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.

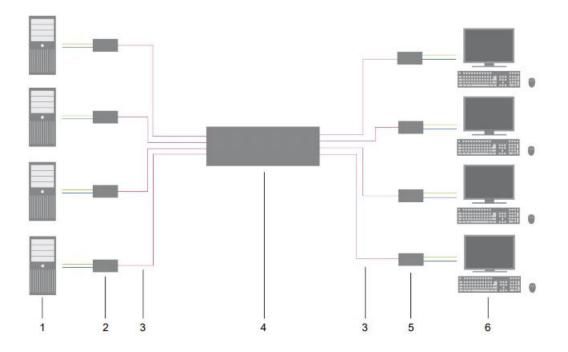


Figure 2-4.1 Installation Example (example Single-head installation)

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
б	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.

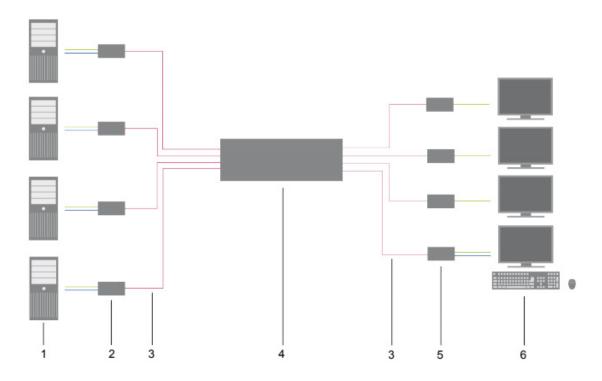


Figure 2-4.2 Installation Example (example Single-head installation)

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

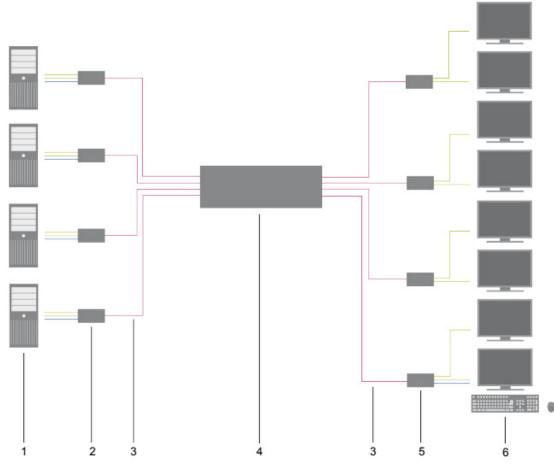


Figure 2-4.3 Installation Example (example Single-head installation)

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	RACK UNIT
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	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

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

PART NO.	DESCRIPTION	RACK UNIT
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	RACKUNIT
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	RACKUNIT
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

2.5.11 2.5.1 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

2.5.12 2.5.2 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

2.5.13 2.5.2 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	





2.5.14 DKM COMPACT II KVM MATRIX FLEX FIBER 1G

PART NO.	DESCRIPTION	RACKUNIT
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

2.5.15 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.

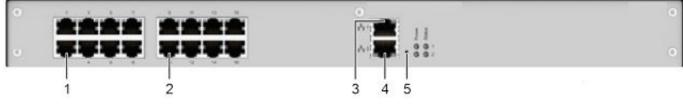


FIGURE 2-6.1. FRONT PANEL - ACXC16-1G & ACXC16-3G

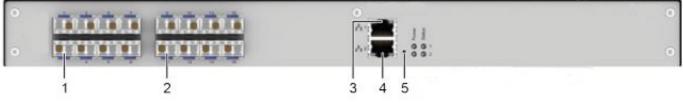


FIGURE 2-6.1.1. FRONT PANEL - ACXC16F-1G & ACXC16F-3G

TABLE 2-6.1. FRONT PANEL SWITCH COMPONENTS

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) Network port 1 (RJ45)	Network port	
(1) Network port 2 (RJ45)	Network port	
(1) Reset button	Switch Reset	
	 (1) I/O-Ports 1 to 8 (1) I/O-Ports 9 to 16 (1) Network port 1 (RJ45) (1) Network port 2 (RJ45) 	(1) I/O-Ports 1 to 8I/O-Ports for connecting devices(1) I/O-Ports 9 to 16I/O-Ports for connecting devices(1) Network port 1 (RJ45)Network port(1) Network port 2 (RJ45)Network port







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

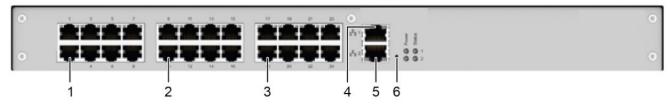


FIGURE 2-6.2. FRONT PANEL - ACXC24-1G & ACXC24-3G

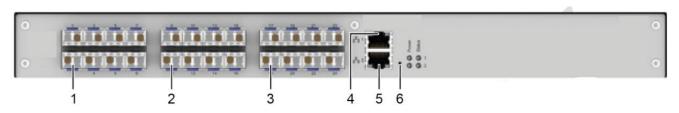


FIGURE 2-6.2.1. FRONT PANEL - ACXC24F-1G & ACXC24F-3G







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.

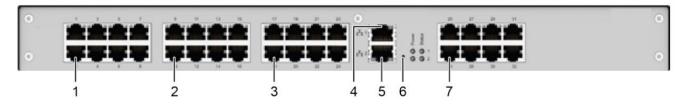


FIGURE 2-6.3. FRONT PANEL - ACXC32-1G & ACXC32-3G

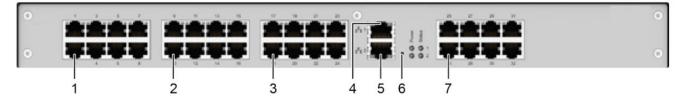


FIGURE 2-6.3.1. FRONT PANEL - ACXC32F-1G & ACXC32F-3G

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.

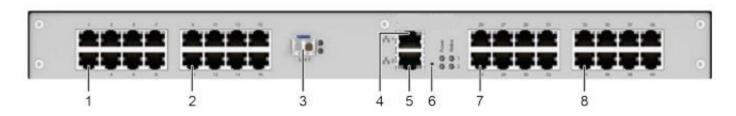


FIGURE 2-6.4. FRONT PANEL - ACXC32-1G-GRID

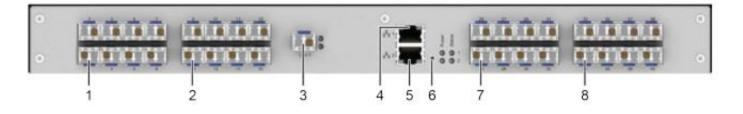


FIGURE 2-6.4.1. FRONT PANEL - ACXC32F-1G-GRID

TABLE 2-6.4. FRONT PANEL SWITCH COMPONENTS

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 1	Grid port 1
4	(1) Network port 1 (RJ45)	Network port
5	(1) Network port 2 (RJ45)	Network port
6	(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 2-6.4.2 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.

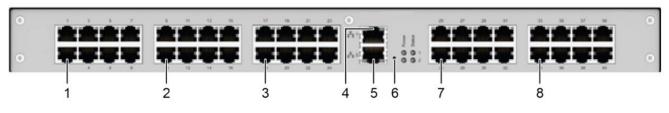


FIGURE 2-6.5. FRONT PANEL - ACXC40-1G & ACXC40-3G

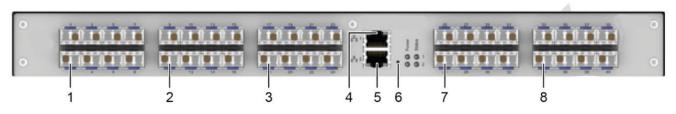


FIGURE 2-6.5.1. FRONT PANEL - ACXC40F-1G & ACXC40F-3G

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
6	(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





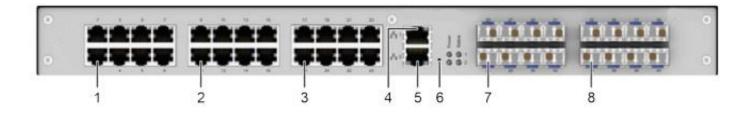


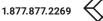
FIGURE 2-6.5.2. FRONT PANEL - ACXC24F16-1G



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.

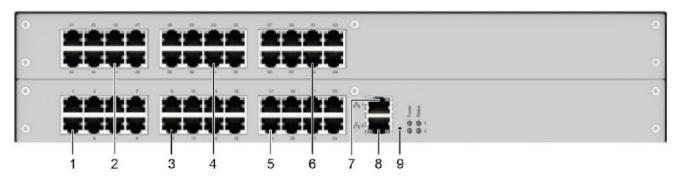


FIGURE 2-6.6. FRONT PANEL - ACXC48-1G & ACXC48-3G

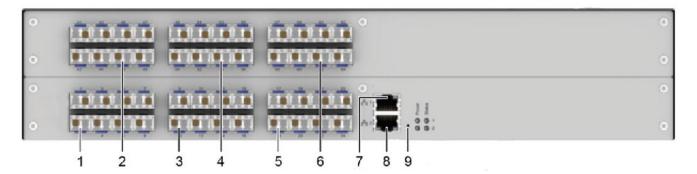


FIGURE 2-6.6.1. FRONT PANEL - ACXC48F-1G & ACXC48F-3G

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
6	(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.

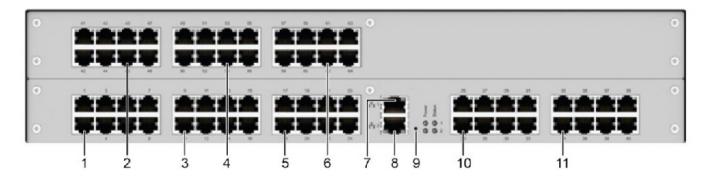


FIGURE 2-6.7 FRONT PANEL - ACXC64-1G & ACXC64-3G

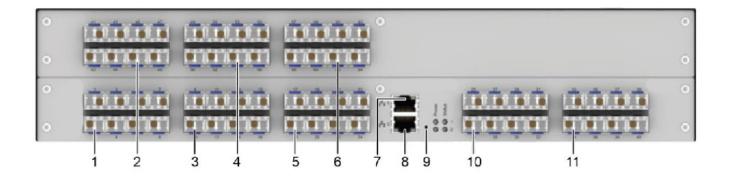


FIGURE 2-6.7.1. FRONT PANEL - ACXC64F-1G & ACXC64F-3G







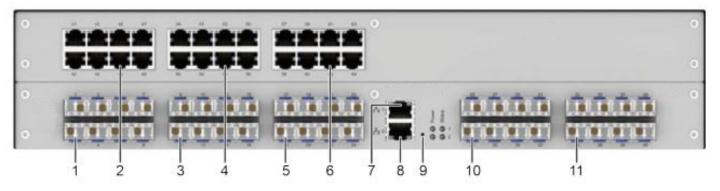


FIGURE 2-6.7.2. FRONT PANEL - ACXC24F40-1G & ACXC24F40-3G

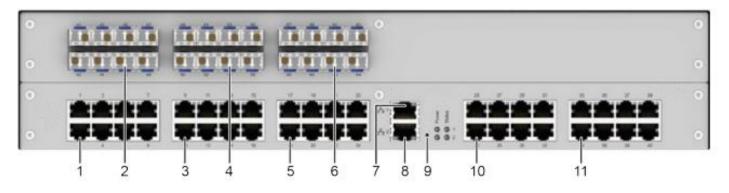


FIGURE 2-6.7.3. FRONT PANEL - CXC40F24-1G & CXC40F24-3G



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.

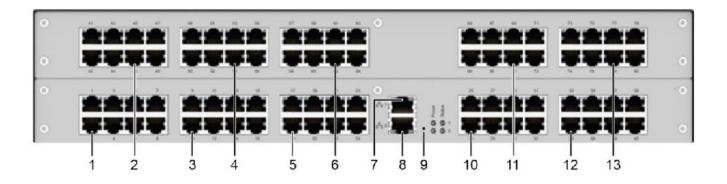


FIGURE 2-6.8. FRONT PANEL -ACXC80-1G & ACXC80-3G

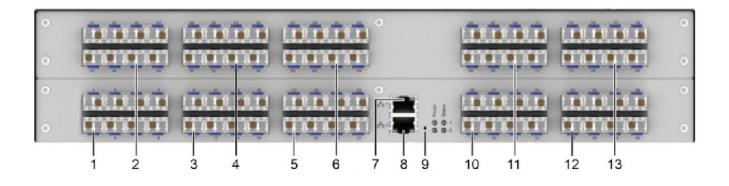


FIGURE 2-6.8.1. FRONT PANEL -ACXCF80-1G & ACXCF80-3G

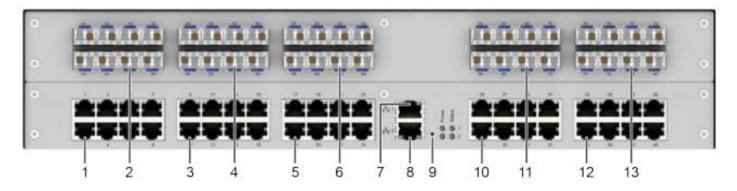


FIGURE 2-6.8.2. FRONT PANEL -ACXC40F40-1G & ACXC40F40-3G

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
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

TABLE 2-6.8. FRONT PANEL SWITCH COMPONENTS

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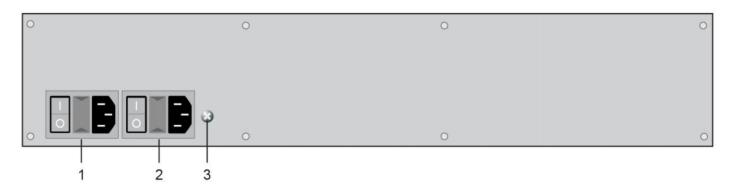


FIGURE 2-6.8.3 BACK PANEL 80-PORT

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.

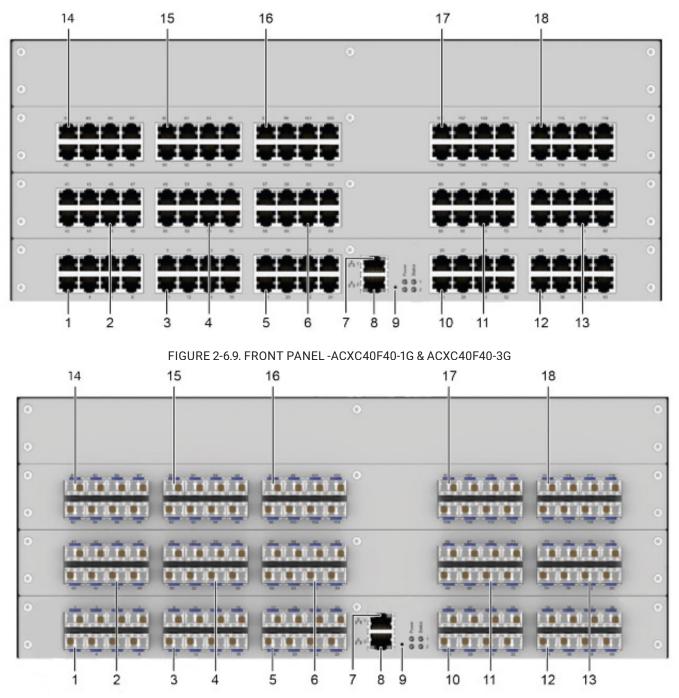


FIGURE 2-6..9.1. FRONT PANEL -ACXC40F40-1G & ACXC40F40-3G



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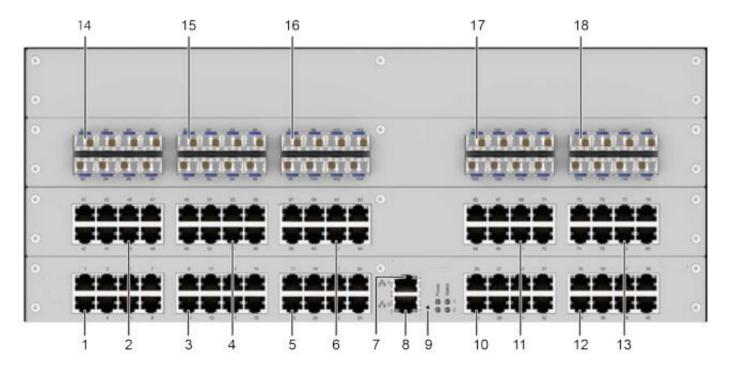


FIGURE 2-9.2. FRONT PANEL -ACXC40F40-1G & ACXC40F40-3G

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
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
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



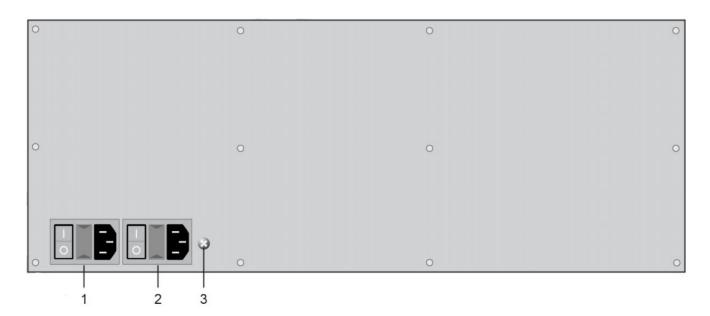


FIGURE 2-6.9.3 BACK PANEL 120-PORT

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.

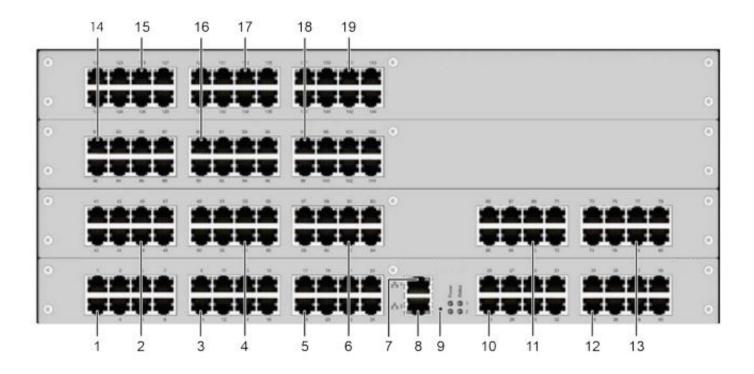
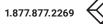


FIGURE 2-6.10 FRONT PANEL - ACXC128-1G & ACXC128-3G





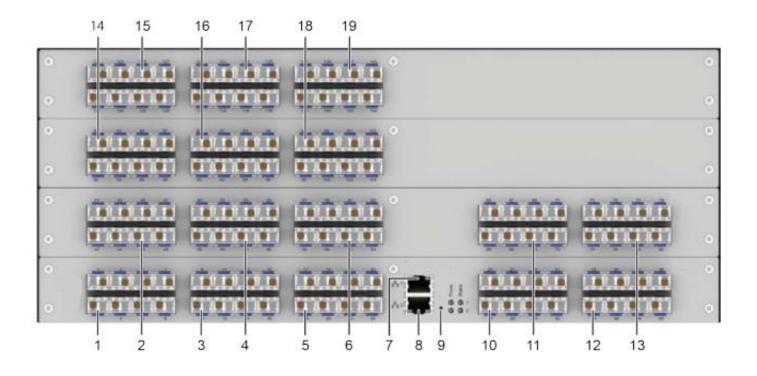


FIGURE 2-6.10.1 FRONT PANEL - ACXC128-1G & ACXC128-3G





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
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 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

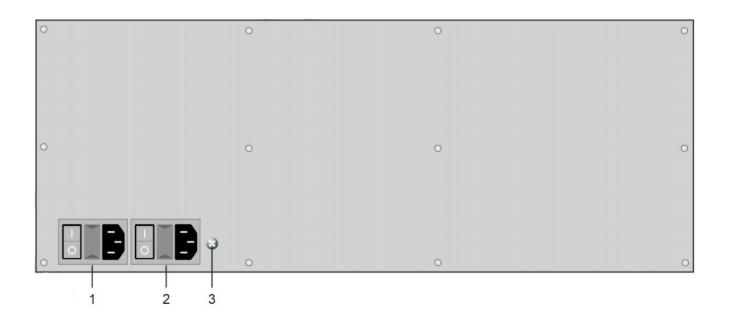


FIGURE 2-6.10.2 BACK PANEL 128-PORT

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.

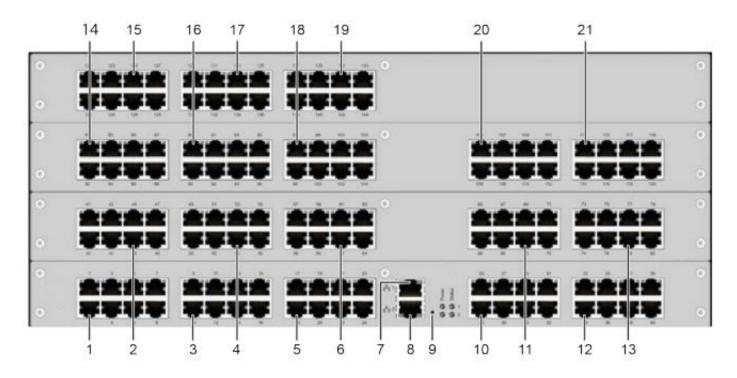


FIGURE 2-6.11. FRONT PANEL - ACXC80F80-1G & ACXC80F80-3G





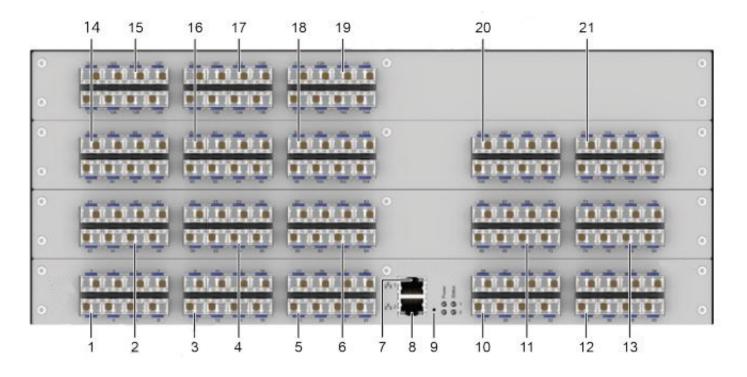


FIGURE 2-6.11.1. FRONT PANEL - ACXC144F-1G & ACXC144F-3G







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	
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 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	



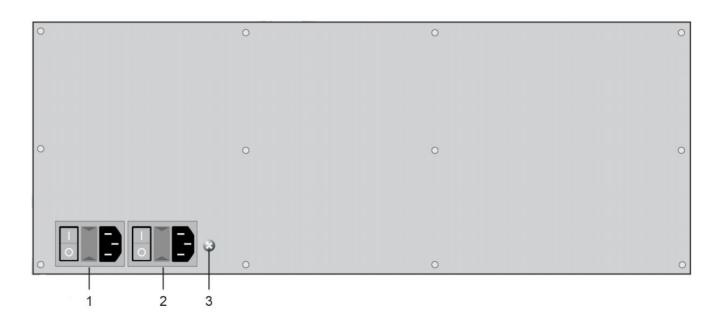


FIGURE 2-6.11.2 BACK PANEL 144-PORT







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.

