured:

OPTION	ENTRY	DESCRIPTION
Horizontal Mouse Speed [1/x]	1 to 9	Adjustment of the horizontal mouse speed, 1 = slow, 9 = fast (default: 4)
Vertical Mouse Speed [1/x]	1 to 9	Adjustment of the vertical mouse speed, 1 = slow, 9 = fast (default: 5)
Double Click Time [sec]	100 to 800	Adjustment of the time slot for a double-click (default: 200 ms)
Keyboard Layout	Region	Set the OSD keyboard layout according to the used keyboard (default: German (DE))
Video Mode	Variable or specific resolution	Resolution that is used when opening OSD
Hot Key	Keyboard command	Calling the command mode via keyboard sequence
Fast Key	Keyboard command	Calling the command mode with only one key

\*The OSD configuration for mouse and keyboard is made in this menu.

### **Changing Settings for Mouse and Keyboard**

To change the settings for mouse and keyboard, proceed as follows:

- 1. Select Extender & Devices > EXT Units in the task area.
- 2. Click the Activate Edit Mode menu item in the toolbar.
- 3. Select the CON extender unit in the EXT Units list whose extender OSD settings has to be adjusted.
- 4. Select the General OSD Data tab.
- 5. Modify the desired settings.
- 6. Click the Apply button to confirm your entries.
- 7. Click the **Deactivate Edit Mode** menu item in the toolbar.

### **Assigning Settings to other Ext Units**

To assign settings of an extender unit to other Ext Units, proceed as follows:

- 1. Select Extender & Devices > EXT Units in the task area.
- 2. Click the Activate Edit Mode menu item in the toolbar.
- 3. Select the CON extender unit whose settings are to be assign to another extender unit.
- 4. Click the Assign Settings to button below the Ext Units list.
- A query to select the settings appears.
- 5. Click the checkboxes for the desired settings.
- 6. Click the Next button.





YAN	Assign Settings to		×
Ste	eps	Select Settings	
<b>1.</b> 2.	Select Settings Assign Settings to		
		General OSD Data	
		<ul> <li>Extender OSD Data</li> </ul>	
		Select All	
		< <u>B</u> ack Next > Einish	Cancel

FIGURE 6-9.1.2 MANAGEMENT SOFTWARE MENU - EXTENDER & DEVICES - EXT UNITS - SELECT SETTINGS

A query to start the assignment appears.

7. Select the Ext Units in the **Available to assign settings to** list to which the settings are to be assigned.

By pressing and holding down the <Ctrl> key at the same time, more than one extender unit can be highlighted.

8. Click the button to move the highlighted Ext Units to the **Assign settings to** list. By clicking the button, all Ext Units will be moved to the **Assign settings to** list.

9. To remove highlighted Ext Units from the **Assign settings to** list, click the button. If you click the button, all Ext Units will be removed from the **Assign settings to** list.

10. Click the Finish button.

The settings are immediately assigned to the selected Ext Units.

11. Click the Deactivate Edit Mode menu item in the toolbar.



The following parameters can be configured:

Select Settings	Availabl	e to assign settings to	, ,	Ass	sign settings to	
Assign Setungs to	ID	Name		ID	Name	
	40236700	EXT_040236700		40236694	EXT_040236694	
	40236703	EXT_040236703				
	10303126	EXT_010303126				
	40227287	EXT_040227287				
	10309572	EXT_010309572				
	10302824	EXT_010302824	4			
	10303109	EXT_010303109	44			
	40087106	EXT_040087106				
	40173697	EXT_040173697	τ.			

FIGURE 6-9.1.3 MANAGEMENT SOFTWARE MENU - EXTENDER & DEVICES - EXT UNITS - ASSIGN SETTINGS TO

### **Copying Settings from another Extender**

To copy settings from an extender unit to another extender unit, proceed as follows:

- 1. Select Extender & Devices > EXT Units in the task area.
- 2. Click the Activate Edit Mode menu item in the toolbar.
- 3. Select the CON extender unit to which the settings are to be copied. By pressing and holding down the

<Ctrl> key at the same time, more than one extender unit can be highlighted.

4. Click the Copy Settings from button below the Ext Units list.

A query to select the settings appears.

- 5. Click the checkboxes for the desired settings.
- 6. Click the Next button.





Steps	Select Settings	
Select Settings     Copy Settings from		
	✓ General OSD Data ✓ Extender OSD Data	
	Select All	
	< Back Next >	Finish Cancel

FIGURE 6-9.1.4 MANAGEMENT SOFTWARE MENU - EXTENDER & DEVICES - EXT UNITS - SELECT SETTINGS

A query to start the assignment appears.

7. Select the extender unit in the selection list from which the settings are to be copied.

8. Click the **Finish** button.

The settings are immediately copied to the selected Ext Units.

Steps	Copy Settin	igs from				
1. Select Settings 2. Copy Settings from	Copy from	010195692	CON_MV_1	1	<b>~</b>	
		010218839	CON_03		*	
		040131932	CON_04			
		010207759	CON_01			
		040015300	CON_02			
		010189131	CON_05			
		010135474	CON_06			
		010209391	CON_07		_	
		010209392	CON_08			
		040113350	CON_09			
		040000927	CON_11	N		
		010000101	CON_12	45		
		040000859	EXT_04000	0859	Ŧ	

FIGURE 6-9.1.5 MANAGEMENT SOFTWARE MENU - EXTENDER & DEVICES - EXT UNITS - COPY SETTINGS



### 6.8.2 SETTING EXTENDER OSD

In this menu the parameters for the Extender OSD can be set. These are local settings that can be made individually for each console.

When setting the horizontal OSD position, a prefixed minus describes the orientation to the right edge of the monitor, e.g., -2 means  $2 \times 10 = 20$  pixels to this edge. When setting a vertical position, a prefixed minus describes the orientation to the bottom edge of the monitor. If the **Update connection info** function is deactivated, the Extender OSD only appears when switching via OSD.

- N S -	-	0	H	Ψ.	τ.				<b>~</b>	-					
pen Seve   Reload   Sonvect 20210210.200   Master X	Decount	ct Activate Edit N	lode Remote Save   Do	whited	Uplead	Monitoring   1	'lash Up	date Device Pinde	System Check 1	Save Status .					
ňew	~	xtender & De	vices - EXT Units												
Valtix							T		100000101		CON Antipart	41042 CON 42			
Port		T ID	Name	Port	Red Po	rt Type					CONASSIGNE	03015 CON_12			
Grid	3	4 010155403	CON_MV_3.4	0		CON	*	Name	CON_12						
Control		5 010155411	CON_MV_4.1	0		CON		Port	0						
Control	·	6 010155420	CON_MV_42	0		CON		Fixed							
Extended Switch	1	010155419	CON_MV_4.3	0		CON		Location							
Presets	4	B 010182231	CON_MV_4.4	0		CON									
Status & Updates	~ 3	9 010219839	CON_03	0		CON		Link 1							
Status - Matrix Finmware	1	0 040131932	CON_04	0	0	CON									
Status - Extender Firmware	1	010207759	CON_01	0	0	CON				-		-			
Update - Matrix Firmware	4	2 040015300	CON_02	0		CON		Extender Type	Firmware Version	General OSD Data	Edender OSD Dat	a Parameters			
Update - Extender Finmware	4	3 040000932	IP-CPU_01_CATx	0		IP OPU		Enable Connec	ion Info	2					
Activate Configuration	4	4 012345679	CPU_Raspl_02	0		CPU		Undate Conner	tion late						
	-	5 040059455	CPU_01	0		CPU		opuste connec	oon mee						
System Settings	<b>^</b> :	6 030000419	CPU_02	0		CPU		Enable CPU Se	ection	×.					
System	3	040059452	CPU_03	0		CPU		Display Time (s	ec]	8					
Access	3	8 040009453	CPU_04	0		CPU		Horizontal Posi	tion [10 ps]	2 \$					
Network	1	010172819	CPU_05	0		CPU		Vartical Desilie	a lite and						
Date and Time	1	010189131	CON_05	0		CON		THILD POINT	a fre bat	- 4					
Matrix Grid	1	010135474	CON_06	Û		CON		OSD Position P	resets	Top Latt					
stender & Devices	~	2 040166854	IP-CPU_04_Fiber	0	0	IP CPU		EN CONTRACT							
EVT Links		3 010209301	CON_07	0	0	CON		Categoria							
CPU Devices	-	4 010209392	CON_08	0	0	CON									
CON Devices	-	5 040113350	CON_09	0	0	CON									
Jser Settings	A 4	6 010195608	CON_10	0	0	CON									
lines & Courses	-	7 040000927	CON_11	0	0	CON	- 1								
users a Groups		010000101	CON_12	0	-	CON									
Assignment	~ .	020201214	IP-CPU_05_k2_DH	0	0	IP CPU									
Virtual CPU Devices	-	040167519	IP-CPU_03_Fiber	0	0	IP CPU									
Virtual CON Devices		040137566	IP-OPU_02_CATX	0		IP CPU									
Julti-Screen Control	-	2 010209378	VulVall_TRx	0	0	CPU									
		Assign Settings I	- Copy Settings	hom	Resta	rt Extender					NewU	nit Delate Unit	datab.	<u>C</u>	incel

FIGURE 6-9.2.1 MANAGEMENT SOFTWARE MENU - EXTENDER & DEVICES - EXT UNITS - EXTENDER OSD DATA







The following parameters can be configured:

OPTION		DESCRIPTION
Enable CPU Selection List	Activated	When executing the key sequence for opening the OSD, a selection list for switching CPU Devices will be displayed in the center of the monitor. Pressing the <f7> key within the selection list opens the standard OSD.</f7>
	Deactivated	Function not active (default)
Enable Connection	Activated	Enable Extender OSD (default)
Info	Deactivated	Function not active (default)
Update Connection	Activated	Update connection changes during fade-in of Extender OSD
Info	Activated	(default)
Display Time	0-999 seconds	Duration of OSD fade-in (default: 10)
Horizontal Position	10 pixels	Horizontal OSD position (default: -2)
Vertical Position	10 pixels	Vertical OSD position (default: 2)

### **Changing the Extender OSD Settings**

To change the extender OSD settings, proceed as follows:

- 1. Select **Extender & Devices > EXT** Units in the task area.
- 2. Click the Activate Edit Mode menu item in the toolbar.
- 3. Select the CON extender unit in the **EXT Units** list whose extender OSD settings has to be adjusted.
- 4. Select the Extender OSD Data tab.
- 5. Modify the desired settings.
- 6. Click the **Apply** button to confirm your entries.
- 7. Click the **Deactivate Edit Mode** menu item in the toolbar.

\*For an efficient extender OSD configuration, OSD settings can be assigned to EXT Units (see description on page 120) or can be copied from an EXT Unit (see description on page 121).



### 6.8.3 SETTING CON DEVICES

pen Save Raiced Conve	ct Dieco	meet	Activate	Edit Node Remote Save	Download.	plead.	Monitoring 1	lash Update.	Device Pinder.	System Chec	k. Sava Status.					
20210210.2ip Master ×	~	Ext	ender 8	Devices - CON D	evices											
Valrix					T			2022			CON Assisted		_			
Ant			ID	Name		1		04455			CONASSIGNED					
irid		01	03001	CON_03001		Narr	NO.	CON			CPU Connected					
Contral		02	03002	CON_03862		Prie	rity		0 0		Allow CPU Scan					
ontrol	A	03	03003	CON_03003		Vin	al Device				Force CPU Scan					
xtended Switch		04	03004	CON_03004		Aller	willing ACL	12			Scan Time Isec1					
resets		05	03005	CON_03005							Deserve and					
tatas & Updates	~	06	03005	CON_03006		Ford	ce Logen				Port Mode					
Takes - Makin Democrats		07	03007	CON_03007		LOS	Frame				Redundancy Off					
tatus - Extender Firmware		08	03008	CON_03008		Sho	w Macro List				Reference	(CON_03044)				
pdate - Matrix Firmware		09	03009	CON_03009		OSD	Disabled				CPU Colors	¥ 00		¥.		
ipdate - Extender Firmware		10	03010	CON_03010							Fix Frame Color	-	v			
divale Configuration		11	03011	CON_03011						-						
liscellaneous		12	03012	CON_03012		Enter	nder Assignme	ent CPUA	ccess Control	Favorites	Macros					
ystem Settings	*	13	03013	CON_03013				Full Access			Video Acc	e55		No Access		
ystem		14	03014	CON_03014		ID	Name			D	Name		ID	Name		
ccess		15	03015	CON_03015		101	0 CPU_010	910					1001	CPU_01001		
witch		16	03016	CON_03016		102	3 CPU_010	123					1002	CPU_01002		
stwork ats and Time		17	03017	CON_03017		102	7 CPU_010	027					1003	CPU_01003		
latrix Grid		18	03018	CON_03018		102	8 CPU_010	128					1004	CPU_01004		
standor & Desires		19	03019	CON_03019		102	9 CPU_010	129					1005	CPU_01005		
AND A DATION		20	03020	CON_03020		103	0 CPU_010	190					1006	CPU_01006		
XT Units		21	03021	CON_03021									1007	CPU_01007		
PU Devices ON Devices		22	03022	CON_03022									1008	CPU_01008		
	1.27	23	03023	CON_03023									1009	CPU_01009		
ser settings	~	24	03024	CON_03024									1011	CPU_01011		
isers & Groups		25	03025	CON_03025									1012	CPU_01012		
ssignment	~	26	03026	CON_03026									1013	CPU_01013		
Itual CPU Devices		27	03027	CON_03027									1014	CPU_01014		
Vitual CON Devices		28	03058	CON_03028									1015	CPU_01015		
ulti-Screen Control		29	03029	CON_03029					Use keyboard key	ys P. V. N to ch	ange the access control	Flists. Use right hand no	use click to	o select action.		
															_	

New CON Devices are created in this menu including access rights and assignment to Ext Units.

FIGURE 6-9.3.1 MANAGEMENT SOFTWARE MENU - CON DEVICE - CON DEVICES

BUTTON	FUNCTION
New Device	Open a new CON Device
Delete Device	Delete a new CON Device
Apply	Confirm a created CON Device
Cancel	Reject changes

KEYBOARD COMMAND	FUNCTION
<f></f>	Add CPU to list Full Access
<v></v>	Add CPU to list Video Access
<n></n>	Add CPU to list No Access



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OPTION	ENTRY	DESCRIPTION
ID	Text	Ident number of the CON Device
Name	Text	Name of the CON Device
		Priority of the CON Device
Priority	0 to 999	Note: There is no K/M sharing between CON Devices with a different priority and the release time does not come into account. CON Devices only have Video Only access to a CPU Device if a CON Device with a higher priority is already switched to it.
	Activated	Create a new CON Device as a Virtual CON Device
Virtual Device	Deactivated	Function not active (default)
Allow User ACL	Activated	Allow activation of the User ACL at the local console
	Deactivated	Function not active (default)
Force Login	Selection list	Force user login at this CON Device
LOS Frame	Activated	<ul> <li>When the video signal between source (computer, CPU) and the CPU Unit or the connection between matrix and the CON Unit is lost, an orange frame will be displayed.</li> <li>When switching to a CPU Unit without video signal, a blank screen will appear surrounded by an orange frame.</li> </ul>
	Deactivated	Function not active (default)
Chow Maara List	Activated	Show the macro list instead of the CPU Device selection list
Show Macro List	Deactivated	Function not active (default)
OSD Disabled	Activated	Disable OSD access for the respective CON Device
	Deactivated	Function not active (default)
CON Assigned	-	ID and name of the assigned Virtual CPU Device, cannot be changed, is retrieved automatically
CPUConnected	-	ID and name of the connected CON Device, cannot be
		changed, is retrieved automatically
Allow CPU Scan	Activated	Allow a scan mode with an automatic change of the video signal for the favorite list (CPU Devices) of the respective console or a logged in user.
	Deactivated	Function not active (default)
Force CPU Scan	Activated	Force a scan mode with an automatic change of the video signal for the favorite list (CPU Devices) of the respective console or a logged in user. Note: An active scanner can be stopped by a mouse or keyboard event. You gain Full Access for the currently switched CPU Device if Force Connect is activated.
	Deactivated	Function not active (default)
Scan Time [sec]	0 to 99 seconds	Retention period until switching to the next CPU Device



OPTION	ENTRY	DESCRIPTION
Port Mode	Activated	The favorite list will be replaced by a port list where the ports from 1 to 999 can be directly selected at each matrix or Matrix Grid. Note: The selection only works for CPU Devices and has to be made according to the switching of favorites. When using the Port Mode, CON and User favorites will be deactivated.
	Deactivated	Function not active (default)
	Activated	Function is not active
Redundancy Off	Deactivated	Automatically switch to the second link of a connected redundant CON Unit when losing the primary link of a CPU Unit (default).
CPU Colors	Selection list	The CPU Device name will be highlighted according to the color setting for text and background. You can select between 16 colors.
Fix Frame Color	Selection list	Show a colored frame at the CPU Device. You can select between 7 colors. The colored frame of the CPU device is displayed with priority.

### **Creating a new Console**

To create a new console, proceed as follows:

- 1. Select **Extender & Devices > CON Devices** in the task area.
- 2. Click the Activate Edit Mode menu item in the toolbar.
- 3. Click the **New Device** button.
- A selection dialog appears.

4. Select a real CPU (Create a standard CPU) or a virtual CPU (Create a virtual CPU) or a template of

an existing CPU (Choose template) in the Choose template selection box.

Note: A template can only be used if there is at least on existing CON Device.

- 5. Click the **OK** button.
- A new CON Device will be created.
- 6. Determine all parameters that are relevant for the CON Device.
- 7. Click the **Apply** button to confirm the creation.
- 8. Click the **Deactivate Edit Mode** menu item in the toolbar.





#### **Assigning Settings to other CON Devices**

To assign settings of a CON Devices to other CON Devices, proceed as follows:

- 1. Select Extender & Devices > CON Devices in the task area.
- 2. Click the Activate Edit Mode menu item in the toolbar.
- 3. Select the CON Device whose settings are to be assign to another CON Devices.
- 4. Click the Assign Settings to button below the CON Device list.
- A query to select the settings appears.
- 5. Click the checkboxes for the desired settings.
- 6. Click the **Next** button.

Assign Settings to			×
Steps	Select Settings		
<ol> <li>Select Settings</li> <li>Assign Settings to</li> </ol>		<ul> <li>Priority</li> <li>✓ Allow User ACL</li> <li>Force Login</li> <li>✓ LOS Frame</li> <li>Show Macro List</li> <li>OSD Disabled</li> <li>✓ Allow CPU Scan</li> <li>Force CPU Scan</li> <li>Scan Time [sec]</li> <li>Port Mode</li> <li>Redundancy Off</li> <li>Reference</li> <li>CPU Colors</li> <li>Fix Frame Color</li> <li>CPU Access Control</li> <li>Favorites</li> <li>Macros</li> <li>GPIO</li> <li>Select All</li> </ul>	
		< Back Next > Einish	Cancel

#### FIGURE 6-9.3.2 MANAGEMENT SOFTWARE MENU - CON SETTINGS - SELECT SETTINGS



A query to start the assignment appears.

- 7. Select the CON Device in the Available to assign settings to list to which the settings are to be assigned. By pressing and holding down the <Ctrl> key at the same time, more than one CON Device can be highlighted.
- Click the button to move the highlighted CON Device to the Assign settings to list. By clicking the button, all CON Devices will be moved to the Assign settings to list.
- 9. To remove highlighted CON Devices from the **Assign settings to** list, click the button. If you click the button, CON Devices will be removed from the **Assign settings** to list.
- 10. Click the Finish button.

The settings are immediately assigned to the selected CON Devices.

11. Click the Deactivate Edit Mode menu item in the toolbar.

Assign S	settings to				
Ava	ailable to assign settings to			Assign settings to	
ID	Name		ID	Name	
3116	MultiViewer 4.4		3008	CON_08	4
3003	CON_03				
3004	CON_04				
3001	CON_01				
3002	CON_02				
3005	CON_05				
3006	CON_06				
3009	CON_09				
3010	CON_10		(		
3011	CON_11				
3012	CON_12		•		
3013	XV_R490_CatX_L				
3014	XV_R490_Fiber_L				
3015	CON 会迷				
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FIGURE 6-9.3.3 MANAGEMENT SOFTWARE MENU - CON SETTINGS - ASSIGN SETTINGS



#### **Copying Settings from another CON Device**

To copy settings from a CON Device to another CON Device, proceed as follows:

- 1. Select Extender & Devices > EXT Units in the task area.
- 2. Click the Activate Edit Mode menu item in the toolbar.
- 3. Select the CON Device to which the settings are to be copied. By pressing and holding down the

<Ctrl> key at the same time, more than one CON Device can be highlighted.

- 4. Click the Copy Settings from button below the CON Device list.
- A query to select the settings appears.
- 5. Click the checkboxes for the desired settings.
- 6. Click the **Next** button.

🐅 Copy Settings from			×
Steps	Select Settings		
Steps  Select Settings Copy Settings from	<u>Select Settings</u>	<ul> <li>Priority</li> <li>✓ Allow User ACL</li> <li>Force Login</li> <li>✓ LOS Frame</li> <li>Show Macro List</li> <li>OSD Disabled</li> <li>✓ Allow CPU Scan</li> <li>Force CPU Scan</li> <li>Scan Time [sec]</li> <li>Port Mode</li> <li>Redundancy Off</li> <li>Reference</li> <li>CPU Colors</li> <li>Fix Frame Color</li> <li>CPU Access Control</li> <li>Favorites</li> <li>Macros</li> <li>GPIO</li> </ul>	
		Select All	
		< Back Next > Einish	Cancel

### FIGURE 6-9.3.4 MANAGEMENT SOFTWARE MENU -CON SETTINGS - SELECT SETTINGS



A query to start the assignment appears.

7. Select the CON Device in the selection list from which the settings are to be copied.

8. Click the Finish button.

The settings are immediately copied to the selected CON Devices.

Select Settings     Copy Settings from	Copy from	03101 MultiViewer 1.1	
		03005 CON_05	<b>A</b>
		03006 CON_06	
		03008 CON_08	
		03009 CON_09	
		03010 CON_10	
		03011 CON_11	
		03012 CON_12	
		03013 XV_R490_CatX_L	
		03014 XV_R490_Fiber_L	
		03015 CON 会迷	
		03016 XV_R490_CatX_R	
		03017 XV_R490_Fiber_R	v

FIGURE 6-9.3.5 MANAGEMENT SOFTWARE MENU -CON SETTINGS - COPY SETTINGS

### **Configuring Extender Unit Assignments**

To run a CPU Device via a matrix, one or more CON Ext Units must be assigned. To place an assignment, proceed as follows:

1. Select Extender & Devices > CON Devices in the task area.

2. Click the Activate Edit Mode menu item in the toolbar.

3. Select the CON Device in the **CON Devices** list that has to be assigned to an extender unit.

4. Select the extender unit in the Extender available list that should be assigned to the CON Device.

5. By clicking with the secondary mouse button once on a CON Device in one of the respective access

lists (Full Access, Video Access and No Access) a context menu for selection will appear in which

the respective CON Device can be moved, and the access rights can be changed. Alternatively, you

can type the key commands <F>, <V> or <N> to set the respective access rights.

6. Click the **Apply** button to confirm the assignment.

7. Click the **Deactivate Edit Mode** menu item in the toolbar.

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#### **Removing an Extender Unit Assignment**

To remove an extender unit assignment, proceed as follows:

- 1. Select Extender & Devices > CON Devices in the task area.
- 2. Click the Activate Edit Mode menu item in the toolbar.
- 3. Select the CON Device in the CON Devices list to be modified.
- 4. Select the extender unit(s) in the Extender assigned list to be removed.
- 5. By clicking with the secondary mouse button once on a CON Device in one of the respective access lists (Full Access or Video Access) a context menu for selection will appear in which the respective CON Device can be moved to the No Access list. Alternatively, you can enter the <N> key command to remove the access rights.
- 6. Click the Apply button to confirm the changes.
- 7. Click the **Deactivate Edit Mode** menu item in the toolbar.

#### **Configuring CPU Access Rights of CON Devices**

To configure CPU access rights of CON Devices, proceed as follows:

- 1. Select Extender & Devices > CON Devices in the task area.
- 2. Click the Activate Edit Mode menu item in the toolbar.
- 3. Select a CON Device in the CON Devices list.
- 4. Select the CPU Access Control tab.
- 5. Click with the secondary mouse button once on a CON Device to or the respective keyboard commands (cf. below) to assign new access rights. Type the key commands <F>, <V> or <N>
- 6. Click the Apply button to confirm the configuration.
- 7. Click the Activate Edit Mode menu item in the toolbar.


#### 6.8.4 SETTING CON DEVICE FAVORITES

Individual favorite lists of CPUs to be switched frequently can be created for all consoles in this menu. A favorite list can contain up to 32 different CPU Devices (from firmware V3.05). The switching of the favorites is done via keyboard commands (see chapter 7.2.1, page 274).

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usignment	~	26 0300	6 CON_03026								12					
tual CPU Devices		27 0300	7 CON_03027								13					
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		29 0300	9 CON 03029										Use keys # and	- to move CPU		

FIGURE 6-9.4.1 MANAGEMENT SOFTWARE MENU - CON SETTINGS - CON DEVICES - FAVORITES

To create a favorite list for any console, proceed as follows:

- 1. Select Extender & Devices > CON Devices in the task area.
- 2. Click the Activate Edit Mode menu item in the toolbar.
- 3. Select the CON Device for which a favorites list is to be created.
- 4. Select the Favorites tab.



- 5. Select the CPU Devices in the CPU Device available list that should be added to the favorites list (Favorite CPU Devices). By pressing and holding down the <Ctrl> key at the same time, more than one CPU Device can be highlighted.
- Click the button to move the highlighted CPU Devices to the favorites list. By clicking the button, all CPU Devices from the CPU Device available list will be moved to the favorites list (Favorite CPU Devices).

7. To remove highlighted CPU Devices from the favorites list, click the button. If you click the button,

all CPU Devices will be removed from the favorites list.

8. Optional: Click the or button to change the order of the CPU Devices within the favorites list.

Or press the <+> or <-> key to change the order of the CPU Devices within the favorites list.

- 9. Click the **Apply** button to confirm the changes.
- 10. Click the Deactivate Edit Mode menu item in the toolbar.

\*For an efficient favorite configuration, favorite settings can be assigned to CON Devices (see description on page 127) or can be copied from a CON Device (see description on page 129).

### 6.8.5 SETTING CON DEVICE MACROS

In this menu macro commands for switching, disconnection or user administration can be created. The

macro commands are created for each console separately.

A macro can execute up to 16 switching commands successively.

The execution of the macros is done via Hot Key and the function keys <F1> to <F16> (see chapter 7.2.2, page 273).

\*The macros can also be used to switch to CPU groups.

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cellaneous	12	03012	CON_03012		Extender Assignment	CPU Access Control Fai	ontes Macros			
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ess	15	03015	CON_03015			Function		P1		P2
tich	16	03016	CON_03016		01					
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#### FIGURE 6-9.4.2 MANAGEMENT SOFTWARE MENU - CON SETTINGS - CON DEVICES - MACROS

FIELD	SELECTION	DESCRIPTION
	Connect (P1=CON, P2=CPU)	Set a bidirectional connection from CON Device P1 to CPU Device P2
	Connect Video (P1=CON, P2=CPU)	Set a Video connection from CON Device P1 to CPU Device P2
	Disconnect (P1=CON)	Disconnect the CON Device P1
	Logout User	Logout the current user
Function (01 to 16)	Set Real CPU (P1=VCPU, P2=RCPU)	Assign a Virtual CPU Device to a Real CPU Device
	Set Virtual CON (P1=RCON, P2=VCON)	Assign a Real CON Device to a Virtual CON Device
	Push (P1=CON)	The user's KVM connection is forwarded to CON Device P1 and is changed to a Video Only connection.
	Push Video (P1=CON)	The video signal of the current connection (KVM or Video Only) is forwarded to CON Device P1. The user's connection remains unchanged (KVM or Video Only).





