



Draco tera enterprise

480 Series

KVM Matrix-Switch

User Manual

Edition: 2017-09-06

Firmware version 03.05



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1 About This Manual

1.1 Scope

This manual describes how to install your Draco tera, how to operate it and how to perform trouble shooting.

1.2 Validity

This manual is valid for all devices listed on the front page. The product code is printed on the base of the devices.

1.3 Cautions and Notes



This symbol indicates an important operating instruction that should be followed to avoid any potential damage to hardware or property, loss of data, or personal injury.



This symbol indicates important information to help you make the best use of this product.

This symbol indicates best practice information to show recommended and optimal ways to use this product in an efficient way.

1.4 Spellings

The following spellings are used in the manual:

The following symbols are used in this manual:

Spelling	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 2x in quick succession (cf. mouse double click)
Menu item	Description of a menu item in the software
Menu item > Menu item	Select menu items successively
Bold print	Description of terms that are used in the device software

2 Safety Instructions

To ensure reliable and safe long-term operation of your Draco tera please note the following guidelines:

Installation

- Only use the device according to this User Manual. Failure to follow these procedures could result in damage to the equipment or injury to the user or installer.
- → Only use in dry, indoor environments.
- ➔ The Draco tera and the power supply units can get warm. Do not install components in an enclosed space without any airflow.
- ➔ Do not obscure ventilation holes.
- Only use power supplies originally supplied with the product or manufacturer-approved replacements. Do not use a power supply if it appears to be defective or has a damaged chassis.
- Connect all power supplies to grounded outlets. In each case, ensure that the ground connection is maintained from the outlet socket through to the power supply's AC power input.
- In case the device is equipped with one or more grounding screws, it is obligatory to use these for normal operation in order to ensure the grounding of the chassis.
- Do not connect the link interface to any other equipment, particularly network or telecommunications equipment.
- Only connect devices to the serial interface that are protected against short circuit currents and incorrect voltages at the serial interface.
- ➔ To disconnect the Draco tera from the power supply, remove the power cord cables of all power supply units or switch supplies off.
- ➔ Take any required ESD precautions.



In order to disconnect the device completely from the electric circuit, all power cables have to be removed.

Repair

- → Do not attempt to open or repair a power supply unit.
- ➔ Do not attempt to open or repair the Draco tera. There are no user serviceable parts inside.
- → Please contact your dealer or manufacturer if there is a fault.

3 Description

3.1 Application

The Draco tera matrix is used to establish connections from consoles (monitor, keyboard, mouse, and other peripheral devices) to various sources (computer, CPU).

In its maximum configuration, up to 288 independent ports can be defined and switched either as a console or a CPU.

The Draco tera matrix is designed to operate with extenders that are able to transmit video, KVM and USB 2.0 signals. But it can also be used as a video matrix.

The connection between the matrix and the peripheral devices, such as KVM extenders or video sources, can be made by Cat X, fiber or coaxial cables.

The matrix serves as a repeater and can be run at a maximum distance of 10 km from the consoles and 10 km from the sources.

3.2 Access Options

The following options are available to configure and operate the Draco tera:

Access Option	Symbol
OSD	OSD
Java tool	AVA
Serial interface	RS232

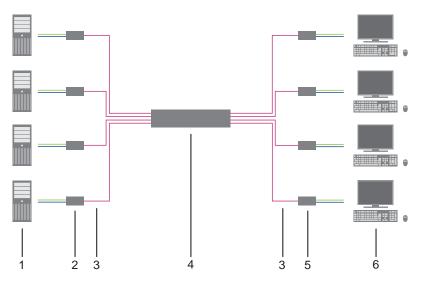
3.3 System Overview

A Draco tera matrix system consists of a Draco tera matrix and, for KVM applications, one or more CPU Units / CON Units. The Draco tera matrix is connected to the CPU Units / CON Units by interconnect cables or directly to the video devices where used as a video matrix.

CPU Units are connected directly to the sources (computer, CPU) by the provided cables.

Monitor(s), keyboard and mouse are connected to the CON Units.

Communication between the Draco tera matrix and the CPU Units / CON Units occurs over the respective interconnect cables.



System Overview (exemplary)

- 1 Source (computer, CPU)
- 2 CPU Units
- 3 Interconnect cable
- 4 Draco tera matrix
- 5 CON Units
- 6 Console (monitor, keyboard, mouse)



See Chapter 4.3, Page 53 for installation examples.

3.4 Product Range

Part No.	Description
K480-576	Draco tera matrix with 576 ports, empty, free configuration
K480-576S	Draco tera matrix with 576 ports (288x288), empty, free configuration
K480-288	Draco tera matrix with 288 ports, empty, free configuration
K480-160	Draco tera matrix with 160 ports, empty, free configuration
K480-080	Draco tera matrix with 80 ports, empty, free configuration
K480-048	Draco tera matrix with 48 ports, empty, free configuration

3.5 Accessories

Part No.	Description
480-C8	Draco tera Cat X I/O board
480-S8	Draco tera fiber I/O board, Single-mode
480-V8	Draco tera fiber I/O board, Single-mode, 3,125 Gbit/s
480-UNI16	Draco tera UNI I/O board for USB 3.0 and SDI
480-GRD-S8-R1	Draco tera 8 to 1 port Matrix Grid board (grid lines), Single-mode, 1.4 km
480-CTRL	Draco tera CPU board version 1
480-CTRL2	Draco tera CPU board version 2
436-IECLOCK-EU	IEC connection cable for power supply, lockable, EU power connector
436-IECLOCK-US	IEC connection cable for power supply, lockable, US power connector
459-1C	Cat X GBIC for use with Draco tera
459-1S	Single-mode GBIC, LC duplex, bidirectional, for use with Draco minor / major / tera
459-1V	Single-mode GBIC, LC duplex, bidirectional, for use with Draco tera (3.125 Gbit/s)
459-6M	Multi-mode GBIC, LC duplex, bidirectional, USB 3.0 (6.25 Gbit/s), for use with Draco tera

Part No.	Description
459-3BX	Coaxial GBIC, bidirectional, for the use with Draco tera (3G-SDI)
459-3DX	DIN 1.0/2.3 GBIC, bidirectional, for the use with Draco tera (3G-SDI)
459-3FX	Single-mode GBIC, LC duplex, bidirectional, for the use with Draco tera (3G-SDI)
459-BMB	Adapter cable BNC to HD-BNC to adapt regular BNC cables to HD-BNC SFPs
459-BMD	Adapter cable BNC to mini DIN to adapt regular BNC cables to mini DIN SFPs
480-FAN576	Draco tera 576 fan tray (spare part)
480-FAN160	Draco tera 288/160 fan tray (spare part)
480-FAN80	Draco tera 80 fan tray (spare part)
480-FAN48	Draco tera 48 fan tray (spare part)
480-RED576	Draco tera 576 plug-in power supply unit (spare part or redundancy)
480-RED288	Draco tera 288 plug-in power supply unit (spare part or redundancy)
480-RED160	Draco tera 160 plug-in power supply unit (spare part or redundancy)
480-RED80	Draco tera 80 plug-in power supply unit (spare part or redundancy)
480-FLTR576	Draco tera 576 filter pads as consumable supply
480-FLTR160	Draco tera 288/160 filter pads as consumable supply
480-FLTR80	Draco tera 80 filter pads as consumable supply
480-FLTR48	Draco tera 48 filter pads as consumable supply

3.6 Device Views

The following views of the Draco tera matrix illustrate the various available chassis types.

3.6.1 Draco tera 576 Port

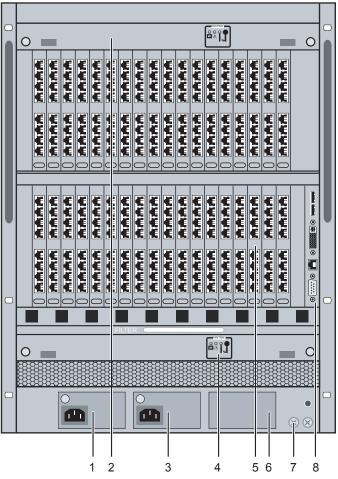
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- 1 Slot for power supply unit 1
- 2 Slot for fan tray 1
- 3 Slot for power supply unit 2
- 4 Slots for I/O boards #1–36
- 5 Slot for fan tray 2
- 6 Slot for power supply unit 3
- 7 Slots for I/O boards #37–72
- 8 Slot for power supply unit 4
- 9 Grounding
- 10 Slot for CPU board 1
- 11 Slot for CPU board 2

2017-09-06

Description

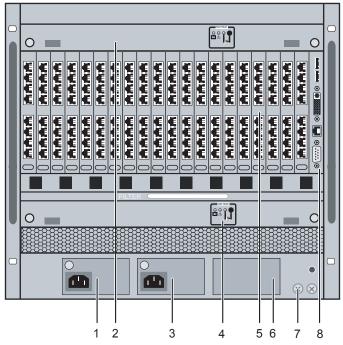
3.6.2 Draco tera 288 Port





- 1 Slot for power supply unit 1
- 2 Slot for fan tray 1
- 3 Slot for power supply unit 2
- 4 Slot for fan tray 2
- 5 Slots for I/O boards #1–36
- 6 Slot for power supply unit 3
- 7 Grounding
- 8 Slot for CPU board