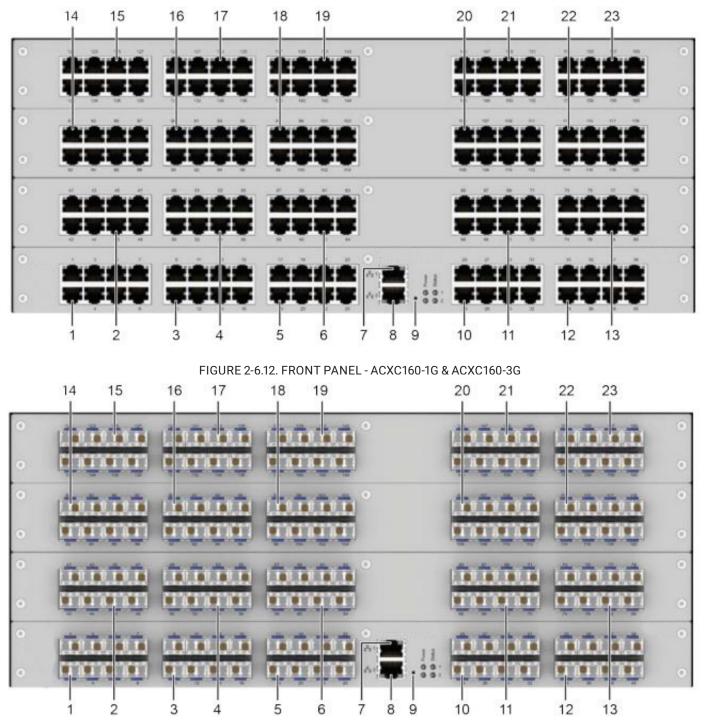


FIGURE 2-6.12.1. FRONT PANEL - ACXC160F-1G & ACXC160F-3G



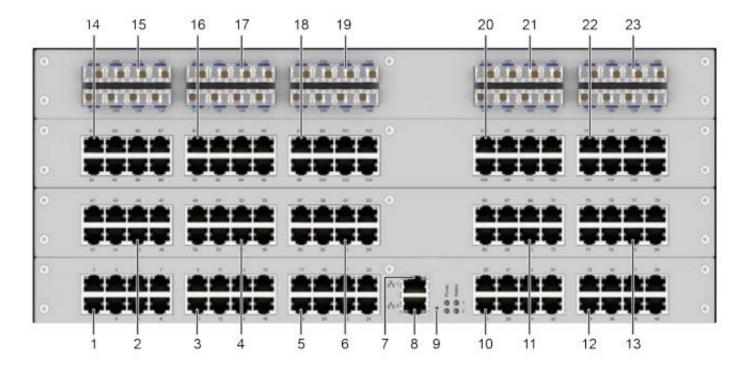


FIGURE 2-6.12.2 FRONT PANEL - ACXC120F40-1G & ACXC120F40-3G

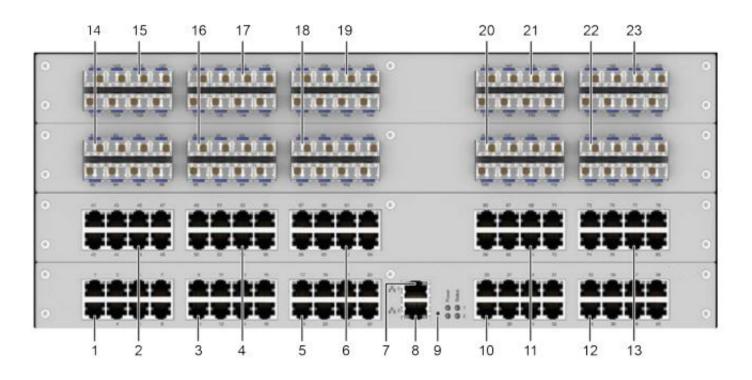


FIGURE 2-6.12.3 FRONT PANEL - ACXC80F80-1G & ACXC80F80-3G



TABLE 2-6.12. FRONT PANEL SWITCH COMPONENTS

NUMBER IN FIGURE 2-2	COMPONENT	DESCRIPTION
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

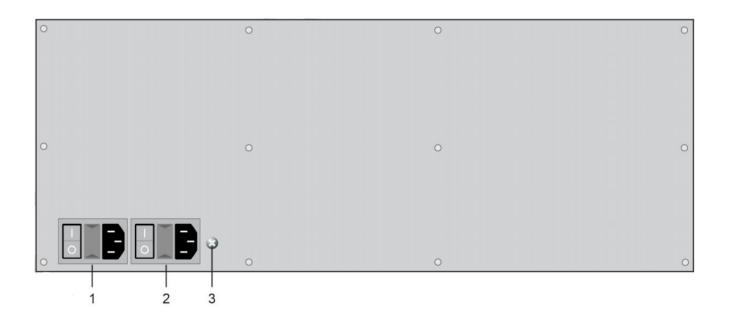


FIGURE 2-6.12.4 BACK PANEL 160-PORT

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

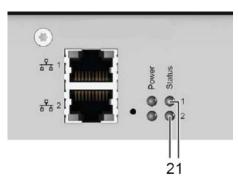


FIGURE 2-7.1 FRONT SIDE LEDS FOR DEVICE STATUS

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

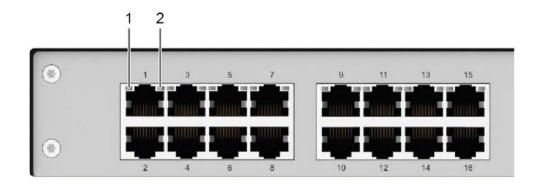


FIGURE 2-7.2 FRONT SIDE LEDS FOR DEVICE STATUS

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

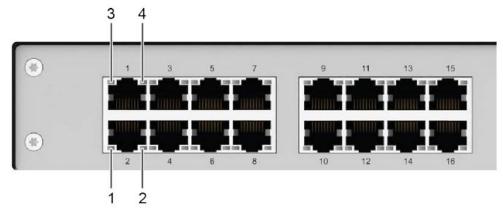


FIGURE 2-7.3 FRONT SIDE LEDS FOR DEVICE STATUS

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

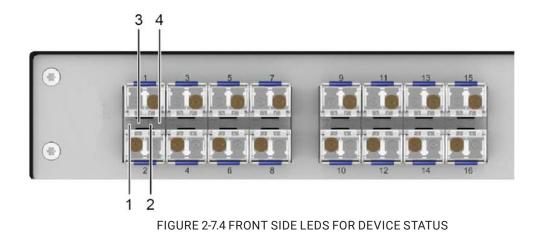


TABLE 2-7.4. FRONT SIDE - STATUS LEDS FOR NETWORK CONNECTION

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

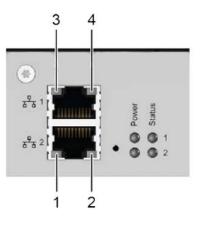


FIGURE 2-7.5 FRONT SIDE LEDS FOR DEVICE STATUS

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

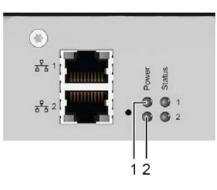


FIGURE 2-7.6 FRONT SIDE LEDS FOR DEVICE STATUS

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	A.O. June 1	On	Power supply available
I	AC Input 1	Off	No power supply available
	2 AC Input 1	On	Power supply available
2		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



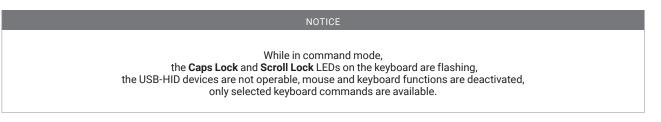
3.2 ACCESS OPTIONS

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	НОТ КЕҮ
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>, , <Enter>

Reset Hot Key

To set a Hot Key back to default settings, press the key combination <Right Shift> + 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
Ourser Dishte	Input field: cursor right
<cursor right=""></cursor>	In menus: previous input field
Querralla	In input fields: line up (with wrap around)
<cursor up=""></cursor>	In menus: line up (without wrap around)
	In input fields: line down (with wrap around)
<cursor down=""></cursor>	In menus: line down (without wrap around)
De rec Une	Previous page in menus with more than one page
<page up=""></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
	Switching in selection fields between two conditions, e.g., between ON / OFF or
<cursor down=""></cursor>	Y (Yes) / N (No)
	In menus: line down (without wrap around)
0	Switching in selection fields between two conditions, e.g., between ON / OFF or
<space></space>	Y (Yes) / N (No)
	In menus with input fields: save data
<enter></enter>	In menus: select menu item
	With buttons: confirm selected button
<esc></esc>	In menus with input fields: cancel data input without saving
<esc></esc>	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)



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	F10:Login
Menu	
Switch Macro List Extended Switch	
Status	
Assignments Configuration	
About	
	Shift+ESC = Close

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 (Previous) .
<f5></f5>	Refresh the currently shown list (Refresh).
<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:

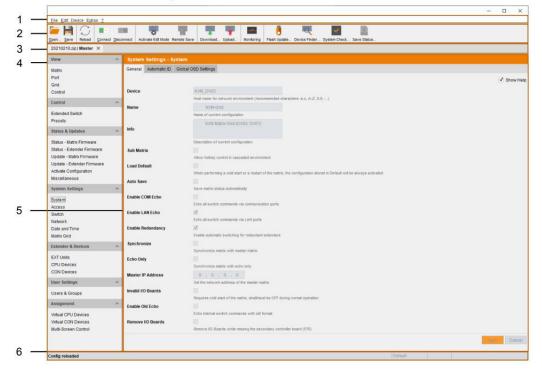


FIGURE 3-3.1 MANAGEMENT SOFTWARE MENU STRUCTURE



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 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 (Remote Save , see chapter 5.10.1
page 135), save a predefined configuration (Save as) (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).



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3.3.2 MANAGEMENT SOFTWARE MENU STRUCTURE

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

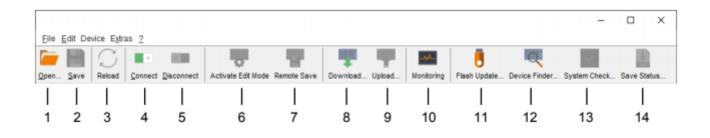


FIGURE 3-3.2. MANAGEMENT SOFTWARE TOOLBAR

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)
2	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>	 Switch in selection fields between two conditions (checkmark or not). Open already highlighted fields with editing or selecting possibility.
<enter></enter>	• Select menu item • In menus: Save data
	Leave tables
<ctrl> + <tab></tab></ctrl>	Jump from tables into the next field
<ctrl> + <left Shift> + <tab></tab></left </ctrl>	 Leave tables Jump from tables into the previous field

*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.

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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	Click with the right mouse button on a field.	A context menu opens and displays functions available for the corresponding filed (if existing).		
function	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.	 The column is sorted in ascending order. The sort of status is indicated by an arrow pointing upwards. 		
Decending sort	Click with the left mouse button twice on the header of the column to be sorted.	 The column is sorted in descending order. The sort is displayed by an arrow that points downwards. 		
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.	 The filter results are shown immediately. The filter symbol is displayed in green. 		
Cancel filter	Delete the text in the filter entry field.	The list or table shows the complete content. The filter symbol is displayed in gray.		

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	
	< <u>Back</u> Next> Einish	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.



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Configuration Report							×
Steps	Save Report						
 Define Content Save Report 	Look jn: 👔	_Matrix 11.pdf	•		2		
	File <u>N</u> ame:	Report_02.pdf					
	Files of <u>T</u> ype:	(*.pdf)	<	Back	vext >	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 requirements (see chapter 10, page 314).	e devices comply with the

* 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:

COMPUTE	ER / 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:

СОМРИТЕ	R/SOFTWARE/NETWORK	RESULTS	
Free memory	RAM	Recommended: 512 MB	
Operating system	Microsoft	Windows 8, Windows 8.1, Windows 10	
	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.





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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.

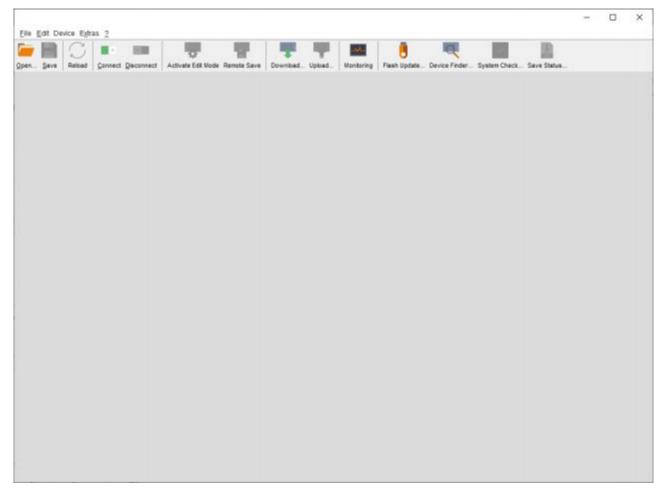


FIGURE 4-5.3 MANAGEMENT SOFTWARE OFFLINE MODE

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.

Devi	ce Finder				>
vai	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: Is save the configuration changes into the active configuration (**Save**, see chapter 5.10.1, page 134), as a production of the active configuration (**Save**, see chapter 5.10.1, 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.



Configuration	
0pen	
System	
Access Switch	
Network #1	
Date+Time	
SNMP	
Matrix Grid	
EXT Units	
CPU Devices	
CON Devices REM Access	
User Data	
CON Macros	
User Macros	
Save	
Save as	
Shut down IO Board	
Restart CPU Board Restart CPU 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:

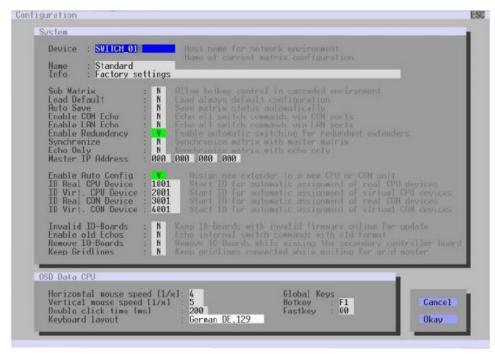


FIGURE 5-4.1.1. OSD MENU CONFIGURATION - SYSTEM



COMPUTER / SOFT	WARE / NETWORK	RESULTS
Device	Text	Enter the device name of the matrix (default: SWITCH_01)
Norre	Taut	Enter the name of the configuration that is used to save the
Name	Text	current settings (default: Standard)
Info	Text	Additional text field to describe the configuration (default:
lillo	Text	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
Lead Default	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)
		Send all switching commands performed in the matrix as an
Enable COM Echo	Y	echo via serial interface. Note: This function should be enabled when using a media controller via serial interface.
	Ν	Function not active (default)
		Send all switching commands performed in the matrix as an
Enable LAN Echo	Y	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.
	Ν	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.
	N	Function not active
		Synchronize the sub matrix to the switch status of the master
Synchronize	Y	matrix.
Synchronize	N	Function not active (default)

FIGURE 5-2.1. OSD MENU CONFIGURATION



COMPUTER / SOFT	WARE/NETWORK	RESULTS
Echo Only	Υ	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	γ	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	γ	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.

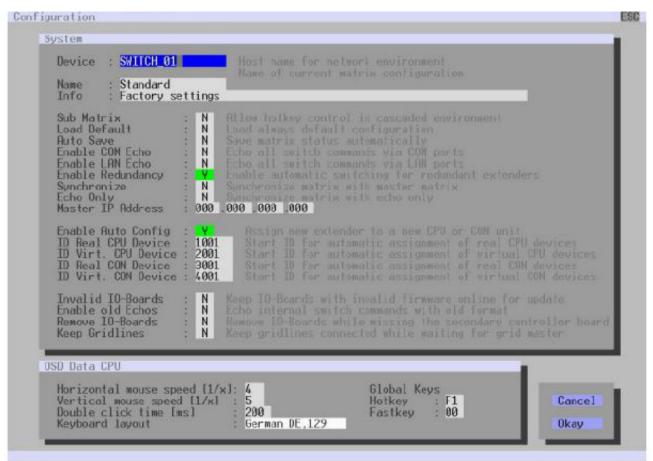


FIGURE 5-4.2.1 OSD MENU CONFIGURATION -SYSTEM - AUTOMATIC ID

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)
Linable Auto Coning	Ν	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 / SOFTW	ARE / 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
Enable CON ACL	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)
		Upon opening the OSD, the console will be automatically
Auto Disconnect	Y	disconnected from the current CPU Device.
	Ν	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	 Period of inactivity of a logged-in user at a CON Device after which he will be automatically logged out. In addition to the logout process, a complete disconnection from the connected CPU Device occurs under Full Access and Private Mode. Select 0 minutes for an automatic user logout when leaving OSD. Using the setting -1 allows the user to be logged in permanently, until a manual logout is executed. The timer is not active as long as the OSD is open (default: 0 minutes).







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.
	Ν	Function not active (default)
Show CPU	Y	Permanently show the name of the currently connected CPU Device in the Connection Info box.
	Ν	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
Macro 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	Υ	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.
	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)
Keyboard Connect	Υ	Activate request of K/M control by keyboard event (key will be lost)
		Function not active (default)
Maura Oannaat	Υ	Activate request of K/M control by mouse event
Mouse Connect	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)
	Υ	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

NEED HELP? LEAVE THE TECH TO US LIVE 24/7

TECHNICAL SUPPORT 1.877.877.2269

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 Svslog #1	: DEB N INF N NOT Y WAR Y ERR Y : 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
Dual Interface	Y	Redundant network connection is deactivated
Duarmenace	Ν	Redundant network connection is activated (default)
		The network settings are automatically supplied by a DHCP
CPU Timeout [min]	Y	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
Galeway	byte	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
ADLOs misse #1	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).
	Ν	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
	Y	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.
	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)
Syslog #1/#2	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	: 1	Server #1	N Server #2	
Server Address	: 00	0 .000 .000 .000 :162	000 .000 .000 .000 :162	
Status Temperature	: 1		NN	
Insert Board Remove Board Invalid Board	: N : N		N N N	
Insert Extender Remove Extender			NN	
Switch Command	: 1		N	
Fan Tray #1 Fan Tray #2 Power Supply #1 Power Supply #2 Power Supply #3 Power Supply #4	: N		N N N N	

The following parameters can be configured:

SNMP Agent

COMPUTER / SOFTWARE / NETWORK		RESULTS
Frakla		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	
Enable Traps	Activates the active sending of trap messages from the SNMP agent to the	
	SNMP server	
Server 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	
	Notification about a newly connected extender to the matrix, notification	
Insert Extender	about a switched-on extender • Notification about a newly established link between extender and matrix	
Remove Extender	 Notification about a removed extender from the matrix Notification about a switched off extender 	
Remove Extender	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 Serv		000 .000 .000 00 Select your lime zone
eal Time (Slock	
Date	01 /01 /00	Entor the date with formal MK/DD/VV NM - month (112) DD - day (131) YV - year (099)
Day	: 01	Enter the day of the week 1 = Monday 2 = Tuesday 7 = Sunday
Time	: 00 :00 :00	
		Set RTC Cancel Okay
		oet mo ouncer only

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	
	ΥY	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	F9:Compare ESC
User List	User Data	
00001 admin	ID/Priority : 1 1999 LDAP User AD Synchry Full Name Password : ***** Repeat Password : *****	Group : N /Group : N onized : N
	Member of Group : not assigned AD group	locked : N
	Administrator : Y Super User : Y Power User : Y LDAP/AD Info SNMP User : N	
	Auto Connect : N	
CPU Access Control List		
Full access	Video access No access	New U. New G.
01001 CPU_010190037		New LU New LG
		Edit
		Delete
		Cancel
		Ckey
Enter 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
<v></v>	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
	Ν	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	 User has user rights Permission to switch CON Devices to CPU Devices s in Extended Switching according to the CON or User ACL, but not in Private Mode.
	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	γ	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.
	Ν	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:Noxt 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 03 04	CPU device RinAl CPU_ATATANAA7 CPU assigned CON connected Status
	05 06 07 08 09 10 11 12 13 14 15 16	EXT list
		Cancel Okay
Use key <a> to add a CPU to	your list	

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:Next F4:Previous F5:Refresh F6:Find F9:Compare E
User List	User Macros
00001 admin	Key: F01 Parameter #1 Parameter #2
Macro Data Function empty	not used not used
Parameter #1 Parameter #2	
For one lef BZ	Diana and Anna and An

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 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	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:Refre	esh F6:Find E9: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 Full access 01001 CPU 010190037	Video access No access	New U. New G.
		New LU New LG
		Edit
		Delete
		LCancel I
		Okey
Enter 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	F1:1	D 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	N assigned CPU_010190	 1037	1
010190037 EXT_010190037 010191923 EXT_010191923	18	Fixed :	N Port 1/2 ; 9	X 0	Universal	÷ 11	
	I	Horizon Vertica Double	OSD Data tal mouse speed [1/x] I mouse speed [1/x] click time ims] d layout ode	4 5 200 German Variab		: 1 : 00	
EXT Type		Enable Enable Update Display Horizon	r OSD Data CPU selection connection info connection info time [sec] tal position l position	市 市 市 日 〇 〇			
	C#1	C#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 (embedded) USB-CON (standalone) Universal-CON Cascade-CON	* = = = = = = = = = = = = = = = = = = =	NE NE NE NE	VI/VGA-CON (video) ID-CPU (keyb., mouse. udio (analog. digital S232 (serial .) SB-CPU (embedded) SB-CPU (embedded) SB-CPU (standalone) niversal-CPU ascade-CPU	.) Y		Edit Uniota 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
ID	-	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
Fixed	Y	Create an EXT Unit with a fixed port assignment (default)
	Ν	Function not active (default)
Port 1/2	1 to 160 (depending on the matrix)	 Port 1: port number of the matrix the extender module is currently connected Port 2: redundant port number of the matrix the extender module is currently connected

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





5.7 CONFIGURING AN USB 2.0 EXTENDER

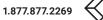
This chapter helps you to configure and use your USB 2.0 EXT Units. USB 2.0 EXT Units can be configured for independent switching or can be assigned to already existing CON Devices or CPU Devices

EXT Units		EXT Data				
2001920037 EKT 212190237		ID : 10193037 Nama : EXT_010190137		CPU/CON assigned 01081 CPU_818190037		
EL0191923 EKT_010191923	- 11	Film	sd : 🗵 🛛 Port 172 : 9	(i)	Universal	: N
EXT Type		Veri Doub Keyb	erel OSU Data izental mouse speed [L/x] lical mouse speed [l/x] ple click time [ms] peerd Layout eo mode	S 200 German Variab		-
		Extender OSD Data Enable GPU selection Enable connection info Update connection info Display time [sec] Horizontal position Vertical position				
Input Signals	CH1.	CH2	Butput 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		****	BVI/VGA-CON (video) HID-CPU (keyo., mease.) Hudio (analo), digital) R\$232 (cerial .) USB-CPU (embedded) USB-CPU (standalone) Uniwersal-CPU	12222	TREE NO.	Edit Contrologi Contrologi

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 F3:1	Next F4:Previous	F5:Refresh F6:Find F9:Compare ES
PU Devices	CPU Data		
	ID	: 1001	Group : N
01001 CPU_010190037	Name	: CPU_010190037	Switch : N Remote Access : N Virtual Device : N
	Member of Group Member of Switch Remote CPU CPU assigned	not assigned not assigned not assigned	not assigned
- I	Allow Private Force Private FIX Color Reference	N 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 SI	P. New IPC	Nor 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		
0	Y	Automatically set if the CPU Device is assigned to a CPU Group		
Group	Ν	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)		
Y		Automatically set for a Virtual CPU Device		
Virtual Device N		Function not active (default)		
Allow Private N		Allow switching to the respective CPU Device in Private Mode		
		Function not active (default)		
	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.		
	Ν	Function not active (default)		



FIELD	ENTRY	FUNCTION		
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.		
		Function not active (default)		
	Y	Assign the CPU Device to a group		
MSC disabled	Ν	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	F1:ID F2:Name F	3:Next F4:Previous	E5:Refresh E6:Find E9:Compare ESC
CPU Devices	CPU Data		
	ID	: 1031	Group : N Switch : N
01001 CPU_010190037	Name	: CPU 018190837	Switch : N Remote Access : N Virtual Device : N
		o : not assigned ch: not assigned not assigned :	not assigned
	Allow Private Force Private FIX Color Reference	I N	2 Step Access : N Exclusive Access : N MSC disabled : N CPU Colors : concernent
	EXT available	1	EXI assigned 010190037 0009 EKT_010190037
			- I
	-		
New R. New V. New G.	New S. New	SP. New IPC	New SES
Edit Delete			Cance1 Okay
Enter a name to find an item			

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	Ν	 Port 1: port number of the matrix the extender module is currently connected Port 2: redundant port number of the matrix the extender module is currently connected

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		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 Nirtual Device : N not assigned 2 Step Access : N Exclusive Access : 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	F1:ID F2:Name	F3:Next	F4:Previous	F5:Refresh	F6:Find	F9:Contain	ESC
Virtual Devices			Real Devic	es			
	000000110		01000.00		_		
02001 virtual CPU 101002 CPU 02002 virtual_CPU_2	_030000419		01002 CF	PU_030000419 PU_040069455			
		- 8			- 8		
		- 8			- 8		
		- 8			- 8		
		- 8			- 8		
		- 8			- 8		
		- 8			- 8		
		- 8			- 8		
		- 8			- 8		12.1
		- 8			- 8	Edit	
		- 8			- 8	Delete	
		- 8			- 8		
		- 8			- 8		н.
		- 8		_	- 8		
			-	_	_		- 1
Select an assignment						وسينت بمهميا المست	

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.

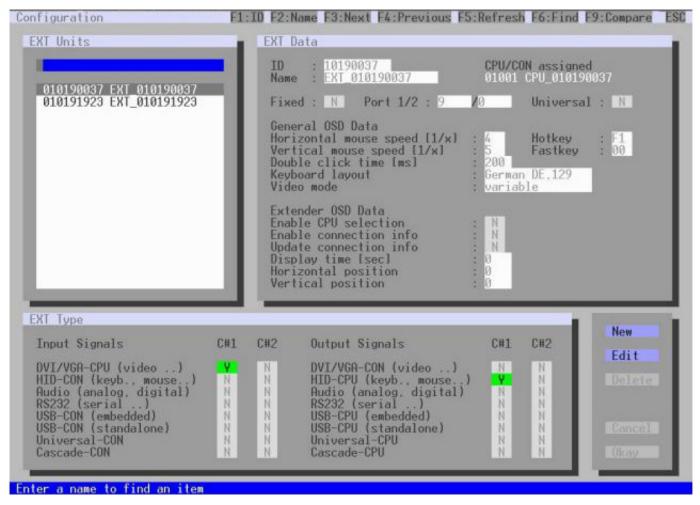


FIGURE 5-9.1.1 OSD MENU CONFIGURATION - EXT UNITS



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.

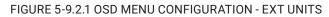
5.9.2 SETTING EXTENDER OSD

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.