FIELD	SELECTION	DESCRIPTION
	Get (P1=CON)	The user's CON Device gets a KVM connection to the CPU Device that is currently connected to CON Device P1. The connection of CON Device P1 is changed into a Video Only connection.
Function (01 to 16)	Get Video (P1=CON)	The user's CON Device gets a Video Only connection to the CPU Device that is currently connected to CON Device P1. The connection of CON Device P1 remains unchanged (KVM or Video Only).
	Login User console P2	Login a certain user P1 at CON Device P2
P1	CON or CPU Device	Logout the current user
P2	CPU or CPU Device	Assign a Virtual CPU Device to a Real CPU Device

To create a macro for the selected console, proceed as follows:

- 1. Select Extender & Devices > CON Devices in the task area.
- 2. Click the **Activate Edit Mode** menu item in the toolbar.
- 3. Select the CON Device for which a console macro is to be created.
- 4. Select the Macros tab.
- 5. Select in the Key field the function key (<F1> to <F32>) for which a macro should be created.
- 6. Select in the **Function** column the commands that should be part of the macro. The selection list will be opened by a double-click on the empty fields.
- 7. Select the respective parameters for the macro functions (e.g., corresponding CON Devices or CPU
- Devices) in the P1 and P2 columns.
- 8. Click the **Apply** button to confirm your entries.
- 9. Click the Deactivate Edit Mode menu item in the toolbar.

For an efficient macro configuration, the following context functions are available:

When clicking on the Macros tab, macros can be assigned to other CON Devices by using the Assign

Settings to... function (see description on page 218) and can be copied from other CON Devices by

using the Copy Settings from... function (see description on page 219).

When clicking on the macro list, macros of the selected key can be copied into the cache by using the

Copy Key Macros function. You can paste the macros from the cache into a key by using the Paste

**Key Macros** function and you can reset all macros of the selected key by using the **Delete Key Macros** function.

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#### 6.8.6 ASSIGNING VIRTUAL CON DEVICES

In this menu, several Real CON Devices can be assigned to a Virtual CON Device.

This function reflects changes in permission made to Virtual CON Devices onto Real CON Devices. Virtual CON Devices can be switched in the same way as Real CON Devices. Real CON Devices that are assigned to a Virtual CON Devices that is connected to a CPU Device will receive the video signal. The last-assigned CON Device will also have control of the keyboard and mouse.

\*A Virtual CON Device can be assigned to more than one Real CON Devices.

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Control	~	03002	CON_03002											
Extended Switch Presets		03003	CON_03003 CON_03004											
Status & Updates	~	03005	CON_03005											
Status - Matrix Firmware Status - Extender Firmware Update - Matrix Firmware Update - Extender Firmware Activate Configuration Miscellaneous		03005 03008 03009 03010	CON_00016 CON_00016 CON_00018 CON_00010 CON_00010											
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FIGURE 6-9.6.1 MANAGEMENT SOFTWARE MENU - ASSIGNMENT - VIRTUAL DEVICES





BUTTON	FUNCTION
Send	Send assignments to the matrix
Reload	Reload changes

To place an assignment, proceed as follows:

1. Select **Assignment > Virtual CON Devices** in the task area.

2. Click the Activate Edit Mode menu item in the toolbar.

3. Select the required Real CON Device in the Real Console list.

4. Double-click in the Virtual Console column to display a list of all available Virtual CON

Devices.

5. Select the required Virtual CON Device in the selection list.

6. Click the Send button to send the assignment to the matrix.

7. Click the Deactivate Edit Mode menu item in the toolbar.

The selection boxes in the Virtual Console column contain a filter function for an easy selec

tion of a single

CPU from a larger pool of CPUs.

The management software offers the option to switch directly from the **Assignment** menu to the definition

menu to check specific settings for the respective Real CON Device or Virtual CON Device.

Click with the secondary mouse button on the respective Real CON Device or Virtual CON

Device and

select Open CON Device in the context menu.

The definition menu for the CON Device settings is opened (see chapter 6.9.1, page 191).

#### 6.8.7 ENABLING SHARED OPERATION

This menu enables shared operation of a CPU Device by two or more CON Devices. A CPU Device can be controlled by only one CON Device at a time but can be taken over successively by other CON Devices. Control of a CPU Unit by a CON Unit is relinquished after the expiration of an inactivity timer associated with the controlling CON Device. The mouse or keyboard may also be used to take control.

\*To allow a smooth and accurate function of the shared operation, you should use identical mice and keyboards. They should be connected to the same USB-HID ports of each CON Unit. The alternative is using the USB-HID Ghosting (see chapter 6.8.1, page 204).

When taking over control within 10 s, any assigned USB 2.0 extender unit if available, will not be switched due to security and stability aspects. The shared operation will be deactivated between CON Devices with a different priority as well as the Release Time.



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Status & Updates	^ CPU	Auto Connect	Extorce ful KVIII access to CPU, other consists are disconnected	
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Miscellaneous System Settings	~ Mou	se Connect	states U-V southor request by skyteland activity	
System Access	Rele	ase Time (soc)	0 Specify inactivity time to accept CPU control request from another console	
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EXT Units CPU Devices CON Devices				
User Settings	~			
Users & Groups				
Assignment	~			
Virtual CPU Devices Virtual CON Devices Multi-Screen Control				Cancel
Config reloaded			Default	

FIGURE 6-9.6.2 MANAGEMENT SOFTWARE MENU - SYSTEM SETTINGS - SWITCH

#### To configure shared operation, proceed as follows:

- 1. Select **System Settings > Switch** in the task area.
- 2. Click the Activate Edit Mode menu item in the toolbar.
- 3. Activate the **Enable Video Sharing** function.
- 4. Activate the Force Connect function.
- 5. Activate the Keyboard Connect function if taking over control by a keyboard event is to be permitted.
- 6. Activate the Mouse Connect function if taking over control by a keyboard movement should be possible.
- 7. Define a Release Time of inactivity (0 to 999 seconds) after which control can be taken over.
- 8. Click the **Apply** button to confirm the changes.
- 9. Click the Deactivate Edit Mode menu item in the toolbar.





#### 6.8.8 ENABLING MULTI-SCREEN CONTROL

When using Multi-Screen Control, switching up to eight connected sources (computers, CPUs) can be performed at one sink with only one connected mouse or keyboard. The sink can consist of up to eight CON Units and accordingly up to eight monitors, or up to sixteen monitors when using Dual-Head extenders modules. In a matrix system, Multi-Screen Control can be set up at multiple sinks.

The CON Units of a sink with Multi-Screen Control must all be physically connected to the same block of 8 ports on the I/O board. One of the CON Devices is designated for USB-HID control of the connected sources, below referred to as "Control CON Device". Control CON Devices are referred to the extender modules/Ext Units within the Multi-Screen Control that are connected to keyboard and mouse for operation.

If the control has to be performed via several USB-HID devices, several CON Devices have to be defined as Control CON Device. Smooth switching of sources with the mouse is performed by dragging the mouse pointer beyond the respective display to an adjacent display in an arrangement of displays. The displays can be arranged side by side, in a grid layout, or completely freely. Alternatively, switching can be performed via keyboard commands according to the ID number in the Multi-Screen Control setup.

NOTICE

When using CON Units with the possibility to connect a local source (computer, CPU) in a Multi-Screen Control environment, the local switching will be disabled.

\*CON Units that have been already configured for Multi-Screen Control can be connected all together to other blocks of 8 ports at another I/O board. In this case any further configuration is not necessary, their functionality will remain as set previously.

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FIGURE 6-9.8.1 MANAGEMENT SOFTWARE MENU - ASSIGNMENT - MULTI-SCREEN CONTROL



FIELD	ENTRY	DESCRIPTION
Dual-Head Extender	Υ	Enable configuring two displays for the Dual-Head extender
Name	Ν	Function not active (default)
Enable	Y	Activate the respective display for Multi-Screen Control
Password	Ν	Function not active (default)
	Υ	Enable the CON Device for USB-HID control of other CON Devices if access is permitted
Control Administrator	Ν	Function not active (default)
	Deactivated	Function not active (default)
Super User	Selection	<ul> <li>Shared (default) permits the access from a Control CON Device to all other CON Devices except to another Control CON Device</li> <li>Name of the own Control CON Device to restrict access to other CON Devices</li> </ul>
	0 to 999 seconds	Time for fade in a red frame at the display with current mouse/keyboard control

#### **Configuring Multi-Screen Control**

To configure the Multi-Screen Control, proceed as follows:

1. Select Assignment > Multi-Screen Control in the task area.

2. Click the Activate Edit Mode menu item in the toolbar.

3. Select the block of 4 or 8 ports in the list of the working area that should be configured for Multi-Screen Control.

Only blocks of 4 or 8 ports that contain at least one CON Unit are shown.

4. Activate Manual option if the USB-HID switching is to be restricted to keyboard commands (see

chapter 7.2.6, page 276). Manual switching allows the use of multi-head consoles.

5. In the Arrangement field, select the layout for the CON Devices you want to configure. Select as follows:

· Horizontal: horizontal arrangement

Block: block arrangement

• **Free:** free arrangement (The free arrangement allows a flexible positioning of the screens for diverse applications.) Move the screens from the **Available Screens** field to the arrangement field.

The fields for the configuration of the individual displays will be arranged accordingly.

6. If the CON Unit to be configured is a Dual-Head extender, click the **Dual-Head Extender** checkbox to activate the option.

An additional display appears in the Available Screen field.





7. Click the Enable checkbox for all CON Devices to be enabled for Multi-Screen Control.

8. Click the Control checkbox for one or more CON Devices to be enabled as Control CON Device.

Enabled Control CON Devices are shown as dark blue screens in the arrangement field.

9. Use the Frame function to configure a red frame, that shows the display with current mouse control, for

the duration of a specified time by flashing briefly. The frame can be activated individually for each

screen by using a timer > 0 seconds.

- 9.1. Double-click in the respective CON Device in the Frame column.
- 9.2. Select the time, the red frame should be faded in.
- 10. Click the Deactivate Edit Mode menu item in the toolbar.

\*All Control CON Devices are enabled to control USB-HID of all other CON Devices in the setup except of another Control CON Device. To restrict the access to other CON Devices, see following section.

#### **Access Restriction when using Multiple Control CON Devices**

Dragging the mouse pointer over the display boundary is only permitted for those displays whose CON Device is enabled for access by the owner of the respective Control CON Device. To enable access to a display for only one Control CON Device, proceed as follows: 1. To enable a Control CON Device for access for a CON Device, double-click on the corresponding

- selection box within the **Owner** column and select the name of the respective Control CON Device.
- Double-click on the corresponding selection box within the **Owner** column of all Control CON Device whose display should be accessible and select the name of the respective Control CON Device. The mouse can now be used to access those displays whose CON Device is enabled for access by the assigned Control CON Device.

#### No simultaneous USB HID sharing of multiple Control CON devices

Example: In a setup of 8 CON Devices, if CON Device 1 and 2 are each Control CON Devices and six other "non-Control CON Devices" are configured, both Control CON Devices can access the displays of CON Device 3 to 8 if they are configured with **Owner = Sharing**.

However, Control CON Device 1 and 2 cannot access the display of a "non-Control CON Device" at the same time. The Control CON Device that first had USB-HID control is reset to its "own" display when the second Control CON Device takes over.



#### **Changing Multi-Screen Control**

To change the Multi-Screen Control for a setup, proceed as follows:

- 1. Select Assignment > Multi-Screen Control in the task area.
- 2. Click the Activate Edit Mode menu item in the toolbar.
- 3. Select the setup in the list of the working area the Multi-Screen Control should be changed.
- 4. Make any edits at the configuration and system settings.
- 5. Click the Apply button to confirm the changes.
- 6. Click the Deactivate Edit Mode menu item in the toolbar.

#### **Deleting Multi-Screen Control**

To delete the Multi-Screen Control for a setup, proceed as follows:

- 1. Select **Assignment > Multi-Screen** Control in the task area.
- 2. Click the Activate Edit Mode menu item in the toolbar.
- 3. Select the setup in the list of the working area the Multi-Screen Control should be deleted.
- 4. Click the Enable checkbox for all CON Devices to remove the checkmarks.

The disabled Control CON Devices are shown as gray screens in the arrangement field and the Multi-Screen Control is disabled.

- 5. Click the **Control** checkbox for all CON Devices to remove the checkmarks.
- 6. Click the Deactivate Edit Mode menu item in the toolbar.

#### **Configuring Multi-Head sources for Multi-Screen Control**

NOTICE

A Multi-Head configuration for Apple Mac sources is not supported due to limitations of the macOS.

For the use of Multi-Head sources (computer, CPU), an additional configuration of the CPU Devices is mandatory. The configuration of CPU Devices, which are connected to Single-Head sources (computer, CPU) is not mandatory.

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FIGURE 6-9.8.2 MANAGEMENT SOFTWARE MENU - EXTENDER & DEVICES - CPU DEVICES - MONITOR ARRAGEMENT

For an additional configuration of the CPU Devices for the use of Multi-Head sources (computer, CPU), proceed as follows.

- 1. Select Extender & Devices > CPU Devices in the task area.
- 2. Click the Activate Edit Mode menu item in the toolbar.
- 3. Select the CPU Device to be configured.
- 4. Select the Monitor Arrangement tab.
- 5. Enter the resolution of the total desktop area into the fields Total Desktop Resolution. For instance, if

there are 4 graphic card outputs with a resolution of 1920x1080 each, you have to enter 7680 under

#### Width and 1080 under Height.

FIGURE 2-14. BACK PANEL

- Select the individual resolution of the graphic card output from the selection list in the field
   Resolution 1 (e.g., 1920x1080). This is the graphic card output the CPU Device is connected to.
- 7. Enter the respective pixel coordinates of the CPU Device in the Multi-Screen Control arrangement into the fields Offset X and Offset Y. For instance, you have to enter 1920 for a shift of 1920 pixels to the right into the field Offset X. DKM flex Configuration via Management Software 215

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TECHNICAL SUPPORT

- If the CPU Device to be configured is a Dual-Head extender, click the **Dual-Head Extender** checkbox to activate the option. Enter the resolution of the 2nd graphic card output and the offset information in the field **Resolution 2**.
- 9. For some operating systems it is necessary to activate the option **Multiplier.** This is mandatory if you cannot reach all areas of the desktop with your mouse cursor.
- 10. Click the **Apply** button to confirm the settings.

A dialog appears to restart the extender module.

11. Click the **Yes** button to restart the extender module to with the new configuration.

The CPU Device is now configured for the Multi-Head operation.



FIGURE 6-9.8.3 MANAGEMENT SOFTWARE DIALOG - MONITOR ARRANGEMENT - RESTART EXTENDER

12. Click the Deactivate Edit Mode menu item in the toolbar.

### 6.9 ACTIVE DIRECTORY

The KVM matrix can be synchronized with the directory service Active Directory regarding user authentication. This allows the user to login at the KVM matrix using login information from the Active Directory service and to contact the Active Directory Server for each authentication that does in fact the proper authentication.





The connection between KVM matrix and the Active Directory server is established via OpenLDAP and periodically synchronized every 5 minutes.

The search of users to be synchronized and automatically added to the KVM matrix configuration can either be based on a **group or organizational unit (OU)**. In both cases a user requires to be at least assigned to one group:

- In case of the group, all users belonging to a previously defined group on the active directory server are added to the KVM matrix and synchronized. In this alternative, the organizational structure of the organizational units (OUs) is added as matrix user group to the KVM matrix configuration. This means that the organizational unit (OU) that includes the user can be found as a matrix user group in the KVM matrix configuration after the synchronization. A user can be member of up to 8 groups.
- In case of the organizational unit, all users belonging to groups that are located directly under this
  organizational unit are added and synchronized. The groups can also include subgroups. The structure
  of the groups is added to the KVM matrix configuration as user group. Each group will be represented in
  the KVM matrix as a user group after the synchronization. Groups that are located in sub organizational
  units will be ignored.

To configure the synchronization to the Active Directory server, proceed as follows:

- 1. Select System Settings > Network in the task area.
- 2. Click the Activate Edit Mode menu item in the toolbar.
- 3. Select the LDAP tab in the working area.

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FIGURE 6-10.1 MANAGEMENT SOFTWARE MENU - SYSTEM SETTINGS - NETWORK - LDAP



- 4. Click the LDAP checkbox and optionally the Use TLS/SSL checkbox to activate these functions.
- 5. Enter the respective IP address and port number into the field LDAP Server (default port number: 389).
- 6. Enter the LDAP **Base DN** into the respective field (e.g., dc=example, dc=com).
- 7. Click the Apply button to confirm the settings.

\*Changes done in step 4 to 7 only come into effect after a restart of the KVM matrix.

8. Select User Settings > Users & Groups in the task area.

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FIGURE 6-10.1.1 MANAGEMENT SOFTWARE MENU - USER SETTINGS - USER & GROUP - USERS

- 9. Click the New User button to create a new LDAP user (bind user).
  - A selection dialog appears.
- 10. Select Create a LDAP User in the selection box.
- 11. Enter a username into the field Name.
- 12. Enter the Common Name (CN) of the bind user from the Active Directory into the field Login Name.
- 13. Enter the password of the bind user from the Active Directory into the field Password.
- 14. Click the **Apply** button to confirm the creation of the user.
- 15. Stay in the menu and open the Groups tab.





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FIGURE 6-10.1.2 MANAGEMENT SOFTWARE MENU - USER SETTINGS - USERS & GROUPS - USER ASSIGNMENT

16. Click the **New Group** button to create a new LDAP group.

A popup window will appear.

17. Select Create a LDAP Group in the popup window.

The group determines which users of the Active Directory server should be synchronized.

- 18. Enter a name into the field Name.
- 19. Enter either the Common Name (CN) of a right group or the Common Name (OU) of an organizational

unit into the field LDAP OU=/CN= as shown below:

- OU= name of the organizational unit
- CN= name of the right group
- 20. Click the Apply button to confirm the creation of the group.

The Active Directory synchronization can be used now.

21. Click the Deactivate Edit Mode menu item in the toolbar.



#### 6.10 MATRIX CASCADING

This simple method of cascading allows a switchable connection between two matrices via so called **Tie Lines.** The Matrix Cascading does not require **Bundle 4**.

This kind of configuration may become necessary if the number of ports in the entire system has to be increased or if certain important connections should be distributed to several matrices due to reasons of redundancy.

The Tie Lines are unidirectional and can only be used in one direction according to their configuration. For a bidirectional use of the cascading, you have to configure opposite Tie Lines. To connect Tie Lines to the matrices, you first have to create intended **Cascade CON Devices** and **Cascade CPU Devices** that have to be switched within the cascaded environment.

\*Ensure that the Tie Lines will only be connected after finishing the configuration.

#### Activating the Sub Matrix Option

1. Connect to the defined Sub Matrix and click the Activate Edit Mode menu item in the toolbar.

- 2. Select System Settings > System in the task area of the Sub Matrix.
- 3. Activate the Sub Matrix option in the working area.
- 4. Click the **Apply** button to confirm the Sub Matrix option.

\*The OSD of the Sub Matrix will immediately freeze and will be only accessible by using the keyboard command <Hot Key>, <s>, <o>.

5. Click the Deactivate Edit Mode menu item in the toolbar.



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Assemblem	Enable Old Echo		
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			Anna Cancel
Dually retraded		Dataut	

#### FIGURE 6-11.1 MANAGEMENT SOFTWARE MENU - SYSTEM SETTINGS > SYSTEM

### 6.10.1 DIRECTING A TIE LINE FROM THE SUB TO THE MASTER

To configure settings for using Matrix Cascading and to direct the Tie Line from the Sub to the Master,

proceed as follows:

- 1. Connect to the Master Matrix.
- 2. Click the Activate Edit Mode menu item in the toolbar.
- 3. Select the menu Extender & Devices > EXT Units in the task area.
  - 3.1. Click the New Unit button.

A selection dialog appears.

- 3.2. Select Cascading CPU Unit in the Choose template selection box.
- 3.3. Click the OK button.

A new Cascading CPU Unit will be created.

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iedno	79	040173682	EXT 040173692	0		CON		Port	17				
ontrol	· 80	040173706	EXT 040173708	438		CPU		Fixed	w.				
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pdate - Matrix Firmware	86	010309567	EXT_010309567	107		CON		Extender Type	Firmware Version				
pdate - Extender Firmware	87	040164611	EXT_040164611	403		CON							
ctivate Configuration	88	040164291	EXT_040164291	445		CPU		Тура	ast CPU		50	indard View Exp	pertivie
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ystem	91	040164610	EXT_040184610	35		CON		HID (keyboard, r	nouse )				
ccess	92	040164288	EXT_040154298	25		CPU		Analog Audio					
witch	93	040164289	EXT_040184289	26		CPU		Digital Aucto					
etwork	94	040164290	EXT_040164290	27		CPU		R8232/R8422 (	serial)				
atrix Grid	95	040227285	EXT_040227285	105		CON		USB-CPU (amb	edded)				
standor & Desiran	96	040173703	EXT_040173703	0		CON		USB-CPU (stan	falone)				
CIERCOLI & DOMENS	97	040173669	EXT_040173699	41		CON		Universal-CPU					
XT Units	98	040262339	EXT_040282339	443		CPU		Cascade-CPU		M			
PU Devices ON Devices	99	040237622	EXT_040237622	337		CPU							
	100	040172444	EXT_040172444	32		CPU							
ser settings	101	040172443	EXT_040172443	30		CPU							
sers & Groups	102	040237184	EXT_040237184	413	0	CON							
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itual CPU Devices	104	040185821	EXT_040185821	43		CON							
Itual CON Devices	105	040173701	EXT_040173701	42		CON							
utti-Screen Control						-							

FIGURE 6-11.1.1 MANAGEMENT SOFTWARE MENU - EXTENDER & DEVICES - EXT UNITS - CASCADING CPU UNIT

- 5. Connect to the Sub Matrix.
- 6. Click the Activate Edit Mode menu item in the toolbar.
- 7. Select the menu Extender & Devices > EXT Units in the task area.
  - 7.1. Click the **New Unit** button.
    - A selection dialog appears.
  - 7.2. Select Cascading CPU Unit in the Choose template selection box.
  - 7.3. Click the **OK** button.

A new Cascading CPU Unit will be created.





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ilch		67		08058	CPU_08	058									03							
twork		68	8	08059	CPU_08	050									04							
te and Time		69	B	01059	CPU_01	059								**	05							
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lender & Devices	~	71	B	01061	CPU_01	061	11								07							
T Units		72	8	01012	CPU_01	230									08							
U Devices		73	B	01063	CPU_01	063								4								
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FIGURE 6-11.1.2 MANAGEMENT SOFTWARE MENU - EXTENDER & DEVICES - EXT UNITS - CASCADING CPU DEVICES

7.4. Enter an appropriate name for the Cascading CON Unit into the **Name** field.

7.5. Enter a port number into the **Port** field according to the required connection of the Tie Line.

7.6. Click the **Apply** button to confirm the creation of a Cascading CON Unit.

8. Select **Extender & Devices > CON Devices** in the task area of the Sub Matrix.

8.1. Click the **New Device** button.

A switchable CON Device will be created.

8.2. Enter an appropriate name for the Cascading CON Device into the Name field.



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ntrol	^ 82	040173895	EXT_040173695	0		CON	Fixed	181 N			
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stem	93	040164289	EXT_040154289	25		CPU	HID (keyboard	d, mouse)			
1855	94	040164290	EXT_040164290	27		CPU	Analog Audio				
itch	95	040227285	EXT_040227285	106		CON	Digital Audio				
twork	96	040173703	EXT_040173703	0		CON	R8232/R842	2 (serial)			
tix Grid	97	040173699	EXT_040173699	41		CON	USB-CON (er	mbedded)			
and a Destand	96	040262339	EXT_040262339	448		CPU	USB-CON (st	andalone)			
CENCES & DOVICES	99	040237622	EXT_040237622	337		CPU	Universial-CO	N			
T Units	100	040172444	EXT_040172444	32		CPU .	Cascade-CO	N	10		
U Devices	101	040172443	EXT_040172443	30		CPU					
	102	040237184	EXT_040237184	413	0	CON					
er Settings	^ 103	090000006	Case_EXT_CON_P	1 13	-	Case CON					
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signment	· 105	040173701	EXT_040173701	42		CON					
and CRU Desires	101	090000423	EXT_090000423	423		USB 2.0 CON					
al CON Devices	107	010308962	EXT_010308982	270		CPU .					

FIGURE 6-11.1.3 MANAGEMENT SOFTWARE MENU - EXTENDER & DEVICES - EXT UNITS - CASCADING CON UNITS

- 8.1. Select the previously configured Cascading CON Unit in the Extender available list.
- 8.2. Click the button to move the highlighted Cascading CON Unit to the Extender assigned list.

The assignment is displayed in the Extender assigned list.

8.3. Click the **Apply** button to confirm the assignment.

9. Click the Deactivate Edit Mode menu item in the toolbar.

The OSD of the Sub Matrix will immediately freeze and will be only accessible by using the keyboard command <Hot Key>, <s>, <o>.

10. Restart all I/O boards on which any Master/Sub CON Units or CPU Units have been configured (see chapter 7.10.3, page 295) or alternatively restart the matrix (see chapter 7.10.1, page 293).

11. Connect the Tie Lines to the matrices. Ensure that each **Cascade CON Device** on one matrix is connected to **Cascade CPU Device** on the other matrix to achieve switching ability between two matrices.

The Matrix Cascading is now configured and can be used. Additional Tie Lines are configured accordingly. The use of cascading is described in chapter 6.11, page 247.







#### 6.10.2 DIRECTING A TIE LINE FROM THE MASTER TO THE SUB

To configure settings for using Matrix Cascading and to direct the Tie Line from the Master to the Sub, proceed as follows:

- 1. Connect to the Master Matrix.
- 2. Click the Activate Edit Mode menu item in the toolbar.
- 3. Select the menu Extender & Devices > EXT Units in the task area.
  - 3.1. Click the New Unit button.
    - A selection dialog appears.
  - 3.2. Select Cascading CON Unit in the Choose template selection box.
  - 3.3. Click the **OK** button.

A new Cascading CON Unit will be created.

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esets		53	03053	CON_03	053										- seed							
tus & Updates	~	54	03054	CON_03	054			Porce Loga					Per	Mode								
	-	55	03055	CON_03	055			LOS Frame					Red	undanc	y Off							
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tion		62	04001	CON_D	001		1	ID	Name		Port	Red Port				D	Name	Pat	Red Port			
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twork		65	03059	CON_03	058			10309564	EXT_0	10303564	0				03	5						
te and Time		65	03060	CONLOS	050			40173592	EXT_0	40173682	0			**	04							
nx Grid		67	03061	CON_03	051			40173703	EXT 0	40173703	0				05	5						
ender & Devices	~	68	03062	CON_03	082			90000008	Case	EXT. CON. 0	10	-		•	06	5						
T Units		69	03063	CON_00	053			40239994	EXT 0	40235594	0				07							
U Devices		70	03064	CON_03	064			40173597	EXT 0	40173697	0			4	0							
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FIGURE 6-11.2.1 MANAGEMENT SOFTWARE MENU - EXTENDER & DEVICES - EXT UNITS - CASCADING CON UNITS



- 3.4. Enter an appropriate name for the Cascading CON Unit into the Name field.
- 3.5. Enter a port number into the **Port** field according to the required connection of the Tie Line.
- 3.6. Click the **Apply** button to confirm the creation of a Cascading CON Unit.
- 4. Select **Extender & Devices > CON Devices** in the task area of the Master Matrix.
  - 4.1. Click the **New Device** button.