3.6.3 Draco tera 160 Port



- 1 Slot for power supply unit 1
- 2 Slot for fan tray 1
- 3 Slot for power supply unit 2
- 4 Slot for fan tray 2
- 5 Slots for I/O boards #1-20
- 6 Slot for power supply unit 3
- 7 Grounding
- 8 Slot for CPU board

3.6.4 Draco tera 80 Port

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		10 m C (2) C (2) C (2)	
1	2 3 4 5 6	7	

- 1 Slot for fan tray
- 2 Slot for power supply unit 1
- 3 Slots for I/O boards #1–10
- 4 Slot for power supply unit 2
- 5 Slot for CPU board
- 6 Slot for air filter
- 7 Slot for fan tray 2

3.6.5 Draco tera 48 Port

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	10P		
	FLIFER	FAN TRAY	
 1	6	 7	

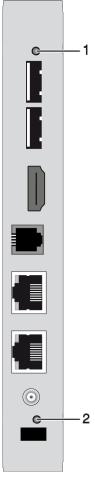
- 1 Slot for fan tray
- 2 Slot for power supply unit 1
- 3 Slots for I/O boards #1-6
- 4 Slot for power supply unit 2
- 5 Slot for CPU board
- 6 Slot for air filter
- 7 Slot for fan tray 2

3.7 Diagnostics and Status

3.7.1 Status LEDs

Draco tera components are fitted with the following LEDs for overall status indication:

CPU Board

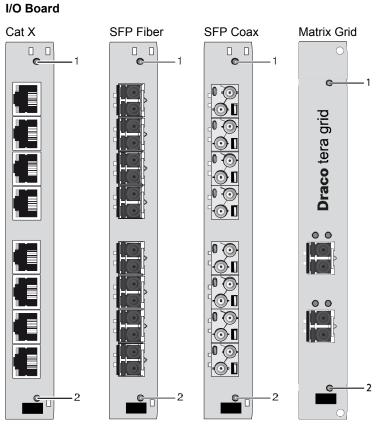


Status LEDs on CPU board:

Pos.	LED	Status	Description							
1	Status 1	White	CPU board is in registration process							
		Blue flashing	Registration of the matrix has started							
		Red flashing	Registration in progress							
		Green flashing	Operating condition							
		Green	CPU board de-registered							
2	Status 2	White	CPU board is in registration process							
		Red flashing	Registration of the matrix has started							
		Off	Operating condition							



Due to variations in LED type "white" might also appear as light purple or light blue.



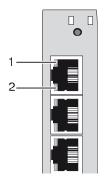
Front View

Status LEDs at I/O boards:

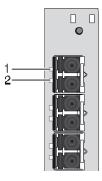
Pos.	LED	Status	Description					
1	Status 1	Light blue	I/O board boot process					
		Red flashing	I/O board registration process					
		Red/ Yellow flashing	I/O board in Service Mode or firmware conflict with CPU board					
		Green flashing	Operating condition, I/O board registered at the matrix					
		Green	I/O board de-registered (locking pin pulled out)					
2	Status 2	White	I/O board boot process					
		Blue	I/O board registration process					
		Blue flashing	Operating condition, communication active with CPU board active					
		Red flashing	I/O board de-registered (locking pin pulled out)					

Ports I/O Board

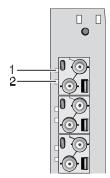
Cat X



SFP Fiber



SFP Coax





Matrix Grid

1



Front View

- Status LED 1 1
- Status LED 2 2

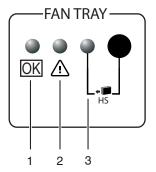
Status LEDs at the ports of the I/O boards:

Pos.	LED	Status	Description
1	Link status	Off	Port not activated
	(orange)	Flashing	Port activated, no connection via interconnect cable
2	Link status	Off	Port not activated
	(green)	Flashing	Port activated, no connection via interconnect cable

Description

Pos.	LED	Status	Description
		On	Connection via interconnect cable ok, data traffic active

Fan Tray



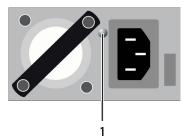
Front View

- 1 Status LED 1
- 2 Status LED 1
- 3 Hot Swap LED

Status LEDs of the fan trays:

Pos.	LED	Status	Description						
1	Status 1 (green)	On	Operating condition						
2	Status 2	Off	Operating condition						
	(red)	On	Error indication						
3	Hot Swap	Off	Hot Swap option deactivated						
	(blue)	On	Hot Swap option activated						

Power Supply Unit Draco tera 576

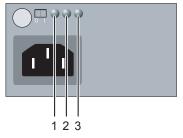


Front View

Status LEDs of the power supply units

Pos.	LED	Status	Description						
1	Status LED	Green	Stand-by on; main output on						
		Orange	Main output OCP or UVP or OVP						
		Orange flashing	Fan Error; over-temperature						

Power Supply Unit Draco tera 288/160



Front View

Status LEDs of the power supply units

Pos.	LED	Status	Description
1	AC Input OK (green)	On	Operating condition
2	DC Output OK (green)	On	Operating condition
3	O/T (yellow)	Off	Normal temperature
		On	High temperature

Description

Power Supply Unit Draco tera 80/48



Pos.	LED	Status	Description
1	DC Input	On	Operating condition
	OK (green)	Off	No power supply
	DC Input (red)	On	Power supply unit not active, Matrix is powered by second power supply unit
		Off	Operating condition

3.7.2 Port Status

The connections and the switching status between the various consoles and CPUs are shown in this menu.

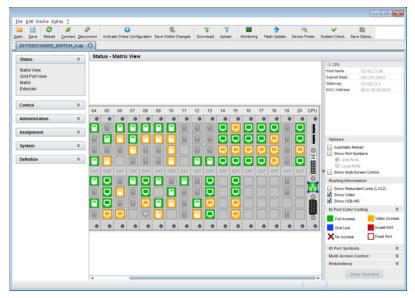
You have the following option to access the menu:



Java Tool

The current port configuration of the Draco tera is illustrated in this menu.

→ Select Status > Matrix View in the task area when connected to the matrix.



Menu Status – Matrix View (example #1)

Description

a. Save Reload Con		ect	Acti	rate O	Contine C	onfigur	ation	Save (Unline Ct	anges	Downlos	d Uplo		Monitoring	Flash	Update	Device Fin	der S	Viystem Check	Save Sta	us	_
	8	- 1	tus -	Mat	rix V	iew	-	-	_	_		_	_		_	_		_				-
Status Matrix View Grid Port View Matrix Extender Control	×																		CPU Host Name Subnet Mask Gateway MAC Address	29 10	1 34 209 20 5 255 255 0 1 34 209 1 21 57 62 0	
Administration	¥																					
Assignment	¥																"ihs	58.	Options			
System Definition	\$ \$																		Automati	Ports Ports		
	-	17	19	21	23	25	27	29	31	33	35 37	39	41	43 45	47	neer		Fanto	Routing Int			
										ø	•	0				100			Show Re	deo	inks (L1/L2)
	-	18	20	22	24	26	28	30	32	34	36 38	40	42	44 46	48		127222		ID Port Col		2	
																			Grid Line	•	Video	Port
																			IO Port Syn			
																			Multi-Scre Redundan		k	
																				Clear Se		

Menu Status – Matrix View (example #2)

The colors indicate the connection status:

Color	Description
Grey	Port not connected
Yellow	Video connection
Green	KVM connection
Red	Faulty Port
Blue	Port connected to another matrix via Grid Line

The symbol indicates the extender that is recognized and defined at a certain port:

Symbol	Description
=	Port connected to a CPU Unit
P.	Port is connected to a CPU Unit that is switched to a CON Unit in Private Mode (see Chapter 3.7.4, Page 35).
Q	Port connected to a CON Unit
Ş	Port connected to a CON Unit with Shared Access to a CPU.
P	Port is connected to a CON Unit that is connected to a CPU Unit in Private Mode (see Chapter 3.7.4, Page 35).
€ CPU	Port connected to a USB 2.0 CPU Unit
CON	Port connected to a USB 2.0 CON Unit
CSC	Port is configured as Cascade-CON port for cascading of matrices.
CSC CPU	Port is configured as Cascade-CPU port for cascading of matrices.
UNI	Port is a UNI port of an I/O board that can be used for USB 3.0 or SDI switching.
	UNI port is configured as CON port in order to connect USB 3.0 CON extenders, for example.
UNI CPU	UNI port is configured as CPU port in order to connect USB 3.0 CPU extenders, for example.



- Red framed ports are defined as "fixed" (e. g. for USB 2.0 connections).
- The port with four static blue squares is currently selected.
- If a port is selected, all other ports are transparent, except those connected to the currently selected port. A selection can be cleared by pressing the button **Clear Selection**.
- In Matrix View, a red cross on a port indicates that the console to be connected does not have access rights to the respecting CPU at this port.