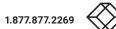


XI Units	-	EXT)ata			
010100007 FUT 010100007		ID Name	: 10190037 : EKT_010190037	CPU/CO 01001	N assigned CPU_010190	037
010190037 EXT_010190037 010191923 EXT_010191923	78	Fixe	ed : N Port 1/2 : 9	13	Universal	: 11
	I	Hor Ver Dout Kevl	eral OSD Data izontal mouse speed [1/x] tical mouse speed [1/x] ble click time [ms] board layout eo mode	4 5 200 Germar Variat	Hotkey Fastkey DE,129	: 00
-XI Type		Enal Enal Upda Disp Hor	ender OSD Data ole CPU selection ole connection info ate connection info olay time [sec] izontal position tical position			
Input Signals	C#1	CH2	Output Signals	C#1	CH2	New
DVI/VGA-CPU (video) HTD-CON (kevbmouse) Audio (analog, digital) RS232 (serial) USB-CON (embedded) USB-CON (standalone) Universal-CON			DVI/VGA-CON (video) HID-CPU (keub. mouse.) Audio (analog, digital) RS232 (serial) USB-CPU (embedded) USB-CPU (standalone) Universal-CPU			Edit Conteres



The following parameters can be configured:

FIELD	ENTRY	FUNCTION
Enable CPU selection	Y	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	Y	Enable Extender OSD (default: Y)
	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:Previous	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	L : N : N : N : On	Virtual Device : N Allow CPU Scan : N Force CPU Scan : N Scan Time [sec]: 3 Port Mode : N Redundancy Off : N Reference : N Fix Color : -	ł
CPU Access Control List	EXT available	3	EXT assigned 010191923 0001 EXT_010191923	ļ
Full access	Video access	No acc 01001	ess CPU_020190418 New V. Edit	1
			Delete	L
Enter a name to find an item			Cancel .0kap	1

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
	Y	Show the macro list instead of the CPU selection list
Show Macro List	Ν	Function not active (default)
	Y	Allow activation of the User ACL at the local console
Allow User ACL	N	Function not active (default)
LOS Frame	Y	 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. When switching to a CPU without video signal, a blank screen will appear surrounded by an orange frame.
	Ν	Function not active (default)
	Y	Automatically set for a CPU Switch (484 Series)
Disable OSD	Ν	Function not active (default)
	Y	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
Port Mode	Y	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)
	Υ	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	Υ	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	1:10 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 11 12 13 14 15 16	CPU device D1001 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:Nex1 F4:Previous F5:Refresh F6:Find F9:Compare E
CON Devices	CON Macros Key: F01 Parameter #1 Parameter #2
Macro Data Function empty Parameter #1	not used not used
Parameter #2	Earce II Okay

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 DON Devices	F1:ID F2:None F0:Next F4:Previous F5:Refresh F6:Find F9:Contain E8	ſ
Real Dovices	Virtual Devices	
03064 CON 010130941 03062 CON 040052148 03063 CON 040112302 03061 CON 040212434		
	Cerrare E.	
Select an assignment		

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.

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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.





Manual : N	Reduce switching is some Disable automatic switch		
Screen #1 ONR/11/191928	Screen #2	Screen #3	Screen 14 screen ant available
Enabled N Control N Omer shored Frame R Sec	Enabled R Control N Owner shared Frame Isec	Enabled N Control N Owner shared Frame Sec	Enabled H Control N Owner phared 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
	N	Function not active (default)
Owner Selection • Shared (default) permits the access from a Control CON Device to all other CON Devices except to another Control CON Device • Name of the own Control CON Device to restrict access to other CON Devices		Device to all other CON Devices except to another Control CON Device • Name of the own Control CON Device to restrict access to
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.

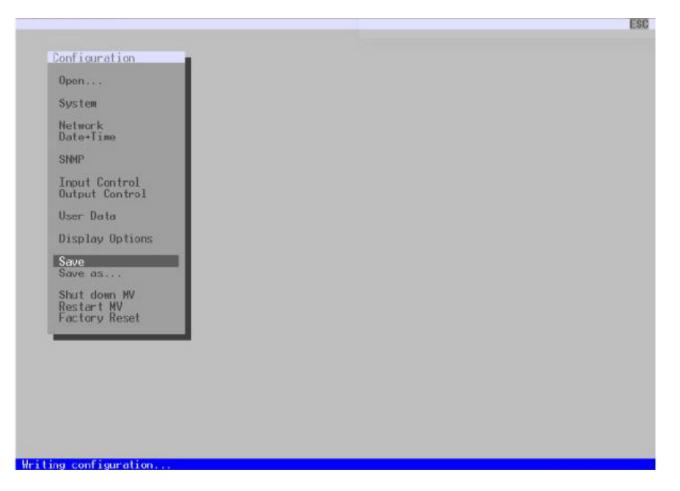


FIGURE5-10.1.1 OSD MENU CONFIGURATION - SAVE



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.

	tandard actory settings	
	tenderd actory settings	
Default S	tandard actory settings	
File #2 File #3 File #5 File #6 File #7	tandard actory cettings tandard actory settings tandard actory settings tandard actory settings tandard actory settings tandard actory settings tandard actory settings tandard	
	actory settings tandard actory 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.

	Es
Standard Factory settings	
Standard Factory settings	
Standard	
Standard	
Standard	
Standard	
Factory settings Standard	
Standard	
Factory settings Standard	
Factory settings Standard Factory settings	
	Cancel Okay
	Factory settings Standard Factory settings Standard Factory cottings Standard Factory settings Standard Factory settings Standard

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	#1		
Dual Interface DHCP IP Address Subnet Mask Gateway Multicast	Pr : 19 : 25 : 19	Disable redundant network interface mode imary CPU Secondary CPU 0 N 2 168 100 099 192 168 100 098 5 255 255 255 255 2 168 100 001 192 5 255 255 255 255 5 255 255 255 255 5 255 255 255 255	
Network Services			
API Service #1 Grid Service #1 SSL Services #1	: Y	Enable API Service port (5555/5565) Enable Grid Service port (5557/5567) Enable SSL for API and Grid communication	
Syslog #1 Syslog Server	: N : 00	0.000.000 .000 :514	
Syslog #2 Syslog Server	: N : 00	Enable Syslog Server #2 0.000.000 .000 :514	
LDAP LDAP TLS/SSL LDAP Server LDAP Base DN	: N : 00 :	Enable Transport Layer Security for Active Directory access	
Log Levels	_		
Trace Syslog #1 Syslog #2	: DE : DE : DE	B N INF N NOT Y WAR Y ERR Y	

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 : ***** Password : ***** Repeat Password : ***** Member of Group : not assigned AD group locked : N Administrator : Y LDAP/AD Info Super User : N Auto Connect : N
Video access No access No access No access New C. New C. New C. New LU New LG 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.





nfiguration	F1:IC	F2:Name	F3:Next F4:Previous F	5:Refresh	F6:Find F	9:Compare	E
EXT Units	- 12	EXT Data					
010100007 FUT 010100007		ID : Name :	10190037 EXT_010190037		N assigned CPU_010190		
010190037 EXT_010190037 010191923 EXT_010191923	188	Fixed :	N Port 1/2 : 9	18	Universal	: N	
	IJ	Horizon Vertica Double	OSD Data tal mouse speed [1/x] l mouse speed [1/x] click time [ms] d layout ode	: 4 : 5 : 200 : German : variab	Hotkey Fastkey DE,129 le	- <mark>- 1</mark> - 00	
ЕХТ Туре		Enable Enable Update Display Horizon	r OSD Data CPU selection connection info connection info time [sec] tal position l position	N N N N N N N N N N N N N N N N N N N			
	C#1 C	:#2 0	utput Signals	C#1	C#2	New	
DVI/VGA-CPU (video)	Y N	N D	VI/VGA-CON (video) ID-CPU (keyb., mouse) N	NN	Edit Delete	
HID-CON (keyb., mouse) Audio (analog, digital) RS232 (serial) USB-CON (embedded) USB-CON (standalone) Universal-CON	N N N	N R N U	udio (analog, digital) S232 (serial) SB-CPU (embedded) SB-CPU (standalone) niversal-CPU		NNNNN		



- 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.



		us F5:Refresh F6:Find F9:Compare E
CPU Devices	CPU Data	
	ID : 1001	Group : N Switch : N
01001 CPU_010190037	Name : CPU_010190037	Remote Access : N Virtual Device : N
	Member of Group : not assigned Member of Switch: not assigned 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 : common
	EXT available	EXI 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:Name	F3:Next F4:Previous	F5:Refresh	F6:Find F9:Compare	ESC
EXT Units	EXT Date	1			10
	ID Name	10190037 EXT_010190037	CPU/CO 01001	N assigned CPU_010190037	L
010190037 EXT_010190037 010191923 EXT_010191923	Fixed	N Port 1/2 : 9	/8	Universal : N	
	Horizon Vertica Double	l OSD Data htal mouse speed [1/x] al mouse speed [1/x] click time [ms] d layout mode	I : 4 5 200 German Variab		l
	Enable Enable Update Display Horizon	er OSD Data CPU selection connection info connection info time [sec] tal position al position	N N 0 0		
EXT Type					10
Input Signals C	#1 C#2 (Output Signals	C#1	C#2	
HID-CON (keyb., mouse) Audio (analog, digital) RS232 (serial) USB-CON (embedded) USB-CON (standalone) Universal-CON	N N N N N N N N N N N N N N	OVI/VGA-CON (video) HID-CPU (keyb., mouse. Audio (analog, digital RS232 (serial) JSB-CPU (embedded) JSB-CPU (standalone) Jniversal-CPU Cascade-CPU	.) Y	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: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 20 Name : CON 010191923 Show Macro List: N Allow User ACL : N Force Login : N LOS Frame : N Disable OSD : N CPU Colors :on EXT available	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 Full access	Video access 01001 C	New R. New V. Edit Delete Cancel Okay

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
Info : 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	Start ID for automatic assignment of virtual CPU devices Start ID for automatic assignment of real 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	[1/x]	

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	E	XT Data					11
010100027 FUT 010100027			10190037 EXT_010190037		N assigne CPU_01019		L
010190037 EXT_010190037 010191923 EXT_010191923		Fixed :	N Port 1/2 : 9	10	Universa	1 : N	
	Ш	Horizont Vertical Double of	OSD Data tal mouse speed [1/x] mouse speed [1/x] lick time [ms] layout ode	4 5 200 German variab	Hotkey Fastkey DE,129 le	: 51 : 30	l
EXT Type		Enable (Enable o Update o Display Horizont	OSD Data CPU selection connection info connection info time [sec] tal position position	N N N 0 0 0			
	#1 C#	2 0.	ıtput 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		D\ HJ RS US US	/I/VGA-CON (video) D-CPU (keyb., mouse. dio (analog, digital S232 (serial) SB-CPU (embedded) SB-CPU (standalone) niversal-CPU	.) N		Edit Delete Cancel	l
Cascade-CON Enter a name to find an item	NN	Le	iscade-CPU	IN	N	Okay	

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 item		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	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	
I I	CPU assigned Allow Privat Force Privat FIX Color Reference EXT available	e : N e : N : N	2 Step Access : N Exclusive Access : N MSC disabled : N CPU Colors : Second on Second EXT assigned	l
			010190037 0009 EXT_010190037	
New R. New V. New G. Edit Delete	New S. N	ew SP. New IPC		I.
Enter 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

Host name for network environment Name of current matrix configuration tings N Allow hotkey control in cascaded environment
 N Load always default configuration N Save matrix status automatically N Echo all switch commands via COM ports N Echo all switch commands via LAN ports Y Enable automatic switching for redundant extenders N Synchronize matrix with master matrix N Synchronize matrix with echo only 000 .000 .000
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 4001 Start ID for automatic assignment of virtual CON devices
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 board N Keep gridlines connected while waiting for grid master

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	setcan	result in valu	es not displaying	properly.			
						01	[and]
						<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 star	tup						
Name adoption (Ext Unit ↔ Device)							
Show Super Grid View	w						
Show powerbackplar and fan firmware	ne						
Enable single I/O boa update on compact s							
Enable splitted firmw update (matrix and e) for master and sub p the 576 switch	(tender)					_	
						<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	Nice	KVM_DV03 Host name for network environment (recommended characters: a-z, A-Z, 0-9,)			
Control	~					
Extended Switch	Na	ime	KVM-Grid Name of current configuration			
Presets						
Status & Updates	inf	lo	KVM Mathe-Grid (DV03, DV01)			
status e opontes						
Status - Matrix Firmware			Description of current configuration			
Status - Extender Firmware	Su	b Matrix				
Update - Matrix Firmware Update - Extender Firmware			Allow hotkey control in cascaded environment			
Activate Configuration	Lo	ad Default				
Miscellaneous			When performing a cold start or a restart of the matrix, the configuration stored in Default will be always activated			
System Settings	Au	ito Save	Save matrix status automatically			
system sermils	1000	able COM Echo	pert music salays summarizing			
System	5.0	able COM ECHO	Eche all switch commands via communication ports			
Access	5.	able LAN Echo	4			
Switch Network	2.0	able Crot Conv	Echo al switch commands via LAII ports			
Date and Time	En	able Redundancy	V			
Matrix Grid			Enable automatic switching for redundant extenders.			
Extender & Devices	o 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				
Assignment	~		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				
Multi-Screen Control			Remove I/O Boards while missing the secondary controller board (576)	-		_
				- second	Ca	racel
Config reloaded			Default			

FIGURE 6-4.1.1 MANAGEMENT SYSTEM SETTINGS - SYSTEM - GENERAL



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
Indifie	Text	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)
	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.
.,	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 Device Estras 2			- 🗆 X
🗁 🗎 💭 🔹 🖷	- v	te Save Download Uplaad Uplaad Volce Finder System Check Save Status	
	-		
	System Settings - Syst		
Matrix Port Grid Control	Enable Auto Config		🗹 Show Help
Control 🥱		Assign new EXT will to a new CPU or CON device	
Extended Switch	ID Real CPU Device	1001 Start ID for automatic assignment of real CPU devices	
Presets	ID Virtual CPU Device	2001	
Status & Updates 🔷		Start ID for automatic assignment of virtual CPU devices	
Status - Matrix Firmware Status - Extender 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 virtual CON devices	
System Settings			
Bystem 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			-April 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 Daries Dires A					- 0 ×
Elle Edit Device Estras 2	ect gacoment Activate Edit Hode F	ndie Save Deuwland., Uptend., Biontorny Planh Updale., Device Pinder.,	System Check. Save Status.		
20210210.zip Master ×					
View	 System Settings - S 	stem			
Matrix Polt	General Automatic ID	Glabal CGD Settings			Show Help
Grid Control	Hot Key	Pre-configured Hot Key 👻			
Control	^	Keyboard sequence to access the command mode			
Extended Switch Presets	Fast Key	Pre-configured Fast Key V Keyboard sequence to access the command mode and to open the OSD			
Status & Updates	^				
Status - Matrix Firmware Status - Extender Firmware Update - Matrix Firmware Update - Extender Firmware Activate Configuration Miscellaneous					
System Settings	~				
Bystern 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					Gancel
				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.

			- ¤ ×
Ele Edi Device Egras 2	d ginconnect Activate Edit Note Rem	ele Seve Devrilead Vyteed Honfortig Flash Updala Device Prider System Check Save Status	
20210210/2ip Master 🖂			
New	System Settings - Acc	\$55	
Matrix			Show Help
Part	Access Satings		
Grid	Force User Login		
Contral		Require user legin to enter 050	
Control	Enable User ACL		
Extended Switch		Enable CPU Access Control Ltat for all users	
Pres ets	Esable Console ACL	R.	
Status & Updattes	~	Enable CPU Access/Cantrol Ust for all consoles	
The second second	OR User/CON ACL		
Status - Matrix Firmware Status - Extender Firmware		OR user and CON Access Castrol List (adand access)	
Update - Matrix Firmware	AND User/COM ACL	M. AND user and CIDNAccess Control Lat. (induce access)	
Update - Extender Firmware	Enable New User	AND rater and Com-Access Central Lat. (House access)	
Activate Configuration	LEADING NOW Claser	Faable CPU access for new users.	
Miscellaneous	Enable Now CON		
System Settings	~	Enable CPU access for new CON devices	
Salem	Auto Disconnect		
Access		Disconnect considerrow current ICPU upon opening the DSD	
Switch	OSD Timeout [sec]	0	
Network		Specify inactivity line to quit OSO automatically (8 \times deactivated)	
Date and Time-	Auto Logout [min]	4	
Matrix Grid		Specify inactivity free for automatic user legoul (0 = immediate, -1 = unitritied)	
Extender & Devices	n Keep CPU		
EXT UNIS		Keep-CPU-connection after Auto Lagout	
GPU Devices	Show CPU		
CONIDevices		Show CPU connector into an all CON units	
User Settings	~		
-			
Users & Groupis			
Assignment			
Wrtual CPU Devices			
Wrtual CON Devices Multi-Screen Control			cancel Cancel
Man-Surean Clothol			
		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 ACL	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)
OR User/CON ACL	Activated	The user obtains the sum of access rights from the console and his personal access rights after logging in (extended access)
ON 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)
Enable new User	Activated	Newly created users automatically receive access to all CPUs
Enable new User	Deactivated	Function not active (default)
Frable raw OON	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	 Period of inactivity of a logged-in user at a console after which he will be automatically logged out. In addition to the logout process, a complete disconnection from the connected CPU occurs under Full Access and Private Mode. Select 0 minutes for an automatic user logout when leaving OSD. Using the setting -1 allows the user to be logged in permanently, until a manual logout is executed. The timer is not active as long as the OSD is open (default: 0 minutes).
Keep CPU	Activated	Permanently show the name of the currently connected CPU Device in the Connection Info box.
•	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 Daries Diese 0			- 0 ×
goen Save Reload Connect De	connect Activate Edit Node Rem	rte Save Downlead Uplaad Uplaad Device Frider System Check Save Status	
20210210.zip Master ×	System Settings - Swi		
	system settings - swi		Show Help
Port	Switch Settings		C Ditwinep
Grid Control	Enable Video Sharing	Allow shared video access to CPU	
Control	Force Connect	V	
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 reast available CPU, requires keyboard or mouse	
Status - Extender Firmware Update - Matrix Firmware	CPU Timeout (min)	600 Specify machets period at currently connected CPU after which CPU will be disconnected automatically (8 = deachvaled)	
Update - Extender Firmware Activate Configuration	Keyboard Connect	x	
Miscellaneous		Enable CPU control request by keyboard activity	
System Settings	Mouse Connect	III) Enable CPU control request by mouse activity	
System	Release Time (soc)	0 Specify inactivity time to accept CPU control reguest from another console	
Access Switch	Macro Single Step	operuny wecowie wite to accept CPU control regional inon another console	
Network		Execute macros in a single step mode	
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			Carcel
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.

pen Seve Reloed Convect 20210210.zip Master X	gisconnect Activate Edit Mode P	emole Seve Download Upload Honitoring Plash Update Device Pinder System Check Save Status		
View	 System Settings - N 	etwork		
Matrix	General Syslog SNM			
Pait			V sr	how He
Grid	Dual Interface			
Control		Enable Dual Network Interface (only available in offline mode)		
Control	Network Settings - Cont	oller Board 1 (Online changes require a matrix restart)		
Extended Switch Preawba	DHCP	If Dynamic configuration of network parameters via OHCP server		
Status & Updates	P Address	192 . 168 . 170 . 168		
Status - Matrix Firmware	Subnet Mask	255.255.255.0		
Status - Extender Firmware Update - Matrix Firmware	Gateway	192 . 158 . 170 . 1		
Update - Extender Firmware	MAC Address	00:215F.04:00:24		
Activate Configuration	Network Settings - Cont	oller Board 2 (Oslise changes require a matrix restart)		
Miscellaneous	DHCP	2		
System Settings	^	Dynamic configuration of network parameters via DHCP server		
System	IP Address	192 . 168 . 100 . 98		
Access Switch	Subnet Mask	25 . 255 . 255 . 0		
Network	Gateway	192_1088_100_1		
Date and Time Matrix Grid	MAC Address	Unknown		
Extender & Devices	A Multicest (Online chang	s require a matrix restart)		
EXTUNIts	Multicast	255 . 255 . 255 . 255		
CPU Devices		Grid Multicast or Broadcast (255-255-255)		
CON Devices		e changes require a matrix restart)		
User Settings	API Service	Enable API service (Port5555)		
Users & Groups	SSL Support	Entrole Price Price Price Coop		
Assignment	~	Enable SSL for secure communication		
Virtual CPU Devices	GRID Service	Enable GED service		
Virtual CON Devices Multi-Screen Control		Enade UKD service		
				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	vated 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	mela Sava Devenlead. Uplead. Menterny Planh Updale. Device Pinder Synker Check. Sava Saka.	
20210210.zip Master ×			
View	 System Settings - Ne 	twork	
Matrix Port Grid Control		bangas requiro a matrix restart, except Log Level)	a Z Show Help
Control	 Enable Syslog 	M Enable Systing Messages for status reporting	
Extended Switch Presets	Syslog Server	182, 588, 170, 555	
Status & Updates	Port		
Status - Matrix Firmware	Log Level	Debug 📃 Info 🗹 Notice 🗹 Warning 🗹 Error 🗹	
Status - Extender Firmware Update - Matrix Firmware Update - Extender Firmware Activate Configuration Miscellaneous	Enable Syslog Syslog Server	banges require a matrix restart, except Log Level) S ⁴ Enable Syning Mexages for status reporting 102 - 188 - 170 - 81	
System Settings	Port	514	
Bystem Access Switch Network Date and Time Watrix Grid	Log Level	Debug 🔜 lefo 🗹 Modice 🗭 Wilarning 🗹 Error 🗭	
Extender & Devices	^		
EXT 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
	Activated	Syslog server to query status is active
Enable Syslog	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)
	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.
Log Level	Info	Activate information messages in syslog (default: deactivated)
Log Level	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:

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

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:

File Edit Device Extras ?						- 🗆 ×
Den., Save Reload Connect D	Isconnect Activate Edit Mode Remete	Save Download Upload Monto	ring Flash Update. Device Finder.	System Check Save Status		
20210210.zip Master X						
View	System Settings - Netwo	rk				
Matrix Port Grid	General Syslog SNMP LI					📝 Show Help
Control	SNMP Agent (Online changes)					
Control	SNMP Agent	Enable SNMP Agent for GET request	s and tracs			
Extended Switch Presets	Port	161				
Status & Updates	Configured SNMPv3 User	<not configurade<br="">SHMPv3 User can be configured in to Configured in the configured in the configured in the configuration.</not>	lser 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					
Miscellaneous	Enable Traps	×.				
System Settings	SNMP Server	192 . 168 . 170 . 155				
System	Port	102				
Access Switch	Select All					
Network	Status	N.	Switch Command			
Date and Time Matrix Grid	Temperature	1	Fan Tray 1	1		
	Insert I/O Board	2	Fan Tray 2	14		
	Remove I/O Board	10	Power Supply 1	12 N		
EXT Units CPU Devices	Invalid I/O Board	1971 1971	Power Supply 2	32 S		
CON Devices	Insert Extender	100	Power Supply 3	1		
User Settings	 Remove Extender 	<u>N</u>	Power Supply 4	<u>s</u>		
Users & Groups						
Assignment	~					
Virtual CPU Devices Virtual CON Devices Multi-Screen Control						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.

	Notification about a removed extender from the matrix
Remove Extender	 Notification about a switched off extender Notification about an interrupted link between extender and matrix
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		×
Contract Con	uage Miscellaneous Syslog SNMP	
Port Log File Directory	162 \\\WINSERVER\USRDIR\$\User\Desktop\DKM\snmp	
Log File Name	snmp	
Log File Extension Daily Log Files	CSV	
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>O</u> k C <u>a</u> r	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 SNMPv3	Users			×
Username	Auth Protocol	Auth Password	Priv Protocol	Priv Password
Auth Auth Priva	iser mame entication Protoc entication Passw acy Protocol acy Password		<u>O</u> k C <u>a</u> nc	×
		Add User	Remove s	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.