A switchable CON Device will be created.

4.2. Enter an appropriate name for the Cascading CON Device into the Name field.

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le and Time	6	6 03060	CON_030	160	40173592	EXT_0401	73692 0			++	04						
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FIGURE 6-11.2.2 MANAGEMENT SOFTWARE MENU - EXTENDER & DEVICES > CON DEVICES - CASCADING CON DEVICE

- 4.1. Select the previously configured Cascading CON Unit in the Extender available list.
- 4.2. Click the button to move the highlighted Cascading CON Unit to the **Extender assigned** list.

The assignment is displayed in the **Extender assigned** list.

4.3. Click the **Apply** button to confirm the assignment.





- 5. Connect to the Sub Matrix.
- 6. Click the Activate Edit Mode menu item in the toolbar.
- 7. Select the menu Extender & Devices > EXT Units in the task area.
  - 7.1. Click the New Unit button.
  - A selection dialog appears.
  - 7.2. Select Cascading CPU Unit in the Choose template selection box.
  - 7.3. Click the OK button.
  - A new Cascading CPU Unit will be created.

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View	~ Ex	tender & De	vices - EXT Units							Edit M	ode activated
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Part		ID	Name	Pert	Red Port	Type	1 10	9000008	CPUICON Assig		
Grid	78	040173693	EXT_040173693	0		CON	Name	Casc_EXT_CPU_01			
Control	79	040173682	EXT_040173692	0		CON	Port	17			
Control	∩ 80	040173706	EXT_040173708	438		CPU	Fixed	v.			
Extended Switch	81	040173708	EXT_040173708	439		CPU	Location				
Presets	82	040173605	EXT_040173695	0		CON		Device: KVM DV03			
Status & Updates	n 83	010308960	EXT_010306980	116		CPU	Link 1	L/O boardi 3			
Dates Habb Deserves	84	040171288	EXT_040171288	48		CPU		I/O board port: 1 Matrix port: 17			
Status - Extender Firmware	85	010308979	EXT_010308979	108		CPU					
Update - Matrix Firmware	86	010309567	EXT_010309567	107		CON	Extender Typ	Firmware Version			
Update - Extender Firmware	87	040164611	EXT_040164611	40.3		CON	2.0			-	
Activate Configuration	88	040164291	EXT_040194291	445		CPU	Тура	Case CPU		Standard View	Expert View
Miscellaneous	89	040164608	EXT_040164608	33		CON		Name	Basic	PartA	PatB
System Settings	· 90	040164609	EXT_040164509	34		CON	DWHDMW	A (rideo)			
System	91	040164610	EXT_040184610	35		CON	HD (keyboa	d, mouse}			
Access	92	040164288	EXT_040164288	25		CPU	Analog Audir				
Switch	93	040164289	EXT_040184289	26		CPU	Digital Audio				
Network Data and Time	94	040154290	EXT_040164290	27		CPU	R8232/R843	(serial)			
Matrix Grid	95	040227285	EXT_040227285	105		CON	USB-CPU (e	mbedded)			
Extender & Devices	96	040173703	EXT_040173703	0		CON	USB-CPU (s	tandalone)			
CHINESE & DOTTER	97	040173669	EXT_040173699	41		CON	Universial-CI	u.			
ECT Units	98	040262339	EXT_040262339	443		CPU	Cascade-CP	U	M		
CON Devices	99	040237622	EXT_040237622	337		CPU					
lines Fallings	100	040172444	EXT_040172444	32		CPU					
over articips	101	040172443	EXT_040172443	30		CPU					
Users & Groups	102	040237184	EXT_040237184	413	0	CON					
Assignment	~ 107	090000000	Case_EXT_CPU_0	11 17	-	Casc CPU					
Virtual CPU Devices	104	040185821	EXT_040185821	43		CON					
Virtual CON Devices	105	040173701	EXT_040173701	42		CON					
Multi-Screen Control		•									and the second se
	A	sign Settings I	a Copy Setting	s hom_	Restarte	Eitender			New Uni	t Delete Unit	<u>Cancel</u>

FIGURE 6-11.2.3 MANAGEMENT SOFTWARE MENU - EXTENDER & DEVICES - EXT UNITS - CASCADING CON UNIT

- 7.4. Enter an appropriate name for the Cascading CPU Unit into the **Name** field.
- 7.5. Enter a port number into the **Port** field according to the required connection of the Tie Line.
- 7.6. Click the **Apply** button to confirm the creation of a Cascading CPU Unit.



#### 8. Select Extender & Devices > CPU Devices in the task area of the Sub Matrix.

8.1. Click the **New Device** button.

A switchable CPU Device will be created.

- 8.2. Enter an appropriate name for the Cascading CPU Device into the Name field.
- 8.1. Select the previously configured Cascading CPU Unit in the Extender available list.
- 8.2. Click the button to move the highlighted Cascading CPU Unit to the **Extender assigned l**ist. The assignment is displayed in the **Extender assigned** list.
- 8.3. Click the Apply button to confirm the assignment.

en Save Reload Sources	d Dieco	enect	Deact	vele Edit Her	te Renote Save D	writed.	ipted. Her	toring P	esh Update	Device Finds	er System Ch	veck	Save Stat	ua							
www.	~	Ext	ender	& Devic	es - CPU Device														Ed	t Mode	activati
lakir		CPU	OPU	Groups	IP Session Config																
ort			10000																		
nd			-		Name	1	ID		1069			CPU	Assigne	bi							
intra		5.5		08053	CPU_08053		Name		Case_OPU	_01		CON	Connec	bed							
introl	~	54		01054	CPU_01054		Virtual Day	ire				CBU	Colors		-			~			
tended Switch		55	8	01055	CPU_01055							-					-				
esets		56	8	01034	CPU_01034		ABOW PTW					1.80	Larve Ac	CONS							
atus & lindates	~	57	B	01057	CPU_01057		Force Priva	ste				MSC	: Disable	d							
nas a openes		58	B	01058	CPU_01058		Fix Frame	Celor			*										
atus - Matrix Firmware		59	8	01045	CPU_01045		Reference		🗌 (no refe	ence set)											
adus - Cristiliaer Firmware		60	8	01046	CPU_01046		2 Step Acc														
date - Extender Firmware		61	8	01047	CPU_01047				-				_			_					
tivate Configuration		62	B	01053	CPU_01053		Extender Ar	isignment	CON Acce	as Control	User Acces	a Con	frol Mo	nitor Ar	rangem	ant					
iscellaneous		63	8	00054	CPU_08054				Extender av	allable							Eden	ler assigned			
stern Settings	~	64	B	08055	CPU_08055		ID	Name		Part	Red Part				D	Name	Part	Red Part			
stam		65	8	00056	CPU_00056		90000308	Carro	DIT_CPU_01	17	-			01							*
Cess		66	B	08057	CPU_08057		40233340	EXT_04	10233349	0				02							
witch		67	8	08058	CPU_08058									03							
dwork		68	B	08058	CPU_08059									04							
de and Time		69	8	01059	CPU_01059								**	05							- 2
anx care		70	B	01050	CPU_01060									06							
teader & Devices	^	71	B	01061	CPU_01061									07							
(T Units		72	B	01052	CPU_01052									08							
PU Devices		73	B	01083	CPU_01063																
ON Devices		74	8	D1054	CPU_01064								44								
er Settings	^	75	B	01085	CPU_01065																
sers & Groups		76		01055	CPU_01066																
sistement	~	77	B	08044	CPU_08044																
		78	8	01067	CPU_01067																
tual CPU Devices		79	B	01058	CPU_01068																٠
uti-Screen Control		80		01069	Case_CPU_01							٠				Use	kaya + ar	d - to move ex	tender		
		4.	tion Se	tions to	Conv Settions f	-	Continue IP	CPU									Desice		wire .	Anth	Carro

FIGURE 6-11.2.4 MANAGEMENT SOFTWARE MENU - EXTENDER & DEVICES > CON DEVICES - CASCADING CON DEVICE

9. Click the **Deactivate Edit Mode** menu item in the toolbar.

10. Restart all I/O boards (see chapter 7.10.3, page 295) on which any Master/Sub CON Units or

CPU Units have been configured or alternatively restart the matrix (see chapter 7.10.1, page 293).

11. Connect the Tie Lines to the matrices. Ensure that each **Cascade CON Device** on one matrix is connected to **Cascade CPU Device** on the other matrix to achieve switching ability between two matrices.

The Matrix Cascading is now configured and can be used. Additional Tie Lines are configured accordingly. The use of cascading is described in chapter 6.11 page 247.







### 6.11 SAVING AND ACTIVATING CONFIGURATIONS

NOTICE

By default, the last configuration that has been saved in the permanent matrix memory will be restored after a restart of the matrix.

First starting the matrix, the factory configuration will be copied into the current configuration. You have 3 possibilities to save configuration changes:

- · saving the current configuration permanently in the matrix memory (Remote Save)
- · saving configuration on a local memory (Save or Save as)
- uploading the configuration in up to 8 predefined storage locations, as well as the default configuration

in the memory of the matrix (**Upload**)

#### 6.11.1 SAVING THE CURRENT CONFIGURATION TO THE MATRIX

\*By default, the last configuration that has been saved in this way will be restored after a restart of the matrix.

To save the current configuration permanently in the matrix memory, proceed as follows:

1. Click the **Remote Save** menu item in the toolbar.

A query to save the configuration appears.

2. Click the Yes button to confirm the saving.

The previously active configuration is overwritten and saved in the permanent memory of the matrix.



FIGURE 6-12.1.1 MANAGEMENT SOFTWARE DIALOG SAVE REMOTE CHANGES





#### 6.11.2 SAVING OF CONFIGURATIONS LOCALLY

Configurations can be saved as a file that can be stored independent of the matrix.

To save a configuration file locally, proceed as follows:

- 1. Select File > Save or File > Save As in the menu bar.
- 2. Enter a name for the configuration.
- 3. Select the directory of the configuration on your storage medium where the configuration is to be saved.

\*Configurations are always saved with the file extension .dtc.

C:\_Matrix\	Configurations			×
Look In: 📄	Configurations	~		
File <u>N</u> ame:	Configuration_01			
Files of <u>T</u> ype:	(*.dtc)			~
			Save	Cancel

FIGURE 6-12.2.2 MANAGEMENT SOFTWARE MENU FILE - SAVE AS..



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### 6.11.3 OPENING A LOCALLY SAVED CONFIGURATION

To open a locally saved configuration, proceed as follows:

- 1. Click the **Open...** menu item in the toolbar.
- 2. Navigate to the location of the configuration file to be opened.
- 3. Click the configuration file to be opened.
- 4. Click the **Open button, to open the configuration file.**

C:\_Matrix\/	Configurations		×
Look In:	Configurations	<ul> <li>✓</li></ul>	
Configura	tion_01.dtc		
File <u>N</u> ame:	Configuration_01.dtc		
Files of <u>T</u> ype:	(*.dtc)		~
			Open Cancel

FIGURE 6-12.3.1 MANAGEMENT SOFTWARE MENU OPEN

\*The configuration can also be opened via drag & drop. To do this, click on the configuration file, hold down the primary mouse button and drag the configuration file into the management software.



#### 6.11.4 UPLOADING A PREDEFINED CONFIGURATION TO THE MATRIX

Using the function **Upload**, the created configuration can be saved within eight storage locations in the matrix (**File#1** to **File#8**). However, it does not replace the buffering of configuration (see chapter 6.12.1, page 228).

Additionally, a configuration can also be saved as default configuration that can be automatically loaded with each start. To upload an opened configuration to the matrix, proceed as follows:

1. Click the Upload menu item in the toolbar.

An access window appears.

2. Enter the IP address of the matrix .

3. Enter the username and password of the administrator.

4. Click the **Next** button to display the selection of storage slots.

Upload				×
Steps	Connect			
1. Connect 2. Select Configuration Slot	Hostname / IP Address		192.168.100.99	9
2. Other of ingulation of the	User		admin	
	Password		****	
		< <u>B</u> ack	Next > Eini	ish Cancel

FIGURE 6-12.4.1 MANAGEMENT SOFTWARE MENU UPLOAD - CONNECT

5. Under **Select Configuration Slot**, select the storage slot for the configuration (**default** or **config01** to **config08**).

6. Option: To activate the uploaded configuration immediately, click the **Activate configuration after upload** check box.

NOTICE
If you click the Activate configuration after upload option, the matrix will be restarted immediately after the save process has been completed. The restart of the matrix may take several minutes, and the matrix is not available during the restart.





7. Click the Finish button to save the configuration to the selected storage location.

A message appears to inform about successful upload.

I. Connect		File	Name	Info	IP Address	Version
2. Select Configuration Slot	01	Default (default)	Basic	kein Grid	DHCP	V04.00
	02	File #1 (config01)	Standard	Factory settings	192.168.100.99	V03.08
	03	File #2 (config02)	Test_tera_4	Grid mit 6 Matrizen	DHCP	V04.00
	04	File #3 (config03)	Standard	Factory settings	192.168.100.99	V03.08
	05	File #4 (config04)	Standard	Factory settings	192.168.100.99	V03.08
	06	File #5 (config05)	Standard	Factory settings	192.168.100.99	V03.08
	07	File #6 (config06)	Standard	Factory settings	192.168.100.99	V03.08
	08	File #7 (config07)	Standard	Factory settings	192.168.100.99	V03.08
	09	File #8 (config08)	Test_tera_1	Grid mit 7 Matrizen, 1xLAN	DHCP	V04.00

FIGURE 6-12.4.2 MANAGEMENT SOFTWARE MENU UPLOAD - SELECT CONFIGURATION SLOT

#### 6.11.5 ACTIVATING A PREDEFINED CONFIGURATION

Previously saved configurations are loaded in this menu. In Active Configuration, the name and detailed information of the currently loaded configuration is displayed. The selection of the configuration to be loaded can be made between eight customizable configurations and the default settings.

NOTICE Activating a configuration will disconnect and restart the matrix. The selected configuration is loaded on restart and is shown in the menu as active configuration under **Active Configuration** in the working area. The previously active configuration is overwritten. The restart of the matrix may take several minutes, and the matrix is not available during the restart.

To activate an uploaded configuration, proceed as follows:

- 1. Select Status & Updates > Activate Configuration during online-mode in the task area.
- 2. Click the Activate Edit Mode menu item in the toolbar.
- 3. Select the configuration to be activated.



pen. Save Reload Connec	Decons	ect Activate Edit Hode Re	errota Sava	Download Upbad	Ionitoring Flash Update_ Device Fire	der System Check Save Status		
20210210.sip Master ×								
ñew	^	Status & Updates - A	kotivate C	Configuration				
Valtx		Active Configuration:	Name	Test_lera_1				
roit Grid			Info	Grid mit 7 Metrizen 1d.A	N			
Contral								
ontrol	~	File		Name		into	IP Address	Version
	-	01 Default (default)	Bas	sia	Test-Matrix		DHCP	V03.06
Avenued Switch	1	02 File #1 (config01)	TS-	TEST-Matrix 5	einzel Matrix, ohne Grid, Ente	rprise 950 Port	OHOP	V03.05
tatus & Heddatus		03 File #2 (config02)	T8-	TEST-Grid-2	Gri d-2 mit 3 Matrizen (E160,0	080,C008j	DHCP	V03.08
unus a Updates	^	04 File #3 (config0.3)	Sup	porfTestGrid2	Grid 2 mit 4 Matrizan (E 160,C	008,2xC088] (sehr große Kon8g)	DHOP	V04.00
Aatus - Matrix Firmware	1	05 File #4 (config0.4)	TES	ST-Orid_5a	Grid mit 5 Matrizen (E160,E04	48, C048, C008, C080]	OHCP	V04.00
Ratus - Extender Firmware		06 File #5 (config05)	TES	IT-GR6_55	Grid mit 6 Mahrzan (E160,ED-	48, CD48, CD08, C083, C043]	DHCP	V04.00
Ipdate - Extender Firmware		07 File #6 (config06)	Tes	tGrid-6_V0303	Firmware V03.03 Grid mit 5 M	latizen	DHCP	V03.03
ctivale Configuration	-	de Prile #7 (config07)	Tes	Clara_4	Gind mit d Matrizan		DHOP	V04.00
ccess witch letwork Jate and Time								
stender & Devices	^							
EKT Units CPU Devices CON Devices								
iser Settings	~							
isers & Groups								
asignment	~							
Intual CPU Devices Intual CON Devices Julti-Screen Control								
Virtual CPU Devices Virtual CON Devices Julti-Screen Control							Adhale C	ancei Reina

FIGURE 6-12.4.3 MANAGEMENT SOFTWARE STATUS & UPDATES - ACTIVATED CONFIGURATION

4. Click the Activate button to activate the selected configuration.

A query to restart the matrix appears.

5. Click the **Yes** button to confirm the activation of the selected configuration.

The connection is disconnected, and the matrix is restarted. The selected configuration is loaded on restart and is shown in the menu as active configuration under **Active Configuration** in the working area. The previously active configuration is overwritten.

6. Click the Deactivate Edit Mode menu item in the toolbar.





#### 6.11.6 DOWNLOADING A PREDEFINED CONFIGURATION FROM THE MATRIX

Configurations saved in the matrix can be downloaded for offline editing in this menu.

To download a configuration from the matrix, proceed as follows:

1. Click the **Download** menu item in the toolbar.

An access window appears.

- 2. Enter the IP address of the matrix .
- 3. Enter the username and password of the administrator.
- 4. Click the Next button to display the selection of storage location.

Download			×
Steps	Connect		
1. Connect 2. Select Configuration	Hostname / IP Address		192.168.100.99
	User		admin
	Password		****
		< <u>B</u> ack	Next > Einish Cancel

FIGURE 6-12.6.1 MANAGEMENT SOFTWARE MENU - CONNECT

- 5. Under **Select Configuration**, select the storage location of the desired configuration (**default** or **config01** to **config08**).
- 6. Click the Finish button to download the desired configuration to management software.



eps	Select	t Configuration				
Connect Select Configuration		File	Name	Info	IP Address	Version
Select comiguration	01	Default (default)	Basic	kein Grid	DHCP	V04.00
	02	File #1 (config01)	Standard	Factory settings	192.168.100.99	V03.08
	03	File #2 (config02)	Test_tera_1	Grid mit 7 Matrizen, 1xLAN	DHCP	V04.00
	04	File #3 (config03)	Standard	Factory settings	192.168.100.99	V03.08
	05	File #4 (config04)	Standard	Factory settings	192.168.100.99	V03.08
	06	File #5 (config05)	Standard	Factory settings	192.168.100.99	V03.08
	07	File #6 (config06)	Standard	Factory settings	192.168.100.99	V03.08
	08	File #7 (config07)	Standard	Factory settings	192.168.100.99	V03.08
	09	File #8 (config08)	Test_tera_4	Grid mit 6 Matrizen	DHCP	V04.00
		4				

FIGURE 6-12.6.2 MANAGEMENT SOFTWARE MENU -DOWNLOAD - SELECT CONFIGURATION

#### 6.12 EXPORT AND IMPORT OPTIONS

The KVM Matrix offers the ability to read out available configuration lists (extenders, CPUs, consoles and users) for export and import again via management software.

\*Exported configuration lists are always saved in .csv format that allows offline editing with common spreadsheet applications.

### 6.12.1 EXPORT / IMPORT OPTIONS

Configuration lists are exported in this menu.







Export	>
Steps	Select Type
1. Select Type	<ul> <li>Extender</li> </ul>
<ol> <li>Export Configuration to CSV File</li> </ol>	IP Session Config
0001110	⊖ CPU
	Console
	◯ User
	CPU Groups
	O User Groups
	O Console Access Control
	O Console Favorites
	Console Macros
	User Access Control
	User Favorites
	O User Macros
	Multi-Screen Control
	< Back Next > Finish Cancel

FIGURE 6-13.1.1 MANAGEMENT SOFTWARE MENU - FILE EXPORT - SELECT TYPE

To export, proceed as follows:

- 1. Select File > Import / Export in the menu bar.
- 2. After opening the menu, select the list to import / export.
- 3. Click the **Next** button.
- 4. Navigate to the location of the configuration file to be exported.
- 5. Enter the name for the configuration file to be exported.
- 6. Click the **Finish** button to confirm the export.



Import	×
Steps	Import Extender Config from CSV File
Select Type     Import Config from CSV     File	Look In: Adatrix
	Extenders.csv User Macros.csv Users.csv
	File Name: Extenders.csv
	Files of Type: (*.csv)
	< <u>Back</u> Next> <u>F</u> inish Cancel

FIGURE 6-13.1.2 MANAGEMENT SOFTWARE MENU - FILE EXPORT - EXPORT CONFIGURATION TO CSV FILE

#### 6.13 UPDATING THE FIRMWARE

#### 6.13.1 UPDATING THE MATRIX FIRMWARE

NOTICE To process successful firmware updates and avoid failures: Only use computers to update the matrix that are not integrated into the matrix setup. Ensure that the computer used for the update is not set into standby mode or sleep mode during the update. Save your configuration locally before starting the update. Proceed an update via direct LAN connection for reasons of network stability.

NOTICE

Ensure that all USB 2.0 extenders are only connected to the provided ports (fixed ports) before you start the matrix update. Non-compliance may affect the stability of the update.

\*For Linux-based systems, the firmware update of MATLOS has to be performed version by version. E.g., if the current firmware version is F01.04 should be updated to F01.08, first update with F01.05, then F01.06 and so on. After each firmware update, the matrix has to be restarted.





The firmware of the matrix can be updated in this menu.

pen gove Rebad Game	- E	Activate Edit Mode Remote Sa	ed Gowload Up	ead Monitoring Fiesh Upda	te Device Finder System Ch	etk Save Status		
20210210.zip Master ×								
View	~ 51	atus & Updates - Update #	Matrix Firmware				Edit Mo	de activated
N atrix				·		· · · · · · · · · · · · · · · · · · ·	Additional se	lection options
Port	Sid	t Name	Туре	Current Version	Update Version	Status	Update	1
Grid		E CHASSIS				Available		
Super Grid		FAN1	FAN	F03.01.200818				
Control		FAN2	FAN	F03.01.200818				
Control	~	PWRCTRL	PWR	F03.00.200113				
Extended Switch	00	E MATL160	CPU	F04.00.210215	F04.00.210219	Ready	1	
Preseta		MATLPXP	PXP	F01.02.200507				
Status & Updates	~	MATLOS	SYS	F01.08.201218				
Status - Matrix Firmware	01	E MATXICS (CAT)	108	F04.00.210215	F04.00.210219	Ready	<b>v</b>	
Status - Extender Firmware		MATXOSD	OSD	F03.49.200506				
Update - Matrix Firmware	02	EI MATXIOS (CAT)	108	F04.00.210215	F04.00.210219	Ready	×	
Update - Extender Firmware		MATXOSD	OSD	F03.48.200506				
Activate Configuration	03	EI MATXIOS (CAT)	108	804.00.210215	F04.00.210219	Ready	×	
HISCENARIOUS		MATXOSD	OSD	F03.48.200506				
System Settings	^ 04	III 🛄 MATXIO8 (SFP)	108	F04.00.210217	F04.00.210219	Ready	1	
System		MATXVOSD	OSD	804.03.200218				
Access	09	E MATLIOS (CAT)	108	F04.00.210215	F04.00.210219	Ready	×	
Switch		MATLOSD	OSD	F01.02.200506				
overwork Date and Time		MATLOS	SYS	F01.08.201218				
latrix Grid	10	E MATLIOS (SFP)	108	F04.00.210215	F04.00.210219	Ready	7	
stander & Devices	~	MATLOSD	OSD	F01.02.200506				
		MATLOS	SYS	F01.08.201218				
CPU Devices CPU Devices CON Devices	-19	R MATVING INATI	104	E04 00 240245	Eng 88 948949	Reads	,	
User Settings	~							
Users & Groups								
Assignment	~							
/intual CPU Devices /intual CON Devices		Overwrite active firmware				S:\Firmware\Testversion\D	VacoTera/MATAPP#F04.80	Browse

FIGURE 6-14.1.1 MANAGEMENT SOFTWARE MENU - STATUS & UPDATES - UPDATE MATRIX FIRMWARE

The firmware of the matrix can be updated in this menu.

OPTION	DESCRIPTION
Name	Module name
Туре	Type number
Current Version	Installed firmware version
Update Version	Current firmware version

#### Preparation

\*If the syslog function has not been set yet, we recommend activating the syslog function (see chapter 6.4.7, page 165) before updating the firmware to log the update in case of update errors.


To be prepared for a firmware update, proceed as follows:

- 1. Save the matrix configuration locally (see chapter 6.12.2, page 257).
- 2. If the options settings for the management software have not yet been set:
  - 2.1. **Open Extras > Options** in the menu bar.
  - 2.2. Under **Firmware Directory** insert in the directory from which the update files should be standardly sourced.
- 3. Save the update files in the Firmware Directory.

#### **Performing the Update**

To update the matrix firmware, proceed as follows:

1. Select Status & Updates > Update - Matrix Firmware in the task area.

All updateable components of the matrix will be automatically selected and highlighted in green.

- 2. Click the **Activate Edit Mode** menu item in the toolbar.
- 3. Click the Update button in the lower part of the working area to start the update.

A query to save the matrix status appears.

4. Click the **Save Matrix Status** button to save the matrix status locally or click the Skip button, if the status is already saved.



FIGURE 6-14.1.2 MANAGEMENT SOFTWARE DIALOG SAVE MATRIX STATUS

5. The progress of the update is displayed in the working area.

After the update, a query to restart the matrix appears.

6. Click the Yes button to restart the matrix.

The updated firmware is displayed in the working area.

7. Click the **Deactivate Edit Mode** menu item in the toolbar.





### 6.13.2 EXTENDER UPDATE

The firmware of the extenders connected to the matrix can be updated in this menu, except the firmware type MSD.

NOTICE	
Possible failures when updating the firmware	
When updating individual firmware files, there may be dependencies on the new content of the files HUSWMSD.pfw or HUSWITCH.pfw if they are changed. Installing in the wrong sequence could lead to failed updates. To process successful firmware updates and avoid failures: First check if there is an update available for the HUSWMSD or HUSWITCH firmware (comparison with the status displayed in the management software. If there is an update available, update the firmware files via service port of the extender modules. Afterwards proceed the update using the function in the management software.	

There are two possibilities to update the extenders:

- Parallel Mode: By default, used for parallel updates of several extenders.
- Sequential Mode: Option the update an extender after the update of another extender is finished.

#### Preparation

If the syslog function has not been set yet, we recommend activating the syslog function (see chapter 6.4.7, page 165) before updating the firmware to log the update in case of update errors.

To be prepared for a firmware update, proceed as follows:

- 1. Save the matrix configuration locally (see chapter 6.12.2, page 229).
- 2. If the options settings for the management software have not yet been set:
  - 2.1. Open Extras > Options in the menu bar.
  - 2.2. Under **Firmware Directory** insert in the directory from which the update files should be standardly

sourced.