➔ Press the left mouse button to show the extender information of the currently selected port on the right hand side of the working area.

The following information is available:

Field	Description
Extender Name	Name of selected extender
Extender Type	Type of selected extender
Port ID	Number of selected port
Device Name	Name of connected console or CPU
Connections	Listing of assigned connections to marked port (Full Access or Video Access)

➔ Press the right mouse button to open the context menu with additional functions for the currently selected port.

Function	Description
Open Extender	The menu for definition of the currently selected extender will be opened
Open Device	The menu for definition of the currently selected console or CPU will be opened
Switch	The menu for execution of switching operations will be opened

The following context functions are available:

In order to reload the Matrix View you have the following options:

- Press the key <F5> on a connected keyboard
- Execute Edit > Reload in the menu bar
- Press the Button Reload in the tool bar

3.7.3 Port Status Matrix Grid

In this menu the connections and the switching status between the various CON and CPU Devices are shown within the Matrix Grid.

The port view is divided into the different Grid matrices. As a result each matrix is displayed in an optimized view of 24 ports per line in order to be able to show also a larger number of ports.

You have the following option to access the menu:



Java Tool

The current port configuration of the Matrix Grid is illustrated in this menu.

→ Select Status > Grid Port View in the task area when connected to the matrix.

n Şave Reibad <u>C</u>	nnect Disconnect	Activate Online Configuration Save Online Changes	Download Upload	Monitoring	Plash Update	Revice Finder.	System Check	Save Status.	
ダ admin@192.168.170	0.59 Master 🙆								
Status Matrix View	* Sta	itus - Grid Port View					1		
Grid Port View Matrix Extender									
Control	¥								
Administration	¥								
Assignment	¥								
System	¥	IP Address: 192.168.170.59	Master			# Connect			
Definition	. 1						Options Automatic	in Daland	
Centration		IP Address: 192.168.170.58			(Ø Connect	Show P	ort Numbers	
					OR		Show M	ulti-Screen Co	ntrol
			22 23 24 25	26		0 31 32		formation edundant Links	0.14.21
		38 39 40 41 43 44 45	46 47 48 49	50 51	52 53 5	4 55 58	Show V	ideo	(could)
							Show U	S8-HD for Coding	
							ful Ac		Video Acce
							Grid Lie		Invalid Port
							X No Acc		Fixed Port
							IO Port Sy	mbols	
							Martin Course	en Control	
							Redundan		

Menu Status - Grid Port View

0

Functions, colors and symbols used in the Grid Port View are identical to those in the port status of the Matrix View see Chapter 3.7.2, Page 30.

3.7.4 Extender OSD

All extenders used with the Draco tera are provided with their own OSD to display the connection status of the console.

CON_0101488887 CPU : 01002 CPU_010148543 ACCESS : 10 cdcscs SHARES : 1 device(s)

Example View Extender OSD

The following information is shown in the OSD menu:

Field	Description			
CON	Name of console			
CPU	Name of currently connected CPU Color Coding:			
	• Green : The connection to the selected CPU is completely established.			
	 Yellow: The connection to the selected CPU i partially established. 			
	Red: The connection to the selected CPU cannot be established.			
	Note : Possible reasons for any incomplete or non- established connection can be switched off extenders or insufficiently available Grid lines in Matrix Grid operation.			

Field	Description	
ACCESS	• Full Access : Console has a KVM connection to the displayed CPU.	
	 Video Access: Console has a video only connection to the displayed CPU. 	
	 Private Mode: Console has a Private Mode connection to the displayed CPU. 	
	 not connected: Console is not connected to a CPU. 	
SHARED	x device(s) shows the exact number of devices that are connected to the current CPU of the console (e.g. 3 devices).	
	If the field remains empty, no other devices are connected to the current CPU.	



If the options **Mouse Connect** or **Keyboard Connect** (see Chapter 5.4.4, Page 94) are used, the name of the console with keyboard / mouse control will be displayed on those consoles that do not have current K/M control. The console is displayed in yellow color under **Access**.

3.7.5 Network Status

The current network configuration is shown in this menu.

You have the following options to access the menu:



The following information is shown in this menu:

Field	Description
DHCP	Information whether the network settings are applied dynamically. Display Y (Yes) or N (No)
IP Address	Information about the IP address as provided manually or via DHCP
Subnet Mask	Information about the subnet mask as provided manually or via DHCP
Gateway	Information about the gateway address as provided manually or via DHCP
MAC ID	Information about the MAC address of the matrix

OSD

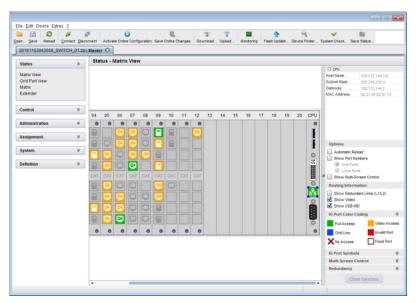
→ Select Status > Network in the main menu.

Network Interfa	ace
DHCP	
IP Address Subnet Mask Gateway	192.168.170.057 255.255.255.000 192.168.170.001
Multicast	
MAC ID	
Network Service	22
API Service	
FTP Server	
Syslog Syslog Server	H1: NO Enable Syslog Server H1 - H1: 000.000.000.000:514
Syslog Syslog Server	M2: NO Enable Syslog Server M2 - M2: 000.000.000:514
LDAP LDAP Server LDAP Base DN	: NO Enable authentication with Active Directory Server : 000.000.000.000:389 :
Log Levels	
Trace Syslog Syslog	: DEB NO INF NO NOT VES WAR VES ERR VES #1: DEB NO INF NO NOT VES WAR VES ERR VES #2: DEB NO INF NO NOT VES WAR VES ERR VES

Menu Status - Network

Java Tool

1. Select Status > Matrix View in the task area.



Menu Status - Matrix View

Use the left mouse button to click on the network port of the CPU board.

The corresponding network status will be shown on the right hand side of the working area.

The available information can be faded in or hidden by pressing the left mouse button on the "plus" or "minus" icon.

3.7.6 Firmware Status Matrix

The current firmware status of the installed boards is shown in this menu.

You have the following options to access the menu:

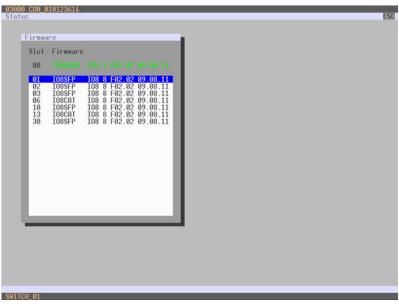


The following information is shown in this menu:

→ Select Status > Firmware in the main menu.

Field	Description
Name	Description of modules
Туре	Type number
Ports	Number of ports
Version	Complete description of firmware version
Date	Date of firmware version
Status	Module status

OSD



Menu Status – Firmware

Java Tool

1. Select Status > Matrix Firmware in the task area.

	-	Activate Online Configuration	Save Online Changes	Download Upload	Monitoring Flash Up	ete Device Finder	System Check S	ave Status	
20161103043008_SWITCH_0		itus - Matrix							-
Matrix View	FI	rmware							
Grid Port View	Slot	Name	Type	Ports	Serial Number	Version	Date	Status	
Matrix		E #SWITCH_01		160	10149940				
Extender	00	🖽 💼 MATX160	CPU	1	10165389	F03.03	2016-10-13	Available	
Control	5 01	E MATXCAT	108	8	0000000000	F03.03	2016-10-13	Available	
Control	02	E MATXCAT	108	8	0000000000	F03.03	2016-10-13	Available	
Administration	\$ 03	🗉 💼 MATXCAT	108	8	10186161	F03.03	2016-10-13	Available	
teriorent i	04	🖽 📠 MATXCAT	108	8	0000000000	F03.03	2016-10-13	Available	
Assignment	s 05	🗉 💼 MATXICAT	108	8	10186145	F03.03	2016-10-13	Available	
System 3	s 06	E MATKCAT	108	8	10185147	F03.03	2016-10-13	Available	
	07	🗉 💼 MATXCAT	108	8	10186149	B03.03	2016-10-13	Available	
Definition	\$ 08	E MATXCAT	108	8	10186137	F03.03	2016-10-13	Available	
	09	III MATXCAT	108	8	10186153	F03.03	2016-10-13	Available	
	10	E MATXCAT	108	8	10186154	F03.03	2016-10-13	Available	
	11	III 💼 MATXCAT	108	8	10139892	B03.03	2016-10-13	Available	
	12	E MATXCAT	801	8	10186162	F03.03	2016-10-13	Available	
		SWITCH_02		160	10187329				
	00	🖽 💼 MATX160	CPU	1	10187668	F03.03	2016-10-13	Available	
	21	E MATXCAT	108	8	10186163	B03.03	2016-10-13	Available	
	22	🖽 📠 MATXCAT	108	8	10186157	B03.03	2016-10-13	Available	
	23	I MATXCAT	108	8	10186166	803.03	2016-10-13	Available	
	24	🖽 💼 MATXCAT	108	8	10185169	B03.03	2016-10-13	Available	
	25	🗉 💼 MATXCAT	108	8	10186165	B03.03	2016-10-13	Available	
	26	E MATXCAT	108	8	10185164	B03.03	2016-10-13	Available	
	27	E MATICAT	108	8	10186159	803.03	2016-10-13	Available	

Menu Status – Matrix Firmware

 To read out the overall status of the matrix and store it locally (file extension .zip), select Matrix > Save Status or press the respective button in the symbol bar.