								- 0 ×
Eile Edit Device Extras 2								· · · · · · · · · · · · · · · · · · ·
Spen Save Reload Connect C	lilli Qiscon	- v m	Save Download Upload M	entoring Flash Update	Device Finder System Check	k Save Status		
20210210.zip Master X								
View	~	System Settings - Netwo	rk					
Matrix Port Grid Control		General Systog SNMP LC	a matrix restart)					🗹 Show Help
Control	~	LDAP	Enable LDAP					
Extended Switch Presets		Use TLS/SSL	Enable suthenticalise with Activ	e 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 in	User Settings				
Activate Configuration		Base DN	dc=DKM.dc=Office Example: ou-user.dc=mydomain	Acres 4				
Miscellaneous	_							
System Settings System	^							
Access Switch Network Date and Time Matrix Grid								
Contraction of Contraction	~							
EXT Units CPU Devices CON Devices								
User Settings	~							
Users & Groups								
Assignment	^							
Virtual CPU Devices Virtual CON Devices Multi-Screen Control								Accts Cancel
							Detault	

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



The following parameters can be configured:

FIELD	ENTRY	DESCRIPTION
LDAP	Activated	LDAP for the request of information from a user administration is active
ED/ (Deactivated	Function not active (default)
User TLS/SSL	Activated	Enable a secured transmission (transport layer security) for the Active Directory access.
05617125/331	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:

			– o ×
Ele Edit Device Egitas 2	peconnect Activate Edit Note R	nrole Save Devented. Uplad., Hontering Flach Updale., Device Finder., Syntem Check., Save Status.,	
20210210.zip) Master ×			
View	 System Settings - Date 	ate and Time	
Matrix Port			I Show Help
Grid	SNTP (Online changes re	equire a matrix restart)	
Control	SNTP	<u>×</u>	
Control		Enable retwork time server synchronisation	
Extended Switch	SNTP Server	10 . 1 . 10 . 30	
Presets	Time Zone	(GBIT +01.00) Amaterdam, Berlin, Bern, Rome, Stockholm, Vienna 👻	
Status & Updates	A Real Time Clock		
Status - Natrix Firmware Status - Extender Firmware Update - Matrix Firmware Update - Extender Firmware Activate Configuration Miscellane ous	Date And Time	Thu 2021-92-11 COS 00 00 Cot Local Time Date and time of real time clock Gat local time of this computer	
System Settings	~		
System Access Switch Natwork Date and Time Maths Grid			
Extender & Devices	~		
EXT Units CPU Devices CON Devices			
User Settings	~		
Users & Groups			
Assignment	~		
Virtual CPU Devices Virtual CON Devices Multi-Screen Control			164. 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

	t gace	-	Activate	tät Hode Remote Save	Download Upb	ad. 10	ntoring P	Plash Update Device	Finder System O	heck Save Status					
20210210.zip Master X	~	Use	r Settin	igs - Users & Group	5										
Matrix			8 Grou	and a second											
Port			-		T										
Grid			D	Name		ID .		34		Administrator		AD :	Synchronized 🗸		
Control			00001	USER_00001		Name		USER_00034		Super User		AD	Group Locked		
Control	~	02	00003	USER_00003		AD CM				Power User					
Extended Switch		03	00008	USER_00008		Passw				SNMPv3 User					
Presets		04	00010	UBER_00010											
Status & Updates	~	05	00011	USER_00011		Priority	r	0 Ç		LDAP Login					
Status - Matrix Firmware		06	00012	USER_00012						Auto Connect					
Status - Extender Firmware		07	00013	USER_00013		CPUA	cess Cont	trol Favorites Ma	C105						
Update - Matrix Firmware		08	00015	USER_00015											
Jpdate - Extender Firmware		09	00015	USER_00016		-		Full Access		Video Access		-	No Access		
Activate Configuration		10	00017	USER_00017		1002	Name		10	Name		1001	Name		
liscellaneous		11	00018	USER_00018		1002	CPU_01					1004	CPU_01001 CPU_01004		
System Settings	~	12	00019	USER_00019		1039	CPU 01					1005	CPU_01005		
Dystem		13	00020	USER_00020		1052	CPU_01					1005	CPU_\$1005		
locess		14	00021	USER_00021		10000		1 Month				1007	CPU_01007		
Switch Network		15	00022	USER_00022								1008	CPU_01008		
Date and Time		16	00023	USER_00023								1009	CPU_01009		
Watrix Grid		17	00025	USER_00025								1010	CPU_01010		
Extender & Devices		18	00025	USER_00026								1011	CPU_01011		
EXT Units		19	00027	USER_00027								1012	CPU_01012		
DPU Devices		20	00028	USER_00029								1013	CPU_01013		
CON Devices		21	00029	USER_00029								1014	CPU_01014		
iser Settings	~	22	00030	USER_00030								1015	CPU_01015		
		23	00031	USER_00031								1016	CPU_01016		
Jsers & Groups		24	00032	USER_00032								1017	CPU_01017		
asignment	~	25	00033	USER_00033	_							1018	CPU_01018		
Vitual CPU Devices		26		USER_00034								1019	CPU_01019		
Intual CON Devices		27	00035	USER_00035											
Julti-Screen Control		28	00038	USER_00038	*			Use key	leard keys P, V, N I	to change the access centrol lists.	Use right hand moun	se click to	select action.		
		As	sign Sett	ngs to Copy Settin	as fram						New U	Iser	Delete User	en c	

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
<٧>	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	 User has administrator rights Permission for system configuration and all switching operations
	Deactivated	Function not active (default)
Super User	Activated	Permission to switch any console to any CPU in Extended Switching
ouper over	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).

en gave Reload Connect		Canada				Monitoring Plash Update Device Pinder System Che									
0210210.zip Master ×	Carrier and					and any president second rate. Systematic									
New	~ Us	er Settin	ngs - Users & Groups										Edit M	ode acti	ivate
fairix	Use	ra Grou	ipa												
ort				T	1.1							12010			
rid		D	Name		ID .	34		Admini	istrato	· .		AD Synchronized	1		
onbai	01	00001	USER_00001		Name	USER_00034		Super	User			AD Group Locked			
ontrai	^ 02	00003	USER_00003		ADCN	-		Power	User						
Extended Switch Presets	03	00008	LISER_DOODS		Passa			SNMPv3 User							
	04	00010	USER 00010												
atus & Updates	∧ 05	00011	USER_00011		Priorit	y 0 0		LOAPL	login						
atus - Matrix Firmware	05	00012	USER_00012					Auto Co	onsect	• (
tatus - Extender Firmware	07		USER_00013		CBLA	ccess Control Favories Macros									
pdate - Matrix Firmware	08	00015	USER DOD15		LIUM	and a second sec									
date - Extender Firmware	09	00015	USER_00016			CPU Device available						te CPU Devices			
livate Configuration	10	00017	USER_00017		D	Name				D	Name				
scellaneous	11	00018	USER 00018		1001	CPU_01001	1		01	1005	CPU_0100			-	
stem Settings	^ 12	00010	USER_00019		1002	CPU_01002			02	1011	CPU_0101				
stem	13		USER. 00020		1003	CPU_01003			03	1013	CPU_0101	3			
	14	00021	USER_00021	- 1	1004	CPU_01004			04						
witch	15		USER_00022		1005	CPU_01005	_11	-	05						
etwork	16	00023	USER_00023		1007	GPU_01007		**	06						3
ale and Time	17		USER_00025		1008	GPU_01008			07						-
Matrix Grid	+0	00026	USER_00026		1009	CPU_91009			80						
tender & Devices	^ 19		USER_00027		1010	CPU_01010		-	09					_	
(T Units	20	00028	USER_00028		1012	CPU_01012		4	10						
PU Devices	21	00029	USER_00029		1014	CPU_01014		44	11						3
ON Devices	22	00020	USER_00030		1015	CPU_01015			12						
ier Settings	^ 23	00031	USER_00031		1016	CPU_01018			13						
sers & Groups	24		USER_00032		1017	CPU_01017			14						
signment	A 25	00033	USER_00033		1018	CPU_01018			15						
	26	00033	USER_00034	- 1	1019	CPU_01019			16						
tual CPU Devices	27	00035	USER_00035		1020	GPU_01020			17						
Virtual CON Devices Multi-Screen Control	21		115500 00035		1021	CPU_01021					Use keys	+ and - to move CPU			
		sign Setti		-							New Use	r Delete User		at a	

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	ps	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 > Finish	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.



Steps	Assign	Settings to				
1. Select Settings 2. Assign Settings to	A	vailable to assign setting	gs to		Assign settings to	
. Assign settings to	ID	Name		ID	Name	
	67	USER_00067	*	65	USER_00065	
	70	USER_00070	H	68	USER_00068	
	72	USER_00072		71	USER_00071	
	74	USER_00074				
	75	USER_00075				
	76	USER_00076				
	77	USER_00077	4			
	78	USER_00078		-		
	80	USER_00080				

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	
1. 2.	Select Settings Copy Settings from	 Priority Super User Power User SNMPv3 User Auto Connect AD Group Locked CPU Access Control Favorites Macros Select All 	
		< <u>B</u> ack Next> Einist	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.

1. Select Settings					_	
2. Copy Settings	Copy from	00001	USER_00001		~	
		00001	USER_00001		*	
		00003	USER_00003			
		00008	USER_00008			
		00010	USER_00010			
		00011	USER_00011			
		00012	USER_00012			
		00013	USER_00013			
		00015	USER_00015	6		
		00016	USER_00016	15		
		00017	USER_00017			
		00018	USER_00018			
		00019	USER_00019		Ŧ	

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.

jie Edit Device Egitas 2			Dearton	o de Edit Mode Rema		and line	•			Review Product	System Check	E Carton							
0210210.zip)Master ×																			
ñew	~	Use	er Settir	ngs - Users &	Groups												Edit Mo	ode acti	ivate
Valtix		Use	rs Gros	(DB															
Port						T	D		19				istrator		-	housing	2		
Srid Control			D	Name		:									2.25	bronized	N.		
		01	00001	USER_00001		1	Матне		USER_000	259		Supe	rUser		AD Grou	p Locked			
ontrol	~	02	00003	USER_00003			AD CN-					Powe	r User						
Extended Switch		03	00008	USER_00008			Passad	and				SNM	v3 User						
Yesets		04	00010	USER_00010			Priority			¢		LDAP	Login						
itatus & Updates	~	05	00011	USER_00011									Connect						
Ratus - Matrix Firmware		06	00012	USER_00012								ABO	Connect						
Ratus - Extender Firmware		07	00013	USER_00013			CPU Act	cess Contr	Favorites	Macros									
Ipdate - Matrix Firmware		08	00015	USER_00015					let le		11 17 11 11	less less less le	in level and						
Update - Extender Firmware 05 Activate Configuration		09	00015	USER_00016			Key	F1	-		38 17 18 18								
liscellaneous		10	00017	USER_00017					Function				P1				P2		
	~	11	00018	USER_00018		_	01		Funda	20			F1.			_	-2		
System Settings		12	00019	USER_00019		- 1	02										-		
lystem		13	00020	USER_00020				Connect (P	=CON, P2=C	PU)									
ccess witch		14	00021	USER_00021			0.0		ect Vides (P1=CON, P2=CPU)										
letwork		15	00022	UBER_00022					rate (P1=CON (P1=CON)	(P2=CPU)									
late and Time		16	00023	USER_00023				ogout Use											
lattx Grid		17	00025	USER_00025					(P1=VCPU, P	2=RCPU)									
stender & Devices	~	18	00026	USER_00026			- A		P1=RCON,	P2=VCON)									
SKT Units		19	00027	USER_00027				ush (P1=0	(P1=CON)										
PU Devices		20	00028	USER_00028				At (P1-CO											
ON Devices		21	00029	USER_00029			1.0	at Video (f											
ser Settings	~	22	00030	USER_00030			12												
		23	00031	USER_00031			13												
Jsers & Groups		24	00032	USER_00032			14												
asignment	~	25	00033	USER_00033			15												
Intual CPU Devices		26	00034	LISER_00034			10												
Intual CON Devices		27	00035	USER_00035									Сору Ка	Macros	R Pasta Key	Macros	T De	lete Key M	lacro
Julii-Screen Control														_			-	-	
		As	sign Sett	ings to Co	y Settings from.									Ne	wUser De	ete User	- 50	19	Cance

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
Function	Set Real CPU (P1=VCPU, P2=RCPU)	Assign a Virtual CPU Device to a Real CPU Device
Function (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.

gen. Save Reload Convect 20210210.zip Master * X	Deconnec	Deactivale Edit Mode	Remete Save Downle	ed. Up	ked.	Monitoring	Plash Updale Device Pinder System D	Check. Sev	e Status				
View	~ U	ser Settings - Use	ers & Groups									Edit Mode	activated
Status - Matris Firmware Status - Extender Firmware Update - Matrix Firmware Update - Extender Firmware Activate Configuration Miscellaneous	 0 1 1 	a B ♣ 0.0305 4 B ♣ 0.0305 5 B ♣ 0.0307 6 B ♣ 0.0307 7 B ♣ 0.0314 8 B ♣ 0.0324 9 B ♣ 0.0328 1 B ♣ 0.0328 1 B ♣ 0.0328	Name GRCUP_00082 GROUP_00084 GROUP_00086 GROUP_00086 GROUP_00087 GROUP_00089 GROUP_00194 GROUP_00194 GROUP_00194 GROUP_00195 GROUP_00194 GROUP_00195 GROUP_00196 GROUP_00197 GROUP_00198 GROUP_00198 GROUP_00193	¥	Info	ID 00001	81 GROUP_80061 OPU Access Control UserCroup available Name USER_00001 USER_00001	-	LDAP Login AD Synchro	D	UserGroup assign Name	red	
Matrix Grid													
Extender & Devices EXT Units CPU Devices CON Devices	^								44				
User Settings	~												
Users & Groups													
Assignment	~												
Virtual CPU Devices Virtual CON Devices Multi-Screen Control											roup Qelete Group		Gancel

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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pen. Save Relaad Convect	Decor	- C.	Activate Cot I	lode Remote Save	Dewnload.	Uplead .	Nontoring Plash	Update	Device Finder		ve Status			
No210210.zip Master ×	~	Exte	ender 8 De	vices - EXT Units										
Valrix	1000000	-		nees - Ext onit				r .						
Port			ID	Name	Port	Red Pert		, ID		40163318		CPU Assigned	01005 CPU_01005	
irid			020190801	EXT_020190601	63		CON	A No	me	EXT_040163318				
Interior		02	010231458	EXT_010231458	127	0	CPU	Po	n	70		Redundant Port	86	
ontrol	~	03	040163323	EXT_040163323	135		CPU	Fix	-					
atended Switch			010198380	EXT_010198380	133		CON		cation					
Yeaeta			040163320	EXT_040163320	136		CPU	Con		Device: NVM_DV01			Parent and a 19784 (1979)	
itatus & Updates	~	06	040163326	EXT_040163326	134		CON	Un		L/O board: 9		Link 2	Device: NVM_DV03 1/0 board: 11	
	10000	07	010198381	EXT_010198381	121		CON			L/O board ports	é 70		I/O board porti f	
Status - Matrix Firmware Status - Extender Firmware		80	040163322	EXT_040163322	124		CPU			Matrix port:			Natrix port: 06	
Jodate - Matrix Firmware		09	040163318	EXT_040163318	70	86	CPU	Edi	ender Type	Firmware Version	Parametera	USB-HID Ghosting ED	D CK	
pdate - Extender Firmware		10	010184096	EXT_010184098	122	0	CON							100
ctivale Configuration		11	040073657	EXT_040073657	120		CPU	Typ	*	PU			Standard View	ExpertVie
liscellaneous		12	010198384	EXT_010198384	119		CPU			Name		Basic	PartA	PatB
lystem Settings	~	13	010309573	EXT_010309573	118		CON	DW	HOMINGA (M			N.		
hatem		14	040163302	EXT_040163302	117		CON		(keyboard, m			N.		
ccess		15	040163321	EXT_040163321	152		CPU		log Audio				1	
witch		16	040163319	EXT_040163319	151		CPU		tal Audio					
letwork		17	040153301	EXT_040163301	150		CON	RS2	32/RS422 (x	erial)			V	
late and Time latetx Grid		18	040163303	EXT_040163303	149		CON	USE	B-CPU (embe	(ded)				V
	_	19	010231054	EXT_010231054	139	0	CPU	USE	-CPU (stand	(anota)				
xlender & Devices	^	20	010198383	EXT_010198383	140		CPU	Univ	versal-CPU					
OKT Units		21	040163324	EXT_040163324	138		CON	Cas	cade-CPU					
PU Devices		22	040163325	EXT_040163325	137		CON							
CON Devices		23	040077291	EXT_040077291	155		CPU							
iser Settings	^	24	040000939	EXT_040000939	153		CON							
isers & Groups		25	010135668	EXT_010135668	156		CPU							
asignment	~	26	010209387	EXT_010209387	154	0	CON							
Vitual CPU Devices		27	010309742	EXT_010309742	257		CPU							
Intual CON Devices		28	040163313	EXT_040163313	297		CON							
fulls-Screen Control		29	010302796	EXT_010302796	258		CPU							
		Ass	sign Settings I	a Copy Setting	s hom_	Resta	ut Extender					Diaw L	init Delete Unit	Cance
													and the second s	

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.

pen Seve Reload Convec	2000	mect	Descrivele Edit	Hode Remote Save	Download.	Upbad	Monitoring Plash	Update Device Pr	der System Check Save Status			
lew	^	Ext	lender & De	vices - EXT Units							Edit Mo	de activat
latrix							T	D	40075855	CPU Assigned	01012 CPU_12 FHD MGA	
ort			ID 4	Name	Part	Red Per	Туре	1		cr o nongeco		
rid		27	010218839	CON_83	154		CON *	Name	CPU_VGA_02			
tertino		28	012345679	CPU_Raspi_02	336		CPU	Port	145			
ontrol	-	29	020201214	IP-CPU_05_v2_DH	104	D	IP CPU	Fixed				
xtended Switch		30	030000419	CPU_02	0		CPU	Location				
resets		31	040000059	EXT_040000859	D		CON		Device: TEST-A-E160			
itatus & Updates	-	32	040000927	CON_11	67	0	CON	Link 1	1/0 Board: 19			
tatus - Matrix Firmware		33	040000932	IP-CPU_01_CATs	D		IP CPU		1/0 heard ports 1 Matrix ports 145			
Ratus - Extender Firmware		34	040015300	CON_82	157		CON					
Ipdate - Matrix Firmware		35	040069452	CPU_03	219		CPU	Extender Type	Firmware Version Parameters	USB-HID Ghosting E	DID	
Ipdate - Extender Firmware		36	040069453	CPU_04	223		CPU				Transmission of the local division of the lo	
ctivale Configuration		37	040069455	CPU_01	0	-	CPU	Type	CPU		Standard View	Expert VI
liscellaneous		38	040076855	CPU_VGA_02	145	- 1	CPU		Name	Basic	PartA	PatB
iystem Settings	^	39	040076860	CPU_VGA_01	137		CPU	DVINDMINGA	(videa)	M.		
lystem		40	040113350	CON_09	65	D	CON	HD (keyboard,	mouse)	1		
ccess		41	040131237	CPU_Raspi_07	341		CPU	Analog Audio			10 N	
witch		42	040131238	CPU_Raspi_08	342		CPU	Digital Audio				
letwork late and Time		43	040131230	CPU_Raspi_09	343		CPU	R5232/R5422	(serial)		N.	
latrix Grid		-44	040131240	CPU_Raspl_06	340		CPU	USB-CPU (em/	bedded)			1
		45	040131241	CPU_Raspl_05	339		CPU	USB-CPU (star	idalone)			
xlender & Devices	^	45	040131242	CPU_Raspi_04	330		CPU	Universal-CPU				
OKT Units		47	040131243	CPU_Raspl_03	337		CPU	Cascade-CPU				
PU Devices		48	040131245	CPU_Raspi_01	335		CPU					
CON Devices		49	040131246	CPU_Raspl_10	344		CPU					
iser Settings	~	50	040131932	CON_04	158	0	CON					
Jsers & Groups		61	040137566	IP-CPU_02_CATx	0		IP CPU					
asignment	~	52	040166854	IP-CPU_04_Fiber	72	0	IP CPU					
itual CPU Devices		53	040167519	IP-CPU_03_Fiber	70	86	IP CPU					
inual CPU Devices		54	090000097	U882.0_CON	97		USB 2.0 CON					
lulti-Screen Control		**	4		144							
		Ag	sign Settings to	Copy Settings	Forn	Restart	Edender			New	Unit Delete Unit	Can

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.

pen. geve Reload Connec 20210210.zip Master X	Deco	reect	Desctivate Edit	Mode Remote Save	Download.	Upbed.	Monitoring 7	Teah Updala	Device Find	er System Chack	Save Status.					
0ew	^	Ext	ender & De	vices - EXT Units										Edi	t Mode	activat
Matrix								Υ _{ID}		40076055		CPU Assigned		CPU_12 FHD (VG		
Part			ID 4	Name	Port	Red. Port	Туре	1								
arid		27	010210039	CON_03	.154		CON	A No	me	CPU_VGA_02						
Control		28	012345679	CPU_Raspl_02	336		CPU	Po	et	345						
ontrol	~	29	020201214	IP-CPU_05_12_DH	104	0	IP OPU	Fix	ed							
Ixlended Switch		30	030000419	CPU_02	0		CPU	Lo	cation							
resets		31	040000859	EXT_040000659	0		CON			Device: TEST-A-	-E160					
itatus & Updates	~	32	040000927	CON_11	67	0	CON	U	k1	L/O board:	19					
Status - Matrix Firmware		33	040000932	IP-CPU_01_CATX	0		IP CPU			I/O board port: Matrix port:	145					
Status - Extender Firmware		34	040015300	CON_02	157		CON									
Update - Matrix Firmware		35	040009452	CPU_03	219		CPU	EM	ender Type	Firmware Version	Parameter	s USB-HID Ghosting E	DID			
Jpdate - Extender Firmware		36	040069453	CPU_04	223		CPU			Name		Туре		3	ersion	
Activate Configuration		37	040069455	CPU_01	0		CPU	01	EXTICPU		E	эл		F01.51.191202		
Macellaneous		38	040076855					02	HIDCPU		H	(D		F04.03.201112		
lystem Settings	~	38	040076860	CPU_VGA_01	137		CPU	03	EXTINSO		1	ISD		802.00.191011		
System		40	040113350	CON_09	65	0	CON	04	ANASER		8	AN.		804.10.101025		
Access		41	040131237	CPU_Raspi_07	341		CPU	05	USBEFS		U	150		800 60 140325		
Bwitch		42	040131238	CPU_Raspi_08	342		CPU	05	CONVER	1	0	PU		F01.52.200306		
Network		43	040131239	CPU_Raspi_09	343		CPU									
Date and Time		44	040131240	CPU_Raspl_06	340		CPU									
Watrix Grid		45	040131241	CPU_Raspi_05	339		CPU									
Extender & Devices	^	46	040131242	CPU_Raspl_04	338		CPU									
EXT Units		47	040131243	CPU_Raspi_03	337		CPU									
CPU Devices		48	040131245	CPU_Raspl_01	335		CPU									
CON Devices		49	040131246	CPU_Raspi_10	344		CPU				0 040	THEY LAND THE	0			
Jser Settings	~	50	040131932	CON_04	158	0	CON				10 0	E D 000	III S.E. II			
Users & Groups		51	040137566	IP-CPU_02_CATX	0		IP CPU					Laf .				
Lasignment	~	52	040166854	IP-CPU_04_Fiber	72	0	IP OPU									
		53	040167519	IP-CPU_03_Fiber	70	85	IP CPU									
Infual CPU Devices		54	090000097	U582.0_CON	97		USB 2.0 COM	N								
Virtual CON Devices		**					100000000									
AND A DESCRIPTION			sign Settings to	. Copy Setting			Extender					bjew		elete Unit		Gan

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.

en gave Raitoad Connect 0210210.210/Master X	t Deco	nect.	Activate Edit I	lode Remote Seve	Download.	Uplead	Monitoring	Plash Upd	ate Device Pinde	System Check	Save Status			
lew	~	Ext	ender & De	vices - EXT Uni	ts									
latrix								Ŧ	ID	93500-424		CPU Assigned	00044 CPU 00044	
lait			ID	Name	Port	Red Port	Туре							
and Control		18	040163303	EXT_040163303	149		CON	*	Name	EXT_09000042	14			
		19	010231854	EXT_010231854	139	0	CPU		Port	424				
ontrol	^	20	010198383	EXT_010196383	140		CPU		Fixed	10				
ixtended Switch		21	040163324	EXT_040163324	130		CON		Location					
resets		22	040163325	EXT_040163325	137		CON			Device: KVM_				
tatus & Updates	~	23	040077291	EXT_040077291	155		CPU		Link 1	I/O board: I/O board po	33			
Rabus - Matrix Firmware		24	040000939	EXT_040000939	153		CON			Matrix port:				
tatus - Extender Firmware		25	010135668	EXT_010135668	156		CPU							
Ipdate - Matrix Firmware		26	010209387	EXT_010209387	154	0	CON		Extender Type	Firmware Versio	N USB-HID O	hosting EDID EDID 2		
Ipdate - Extender Firmware		27	010309742	EXT_010309742	257		CPU		Туре	188 2.0 CPU			Standard View	w ExpertVie
ctivate Configuration Itscellaneous		28	040163313	EXT_040153313	297		CON						Clandard Vie	Coperior
		29	010302796	EXT_010302796	258		CPU			Name		Basic	PartA	PartB
ystem Settings	^	30	040163314	EXT_040163314	290		CON		DVIHDM/VGA(ideo)				
lystem		31	010309739	EXT_010309739	259		CPU		HED (hayboard, r	nause)				
ccess		32	040163311	EXT_040163311	96		CON		Analog Audio					
Witch Letwork		33	010309746	EXT_010309746	260		CPU		Digital Audio					
ale and Time		34	010302831	EXT_010302831	300		CON		R\$232/R\$422(serial)				
fatrix Grid		35	010287351	EXT_010287351	261		CPU		USB-CPU (emb	edded)				
xtender & Devices	~	36	040163312	EXT_040163312	301		CON		USB-CPU (stan	dalone)		NI .		
		37	010308970	EXT_010308970	262		CPU		Universal-CPU					
Diff Units CPU Devices		38	040163310	EXT_040163310	302		CON		Cascade-CPU					
ION Devices		39	010308973	EXT_010306973	264		CPU							
ser Settings	~	40	040163309	EXT_040163309	303		CON							
		41	040073656	EXT_040073656	263		CPU							
Isers & Groups		42	040163308	EXT_040163308	0		CON							
tremaise	^	43	040127994	EXT_040127994	265		CPU							
Viual CPU Devices		44	010309561	EXT_010309561	0		CON							
Intual CON Devices		45	010302804	EXT_010302804	266	×	CPU	_						
Julti-Screen Control		-45	090000424					- e						

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



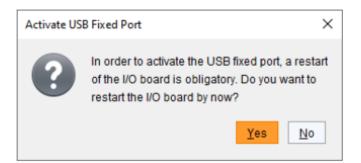


FIGURE 6-7.1.1 MANAGEMENT SOFTWARE DIALOG - ACTIVE USB FIXED PORT

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.