3. Save the update files in the Firmware Directory.



#### Performing the Update in Parallel Mode (Standard Update)

en. gave Relaad Gar	inect Disc	E Innect	O Activate E dt Mode	Remote Save	Download . Upload	Nontoring 1	Pash Update	Device Finder Syste	en Check.	Save Status			
admin@192.168.100.157	×												
rwi	~	Statu	s & Updates - I	Jpdate Exte	nder Firmware								
ahrik ont rid ontrol		• O Step 1	Parallel Mode (re Sequential Mode : Upload Firmware	commended) Step 2: Upd	Parallel update Sequential upda ale Firmware	of extenders, exe ate mode in order	cuted separab to update spe	ely on each VO board cific extenders					
ontrol	~	Firmw	are File	FirmurePubli	WHEN THE ADKM IN	1215W 0002040	0 Default200	011127 Estanda	Browse	10			
dended Switch			his Consults Like										
resets		Availa #	Norma Name		Type		ension	Salaria	d				
atas & Updates	A	01	EXTOPU	EX.	()pe	FR3 31 200	1113	1	6				
atus - Matrix Firmware		02	EXTCON	EX	r.	F03.28.190	102.9	1					
alus - Extender Firmware		03	EXTELCON	ER	r	F04.21.181	1295	1					
odate - Matrix Firmware		04	EKTROPU	ER	14 14	F02.26.101	1128	1					
pdate - Extender Firmware	6	05	EXTHREON	6.0	a .	F01.37.191	128	1					
divate Configuration		06	EXTHROPU	EX	R	F01.25.101	1129	4					
column California		07	HOCPU	140		F04.02.210	122	V					
sum semups													
istem		Uploa	d Progress			0%			Uploa	sd.			
witch etwork ate and Time atrix Grid		Uptoa	d Messages										
dender & Devices	~												
KT Units PU Devices ON Devices													
ser Settings	. ^												
sers & Groups								Save	Upload Lo	20			
ssignment	A												
inual CPU Devices inual CON Devices													

UPDATE EXTENDER FIRMWARE - PARALLEL MODE - UPLOAD

To update the extender firmware via standard update, proceed as follows:

- 1. Select Status & Updates > Update Extender Firmware in the task area. The Parallel Mode for the standard update will be selected by default and the Upload Firmware tab will be opened.
- 2. Before the actual update process, all firmware files have to be uploaded to the respective I/O boards on which the extenders are to be updated. If a newer firmware is available, appropriate I/O boards will be automatically selected for the upload in the **Selected** column and highlighted in green.
- 3. Click the **Upload** button to start the upload and distribution of the update files.

\*By performing the upload process, no update files will be installed. The update process can be performed later. If there are not selected all I/O cards, the upload of the update files will be performed in sequence.

A query to update the extender firmware appears finishing the upload process successful.

4. Click the **Yes** button if you want to directly start the actual update process. The **Update Firmware** tab will open immediately.







FIGURE 6-14.2.2 MANAGEMENT SOFTWARE DIALOG STATUS & UPDATES - UPDATE EXTENDER	
FIRMWARE PARALLEL MODE - UPDATE	

\*When updating an identical or an older firmware version than the version currently installed, the Enable Downgrade option in the upper part of the working area must be enabled.

5. Click the Update button to start the update.

\*Just before the update process, all affected I/O boards will be set into the Service Mode and retrieved gradually after finishing the respective updates. During Service Mode, all matrix functions are disabled on the I/O boards on which an update is currently performed. An OSD picture indicates the activation of the Service Mode and is displayed on all monitors that are connected to the matrix via a CON device.

- 6. The progress of the update is displayed in the working area.
- 7. Check the update messages in the message field after the update if the updates for all extenders have been installed correctly.

Dia Edit Davina Estras 9			- u x
De La Cella Cara Cara Cara Cara Cara Cara Cara C	nct Die X	Activels Edit Hode Remote Save Download Upted Wantering Plash Update Gevice Finder System Check Save Status	
View	~	Status & Updates - Update Extender Firmware	
Matrix Port Grid Control		Parallel Mode (recentmended)     Parallel update of entinders, executed separately on each I/D board     Sequential Mode     Sequential update mode in order to update specific extenders      Sep 1: Uplate Firmware     Sep 2: Update Firmware	
Control	~	Enable Downgrade	
Extended Switch Presets		Enable bits checkbox when downgrading the throware or updating the currently installed termane again.	
Status & Updates	~	Update Progress Update Triched Update	
Status - Mattis Firmware Bataua - Entender Firmware Update - Abtender Firmware Update - Extender Firmware Activate Configuration Miscellomeous System Settings System Settings System System Settings Date and Time Mattis Grid	^	Update Mossages           2921-03-12715.165.96.01         Check extender version beföre update 3921-00-12716.1730.053         Extender version checked           2921-00-12716.1730.053         Extender vpdate standel         2921-00-12716.1730.053           2921-00-12716.1730.059         Extender vpdate standel         2921-00-12716.1730.053           2921-00-12716.1730.059         Extender vpdate standel         2921-00-12716.1730.053           2921-00-12715.173.1137         Update en Ports 4-14 completed         2921-00-12715.242.354           2921-00-12715.242.354         Update en Ports 4-14 completed         2921-00-12715.242.354           2921-00-12715.242.354         Update en Ports 4-14 completed           2921-00-12715.242.354         Update supposed           2921-00-12715.242.354         Update supposedM	
Extender & Devices	~		
EXT Units CPU Devices CON Devices			
User Settings	~	Save Lindate Loo	
Users & Groups		una obran rok	
Assignment	~		
Virtual CPU Devices		Urfaute	

FIGURE 6-14.1.3 MANAGEMENT SOFTWARE DIALOG STATUS & UPDATES - UPDATE EXTENDER FIRMWARE PARALLEL MODE - UPDATE



#### Performing the Update in Sequential Mode (Expert Update)

To update the extender firmware via sequential update, proceed as follows:

- 1. Select Status & Updates > Update Extender Firmware in the task area.
- 2. Click the Activate Edit Mode menu item in the toolbar.
- 3. Select the **Sequential Mode** option in the upper part of the working area.

All updateable extenders will be automatically selected and highlighted in green.

2pen Save Reload Com	ect Da	connect	Advate Edit	Tode Remote Se	ve Download Uplaad N	londoring Pie	eh Update D	Device Finder System Chec	s Save Status			
View	~	Sta	tus & Updat	es - Update B	Extender Firmware							
Matrix Post Grid Control			Parallel Mor Sequential I	de (recommend Node	ked) Parallel update of ex Sequential update m	tanders, execu ode in order to	ited separatel update spec	ly on each I/O board ific extenders			Additional sele	ection options
Control	~		ID		Name	Port	Туре	Device	Current Version	Update Version	Update	5
Extracted Duritety	-	01	III 102032	250	EXT_010203250	11	CON UNIT	CON_010203250			J	
Presets					EXTOON		EXT		F03.28.190509	F03.28.190509		
Finite & Hardeland					HIDCON		HID		F04.03.201112	F04.03.210122	J	
status & updates	~				EXTRISD		MSD		B02.45.180606			
Status - Matrix Firmware		02	El 401319	133	EXT_040131933	10	CONUNIT	CON_940131933			1	
Status - Extender Firmware					EXTHROON		EXR		F01.35.190902	F01.37.191128	7	
Update - Extender Firmware					HIDCON		HID		F04.03.201112	F04.03.210122	J.	
Activate Configuration					EXTRISD		MBD		B02.51.200422		10.	
Miscellaneous					HIDCPU		HID		F04.03.201112	F04.03.210122	V	
System Settings	~	03	E 401881	132	EXT_040188132	41	CONUNIT	CON_040188132			1	
Destant	_				FXTDLCON		EXT		\$03.00.201203			
Access					HIDCON		HID		F04.03.201112	F04.03.210122	7	
Switch					EZTDLMSD		MSD		802 03 201211		11	
Network		04	E 123487	765	EXT_012348765	42	CON UNIT	CON_012348765			1	
Date and Time Matrix Grid		2021	-03-15712-13.2	27.567 An	alyzing of firmware complete							
Extender & Devices	~											
EXT Units CPU Devices CON Devices												
User Settings	~											
Users & Groups												
Assignment	~		atender frever	e version conflict					S:Firmware/Publicver	sioniDracoTeral2021FW_0	0820400_Detau#202	Browse
			anual update of	EXTMSD / EXTIN	SD recommended						Undate	Reipad
State and CHILL Download												the second se

#### FIGURE 6-14.1.4 MANAGEMENT SOFTWARE MENU STATUS & UPDATES - UPDATE EXTENDER FIRMWARE - SEQUENTIAL MODE

4. Click the **Update** button in the lower part of the working area to start the update.

Just before the update process, all affected I/O boards will be set into the **Service Mode** and retrieved gradually after finishing the respective updates. During Service Mode, all matrix functions are disabled on the I/O boards on which an update is currently performed. An OSD picture indicates the activation of the Service Mode and is displayed on all monitors that are connected to the matrix via a CON device.

After update completion the Service Mode will be quit.

5. Check the update messages in the message field after the update if the updates for all extenders have been installed correctly.





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pen., Save Relating Source	nect Dis	- E	Activate Ldt Hode Re	The second secon	Montoring Pi	Bah Update 0	Tevice Finder System Chec	k_ Save Status.		- 1	0 X
admin@192.168.100.155	×										
new	~	Sta	itus & Updates - Up	pdate Extender Firmware							
Matrix Port Grid Control			Parallel Mode (rece     Sequential Mode	ommended) Parallel update of e Sequential update n	rtenders, exec node in order t	uted separate o update spec	y on each IKO board flic eclenders			Additional select	tion options
Control	~		ID	Name	Port	Type	Device	Current Version	Update Version	Update	
	-	01	B 10203250	EXT_010203250	11	CONUNIT	CON_010203250				
Attended switch Prosate				EXTCON		EXT		F03.28.190509	F03.28.190509		
	-			HIDCON		HD		F04.03.210122	F04.03.210122		
status & Updates	^			EXTMSD		MSD		802.45.180605		10	
Status - Matrix Firmware		02	G 40131933	EXT_040131933	15	CON UNIT	CON_040131933				
Status - Extender Firmware				EXTHROON		EXR		F01.37.191128	F01.37.191128		
Update - Matrix Firmware				HIDCON		HD		F04.03.210122	F04.03.210122		
Activate Configuration				EXTMSD		MSD		802.51.200422			
Viscellaneous				HIDCPU		HD.		F04.03.210122	F04.03.210122		
Sealern Settings	A.	03	40188132	EXT_040180132	41	CON UNIT	CON_040188132				
				FXTDLCON		EXT		803.00.201203			
system Locase				HIDCON		HD		F04.03.210122	F04.03.210122		
Switch				EZTDLMSD		MSD		B02.03.201211		10	
Network		04	E 12348765	EXT_012348765	42	CONUNIT	CON_012340765				
Date and Time		2021	-03-15112.18:40.775	Firmware update HIDCON on E	stender EXT_	040131933 (P	ort 16) finished				
Matrix Grid		2021	1-03-15712 19:02:681	Firmware update HDCPU on E	stender EXT_	H0131933 (P	oft 16) finished				
Extender & Devices	~	2021	-03-15712 19:23.526	Firmware update HIDCON on E	xtender EXT_I	040188132 (P	ort 41) finished				
DCT Units		2021	-03-15712 19:44.619	Firmware update HIDCON on E Firmware update HIDCON on F	stender EXT_I	112348765 (P	ort 42) finished				
CPU Devices		2021	-03-15T12:20:20.854	Firmware update HIDCPU on E	xtender EXT_I	40121361 (P	oft 44) finished				
CON Devices		2021	1-03-15T12:20:36.079	Firmware update HIDCPU on E	xtender EXT_0	10195232 (P	art: 46) finished				
Jaer Settings	~	2021	-03-15712:20:51:255	Firmware update HIDCPU on E	stender EXT_0	010233201 (P	art: 47) finished				
Users & Crowns		2021	-03-15T12:21:06.621	Firmware update HIDCPU on E Update successful	xtender EXT_0	10190938 (P	art: 48) finished				
Assignment	~		Extender firmware version	cartict				S:/Firmware/Publicve	rsion/DracoTera/2021/FW_0	0620400_Detautt202	Browse
			Vanual update of EXTMSD	/EXTINSD recommended						Indate	Deland
Vinual CPU Devices			Rirong module type (CPUA	CON mismatch)						02/3336	roecad
THUS CON DAVIORS			a construction (see and								

#### FIGURE 6-14.1.5 MANAGEMENT SOFTWARE MENU STATUS & UPDATES - UPDATE EXTENDER FIRMWARE - SEQUENTIAL MODE

#### 6. Click the **Deactivate Edit Mode** menu item in the toolbar.

## 6.14 LICENSE MANAGEMENT

In this menu the matrix can be upgraded with new function bundles by installation of license keys.

To obtain license keys to upgrade matrix functions, contact Black Box tech suppert.



Elle Edit Desice Estras, 2			- 0 ×
Spen. Save Relad Correct De	connect Activate Edit Hode Remote S	are Drwnbad. Upbed. Upbed. Plank Upders. Device Profer. System Check Sare Status	
20210210.sp Master ×			
View ^	Status & Updates - Misce	lianeous	
Matrix Port Grid	VO Board Diagnosis License	Ianagement FPGA Update Custom UI Update	🗹 Show Help
Control	Serial Number		
Control	S/N Backplane	40256690	
Extended Switch Presets	Active Licenses Presets (Tool only)	×	
Status & Updates	Extended Switch (Tool only)	x	
Status - Matrix Firmware Status - Ediander Firmware Update - Matrix Firmware Update - Extender Firmware Activate Configuration	API SNMP Syslog Matrix Grid	x x x x	
Miscenarieuos	Multi-Screen Control	X	
System Settings ^	Activate License		
Bysilem Access Switch Network Date and Time Matrix Grid	License Key	Activates	
Extender & Devices			
EXT Units CPU Devices CON Devices			
User Settings			
Users & Groups			
Assignment			
Virtual CPU Devices Virtual CON Devices Multi-Screen Control			
		Dataut	

#### FIGURE 6-15.1 MANAGEMENT SOFTWARE MENU STATUS & UPDATES - MISCELLANEOUS - LICENSE MANAGEMENT

To activate a function bundle, proceed as follows:

- 1. Select Status & Updates > Miscellaneous in the task area.
- 2. Select the Miscellaneous tab.
- 3. Enter your license key in the working area under Activate License in the License Key field.
- 4. To activate the license key, click the **Activate** button. The new functions will be immediately enabled, a restart of the matrix will not be necessary.





### 7.1 **OPERATION**

The matrix can be operated in three different ways:

#### 1. Direct Switching

- · via a keyboard connected to a CON port and the favorites
- · by a macro keyboard connected to a console port

#### 2. OSD

- · via keyboard/mouse directly connected to the CPU board of the matrix
- via keyboard/mouse connected to a CON Unit and the OSD

#### 3. External Switching Commands

- · via an external computer via management software (network connection required)
- · via a media control (network connection required)

### 7.2 SWITCHING OPERATION VIA KEYBOARD

### 7.2.1 DIRECT SWITCHING

The direct switching by favorites on a keyboard is the fastest possibility for a user to switch at his console between different CPUs. This offers the option to switch video, keyboard and mouse or Video Only.

#### **Direct Switching of Video, Keyboard and Mouse**

- 1. Start the command mode with the Hot Key. The **Caps Lock** and **Scroll Lock** LEDs on the keyboard are flashing.
- 2. Enter the index number of the new CPU from the list of favorites.
- Press the <Enter> key to confirm. At the same time the command mode is closed, and the console is connected to the new CPU which takes over complete control.
  - Example: Switching to favorite CPU 7 with video, keyboard, and mouse
  - <left Shift>, <left Shift>, <7>, <Enter>

\*Fastest switching time can be achieved by using identical mice, keyboards, and monitors. This contributes to a smooth and seamless direct switching of the matrix.

#### Switching in Private Mode

1. Start the command mode by entering the Hot Key. The **Caps Lock** and **Scroll Lock LEDs** on the keyboard are flashing.



- Enter the index number of the new CPU from the list of favorites.
   Press the <left Shift>, <Enter> keys at the same time to confirm. At the same time the command mode is closed, and the console is connected to the new CPU with complete control in **Private Mode.**

Example: Switching to favorite CPU 3 in Private Mode <left Shift>, <left Shift>, <3>, <left Shift>, <Enter>

#### **Direct Switching of Video**

- 1. Start the command mode by entering the Hot Key. The Caps Lock and Scroll Lock LEDs on the keyboard are flashing.
- 2. Enter the index number of the new CPU from the list of favorites.
- Press the <Space> key to confirm. At the same time command mode is closed, and the console is connected to the new CPU with Video Only.

Example: Switching to favorite CPU 1 with Video Only <left Shift>, <left Shift>, <1>, <Space>

#### Switching to previous CPU

\*If you switch to a CPU that was previously connected with Video Access only, you will be connected to this CPU with full KVM access.

\*You can only switch to valid, unused CPUs using Hot Keys. The options Force Connect and Force Disconnect as well as the restrictions of the User ACL and CON ACL are taken into account. Hot Keys are only supported if neither Enable User Login nor the Enable User ACL is selected, and the user is logged in the OSD.

- 1. Start the command mode by entering the Hot Key. The **Caps Lock** and **Scroll Lock LEDs** on the keyboard are flashing.
- 2. Press the key of your keyboard. At the same time command mode is closed, and the console is connected to the previous CPU with complete control. Disconnecting current connection
- 1. Start the command mode by entering the Hot Key. The Caps Lock and Scroll Lock LEDs on the keyboard are flashing.
- 2. Press the <Backspace> key of your keyboard. The command mode is closed, and the console is disconnected from the previous connected CPU.

\*Optimal results can be achieved by using identical resolutions as far as possible. This contributes to a smooth and seamless function of the scan mode.

#### FUNCTION KEYS <F1> TO <F16> 7.2.2

In the command mode you can retrieve the macros 1 to 32 with the <F1> to <F16> function keys on the connected standard keyboard instead of the special macro keyboard.

Executing macros 17 to 32 is realized by the simultaneous use of the <left Shift> key. The stored command sequence for the appropriate function key is executed and the command mode is left immediately.

It is not necessary to press <Enter> to confirm the selection of macros.



## 7.2.3 SWITCHING A CON UNIT TO A LOCAL SOURCE

KVM extender CON Units connected to a local source (computer, CPU) can be locally switched via the matrix. Switching is performed between the local source and the KVM connection and can be executed via keyboard commands or OSD (see chapter 7.2.4, page 254). If you switch to the local source, the KVM connection will be automatically disconnected.

\*When using CON Units with the possibility to connect a local source (computer, CPU) in a Multi-Screen Control environment, the local switching will be disabled.

The following keyboard commands are available to switch to the local source:

KEYBOARD COMMANDS	DESCRIPTION
<hot key="">, <k>, &lt;1&gt;, <enter></enter></k></hot>	Switching to extender connection
Type <hot key="">, <k>, &lt;2&gt;, <enter></enter></k></hot>	Switching to extender connection 2 (only with redundant CON Units)
<hot key="">, <l>, <enter></enter></l></hot>	Switching to the local source (computer, CPU)

### 7.2.4 MULTI-SCREEN CONTROL SWITCHING VIA KEYBOARD

The Multi-Screen function contains a switching of the USB-HID signal between different statically connected sources (computer, CPU) within a CON Device and can be performed via keyboard (configuration see chapter 7.12, page 327) or mouse (see chapter 7.3, page 277).

To perform a switching operation via keyboard command, proceed as follows:

- 1. Enter the <Hot Key> to start the command mode.
- Press the respective key on the numeric pad of the keyboard to select the target display. The switching operation will be performed, and the USB-HID signal will be available at the target display.

The following keyboard commands are available for switching operations:

KEYBOARD COMMANDS	DESCRIPTION
<current hot="" key="">, <num 0=""></num></current>	Switching of the USB-HID signal to the own display (CON Unit with keyboard and mouse)
<current hot="" key="">, <num 1=""></num></current>	Switching of the USB-HID signals to display #1
<current hot="" key="">, <num 2=""></num></current>	Switching of the USB-HID signals to display #2)
<current hot="" key="">, <num 3=""></num></current>	Switching of the USB-HID signals to display #3
<current hot="" key="">, <num 4=""></num></current>	Switching of the USB-HID signals to display #4



### 7.3 SWITCHING VIA OSD

### 7.3.1 KVM SWITCHING

witch	F1:ID F2:Name	F3:Next	F4:Previous	F5:Refresh	F6:Find	F7:EXT	F8:Show	F9:Compare	ESC
CPU Devices		CON/CPU	Data		_	_	_		- 1
All CPUs		CON devi	ice N 010191929		CPU (	device	10190037		
CPU_010190037		CON assi	aned		CPU	assigne	d		
	- 8	CPU conn	nected		CON	connect	ed		
	- 8	Status			State	42			н.
	- 8	EXT list	Kanadara		EXT	list			н.
Video only	Video on	y access	: with keyboa	ard & mouse	disable	đ	_		ļ
Full access		ss in st							
Private acces									
Disconnect									
CPU Scanner									
Disconnect KBACKSPACE> CPU Scanner	Start the	it your C r CPU sco	20N device . mner to sca	n your favo	rites				

#### FIGURE 7-3.1.1 OSD MENU SWITCH

To switch the console to any available CPU, proceed as follows:

- 1. Select **Switch** in the main menu.
- 2. Select in the **CPU Devices** list on the left-hand side that CPU that should be connected to the CON Device.
- 3. Press the appropriate keyboard command to confirm desired connection type.

\*Switching operations from the own CON Device can only be performed on CPU Devices that are available in the **CPU Devices** list.

\*Listed CPU Devices highlighted in red color are currently connected in Private Mode and are blocked by the connected CON Device.

Press the <F8> key to expand the current view to show inactive CPU devices.





#### Switching via Selection List for CPU Devices

The matrix offers the ability to execute KVM switching operations by means of a selection list for CPU Devices next to the OSD in full screen.

To use the selection list for CPU Devices, proceed as follows:

- 1. Activate the Enable CPU Selection List option in the Configuration > EXT Units menu for those consoles where the selection list for CPU Devices should be available.
- Start the command mode by entering the Hot Key and press <o> to open OSD. The selection list immediately appears in the preset position of the extender OSD.

\*Press the <F8> key to hides inactive CPU Devices to provide a clearer overview.

3. Press the respective key (see chapter 7.2.1, page 250) to execute the desired switching operation. To prevent a switching operation and access OSD, press <F7> key. To close the selection list, press <Esc> key.

CPU_010231843 CPU_02	Video only <space> Full access <etter> CSTLF1&gt;+(ENTER&gt; Disconnect <backspace></backspace></etter></space>	Fl:ID F2:Name F3:Next F5:Refresh F5:Find F6:Find F7:Menu F7:Show F8:Show F9:Compare F10:Login

FIGURE 7-3.1.2 EXAMPLE VIEW SELECTION LIST CPU DEVICES

#### Activating the automatic Scan Mode for CPU Devices

The matrix offers the ability to use a scan mode based on the favorite list of each console or user. Scan mode allows the matrix to switch in sequence between the CPU Devices in the favorite list within a predefined time. All scans are performed in Video Only mode.

To configure the scan mode, refer to chapter 5.8.3, page 100.

To activate the scan mode, proceed as follows:

1. Define a favorite list for the respective CON Device or users

2. Start the command mode by entering the Hot Key and press <o> to open OSD.

3. Select one of the CPU Devices in the CPU selection list that are defined in your favorite list.

4. Confirm your selection by pressing the CPU Scanner button. The scan will automatically start.

\*If you have enabled the Force CPU Scan option, the scan will automatically start after switching the respective CON Device to any CPU Device from the favorite list without the need to press the CPU Scanner button.



## 7.3.2 EXTENDED SWITCHING

Extended Switch	F1:ID F2:Name F3:Next F4:Previou	s F5:Refresh F6:Find F9:Compare ESC
CON Devices	CON/CPU Data	
02007_CON_010100971	CON device 03004 CON_010190841	CPU device
03002 CON_040062140	CON assigned	CPU assigned
03001 CON_040212434	CPU connected	CON connected
	Status ONLINE	Status
	EXT list	EXT list
Switch Select t <enter> Disconnect Disconne <backspace></backspace></enter>		ng

#### FIGURE 7-3.2.1 OSD MENU EXTENDER SWITCH

The following information is shown in this menu:

FIELD	DESCRIPTION
CON device	Real CON Device with assigned CON EXT Unit
CON assigned	Virtual CON Device that is assigned to the Real CON Device
CPU connected	Currently connected CPU Device
CON status	Current connection status (CON Device)
EXT list	List of all available physical Ext Units (CON Units)
CPU device	Assigned physical EXT Unit (CPU Unit)
CPU assigned	Real CPU Device that is assigned to a Virtual CPU Device



FIELD	DESCRIPTION
CON connected	Currently connected CON Device
CPU status	Current connection status (CPU Device)
EXT list	List of all available physical Ext Units (CPU Units)

The following keyboard commands are available for switching operations:

KEYBOARD COMMAND	FUNCTION
<space></space>	Currently connected CON Device
<enter></enter>	Current connection status (CPU Device)
<shift> + <enter></enter></shift>	List of all available physical Ext Units (CPU Units)
<backspace></backspace>	Disconnect own CON Device from CPU Device.

To switch any console to any available CPU, proceed as follows:

- 1. Select **Switch** in the main menu.
- 2. Select in the **CON Devices** list on the left-hand side that one that should be switched to a CPU Device.
- 3. Press the <Enter> key.

The connection types and their corresponding keyboard commands are listed in the lower working area.

4. Press the appropriate keyboard command to confirm the desired connection type.

\*Switching operations from the user's CON Device can only be performed on CPU Devices that are available in the CPU Devices list.

\*Press the <F8> key to expand the current view to show inactive CPU devices.

### 7.3.3 USB 2.0 SWITCHING

Switching of USB 2.0 extender basically works like switching of KVM extenders. The following scenarios to switch USB 2.0 extenders are possible.

- 1. An extender unit with USB 2.0 will be created and assigned to an already existing device with existing KVM Ext Units (see chapter 5.6.1, page 106).
- A separate device for the extender unit with USB 2.0 will be created without assigning a KVM extender unit to that device. This possibility offers a separate switching of the USB 2.0 signal (see chapter 5.6.1, page 106).



\*Switching of USB 2.0 signals uses Extended Switching functionality (see chapter 7.2.2, page 252). When using parallel operation within the matrix, set the **Release Time** in the **System Settings > Switch** menu to 10 s or more (see chapter 6.4.5, page 162). Otherwise, the connection of the USB 2.0 extender will not be established due to security and stability reasons.

## 7.3.4 SWITCHING A CON UNIT TO A LOCAL SOURCE

CON Units connected to a local source (computer, CPU) can be locally switched via the matrix. Switching is performed between the local source and the KVM connection and can be executed via OSD or keyboard command (see chapter 7.1.2, page 327).

If you switch to the local source, the KVM connection will be automatically disconnected.

\*When using CON Units with the possibility to connect a local source (computer, CPU) in a Multi-Screen Control environment, the local switching will be disabled.

Switch	F1:ID F2:Name	F3:Next F4:Previous	F5:Refresh	F6:Find F7:EXI F8:Show	F9:Compare	ESC
CPU Devices	-	CON/CPU Data				- 1
A11 CPUs		CON device 03003 CON_010182248		CPU device		I.
		CON assigned		CPU assigned		
	- 88	CPU connected		CON connected		
	- 8	Status		Status		
	- 8	EXT list		EXT list		
Full access						
Private acces						
Disconnect		t your CON device .				
CPU Scanner						
Select a CPU devi	ce					

FIGURE 7-3.4.1 OSD MENU SWITCH





To switch to a local source, proceed as follows:

- 1. Select **Switch** in the main menu.
- 2. If you are not in the Switch menu of the OSD, enter the <Hot Key> to start the command mode.
- 3. Press the <o> key to open OSD. You will see a list of all available CPUs as a start menu.
- 4. Switch to the CPU in the **Local CPU** list.

The switching operation to the local source will be performed immediately.