The various modules can expanded and retracted in the **Name** column by clicking with the left mouse button on the plus or minus symbols.

By clicking on the plus resp. minus symbol in the upper right corner of the working area you can expand and retract all module information with one click of the left mouse button.

3.7.7 Firmware Status Extender

The current firmware status of connected extenders is shown in this menu.

You have the following option to access the menu:



The following information is shown in this menu:

Field	Description
Name	Description of firmware
Туре	Description of extender module
Ports	Number of ports
Cur. Version	Description of current firmware version
Cur. Date	Date of current firmware version

→ Select Status > EXT Firmware in the task area.

Save Reload Connect	B ^N Disconnect	Activate	Configuration Save Online Ch	anges Download Upload	Monitoring	Flash Update.	. Device Finder Syste	w Check Save Status
20161103043008_SWITCH_0	1.zip Mast	er 😣						
Status	A St	atus - Ex	tender					
		irmware	Extender Firmware on I/O Board					
Matrix View Grid Port View Matrix	E	dender Vie	w Component View					
Extender		ID		Name	Port	Type	Version	Date
2.17.0	_		WITCH_01	SWITCH_01				
Control	* 01		10189444	MC 1 Prime	1	CPU UNIT		
Administration	¥			EXTRCPU		EXR	F01.39	2016-05-14
	-			HIDCPU		HID	F04.01	2016-02-16
Assignment	¥			EXTMSD		MSD	B02.29	2013-06-11
System	¥			ANASER		SAX	800.00	2001-01-01
	02	8	10189443	MC 1 SEC	2	CPU UNIT		
Definition	*			EXTROPU		EXR	F01.39	2016-06-14
				HIDCPU		HID	F04.01	2016-02-16
				EXTINSD		MSD	802.29	2013-06-11
	03	8	10189435	MC 2 Prime	3	CPU UNIT		
				EXTRCPU		EXR	F01.39	2016-06-14
				HIDCPU		HID	F04.01	2016-02-16
				EXTMSD		MSD	802.29	2013-06-11
				ANARS422		SAX	B01.00	2013-05-23
	04		10189447	MC 2 SEC	4	CPU UNIT		
				EXTROPU		EXR	F01.39	2016-06-14
		Extender fin	mware version conflict					
		Manual upde	ate of EXTMSD / EXTMSD recommend	ed				
		Wrang mode	le type (CPU/CON mismatch)					
		Undefined ty	pe					

Menu Status – EXT Firmware

3.8 Trace Function

All events, e.g. activities and switching operations of the Draco tera matrix, are logged and displayed in this menu.

This function is used for diagnostic purposes.

You have the option to request various trace views in the menu:



The following information is shown in this menu:

Field	Description
Date	Date stamp
Time	Time stamp
Message	Detailed description of the event

Trace possibilities

- → Select Status > Trace IO Board in the main menu to check the events on your current I/O board.
- → Select Status > Trace Matrix to check the matrix events.

3.9 Syslog Monitoring

The complete logging of the Draco tera matrix activities, switching operations and surveillance of the function of critical components like fans or power supply units takes place in this menu.

You have the following option to access the menu:



In order to start Syslog Monitoring proceed as follows:

	nect Activitie Unine Configurat	ion Save Online Changes	Download.	Upload	Monitoring Flash Update Device Finder System Check Save Status
Ionitoring 😣					
nitoring 😤	Status - Syslog				
log	Filter Find	Facility		Severity	Host Message
MP	From 20.06.17 📩 08.44 To 20.06.17 📩 08.44	122 kem	Î	ernerge alert critical error	
	Host	App Name	Proc ID	Msg ID	Message
	A-KVM1.wdr.de	NOT		CPU	swHandleSetGridConKVM(): CON=3834 KVM=3
	A-KVM1.wdr.de	NOT		CPU	swHandleSetGridConKVM(): CON=3834 KVM=3
	B-KVM1.wdr.de	NOT		CPU	swHandleSetGridConKVM(): CON=3834 KVM=3
	B-KVM1.wdr.de	NOT		CPU	swHandleSetGridConKVM(): CON=3834 KVM=3
	B-KVM1.wdr.de	NOT		CPU	swConnectGridCpuCon(): CPU=1004 CON=3008 MODE=00
	B-KVM1.wdr.de	NOT		CPU	swConnedGridCpuCon(): CPU=1004 CON=3008 MODE=00
	B-KVM1.wdr.de	NOT		CPU	swHandleSetGridCpuCon(): CPU=1004 CON=3008 MODE=00
	B-KVM1.wdr.de	NOT		CPU	swHandleSetGridCpuCon(): CPU=1004 CON=3008 MODE=00
	A-KVM1.wdr.de	NOT		CPU	swHandleSetCpuCon(): CPU=1004 CON=3008 MODE=00
	A-KVM1.wdr.de	NOT		CPU	swHandleSetCpuCon(): CPU=1004 CON=3008 MODE=00
	A-KVM1.wdr.de	NOT		CPU	swBinRetLogin(): CON=3008 USER=4 bfe
	A-KVM1.wdr.de	NOT		CPU	swBinRetLogin(): CON=3008 USER=4 bfe
	B-KVM1.wdr.de	NOT		CPU	swConnedGridCpuCon(): CPU=1000 CON=3018 MODE=00
	B-KVM1.wdr.de	NOT		CPU	swConnectGridCpuCon(): CPU=1000 CON+3018 MODE=00
	B-KVM1.wdr.de	NOT		CPU	swDisconnectGridCon(): CON=3018
	A MARK under das	MONT	-	2004	An Ole sease and old One U. OOM 2010

→ Select the symbol **Monitoring** in the symbol bar.

Menu Monitoring – Syslog

Logging of system activities starts when the **Monitoring** menu is opened and remains active until the tab is closed.



Syslog messages are transmitted via UDP. Therefore, port 514 within the used network should not be blocked, e.g. by a firewall.

During logging the activities are written continuously into logging files and stored locally. This process can be set with various options.

Options

→ Select Extras > Options in the menu bar and open the tab Syslog.

The following options are available:

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 Logfiles	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
Autostart	When starting the Java Tool, the Syslog function will be started in the background
Open Monitoring Tab	When starting the Java Tool, 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 one will be overwritten with the new information.

Filter Function

In order to filter relevant messages out of a number of logged activities of the Draco tera, the Syslog Monitoring offers various filter options.

In order to set and activate a filter, proceed as follows:

- 1. Set the desired filter option(s) by activating the respective checkbox(es).
- 2. Activate the filter settings by pressing the **Filter** button.
- 3. In order to deactivate an activated filter setting press the Clear button.

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

All messages shown in the Syslog are equipped with various recording functions.

- ➔ In order to store messages shown in the Syslog (filtered or unfiltered), press the Save trace button. The messages will be stored in a .txt file.
- ➔ In order to remove messages shown in the Syslog, press the Clear trace button.
- ➔ In order to stop recording messages, press the Pause button. In order to continue press the button again.

3.10 SNMP

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.

When using SNMP monitoring, it is recommended that a dedicated network is used to maintain continuous access.

You have the following options to configure the SNMP monitoring:



OSD

In order to activate the SNMP agent, proceed as follows:

1. Select Configuration > SNMP in the main menu.

Enable		N			
SNMP Server		-		-	
Enable Traps		Ν			N Server #2
Server Address		000	.000 .000 .000 :162	l	00 .000 .000 .000 :162
Status Temperature		N N			N
Insert Board Remove Board Invalid Board		N N N			N N
Insert Extender Remove Extender		N N		I	N
Switch Command		Ν			N
Fan Tray ∥1 Fan Tray ∥2		N N		1	N
Power Supply #1 Power Supply #2 Power Supply #3 Power Supply #4	:	NNN			N N N
					Cancel Okay

Menu Configuration – SNMP

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

In order to configure a SNMP server, proceed as follows:

- 1. Select **Configuration > SNMP** in the main menu.
- Set the Enable Traps option to Y (Yes) within SNMP Server. This function allows an active transmission of trap messages from the SNMP agent to the SNMP server.
- 3. Set the IP address of the SNMP server within Server Address.
- 4. Activate the requested traps by enabling them to **Y** (Yes).