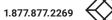




pen geve Reload Convect 20210210.zip Master ×	Deco	mect	Activate Edit Hode	Remete Save	Head Up!	tad Hontorng Pa	ish Update D	Revice Find	er System Chec	s. 5	iave Status							
New	~	Exte	nder & Devic	es - CPU Devices														
Matrix		CPU	CPU Groups	IP Session Config														
Port					T													
Grid			D	Name		D	1021			CPI	U Assign	H						
Control		01	01001	CPU_01001		Name	CPU_0100	21		CO	N Connec	bat	03019 C	DN_03019				
Control	~	02	01002	CPU_01002		Virtual Device				CPI	U Colors			¥ 01 ····	¥			
Extended Switch		03	01003	CPU_01003		Allow Private	~			Exc	Jusive Ac	cess						
Presets		04	01004	CPU_01004		Force Private				MS	C Disable	d						
Status & Updates	~	05	01005	CPU_01005		Fix Frame Color				-								
Status - Matrix Firmware		05	01005	CPU_01005					*									
Status - Extender Firmware		07	01007	CPU_01007		Reference	(no refe	rence se										
Update - Matrix Firmware		08	01000	CPU_01008		2 Step Access												
Update - Extender Firmware		09	01009	CPU_01009		Extender Assignmen	CONAN	ass Carb	W I Kar Loras	IL Car	ninos Ma	nitry at	momenter					
Activate Configuration		10	01010	CPU_01010		Louis and the state												
Miscellaneous		11	01011	CPU_01011			Extender av							Edender ass				
System Settings	~	12	01012	CPU_01012		ID Name		Port	Red Port				ID .	Name	Port	Red. Port		
System		13	01013	CPU_01013		40233349 EXT_0	40233340	0		- 1		01	10309748	EXT_010309748	269		-	
Access		14	01014	CPU_01014								02						
Bwitch		15	01015	CPU_01015								03						
Network Date and Time		16	01016	CPU_01016								04						
Watrix Grid		17	01017	CPU_01017							++	05						3
Extender & Devices	~	18	01018	CPU_01018								06						
		19	01010	CPU_01019								07						
EXT Units		20	01020	CPU_01020							4	05						
CPU Devices CDN Devices		21	01021	CPU_01021														
		22	01022	CPU_01022							44							3
Jser Setlings	A	23	01023	CPU_01023														
Users & Groups		24	01024	CPU_01024														
lasignment	~	25	01025	CPU_01025														
Infual CPU Devices		26	01025	CPU_01025														
Artual CON Devices		27	01027	CPU_01027														
Nulti-Screen Control		28	01020	CPU_01028						٠				Use keys # and - to r	izve exter	der		
			ign Settings to	Copy Settings the		Configure IP CPU								yew Device D			-	

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.
Virtual Device	Activated	Allow switching to the respective CPU Device in Private Mode
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)
MCC disabled	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.

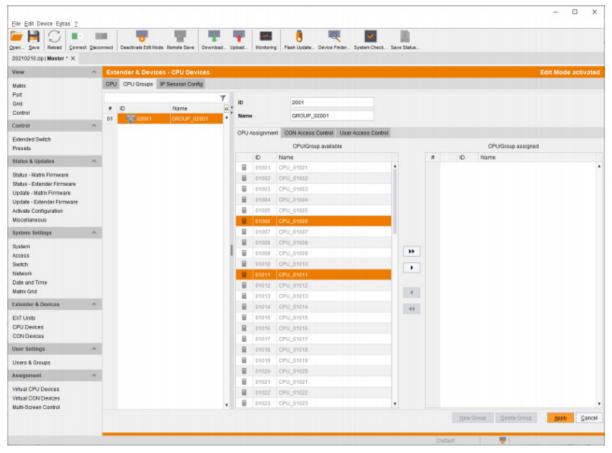


FIGURE 6-8.3.1 MANAGEMENT SOFTWARE MENU - EXTENDER & DEVICES - CPU DEVICES - CPU GROUPS



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.

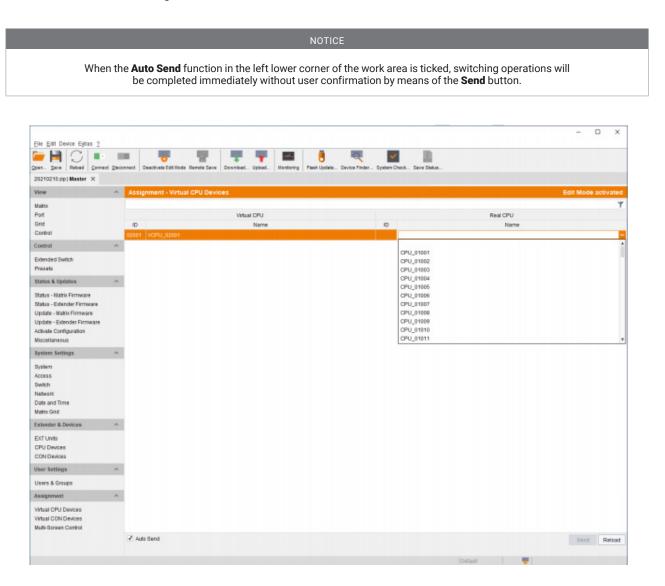


FIGURE 6-8.4.1 MANAGEMENT SOFTWARE MENU - ASSIGNMENT - VIRTUAL CON DEVICES

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

- H C -	- 11	•	0	10	Ψ.	T				~	1					
n. Save Reload Connect	Decor	nect	Activate Edit II	Iode Remete Save Do	whilead	Uplead	Monitoring P	lash Up	date Device Finder	System Check.	Save Status					
210210.zip Master ×																
lew	~	Ext	ender & De	vices - EXT Units												
fabrix								т	D	10000101		CON Assigned	03012 CON_12			
lait			ID	Name	Port	Red.Port	Туре					contraction	and a surface			
anid		24	010155403	CON_MV_3.4	0		CON	•	Name	CON_12						
Control	_	25	010155411	CON_NV_4.1	0		CON		Port	0						
ontrol	^	26	010155420	CON_MV_4.2	0		CON		Fixed							
Ixlended Switch		27	010155419	CON_MV_4.3	0		CON		Location							
vesets		28	010182231	CON_MV_4.4	0		CON									
itatus & Updates	~	29	010218839	CON_03	0		CON		Link 1							
Rabus - Matrix Firmware		30	040131932	CON_04	0	0	CON									
Italus - 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	a Parameters			
pdate - Extender Firmware		33	040000932	IP-CPU_01_CATX	0		IP CPU		Horizontal Mou	a freed first	4 \$					
ctivate Configuration		34	012345679	CPU_Raspi_02	0		CPU									
liscellaneous	_	35	040069455	CPU_01	0		CPU		Vertical Mouse	Speed [10x]	5 \$					
ystem Settings	~	36	030000419	CPU_02	0		CPU		Double Click Ti	ne (ms)	200 \$					
lystem		37	040069452	CPU_03	0		CPU		Keyboard Layo	1	German (DE, 129)	*				
CCRSS		38	040069453	CPU_04	0		CPU		Video Mode		Variable	~				
Switch Setwork		39	010172819	CPU_05	0		CPU									
Date and Time		40	010189131	CON_05	0		CON		Hot Key		Pre-configured Hot Ki	ej v				
latrix Grid		41	010135474	CON_05	0		CON		FastKey		Custom Key	✓ HID Scan C	Code: 0v68			
xtender & Devices	~	42	040166854	IP-CPU_04_Fiber	0	0	IP CPU									
	-	43	010209391	CON_07	0	0	CON									
DIT Units CPU Devices		44	010209382	CON_08	0	0	CON									
CON Devices		45	040113350	CON_09	0	0	CON									
	~	46	010195808	CON_10	0	0	CON									
Iser Settings	~	47	040000927	CON_11	0	0	CON									
isers & Groups		48	010000101	CON_12	0	-	CON									
ssignment	~	49	020201214	IP-CPU_05_x2_DH	0	0	IP CPU									
Viual CPU Devices		50	040167519	IP-CPU_03_Fiber	0	0	IP OPU									
Intual CON Devices		51	040137566	IP-CPU_02_CATX	0		IP OPU									
ulti-Screen Control		52	010209378	VulWall_TRx	0	D	CPU	,								
		As	sign Bettings t	a_ Copy Settings	tom_	Restan	Extender					New Us	vit Delate Unit	3000	9	and

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	
1. 2.	Select Settings Assign Settings to		
		General OSD Data	
		Extender OSD Data	
		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:

iteps	Assign Settin	gs to						
Select Settings Assign Settings to	Availabl	e to assign settings to		Assign settings t				
. Assign Settings to	ID	Name		ID	Name			
	40236700	EXT_040236700		40236694	EXT_040236694	4		
	40236703	EXT_040236703	++					
	10303126	EXT_010303126	•					
	40227287	EXT_040227287						
	10309572	EXT_010309572						
	10302824	EXT_010302824	4					
	10303109	EXT_010303109						
	40087106	EXT_040087106						
	40173697	EXT_040173697	v			,		

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	
1. Select Settings 2. Copy Settings from		
	✓ General OSD Data ✓ Extender OSD Data	
	Select All	

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	gs from				
1. Select Settings 2. Copy Settings from	Copy from	010195692	CON_MV_1	.1	~	
		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	2		
		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.

sen. gave Raiced Convec	e Becor	mect	Activate Edit II	lode Remote Save	Dewnload .	Uplead	Nontoring	Plash Upda	te Device Pinde		Save Status .						
0210210.zip Master ×	~	Evel	ander 8 De	vices - EXT Units	-												
		EAI	ender a De	vides - Exil Onlis	•			т								_	-
Alabrix Point			iD	Name	Port	Dat Dr	rt Type	· .	D	10000101			CON Assigned	03012 CON_12			
arid						Popul P u		1	Name	CON_12							
ionbal			010155403	CON_MV_3.4	0		CON		Part	0							
ontrol	~	25	010155411	CON_MV_4.1	0		CON										
		26	010155420	CON_WV_42	0		CON		Fixed								
xtended Switch Yeaveta			010155419	CON_MV_4.3	0		CON		Location								
	~	28	010182231	CON_MV_4.4 CON_03	0		CON										
tatus & Updates	~		040131932	CON_04	0	0	CON		Link 1								
tatus - Matrix Finmware			010207759	CON_01	0	0	CON										
tatus - Extender Firmware Ipdate - Matrix Firmware		32	040015300	CON_02	0		CON		Extender Type	Firmware Version	General OS	Data	Extender OSD Data	Parameters			
pdate - Extender Firmware			040000932	IP-CPU_01_CATx	0		IP OPU										
ctivate Configuration		34	012345679	CPU_Raspi_02	0		CPU		Enable Connec	ioe lefo	1						
liscellaneous		35	040069455	CPU_01	0		CPU		Update Connec	tion info	1						
ystem Settings	~	36	030000419	CPU_02	0		CPU		Enable CPU Se	ection	1						
lystem			040069452	CPU_03	0		CPU	11	Display Time (s	~1							
ccess		38	040009453	CPU 04	0		CPU	- 11									
witch		30	010172819	CPU_05	0		CPU		Horizontal Posi	tion [10 ps]		2 🗘					
etwork .		40	010189131	CON 05	0		CON		Vertical Positio	n [10 ps]		3 🗘					
Date and Time Jatrix Grid		41	010135474	CON D6	0		CON		OSD Position P	resets	Top Left	*					
		42	040166854	IP-CPU 04 Fiber	0	0	IP CPU										
slender & Devices	~	43	010209391	CON 07	0	0	CON		EKTOSO								
XT Units		44	010209392	CON_08	0	0	CON										
PU Devices		45	040113350	CON_09	0	0	CON										
ON Devices		45	010195909	CON_10	0	0	CON										
ser Settings	^	47	040000927	CON_11	0	0	CON										
isers & Groups		48	010000101	CON_12	0	-	CON										
asignment	~	49	020201214	IP-CPU_05_x2_D	H 0	0	IP CPU										
Intual CPU Devices		50	040167519	IP-CPU_03_Fiber	0	0	IP OPU										
Itual CON Devices		51	040137566	IP-CPU_02_CATX	0		IP CPU										
lulti-Screen Control		52	010209378	VutWall_TRx	0	0	CPU										
		As	sign Settings k	a_ Copy Setting	s hom.	Resta							New Un	It Delate Unit	400		

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

Sen. Save Raiced Sonner	ct Diaco	illi react	Activate	Edit Note: Remote Seve	Dewnload., L	pited.	Iontoring Pla	anh Update Device	Pinder System C	heck Save Status					
20210210.zip Master ×															
View	~	Ext	ender 8	Devices - CON De	vices										
Mahtx					Ť	ID		3025		CON Assigned					
Port		#	ID	Name		1				CPU Connected					
Grid Control		01	03001	CON_03001		Name		CON_03025							
		02	03002	CON_03002		Priorit	Y	0. ‡		Allow CPU Scan					
Control	A	03	03003	CON_03003		Virtual	Device			Force CPU Scan					
Extended Switch		04	03004	CON_03004		Allow	User ACL	12		Scan Time [sec]	0 \$				
Presets		05	03005	CON_03005		Force	Login			Port Mode					
Status & Updates	~	06	03005	CON_03006		LOSE				Redundancy Off					
Status - Matrix Firmware		07	03007	CON_03007			Macro List								
Status - Extender Firmware		80	03008	CON_03008						Reference	(CON_03044)				
Update - Matrix Firmware		09	03009	CON_03009		OSD D	isabled			CPU Colors			¥		
Update - Extender Firmware Activate Configuration			03010	CON_03010						Fix Frame Color	-	*			
Miscellaneous			03011	CON_03011		Extend	er Assignmen	d CPU Access C	ontrol Favorites	Macros					
System Settings	~	12	03012	CON_03012 CON_03013		-		ull Access		Video Acc			No Acces		
			03014	CON_03014		I ID	Name	un marcens	D	Name	77.	ID	Name		
System Access		15	03015	CON_03015		1010	CPU_0101	0		That i the		1001	CPU_01001		
Switch		16	03016	CON 03016		1023	CPU_0102					1002	CPU_01002		
Network			03017	CON_03017		1027	CPU_0102					1003	CPU_01003		
Date and Time		18	03018	CON 03018		1028	CPU 0102					1004	CPU 01004		
Matrix Grid		19	03019	CON 03019		1029	CPU_0102					1005	CPU_01005		
Extender & Devices	~	20		CON 03020		1030	CPU 0103					1005	CPU 01005		
EXT Units			03021	CON_03021								1007	CPU_01007		
CPU Devices		22	03022	CON_03022								1008	CPU_01008		
CON Devices		23	03023	CON_03023								1009	CPU_01009		
User Settings	~	24	03024	CON_03024								1011	CPU_01011		
Users & Groups		25	03025	CON_03125								1012	CPU_01012		
Assignment	~	26	03025	CON_03026								1013			
		27	03027	CON_03027								1014	CPU_01014		
Virtual CPU Devices Virtual CON Devices		28	03028	CON_03029								1015	CPU_01015		
Multi-Screen Control		29	03029	CON_03029				Use key	coard keys P. V. N to	change the access contra	Tists. Use right hend no	use cick to	select action.		
					as hore									_	

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
<٧>	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.
Vintual Davias	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	 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. When switching to a CPU Unit without video signal, a blank screen will appear surrounded by an orange frame.
	Deactivated	Function not active (default)
Show Macro 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
USD Disabled	Deactivated	Function not active (default)
CON Assigned	-	ID and name of the assigned Virtual CPU Device, cannot be changed, is retrieved automatically
ODU Osmantad		ID and name of the connected CON Device, cannot be
CPU Connected	-	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		
 Select Settings Assign Settings to 		 Priority ✓ Allow User ACL Force Login ✓ LOS Frame Show Macro List OSD Disabled ✓ Allow CPU Scan Force CPU Scan Scan Time [sec] Port Mode Redundancy Off Reference CPU Colors Fix Frame Color CPU Access Control Favorites Macros GPIO Select All 	
		< 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 Settings to					
teps	Assign S	Settings to			
. Select Settings . Assign Settings to	Ava	ailable to assign settings to		Assign settings to	
, hongi ooningo 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	4		
	3011	CON_11			
	3012	CON_12	•		
	3013	XV_R490_CatX_L			
	3014	XV_R490_Fiber_L			
	3015	CON 会迷			
	3016	XV_R490_CatX_R			
	3017	XV_R490_Fiber_R			

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		
 Select Settings Copy Settings from 	Select Setungs	 Priority Allow User ACL Force Login LOS Frame Show Macro List OSD Disabled Allow CPU Scan Force CPU Scan Scan Time [sec] Port Mode Reference CPU Colors Fix Frame Color CPU Access Control Favorites Macros GPIO Select All 	
		< <u>Back</u> Next> Einish Canc	el

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.

1. Select Settings 2. Copy Settings from Copy from D3101 MultiViewer 1.1 03005 CON_05 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	~	
03005 CON_05 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		
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	A	
03009 CON_09 03010 CON_10 03011 CON_11 03012 CON_12 03013 XV_R490_CatX_L 03014 XV_R490_Fiber_L		
03009 CON_09 03010 CON_10 03011 CON_11 03012 CON_12 03013 XV_R490_CatX_L 03014 XV_R490_Fiber_L		
03011 CON_11 03012 CON_12 03013 XV_R490_CatX_L 03014 XV_R490_Fiber_L		
03012 CON_12 03013 XV_R490_CatX_L 03014 XV_R490_Fiber_L		
03013 XV_R490_CatX_L 03014 XV_R490_Fiber_L		
03014 XV_R490_Fiber_L		
03015 CON 会迷		
03016 XV_R490_CatX_R		
03017 XV_R490_Fiber_R	•	

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.





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).

sen Save Reload Convect 20210210.21p Master X	Decom	nect)	Activate	Edit Node Remetie Save Downlo	red. Upl	ed. a	Iontoring Plas	h Update Device Pinder.	System Ch	ock. Sa	ve Status						
0ew	~	Exter	nder 8	Devices - CON Devices													
Waltix					T	ID		3025		-	Assigned		_				
Port			D	Name													
arid		01 0	3001	CON_03001	1	Name		CON_03025		CPU	Connected						
Control		02 0	3002	CON_03002		Priorit	y	0 \$		Allow	CPU Scar						
Control	^	03 0	3003	CON_03003		Virtual	Device			Force	e CPU Scar						
Extended Switch		04 0	3004	CON_03004		Allow	User ACL	×.		Scan	Time (sec			0			
Presets		05 0	3005	CON_03005		Force					Mode						
itatus & Updates	~	06 0	3006	CON_03006													
Status - Matrix Firmware		07 0	3007	CON_03007		LOS F					indancy Of						
Status - Extender Firmware		08 0	3008	CON_03008		Show	Macro List			Refe	rence		(CON	(03044)			
Jpdate - Matrix Firmware		09 0	3009	CON_03009		0500	isabled			CPU	Colors		-	¥ on	~		
Ipdate - Extender Firmware		10 0	3010	CON_03010						Fix Fi	rame Color			~			
ctivate Configuration		11 0	3011	CON_03011													
liscellaneous	_	12 0	3012	CON_03012		Extend	er Assignment	CPU Access Control	Favorites	Macros	5						
System Settings	2	13 0	3013	CON_03013				CPU Device available						Favorite C	PU Devices		
Bystem		14 0	3014	CON_03014		ID	Name						ID	Name			
ccess		15 0	3015	CON_03015		1010	CPU_01010			*		01	1028	CPU_01028			
Bwitch		15 0	3016	CON_03016		1023	CPU_01023					02	1027	CPU_01027			
Vetwork Date and Time		17 0	3017	CON_03017								03	1029	CPU_01029			
Aatrix Grid		18 0	3018	CON_03018							11	04	1030	CPU_01030			3
stender & Devices	~	19 0	3019	CON_03019								05					
stender & Devices	~	20 0	3020	CON_03020							P	06					1
DIT Units		21 0	3021	CON_03021								07					
CPU Devices CON Devices		22 0	3022	CON_03022							45	08					
		23 0	3023	CON_03023								09					
Iser Settings	^	24 0	3024	CON_03024							-44	10					3
Jsers & Groups		25 0	3025	CON_03025								11					
asignment	~	26 0	3026	CON_03026								12					
Viual CPU Devices		27 0	3027	CON_03027								13					
Intual CON Devices		28 0	3028	CON_03028								14					
Julti-Screen Control		29 0	3029	CON_03029										Use keys + ar	d - to move CPU		
		Annie	an Rattie	ngs to Copy Settings from										New Device	Defete Device	200	

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.
- 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. 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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- N C -					-	•	~					
penSave Reloed <u>C</u> onvect 20210210.zip Master ×	Diacona	ect Active	ete Edit Mode Remote Save Down	lead Uplead	1. Honitoring Pla	ah Updale Device Pinder !	System Check.	. Save Status .				
New	~	Extender	& Devices - CON Devices	:								
Valtix				T.	_							
Pait		# ID	Name	:	D	3025		CON Assigned				
Grid		01 03001	1 CON_03001	- 1	Name	CON_03025		CPU Connected				
Control		02 03000	2 CON_03002		Priority	0 🗘		Allow CPU Scan				
Control	~	03 03003	3 CON_03003		Virtual Device			Force CPU Scan				
Extended Switch		04 03004	CON_03004		Allow User ACL	v.		Scan Time [sec]	0 0			
Presets		05 03005	5 CON_03005									
Status & Updates	~	06 03000	5 CON_03006		Force Login			Port Mode				
Status - Matrix Firmware	-	07 03007	7 CON_03007		LOS Frame			Redundancy Off				
Status - Extender Firmware		06 03000	5 CON_03008		Show Macro List			Reference	(CON_03044)			
Update - Matrix Firmware		08 03005	9 CON_03009		OSD Disabled			CPU Colors	* on	- +		
Update - Extender Firmware		10 03010	0 CON_03010					Fix Frame Color	-	~		
Activate Configuration		11 03011	1 CON_03011									
Miscellaneous		12 03012	2 CON_03012	1.1	Eitender Assignmen	CPU Access Control 1	Favorites M	acros				
System Settings	^	13 03013	3 CON_03013		Key F1	0 12 13 14 18 1	6 F7 F1 F1	F10 F11 F12 F10 F	14 F15 F18			
System		14 03014	4 CON_03014		and Li	91 52 53 54 55 9	10 17 18 18	910 911 912 919 S	14 515 518			
Access		15 03015	5 CON_03015			Function		P	1.		P2	
Switch		16 03016	6 CON_03016		01							
Network Date and Time		17 03017	7 CON_03017		02 Connect Wdec	(P1=CON, P2=CPU)	03025	5 CON_03025		01030 CPU_0103	0	
Watrix Grid		18 03018	8 CON_03018		03							
Extender & Devices	0	19 03019			04							
		20 03020	0 CON_03020		05							
EXT Units CPU Devices		21 03021			06							
CON Devices		22 03022			07							
		23 03023			08							
Jser Settings		24 03024			00							
Users & Groups		25 03025		_	10							
Assignment		26 03020			11							
Virtual CPU Devices		27 03027			12							
Virtual CON Devices		28 03028			**							
Multi-Screen Control		29 03025	0 CON_03029						сору Кау Мастов	R Pasta Kay Macros	E Detete Key M	acros
		Annina Sa	itings to Copy Settings to						New De	vice Delete Devic	· · · · · · · · · · · · · · · · · · ·	Cancel

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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Status & Updates	~	03005	CON_03035												
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Status - Extender Firmware		03007	CON_03007												
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Virtual CPU Devices			CON_03027												
Virtual CON Devices			CON_03028												
Multi-Screen Control															
		V AL	to Send											Send	Reload

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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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	 Shared (default) permits the access from a Control CON Device to all other CON Devices except to another Control CON Device Name of the own Control CON Device to restrict access to other CON Devices
	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.