\*The local source (computer, CPU) will be only shown in the OSD if the connected CON Unit includes the option for a local connection.

## 7.3.5 SWITCHING VIA MACRO LIST

Next to executing macros via function keys <F1> to <F16>, they can also be executed via Macro List in the OSD. At the same time this specific list offers the possibility to see the content of the various macros including the single commands before executing them. There are displayed 16 of the total 32 macros per page.

Macro List	ESC
Key Macro	
F01 CF(CON_040212434,CPU_020190418)	
FA2	
F02	
F05	
F04	
F05	
F06	
F07	
F08	
F09	
F10	
F11	
F12	
F13	
F14	
F15	
F16	

#### FIGURE 7-3.5.1 OSD MACRO LIST



- 1. Select Macro List in the main menu.
- 2. Make sure that you have already configured CON or user macros.
- 3. Select the respective macro in the list that you want to execute.

4. If you want to execute a macro 17-32 (<Shift> + <F1> to <F16>), press the <Page Down> key and select the macro afterwards.

5. Press the <Enter> key to execute the macro The macro will be immediately executed.

If the Macro List should be directly displayed upon opening OSD, activate the option Show Macro List in the menu Configuration > CON Devices for the respective CON Devices.

#### 7.3.6 SWITCHING OF SINGLE EXTENDERS WITHIN DEVICES

You can independently switch single extenders within configurations consisting of CON and CPU Devices with multiple extenders.

CPU Devices		0.001 /0.001 .0		
		CUN/CPU Data		
All CPUs	_	CON device 03001 CON_010191923	CPU device 01001 CPU_01	0190037
CPU_010190037	- 11	CON assigned	CPU assigned	
	- 88	CPU connected	CON connecte	d
	- 8	Status DNLTNC	Status Disc 110	
	- 88	EXT list	EXT list	00 101 010100007
Video only	Video on	ly access with keyboard	& mouse disabled	
Full access				8
Private access				
Disconnect		ct your CON device		
CPU Scanner				
	_			

#### FIGURE 7-3.6.1 OSD MACRO LIST

To switch a single extender to a device with multiple extenders, proceed as follows:

- 1. Select Switch in the main menu.
- 2. Select the respective CPU Device in the CPU Devices list containing the extender you want to have access to.
- 3. Press the <F7> function key on the keyboard. The standard will change into the switching mode for single extenders.





- 4. Select the extender you want to switch within your CON Device.
- 5. Press the <Tab> key to access the extender list of the selected CPU Device.
- 6. Select the CPU extender you want to switch to.
- 7. Press the <Space> key to execute the switching operation.

Switching of single extenders from a Device is only possible in **Video Only** mode. Single extenders of a Device that are already switched will be highlighted with "!".

## 7.3.7 ADDRESSING OF MASTER AND SUB MATRICES

The matrix can be cascaded over two levels. You can either send the commands (including opening the OSD) to the master or the sub matrix.

When in the command mode, you can select whether commands should be handled in the master or the sub matrix.

#### **OSD Access**

- OSD access to the master matrix: <Hot Key>, <o>
- OSD access to the sub matrix <Hot Key>, <s>, <o>

To do a cross-matrix switching, proceed as follows:

- 1. Open the OSD of the master matrix with the following keyboard sequence: <Hot Key>, <o>
- 2. Select the CPU device configured as Tie Line in the CPU selection list and press the <Enter> key to switch onto.
- 3. Open the OSD of the sub matrix with the following keyboard command: <Hot Key>, <s>, <o>
- 4. Select your target CPU in the CPU selection list of the sub matrix.

\*The selected master matrix / sub matrix mode is permanently activated until the other mode will be manually activated. This means that if you press the <s> key, all prospective commands will be sent to the sub matrix, but not if the command mode is left in the meantime.

### 7.4 SWITCHING OPERATION VIA MANAGEMENT SOFTWARE

### 7.4.1 EXTENDED SWITCHING

\*Switching operations can only be performed in online mode. That means an active network connection is required between the matrix and the management software.

You have two options to perform switching operations for the matrix via management software:

#### Possibility 1:

All connected consoles and the associated CPU connections are shown in columns in the working area in this menu.

- 1. Select Control > Extended Switch in the task area.
- 2. Click the Activate Edit Mode menu item in the toolbar.



Elle Edit Device Egitas 2		_							- 0 X
Crest Sava Balcad Con	neri Darr	and a	Canativale Foll Mode Dennis Save	Description Links	Nonitering Flash in	ndate Device Finder	System Charty Save Status		
20210210.zip  Master ×							-,		
View	~	Contr	ol - Extended Switch						Edit Mode activated
Matrix									Y
Part		-	CON Device				CPU De	vice	
Control		ID OTHER	Name		Full Access		Video Access	Private Az	icess .
Control			CON_03001						
CONTON		03002	CON_03002		NORA CRU 01004				
Extended Switch		03004	CON 03004		01006 CPU 01006				
Preseta		03005	CON 03005		01007 CPU 01007				
Status & Updates	^	03006	CON 03006		01008 CPU 01008				
Status - Matrix Firmware		03007	CON_03007		01009 CPU_01009				
Status - Extender Firmware		03008	CON_03008		01054 CPU_01054				
Update - Extender Firmware		03009	CON_03009				1		
Activate Configuration		03010	CON_03010					*	
Miscellaneous		03011	CON_03011		01013 CPU_01013		01001 CPU_01001		
System Settings	^	03012	CON_03012		01015 CPU_01015		01003 CPU_01003		
System		03013	CON_03013		01014 CPU_01014		01004 CPU_01004		
Access		03014	CON_03014				01005 CPU_01005		
Switch		03015	CON_03015				01007 CPU 01007		
Network Data and Time		03016	CON_03016				01008 CPU_01008		
Matrix Grid		03017	CON_03017		01018 CPU_01018		01009 CPU_01009		
Falsador & Doutron		03018	CON_03018		01020 CPU_01020		01010 CPU_01010		
CAMPOON IS COTICES		03019	CON_03019		01021 CPU_01021				
EXT Units		03020	CION_03020		01056 CPU_01066				
CON Devices		03021	CON_03021						
liner Settings	~	03022	CON_03022						
one seconds		03023	CON_03023		01025 CPU_01025				
Users & Groups		0.3004	CON_03024		01026 0P0_01026				
Assignment	^	03025	CON_03025		01023 CRU 01023				
Virtual CPU Devices		03027	CON 03027		01029 CPU 01029				
Virtual CON Devices		03028	CON 03028						
Multi-Screen Control		Auto	e Send e Devices wio Extender Assignmer e inactive Devices	x.					Sind Reset Reload
								Default	

FIGURE 7-4.1.1 MANAGEMENT SOFTWARE MENU CONTROL - EXTENDER SWITCH

The following functions are available to perform a switching operation:

BUTTON	FUNCTION
Send	Send effected switching operations to the matrix
Reset	Disconnect all existing connections within the matrix
Reload	Reload switching status

To perform a switching operation, proceed as follows:

To set a **KVM connection** between a CON Device and a CPU Device, double-click on the corresponding selection box within the **Full Access** column and select the requested CPU Device.

To set a **video connection** between a CON Device and a CPU Device, double-click on the corresponding selection box within the **Video Access** column and select the requested CPU Device.

To set a **Private Mode** connection between a CON Device and a CPU Device, double-click on the corresponding selection box within the P**rivate Access** column and select the requested CPU Device.





\*If a CPU Device does not have access rights, it will not appear in the list.

\*When the Auto Send function in the left lower corner of the work area is ticked, switching operations will be completed immediately without user confirmation by means of the Send button. When the Hide Devices w/o Extender Assignment function in the left lower corner of the work area is ticked, only CON Devices and CPU Devices that are assigned to extenders are shown.

#### **Possibility 2:**

		- 0 ×
Elle Edit Device Egitas 2		
gen. Save Reload Conner	d geconnect Deschvele Edit Node Renote Save Download Uplaad Mentoring Plash Updale Device Pinder System Check Save Status	
20210210.sip  Master ×		
View	🔶 View - Matrix	Edit Mode activated
Matrix Port Grid Control		Matrix Status Temperature Dk PSU 1 Dm PSU 2 Dm PSU 3 Not Available
Control	A	PSU 4 Not Available
Extended Switch Presets		Fan 2 Ok
Status & Updates	A	
Status - Matrix Firmware Status - Entender Firmware Update - Matrix Firmware Update - Extender Firmware Activate Configuration Misoelianeous		
System Settings	A (47.15.0) (47.10.0) (47.10.0) (47.10.0)	
System	01 03 05 07 09 11 13 15 17 19 21 23	
Access		> Options
Network Date and Time Matrix Grid	Device Name: MacMint (10.07)	Automatic Reload Show Port Numbers Ond Perts Local Perts
Extender & Devices	· ·	Show Illuti-Screen Control
EXT Units CPU Devices CON Devices		Routing Information Show Redundent Links (), 11(2) Show Video Show Video Show USB-HD
User Settings	· ·	IO Part Color Coding A
Users & Groups		Fait Access
Assignment	A	Grid Line Invalid Port
Virtual CPU Devices Virtual CON Devices Multi-Screen Control		10 Port Symbols V Multi-Screes Control V Redundancy V
		Clear Selection
Switch CON_07 to MacMini1 [10	an Detaut	<b>T</b>

FIGURE 7-4.1.2 MANAGEMENT SOFTWARE MENU VIEW - MATRIX

The following symbols may be shown in the connection overview:

BUTTON	FUNCTION
<b>K</b>	CON Device is connected via Shared Access with at least one further CON Device to the same CPU Device. The CON Device has Full Access at the moment.
<	CON Device is connected via Shared Access with at least one further CON Device to the same CPU Device. The CON Device has a Video Access connection at the moment.
Reload	Reload switching status



To perform switching operations between CON and CPU Devices proceed as follows:

1. Select View > Matrix in the task area or select View > Port when using a Matrix Grid.

2. Move the mouse cursor to the port that has to be switched.

3. Hold down the primary mouse button and move the cursor to the port that has to be connected to the initial port. The current cursor movement will be displayed by a black auxiliary line.

4. Release the primary mouse button. A popup to select the available switching type (Full Access, Video Access or Private Mode) will be opened.

5. Select the desired switching type. The switching operation will be immediately executed. At the same time all Ext Units that are assigned to the involved devices will be switched.

\*If a port is shown with a red cross on Matrix View, the console does not have access rights to the CPU connected to that port.

To disconnect existing connection between CON and CPU Devices proceed as follows:

- 1. Click with the secondary mouse button on the port that is to be disconnected.
- 2. Select the Disconnect function in the popup that appears.

The connected ports will be immediately disconnected. At the same time all further connections of the extenders assigned to the involved devices will be disconnected.

### 7.4.2 USB 2.0 SWITCHING

Switching of USB 2.0 extender basically works like switching of KVM extenders. The following scenarios to switch USB 2.0 extenders are possible.

1. An extender unit with USB 2.0 will be created and assigned to an already existing device with existing KVM Ext Units (see chapter 6.8.2, page 184 or chapter 6.9.3, page 197).

2. A separate device for the extender unit with USB 2.0 will be created without assigning a KVM extender unit to that device. This possibility offers a separate switching of the USB 2.0 signal (see chapter 6.8.2, page 184 or chapter 6.9.3, page 197).

Switching of USB 2.0 signals uses Extended Switching functionality (see chapter 7.3.1, page 258). When using parallel operation within the matrix, set the **Release Time** in the **System Settings > Switch menu** to 10 s or more (see chapter 6.4.5, page 162). Otherwise, the connection of the USB 2.0 extender will not be established due to security and stability reasons.

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## 7.4.3 PREDEFINING MACROS

Predefined macros to switch the matrix without loading a new configuration can be created and activated in this menu.

en Save Reload Sanna	et geo	connect D	esctivele Edit Hode Remote Save Do	writed. Upb	ed Ventoring Flam	Npdale Device Finder	System Check 5	ner Sintun.			
lew	~	Contro	ol - Presets							Edit Mode ad	tivated
latrix											T
lait			CON Device			aru	Device		Presets		
ind		D	Name		Full Access	Video	Access	Private Acces	• IIH 🗙		
ionitral .	_	03001	CON_03001						1	New Desid	
ontrol	~	03002	CON_03002						_	The second second	
xtended Switch		03003	CON_03003	01004	CPU_01004						
resets		03004	CON_03004	01006	CPU_01006						
tatas & Updates	~	03005	CON_03005	01007	CPU_01007						
tatus - Matrix Firmware		03006	CON_03006	01008	CPU_01008						
tatus - Extender Firmware		0.3007	CON_03007	01009	CPU_01009						
pdate - Matrix Firmware		03008	CON_03008	01054	CPU_01054						
pdate - Extender Firmware		03009	CON_03009					01011 CPU_01011			
divate Configuration			CON_03010								
iscellaneous	_	03011	CON_03011	01013	CPU_01013						
stem Settings	~	03012	CON_03012	01015	CPU_01015						
rstem			CON_03013	01014	CPU_01014						
ccess		03014	CON_03014			01019 CPU_010	019				
which			CON_03015			01017 CPU_010	017				
ate and Time		0.3016	CON_03016			01019 CPU_010	019				
atrix Grid			CON_03017	01018	CPU_01018						
teeder & Devices	~	0.3018	CON_03018	01020	CPU_01020						
71 bets		03019	CON_03018	01021	CPU_01021						
PU Devices		03020	CON_03120	01066	CPO_01066						
ON Devices			0000 00000								
uer Settings	~	03022	000_03022	00000	CELL 01025						
		0302.5	0.000 0.0000	04025	0011 01020						
sers & Groups	-	03125	CON 03325	01020	0-0_01020						
ssignment	~	03025	CON 03456	01022	CRU 04023						
rtual CPU Devices		100020	Particle and Education According	0 1023	0-0-01023						1
rtual CON Devices		Hide	inarthy Devices								aend

#### FIGURE 7-4.3.1 MANAGEMENT SOFTWARE MENU CONTROL - PRESETS

#### **Creating a new Switch Macro**

To create a new switch macro, proceed as follows:

- 1. Select **Control > Presets** in the task area.
- 2. Click the Activate Edit Mode menu item in the toolbar.
- 3. Click on the (New) symbol in the right column of the working area to open a new switch macro.
- You are asked if the existing connections should be taken over for the new switch macro.
- Click on a device in the corresponding columns (Full Access, Video Only or Private Mode) to drop down the appropriate selection to set the desired switching operations or use the function for a disconnect (Disconnect CPU).
- 5. Click the (**Save**) symbol in the right column of the working area to save the created switch macro. A save dialog will appear.
- 6. Enter a name for the new switch macro.
- 7. Click the **Ok** button in the save dialog to confirm the new preset. The new switch macro is listed in the right column.
- 8. Click the Activate Edit Mode menu item in the toolbar.





### **Copying a Switch Macro**

To copy a switch macro, proceed as follows:

- 1. Select Control > Presets in the task area.
- 2. Click the **Activate Edit Mode** menu item in the toolbar.
- 3. Click with the secondary mouse button on a selected switch macro in the right column to copy the current switch macro when using the **Save as.**.. option.
- 4. Click the **Activate Edit Mode** menu item in the toolbar.

### **Deleting a Switch Macro**

To delete a switch macro, proceed as follows:

- 1. Select Control > Presets in the task area.
- 2. Click the Activate Edit Mode menu item in the toolbar.
- 1. Select a switch macro to be deleted.
- 2. Click the (**Delete**) symbol in the right column of the working area to delete the current switch macro or click with the secondary mouse button on a selected switch macro using the **Delete**... option.
- 3. Click the Activate Edit Mode menu item in the toolbar.

#### Loading a Switch Macro

To load a predefined switching, proceed as follows:

- 1. Select Control > Presets in the task area.
- 2. Click the Activate Edit Mode menu item in the toolbar.
- 3. Select the switch macro in the right column of the working area that has to be loaded.
- 4. Press the Send button on the bottom right of the working area to activate the selected switch macro.
- 5. Click the Activate Edit Mode menu item in the toolbar.
- \*A predefined switch macro can only be activated in online mode.

When loading presets, only those switching operations that are compliant with the hardware and the configuration of the currently used matrix are taken into account.

#### 7.5 MULTI-SCREEN CONTROL SWITCHING VIA MOUSE (PANNING)

The Multi-Screen function contains a switching of the USB-HID signal between different statically connected sources (computer, CPU) within a CON Device. The switching of the USB-HID signal can be made by a movement of the mouse pointer beyond the edge of the current display to a neighboring display.

To perform a switching operation by movement of the mouse pointer, proceed as follows:

1. Move the mouse pointer to that edge of the display which borders vertically or horizontally to the neighboring display.

2. Move the mouse pointer beyond the edge of the display.

The mouse pointer will appear on the adjacent display. The switching operation has been performed and the USB-HID signal will be now available at the target display.

\*The switching operation can also be performed via keyboard (see chapter 7.2.6, page 276).





### 7.6 QUERYING A STATUS FOR DIAGNOSIS VIA OSD

Various statuses can be queried for diagnosis:

Status	
Network	
SNMP	
Firmware	
Trace	

## 7.6.1 NETWORK STATUS FIGURE 7-6.1 OSD MENU STATUS

The current network configuration is displayed in this menu. Select **Status > Network** in the main menu to query the network configuration.

Dual Interface DHCP IP Address Subnet Mask Gateway MAC ID	: N0         Primary Port       Secondary Port         : YES       N0         : 192.168.178.074       000.000.000.000         : 255.255.255       000       000.000.000         : 192.168.178.001       000.000.000.000         : 00:21:5F:04:03:7E       00:21:5F:04:03:7F	
Multicast	255.255.255.255	
letwork Services		
API Service Grid Service SSL Services	: YES NO Enable API Service port (5555/5565) : YES NO Enable Grid Service port (5557/5567) : NO NO Enable SSL for API and Grid communication	
Syslog ∥1 Syslog Server	: NO Enable Syslog Server #1 : 000.000.000.000:514	
Syslog #2 Syslog Server	: NO Enable Suslog Server #2 : 000.000.000.000:514	
LDAP LDAP Server LDAP Base DN	: NO Enable authentication with Active Directory Server : 000.000.000.000:389 :	
og Levels		
Trace Suslea #1	: DEB NO INF NO NOT YES WAR YES ERR YES	

7.6.2 SNMP STATUS

FIGURE 7-6.1.1 OSD MENU NETWORK

The current SNMP status is displayed in this menu. Select Status > SNMP in the main menu to query the SNMP status.

NMP Server					
Enable Traps	;	NO	Server #1		
Server Address	5	000.	000.000.000	000.	000.000.000
Status Temperature		NO NO		NO NO	
Insert Board Remove Board Invalid Board		NO NO NO		NO NO NO	
Insert Extender Remove Extender		NO NO		NO NO	
Switch Command	;			NO	
Fan Tray #1 Fan Tray ₩2		NO NO		NO NO	
Power Supply #1 Power Supply #2 Power Supply #3 Power Supply #4		NO NO NO NO		NO NO NO	

FIGURE 7-6.2.1 OSD MENU STATUS - SNMP \*The procedure for activating the SNMP agent or configuring an SNMP server is described in chapter 5.4.6, page 94.

### 7.6.3 FIRMWARE STATUS

The current firmware status is displayed in this menu. Select **Status > Firmware** in the main menu to query the firmware status.







#### FIGURE 7-6.3.1 OSD MENU STATUS - FIRMWARE







#### TRACE 7.6.4

The trace function is used for diagnostic purposes. All recorded events for activities and switching operations of the matrix are displayed in this menu.

Select Status > Trace in the main menu of the I/O board, the user's console is connected to display the recorded events of the selected I/O board.

atus	6
race	
ate Time Message	
020/08/15 14:31:59 00 NOT scrHandleOpen(): PORT=1	
020/08/15 14:31:56 00 NOT scrtlandleTimeout(): PORTAL SETHOSTID	8
020/08/15 14:31:56 00 WAR picRetVersion(): PORT=1 ID=5 empty	
020/08/15 14:31:56.00 WAR picketVersion(): PORT-1 ID-4 empty	
020/08/15 14:31:51.00 NOT scrupdaleR8() FORT-1 RX-DN	
020/08/15 14:31:51.00 NOT catUpdatePortStatus(): PORT=1 REO=8XON	
020/08/15 14:31:51.00 NOT catUpdatePortStatus(): PORT=1 SYNC=1	
020/08/15 14:26:17.00 NOT catUpdatePortStatus(): PORT-1 CAT-1	
920/08/15 14:26:16.00 NOT scrUpdoteR%(): FORT-1 RK-DFF	
020/08/15 14:26:16 00 ERR catErrorHandler(): PORT=1 stopped	
020/08/15 14:26:16.00 WAR catErrorHandler(): PDRI=1 restart	
320/08/15 14:26:10.00 NOT scrUpdeteR((): PORT-1 RX-ON	
020/08/15 14:26:10.00 NOT catUpdatePortStatus(): PORT=1 REO=RXON	
020/08/15 14:26:10.00 NOT catUpdatePortStatus(): PORT-1 SYNC-1	
320/08/15 14:26:08 00 NOT scrlbdateRX(): FORT=1 RX=DEF	
020/08/15 14:26:07:00 WAR catUndatePortStatus(): PORT=1 RE0=8X0FF	
320/08/15 14:26:07.00 NOT scrUpdateRX(): PORT-1 RX-0N	
20/08/15 14:26:07.00 NOI catUndatePortStatus(): PORT=1 REO=RXON	
220/08/15 14:26:07.00 NOT catUpdatePortStatus(): PORT-1 SYNC-1	
220/08/15 14:26:07 00 NOT catllodatePortStatus(): PORT=1 CRT=1	
120/08/15 14:26:07.00 NOT scribdateBX() FORT=1 RX=DEF	
320/08/15 14:26:06:00 WOR catErrorHandler(): PORT=1 restart	
320/08/15 14:26:00 00 NOT scribdateRX(): PORT=1 RX=0N	
120/08/15 14:26:00 00 NOT catUndatePortStatus(): PORT=1 RED=\$X0N	
120/08/15 14:26:00 00 NOT catllodatePortStatus() PORT=1 SVNC=1	
120/08/15 14:25:57 00 NOT scrubdateRX(): FORT-1 RX=0FF	
020/08/15 14:25:57.00 WAR catUpdatePortStatus(): PORT-1 REO-RWOFF	
320/08/15 14:25:57 00 NOT scribdateBX(): FORT=1 RX=DN	
020/08/15 14:25:57.00 NOF catUpdatePortStatus(): PORT-1 RE0-8X0N	
020/08/15 14:25:57.00 NOT_catUpdatePortStatus(): PORT=1_SVNC=1	
020/08/15 14:25:57.00 NOT catUpdatePortStatus(): PORT=1 CAT=1	
020/08/15 14:25:57.00 NOT scrUpdateRK(): PORT-1 RX-DEF	

#### FIGURE 7-6.4.1 OSD MENU STATUS -TRACE

The following information is shown in this menu:

FIELD	DESCRIPTION
Date	Date stamp
Time	Time stamp
Message	Detailed description of the event

\*The procedure for activating the SNMP agent or configuring an SNMP server is described in chapter 5.3.6, page 75.





## 7.6.5 REDUNDANCY FUNCTION

The current firmware status is displayed in this menu. Select **Status > Firmware** in the main menu to query the firmware status.

KVM extenders with redundant connectors for interconnect cables can be simultaneously operated with both connectors at a single Matrix or a Matrix Grid (from firmware version V04.00).

The connector labeled with **Link 1** at the KVM extender is meant for the primary connection. If the connection on CON or CPU Unit side is interrupted due to any problem, the connection will be automatically re-established through the second connector labeled with **Link 2**. For this kind of redundancy function, there is no need for any configuration of the KVM matrix or the KVM extenders.

Switch	1:ID F2:Name	F3:Next F4:Previous	F5:Refresh	F6:Find F7:E	KI F8:Show	F9:Compare	ESC
CPU Devices	-	CON/CPU Data					- 1
All CPUs		CON device 03003 CON_010182248		CPU device	B		H
Local GP4	_	CON assigned		CPU assign	ned		
	- 88	CPU connected		CON connec	cted		
	- 8	Status		Status			
	- 88	EXT list		EXT list			
							11
Full access							
Private access							
Disconnect		t your CON device .					
CPU Scanner							
Select a CPIL deuid	*e			_			-

FIGURE 7-6.5.1 OSD MENU STATUS -SWITCH

Select **Switch** in the main menu.

When using redundant KVM extenders, the respectively active connector is shown in this view under **EXT** list in the field **CON/CPU Data.** If the first connector (**Link 1**) is active, it will be highlighted with **:1** behind the respective extender. If the second connector (**Link 2**) is active, this will be highlighted with **:2**.

### 7.7 QUERYING A STATUS VIA MANAGEMENT SOFTWARE

### 7.7.1 DEVICE STATUS

The connections to the matrix are displayed in this menu. **Select View > Matrix** in the task area to display the current connections.

Bie Edit Device Egras 2	- 0 ×
📨 🛃 💭 📭 🔹 🦉 🙀 🐺 🐺 🕎 📾 👌 🔍 🔛 📩	
20210210.zpj Master ×	
View - Matrix	
Matter Polt Grid Control	Matrix Status           Temperature         Dix           PSU 1         On           PSU 2         On           PSU 3         Hef Available           PSU 4         Hef Available
Extended Switch Presets	Fan 1 Ok Fan 2 Ok
Status & Updates 🗠	
Status - Martin Firmware Status - Extender Firmware Update - Dävnder Firmware Advala Configurations Miscellaneous	
System Sollings	_
System         B1 03 05 for 00 11 13 15 17 19 21 23         Support         Support	> Ourliens Automatic Related Show Part Numbers * One Parts
Extender & Devices ^	Show Multi-Screen Control
EXTUNIS CPU Devices CON Devices	Routing Information Show Networkert Links (LNL2) Show Video Show Use-RD
User Settings	10 Part Colar Coding 🔨
Users & Groups	Full Access Video Access
Assignment	Grid Line Invalid Port
Virtual CPU Devices Virtual CDN Devices Multi-Screen Control	ND Port Symbols V Matti Screen Control V Redundancy V Claur Salector
Default	

FIGURE 7-7.1.1 OSD MENU VIEW - MATRIX

NETWORK PORT COLOR	DESCRIPTION
Green	Port is connected
Red	Port is not connected or not available



## 7.7.2 NETWORK STATUS

The current network configuration is displayed in this menu. Select **System Settings > Network** in the task area to query the network configuration.

Dia Edit Davica Estrar 0				- 0 ×
Spen. Save Reload Conve	ect gincor	Activate Edit Node Remo	ine Save Download Uplead Nontering Plash Update Device Pinder Synther Check Save Status	
20210210.zip Master ×				
View	~	System Settings - Net	vork	
Matrix Port		General Systeg SNMP	LDAP	🗹 Show Help
Contral		Dual Interface		
Control			Enable Dual Network Interface (only available in offline mode)	
CONTRA		Network Settings - Controll	er Board 1 (Osline changes require a matrix restart)	
Extended Switch Presets		DHCP	🗹 Dynamic configuration of network parameters via DHCP server	
Status & Updates		IP Address	192 . 168 . 170 . 168	
Status - Matrix Firmware Status - Educates Firmware		Subnet Mask	255 . 255 . 255 . 0	
Update - Matrix Firmware		Gateway	182 . 558 . 170 . 1	
Update - Extender Firmware		MAC Address	00:215F.04:00:24	
Activate Configuration Miscellaneous		Network Settings - Controll	er Board 2 (Osline changes require a matrix restart)	
Sector Sollings	~	DHCP	×	
sharen armida			Dynamic configuration of network parameters via DRCP server	
System		IP Address	192 . 168 . 100 . 98	
Switch		Subnet Mask	25 . 255 . 255 . 0	
Network Data and Time		Gateway	182 . 108 . 100 . 1	
Matrix Grid		MAC Address	Uninown	
Extender & Devices	~	Multicast (Online changes i	equire a matrix restart)	
Evillate		Multicest	255 . 255 . 255 . 255	
CPU Devices			Orid Multicast or Broadcast (255.255.255.255).	
CON Devices		Network Services (Online c	hanges require a matrix restart)	
User Settings	^	API Service	Cable AP service (Port 555)	
Users & Groups		SSL Support		
Assignment	~		Enable SSL for secure communication	
Virtual CPU Devices Virtual CON Devices Multi-Screen Control		GRU SEIVICE	INT Enable GED service	
				deck/ Cancel
			Default	

FIGURE 7-7.2.1 MANAGEMENT SOFTWARE MENU SYSTEM SETTINGS - NETWORK - GENERAL



## 7.7.3 MATRIX FIRMWARE STATUS

The firmware status of the extenders is displayed in this menu. Select Status & Updates > Status - Matrix Firmware in the task area to query the current firmware status of the extenders.