You can select the following traps:

Тгар	Description
Status	Notification about matrix status
Temperature	Notification about temperature within the matrix
Insert Board	Notification about insertion of a new I/O board into a slot
Remove Board	Notification about removal of an I/O board out of a slot
Invalid Board	Notification about a faulty I/O board
Insert Extender	Notification about a newly connected extender to the matrix, notification about a switched on extender, notification about a newly established link between extender and matrix
Remove Extender	Notification about a removed extender from the matrix, 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 status of fan tray #1
Fan Tray #2	Notification about the status of fan tray #2
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

In order to query the SNMP status, proceed as follows:

5. Select **Status > SNMP** in the main menu.



For an activation of the SNMP agent function or the SNMP server function, a restart of the matrix is necessary. Two SNMP servers can be used at the same time.

Java Tool

In order to activate the SNMP agent, proceed as follows:

1. Select System > Network in the task area.

n Save Reload Connect D	aconnect Activate Online Configuration	n Save Online Changes	Download Upload	Monitoring Flash Up	date Device Finder.	System Check	Save Status	
20161103043008_SWITCH_01;	tip Master 😔							
Status V	System - Network							
	General Syslog SNMP	LDAP						
Control ¥							Sho	w Hel
Administration ¥	SNMP Agent (Online change	s require a matrix resta	rt)					
ssignment ¥	SNMP Agent	Enable SNMP Agent	for GET requests and traj	19				
system 🖈	Port	161						
System Data	Configured SNMPv3 User	<not configured-<="" td=""><td>configured in Definition</td><td>- User</td><td></td><td></td><td></td><td></td></not>	configured in Definition	- User				
Bwitch	SNMP Trap (Online changes							
Vetwork Date and Time	Trap Receiver 1 Trap Rec	elver 2						
Matrix Grid	Enable Traps							
Definition ¥	SNMP Server	0.0.0	. 0					
	Port	162						
	Status			Switch Command				
	Temperature			Fan Tray 1				
	Insert I/O Board			Fan Tray 2				
	Remove I/O Board			Power Supply 1				
	Invalid I/O Board			Power Supply 2				
	Insert Extender			Power Supply 3				
	Remove Extender			Power Supply 4				
							Apply	Cano

Menu System – Network

 Activate the SNMP Agent option in the SNMP tab. By activating this option, the permission for an active query of the SNMP agent is granted.

In order to configure a SNMP-Server, proceed as follows:

- 1. Select **Configuration > Network** in the task area.
- Activate the Enable Traps option within SNMP Server. This function allows an active transmission of trap messages from the SNMP agent to the SNMP server.
- 3. Set the IP address of the SNMP within SNMP Server.
- 4. Activate the requested traps.



To activate the SNMP agent function or the SNMP server function, a restart of the matrix is required.

3.11 System Check

System Check offers a diagnostic function for checking the matrix configuration. The feature indicates suboptimal and faulty settings.

System Check is exclusively used for a confidence check and does not make any active changes in the configuration.

You have the following option to access the menu:



The following configuration parts are checked:

- Matrix Firmware
- Extender Firmware
- Multi-Screen Control
- Ext Units
- CPU Devices
- CON Devices
- User
- System Configuration
- Matrix Grid

The following notification levels can be shown:

Level	Description
OK (green)	System Check completed without any abnormalities
WARNING (yellow)	System Check 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 Check revealed errors in the configuration that can have both functional and system critical influences on the system.



If the messages "WARNING" and "ERROR" are generated by the System Check function, the respective problem will be described and a basic guideline will be provided. In order to start System Check, proceed as follows:

→ Select the System Check symbol in the symbol bar.

System Check			
The System Check helps order to support your per		ossible sources of error within the configuration of the matrix. Test results are listed as recommendations in the configuration.	
Matrix Firmware	ок		
Extender Firmware	WARNING	Extender firmware version conflict	
System Configuration	OK		
Ports	ок		
Grid Lines	WARNING	No Grid Line connected to matrix SWITCH_01 ➡ Check the Grid Lines and add at least one Grid Line to the matrix	
Grid Lines	WARNING	No Grid Line connected to matrix SWITCH_02 Check the Grid Lines and add at least one Grid Line to the matrix	
EXT Units	INFO	Number of extenders in configuration: 109	
EXT Units	WARNING	EXT Unit without device assignment ID = 10193344, Name = EXT_010193344 = Check assignment in Definition > CON Devices.	
EXT Units	WARNING	ETU ohi Wohout device assignment ID = 40014492, Name = EXT_040014492	
EXT Units	WARNING	Check assignment Definition > CPU Devices. Check assignment D = 40014490, Name = EXT_040014490 Check assignment in Definition > CPU Devices.	
EXT Units	WARNING	ET Unit wildout device assignment ID = 40014489, Name = EXT_040014489 = Check assignment in Definition > CPU Devices.	
TVT IInite	MADAUNO	EVI Listwithout device applianment	

Menu – System Check

3.12 Device Finder

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

You have the following possibility to access the function:



The following device information is shown in the Device Finder:

Information	Description
Device	Name of 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 device



The last column of the Device Finders can be used to access the respective matrix directly using the button **Connect**.

In order to start the Device Finder, proceed as follows:

→	Select the	symbol	Device	Finder in	the symbol bar.
---	------------	--------	--------	-----------	-----------------

	e Finder								×
vail	able KVM devices within	n the local network		Broadcast/Mul	lticast	255 .	255 .	255	255
	Device	Name	IP Address	MAC Address	Туре				
01	tera48	Service_Grid	192.168.170.58	00:21:5F:02:00:9A	Matrix		🖋 C	onnec	t
02	tera8	Service_Grid	192.168.170.59	00:21:5F:02:02:52	Matrix		🚿 C	onnec	t

Menu – Device Finder

4 Installation

4.1 Package Contents

Your package contains the following items:

- Draco tera matrix
- 1x power cord per built-in power supply unit
- 1x serial control cable
- Mounting accessories
- Quick Setup



If anything is missing, contact your dealer.

4.2 System Setup

First time users are recommended to setup the system in the same room as a test setup. This will allow you to identify and solve any cabling problems, and experiment with your system more conveniently.

Setup of the matrix

- 1. Install the CPU and I/O boards.
- 2. Connect keyboard, mouse and monitor to the CPU board of the matrix.
- 3. Connect the matrix to the power supply.
- Open OSD via keyboard command <'Hot Key'>, <o> and login with administrator rights in the main menu under configuration (see Chapter 5.2.1, Page 62).
- 5. Configure initially as requested.



After the configuration of the system it is recommended to save the configuration by selecting **Configuration > Save** and restart the matrix by selecting **Restart Matrix**.

 Optional: Establish a network connection between the matrix and the Java tool in order to set an extended configuration (see Chapter 5.2.2, Page 67). The default IP address is 192.168.100.99 and DHCP is deactivated. When installaing several matrices at the same time, it is strongly recommended to install them in sequence and to assign unique IP addresses in order to avoid IP address conflicts.

Setup of Extender

- 1. Connect the CON Units to the matrix by using the interconnect cables (Cat X or fiber).
- 2. Connect the CON Units to the input devices to be used (for example keyboard and mouse).
- 3. Connect the 5VDC power supply units to the CON Units.
- 4. Check the basic function of the CON Unit by opening the OSD via keyboard command <'Hot Key'>, <o>.
- 5. Connect the source (computer, CPU) to the CPU Unit of the extender by using the provided connection cables.
- Connect the CPU Unit to the matrix using the interconnect cables (Cat X or fiber).
- 7. If you have a video matrix, connect the video source directly to the matrix using the interconnect cables (coax, fiber).
- 8. Connect the 5VDC power supply units to the CPU Units.
- 9. Start the system.

4.3 Example Applications

The Draco tera supports a wide and flexible range of system configurations:

A part of the Draco tera can be configured as a Single-Head work station, a part as Dual-Head, as Quad-Head or even as a video matrix for example. In addition there are configurations with KVM and USB 2.0 available.

In addition to OSD access by a keyboard connected to the CPU board or an extender CON Unit, other methods of control are available, including:

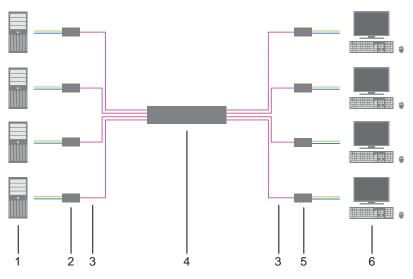
- Java Tool
- Serial interface

A connection to common media controls is also possible.

The following section shows typical exemplary installations of the Draco tera:

4.3.1 KVM Matrix

In Single-Head mode, up to 288 ports can be used either as an input or as an output port depending on components and equipment. Non-blocking access is available for all users, i.e. user access is not limited by the activities of another user.



Single-Head KVM Matrix

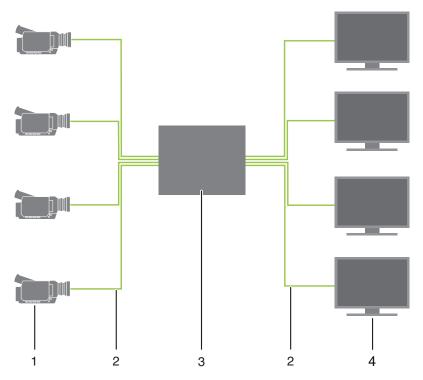
- 1 Source (computer, CPU)
- 2 CPU Unit
- 3 Interconnect cable
- 4 Draco tera matrix
- 5 CON Unit
- 6 Console (monitor, keyboard, mouse)

If you have a Single-Head console, you can also get access to a Dual-Head or Quad-Head CPU for example. However control is only possible at monitor 1.