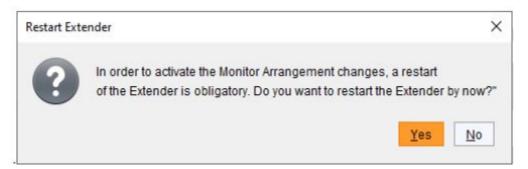


FIGURE 6-9.8.3 MANAGEMENT SOFTWARE DIALOG - MONITOR ARRANGEMENT - RESTART EXTENDER

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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Assignment ^			
Virtual CPU Devices Virtual CON Devices Multi-Screen Control		Default	Cancel

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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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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ccess		92	040164288	EXT_040164288	25		CPU		Analog Audio				
Switch		93	040164289	EXT_040184289	26		CPU		Digital Audio				
letwork Date and Time		94	040164290	EXT_040164290	27		CPU		R8232/R8422(serial)			
fatrix Grid		95	040227285	EXT_040227285	106		CON		USB-CPU (amb	edded)			
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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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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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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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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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Malitix Grid		67	03061	CON_030	001		401	73703	EXT_04017370	3 0				05							
Extender & Devices	^	68	03062	CON_030	062		900		Case_EXT_CO	_	-		•	05							1
EXT Units		69	03063	CON_030	062			_	EXT_04023666					07							
CPU Devices		70	03064	CON_030	064				EXT_04017366				-4	08							
CON Devices		71	03065	CON_DO																	
Jser Settings	~	72	03066	CON_030	096								44								3
Users & Groups		73	03067	CON_DOC	067																
		74	03069	CON_030	969																
Assignment	~	75	03068	CON_03																	
Virtual CPU Devices		76	03070	CON 030																	
Virtual CON Devices		77	03071	Case CO												Une	keys + as	d - to move ext	ander		
Multi-Screen Control			sign Setti	_	Copy Settin												Device	Delete De	_	pply	Can

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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en Seve Reload Convec 0210210.zip Master X	Diacon	rect	Deactivate Edit	t Mode Remete Seve	Dewnload .	Uplead	Monitoring Pla	ish Update Device Pr	rder System Check Save Status			
lew	~	Ext	ender & De	vices - EXT Units							Edit M	iode activate
fabrix							1	r iD	93000038	CPU/CON Assig		
ort			ID	Name	Port	Red Por	Type	1		CPUCCH Assign		
irid		78	040173693	EXT_040173693	D		CON	. Name	Casc_EXT_CPU_01			
iedno:		79	040173692	EXT_040173692	0		CON	Port	17			
ontrol	^	80	040173706	EXT_040173708	438		CPU	Fixed	N			
atended Switch		81	040173708	EXT_040173708	439		CPU	Location				
Yesets		82	040173695	EXT_040173605	0		CON		Device: MMLDV03			
tatus & Updates	~	83	010308960	EXT_010306980	115		CPU	Link 1	L/O boards 3			
Zatus - Matrix Firmware		84	040171288	EXT_040171288	48		CPU		I/O board port: 1 Natrix port: 17			
tatus - Extender Firmware		85	010308979	EXT_010308979	108		CPU					
ipdate - Matrix Firmware		86	010309567	EXT_010309567	107		CON	Extender Type	Firmware Version			
pdate - Extender Firmware		87	040164611	EXT_040164611	403		CON	-	Case CPU			
ctivate Configuration		88	040164291	EXT_040164291	445		CPU	Тура	Case CPU		Standard View	ExpertVe
liscellaneous	_	89	040164608	EXT_040164608	33		CON		Name	Basic	PartA	PatB
yslem Settings	^	90	040164609	EXT_040164509	34		CON	DWHDMMGA	(video)			
lystem		91	040164610	EXT_040164610	35		CON	HID (keyboard,	mouse }			
ccess		92	040164288	EXT_040164288	25		CPU	Analog Audio				
witch		93	040164289	EXT_040184289	26		CPU	Digital Audio				
letwork late and Time		94	040164290	EXT_040164290	27		CPU	R8232/R8422	(serial)			
latix Grid		95	040227285	EXT_040227285	106		CON	USB-CPU (em	bedded)			
xtendor & Devices	~	96	040173703	EXT_040173703	D		CON	USB-CPU (sta	ndalone)			
		97	040173699	EXT_040173699	41		CON	Universial-CPU				
OT Units		98	040262339	EXT_040252339	440		CPU	Cascade-CPU		M		
CN Devices		99	040237622	EXT_040237622	337		CPU					
		100	040172444	EXT_040172444	32		CPU					
ver Settings	^	101	040172443	EXT_040172443	30		CPU					
Isers & Groups		102	040237184	EXT_040237184	413	0	CON	1				
ssignment	~	103	90000000	Case_EXT_CPU_0	1 17	-	Casc CPU					
intual CPU Devices		104	040185821	EXT_040185821	43		CON					
Itual CON Devices		105	040173701	EXT_040173701	42		CON	•				
		As	sign Settings h	a Copy Setting	s hom_	Restart	Eitender			New Unit	Delete Unit	Card

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.

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en Seve Reload Sonner 0210210.zip Master * X	ci Dieci	enect	Descrivete Ede He	de Renote Save Downb	ad., U	post. Non	toring P	ash Update 1	Device Find	er Syntem Ch	ect.	Sava Stat	ua								
ñew	~	Exte	ender & Devic	es - CPU Devices															Edit Mode	acti	vate
fabrix		CPU	CPU Groups	IP Session Config																	
Part					Y			[
Grid			D	Name		ID		1069			CPU	Assigne	a								
Contral		53	08053	CPU_08053		Name		Case_CPU	_01		CON	Connect	bed								
Control	^	54	01054	CPU_01054		Virtual Devi	ce				CPU	Colors			٣	on	¥				
Extended Switch		55	01055	CPU_01055		Allow Priva	te				Excl	tusive Ac									
Yesets		56	01034	CPU_01034		Force Priva					MSC	Disable	4								
itatas & Updates	~	57	01057	CPU_01057		Fix Frame C				~											
Italus - Matrix Firmware		58	01058	CPU_01058			0001														
Status - Extender Firmware		59	01045	CPU_01045		Reference		(no refer	ence set)												
Update - Matrix Firmware		60	01046	CPU_01046		2 Step Acco	15.5														
Jpdate - Extender Firmware		61	01047	CPU_01047		Extender As	imment	CON Acres	a Control	User Acces	a Con	teal Mo	allor de	TADORTO	and in						
ctivate Configuration		62	01053	CPU_01053																	
Miscellaneous		63	00054	CPU_08054				Extender ava									ler assign				
iyslem Settings	~	64	08055	CPU_08055		ID	Name		Part	Red Part				D	Name	Part	Red Po	iff.			
Bystem		65	00056	CPU_00056	- 1	90000008		DOT_CPU_01	_				01								
ccess		66	08057	CPU_08057	- 1	40233340	EXI_04	10233349	0				02								
Switch Vetwork		67	00058	CPU_08058									03								
Date and Time		68	00050	CPU_08059								- ++	04								- 2
Autrix Grid		69	01050	CPU_01059									05								
xtender & Devices	~	70	01050	CPU_01060								•	06								
		71	01061	CPU_01061									07								
DIT Units CPU Devices		72	01052	CPU_01052								4	08								
CON Devices		73	01063	CPU_01063																	
	~	74	01054	CPU_01064								44									3
Juer Settings		75	01065	CPU_01065																	
Jsers & Groups		76	01055	CPU_01066																	
ssignment	~	77	08044	CPU_08044																	
Intual CPU Devices		78	01067	CPU_01067																	
Infual CON Devices		79	01058	CPU_01068																	
Aulti-Screen Control		80	01069	Case_CPU_01											USE	anya y ar	d + to move	ex a noer	_		
		Ass	sign Settings to	Copy Settings from.		Configure IP (PU								New	Device	Delete	e Device	Apply	\$	and

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.

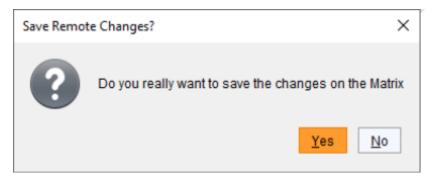


FIGURE 6-12.1.1 MANAGEMENT SOFTWARE DIALOG SAVE REMOTE CHANGES





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	 ✓	
Configura	tion_01.dtc		
File <u>N</u> ame:	Configuration_01.dtc		
Files of <u>Type</u> :	(*.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
	User		admin
	Password		****
		< <u>B</u> ack	Next > Einish 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.

1.	Connect Select Configuration Slot		File	Name	Info	IP Address	Version
	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. geve Relad gamed	-	Activate Edit Hode R	terrota Sava	Download Upbad	Monitoring Planh Update	Device Finder Sy	atem Check Save Status		
New .	~ St	atus & Updates - J	Activate C	Configuration					
Matrix		tive Configuration:		Test_lera_1		_			
Poit		are compared.							
Grid Control			Info	Grid mit 7 Metrizen, t.d.	AN				
	-	File		Name			into	IP Address	Version
Control	01	Default (default)	Bas	iic .	Test-Matrix			DHCP	V03.06
Extended Switch	02	File #1 (config01)	TS-	TEST-Matrix 5	einzel Matrix, ohne	Grid, Enterprise 1	10 Port	DHCP	V03.05
Presets	03	File #2 (config02)	T8-	TEST-Orld-2	Grid-2 mit 3 Matriz	en (E160,C080,C0	18]	DHCP	V03.08
Status & Updates	· 04	File #3 (config0.3)	Sup	porff walfGrid2	Grid 2 mit 4 Matrix	en (E 160, C 000, 2x0	080) (sehr große Konlig)	DHOP	V04.00
Status - Matrix Firmware	05	File #4 (config04)	TES	T-Grid_5a	Grid mit 5 Matrizen	[E160.E048,C048	C008.C080]	OHCP	V04.00
Status - Extender Firmware	05	File #5 (config05)	TES	IT-Grid_5b	Grid mit 6 Matrizan	JE 160, E048, C048	C008,C080,C040]	DHCP	V04.00
Update - Matrix Firmware Update - Extender Firmware	07	File #6 (config06)	Tes	tGrid-6_V0303	Firmware V03.03 0	Srid mit 5 Matrizen		DHCP	V03.03
Activate Configuration	08	File #7 (config07)	Tes	Usta_4	Grid mit 6 Matrizen			DHCP	V04.00 V04.00
System Access Switch									
Network Date and Time									
Network Dote and Time Watrix Grid Extlement & Devices	^								
Network Date and Time Matrix Grid Extender & Devices EXT Units CPU Devices	^								
Network Date and Time Matrix Grid Extender & Devices EXT Units EXT Units EXT Units EXT Units EXT Devices	< <								
Network Date and Time Matrix Grid									
Network Date and Time Jahts Grid Extender & Devices EXT Units EXT Units SON Devices SON Devices Iser Settings Janne & Groups									
Network Date and Time Wath: Grid Extender & Devices EXT Units CON Devices DON Devices Jsor Settlegs	^								
Network Date and Time Math: Grid Math: Grid Second Second CPU Devices DON Devices DON Devices Joser Settings Users & Groups Langsminet Virtual CPU Devices Virtual CPU Devices	^							Adhate	Carcel Relo

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.



teps	Select	Configuration				
Connect Select Configuration		File	Name	Info	IP Address	Version
	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	 Extender
 Export Configuration to CSV File 	IP Session Config
Covrie	⊖ CPU
	○ Console
	◯ User
	O CPU Groups
	O User Groups
	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.

ED C -		_	1000 1000	1000	-		1		
- 🗖 💭 📭		•	O H	T T			E		
	OL Direct	innett	Activate Edit Mode Remote Save	Counterd_ Uplead	L. Monitoring Flash Update	. Device Finder System Check	Save Status		
20210210.zip Master ×		_							
View	~	Sta	tus & Updates - Update Ma	trix Firmware				Edit Mode	activated
Matrix.								Additional selec	dion options
Port		Slot	Name	Type	Current Version	Update Version	Status	Update	
Grid			B CHASSIS				Available		
Super Grid Control			FAN1	FAN	F03.01.200818				
			FAN2	FAN	F03.01.200818				
Control	^		PWRCTRL	PWR	F03.00.200113				
Extended Switch		00	E MATL160	CPU	F04.00.210215	F04.00.210219	Ready	V	
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	4	
Status - Extender Firmware			MATXOSD	OSD	F03-40-200506				
Update - Matrix Firmware		02	EI MATXIO8 (CAT)	108	F04.00.210215	F04.00.210219	Ready	1	
Update - Extender Firmware			MATXOSD	OSD	F03.48.200506				
Activate Configuration Niscellaneous		03	🖬 💼 MATXIOB (CAT)	108	804.00.210215	F04.00.210219	Ready	1	
			MATXOSD	OSD	F03.48.200506				
System Settings	~	04	EI 🔳 MATXIO8 (SFP)	108	F04.00.210217	F04.00.210219	Ready	1	
System			MATXVOSD	OSD	804.03.200218				
Access		09	EI 🛖 MATLIOB (CAT)	108	F04.00.210215	F04.00.210219	Ready	1	
Switch Network			MATLOSD	OSD	F01.02.200506				
Date and Time			MATLOS	SYS	F01.08.201218				
Matrix Grid		10	E MATLIOB (SFP)	108	F04.00.210215	F84.08.210219	Ready	7	
Extender & Devices	~		MATLOSD	OSD	F01.02.200506				
			MATLOS	SYS	F01.08.201218				
EXT Units		19	E MATXIDRADATI	108	F04.00.210215	EN4 00 210210	Reads	4	
CPU Devices CON Devices									
Iser Settings	^								
Jsers & Groups									
Assignment	~								
/intual CPU Devices			Verwrite active firmware				S:\Firmware\Testversion\DraceTeralMATA	PP/F04.00,	Browse.
Virtual CON Devices								Update	Reload

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.

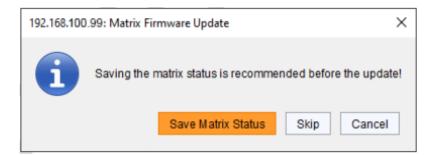


FIGURE 6-14.1.2 MANAGEMENT SOFTWARE DIALOG SAVE MATRIX STATUS

5. The progress of the update is displayed in the working area.

After the update, a guery 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.

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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)

penReload admin@192_168_100.157		innect	Activate Edt Wode	Remote Save	Download. Uploa	L Hontoring	Fash Update	Device Finder. Syste	m Check	Save Status.		
view		Statu	s & Updates -	Update Exte	nder Firmware							
Mahix Port Grid Control			Parailel Mode (n Sequential Mode : Upload Firmwar	scommended)	Parallel updat Sequential up	e of extenders, e		ately on each VO board pecific extenders	1			
Control	~	Firmw	are File	FirmewaPub	OKM S	2021FW 00020	ADD Default2	0201112_Extende	Browse	1		
Extended Switch			ble Firmwore File									
Presets			Name		Type		Version	Selecter	4			
Status & Updates	~		EXTOPU	10		F03.51.2		1				
Status - Matrix Firmware		02	EXTOON	E	T	F03.28.1	190029	1				
Status - Extender Firmware		03	EXTELCON	E	T	FD4.21.1	191225	1				
Jpdate - Matrix Firmware		04	EKTROPU	Ð	R.	F02.26.1	101128	1				
Jpdate - Extender Firmware Advate Configuration		05	EXTHREON	63	R	F01.37.1	191128	1				
Miscellaneous		06	EXTHROPU	Ð	R	F01.251	191129	1				
System Settings	~	07	HDCPU	10		F04.03.2	210122	1		*		
Second Second												
System Access		Uploa	d Progress			0%			Upica	NG .		
Switch Network Date and Time Mateu Grid		Uploa	d Messages									
Extender & Devices	~											
EXT Units CPU Devices CON Devices												
Jser Settings	. ^											
Users & Groups								Save	Upload Lo	9		
Assignment	A											
Virtual CPU Devices Virtual CON Devices Multi-Screen Control												

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.

Elle Edit Device Egtras 2			- u x
- H C -		activels Edit Hode Remote Save Download Uplead Wantering Plash Update Device Pinder System Check Save Status	
View	~	Status & Updates - Update Extender Firmware	
Matrix Port Grid Control		Parallel Mode (recommended) Parallel update of extendens, executed separately on each I/O board Sequential Mode Sequential update mode in order to update specific extendens Step 1: Uplate Timmane Step 2: Update Timmane	
Control	~	Enable Downgrade	
Extended Switch Presets		Enable bis checkbox when downgrading the firmware or updating the currently installed firmware again.	
Status & Updates	~	Update Progress Update Enished 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 2921-03-12115 1658 051 Check extender version before update 2921-03-12115 1658 053 Extender version checked 2921-03-12116 1730 053 Extender version checked 2921-03-12115 1730 053 Extender version checked 2921-03-12115 1730 0598 Extender update stand 2921-03-12115 181 1307 Update on Ports 4-14 completed 2921-03-12115 181 1307 Update on Ports 4-16 completed 2921-03-12115 182 433 548 Update on Ports 4-16 completed 2921-03-12115 242 3548 Update on Ports 4-16 completed 2921-03-12115 242 3548 Update on Ports 4-16 completed 2921-03-12115 242 3548 Update on Store update 2921-03-12115 242 3548 Update supports 4-16 completed 2921-03-12115 242 3548 Update supports 4-16 completed 2921-03-12115 242 3548 Varif varied update 2921-03-12115 242 3548 Update supports 4-16 completed 2921-03-12115 242 3548 Update supports 4-16 completed <	
Extender & Devices	~		
EXT Units CPU Devices CON Devices			
User Settings	~	Save Update Log	
Users & Groups		and closes rog	
Assignment	~		
Virtual CPU Devices		Default	

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.

pen Save Reload Con admin@192.168.100.155	nect Disc	enect	Act	-	te Save Download Upbad N	londoring Pi	esh Update C	Device Finder System Chec	k Save Status			
View		Star	tus &	Updates - Upd	ate Extender Firmware							
Matrix Port Grid Control				rallel Mode (recom questial Mode	mended) Parallel update of ex Sequential update m						Additional selects	ion options
Control	0		ID		Name	Port	Type	Device	Current Version	Update Version	Update	
		01		10203250	EXT_010203250	11	CON UNIT	CON_010203250			J	
Extended Switch Presets					EXTOON		EXT		F03.28.190509	F03.28.190509		
	_				HIDCON		HID		F04.03.201112	F04.03.210122	J	
Status & Updates	^				EXTRISD		MSD		802.45.180605			
Status - Matrix Firmware		02	B	40131933	EXT_040131933	10	CON UNIT	CON_040131933			1	
Status - Extender Firmware					EXTHROON		EXR		P01.35.190902	F01.37.191128	7	
Update - Matrix Firmware Update - Extender Firmware					HIDCON		HID		F04.03.201112	F04.03.210122	1	
Activate Configuration					EXTRISD		MBD		802 51 200422		10	
Miscellaneous					HIDCPU		HID		F04.03.201112	F04.03.210122	1	
System Settings	~	03		40188132	EXT_040188132	41.	CON UNIT	CON_840188132			7	
	_				FXTDLCON		EXT		503 00.201203		10	
System Access					HIDCON		HID		F04.03.201112	F04.03.210122	1	
Switch					EZTDLMSD		MSD		802 03 201211		10	
Network		04		12348765	EXT_012348765	42	CON UNIT	CON_012348765			1	
Date and Time Matrix Grid		2021	-03-15	5712.13.27.567	Analyzing of firmware complete							
Extender & Devices	^											
EXT Units CPU Devices CON Devices												
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Users & Groups												
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Virtual CPU Devices		-		update of EXTMSD / 8 module type (CPU/CO	XTIMSD recommended N miemetch)						Update	Reload

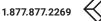
FIGURE 6-14.1.4 MANAGEMENT SOFTWARE MENU STATUS & UPDATES - UPDATE EXTENDER FIRMWARE - SEQUENTIAL MODE

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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1.877.877.2269

Elle Edit Device Egtras 2											-	o x
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admin@192.168.100.155	×											
View	~	Sta	tus & Upda	ates - Upd	ate Extender Firmware							
Matrix Port Grid Control			Parallel M Sequentle	lode (recom al Mode	mended) Parallel update of ext Sequential update m						Additional select	tion options
Costrol	~		ID		Name	Port	Type	Device	Current Version	Update Version	Update	1
	-	01	E 1020	3250	EXT_010203250	11	CONUNIT	CON_010203250				
Extended Switch Presets					EXTCON		EXT		F03.28.190509	F03.28.190509		
	_				HIDCON		HD		F04.03.210122	F04.03.210122		
Status & Updates	~				EXTMSD		MSD		802.45.180606		10	
Status - Matrix Firmware		02	8 4013	1933	EXT_040131933	15	CONUNIT	CON_040131933				
Status - Extender Firmware					EXTHROON		EXR		F01.37.191128	F01.37.191128		
Update - Matrix Firmware Update - Extender Firmware					HIDCON		HD		F04.03.210122	F04.03.210122		
Activate Configuration					EXTWOD		MSD		802.51.200422			
Miscellaneous					HIDCPU		HD.		F04.03.210122	F04.03.210122		
System Settings	~	03	G 4018	8132	EXT_040188132	41	CONUNIT	CON_040188132				
C. dea					FXTDLCON		EXT		803.00.201203			
Bystem Access					HIDCON		HD		F04.03.210122	F04.03.210122		
Switch					EZTDLM8D		MSD		B02.03.201211		10	
Network		04	E 1234	8765	EXT_012348765	-42	CON UNIT	CON_012340765				
Date and Time		2021	-03-15712.1	8.49.775	Firmware update HIDCON on Ex	lander EXT_	40131933 (P	ort 16) finished				
Matrix Grid			-03-15712.1		Firmware update HIDCPU on Ex							
Extender & Devices	~		-03-15712.1		Firmware update HIDCON on Ex							
EXT Units			-03-15T12-1		Firmware update HIDCON on Ex Firmware update HIDCON on Ex							
CPU Devices			-03-15T12.2		Firmware update HIDCPU on Ex							
CON Devices			-03-15T12:2		Firmware update HIDCPU on Ex							
User Settings	~		-03-15712.2		Firmware update HIDCPU on Ex	_						
Users & Groups			-03-15T12.2		Firmware update HIDCPU on Ex Update successful	enger EAT_3	no neoscia (P	art way reserved				
Assignment	~		xtender firmer						S:Firmware/Publicite	rsion/DracoTeral2021FW_0	0620400 Detautt202	Browse
					IXTIMSD recommended							
Virtual CPU Devices			lirong module I								Update	Reload
Virtual CON Devices			and a second in	the oraco	in a second data j							

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 Device Egtras 2			- 0 X
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View ^	Status & Updates - Misce	laneous	
Port		Isragement FPGA Update Custom UI Update	J Show Help
Control	Serial Number		
Control	SIN Backplane Active Licenses	40256090	
Extended Switch Presets	Presets (Tool only)	z	
status a openers	Extended Switch (Tool only)	x	
Status - Harro Firmware Status - Extender Firmware Update - Matrix Firmware Update - Extender Firmware Activate Configuration	API SNMP Syslog Matrix Grid Multi-Screen Control	x z z z	
and the second	Activate License		
System Access Switch Network Date and Time Matrix Grid	License Key	Activates	
Extender & Devices			
EXT Units CPU Devices CON Devices			
User Settings ^			
Users & Groups			
Assignment o			
Virtual CPU Devices Virtual CON Devices Multi-Screen Control			
		Default	

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>, <1>, <enter></enter></k></hot>	Switching to extender connection
Type <hot key="">, <k>, <2>, <enter></enter></k></hot>	Switching to extender connection 2 (only with redundant CON Units)
<hot key="">, <i>, <enter></enter></i></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

CPU Devices CON/CPU Data All CPUs CON device CPU_0101900037 CON assigned CPU connected CON connected Status Status EXT list EXT list Video only Video only access with keyboard & mouse disabled Full access Full access in standard mode with video sharing enabled	witch	F1:ID F2:Name	F3:Next	F4:Previous	F5:Refresh	F6:Find	F7:EXT	F8:Show	F9:Compare	ESC
CPU_010190037 03001 CON_010191923 01001 CPU_010190037 CON assigned CPU assigned CPU connected CON connected Status Status EXT list EXT list Video only Video only access with keyboard & mouse disabled Full access Full access in standard mode with video sharing enabled	CPU Devices		CON/CPU	Data		_	_	_		- 1
CPU 010190037 CON assigned CPU assigned CPU connected CON connected Status Status EXT list EXT list	All CPUs		CON devi	ice N 010191929				10190037		
CPU connected CON connected Status Status EXT list EXT list EXT list EXT list Video only Video only access with keyboard & mouse disabled Full access Full access in standard mode with video sharing enabled	CPU_010190037									
Video only Video only access with keyboard & mouse disabled Full access Full access in standard mode with video sharing enabled		- 88								
Video only Video only access with keyboard & mouse disabled Full access Full access in standard mode with video sharing enabled		- 8	Status			State	us			
<pre></pre>		- 8	EXT list	Kanadara		EXT	list			
<enter></enter>	Video only	Video on	w ly access	: with keybo	ard & mouse	disable	d			ļ
SERVERY	Full access									
Private access Full access in private mode with video sharing disabled	Private acces									
Disconnect your CON device	Disconnect									
CPU Scanner Start the CPU scanner to scan your favorites	CPU Scanner									

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.

<u>CPU_010231843</u> CPU_02	Video only <space> Full access <etter> CSTLF1>+(ENTER> 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	us F5:Refresh F6:Find F9:Compare ESC
CON Devices	CON/CPU Data	
03004 CON 010190841	CON device 03004 CON_010190841	CPU device
03002 CON_040062140 03003 CON_040112302	CON assigned	CPU assigned
03001 CON_040212434	CPU connected	CON connected
	Status ONLINE	Status
	EXT list 010190841 0001 EXT_010190841	EXT list
Switch Select t		ng
<pre></pre>		

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		ct 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)
F02
F03
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	0.011 (0.011 0		
	CON/CPU Data	1	
All CPUs	CON device 03001 CON 01	0191923	CPU device 01001 CPU 010190037
CPU_010190037	CON assigned		CPU assigned
	CPU connecte	ed	CON connected
	Status		Status GNLTNE
	EXT list		EXT list 010190037 0009 EXT 010190037
Video only	ideo only access wit	th keyboard & mouse di	isabled
Full access			naring enabled
Private access F			aring disabled
Disconnect D	isconnect your CON o		
CPU Scanner S			tes

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.