- DB C	-	- 1			A 197			
- N S I -			<b>7 H</b>	T T 🖴		🖌 📩		
en., Seve   Reload   Serve	ct Discor	med A	ctivate Edit Node Remote Save   Dor	vniced Uploed   Monitoring	Plash Update Device Finder !	lystem Check Save Status		
		Ctatus	E Lindatos - Status Matrix	Firmutare				
		status	s s opuares - status matrix	riiliinare				
ahtx		Farmana						
en. Id		Slot N	arte	Type	Porta	Senal Number	Version	Status
intral		-	E TEST-#-#024C016#		40	40258690		
otroi	~		E CHASSIS					Available
12.04			FAN	PAN	1		F03.01.201208	
ended Switch			FAN	FAN	1		F03.01.201208	
la eta	_		PWRCTHL	PINR	1		F03.00.201208	
itais & Updates	~	00	H WHITLONDC	CPU	1	40258691	F04.00.210303	Ready
stus - Matrix Firmware			MATLPXP	РхР	1		F01.02.200507	
dus - Extender Firmware			MATLOS	515	1		F01.08.210222	
date - Matrix Firmware		01	E MATLIOS (CAT)	108	8	40258692	F04.00.210303	Ready
date - Extender Firmware	-		MATLOSD	OSD	0		G02.00.201215	
scellaneous				MATLOS	848	1		F01.08.210222
		02	E PIATLICE (CAT)	108	8	0000000000	F04.00.210303	Ready
item Settings	^		MATLVOSC	OSD	8		F01.14.201209	
dem			MATLOS	818	1		F01.08.210222	
cess		03	E RIATLIOS (CAT)	108	8	40258694	F04.00.210303	Ready
1ch			MATLOSD	08D	8		G02.00.201218	
and Time			MATLOS	212	1		F01.08.210222	
Hix Grid		04	E TATLICE (SFP)	108	8	40258895	F04.00.210303	Ready
andor & Desiran			MATLOSD	OSD	8		G02.00.201216	
eroer & Devices			MATLOS	898	1		F01.08.210222	
T Units		05	E HATLICE (SFP)	108	0	000000000	F04.00.210303	Ready
U Devices			MATLVOSD	OSD	8		F02.01.201022	
N DEWOES	_		MATLOS	575	1		F01.08.210222	
r Settings	^	06	III 🜉 HATLIOB (SFP)	108	8	40258895	F04.00.210303	Ready
ers & Groups			MATLOSD	OSD	8		G02.00.201216	
signment.	~		MATLOS	515	1		F01.08.210222	
		07	E HATLIGE (SFP)	108	8	0000000000	F04.00.210303	Ready
tual CON Devices			MATLVOSD	OSD	8		F02.01.201022	
Screen Control			MATLOS	878	1		F01.08.210222	

### FIGURE 7-7.3.1 MANAGEMENT SOFTWARE MENU STATUS & UPDATES - STATUS - MATRIX FIRMWARE

COLUMN	DESCRIPTION				
Slot	Slot number of the I/O module or CPU module				
Name	Name of the I/O module or CPU module     Name of the I/O module firmware or CPU module firmware				
Туре	Firmware type				
Port	Number of ports				
Serial Number	Serial number of the I/O module or CPU module				
Version	Installed firmware version				
Status	Status of the I/O module or CPU module				



The different modules can be expanded and collapsed by left-clicking on the "plus" and "minus" symbols in the Name column.

By clicking on the "plus" and "minus" symbol in the upper right corner of the working area, you can expand and collapse all module information with a click of the primary mouse button.

#### 7.7.4 **EXTENDER FIRMWARE STATUS**

The firmware status of the extenders is displayed in this menu. Select Status & Updates > Status - Extender Firmware in the task area to query the current firmware status of the extenders.

joen Save Reload Some	t geos	enect	Activitie	e Edit Hode Remote Save Dov	rikad Upbad Mentoring Plash Update.	Device Finder_ Sy	atem Check	Save Stetus		
20210210.zp Master ×										
View	~	Stat	tus & U	Ipdates - Status Extend	er Firmware					
Matrix		Firm	ware E	Extender Firmware on VO Boar	đ					
Part										
Grid		Ede	ender Vie	ew Component View						
Control			ID		Name	Port	Type	Device	Version	0
Control	~		日間で	TEST-A-E160	TEST-A-E160					4
Extended Switch		01	00	40113350	CON_09	65	CON UNIT	CON_09		
Presets		02		10195808	CON_10	66	CON UNIT	CON_10		
Status & Updates	~				EXTHROON		EIR		801.37.191128	
Status - Matrix Firmware					HIDCON		HID		F04.03.201112	
Status - Extender Firmware					EXTMSD		MSD		802.51.200422	
Update - Matrix Firmware		03		40000027	CON_11	67	CON UNIT	CON_11		
Update - Extender Firmware		04	E	10000101	CON_12	68	CON UNIT	CON_12		
Miscellaneous		05		40167519	IP-CPU_03_Fiber	70	CPU UNIT	IP-CPU C Fiber		
Eastern Kollings	~	05	•	40155854	IP-CPU_04_Fiber	72	CPUUNIT	IP-CPU D Fiber		
system seconds		07		10155408	CON_MV_3.1	89	CONUNIT	Multiviewer 3.1		
System		08		10155418	CON_MV_3.2	90	CON UNIT	MultiViewer 3.2x		
Switch		09		10155422	CON_MV_3.3	91	CONUNIT	MultiViewer 3.3		
Network		10	•	10155403	CON_MV_3.4	92	CONUNIT	MultiViewer 3.4		
Date and Time		11	•	10155411	CON_MV_4.1	93	CONUNIT	MultiViewer 4.1		
Matrix Grid		12	•	10155420	CON_MV_4.2	94	CONUNIT	Muttylewer 4.2		
Extender & Devices	~	13		10155419	CON_MV_4.3	95	CONUNIT	Bull/Newer 4.3		
EXT Units		14		10182231	CON_MV_4.4	96	CONUNIT	NUTSViewer 4.4		
CPU Devices		15		20201214	IP-CPU_05_92_DH	104	CPU UNIT	IP-CPUV2		
CON Devices		16		40076690	CPU_VGA_01	137	CPU UNIT	CPU_11FHD (VGA)		
User Settings	A	17		40075855		145	CPU UNIT	CPU_12 FHD [VGA]		
Users & Groups		18	-	10207709	CON_01	103	CONUNIT	CONCOT		
Assignment	~			102 (80.79	CONCUS	154	CONTONIT	untes		
		D	dander fit	mware version conflict						

FIGURE 7-7.4.1 MANAGEMENT SOFTWARE MENU STATUS & UPDATES - STATUS EXTENDER FIRMWARE - FIRMWARE

COLUMN	DESCRIPTION					
ID	Ident number of the extender					
Name	Name of the extender and the extender firmware					
Port	Number of ports					
Туре	Extender type					
Device	Device to which the extender is assigned					
Version	Installed firmware version					



Firmware types to be updated or firmware conflicts are highlighted in color: Extender firmware version conflict Manual update of EXTMSD / EXTIMSD recommended Wrong module (CPU/CON mismatch) Undefined type

The different modules can be expanded and collapsed by left-clicking on the "plus" and "minus" symbols in the **Name** column. By clicking on the "plus" and "minus" symbol in the upper right corner of the working area, you can expand and collapse all module information with a click of the primary mouse button.

### 7.7.5 EXTENDER FIRMWARE STATUS ON I/O BOARD

The extender firmware status of the I/O boards is displayed in this menu.

- 1. Select **Status & Updates > Status Extender Firmware** in the task area to query the current firmware status of the extenders.
- 2. Select the Extender Firmware Status on I&O Board tab in the working area.



FIGURE 7-7.5.1 MANAGEMENT SOFTWARE MENU STATUS & UPDATES - STATUS MATRIX FIRMWARE - EXTENDER FIRMWARE ON IO BOARD

The following information is displayed in the working area:



COLUMN	DESCRIPTION
Slot	Ident number of the extender
Name	Name of the extender and the extender firmware
Туре	Extender type
Mem Usage / Version	<ul> <li>Free memory on the I/O module (in MB)</li> <li>Firmware version of the I/O module</li> </ul>

The different modules can be expanded and collapsed by left-clicking on the "plus" and "minus" symbols in the **Name** column.

By clicking on the "plus" and "minus" symbol in the upper right corner of the working area, you can expand and collapse all module information with a click of the primary mouse button.

## 7.7.6 SYSLOG MONITORING

The syslog function offers a complete logging of the matrix activities and switching operations in this menu. During logging the activities are written continuously into log files and stored locally.

NOTICE Syslog messages are transmitted via UDP. Therefore, port 514 within the used network should not be blocked, e.g., by a firewall.

The procedure for activating the syslog function is described in chapter 6.4.7, page 165.



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en. Seve Reload Convect D	aconnect Activate Edit Hode Remote	Save Dow	nbad Upbad I	Ventoring Flash Upda	te_ Device Finder_ System	Check., Save 1	Statua			
1210210.zip) Master × Mon	toring X									
onitoring	Monitoring - Syslog									
Syslog SNMP	Filter Find									
	Date		Facility	Severity	Host	Nessage		Filter		
	From 23.02.21 \$ 12.50.2	9 Q	kars A	emergency	•			Clear		
	To 23.02.21 C 12.59.2	9 0	user mail	alert	T Inc Name	D ment		the D		
			daemon	error	- opp manne	Procisi		and the		
			auth •	wan	•					
	Date	Fadility	Seventy	Host	App Name	Proc ID	Mag ID	Message		
	2021-02-23112-59:09.872	localD	NOTICE	TEST-A-E190	NOT	37	CPUI	TanAptAccept): API SOCKET=1444838 HOST=192, 158, 170, 181 c		
	2021-02-23112:59:09.867	localo	WAREN	TEST-A-E190	WAR		CPU1	TanManager): SOCKET=444B38 closing socket		
	2021-02-23112-59:09 213	localO	NOTICE	TEST-A-E190	NOT	-	CPUI	IanApiAccept): API SOCKET+40829C HOST+192, 168, 170, 181 c		
	2021-02-23112:59:09.267	localO	NOTICE	TEST-A/E190	NOT		CPU1	TanApiAccept(): API SOCKET=425A00 HOST=192.168.170.181 0		
	2021-02-23112-59:09 262	localD	WAREN	TEST-A-E150	WAR	-	CPUI	TanManage(): SOCKET+43829C dosing socket		
	2021-02-23112:59:09:257	Incalo	WAREN	TEST-WE190	WAR		CPU1	TanManage(): SUCKET=42BA00 closing socket		
	2021-02-23112:59:05:267	localD	NOTICE	TEST-A-E160	NOT		CPU1	swConnedGridPort(): PORT=159		
	2021-02-23112:59:05:201	local0	INFO	TEST-A-E100	INF		CPU1	swcennedPort() PORT=159		
	2021-02-23112:50:05:249	localD	NOTICE	TEST-A-E160	NOT		CPU1	swHandlemserlExtender(): PORT=159 EXT=10135474.1		
	2021-02-23712:59:04.257	local0	NOTICE	TEST-A-E100	NOT		CPU1	lanApiAccept(): API SOCKET=43829C H0ST=192 168 170 181 c		
	2021-02-23112:50:04:251	100210	NOTICE	TEST-A-E160	NOT	-	CPU1	TanAptAccept(): API SOCKET=428A00 HOST=192.168.170.181 c		
	2021-02-23712:59:04:245	local0	WARN	TEST-A-E100	WAR		CPUI	lanManage(): SOCKET=43829C closing socket		
	2021-02-23112:50:04:241	local0	WARN	TEST-A-E160	WAR		CPU1	TanManage(): SOCKET=42BA00 closing socket		
	2021-02-23T12:59:00 749	local0	NOTICE	TEST-A-E1990	NOT		CPUI	swConnedGridPort(): PORT=160		
	2021-02-23112:59:00.743	localO	INFO	TEST-A-E160	INF		CPU1	swConnedPort(): PORT=160		
	2021-02-23112:59:00.731	local0	NOTICE	TEST-A-E160	NOT		CPU1	swHandleinserlEidender(): PORT=160 EXT=40131242-1		
	2021-02-23112:58:59.240	localO	NOTICE	TEST-A-E160	NOT		CPU1	IanApiAccept(): API SOCKET+43829C HOST+192, 168, 170, 181 c		
	2021-02-23112:58:59:234	localD	NOTICE	TEST-A-E160	NOT		CPUI	TanAptAccept): API SOCKET=428A00 HOST=192.158.170.181 c		
	2021-02-23112:58:59.228	localo	WARN	1E81-A/E160	WAR		CPU1	Tankianagely: SOCKET=43829C dosing socket		
	2021-02-23112:58:59:224	localD	WARN	TEST-A-E160	WAR		CPUI	Tanttanage(): SOCKET+428400 dosing socket		
	2021-02-23T12:58:57.713	local0	NOTICE	TEST-A-E160	NOT		CPU1	swConnedtalidPort): PORT=157		
	2021-02-23112:58:57.708	localD	INFO	TEST-A-E160	INF	-	CPU1	swConnedPol(): PDRT=157		
	2021-02-23712:58:57.692	lo callo	NOTICE	TEST-A-E100	NOT	-	CPU1	swHandleinserlExtender(): PORT=157 EXT=40015300:1		
	9131.09.93119 48 44 341	taram	NUTICE	TERTALEMA	MAR		CPUM	CONTRACTOR FOR MIT CON-3014 EXT-45131039 KUB-1		

FIGURE 7-7.5.2 MANAGEMENT SOFTWARE MENU MONITORING

To open the monitoring, proceed as follows: Click the **Monitoring** menu item in the toolbar. The logged syslog messages are displayed in the working area.

#### Filter function

To filter relevant messages from the multitude of logged activities of the SNMP module, the extenders and the chassis, the syslog monitoring offers various filter options. To set and activate a filter, proceed as follows:

1. Activate the respective checkbox(es) to activate the desired filter option(s).

- 2. Click the **Filter** button to activate the filter settings.
- 3. Click the Clear button to deactivate an activated filter setting.

The following filter options are available:



OPTION	DESCRIPTION
Date	Messages for a defined date range will be filtered
Facility	Messages for a defined facility will be filtered
Severity	Messages for a defined severity will be filtered
Host	Messages for a defined host will be filtered
Message	Messages with defined text parts will be filtered

Filter options are not valid within the locally stored log files.

#### **Recording function**

Various options are available for the messages displayed in the SNMP log. To save the displayed messages (filtered or unfiltered), click the **Save trace** button. The messages are saved in a SNMP file (extension .csv).

To clear the view with the displayed messages, click the **Clear trace** button. The recorded messages will be kept.

To pause the display of messages, click the **Pause** button. During the pause, the messages will be recorded continuously.

To display the messages recorded in the background during the pause, click the **Pause** button again. All messages recorded in the background will be displayed immediately.




#### Search function

The search function can be used to search for specific Syslog messages from a variety of logged activities and relevant messages from the SNMP module, extenders, and chassis.

pring ~	Monitoring - Syslog							
System SyMMP	Filter Find							
	Find Message: API							Find Nes
	Date	Fadility	Sevently	Host	App Name	Proc ID	Mag ID	Hestage
	2021-02-23712-59-09-983	lacal0	WARN	TEST-A-E160	WAR		CPUH	Innikanane/V SOCIET:4513D4 dinsian sarket
	2021-02-23712-59:09.877	local0	NOTICE	TEST-A-E160	NOT		CPU1	JanApiAccepti: API SOCKET=45DC70 HOST=192 168 170 181
	2021-02-23T12-59-09 872	local0	NOTICE	TEST-A-E100	NOT		CPUI	IanApiAccept0: API SOCKET::444E38 H0ST::192 168 170 181 (
	2021-02-23T12:58:09.867	local0	WARN	TEST-A-E160	WAR		CPU1	lantilanage(): SOCKET=444838 closing socket
	2021-02-23712:59:09:273	local0	NOTICE	TEST-A-E160	NOT	-	CPUI	IanApiAccept(): API SOCKET=43829C H0ST=192 168 170 181
	2021-02-23T12:50:09.267	local0	NOTICE	TEST-A-E160	NOT		CPU1	IanApiAccept(): API SOCKET=42BA00 HOST=192.168.170.181
	2021-02-23712-59-09-262	localD	WARN	TEST-A-E150	WAR	-	CPUI	IanManage(): SOCKET=43829C closing socket
	2021-02-23T12:50:09.257	local0	WARN	TEST-A-E160	WAR		CPU1	IanManage(): SOCKET=42BA00 closing socket
	2021-02-23112:59:05:267	local0	NOTICE	TEST-A-E160	NOT		CPUI	swConnedGridPort(): PORT=159
	2021-02-23T12:59:05:261	local0	INFO	TEST-A-E100	INF		CPU1	swCennedPort(): PORT=159
	2021-02-23712:59:05:249	local0	NOTICE	TEST-A-E160	NOT		CPU1	awHandleinaerExtender(): PORT=159 EXT=10135474.1
	2021-02-23T12:58:04:257	local0	NOTICE	TEST-A-E100	NOT		CPU1	lanApiAccept): API SOCKET=43829C H0ST=192,156,170,181
	2021-02-23712:59:04:251	local0	NOTICE	TEST-A-E160	NOT	-	CPU1	IanApiAccept(): API SOCKET=428A00 HOST=192.168.170.181
	2021-02-23712:59:04:245	local0	WARN	TEST-A-E160	WAR		CPU1	IanManage(): SOCKET=43829C closing socket
	2021-02-23712:50:04:241	local0	WARN	TEST-A-E160	WAR		CPU1	IanManage(): SOCKET-428A00 closing socket
	2021-02-23712:59:00.749	local0	NOTICE	TEST-A-E100	NOT	-	CPU1	swConnedGridPort(): PORT=160
	2021-02-23T12:59:00.743	local0	INFO	TEST-A-E160	INF		CPU1	swConnedPort(): PORT=160
	2021-02-23712:59:00.731	local0	NOTICE	TEST-A-E160	NOT	-	CPUI	swHandleinserExtender(): PORT=160 EXT=40131242-1
	2021-02-23T12:58:59.240	local0	NOTICE	TEST-A-E160	NOT		CPU1	lanApiAccept(): API SOCKET=43829C HOST=192 168 170 181
	2021-02-23712:58:59.234	local0	NOTICE	TEST-A-E190	NOT	-	CPUI	lanApiAccept(): API SOCKET=426A00 HOST=192.158.170.191
	2021-02-23T12:58:59.228	local0	WARN	TEST-A-E160	WAR		CPU1	lanManage(): SOCKET=43829C closing socket
	2021-02-23712:58:59 224	local0	WARN	TEST-A-E150	WAR	-	CPUI	IanManage(): SOCKET=428A00 closing socket
			and the second second					

FIGURE 7-7.5.3 MANAGEMENT SOFTWARE MENU MONITORING - SYSLOG - EXAMPLE FOR SEARCH RESULT

To find specific syslog messages, proceed as follows:

- 1. Click the monitoring menu item in the toolbar.
- 2. Click the Find tab in the working area.

The recorded SNMP messages are displayed in the working area.

- 3. Enter a search term in the Find Message search field.
- 4. Click the **Find Next** button.

The first message with the entered search term is highlighted.

5. Click the **Find Next** button again to find another message with this search term. The next message with the entered search term is highlighted.

Possible search terms would be, e.g., the port ID (e.g., MOD=10), the firmware (e.g., EXTCON), link status (e.g., link).

To go back to the previous search result, click the **Find Previous** button.

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#### **Filter function**

To filter relevant messages from the multitude of logged activities of the SNMP module, the extenders and the chassis, the SNMP monitoring offers various filter options.

To set and activate a filter, proceed as follows:

- 1. Activate the respective checkbox(es) to activate the desired filter option(s).
- 2. Click the Filter button to activate the filter settings.
- 3. Click the Clear button to deactivate an activated filter setting.

The following filter options are available:

OPTION	DESCRIPTION	
Date	Messages for a defined date range will be filtered	
Facility	Messages for a defined facility will be filtered	
Severity	Messages for a defined severity will be filtered	
Host	Messages for a defined host will be filtered	
Message Messages with defined text parts will be filtered		

\*Filter options are not valid within the locally stored log files.

#### **Recording function**

Various options are available for the messages displayed in the SNMP log. To save the displayed messages (filtered or unfiltered), click the **Save trace** button. The messages are saved in a SNMP file (extension .csv).

To clear the view with the displayed messages, click the **Clear trace** button. The recorded messages will be kept.

To pause the display of messages, click the **Pause** button. During the pause, the messages will be recorded continuously.

To display the messages recorded in the background during the pause, click the **Pause** button again. All messages recorded in the background will be displayed immediately.



#### 7.7.7 SNMP MONITORING

The SNMP function allows all function-critical and safety-critical elements of the SNMP module, the extenders, and the chassis to be monitored and gueried. This function complies with the RFC 1157 conformal standard.

The procedure for activating the SNMP agent or configuring an SNMP server is described in chapter 6.4.7, page 143.

							-	o x	
Elle Edit Device Egtras 2					-				
		C <b>T</b> T							
gen. Save Reload Connect Der	connect Activate Edit Hode Remote	Seve Download Upload.	Monitoring Plash Up	odale Device Finder System Check S	Garve Statum				
20210210.zip Master × Vonito	ning ×								
Monitoring ^	Monitoring - SNMP								
Syslog	Filter Find								
SNMP	Date	Severity	Host	Type of Trap Nessage				Filter	
	From 23.02.21 🗘 12.50.	zo 🗘 📃 krło		Temperature				lasr	
	To 23.02.21 🗘 12.50:	29 C Error							
	Date	Uptime	Host	Type of Trap	Message		Star	Version	
	2021-02-23T12:58:25:676	23428.64	192.168.170.57	Status and speed of fan tray #1	Status: OK; Speed: 4 (Min: 0, Mar 15)		1	1	
	2021-02-23T12:58:25.027	2:34:29.03	192.168.170.59	authenticationFailure			1		
	2021-02-23T12:58:23.425	2342639	192.168.170.57	authenticationFailure			1		
	2021-02-23712:58:21:500	2:34:24.71	192.168.170.104	Status and speed of tan tray #2	Status: OK; Speed: 4 (Min: 0, Max 15)		1		
	2021-02-23T12:58:21.484	2:34:24.71	192.168.170.104	Status and speed of fan tray #1	Status: OK; Speed: 4 (Min: 0, Mar 15)		1		
	2021-02-23T12:58:20.999	2.34:25.01	192.168.170.59	authenticationFailure			1		
	2021-02-23T12:58:19.396	2:34:22:37	192.168.170.57	authenticationFailure			1		
	2021-02-23112:58:16.976	2:34:20.99	192 168 170 59	authenticationFailure			1		
	2021-02-23T12:58:15:374	2:34:18.35	192.168.170.57	authenticationFailure			1		
	2021-02-23112:58:14.755	3.04:16.97	192 168 170 114	Last slot inserted	Slot 9; Extender: 40131237		з		
	2021-02-23T12:58:14.670	3:04:16.89	192.168.170.114	Last slot inserted	Slot 8; Extender: 40131238		3		
	2021-02-23112:58:14:585	3.04:15.01	192.168.170.114	Last slot inserted	Slot 6; Extender: 40131239		з		
	2021-02-23T12:58:14.507	3:04:16.73	192.168.170.114	Last slot inserted	Slot. 5; Extender: 40131246		3		
	2021-02-23T12:58:13.768	2.34:16.73	192.168.170.57	Temperature of the matrix	Temperature: 65°C		1		
	2021-02-23T12:58:13.418	3:04:15.64	192.168.170.114	Last slot inserted	Slot: 15; Extender: 40131243		3		
	2021-02-23T12:58:13.333	3:04:15:56	192.168.170.114	Last slot inserted	Stat 12, Extender: 40131241		3		
	2021-02-23T12:58:13.248	3:04:15.48	192.168.170.114	Last slot inserted	Slot 11; Extender: 40131240		3		
	2021-02-23T12:58:12.978	2.34:16.99	192.168.170.59	authenticationFailure			1		
	2021-02-23T12:58:11.339	2:34:14.57	192,168,170,104	Temperature of the matrix	Temperature: 65°C		1		
	2021-02-23T12:58:11.339	2:34:14.31	192.168.170.57	authenticationFailure			1		
	2021-02-23712:58:08.931	2:34:12.95	192.168.170.59	authenticationFailure			1		
	2021-02-23T12:58:07.313	2:34:10:29	192.168.170.57	authenticationFailure			1		
	2021-02-23712:58:04.893	234:08.91	192 168 170 59	authenticationFailure			1		
	2021-02-23T12:58:03.290	2:34:06.27	192.168.170.57	authenticationFailure			1		
	2021-02-23112:58:03:090	3.04:04.31	192.168.170.114	Last slot removed	Slot 9; Extender: 40131237		3		,
			100 100 100 111		ALL & P. 1. (114)444	Gaug trace	artere	Dause	
									ĺ

FIGURE 7-7.7.1 MANAGEMENT SOFTWARE MENU MONITORING SNMP

To open the SNMP monitoring, proceed as follows:

- 1. Click the Monitoring menu item in the toolbar.
- 2. Click the SNMP button in the task area.

The logged SNMP messages are displayed in the working area.



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#### **Filter function**

To filter relevant messages from the multitude of logged activities of the SNMP module, the extenders and the chassis, the SNMP monitoring offers various filter options.

To set and activate a filter, proceed as follows:

- 1. Activate the respective checkbox(es) to activate the desired filter option(s).
- 2. Click the **Filter** button to activate the filter settings.
- 3. Click the Clear button to deactivate an activated filter setting.

The following filter options are available:

OPTION	DESCRIPTION	
Date	Messages for a defined date range will be filtered	
Facility	Messages for a defined facility will be filtered	
Severity Messages for a defined severity will be filtered		
Host Messages for a defined host will be filtered		
Message	Messages with defined text parts will be filtered	

\*Filter options are not valid within the locally stored log files.

#### **Recording function**

Various options are available for the messages displayed in the SNMP log. To save the displayed messages (filtered or unfiltered), click the **Save trace** button. The messages are saved in a SNMP file (extension .csv).

To clear the view with the displayed messages, click the **Clear trace** button. The recorded messages will be kept.

To pause the display of messages, click the **Pause** button. During the pause, the messages will be recorded continuously.

To display the messages recorded in the background during the pause, click the **Pause** button again. All messages recorded in the background will be displayed immediately.