Any signal source can be switched to any number of monitors that will show the video signal at the same time. Audio may also be switched if required.

4.3.2 Video Matrix

If you use the Draco tera as a video matrix, up to 288 input ports can be switched to up to 288 output ports depending on components and equipment.



Video Matrix

- 1 Video source (e. g. SDI camera)
- 2 Interconnect cable
- 3 Draco tera matrix
- 4 Video sink (e. g. monitor)

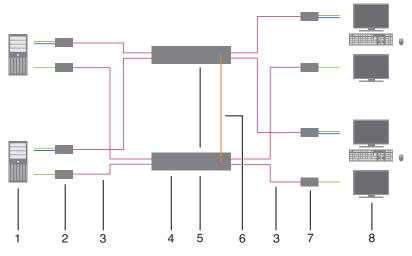
4.3.3 Parallel Operation (Stacking)

If you have special configurations, especially at installations with several monitors per work station or additional support of USB 2.0 transmission paths, the number of connectable CPUs and consoles can be increased by a parallel operation (stacking) of several Draco tera devices.

One Draco tera matrix is defined as the **Master Matrix** and its IP address entered into the **Master IP Address** field (see Chapter 5.4.1, Page 82). All other matrices are defined as **Sub Matrices**. Sub matrices must be connected to the master matrix via network connector (RJ45) on the CPU board. The **Enable LAN Echo** option has to be activated at the master matrix (see Chapter 5.4.1, Page 82).

If a switching command is performed using the OSD, the synchronized matrices will also switch automatically.

Switching of stacked devices might be delayed by several seconds.



Parallel Operation (Stacking)

- 1 Dual-Head source (computer, CPU)
- 2 CPU Unit
- 3 Interconnect cable
- 4 Master matrix
- 5 Synchronized matrix
- 6 Network connection master matrix / synchronized matrix
- 7 CON Unit
- 8 Console (2x monitor, keyboard, mouse)

4.3.4 Matrix Grid

You can use a matrix grid for applications where the required number of ports is not sufficient or important connections need to be made to several matrices to provide redundancy.

A matrix grid consists of one master matrix and at least one slave matrix. In its maximum configuration, it can consist of up to 24 matrices.

In order to build a matrix grid, the grid matrices are interconnected by "Grid Lines". In this case, the slave matrices can be connected directly to the master matrix or between themselves.

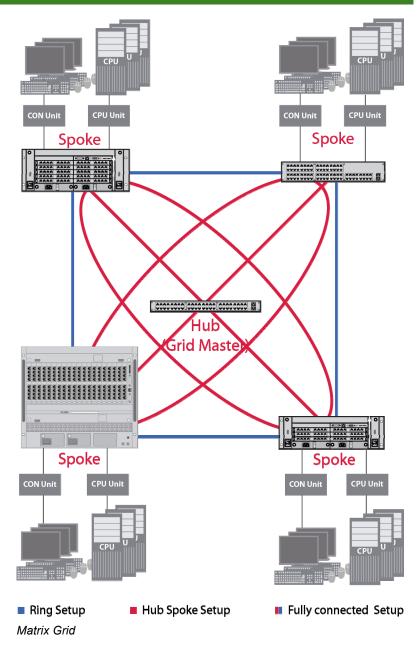
When arranging the grid lines, various grid setups can be realized, for example: a ring setup, a hub & spoke setup or a fully connected setup of matrices.

Grid lines can process signals bidirectional (**Smart Connect**). Per grid line, one KVM connection can be transmitted.

All switching operation will be exclusively performed through the Grid Master.

To configure the matrix grid, see see Chapter 5.17, Page 182.

Installation



5 Configuration

5.1 Command Mode

The Draco tera includes a Command Mode that allows several functions to be controlled by keyboard commands during normal use.

To enter Command Mode use a 'Hot Key' sequence and to exit Command Mode, press <Esc>. While in Command Mode, the LEDs **Shift** and **Scroll** on the console keyboard will flash.



In Command Mode, normal keyboard and mouse operation will cease. Only selected keyboard commands are available.

If there is no keyboard command executed within 10 s after activating Command Mode, it will be deactivated automatically.

The following table lists the keyboard commands to enter and to exit Command Mode and to change the 'Hot Key' sequence:

Function	Keyboard Command
Enter Command Mode (default)	2x <left shift=""> (or 'Hot Key')</left>
Exit Command Mode	<esc></esc>
Change 'Hot Key' sequence	<pre><current 'hot="" key'="">, <c>, <new 'hot="" code="" key'="">, <enter> Until 2011-30-09: <left ctrl=""> + <left shift=""> + <c>, <'Hot Key' Code>, <enter></enter></c></left></left></enter></new></c></current></pre>



<Key> + <Key>Press keys simultaneously<Key>, <Key>Press keys successively2x <Key>Press key quickly, twice in a row
(similar to a mouse double-click)

The 'Hot Key' sequence to enter Command Mode can be changed. The following table lists the 'Hot Key' Codes for the available key sequences:

'Hot Key' Code	'Hot Key'
0	Freely selectable (from 2012-01-12 on)
2	2x <scroll></scroll>
3	2x <left shift=""></left>
4	2x <left ctrl=""></left>
5	2x <left alt=""></left>

'Hot Key' Code	'Hot Key'
6	2x <right shift=""></right>
7	2x <right ctrl=""></right>
8	2x <right alt=""></right>



In a combined KVM matrix / U-Switch configuration, choose different 'Hot Keys' for the KVM matrix and the U-Switch.

Set freely selectable 'Hot Key' (exemplary)

In order 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, this 'Hot Key' can be exclusively used for opening the OSD directly.

In order 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>

In order to select a freely selectable 'Hot Key' (e.g. 2x <Space>) for opening OSD directly, use the following keyboard sequence:

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

Reset 'Hot Key'

In order to set a 'Hot Key' back to default settings of the extender, press the key combination <Right Shift> + within 5 s after switching on the CON Unit or plugging in a keyboard.

In order to delete the 'Hot Key' for direct OSD access, use the following keyboard sequence:

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

5.2 Control Options

The Draco tera contains an internal CPU that allows you to control all functions from any console without the need for an external CPU or media control.

You have the following options to access the Draco tera for configuration and operation:

- via OSD
- via Java Tool
- via serial interface

5.2.1 Control via OSD



Via OSD (On-Screen-Display) you set the configuration of the Draco tera operating system. The settings of the **Configuration** menu are described below. All other menus are described in later chapters.

You have the following options to enter the OSD of the Draco tera:

- via keyboard connected to the CPU board
- · via keyboard connected to a CON Unit of an extender

Entering OSD

- 1. Start Command Mode with the 'Hot Key' (see Chapter 5.1, Page 60).
- 2. Press <o> to open OSD.

You will see a list of all available CPUs as a start menu.

3. Press <Esc> 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 OSD

Press <Esc> 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.

Menu Structure

CON_03	
	F10:Login
Menu Switch Macro List Extended Switch Status Assignments Configuration About	F10:Login
Shift+ES	C = Close
Techsupport_048C	



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)

Keyboard control

You can select the following keyboard commands:

Function	Keyboard Command
Left cursor - only within an input field or a switching screen	<cursor left=""></cursor>
Right Cursor - only within an input field or a switching screen	<cursor right=""></cursor>
 In input fields: Line up (with wrap around) In menus: Line up (without wrap 	<cursor up=""></cursor>
 around) In input fields: Line down (with wrap around) In menus: Line down (without wrap around) 	<cursor down=""></cursor>
Previous page in menus with more than one page	<page up=""></page>
Next page in menus with more than one page	<page down=""></page>
Next input field	<tab></tab>
Previous input field	<left shift=""> + <tab></tab></left>
Next option in selection fields	<+>
Previous option in selection fields	<->
Switching in selection fields between two conditions, e. g. between ON / OFF or Y (Yes) / N (No)	<space></space>
In menus with input fields: Save dataIn menus: Select menu item	<enter></enter>
 In menus with input fields: Cancel data input without saving In menus with selection fields: Go back to the superior menu 	<esc></esc>

Sorting Function

Lists and tables in the Java Tool offer a sorting function for fast and smooth search.

The following sorting functions are available:

Function	Keyboard Command
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).	<f1></f1>
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).	<f2></f2>
Go to the next result in the list of results of the search field (Next).	<f3></f3>
Go to the previous result in the list of results of the search field (Previous).	<f4></f4>
Refresh the currently shown list (Refresh).	<f5></f5>
Jump between the search field and the list of results (Find).	<f6></f6>
Show unavailable CPUs	<f8></f8>
Activate search function from the beginning of the name (Compare).	<f9></f9>

Password request

You have to login with administrator rights to be able to set configurations.