Ble Edit Device Egitas 2			_				- 0 ×
- N S I -			T	🐨 🐨 📑	🔍 🖬 📗		
en. Seve Reload Connec	t Decon	nect D	eactivate Edit Mode Remote Save	Download. Upload Monitoring Plash Update Dev	be Finder System Check Save Status		
0210210.zip Master ×							
lew	^	Contro	ol - Extended Switch				Edit Mode activate
latrix							
lait			CON Device		CPU Device		
irid		D	Name	Full Access	Video Access	Private Ap	Dess
Contral		03001	CON_03001				
ontrol	^	03002	CON_03002				
Extended Switch		03003	CON_03003	01004 CPU_01004			
Yesets		03004	CON_03004	01006 CPU_01006			
tatus & Updates	~	03005	CON_03005	01007 CPU_01007			
		03006	CON_03006	01008 CPU_01008			
Itatus - Matrix Firmware Ratus - Extender Firmware		03007	CON_03007	01009 CPU_01009			
Ipdate - Matrix Firmware		03008	CON_03008	01054 CPU_01054			
ipdate - Extender Firmware		03009	CON_03009		<u> </u>	-	
ctivate Configuration		03010	CON_03010		01001 0001 01001	1	
liscellaneous		03011	CON_03011	01013 CPU_01013	01001 CPU_01001 01002 CPU_01002		
ystem Settings	^	03012	CON_03012	01015 CPU_01015	01003 GPU_01003		
lystem		03013	CON_03013	01014 CPU_01014	01004 CPU_01004		
ccess		03014	CON_03014		01005 CPU_01005		
witch		03015	CON_03015		01006 CPU_01005 01007 CPU_01007		
etwork.		03016	CON_03016		01008 CPU_01008		
ate and Time latrix Grid		03017	CON_03017	01018 CPU_01018	01009 CPU_01009		
		03018	CON_03018	01020 CPU_01020	01010 CPU_01010		
stender & Devices	^	03019	CON_03019	01021 CPU_01021	01011 CPU_01011	Ŧ	
XT Units		03020	CON_03020	01055 CPU_01055			
PU Devices		03021	CON_03021				
ON Devices		03022	CON_03022				
ser Settings	^	03023	CON_03023	01025 CPU_01025			
Isers & Groups		03024	CON_03024	01026 CPU_01026			
asignment	~	03025	CON_03025				
		03026	CON_03026	01023 CPU_01023			
itual CPU Devices		03027	CON_03027	01029 CPU_01029			
itual CON Devices			CON 03028				
		J Auto					Sind Reset Reload
			Devices w/o Extender Assignmen	*			
		Hede	inactive Devices				

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:

Elle Edit Device Estras 2		- 0 ×
	• 🐨 🐺 🐺 🗰 👌 🔍 📓 🚠	
gren. Save Reload Connect S	Deconnect Descrivele Edit lide Remote Save Download Upbad Hontoring Plank Update Device Pinder System Check Save Status	
20210210.stp Master X		
View	View - Matrix	Edit Mode activated
Matrix Port Grid Control		Matrix Status Temperature Dk PSU 1 Ok PSU 2 Om PSU 3 Not Available
Control	^	PSU 4 Not Available Fan 1 Ok
Extended Switch Presets		Fan 2 Ok
Status & Updates	^	
Status - Matrix Firmware Status - Extender Firmware Update - Matrix Firmware Update - Stender Firmware Activate Configuration Miscellaneous		
System Settings	A GAT 15 R1 GAT 30 GAT 15 R1 STP10 R1 STP10 R1 STP10	PH
System Access		37 39
Switch		Outions
Network Date and Time Matrix Grid	02 04 86 08 10 12 14 16 18 29 22 24 26 28 39 32 34 36 3	Ond Perts Local Perts
Extender & Devices	^	Show Wulk-Screen Control Routing Information
EXT Units CPU Devices CON Devices		Show Redwindert Links (1,11,2) Show Video Show Video Show Video
User Settings	^ ·	10 Part Color Coding A
Users & Groups		Fait Access Video Access
Assignment	^	Grid Line Invalid Port
Virtual CPU Devices Virtual CON Devices Multi-Screen Control		Kio Access Pred Port 80 Port Symbols ~ Mariti-Screen Control ~ Redundancy ~
		Clear Selection
Switch CON_07 to MacMini1 [10.07	Defa	di 😽

FIGURE 7-4.1.2 MANAGEMENT SOFTWARE MENU VIEW - MATRIX

The following symbols may be shown in the connection overview:

BUTTON	FUNCTION
Υ.	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.
K	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.

BLACKBOX.COM



7.4.3 PREDEFINING MACROS

Predefined macros to switch the matrix without loading a new configuration can be created and activated in this menu.

sen. gave Relead gam	ect gas	senect D	eschvale Edit Hode Remote Save Dow	nizad Up	ikad Kontoring	Plash Update.	Device Finder_	System Check	Save Status					
ñew	~	Contro	ol - Presets									Edit Mod	e activ	ater
Autrix														7
ort			CON Device				CIPU	Device			Presets			
rid		D	Name		Full Access		Video	Access		Private Access	III H >	c		
intrai		03001	CON_03001								1			
ontrol	~	03002	CON_03002								_	New Preset		
xtended Switch		03003	CON_03003	01004	CPU_01004									
resets		03004	CON_03004	01006	CPU_01006									
tatus & Updates	~	0.3005	CON_03005	01007	CPU_01007									
		03006	CON_03006	01006	8 CPU_01008									
tatus - Matrix Firmware tatus - Extender Firmware		0.3007	CON_03007	01009	CPU_01009									
pdate - Matrix Firmware		03008	CON_03008	01054	CPU_01054									
odate - Extender Firmware		03009	CON_03009						01011 C	PU_01011				
divate Configuration		03010	CON_03010											
iscellaneous		03011	CON_03011	01013	8 CPU_01013									
ratern Settings	^	03012	CON_03012	01015	CPU_01015									
ystem		03013	CON_03013	01014	CPU_01014									
ccess		03014	CON_03014				1019 CPU_01	219						
witch		03015	CON_03015				1017 CPU_01	917						
etwork		03016	CON_03016			0	1019 CPU_01	019						
ate and Time atrix Grid		03017	CON_03017	01018	8 CPU_01018									
		03018	CON_03018	01020	CPU_01020									
eteeder & Devices	^	03019	CON_03019	01021	CPU_01021									
XT Units		03020	CON_03020	01066	CPU_01066									
PU Devices ON Devices		03021	CON_03021											
	_	03022	CON_03022											
ser Settings	^	03023	CON_03823		5 CPU_01025									
sers & Groups		03024	CON_03024	01026	CPU_01026									
ssignment	~	03025	CON_03025											
Intual CPU Devices		03026	CON_03026	01023	3 CPU_01023									
Hual CON Devices		Hide	Devices w/o Extender Assignment											Sen

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	
Network SNMP Firmware	
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 : 192.168.178.074 000.000.000.1 : 255.255.255.000 000.000.000.1 : 192.168.178.001 000.000.000.1 : 00:21:5F:04:03:7E 00:21:5F:04:0	300 300 300
Multicast	255.255.255.255	
letwork Services		
API Service Grid Service SSL Services	: YES NO Enable API Service port (55 : YES NO Enable Grid Service port (55 : NO NO Enable SSL for API and Grid	
Syslog ∥1 Syslog Server	: NO Fnable Syslog Server #1 : 000.000.000.000:514	
Syslog #2 Syslog Server	: NO Enable Syslog Server #2 : 000.000.000.000:514	
LDAP LDAP Server LDAP Base DN	: NO Enable authentication with Activ : 000.000.000.000:389 :	ve Directory Server
og Levels		
Trace Svslog ⊎1	: DEB NO INF NO NOT YES WAR YES : DEB NO INF NO NOT YES WAR 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.

SNMP Server					
Enable Traps	:	NO	Server #1		
Server Address	:	000.	000.000.000	000.	.000 . 000 . 000
Status Temperature		NO NO		NO NO	
Insert Board Remove Board Invalid Board		NO		NO NO NO	
Insert Extender Remove Extender				NO NO	
Switch Command	:	NO		NO	
Fan Tray #1 Fan Tray W2	:	NO NO		NO NO	
Power Supply #1 Power Supply #2 Power Supply #3 Power Supply #4		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.





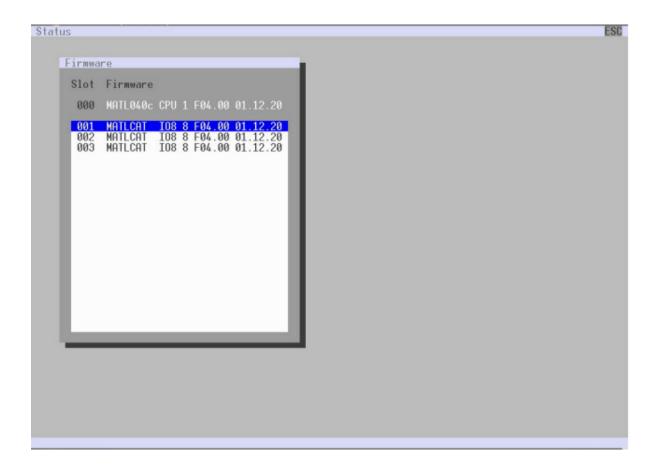


FIGURE 7-6.3.1 OSD MENU STATUS - FIRMWARE







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.

ate Time	Message 9.00 NOT scrHandleOpen(): PORT=1 5.00 NOT scrHandleTimeout(): PORT=1 SETHDSTID 5.00 WAR picRetVersion(): PORT=1 ID=5 empty 5.00 WAR picRetVersion(): PORT=1 ID=4 empty 1.00 NOT scrUpdateRX(): PORT=1 RX=0N 1.00 NOT catUpdatePortStatus(): PORT=1 RE0=8XON	
020/08/15 14:31:55	9.00 NOT scrHandleOpen(): PORT=1	
020/08/15 14:31:50	5.00 NOT scrHandleTimeout(): PORT+1 SETHOSTID	
020/08/15 14:31:50	5.00 WAR picRetVersion(): PORT=1 ID=5 empty	
020/08/15 14:31:50	6.00 WAR picRetVersion(): PORT=1 ID=4 empty	
020/08/15 14:01:5	1.00 NOT scrUpdateRK(): PORT-1 RX-0N 1.00 NOT catUpdatePortStatus(): PORT=1 REQ=RXON 1.00 NOT catUpdatePortStatus(): PORT=1 SYNC=1 7.00 NOT catUpdatePortStatus(): PORT=1 CAT=1 0.00 NOT catUpdatePortStatus(): PORT=1 PV-00T	
	1.00 NOT catUpdatePortStatus(): PORT=1 REQ=RXON	
020/08/15 14:31:5	1.00 NOT_catUpdatePortStatus(): PORT=1_SYNC=1	
020/08/15 14:26:1	7.00 NOT catUpdatePortStatus(): PORT=1 CAT=1	
020/08/15 14:26:10	0.00 MUL SCLUDBOLCHANZ, FULL 1 AN ULL	
020/08/15 14:26:10	6.00 ERR catErrorHandler(): PORT=1 stopped	
020/08/15 14:26:10 020/08/15 14:26:10	5.00 WAR cuttrorHandler(): PORT-1 restart 3.00 NOT scrUpdateRK() PORT-1 RX-ON 3.00 NOT catUpdatePortStatus(): PORT-1 REO=RXON 3.00 NOT catUpdatePortStatus(): PORT-1 SYNC-1 3.00 NOT catUpdatePortStatus(): PORT-1 SYNC-1	
020/08/15 14:26:10	0.00 NOT scrupdateR((): FORT-1 RX-ON	
020/08/15 14:26:10	0.00 NUL catupdatePortStatus(): PORT=1 REU=RXUN	
020/08/15 14:26:10	0.00 NOT catUpdatePortStatus(): PORT-1 SYNC-1	
020/08/15 14:26:00	5.00 NUL SCrupdateRX(); FURI=1 KX=UFF	
020/08/15 14:26:0	8.00 NOT scrUpdateR%(); FORT=1 RX=0FF 7.00 WHR catUpdatePortStatus(); PORT=1 REQ=RX0FF 7.00 WHR catUpdatePortStatus(); PORT=1 REQ=RX0FF	
020/08/15 14:26:0 020/08/15 14:26:0	7.00 NOT scrUpdateRX(): PORT=1 RX=0N 7.00 NOT catUpdatePortStatus(): PORT=1 REQ=RXON 7.00 NOT catUpdatePortStatus(): PORT=1 SPNC=1 7.00 NOT catUpdatePortStatus(): PORT=1 CAT=1 7.00 NOT scrUpdateRX(): PORT=1 RX=DFF	
020/08/15 14:26:0 020/08/15 14:26:0	7.00 NOT catUpdatePortStatus(): PORT=1 REQ=RXON	
	7.00 NUL catupdatePortStatus[]: PORT=1 SYNC=1	
020/08/15 14:26:0	(.00 NUL CATUDDATEPORTSTATUS(): PUKI=1 UHI=1	
020/08/15 14:26:0	5.00 WAR catErrorHandler(): PORT=1 restart	
020/08/15 14:26:00	5.00 WHK CATERPORTANGIER(): PURIFI restart	
820/08/15 14:26:00	0.00 NOT scrUpdateRX(): PORT=1 RX=0N	
020/08/15 14:26:00 020/08/15 14:26:00	0.00 NOI scrUpdateRX(): FORT=1 RX=0N 0.00 NOI catUpdatePortStatus(): PORT=1 REQ=RXON 0.00 NOI catUpdatePortStatus(): PORT=1 SYNC=1 7.00 NOI scrUpdateRX(): FORT=1 RX=0FF	
020/08/15 14:25:5	0.00 NUL catupdateroristatust): Puklei SYNCEL 7.00 NUL scrUpdateRX(): PORTE1 RX=0FF	
020/08/15 14:25:5	7.00 WAR catUpdatePortStatus(): PORT-1 REQ-RMOFF	
020/08/15 14:25:5	7.00 NOT scrUpdateRX(): PORT=1 RX=0N	
020/08/15 14.23.3	7.00 NOT catllodatePortStatue[] · PORT=1 9E0=9YOW	
020/08/15 14:25:5 020/08/15 14:25:5 020/08/15 14:25:5	7.00 NOT scrUpdateRx(): FORT=1 RX=0N 7.00 NOT catUpdatePortStatus(): PORT=1 RE0=RXON 7.00 NOT catUpdatePortStatus(): PORT=1 SVNC=1 7.00 NOT catUpdatePortStatus(): PORT=1 CRT=1 7.00 NOT scrUpdateRx(): PORT=1 RX=0FF	
020/08/15 14:23:3	7 00 NOT catlodatePortStatus() PORT=1 COT=1	
020/08/15 14:25:5	7.00 NOT Chropulate of Istatusty: PORT-1 UNI-1	

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 CPU devid	*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.

Ele Edit Device Editas 2	- o ×
📨 🕅 💭 📭 📮 🦉 🏹 🏹 🐺 🐨 🎁 🚱 🙀 🎝 🏹 👘 👘 👘 👘	
20210210.zp(Master X	
View - Matrix	
Mattix Pott Grid Control Control	Matrix Status Tempetalare Dx FSU 1 On PSU 2 On PSU 3 Not Avraitable PSU 4 Not Avraitable
Extended Switch Preaets	Pan 1 Ox Pan 2 Ox
Status & Updates 🗠	
Status - Matto Firmware Status - Editender Firmware Update - Dieknder Firmware Advala Configuration Miscellaneous	
System Settings A CAT 10 R1 CAT 10 R1 S4TP10 R1 S4TP10 R1 S4TP10 R1	_
System Bit Dot 1 pm Dot 1 pm	Options Astomatic Retaid Show Part Numbers @ One Parts Used Parts
Extender & Devices	Show Muth-Screen Control
EXT Units CPU Devices CON Devices	Routing Information Show Redundant Links (1.11.2) Show Video Show USS-HD
User Settings	10 Part Colar Coding 🔨
Users & Groups	Full Access Video Access
Assignment	Grid Line Invalid Port X to Access Place Place Place
Virtual CPU Devices Virtual CDN Devices Multi-Screen Control	Ro Paces Presenter Ro Pact Symbols V Martis Screek Control V Redundancy V Clear Selection
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.

Elle Edit Device Estras 2				- 0 ×
- N S -	EM	Activate Edit Node Remete	Save Download. Upload. Upload. Nontorry Plank Update. Device Profer. Syntem Check. Save Status.	
20210210.zip Master ×				
View	~ 5	System Settings - Netwo	rk i i i i i i i i i i i i i i i i i i i	
Matrix Port Grid	G	ieneral Systeg SNMP L	DAP	📝 Show Help
Control		Dual Interface		
Control	A		Enable Dual Network Interface (only available in offline mode)	
			Board 1 (Oslise changes require a matrix restart)	
Extended Switch Presets	C	HCP	I Dynamic configuration of network patameters via DHCP server	
Status & Updates	- B	P Address	192 . 158 . 170 . 158	
Status - Matrix Firmware Status - Extender Firmware	5	Subnet Mask	255.255.255.0	
Update - Matrix Firmware	G	Gateway	192 . 968 . 170 . 1	
Update - Extender Firmware		AAC Address	00215F040024	
Activate Configuration Miscellaneous		letwork Settings - Controller	Board 2 (Osline changes require a matrix restart)	
	0	HCP	X	
System Settings	~		Dynamic configuration of network parameters via DHCP server	
System		P Address	192 . 168 . 100 . 98	
Switch		Subnot Mask	25 . 255 . 255 . 0	
Network Date and Time	6	Sateway	182 . 108 . 100 . 1	
Matrix Grid		AAC Address	Unknown	
Extender & Devices	~ *	Aufticast (Online changes req	uire a matrix restart)	
EXTUNIS		Aulticast	255 . 255 . 255	
CPU Devices			Grid Multicast or Broadcast (255-255-255)	
CON Devices		letwork Services (Online cha	nges require a matrix restart)	
User Settings	~ *	VPI Service	V Enable API service (Port5555)	
Users & Groups	5	SSL Support		
Assignment	~		Enable SSL for secure communication	
Virtual CPU Devices Virtual CON Devices Multi-Screen Control	6	2RD Service	(ef) Enable GRD service	
				Rectiv 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.

A LOSS I ATTAL I									
pen. gave Raiced gam	ect Decc	nnect Activate E	dt Mode Remote Save Do	wniced Upleed Montering	Plash Update Device Finder Sy	atem Check Save Status			
20210210.sp Master ×									
New	~ *	Status & Up	dates - Status Matrix	Firmware					
Mahix	_	Firmware							
Part		Slot Name		Type	Porta	Serial Number	Version	Status	-
Grid			ST-F-F024C016F		40	40258690			-
Control			CHASSIS					Available	
Control	~		FAN	FAN	1		F03.01.201208		
Extended Switch			FAN	FAN	1		F03.01.201208		
Presets			PWRCTRL	PWR	1		F03.00.201208		
Status & Updates	~	00 B.	MATLONOC	CPU	4	40259691	FD4.00.210303	Ready	
			MATLPXP	PxP	1		F01.02.200507		
Status - Matrix Firmware Status - Extender Firmware			MATLOS	515	1		F01.08.210222		
Update - Matrix Firmware		01 0	MATLIOS (CAT)	108	8	40258692	F04.00.210303	Ready	
Update - Extender Firmware			MATLOSD	OSD	1		G02.00.201215		
Activate Configuration			MATLOS	svs	1		F01.08.210222		
Miscellaneous		02 8	HATLIOB (CAT)	108	8	0000000000	F04.00.210303	Ready	
System Settings	~		MATLVOSC	OSD	8		F01.14.201209		
Bystem			MATLOS	SYS	1		F01.08.210222		
Access		03 E	MATLIOS (CAT)	108	8	40259694	F04.00.210303	Ready	
Switch			MATLOSD	08D	8		G02.00.201216		
Network Date and Time			MATLOS	515	1		F01.08.210222		
Matrix Grid		04 🛛 🖬	IMATLIOB (SFP)	108	8	40258695	F04.00.210303	Ready	
Extender & Devices	~		MATLOSD	OSD	8		G02.00.201216		
			MATLOS	848	1		F01.08.210222		
EXT Units		05 E 👯	IIATLICII (SFP)	108	1	0000000000	F04.00.210303	Ready	
CPU Devices CON Devices			MATLVOSD	OSD	8		F02.01.201022		
	-		MATLOS	575	1		F01.08.210222		
Jeer Settings	^	06 🗆 🖬	MATLIOB (SFP)	108	8	40258895	F04.00.210303	Ready	
Users & Groups			MATLOSD	OSD	8		G02.00.201216		
Assignment	~		MATLOS	81/8	1		F01.08.210222		
Virtual CPU Devices		07 🗆 🖬	INATLIOB (SFP)	108	8	0000000000	F04.00.210303	Ready	
Vitual CON Devices			MATLVOSD	OSD	8		F02.01.201022		

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.

pen. gave Relad garries		and a	Q.	t Hode Remote Save Download	. Upbed Mentoring Plash Update.	Device Finder_ Sy	stern Check	Save Status	
0210210.sp Master ×									
0ew	~	Stat	us & Upd	lates - Status Extender Fi	imware				
Autrix		-	and the second second	nder Firmware on UO Board					
Port									
and		Ede	ender View	Component View					
Control			D		Name	Port	Type	Device	Version
Control	~		D III TES	T-A-E160	TEST-A-E160		179-0		100000
atended Switch		01		0113350	CON 09	65	CONUNIT	CON 09	
resets		02		0195808	CON_10	68	CON UNIT		
itatus & Updates	~				EXTHROON		EIR		801.37.191129
Status - Matrix Firmware					HIDCON		HID		F04.03.201112
Status - Extender Firmware					EXTMSD		MSD		802.51.200422
Ipdate - Matrix Firmware		03	⊞ 4	0000027	C0N_11	67	CON UNIT	CON_11	
Ipdale - Extender Firmware		04	E 1	0000101	CON_12	68	CONUNIT	CON_12	
ctivate Configuration		05	E 4	0167519	IP-CPU_03_Fiber	70	CPU UNIT	IP-CPU C Fiber	
liscellaneous	_	05	⊞ 4	0155854	IP-CPU_04_Fiber	72	CPUUNIT	IP-CPU D Fiber	
ystem Settings	^	07	00 1	0155408	CON_MV_3.1	89	CON UNIT	Multiviewer 3.1	
Bystem		08	⊞ 1	0155418	CON_MV_3.2	90	CON UNIT	MultiViewer 3.2x	
ACCess.		09	III 1	0155422	CON_MV_3.3	91	CON UNIT	MultiViewer 3.3	
Bwitch Network		10	⊞ 1	0155403	CON_MV_3.4	92	CONUNIT	MultiViewel 3.4	
ale and Time		11	⊞ 1	0155411	CON_MV_4.1	93	CON UNIT	MultiViewer 4.1	
/atrix Grid		12	⊞ 1	0155420	CON_MV_4.2	94	CON UNIT	Multiviewar 4.2	
xleader & Devices	~	13	⊞ 1	0155419	CON_MV_4.3	95	CONUNIT	MultViewer 4.3	
ST Units		14	III 1	0182231	CON_MV_4.4	96	CON UNIT	Multiviewer 4.4	
PU Devices		15		0201214	IP-CPU_05_J2_DH	104	CPU UNIT	IP-CPUv2	
CON Devices		16		0076860	CPU_V8A_01	137		CPU_11 FHD (VGA)	
ser Settings	~	17		0076855	CPU_VGA_02	145		CPU_12 FHD [VGA]	
		18		0207709	CON_01	153	CONUNIT		
Jsers & Groups	_	19	⊞ 1	0218839	CON_03	154	CONUNIT	CON_03	
Lesignment	~	Ex	dender firme	are version conflict					
Viual CPU Devices		Ma	eruel update	of EXTMSD / EXTMSD recommende	d				
Artual CON Devices		W	rong module	type (CPU/CON mismatch)					

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.

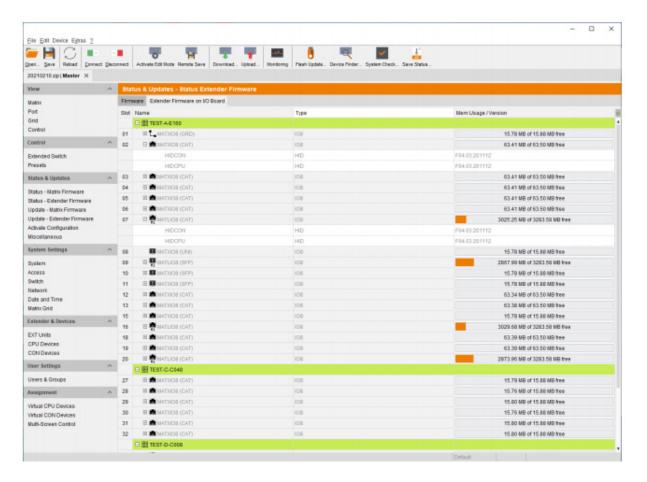


FIGURE 7-7.5.1 MANAGEMENT SOFTWARE MENU STATUS & UPDATES - STATUS MATRIX FIRMWARE - EXTENDER FIRMWARE ON IO BOARD

The following information is displayed in the working area:

BLACKBOX.COM



COLUMN	DESCRIPTION
Slot	Ident number of the extender
Name	Name of the extender and the extender firmware
Туре	Extender type
Mem Usage / Version	 Free memory on the I/O module (in MB) Firmware version of the I/O 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.