#### Search function

The search function can be used to search for specific SNMP messages from a variety of logged activities and relevant messages from the SNMP module, extenders, and chassis.

sen Save Reload Conve	et gleconnect Activate Edit Hode Remot	a Save Download Up	Read. Monitoring Planh Up	date Device Finder System Check S	ave Status		
0210210.zip Master ×	Monitoring X						
ionitoring	Monitoring - SNMP						
lyslog	Filter Find						
MP	Find Messager Temperature						Find Next
	raid message. Temperatur					D	nd Previou
	Date	Uptime	Host	Type of Trap	Message	57.0	IP-Versio
	2021-02-23712:58:25.027	234:29.03	192.168.170.59	authenticationFailure		1	
	2021-02-23712:58:23.425	2:34:26.39	192.168.170.57	authenticationFailure		1	
	2021-02-23712:58:21.500	2342471	192 168 170 104	Status and speed of tan tray #2	Status: OK: Speed: 4 (Min: 0, Max 15)	1	
	2021-02-23T12:58:21.484	2:34:24.71	192.168.170.104	Status and speed of fan tray #1	Status: OK; Speed: 4 (Min: 0, Max 15)	1	
	2021-02-23712-58-20.999	234:25.01	192.168.170.59	authenticationFailure		1.	
	2021-02-23T12:58:19.396	2:34:22:37	192.168.170.57	authenticationFailure		1	
	2021-02-23712-58-16-976	2.34:20.99	192.168.170.59	authentication#ailure		1	
	2021-02-23T12:58:15:374	2.34:18.35	192.168.170.57	authenticationFailure		1	
	2021-02-23712:58:14.755	3.04:16.97	192.168.170.114	Last slot inserted	Slot 9; Extender: 40131237	3	
	2021-02-23712:58:14.670	3:04:16.89	192.168.170.114	Last slot inserted	Slot 8; Extender: 40131238	3	
	2021-02-23712:58:14:586	3:04:16.81	192.168.170.114	Last slot inserted	Slot 6; Extender: 40131239	3	
	2021-02-23712:58:14:507	3:04:16.73	192.168.170.114	Last slot inserted	Slot 5; Extender: 40131246	3	
	2021-02-23712:58:13.768	2:34:16.73	192.168.170.57	Temperature of the matrix	Temperature: 65°C		
	2021-02-23T12:58:13.418	3:04:15.64	192.158.170.114	Last slot inserted	Slot 15; Extender: 40131243	3	
	2021-02-23712:58:13.333	3:04:15.56	192.168.170.114	Last slot inserted	Slot 12; Extender: 40131241	3	
	2021-02-23712:58:13.248	3:04:15.48	192,168,170,114	Last slot inserted	Slot 11; Extender: 40131240	3	
	2021-02-23T12:58:12.978	2:34:16.99	192.168.170.59	authenticationFailure		1	
	2021-02-23712:58:11.339	2:34:14.57	192.158.170.104	Temperature of the matrix	Temperature: 65°C	1	
	2021-02-23T12:58:11.339	2:34:14.31	192.168.170.57	authenticationFailure		1	
	2021-02-23712:50:08.931	2.34:12.95	192.168.170.59	authenticationFailure		1	
	2021-02-23T12:58:07.313	2:34:10.29	192.168.170.57	authenticationFailure		1	
	2021-02-23712-58-04.893	2.34:08.91	192.168.170.59	authenticationFailure		1	
	2021-02-23T12:58:03.290	2.34:06.27	192.168.170.57	authenticationFailure		1	
	2021-02-23T12:58:03:090	3:04:04.31	192.168.170.114	Last slot removed	Slot 9; Extender: 40131237	3	
	2021-02-23T12-58-03-074	3040431	192,168,170,114	Last slot removed	Slot 8: Extender: 40131238	3	

#### FIGURE 7-7.7.2 MANAGEMENT SOFTWARE MENU MONITORING SNMP EXAMPLE FOR SEARCH RESULT

To find specific syslog messages, proceed as follows:

- 1. Click the monitoring menu item in the toolbar.
- 2. Click the Find tab in the working area.
  - The recorded SNMP messages are displayed in the working area.
- 3. Enter a search term in the Find Message search field.
- 4. Click the **Find Next** button.

The first message with the entered search term is highlighted.

5. Click the **Find Next** button again to find another message with this search term. The next message with the entered search term is highlighted.

\*Possible search terms would be, e.g., temperature, fan, or the serial number of an extender (e.g., 40131237). To go back to the previous search result, click the **Find Previous** button.





#### 7.7.8 REDUNDANCY FUNCTION

KVM extenders with redundant connectors for interconnect cables can be simultaneously operated with both connectors at a single Matrix or a Matrix Grid (from firmware version V04.00).

The connector labeled with **Link 1** at the KVM extender is meant for the primary connection. If the connection on CON or CPU Unit side is interrupted due to any problem, the connection will be automatically re-established through the second connector labeled with **Link 2**.

For this kind of redundancy function, there is no need for any configuration of the KVM matrix or the KVM extenders.

		- 🗆 ×
Elle Edit Device Estras 2		
📁 🗎 💭 💷	💶 🐨 🐺 🐺 🐺 🔤 🧂 🦉	
Open. Save Reload Conve	ct gleconnect Activate Edit Node Remain Save Download. Upland. Nontering Planh Update Device Pinder System Check Save Status.	
20210210.zp Master ×		
View	🗠 🍨 View - Matrix	
Matrix Port Grid Super Grid Control		Matrix Status     Temperature Ok     PSU 1 On     PSU 2 On     PSU 3 Not Available     PSU 4 Not Available     PSU 4 Not Available
Control	n	Fan 2 Ok
Extended Switch Presets		
Status & Updates	~	
Status - Matrix Firmware Status - Eitender Firmware Update - Matrix Firmware Update - Extender Firmware Activate Configuration Misicellamecus	CAT10.71 CAT30.5 CAT10.71 81 03 05 87 09 11 13 15 17 19 21 23 2 8 9 25 27 29 31 23 25 37 29	Options Automatic Related Show Part Hunders  Onl Parts
System Settings		> Show Muti-Screen Control
System Access Switch Network Date and Time Matrix Orid	B2     04     06     B8     10     12     14     16     18     20     22     24     26     28     30     32     34     36     38     40	Routing Information           Item Show Redundent Links (1.14.2)           Show Video           Show Video
Extender & Devices	~	Grid Line Invalid Port
EXT Units CPU Devices CON Devices		Kic Access Pixed Port
lines Ballines		Multi-Screen Control 🛛 👻
case serings		Redundancy
Users & Groups		Link 1 En Link 2
Assignment	A	- Adive Link
Virtual CPU Devices Virtual CON Devices	• Default	Clear Selection

FIGURE 7-7.8.1 MANAGEMENT SOFTWARE VIEW - MATRIX

To check the connection status of the redundant KVM extenders, proceed as follows:

- 1. Select **View > Matrix** in the task area.
- Activate the checkbox Show Redundant Links (L1/L2) under Routing Information on the right side of the working area.
- Open the menu **Redundancy** on the right side of the working area to receive the respective legend information.
- 4. Redundant connectors are highlighted in the matrix view with L1 and L2. The respectively active link is highlighted with a light green label.



#### 7.7.9 SYSTEM CHECK

Users have access to a diagnostic function through system check for checking the device configuration. The feature indicates non-optimal as well as incorrect settings and displays issues instructions. The system check is only used to check plausibility and does not make any active configuration changes.

The following configuration parts are checked:

- Matrix Firmware
- Extender Firmware
- Multi-Screen Control
- Ext Units
- CPU Devices
- CON Devices
- Users
- Macros
- System Configuration
- Matrix Grid

The following notification levels can be shown:

LEVEL	DESCRIPTION
OK (green)	System checks completed without any abnormalities.
WARNING (yellow)	System checks revealed abnormalities in the configuration that point to incomplete parts of the configuration, firmware differences, duplications, or unconnected extenders, but without being system critical.
ERROR (red)	System checks revealed errors in the configuration that can have both functional and system critical influences on the system.

#### NOTICE

If the messages "WARNING" or "ERROR" are generated by the system check function, the respective problem will be described, and an issue instruction will be provided.

#### NOTICE

The system check of the matrix may take several minutes, and the matrix is not available during this time.





To start the system check, proceed as follows:

- 1. Click the menu item **System Check** in the tool bar.
- A query appears to check the system.
- 2. Click the **Yes** button to start the system check.



FIGURE 7-7.9.1 MANAGEMENT SOFTWARE DIALOG - VALIDATE SYSTEM

A report is displayed after the system check.

System Check - TEST-F	-F024C016F		×
System Check			
The System Check helps your personal check of the	to disclose p e configuratio	ossible sources of error within the configuration. Test results are listed as recommendations in order to suppo n.	rt
Matrix Firmware	Warning	Matrix OSD firmware version conflict	
		⇒ Check matrix OSD firmware in Status - Matrix Firmware.	
Extender Firmware	Warning	Extender firmware version conflict	
		⇒ Check extender firmware in Status - Extender Firmware.	
Extender Firmware	Warning	Extender (ID = 10195808, Name = CON_10, Port = 66) includes an old FPGA firmware which does not support	rt
		the ENAREDFRM parameter	
		- Check extender firmware in Status - Extender Firmware.	
Extender Firmware	Warning	Extender (ID = <u>40000927</u> , Name = CON_11, Port = 67) includes an old FPGA firmware which does not support the ENAREDFRM parameter	n
		⇒ Check extender firmware in Status - Extender Firmware.	
Macros	Info	442 / 8192 active macros	
System Configuration	Warning	Invalid I/O Boards is activated	
-,		→ Must be OFF during operation, enable during matrix updates only	
Multi-Screen Control	Ok		
Ports	Ok		
		Qlose	

#### FIGURE 7-7.9.2 MANAGEMENT SOFTWARE REPORT SYSTEM CHECK

#### 7.7.10 NETWORK CHECK

The network check checks the firewall settings for the ports available in the network.

Available ports are shown in green. If a port is not available, the corresponding entry appears in red and instructions are displayed.

To start the network check, proceed as follows:

1. Select Extras > Network Check in the menu bar.

A query appears with an input field for the IP address of the SNMP module to be queried.

2. Enter the IP address of the SNMP module.

3. Click the Start network check button to start the network check.

The availability of the ports is shown after a short moment.

Network Check		×
Hostname / IP Address	192.168.100.99	
	Start network check	
2021-02-25T10:13:24.744 2021-02-25T10:13:38.865	API port (5555/5565) - available Syslog port (514) - available	
		Save Log Messages <u>C</u> lose

FIGURE 7-7.10.1 MANAGEMENT SOFTWARE REPORT NETWORK CHECK - AVAILABLE PORTS





#### 7.8 SAVING A STATUS VIA MANAGEMENT SOFTWARE

- Click the Save Status menu item in the toolbar to read out the overall status of the device and store it locally (file extension .zip).
   A dialog appears.
- 2. Choose the status option.
- 3. Click the **Next** button.

	Save Status		×
Ste	ps	Saving Option	_
1. 2. 3. 4. 5.	Saving Option Choose Directory Anonymization Save EXT Units Settings Save Status	<ul> <li>Save Status of all matrices in the grid</li> <li>Save current matrix status</li> </ul>	
		< <u>B</u> ack Next> Einish Canc	el

FIGURE 7-8.1.1 MANAGEMENT SOFTWARE MENU SAVE STATUS - SAVING OPTIONS

4. Navigate to the directory you want to save the status file.

5. Click the **Next** button.

6. Click the **Anonymize** checkbox to anonymize your personal data when saving the status file if necessary (not recommended for trouble shooting).

If you want to use the status file as a backup, do not click the **Anonymize** checkbox.

7. Click the **Next** button.



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Save Status		×
Steps	Anonymization	
1. Saving Option 2. Choose Directory 3. Anonymization	The option anonymizes your personal data in the (Ext Units, CPU Devices, CON Devices, User)	e configuration.
<ol> <li>Save EXT Units Settings</li> <li>Save Status</li> </ol>	Anonymize	
	An anonymized confguration must not	t be used as backup!
		<back next=""> Einish Cancel</back>

FIGURE 7-8.1.2 MANAGEMENT SOFTWARE MENU SAVE STATUS - ANONYMIZATION

- 8. Click the Save **EXT Units Settings** checkbox to save your extender settings.
- 9. Click the **Next** button.

Save Status	×
Steps	Save EXT Units Settings
1. Saving Option 2. Choose Directory	The option stores the EDID, USB-HID Ghosting and config parameters for all connected EXT Units.
3. Anonymization 4. Save EXT Units Settings 5. Save Status	Save EXT Units Settings
S. Care Galas	Do not execute during operation as each EXT Unit will go into service mode for several seconds.
	< <u>B</u> ack Next> Einish Cancel

FIGURE 7-8.1.3 MANAGEMENT SOFTWARE MENU SAVE STATUS - SAVE EXT UNIT SETTINGS





10. Wait until all steps show green checkmarks and the "**Saving status successful**" message is displayed.

11. Click the **Finish** button to finish the saving.

Save Status				×
Steps	Save Status			
<ol> <li>Saving Option</li> <li>Choose Directory</li> <li>Anonymization</li> <li>Save EXT Units Settings</li> <li>Save Status</li> </ol>	Step 1: Step 2: Step 3: Step 4: Step 5: Step 6:	Receiving system information Saving firmware Saving port status Saving extender settings Saving miscellaneous files Saving configuration	*****	
		< Back	Next >	Finish Cancel
		< <u>B</u> ack	Next >	Einish Cancel

FIGURE 7-8.1.4 MANAGEMENT SOFTWARE MENU SAVE STATUS - SAVE STATUS

#### 7.9 OPENING A LOCALLY SAVED STATUS VIA MANAGEMENT SOFTWARE

To load a locally saved status, proceed as follows:

- 1. Select **Device > Load Status**... in the menu bar.
- 2. Navigate to the storage location of the status file to be opened.
- 3. Click the status file to be opened.
- 4. Click the **Open** button to open the status file.



C:\_Matrix\!	Status Files		×
Look <u>I</u> n:	Status Files	<ul><li>✓ <ul><li></li></ul></li></ul>	
20210224	113534.zip		
File <u>N</u> ame:	20210224113534.zip		
Files of <u>T</u> ype:	(*.zip)		~
			Open Cancel

FIGURE 7-9.1.1 MANAGEMENT SOFTWARE MENU DEVICE - LOAD STATUS

The status can also be opened via drag & drop. To do so, open the file browser, navigate to the storage location of the status file, click on the status file, hold down the primary mouse button and drag and drop the status file into the management software.

#### 7.10 RESTARTING, RESETTING, AND POWERING DOWN FUNCTIONS VIA OSD

#### 7.10.1 RESTARTING THE MATRIX

To perform a restart of the matrix, proceed as follows:

Select **Configuration > Restart Matrix** in the main menu.

The current configuration is saved in the permanent memory of the matrix and matrix will be restarted

with the current configuration..

Configuration	ESC
Restart Matrix	
Restart watrix with current configuration ?	
	Cancel Okay

#### FIGURE 7-10.1.1 OSD MENU CONFIGURATION - RESTART MATRIX

BLACKBOX.COM

301



#### 7.10.2 RESTARTING THE I/O BOARD

To perform a restart of the I/O board, the user's console is connected, proceed as follows:

Select **Configuration > Restart IO** Board in the main menu.

The I/O board will be restarted.

Configuration			ESC
Restart IO Board			
	Restart your IO board ?		
		Cancel	0kay
			_

FIGURE 7-10.2.1 OSD MENU CONFIGURATION - RESTART I/O BOARD

\*To restart I/O boards with CPU extenders, use the restart option of the management software (see chapter 7.10.3, page 295)

#### 7.10.3 RESTARTING THE CPU BOARD

To perform a restart of the CPU board, proceed as follows:

Select **Configuration > Restart CPU Board** in the main menu.

The current configuration of the CPU board is saved in the permanent memory of the matrix and the CPU boards will be restarted with the current configuration.



#### 7.10.4 RESTARTING THE MATRIX

To perform a restart of the CPU board, proceed as follows:

Select **Configuration > Restart CPU Board** in the main menu.

The current configuration of the CPU board is saved in the permanent memory of the matrix and the

CPU boards will be restarted with the current configuration.

onfiguration		l
Restart CPU Board		
	Restart your CPU board ?	
		Cancel Okay

FIGURE 7-10.4.1 OSD MENU CONFIGURATION -RESTARTING CPU BOARD

## 7.10.5 RESETTING THE MATRIX TO THE FACTORY SETTINGS

NOTICE If you perform a (factory) reset, all current settings and all configurations stored in the matrix will be lost. This also applies to the network parameters (reset to default IP-address) and the admin password.

If a firmware update has been installed since the delivery, the matrix will be set to the state defined there

#### 7.10.6 POWERING DOWN THE MATRIX

To shut down the system, proceed as follows:

- 1. Select Configuration > Shut down Matrix in the main menu.
- 2. Click the **Okay** button to confirm the selection.

The current configuration of the matrix is saved in the permanent memory of the matrix and the matrix will be shut down.

\*The fans will be switched to maximum speed after the shutdown. Then the matrix can be disconnected from the power supply.





#### FIGURE 7-10.6.1 OSD MENU FACTORY RESET

## 7.10.7 POWERING DOWN THE I/O BOARD

To shut down the I/O board, proceed as follows:

1. Select **Configuration > Shut down IO Board** in the main menu.

2. Click the Okay button to confirm the selection.

The current configuration of the I/O boards is saved in the permanent memory of the matrix and the I/O board will be shut down.



FIGURE 7-10.7.1 OSD MENU CONFIGURATION - SHUT DOWN MATRIX



# 7.11 RESTARTING, RESETTING, AND POWERING DOWN FUNCTIONS VIA MANAGEMENT SOFTWARE

## 7.11.1 RESTARTING THE MATRIX

NOTICE When restarting the matrix, the current configuration is saved in the permanent memory of the matrix and the matrix will be restarted with the active configuration.

To perform a restart of the matrix, proceed as follows:

- 1. Select Device > Advanced Service > Restart Device in the menu bar.
- An access window appears.
- 2. Enter the username and password of the administrator.
- 3. Click the **Ok** button.

Authentication required	×
User	admin
Password	****
	Ok Cancel

FIGURE 7-11.1.1 MANAGEMENT SOFTWARE DIALOG LOG IN ADMINISTRATOR

A query to restart the matrix appears.

4. Click the **Yes** button to restart the matrix.



FIGURE 7-11.1.2 MANAGEMENT SOFTWARE DIALOG RESTART MATRIX

The current configuration is saved in the permanent memory of the matrix and the matrix will be restarted.





#### 7.11.2 RESTARTING THE CPU BOARD

To perform a restart of the CPU board, proceed as follows:

- 1. Select **View > Matrix** in the task area.
- 2. Click with the secondary mouse button on the symbol of a network port of the CPU board to be restarted.

A context menu appears.

3. Select the Restart CPU Board function in the context menu.

**Note:** The CPU board will be restarted immediately without user confirmation. The symbols of the network ports are red for a short time in the overview. When the symbols of the network ports are green again, the restart of the CPU board was successful.

	- 0 ×
Eine Eant Devote Egna 2 Terre Eine Statut Construction C	
20210210.zp) Master X	
View - Matrix	
Matrix Port Grid Control	CR0           Host Name         182,168,178,137           Subset Mask         295,295,26,8           Gataviay         182,168,179,3           MAC Address         06,21,37,94,03,90
Control ^	
Extended Switch  Presets	
Status & Updanes	
Status - Martin Finnware Status - Extended Finnware Update - Extended Finnware Update - Extended Finnware Advisit Configuration	
System Settings	
Byslem         41         03         05         07         09         11         13         15         17         19         21         23         25         27         29         31         33         35         37         39           Access         Switch         Set and Time         Set 04         06         08         10         12         14         16         18         20         22         24         28         20         32         34         36         37         39         35         37         39         35         37         39         36         37         39         35         37         39         35         37         39         35         37         39         35         37         39         31         35         37         39         31         35         37         39         31         35         37         39         35         37         39         31         35         37         39         31         35         37         39         31         31         35         37         39         31         31         35         37         39         31         31         31 <t< th=""><th>Options     Adomatic Relaxed     Show Part Numbers     World Purs     Local Parts</th></t<>	Options     Adomatic Relaxed     Show Part Numbers     World Purs     Local Parts
Extender & Devices ^	Show Muth-Screen Control
EKT Units CPU Devices CON Devices	show Redundant Links (L1/L2)     Show Video     for Video Vid
User Settings ^	10 Part Color Coding ^
Usera & Groupa	Full Access Video Access
Assignment	Grid Line Invalid Port
Virtual CPU Devices Virtual CDN Devices Multi-Screen Control	10 Port Symbols V Matti Screen Control V Reductancy V Clear Selection

FIGURE 7-11.2.1 MANAGEMENT SOFTWARE VIEW - MATRIX - RESTART I/O BOARD



#### 7.11.3 RESTARTING AN I/O BOARD

To perform a restart of the I/O board, proceed as follows:

- 1. Select View > Matrix in the task area.
- 2. Click with the secondary mouse button on the symbol of the extender of the I/O board to be restarted. A context menu appears.
- 3. Select the Restart I/O Board function in the context menu.

**Note:** The I/O board will be restarted immediately without user confirmation. The I/O board will disappear for a short time in the overview. When the I/O board is visible again, the restart of the I/O board was successful.



FIGURE 7-11.3.1 MANAGEMENT SOFTWARE VIEW - MATRIX - RESTART I/O BOARD





#### 7.11.4 RESTARTING AN EXTENDER MODULE

To perform a restart of an extender module, proceed as follows:

- 1. Select **View > Matrix** in the task area.
- 2. Click with the secondary mouse button on the symbol of the extender to be restarted.

A context menu appears.

3. Select the **Restart Extender** function in the context menu.

**Note:** The extender module will be restarted immediately without user confirmation. The extender symbol will disappear for a short time in the overview. When the symbol is visible again, the restart of the extender module was successful.

	- 0 ×
Elle Edit Device Estras 2	
20210210.ip/Master X	
View Altrix	
Matix Port Grid Control	D Part     Extender Name     OCH_UI7     Extender Type     OCH     Part     Part     Strington     Strington     Strington     Strington     Device
Extended Switch Presets	Device 0 (807 Device Name (CON_E7 Extender 1 CON_E7 (201.0) ☐ Connections
Status & Updates 🗠	Madilief (10.07) Full Access
Status - Lafatis Firmware Status - Extender Firmware Update - Matrix Firmware Update - Saterder Firmware Activate Configuration Miscelianeus	
System Settings A cost and cos	
Bystem         01         03         05         07         09         11         13         15         17         19         21         23         25         27         29         13         35           Access         Image: Control of the standard s	20 40 20 50 20 50 20 20 50 20 20 20 20 20 20 20 20 20 2
Extender & Devices	Show Muth-Screen Control
EXT Units CPU Devices CON Devices	Bouting Information Show Redundent Links (L1/L2) Show Video Show Video Information
User Settings	10 Part Colar Coding 🔨
Users & Groups	Fail Access Video Access
Assignment	Grid Line Invalid Port No Access Prival Port
Virtual CPU Devices Virtual CDNDevices Multi-Boreen Control	Is) Part Symbols V Mart Screen Control V Redandancy V Crear Selection
0	data di

FIGURE 7-11.4.1 MANAGEMENT SOFTWARE VIEW - MATRIX - RESTART EXTENDER



When restarting the matrix, the current configuration is saved in the permanent memory of the matrix and the matrix will be restarted with the active configuration.

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To shut down the matrix, proceed as follows:

1. Select Device > Advanced Service > Shut down Matrix in the menu bar.

An access window appears.

- 2. Enter the username and password of the administrator.
- 3. Click the **Ok** button.

Authentication required	×
User	admin
Password	****
	<u>Qk</u> C <u>a</u> ncel

FIGURE 7-11.5.1 MANAGEMENT SOFTWARE DIALOG LOG IN ADMINISTRATOR

A query to shut down the matrix appears.

4. Click the Yes button to start the shutdown



FIGURE 7-11.5.2 MANAGEMENT SOFTWARE DIALOG LOG SHUT DOWN MATRIX







The current configuration is saved in the permanent memory of the matrix and the matrix will be shut down.

After shutting down, a notification to power off the matrix appears.



FIGURE 7-11.5.3 MANAGEMENT SOFTWARE DIALOG LOG SWITCH OFF MATRIX

#### 7.11.6 RESETTING THE MATRIX TO THE FACTORY SETTINGS



\*If a firmware update has been installed since the delivery, the matrix will be set to the state defined there.

To perform a reset of the matrix, proceed as follows:

- 1. Select Device > Advanced Service > Factory Reset > Factory Reset in the menu bar.
- An access window appears.
- 2. Enter the username and password of the administrator.
- 3. Click the Ok button to confirm your entries.



FIGURE 7-11.6.1 MANAGEMENT SOFTWARE DIALOG LOG IN ADMINSTRATOR



A query to reset the matrix appears.

4. Click the **Yes** button to reset the device.



FIGURE 7-11.6.2 MANAGEMENT SOFTWARE DIALOG FACTORY RESET

The matrix is reset to factory settings.





## 7.11.7 RESETTING AN I/O BOARD TO THE FACTORY SETTINGS

NOTICE

If you perform a (factory) reset, all current settings and all configurations of the I/O board will be lost.

If a firmware update has been installed since the delivery, the I/O boards will be set to the state defined there.

To perform a reset of an I/O board, proceed as follows:

- 1. Select View > Matrix in the task area.
- 2. Click with the secondary mouse button on the symbol of an extender of the I/O board to be reset.
- A context menu appears.

3. Select the Factory Reset I/O Board function in the context menu.

**Note:** The I/O board will be restarted immediately without user confirmation. The I/O board will disappear for a short time in the overview. When the I/O board and the extenders are visible again, the reset of the I/O board was successful.

		- 0 ×
Spen. Save Relead Spring	I gescenned Activate Edit linder Revels Save Downbadt, Epipead, Epipead, Device Pinder, Syntem Check, Save Status.	
20210210.sp  Master X		
View	View - Matrix	
Matrix Port Grid Control		L3 Pert Extender Name CON_E7 Extender Name CON Part Stor (globe) Stor (globe) 46
Control	~	Device D 3007
Extended Switch Presets		Device Name CON_07 Extender 1 CON_07 (381.0) Connections
Status & Updates	~	MacMinif [10.07] Full Access
Status - Matrix Firmware Status - Extender Firmware Update - Matrix Firmware Update - Extender Firmware Activate Configuration Miscellaneous		
System Settings	A (47.15.0) (47.15.0) (47.16.0) (47.16.0)	
System Access Switch Network Date and Time Matrix Grid	01 03 05 07 09 11 13 15 17 19 21 23 Control Control C	Outlines     Automatic Relead     Show Port Numbers     K drid Ports     Local Parts
Extender & Devices	n Restart I/O Board	Show Hutl-Screen Control
EXT Units CPU Devices CON Devices		Routing Information Show Redundent Links (L1/L2) Show Video Show Use-ND
User Settings	*	10 Part Colar Coding A
Usera & Groupa		Full Access Video Access
Assignment	*	Grid Line Invalid Port
Virtual CPU Devices Virtual CON Devices Multi-Screen Control		No Access Pred Port No Port Symbolis   Mats Screes Control  Redusdency  Clear Salection
	Detsut	

FIGURE 7-11.7.1 MANAGEMENT SOFTWARE VIEW - MATRIX - CONTEXT VIEW



#### 7.12 SUMMARY OF KEYBOARD COMMANDS

In the following you find a summary of keyboard commands that can activate extender and matrix functions after executing the Hot Key.