03000 CON_010123614	
	Login
	User
	Password
	1 033W01 0
	Cancel Okay
SWITCH_01	

Menu Login

Access to the configuration menu requires administrator rights. User login is mandatory.

Field	Input
User	admin
Password	admin

By pressing <F10> in the main menu of the OSD, the login mask will be opened. In order to log out a user, press <F10> again.



For security reasons, please change the administrator password as soon as possible (see Chapter 5.4.1, Page 82).

5.2.2 Control via Java Tool



Requirements

If you want to use the Java Tool, the following requirements have to be fulfilled:

- Computer with an executable Java Tool and an installed Java Runtime Environment (JRE, version 1.7 or higher)
- Java Tool software
- Available network connection between the Java Tool and the matrix



Contact your system administrator concerning JRE and network connection.

Installation of the Java Tool

The Java Tool is available as a single executable program file that does not require a separate installation.

→ Copy the tool after receiving the file to a directory on your computer.



If you do not have a copy of the Java Tool, contact your dealer.

Computer Connection to the Matrix



For a direct connection between computer and matrix, a cross-wired network cable is required.

For a connection between computer and matrix via switch or hub, a parallel assembled network cable is required.

Do not use a network connection between Java Tool and the matrix that is primarily used for transmitting audio data.

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

Start of the Java Tool

 Open the Java Tool by a double click on the program icon or use the <Enter> key of the keyboard.



Connection to the Matrix

At least FTP rights are required.

- 1. Open the Java Tool.
- 2. Select Matrix > Connect in the menu bar.
- 3. Enter the IP address in the popup input field according to the network configuration of the Draco tera (see Chapter 5.2.3, Page 76).
- 4. Enter the user name and password for the Draco tera (see Chapter 5.4.1, Page 82).
- 5. Confirm your inputs with the button **OK** or reject with **Cancel**.

Connect	—
Hostname / IP Address	192.168.170.59
User	admin
Password	****
	Login C <u>a</u> ncel

Menu Connect



Up to twelve connections between the matrix and the Java Tool can be established at the same time due to a limitation of available sockets.

Menu structure

. Save Reload Cor 0161103043008_SWITC			ion Save Online Changes Download Upbad Montoring Flash Update Device Finder System C	heck Save Status
itatus	* 1	System - System Data		
Aatus		General Automatic ID	DSD Data (CPU)	
Control	¥			Show H
dministration	* ,	Device	SWITCH 01	
		Jevice	Host name for network environment (recommended characters: a-z, A-Z, 0-9,)	
ssignment	×,	Name	NBC Grid	
ystem			Name of current matrix configuration	
	-		11-03-2016 post upgrade	
stem Data	1	nfo		
witch				
etwork			Description of current matrix configuration	
ate and Time		Sub Matrix	Allow helkey centrol in cascaded environment	
atrix Grid		oad Default	Addressed of the second of the	
efinition	¥	Load Delaun	When performing a cold start or a restart of the matrix, the configuration stored in Default will be always activated	
notinitie		Auto Save		
			Save matrix status automatically	
Enable COM Echo Enable LAN Echo Enable Redundancy		nable COM Echo		
			Echo all switch commands via communication ports	
		Enable LAN Echo	8	
			Echo all switch commands via LAN ports	
		Enable Redundancy		
			Enable automatic switching for redundant extenders	
	1	Synchronize		
			Synchronize matrix with master matrix	
	E	Echo Only		
				Apply Ca

Example View (System – System Data)

The menu structure of the Java Tools is subdivided into various sections:

- Menu bar (top line)
- Toolbar (second line)
- Tab bar (third line)
- Task area (left menu section)
- Working area (right menu section)
- Status bar (bottom line section)

Operating Instructions

The operation of the Java Tool is intuitive and corresponds to the user interface of common operating systems.

The Java Tool contains its own support function.

The integrated help texts in the working area of the Java Tool can be activated or deactivated by the checkbox in the upper right corner.

Mouse Control

You can select the following mouse commands:

Function	Mouse Command
Menu selection, marking	Left mouse button
Open function specific selection menus	Double click left mouse button
Open context specific selection menus	Right mouse button

Keyboard Control

You can select the following keyboard commands:

Function	Keyboard Command	
Cursor to the left	<cursor left=""></cursor>	
Cursor to the right	<cursor right=""></cursor>	
Line up	<cursor up=""></cursor>	
Line down	<cursor down=""></cursor>	
Previous page in input or status menus with more than one page	<page up=""></page>	
Next page in input or status menus with more than one page	<page down=""></page>	
Next field in input menus	<tab></tab>	
Previous field in input menus	<left shift=""> + <tab></tab></left>	
 Switching in selection fields between two conditions (checkmark or not). Open already marked fields with editing or selecting possibility. 	<space></space>	
In menus: Data savingMenu item selection	<enter></enter>	
Leave tablesJump from tables into the next field	<ctrl> + <tab></tab></ctrl>	
Leave tablesJump from tables into the previous field	<ctrl> + <left shift=""> + <tab></tab></left></ctrl>	



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.

Reload Options

The information shown in the Java Tool can be reloaded in different ways.

- Via <F5> on the used keyboard
- Via Edit > Reload in the menu bar
- Via "Reload"-Symbol in the symbol bar

Context Function

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

➔ To execute a context function, use the right mouse button on the corresponding field and select the desired function.

Sorting Function

Lists and tables in the Java Tool offer a sorting function for fast and smooth search.

 Ascending: Click left mouse button once on the header of the column to be sorted.

The sort status is indicated by an arrow that points upwards.

Descending: Click left mouse button once on the header of the column to be sorted.

The sort is displayed by an arrow that points downwards.

Cancel sort: Click left mouse button once or twice on the head of the sorted column.

The arrow displayed disappears.

Filter Function

Lists and tables in the Java Tool offer a filter function that allows a fast and smooth search.

- 1. To activate a filter, use the right mouse button to click on the header of the column to be filtered and select **Set Filter**.
- Write the word or part of a word that has to be filtered into the header. The filter results are shown immediately.
- 3. In order to delete a filter, use the right mouse button to click on the header of the column that has to be filtered and select **Clear Filter**.

An active filter is indicated by an asterix in the header. The filter function is based on the functional principle of common web search engines.

Offline Configuration

Configuration and system settings via Java Tool can be changed in offline mode without a direct connection between matrix and Java Tool.

In order to activate a matrix configuration, proceed as follows:

- 1. Select File > Upload in the menu bar.
- Enter the IP address of the matrix (see Chapter 5.2.3, Page 76) and the name and password of the user authorization and select the storage location of the new configuration (default or config01-08) in the Select Configuration menu.
- Select Matrix > Connect in the menu bar and enter the IP address of the matrix and the name and password for user authorization.
- Select Administration > Activate Configuration in the task area and select the storage location that has been selected above.
- 5. Use the **Activate** button to open the selected configuration within the matrix.

The connection and the open tab will be closed and the matrix will be restarted.



During the activation of a configuration, the matrix is temporarily unavailable.

Online Configuration

Configurations and system settings can be also edited via Java Tool in online mode with an active connection between matrix and Java Tool.

n Save Reload C	Sonnect Discon		ration Save Online Changes Downibad Upload Monitoring Flash Update Device Finder System Check.	Save Status
20161103043008_SW	ITCH_01.zip	laster 😳		
Status	¥	System - System Data	Online Configura	ation Mode activa
Control	*	General Automatic ID	OSD Data (CPU)	
				Show H
Administration	¥	Device	SWITCH_01	
Assignment	¥		Host name for network environment (recommended characters: a-z, A-Z, 0-9,)	
- and the second s		Name	NBC Grid	
System	*		Name of current matrix configuration	
System Data Access Switch		Info	11-03-2016	
Network			Description of current matrix configuration	
Date and Time Matrix Grid		Sub Matrix	Allow helkey control in cascaded environment	
		Load Default		
Definition	¥		When performing a cold start or a restart of the matrix, the configuration stored in Default will be always activated	
		Auto Save	Save matrix status automatically	
		Enable COM Echo	Echo all switch commands via communication ports	
		Enable LAN Echo	Z	
			Eche all switch commands via LAN ports	
		Enable Redundancy	Enable automatic switching for redundant extenders	
		Synchronize		
			Synchronize matrix with master matrix	
		Echo Only		

Menu System – System Data

In order to edit a configuration in online mode, proceed as follows:

- Select the menu item Matrix > Activate Online Configuration Mode. This setting will also be shown in the lower part of the working area.
- Make any edits at the configuration and system settings and confirm them by pressing the **Apply** button. The changes will be applied immediately.
- In order to deactivate the online mode, select the menu item Matrix > Deactivate Online Configuration Mode in the menu bar.

Options menu

The Java Tool can be adapted and customised by editing various default settings.

In order to activate or change the default settings, proceed as follows:

→ Select Extras > Options in the menu bar. The tab Default Settings will open.