7.7.6 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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2021021010p)Master X Monitoring X										
Monitoring	Monitoring - Sysiog									
Byslog SrunP	Filter Find									
	Date		Facility	Severity	Host	Nessage		Filter		
	From 23.02.21 C 12.50.		karn A	emergency alert				Clear		
	To 23.02.21 C 12.50		mail	critical	App Name	Proc ID		lao ID		
			daemon	error						
	Date	Facility	Severity 1	Host	App Name	Proc ID	Mag ID	Message		
	2021-02-23112:59:09.872	localD	NOTICE	TEST-A-E100	NOT		CPUI	IanApiAccept0: API SOCKET=444838 HOST=192, 158, 170, 181 con		
	2021-02-23T12:58:09.867	local0	WARN	TEST-A-E190	WAR		CPU1	lanManage(): SOCKET=444B38 closing socket		
	2021-02-23112-59-09-273	localD	NOTICE	TEST-A-E100	NOT		CPUI	IanAplAcceptO: API SOCKET=43829C H0ST=192 158 170 181 con		
	2021-02-23T12:59:09.267	local0	NOTICE	TEST-A/E190	NOT		CPU1	IanApiAccept(): API SOCKET=425A00 H08T=192, 198, 170, 181 con		
	2021-02-23712-59-09-262	local0	WARN	TEST-A-E160	WAR	-	CPU1	IanManage(): SOCKET+43829C dosing socket		
	2021-02-23T12:58:09.257	local0	WARN	TEST-A-E190	WAR		CPU1	IanManage(): SOCKET=42BA00 closing socket		
	2021-02-23712:59:05:267	local0	NOTICE	TEST-A-E160	NOT	-	CPU1	swConnedGridPort(): PORT=159		
	2021-02-23T12:59:05:261	local0	INFO	TEST-A-E100	INF		CPU1	swConnedPort(): PORT=159		
	2021-02-23T12:50:05:249	local0	NOTICE	TEST-A-E160	NOT	-	CPU1	swHandleinserExtender(): PORT=159 EXT=10135474.1		
	2021-02-23T12:59:04.257	local0	NOTICE	TEST-A-E100	NOT		CPU1	IanApiAccept(): API SOCKET=43829C H0ST=192, 168, 170, 181 con		
	2021-02-23712:50:04:251	local0	NOTICE	TEST-A-E160	TON	-	CPU1	IanApiAccept(): API SOCKET=428A00 HOST=192.188.170.181 cor		
	2021-02-23712:59:04.245	local0	WARN	TEST-A-E190	WAR		CPUI	lanktanage(): SOCKET=43829C closing socket		
	2021-02-23T12:50:04:241	local0	WARN	TEST-A-E160	WAR		CPU1	lanManage(): BOCKET=42BA00 closing socket		
	2021-02-23712:59:00.749	local0	NOTICE	TEST-A-E150	NOT		CPUI	swConnedGridPort(): PORT=160		
	2021-02-23T12:59:00.743	local0	INFO	TEST-A-E190	INF		CPU1	swConnectPort(): PORT=160		
	2021-02-23712:59:00.731	local0	NOTICE	TEST-A-E100	NOT		CPU1	swHandleinserExtender(): PORT=160 EXT=40131242:1		
	2021-02-23T12:58:59.240	local0	NOTICE	TEST-A-E190	NOT		CPU1	IanApiAccept(): API SOCKET=43829C HOBT=192.168.170.181 con		
	2021-02-23712:58:59:234	localD	NOTICE	TEST-A-E150	NOT		CPU1	IanApiAccept(): API SOCKET=428A00 HOST=192.168.170.181 cor		
	2021-02-23T12:58:59.228	lecal0	WARN	TEST-A-E190	WAR		CPU1	lanManage(): SOCKET=43829C closing socket		
	2021-02-23712:58:59:224	local0	WARN	TEST-A-E160	WAR		CPU1	lanManage(): SOCKET+428400 closing socket		
	2021-02-23T12:58:57.713	local0	NOTICE	TEST-A-E190	NOT		CPU1	swConnectOridPort(): PORT=157		
	2021-02-23T12:58:57.708	local0	INFO	TEST-A-E160	INF	-	CPU1	swConnedPort() PORT=157		
	2021-02-23712:58:57.692	local0	NOTICE	TEST-A-E100	NOT	-	CPU1	swHandleinsertExtender(): PORT=157 EXT=40015300:1		
	0001.00.00T105858.451	tarath	NOTICE	TERT_R_EMR	PAPE .		CPUI	sumonia@abbitEventeric com-3004 EVT-48131032 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.

Ionitoring	Monitoring - Syslog							
Dyslog	Filter Find							
NMP	Find Message: API							Find Next Find Previous
	Date	Facility	Severity	Host	AppName	Proc ID	Hag ID	Message
				-		Files		
	2021-02-23T12:59:09.883 2021-02-23T12:59:09.883	local0	NOTICE	TEST-A-E160 TEST-A-E160	WAR		CPU1 CPU1	IanManage(): SOCKET=4513D4 dosing socket IanApiAccept(): API SOCKET=45DC70 HOST=192.168.170.181 cor
	2021-02-23112:59:09.872	local0	NOTICE	TEST-A-E100	NOT	-	CPUI	lanApiAccept): API SOCKET=464638 HOST=192 198 170 191 con
	2021-02-23T12:58:09.867	local0	WARN	TEST-A-E160	WAR		CPU1	lantilanage(): SOCKET=444B38 closing socket
	2021-02-23712:59:09.273	local0	NOTICE	TEST-A-E160	NOT	-	CPUI	IanApiAccept(): API SOCKET=43829C H0ST=192 168 170 181 col
	2021-02-23T12:59:09.267	local0	NOTICE	TEST-A-E100	NOT		CPU1	IanApiAccept(); API SOCKET=428A00 HOST=192, 168, 170, 181 cor
	2021-02-23712:59:09.262	localD	WARN	TEST-A-E160	WAR	-	CPUI	IanManage(): SOCKET=43829C closing socket
	2021-02-23T12:59:09.257	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	swConnectPort(): PORT=159
	2021-02-23712:59:05:249	local0	NOTICE	TEST-A-E160	NOT		CPU1	swHandleinserEidender(): PORT=159 EXT=10135474.1
	2021-02-23T12:59:04:257	local0	NOTICE	TEST-A-E100	NOT		CPU1	lanApiAccept(): API SOCKET=43829C HOST=192.168.170.181 col
	2021-02-23712:59:04:251	local0	NOTICE	TEST-A-E160	NOT	-	CPU1	IanApiAccept(): API SOCKET=428A00 HOST=192.188.170.181 cor
	2021-02-23T12:59:04:245	local0	WARN	TEST-A-E190	WAR		CPU1	lanManage(): BOCKET=43829C closing socket
	2021-02-23712:59:04:241	local0	WARN	TEST-A-E160	WAR		CPU1	IanManage(): SOCKET=42BA00 closing socket
	2021-02-23T12:59:00.749	local0	NOTICE	TEST-A-E100	NOT	-	CPU1	swConnedGridPort(): PORT=160
	2021-02-23T12:59:00.743	local0	INFO	TEST-A-E160	INF		CPU1	swCennedPort(): PORT=160
	2021-02-23T12:59:00.731	local0	NOTICE	TEST-A-E160	NOT	-	CPUI	swHandleinsertExtender(): PORT=160 EXT=40131242.1
	2021-02-23T12:58:59.240	local0	NOTICE	TEST-A-E160	NOT		CPU1	IanApiAccept(): API SOCKET=43829C HOBT=192 168 170 181 co
	2021-02-23712:58:59.234	local0	NOTICE	TEST-A-E100	NOT	-	CPU1	IanApiAccept(): API SOCKET=428A03 HOST=192, 158, 170, 191 cor
	2021-02-23T12:58:59.228	local0	WARN	TEST-A-E160	WAR		CPU1	IanManage(): SOCKET=43829C closing socket
	2021-02-23712:58:59.224	local0	WARN	TEST-A-E160	WAR	1	CPUI	IanNanage(): SOCKET=428400 closing socket
	2021-02-23T12:58:57.713	local0	NOTICE	TEST-A-E190	NOT		CPU1	swCennedOridPert(): PORT+157

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.

20210210.zip Master ×	met geconnect Activate Edit Hode Remot Monitoring X						
Monitoring	Monitoring - SNMP						
galog	Filter Find						
INMP	Date	Severity	Host	Type of Trap Message			Filter
	Fram 23.02.21 C 12.50			Temperature			Clear
	To 23.02.21 🗘 12.50	29 C Warning Error					
	Date	Uptime	Heat	Type of Trap	Message		Sharp-Versio
	2021-02-23712-58-25.676	23428.64	192.168.170.57	Status and speed of fan tray #1	Status: OK; Speed: 4 (Mm: 0, Mar 15)		1
	2021-02-23712:58:25.027	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 fan tray #2	Status: OK; Speed: 4 (Min: 0, Max 15)		1
	2021-02-23T12:58:21.484	23424.71	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
	2021-02-23712:58:16.976	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
	2021-02-23712:58:14.755	3:04:16.97	192 168 170 114	Last slot inserted	Slot 9; Extender: 40131237		3
	2021-02-23T12:58:14.670	3:04:16.89	192.168.170.114	Last slot inserted	Slot 8; Extender: 40131238		3
	2021-02-23712:58:14:505	3.04:16.01	192.168.170.114	Last slot inserted	Slot 6; Extender: 40131239		3
	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	3.04.15.58	192.168.170.114	Last slot inserted	Slot. 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
	2021-02-23712:58:11.339	2:34:14.57	192 168 170 104	Temperature of the matrix	Temperature: 65°C		1
	2021-02-23T12:58:11.339	234:14.31	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	2:34:08.91	192.168.170.59	authenticationFailure			1
	2021-02-23T12:58:03.200	2:34:06:27	192.168.170.57	authenticationFailure			1
	2021-02-23712-58-03.090	3:04:04.31	192.168.170.114	Last slot removed	Slat 9; Extender: 40131237		3
			100 100 100 111		ALL A P. 1 10100000	Save trace Clear trac	e Paul

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.

Bie Edit Device Egtras	annet geconnet Activate Edit Hode Remo	n Save Download Up	stad Monitoring Planih Up	date_ Device Finder_ System Check 5	Sava Statua			
Aonitoring	Monitoring - SNMP							
Syslog	Filter Find							
INMP								
	Find Message: Temperature	•						ind Next
							Find	d Previous
	Date	Uptime	Host	Type of Trap	Message		12.8.8	P-Version
	2021-02-23712-58:25 027	234:29.03	192 168 170 59				1	
	2021-02-23112:58:23.425	2.34.29.03	192.168.170.59	authenticationFailure authenticationFailure			1	
	2021-02-23112-58-23-425	2.34.26.71	192 158 170 104	Status and speed of fan tray #2	Status: OK; Speed: 4 (Min: 0, Mar 15)		1	
	2021-02-23T12:58:21.484	23424.71	192 168 170 104	Status and speed of fan tray #1	Status: OK: Speed: 4 (Min: 0, Mar 15) Status: OK: Speed: 4 (Min: 0, Mar 15)		1	
	2021-02-23112:58:20.999	23425.01	192 168 170 59	authenticationFailure	ceases. on, operat + (rest, e, real 15)		1	
	2021-02-23712:58:19.395	2.34:22.37	192 168 170 57	authenticationFailure			1	
	2021-02-23712-58-16.976	2 34 20.99	192 168 170 59	authenticationFailure			1	
	2021-02-23712:58:15.374	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	
	2021-02-23T12:58:14:507	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	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	
	2021-02-23712:58:08.931	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	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	
	2021-02-23712:58:03.074	3:04:04.31	192.168.170.114	Last slot removed	Slot. 8; Extender: 40131238		3	
						Save trace	Cleartrace	Pause

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 Note Remete Save Dewnlead. Uplead. Nontering Plash Update Device Pinder System Check Save Status.	
20210210.zp Master ×		
View	🗠 🍨 View - Matrix	
Matrix Port Grid Super Grid Control		Matrix Status Tempedane Dk Dk SU 1 On PSU 2 On PSU 3 Not Available PSU 4 Not Available Tan 1 Dk
Control	n	Fan 2 Ok
Extended Switch Presets		
Status & Updates	~	
Status - Matrix Firmware Status - Eitender Firmware Update - Matrix Firmware Update - Extender Firmware Activate Configuration Misicellane.cus	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 Relaad Show Part Hunders © Ond Parts
System Settings		Cocal Ports
System Access Switch Network Date and Time Matrix Orid	B2 D4 D6 B1 D1 D1<	Routing Information Show Redundent Links (1.31.2) Show Use Show Use Automatic Coding Automatic C
Extender & Devices	~	Grid Line Invalid Port
EXT Units CPU Devices CDN Devices		Kic Access Pixed Port
		Multi-Screen Control 🛛 👻
User Settings		Redundancy ^
Users & Groups		Link 1
Assignment	×	- 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.

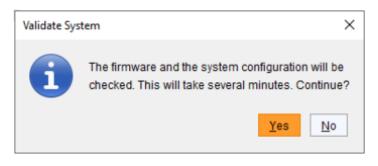


FIGURE 7-7.9.1 MANAGEMENT SOFTWARE DIALOG - VALIDATE SYSTEM

A report is displayed after the system check.

System Check - TEST-F	-F024C016F		×
System Check			
The System Check helps your personal check of the		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 = 40000927, 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		
		Close	

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	 Save Status of all matrices in the grid Save current matrix status 	
		< <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.
 Save EXT Units Settings Save Status 	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			
 Saving Option Choose Directory Anonymization Save EXT Units Settings Save Status 	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	*****	
		< <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	✓ 	
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

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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		ł
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.



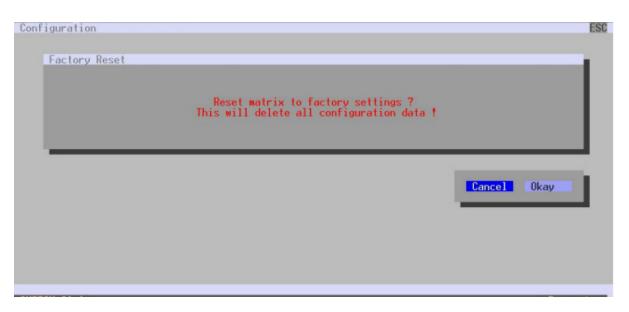


FIGURE 7-10.6.1 OSD MENU FACTORY RESET

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.

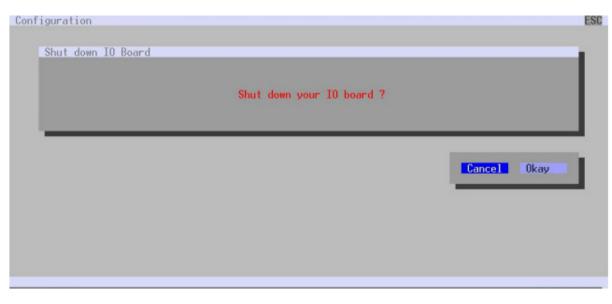


FIGURE 7-10.7.1 OSD MENU CONFIGURATION - SHUT DOWN MATRIX



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
	<u>O</u> k C <u>a</u> ncel

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 ×
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20210210.pp Master X	
View - View - Matrix	
Mairix Poit Grid Control	CPp Hold Name 192 168.172 /137 Subnet Mask 295 295 295 8 Galaveray 192 168.179 /1 MAC Address Dc 21.57 04.033 9C
Control	
Extended Switch Presets	
Status & Updates 🗠	
Status - Markin Finnware Status - Markin Finnware Update - Extender Finnware Update - Extender Finnware Miscellaneous	
System Settings A Curl 16 R1 Curl 30 Curl 10 R1 SFP10 R1 SFP10 R1	
Byslem 41 03 05 07 19 21 23 25 27 29 31 33 35 37 39 Access Switch Image: Control of the state of the st	Coptions Actomatic Relead Shove Part Humbers W Ovid Parts Cool Parts
Extender & Dovices ^	Show Muti-Screen Control
EKT Units CPU Devices CON Devices	Routing Information Show Redundant Links (L1/L2) Show Video Show US8-IND
User Settings ^	ID Port Color Coding ^
Usera & Groupa	Full Access Video Access
Assignment	Grid Line Invalid Port X to Access
Virtual CPU Devices Virtual CDN Devices Multi-Screen Control	N) Port Symbols v Marts Screen Control v Redundancy v Clear Sale choo

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.

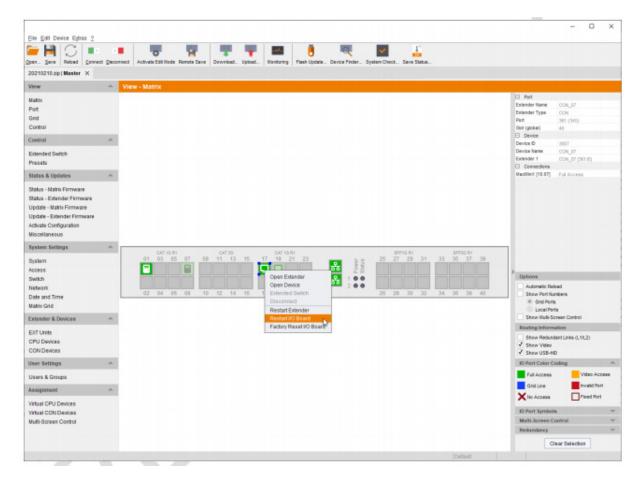


FIGURE 7-11.3.1 MANAGEMENT SOFTWARE VIEW - MATRIX - RESTART I/O BOARD





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 Epitas 2	
20210210.itp Master X	
View View - Matrix	
Markx Pot Gord Control Control	Port Extender Hame CON_D7 Extender Type CON Part St1 (345) Sof (345) 46 Device
Extended Switch Provats States & Updates	Device D 3007 Device Mass CON[57 Extender 1 CON[57]DE/7] ⊟ Cennectors Mactiter (1917) Full Access
Status - Elarita Firmware Status - Elarita Firmware Update - Matrix Firmware Update - Matrix Firmware Update - Configuration MicroElareus	
System Settings	
Corr 10 R1 Corr 10 R1 Sprace Sprace <th< th=""><th>37 39 Options Adomatic Related</th></th<>	37 39 Options Adomatic Related
Extender & Devices	Show Muth-Screen Control
EXT Units CPU Devices CON Devices	Routing Information Show Redundent Links (L1L2) Show Video Show USE-RD
User Settings 🗠	10 Part Color Coding A
Usars & Groups	Fall Access Video Access
Assignment A	Grid Line Invalid Port Kio Access
Virtual CPU Devices Virtual CDN Devices Multi-Screen Control	No Access Print for No Port Symbols V Mail:Scene Control V Redundercy V Chair Selection
Det	10

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>Ok</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

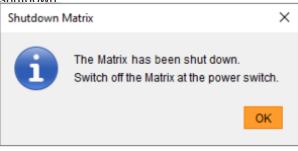


FIGURE 7-11.5.2 MANAGEMENT SOFTWARE DIALOG LOG SHUT DOWN MATRIX





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.

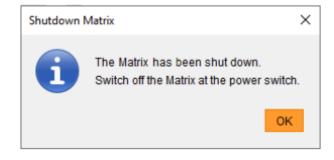


FIGURE 7-11.5.3 MANAGEMENT SOFTWARE DIALOG LOG SWITCH OFF MATRIX

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.

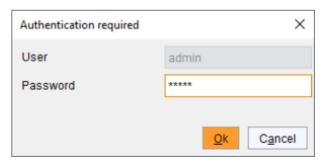


FIGURE 7-11.6.1 MANAGEMENT SOFTWARE DIALOG LOG IN ADMINSTRATOR



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.

		- 🗆 X
	e Concreted Activate Edit Hode Reveals Save Download Upbad Upbad Upbad Download Upbad	
20210210.sp Master X		
View	View - Matrix	
Matrix Port Grid Control		Port Extender Name CON_E7 Extender Type CON Part St(146) Sof (plotein) 46
Control	· ·	Device Device D 3007
Extended Switch Presets		Device Name CON_07 Extender 1 CON_07 [SEI/0]
Status & Updates	^	MacMinif [10.07] Fall Access
Status - Matrix Firmware Status - Extender Firmware Update - Matrix Firmware Update - Extender Firmware Activate Configuration Miscellaneous		
System Settings	CAT 15 R1 CAT 30 CAT 10 R1 SEP10 R1 SEP10 R1	
System Access Switch Network Date and Time Matrix Grid	01 03 66 07 89 11 13 15 17 19 21 23 25 27 29 31 33 35 37 39 01 03 66 07 89 11 13 15 17 19 21 23 23 33 35 37 39 01 03 66 07 89 11 13 15 17 19 21 23 27 29 31 33 35 37 39 02 04 06 08 10 12 14 15 17 19 21 20 20 31 33 39 39 30 <th>Outions Automatic Relead Share Port Numbers Origi Parts Local Parts</th>	Outions Automatic Relead Share Port Numbers Origi Parts Local Parts
Extender & Devices	RestartI/O Board Factory ResettI/O Board	Show Hutt-Screen Control
EXT Units CPU Devices CON Devices		Routing Information Show Redundent Links (),11(2) Show Video Show USB-HD
User Settings	~	10 Part Color Coding ^
Users & Groups		Full Access Video Access
Assignment	A	Grid Line Invalid Port
Virtual CPU Devices Virtual CDN Devices Multi-Screan Control		k) Part Symbols Kats Screen Control Clear Selecton
	Default	

FIGURE 7-11.7.1 MANAGEMENT SOFTWARE VIEW - MATRIX - CONTEXT VIEW



7.12 SUMMARY OF KEYBOARD COMMANDS

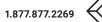
In the following you find a summary of keyboard commands that can activate extender and matrix functions after executing the Hot Key.

Extender

BUTTON	DESCRIPTION
<hot key="">, <a></hot>	Download of DDC information for the monitor connected to the CON Unit into the CPU Unit
<hot key="">, <k>, <1>, <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>, <2>, <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>, <1>, <enter></enter></d></hot>	Switch to video channel 1 of the Dual-Head CPU Unit (482 series only)
<hot key="">, <d>, <2>, <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="">, <1> <16>, <enter> (<space> or <left Shift> + <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> + <f17> <f32></f32></f17></left </hot>	Open OSD of the sub matrix in a cascaded environment		
<hot key="">, <c>, <new Hot Key Code>, <enter></enter></new </c></hot>	Close the current connection of the own console		
<hot key="">, <c>, <0>, <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>, <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>, <0>, <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.

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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
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.

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
P-IP-I	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° 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° C higher than the ambient temperature. Therefore, the MTBF calculation refers to an ambient temperature of 45° C. The humidity is limited to 60° .

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 display	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	 Check connecting cables and connectors.
flashing orange	and CPU Unit.	(cable break, CPU/CON Unit offline). Connect a 3G extender to a 3G port. Contact dealer if necessary.

10.8.2 ERROR INDICATION AT THE 3G CAT X PORT

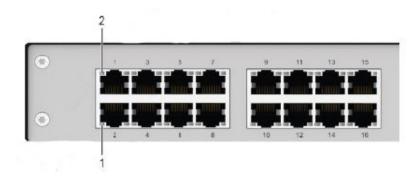


FIGURE 10-8.1.2 LEDS OF I/O MODULE 3G CAT X

DIAGNOSIS	POSSIBLE REASON	MEASURE
LED 1 or LED 2 flashing orange	Connections CON Unit, matrix and CPU Unit.	 Check connecting cables and connectors. (cable break, CPU/CON Unit offline). Connect a 3G extender to a 3G port. Contact dealer if necessary.

*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

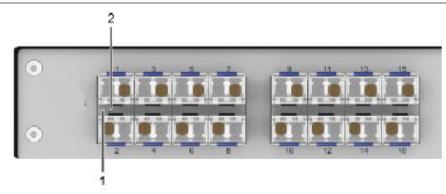


FIGURE 10-8.1.3 LEDS OF I/O MODULE FIBER PORT

DIAGNOSIS	POSSIBLE REASON	MEASURE
LED 1 or LED 2 flashing RED	Connections CON Unit, matrix and CPU Unit.	 Check connecting cables and connectors. (cable break, CPU/CON Unit offline). Connect a 3G extender to a 3G port. Contact dealer if necessary.

*For further measures see user manual of the respective extender series.

10.9 BLANK SCREEN

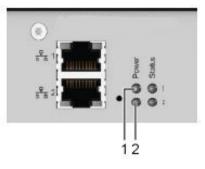


FIGURE 10-9.1.1 LEDS FOR POWER FUPPLY

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.

NEED HELP? LEAVE THE TECH TO US



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