#### Extender

BUTTON	DESCRIPTION
<hot key="">, <a></a></hot>	Download of DDC information for the monitor connected to the CON Unit into the CPU Unit
<hot key="">, <k>, &lt;1&gt;, <enter></enter></k></hot>	Switch to the KVM connection 1 (only with HDMI CON Units with available connection for a local source)
<hot key="">, <k>, &lt;2&gt;, <enter></enter></k></hot>	Switch to the KVM connection 2 (only with HDMI CON Units with available connection for a local source and a redundant interconnection)
<hot key="">, <i>, <enter></enter></i></hot>	Switch to local source (computer, CPU) (only with HDMI CON Units with available connection for a local source)
<hot key="">, <h>, <w>, <enter></enter></w></h></hot>	USB-HID Ghosting: Write device descriptions of the input devices connected to the CON Unit into the CPU Unit. Activate the emulation in the CPU Unit.
<hot key="">, <h>, <e>, <enter></enter></e></h></hot>	Activate the emulation of already stored device descriptions in the CPU Unit
<hot key="">, <h>, <d>, <enter></enter></d></h></hot>	Deactivate the emulation of active device descriptions in the CPU Unit. The input devices connected to the CON Unit will be passed transparently to the source (computer, CPU).
<hot key="">, <h>, <r>, <enter></enter></r></h></hot>	Deactivate the emulation of active device descriptions in the CPU Unit. Delete the descriptions out of the CPU Unit. The input devices connected to the CON Unit will be passed transparently to the source (computer, CPU).
<hot key="">, <d>, &lt;1&gt;, <enter></enter></d></hot>	Switch to video channel 1 of the Dual-Head CPU Unit (482 series only)
<hot key="">, <d>, &lt;2&gt;, <enter></enter></d></hot>	Switch to video channel 2 of the Dual-Head CPU Unit (482 series only)

#### Matrix

BUTTON	DESCRIPTION
<hot key="">, <o></o></hot>	Open OSD
<hot key="">, <s>, <o></o></s></hot>	Open OSD of the sub matrix in a cascaded environment
<hot key="">, <backspace></backspace></hot>	Close the current connection of the own console
<hot key="">,</hot>	Switch back to the previous connected source (computer, CPU) with a KVM connection)
<hot key="">, &lt;1&gt; &lt;16&gt;, <enter> (<space> or <left Shift&gt; + <enter>)</enter></left </space></enter></hot>	Switch to a source (computer, CPU) stored in the favorite list with a KVM connection (Video Only or Private Mode connection)





BUTTON	DESCRIPTION				
<hot key="">, <f1> <f16></f16></f1></hot>	Open OSD				
<hot key="">, <left Shift&gt; + <f17> <f32></f32></f17></left </hot>	Open OSD of the sub matrix in a cascaded environment				
<hot key="">, <c>, <new Hot Key Code&gt;, <enter></enter></new </c></hot>	Close the current connection of the own console				
<hot key="">, <c>, &lt;0&gt;, <new hot="" key="">, <enter></enter></new></c></hot>	Switch back to the previous connected source (computer, CPU) with a KVM connection)				
< <hot key="">, <f>, <new Hot Key Code&gt;, <enter>)</enter></new </f></hot>	Switch to a source (computer, CPU) stored in the favorite list with a KVM connection (Video Only or Private Mode connection)				
<hot key="">, <f>, &lt;0&gt;, <new hot="" key="">, <enter></enter></new></f></hot>	Define freely selectable Hot Key for direct OSD access				
<hot key="">, <num 0=""></num></hot>	Switch the USB-HID signal to the user's display (CON Unit with keyboard and mouse)				
<hot key="">, <num 1=""></num></hot>	Switching of the USB-HID signals to display #1				
<hot key="">, <num 2=""></num></hot>	Switching of the USB-HID signals to display #2				
<hot key="">, <num 3=""></num></hot>	Switching of the USB-HID signals to display #3				
<hot key="">, <num 4=""></num></hot>	Switching of the USB-HID signals to display #4				

#### 8.1 INTERFACES

#### 8.1.1 RJ45 (NETWORK)

The network communication of the devices requires a 100BASE-T connection. The cabling has to be done according to EIA/TIA-568-B (100BASE-T) with RJ45 connectors at both ends. All four wire pairs are used in both directions. The cabling is suitable for a full duplex operation. For the cable connection to a source (computer, CPU), a crossed network cable (cross cable) has to be used.

#### 8.1.2 8.1.2 RJ45 (INTERCONNECT)

The communication between Cat X devices requires a 1000BASE-T connection. Connector wiring must comply with EIA/TIA-568-B (1000BASE-T), with RJ45 connectors at both ends. All four cable wire pairs are used.

#### 8.1.3 FIBER SFP TYPE LC (INTERCONNECT)

The communication of fiber devices is performed via Gigabit SFPs that are connected to suitable fibers fitted with connectors type LC.

If you perform a (factory) reset, all current settings and all configurations of the I/O board will be lost.

NOTICE

SFP modules can be damaged by electrostatic discharge (ESD).

Please consider ESD handling specifications.

#### 8.2 INTERCONNECT CABLE

#### 8.2.1 CAT X

NOTICE

Transmission problems Routing over an active network component, such as an Ethernet Hub, Router or Matrix, is not allowed. Operation with several patch fields is possible. Establish a point-to-point connection. Avoid routing Cat X cables along power cables.

NOTICE

Exceeding the limit of the device class The use of unshielded Cat X cables with higher electromagnetic emissions / radiation can exceed the limit values for the specified device class. Correctly install shielded Cat X cable throughout interconnection, to maintain regulatory EMC compliance.

#### NOTICE

Exceeding limit values for electromagnetic radiation The limit values for the electromagnetic radiation of the device are complied with if ferrites are mounted on both sides of all Cat X cables near the device. With installed ferrites, the devices meet the EU guidelines for electromagnetic compatibility. The operation of the devices without mounted ferrites leads to a loss of conformity with the EU directives. Mount ferrites on both sides of all Cat X cables near the device to maintain regulatory EMC compliance.





#### **Type of Interconnect Cable**

The KVM-Extender requires interconnect cabling specified for Gigabit Ethernet (1000BASE-T). The use of solid core (AWG24), shielded, Cat 5e (or better) is recommended.

TYPE OF CABLE	SPECIFICATION			
Cat X installation cable AWG24	S/UTP (Cat 5e) cable according to EIA/TIA-568-B. Four pairs of wires AWG24. Connection according to EIA/TIA-568-B (1000BASE-T).			
Cat X patch cable AWG26/8	S/UTP (Cat 5e) cable according to EIA/TIA-568-B. Four pairs of wires AWG26/8. Connection according to EIA/TIA-568-B (1000BASE-T).			

\*The use of flexible cables (patch cables) type AWG26/8 is possible; however, the maximum possible extension distance is halved.

#### Maximum acceptable cable length

TYPE OF CABLE	SPECIFICATION
Cat X installation cable AWG24	140 m (460 ft)
Cat X patch cable AWG26/8	70 m (230 ft)

#### 8.2.2 FIBER

NOTICE	
<b>Transmission problems</b> Routing over an active network component, such as an Ethernet Hub, Router or Matrix, is not allowed. Operation with several patch fields is possible. Establish a point-to-point connection. Avoid routing Cat X cables along power cables.	

FIGURE 2-14. BACK PANEL



NOTICE

#### Type of Interconnect Cable\*

TYPE OF CABLE	SPECIFICATION		
Single-mode 9 µm	• Two fibers 9 µm • I-V(ZN)H 2E9 (in-house patch cable) • I-V(ZN)HH 2E9 (in-house breakout cable) • I/AD(ZN)H 4E9 (in-house or outdoor breakout cable, resistant) • A/DQ(ZN)B2Y 4G9 (outdoor cable, with protection against rodents)		
Multi-mode 50 µm	• Two fibers 50 µm • I-V(ZN)H 2G50 (in-house patch cable) • I/AD(ZN)H 4G50 (in-house or outdoor breakout cable, resistant)		
* Cable notations according to VDE			

#### Maximum acceptable cable length

TYPE OF CABLE	SPECIFICATION
Single-mode 9 µm	10,000 m (32,808 ft)
Single-mode 9 µm XV	5,000 m (16,404 ft)
Multi-mode 50 µm (OM3)	1,000 m (3,280 ft)
Multi-mode 50 µm	400 m (1,312 ft)

\*Using single-mode SFPs with multi-mode fibers, the ranges can be increased.

#### Maximum acceptable cable length

CONNECTOR	ТҮРЕ
Plug-in connector	LC-Connector





#### 8.3 CONNECTOR PINOUTS

#### 8.3.1 RJ45 (NETWORK)

	TYPE OF CABLE	SIGNAL	PIN	SIGNAL
	1	D1+	5	Not connected
	2	D1-	6	D2-
	3	D2+	7	Not connected
0	4	Not connected	8	Not connected

#### 8.3.2 RJ45 (INTERCONNECT)

	TYPE OF CABLE	SIGNAL	PIN	SIGNAL
	1	D1+	5	D3-
	2	D1-	6	D2-
	3	D2+	7	D4+
81	4	D3+	8	D4-

#### 8.3.3 FIBER SFP TYPE LC

CONNECTOR	TYPE OF CABLE	SIGNAL
(F	1	Data OUT
	2	Data IN



#### 8.4 POWER SUPPLY, CURRENT DRAW AND POWER CONSUMPTION

#### 8.4.1 POWER SUPPLY, CURRENT DRAW AND POWER CONSUMPTION FLEX CAT X 1G

PRODUCT TYPE	MAX CURRENT	MAX VOLTAGE (AC)	FREQUENCY	POWER CONSUMPTION
ACXC16F-1G	3,918 mA	100 to 240 V	50/60 Hz	53.7 W
ACXC24F-1G	5,057 mA	100 to 240 V	50/60 Hz	69.3 W
ACXC32F-1G	6,196 mA	100 to 240 V	50/60 Hz	85.0 W
ACXC40F-1G	7,334 mA	100 to 240 V	50/60 Hz	100.6 W
ACXC48F-1G	9,600 mA	100 to 240 V	50/60 Hz	126.6 W
ACXC64F-1G	11,933 mA	100 to 240 V	50/60 Hz	157.4 W
ACXC80F-1G	14,267 mA	100 to 240 V	50/60 Hz	188.1 W
ACXC120F-1G	21,900 mA	100 to 240 V	50/60 Hz	279.6 W
ACXC128F-1G	23,067 mA	100 to 240 V	50/60 Hz	294.5 W
ACXC144F-1G	25,400 mA	100 to 240 V	50/60 Hz	324.3 W
ACXC160F-1G	27,733 mA	100 to 240 V	50/60 Hz	354.0 W

8.4.2 POWER SUPPLY, CURRENT DRAW AND POWER CONSUMPTION CAT X 3G

PRODUCT TYPE	MAX CURRENT	MAX VOLTAGE (AC)	FREQUENCY	POWER CONSUMPTION
ACXC16F-1G	5,318 mA	100 to 240 V	50/60 Hz	72.9 W
ACXC24F-1G	7,157 mA	100 to 240 V	50/60 Hz	98.1 W
ACXC32F-1G	8,996 mA	100 to 240 V	50/60 Hz	123.4 W
ACXC40F-1G	10,834 mA	100 to 240 V	50/60 Hz	148.6 W
ACXC48F-1G	13,800 mA	100 to 240 V	50/60 Hz	182.0 W
ACXC64F-1G	17,533 mA	100 to 240 V	50/60 Hz	231.2 W
ACXC80F-1G	21,267 mA	100 to 240 V	50/60 Hz	280.4 W
ACXC120F-1G	32,400 mA	100 to 240 V	50/60 Hz	413.6 W
ACXC128F-1G	34,267 mA	100 to 240 V	50/60 Hz	437.4 W
ACXC144F-1G	38,000 mA	100 to 240 V	50/60 Hz	485.1 W
ACXC160F-1G	41,733 mA	100 to 240 V	50/60 Hz	532.8 W



#### 8.5 CONNECTOR PINOUTS

#### 8.5.1 POWER SUPPLY, CURRENT DRAW AND POWER CONSUMPTION FIBER 1G & 3G

PRODUCT TYPE	MAX CURRENT	MAX VOLTAGE (AC)	FREQUENCY	POWER CONSUMPTION
ACXC16F-1G/3G	3,918 mA	100 to 240 V	50/60 Hz	53.7 W
ACXC24F-1G/3G	5,057 mA	100 to 240 V	50/60 Hz	69.3 W
ACXC32F-1G/3G	6,196 mA	100 to 240 V	50/60 Hz	85.0 W
ACXC40F-1G/3G	7,334 mA	100 to 240 V	50/60 Hz	100.6 W
ACXC48F-1G/3G	9,600 mA	100 to 240 V	50/60 Hz	126.6 W
ACXC64F-1G/3G	11,933 mA	100 to 240 V	50/60 Hz	157.4 W
ACXC80F-1G/3G	14,267 mA	100 to 240 V	50/60 Hz	188.1 W
ACXC120F-1G/3G	21,900 mA	100 to 240 V	50/60 Hz	279.6 W
ACXC128F-1G/3G	23,067 mA	100 to 240 V	50/60 Hz	294.5 W
ACXC144F-1G/3G	25,400 mA	100 to 240 V	50/60 Hz	324.3 W
ACXC160F-1G/3G	27,733 mA	100 to 240 V	50/60 Hz	354.0 W

## 8.5.2 POWER SUPPLY, CURRENT DRAW AND POWER CONSUMPTION HYBRID 1G

PRODUCT TYPE	MAX CURRENT	MAX VOLTAGE (AC)	FREQUENCY	POWER CONSUMPTION
ACXC24FH16-1G	7,334 mA	100 to 240 V	50/60 Hz	100.6 W
ACXC24FH40-1G	11,933 mA	100 to 240 V	50/60 Hz	157.4 W
ACXC40FH24-1G	11,933 mA	100 to 240 V	50/60 Hz	157.4 W
ACXC40FH40-1G	14,267 mA	100 to 240 V	50/60 Hz	188.1 W
ACXC80FH40-1G	21,900 mA	100 to 240 V	50/60 Hz	279.6 W
ACXC80FH80-1G	27,733 mA	100 to 240 V	50/60 Hz	354.0 W
ACXC120FH40-1G	27,733 mA	100 to 240 V	50/60 Hz	354.0 W

FIGURE 2-14. BACK PANEL



#### 8.5.3 POWER SUPPLY, CURRENT DRAW AND POWER CONSUMPTION HYBRID 3G

PRODUCT TYPE	MAX CURRENT	MAX VOLTAGE (AC)	FREQUENCY	POWER CONSUMPTION
ACXC40-1G-2RU	9,434 mA	100 to 240 V	50/60 Hz	53.7 W
ACXC40-1G-4RU	14,033 mA	100 to 240 V	50/60 Hz	69.3 W
ACXC40F-1G-2RU	17,433 mA	100 to 240 V	50/60 Hz	85.0 W
ACXC40F-1G-4RU	17,7677 mA	100 to 240 V	50/60 Hz	100.6 W
ACXC24F16-1G-2RU	28,067 mA	100 to 240 V	50/60 Hz	126.6 W
ACXC24F16-1G-4RU	33,067 mA	100 to 240 V	50/60 Hz	157.4 W

#### 8.6 **OPEN\_ENVIRONMENTAL CONDITIONS AND EMISSIONS**

PARAMETER	VALUE	
Operating Temperature	5 to 45 °C (41 to 113 °F)	
Storage Temperature	-25 to 60 °C (-13 to 140 °F)	
Relative Humidity	Max. 80% non-condensing	
Operating Altitude	Max. 2.500 m (7,500 ft)	
Heat Dissipation	Corresponds to power consumption in Watt (W)	



#### 8.7 **DIMENSIONS**

PRODUCT/ PACKAGING	DIMENSION	DIMENSION INCL. SHIPPING BOX
DKM flex 1RU	442 x 449 x 44 mm	602 x 526 x 154 mm
chassis	(17.4" x 17.7" x 1.7")	(23.7" x 20.7" x 6.1")
DKM flex 2RU	442 x 449 x 90 mm	602 x 526 x 208 mm
chassis	(17.4" x 17.7" x 3.5")	(23.7" x 20.7" x 7.9")
DKM flex 4RU	442 x 449 x 177 mm	640 x 570 x 360 mm
chassis	(17.4" x 17.7" x 7.0")	(25.2" x 22.4" x 14.2")

#### 8.8 8.7 OPEN\_WEIGHT

PRODUCT	WEIGHT (INCL. FANS AND PSUS)
DKM flex 1RU chassis	7.7 kg (17 lb)
DKM flex 2RU chassis	11 kg (24.3 lb)
DKM flex 4RU chassis	19 kg (41.9 lb)

#### 8.9 8.8 MTBF

The following table contains the mean time between failure (MTBF) in power-on hours (POH). The estimate is based on the FIT rates of the parts included. FIT rates are based on normalized environmental conditions of T =  $60^{\circ}$ C and activation energy (Ea) of 0.7 eV. Calculations are based on 90% confidence limit. We estimate that inside the housing, temperature will be  $15^{\circ}$ C higher than the ambient temperature. Therefore, the MTBF calculation refers to an ambient temperature of  $45^{\circ}$ C. The humidity is limited to  $60^{\circ}$ .

Under these standard conditions, the MTBF for the components of the DKM flex KVM matrices are estimated as follows:

COMPONENT	MTBF IN POH
DKM flex 1RU chassis (incl. fans and PSUs)	71,900
DKM flex 2RU chassis (incl. fans and PSUs)	74,300
DKM flex 4RU chassis (incl. fans and PSUs)	65,400
I/O card Cat X 1G	899,200
I/O card Cat X 3G	474,800
I/O card fiber 1G & 3G (without SFP modules)	878,700

#### 9.1 MAINTENANCE

The device contains no user serviceable parts inside.

Do not attempt to open or repair the device.

Please contact your dealer or manufacturer if there is a fault.

#### 10.1 TROUBLESHOOTING

The following chapters provide help in case of problems with the DKM unit. The content of this help is based on an already functioning extender section. Before operating your extenders with the matrix, please make sure that the extenders work via a direct point-to-point connection. A Cat X or fiber optic coupler can be used to support this. In case of problems in this regard, the manuals of the respective extenders offer assistance if necessary.

#### 10.2 EXTERNAL FAILURE

DIAGNOSIS	POSSIBLE REASON	MEASURE
Matrix cannot be started anymore	Fuse at the standard appliance outlet.	Check the fuse.

#### **10.3 VIDEO INTERFERENCE**

DIAGNOSIS	POSSIBLE REASON	MEASURE
Opening the OSD not possible	No OSD jumper set	Set jumper 11 on the CON Unit.
Incorrect video displa	y Cable connection disturbed	Check the connection, length, and quality of the interconnect cable to the units.

#### **10.4 MALFUNCTION OF FANS**

DIAGNOSIS	POSSIBLE REASON	MEASURE
Fans do not run	Fans defective	Contact your dealer.t.



#### **10.5 MALFUNCTION OF POWER SUPPLY UNITS**

DIAGNOSIS	POSSIBLE REASON	MEASURE
Matrix cannot be	No power supply available.	Check if power supply cables are connected correctly.
started	Power supply units are not switched on	Check switch on the power supply units.

#### **10.6 NETWORK ERROR**

DIAGNOSIS	POSSIBLE REASON	MEASURE
Network settings are not assumed after editing.	Restart of the matrix not yet completed.	Restart the matrix.

#### 10.7 FAILURE AT THE MATRIX

DIAGNOSIS	POSSIBLE REASON	MEASURE
Port definitions as USB 2.0 invalid.	Restart of the matrix not yet completed.	Restart the matrix.
No OSD access possible.	Wrong Hot Key	Reset Hot Key if necessary (see chapter 3.9.1, from page 43).


# **CHAPTER 10: TROUBLESHOOTING**



#### **10.8 FAILURE AT THE INTERCONNECTION PORT**

# 10.8.1 ERROR INDICATION AT THE 1G CAT X PORT



#### FIGURE 10-8.1.1 LEDS OF I/O MODULE 1G CAT X

DIAGNOSIS	POSSIBLE REASON	MEASURE
LED 1 or LED 2	Connections CON Unit, matrix	<ul> <li>Check connecting cables and connectors.</li></ul>
flashing orange	and CPU Unit.	(cable break, CPU/CON Unit offline). <li>Connect a 3G extender to a 3G port.</li> <li>Contact dealer if necessary.</li>

# 10.8.2 ERROR INDICATION AT THE 3G CAT X PORT



#### FIGURE 10-8.1.2 LEDS OF I/O MODULE 3G CAT X

DIAGNOSIS	POSSIBLE REASON	MEASURE
LED 1 or LED 2 flashing orange	Connections CON Unit, matrix and CPU Unit.	<ul> <li>Check connecting cables and connectors. (cable break, CPU/CON Unit offline).</li> <li>Connect a 3G extender to a 3G port.</li> <li>Contact dealer if necessary.</li> </ul>

\*For further measures see user manual of the respective extender series.

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# **CHAPTER 10: TROUBLESHOOTING**



# 10.8.3 ERROR INDICATION AT THE FIBER PORT



#### FIGURE 10-8.1.3 LEDS OF I/O MODULE FIBER PORT

DIAGNOSIS	POSSIBLE REASON	MEASURE
LED 1 or LED 2 flashing RED	Connections CON Unit, matrix and CPU Unit.	<ul> <li>Check connecting cables and connectors. (cable break, CPU/CON Unit offline).</li> <li>Connect a 3G extender to a 3G port.</li> <li>Contact dealer if necessary.</li> </ul>

\*For further measures see user manual of the respective extender series.

### 10.9 BLANK SCREEN



#### FIGURE 10-9.1.1 LEDS FOR POWER FUPPLY

DIAGNOSIS	POSSIBLE REASON	MEASURE
LED 1 and LED 2 off	Power supply	Check the connection to the power network.
Monitors remains dark after switching operation	Switching to a port without connected source (computer, CPU).	Switch to a Port with a connected source (computer, CPU).
	Connections CON Unit, matrix, and CPU Unit.	Check connecting cables and connectors (no cable, cable break, CPU/CON Unit offline, CPU/CON Unit connected to the wrong port) see chapter 10.7, from page 310)).

\*For further measures see user manual of the respective extender series.

#### 11.1 TECHNICAL SUPPORT

Prior to contacting support, please ensure you have read this manual, and then installed and set-up your DKM flex as recommended.

#### 11.1.1 11.1 SUPPORT CHECKLIST

To efficiently handle your request, it is necessary that you complete a support request checklist (Download). Please ensure that you have the following information available before you call:

- · Company, name, phone number and email,
- Type and serial number of the device (see bottom of the device),
- · Date and number of sales receipt and name of dealer if necessary,
- · Issue date of the existing manual,
- · Nature, circumstances, and duration of the problem,
- Components included in the system (such as graphic source/CPU, OS, graphic card, monitor, USB-HID/USB 2.0 devices, interconnect cable) including manufacturer and model number,
- Results from any testing you have done.

#### 11.1.2 11.2 SHIPPING CHECKLIST

- 1. To return your device, you need an RMA number (Return-Material-Authorization). Therefore, please contact your dealer.
- 2. Package your devices carefully. Add all pieces which you received originally. Preferably use the original box.
- 3. Note your RMA number visibly on your shipment.

\*Devices that are sent in without an RMA number will not be accepted. The shipment will be sent back without being opened; postage unpaid.

#### 12.1 CERTIFICATES/DIRECTIVES

#### 12.1.1 12.1 NORTH AMERICAN REGULATORY COMPLIANCE

This equipment has been found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.



# CHAPTER 12: CERTIFICATE/DIRECTIVES



Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Shielded cables must be used with this equipment to maintain compliance with radio frequency energy emission regulations and ensure a suitably high level of immunity to electromagnetic disturbances. All power supplies are certified to the relevant major international safety standards.

# 12.1.2 12.2 WEEE

The manufacturer complies with the EU Directive 2012/19/EU on the prevention of waste electrical and electronic equipment (WEEE).

The device labels carry a respective marking.

### 12.1.3 12.3 ROHS

This device complies with the Directive 2011/65/EU of the European Parliament and of the council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (including the Commission Delegated Directive (EU) 2015/853 of 31 March 2015 amending Annex II to Directive 2011/65/EU).

The device labels carry a respective marking.



#### 13.1 **GLOSSARY**

The following terms are commonly used in this manual or in video and KVM technology.

TERM	DESCRIPTION
Auto Disconnect	Matrix function that allows an automatic disconnect between a console and a CPU, if OSD is opened via this console.
Auto Logout	Matrix function that describes the duration of inactivity after the user has been logged out from the OSD at this console.
Cat X	Any Cat 5e (Cat 6, Cat 7) cable
CON Device	Logical term that summarizes several physical extenders to switch more complex console systems via matrix.
CON Timeout	Matrix function that allows an automatic disconnect of the own console from the connected CPU after a predefined time.
CON Unit	Component of a KVM Extender or Media Extender to connect to the console (monitor(s), keyboard, and mouse; optionally also with USB 2.0 devices)
Console	Keyboard, video, and mouse
Console ACL	Console Access Control List is a list that shows the respective switching rights for the various consoles.
CPU Auto Connect	Matrix function that allows an automatic connection establishment between the own console and a random CPU that is available.
CPU Device	Logical term that summarizes several physical extenders to switch more complex CPU systems via matrix.
CPU Timeout	Matrix function that allows the user to disconnect after a predefined period of inactivity from the respective CPU.
Dual Access	A system to operate a source (computer, CPU) from two consoles
Dual-Head	A system with two video connections
EXT Unit	Part or extender board of a CON or CPU unit with a connection to the matrix. A CON or CPU unit can consist of several EXT devices.
Fiber	Single-mode or multi-mode fiber cables
Force Connect	Matrix function that allows to switch with the own console to a CPU that is already used and in doing so to take keyboard and mouse control. The connected console so far loses K/M control but keeps video control.
Force Disconnect	Matrix function that allows to switch with the own console to a CPU that is already used and in doing so to take KVM control. The connected console so far loses complete KVM control.
KVM	Keyboard, video, and mouse
Keyboard Connect	Matrix function that allows taking over the keyboard control of an inactive console.
Macro Keys	Programmable keys that can execute a stringing together of commands to the matrix.

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TERM	DESCRIPTION
Mouse Connect	Matrix function that allows taking the mouse control of an inactive console.
MTBF	Mean Time Between Failure (MTBF) is measured in power-on hours
Multi-mode	50 µm multi-mode fiber cable
Multi-Screen Control	Control of USB-HID of up to eight sources (computer, CPU) at one sink with only one connected mouse or keyboard. The sink can consist of up to eight monitors, or up to sixteen monitors when operating Dual-Head Sources. In a matrix system, Multi-Screen Control can be set up at multiple sinks.
Non-Blocking Access	Matrix configuration where no user can be disturbed by an activity of another user.
OSD	The On-Screen-Display is used to display information or to operate a device.
OSD Timeout	Matrix function that closes the OSD automatically after a predefined period of inactivity.
РОН	Power-on hours corresponds to the average operating time
Quad-Head	A system with four video connections.
Release Time	Matrix function that allows a console that is connected with the same CPU to release the K/M control after a predefined time.
Service Mode	Defined maintenance condition that allows updating of extenders that are connected to the matrix.
SFP	SFPs (Small Form Factor Pluggable) are pluggable interface modules for Gigabit connections. SFP modules are available for Cat X and fiber interconnect cables.
Single-Head	A system with one video connection
Single-mode	9 µm single-mode fiber cable.
Tie Line	Communication connection to and between extension modules in a network environment.
USB-HID	USB-HID devices (Human Interface Device) allow for data input. There is no need for a special driver during installation; "New USB-HID device found" is reported. Typical USB-HID devices include keyboards, mice, graphics tablets and touch screens. Storage, video, and audio devices are not HID.
User ACL	User Access Control List is a list that shows the respective switching rights for the various users.
Video Sharing	Matrix function that allows switching from the user's console to any CPU with video.

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