The following default settings parameters can be changed:

Option	Description
IP / Hostname	Default IP address of the matrix required for connection
User	Default user name required for connection
Configuration Directory	Default directory for configuration files
Firmware Directory	Default directory for update files
Status Directory	Default directory for the firmware status
Import / Export Directory	Default directory for import and export files
Presets Directory	Default directory for macro files

In order to set various font sizes for the Java Tool, proceed as follows:

- 1. Select Extras > Options in the menu bar.
- 2. Open the Font tab.
- 3. Select the desired font size (normal or large).

Report

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

In order to create a report, proceed as follows:

- Select File > Report... in the menu bar. A selection assistant will be opened.
- Select contents that should be included in the report (Matrix View, EXT Units, CPU Devices, CON Devices and Users) and confirm with the button Next >.
- 3. Select the preferred location for storage of the report and confirm with the **Finish** button.

Configuration Report x Steps Define Content 1. Define Content Matrix View 2. Save Report System Assignment EXT Units CPU Devices CON Devices Access Control Favorites Macros **V**User Access Control ✓ Favorites Macros User Groups Access Control CPU Groups Select All Next > Finish < Back Cancel

The report will be created as a PDF file.

Menu File > Report



The report function can be used in both online or offline mode of the Java Tool.

5.2.3 Control via Serial Interface



The Draco tera operating system offers various functions for an operation via serial interface. There are telegrams for Switching single or all connections available, both unidirectional and bidirectional. In addition, there are telegrams for an overall definition of the total switching status and for saving and loading such switching states.

The Draco tera optionally provides an echo of all affected switching operations via serial interface or network interface. This aids continuous tracking of a matrix configuration and enables your own applications to be updated.

As an additional application you can parallely switch matrix clones as synchronized matrices (**Stacking**) via serial network interface.

5.3 Assignment

The Draco tera offers the option of a console specific or a CPU specific assignment.

- Assign virtual CPUs to real CPUs.
- Assign real consoles to virtual consoles.

5.3.1 Virtual CPU

You can assign virtual to real CPUs in this menu.

With this function the effort of switching several consoles to the same CPU can be reduced. If several consoles are connected to a virtual CPU that is assigned to a real CPU, you only have to change the real CPU once and all consoles will receive the video signal of the new CPU.

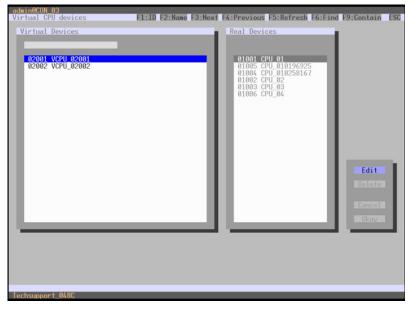
It is possible to assign either one or several real CPUs to a virtual CPU.

You have the following options to access the menu:



OSD

→ Select Assignments > Virtual CPU Devices in the main menu.



Menu Assignments – Virtual CPU Devices

For an assignment, proceed as follows:

- Select the virtual CPU in the Virtual Devices list that has to be assigned to a real CPU.
- 2. Press the Edit button.
- Select the CPU in the **Real Devices** list that has to be assigned to the selected virtual CPU.
- Press the Okay button to confirm the assignment. The assignment will be made.



Only one virtual CPU can be assigned to a real CPU.





→ Select Assignment > Virtual CPU Devices in the task area.

n Şave Reload Çonnect			ion Save Online Changes	Townload	Upload	Monitoring	Flash Update.	Device Finder.	 System Check. 	Save Status			
20161103043008_SWITCH_0											_		
Status	Ass	Assignment - Virtual CPU Devices											
Control			Virtual CPU			Real CPU							
	D		Name			ID			Name				
Administration		VCPU_02000				01003	MC 05R						
Assignment		1 VCPU_02001											
Virtual CPU Devices	02002	2 VCPU_02002											
Virtual CON Devices	02003	VCPU_02003				01008	MC 05L						
Multi-Screen Control	02004	VCPU_02004											
System	02005	5 VCPU_02005											
system	02005	5 VCPU_02005				01004	MC 03L						
Definition	\$ 02007	7 VCPU_02007											
	02008	8 VCPU_02008											
	02009	9 VCPU_02009											
	02010	0 VCPU_02010				01007	MC 04R						
	02011	VCPU_02011											
	and the second se	2 VCPU_02012											
		8 VCPU_02013				01001	MC 01R						
	02014	VCPU_02014											
	2 Au	uto Send								Send	Reloa		

Menu Assignment - Virtual CPU Devices

For an assignment, proceed as follows:

- 1. Select a virtual CPU in the Virtual CPU list.
- Double click in the Real CPU column to display a list of all available real CPUs.
- 3. Select a real CPU.

You can select the following buttons:

Button	Function
Send	Send assignments to the matrix
Reload	Reload changes



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.

The selection boxes in the **Real CPU** column contain a filter function for an easy selection of a single CPU from a larger pool of CPUs (see Chapter 5.2.2, Page 67).

The Java tool offers the option to switch directly from the **Assignment** menu to the **Definition** menu to check specific settings for the respective console or CPU.

➔ Use the right mouse button to select the respective console or CPU and select Open CON Device or Open CPU Device.

5.3.2 Virtual Console

You can assign real consoles to virtual consoles in this menu.

This function reflects changes in permission made to virtual consoles onto real consoles.

Virtual consoles can be switched in the same way as real consoles. Real consoles that are assigned to a virtual console that is connected to a CPU will receive the video signal. The last-assigned console will also have control of the keyboard and mouse.

You have the following options to access the menu:



OSD

→ Select Assignments > Virtual CON Devices in the main menu.

admin@CON_03 Virtual CON devices	F1:ID F2:Name F3:Next F4:Previous F5:Refresh F6:Find F9:Contain E5	SC
Real Devices 03003 CON 01 03005 CON 010218843 03006 CON 010230836 03006 CON 010233209 03006 CON 010233209 03001 CON 03 03002 CON 04 03007 CON_040062369	Virtual Devices	
Techsupport_048C		

Menu Assignments – Virtual CON Devices

For an assignment, proceed as follows:

- 1. Select the real console in the **Real Devices** list that has to be assigned to a virtual CPU.
- 2. Press the Edit button.
- Select the virtual console in the Virtual Devices list that has to be assigned to the selected real console.
- Press the Okay button to confirm the assignment. The assignment will be made.



A virtual console can be assigned to more than one real consoles.

n Şave Reload Çonnec			uration Save Online Changes	Townload	Tribud	Monitoring	Plash Update	Evice Finder.	System Check.	Save Status	
20161103043008_SWITCH_		ignment - Virtual (CON Devices								_
Status	•	-									
Control	*		Real Console					Virtual	Console		
Administration	¥ ID		Name			D			Name		
Annunso abou		MO 04 L MON									
Assignment	\$ 0100	MO 06 L MON				04005	VCON_04005				
Virtual CPU Devices	01015	MO 15 L MON									
intual CON Devices Iulti-Screen Control	0102	MO 24 L MON									
	0102	MO 20 L MON				04005	VCON_04005				
System	¥ 0100	MO 03 L MON									
oyonem		MO 21 L MON									
Definition	♥ 01003	2 MO 02 L MON				04005	VCON_04005				
	0100	MO 01 L MON									
	0101-	MO 14 L MON				04003	VCON_04003				
	01023	2 MO 22 L MON									
	01023	MO 23 L MON									
		5 MO 05 R MON					VCON_04002				
		MO 13 L MON					VCON_04006				
	and the second se	MO 01 R MON				04004	VCON_04004				
		2 MO 12 L MON									
		2 MO 02 R MON				04005	VCON_04005				
		7 MO 17 L MON									
	and the second second	7 MO 27 L MON									
	0102	8 MO 26 L MON									

→ Select Assignment > Virtual CON Devices in the task area.

Menu Assignment – Virtual CON Devices

In order to place an assignment, proceed as follows:

- 1. Select the required real console in the **Real Console** table.
- 2. Double click in the **Virtual Console** column to display a list of all available virtual consoles.
- 3. Select the required virtual console.

You can select the following buttons:

Button	Function			
Send	Send assignments to the matrix			
Cancel	Reject changes			



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.

The selection boxes in the **Virtual Console** column contain a filter function for an easy selection of a single CON from a larger pool of CON (see Chapter 5.2.2, Page 67).

5.4 System Settings

You have the option to configure the following system settings at the Draco tera.



The configuration of the system settings can only be done by users with administrator rights.

5.4.1 System Data

The system configuration is set in this menu.

You have the following options to access the menu:



You can select the following settings:

Field	Selection	Description
Device	Text	Enter the device name of the matrix (default: SWITCH_01)
Name	Text	Enter the name of the configuration that is used to save the current settings (default: Standard)
Info	Text	Additional text field to describe the configuration (default: Factory settings)
Sub Matrix	activated	If the matrix is defined as a sub matrix in the OSD, the user will lose control. Control can be recovered by using the keyboard command <shift>, <shift>, <s>, <o>. The OSD for the matrix that has been defined as sub matrix will be reopened.</o></s></shift></shift>
	deactivated	Function not active (default)
Load Default	activated	Starting the matrix after a restart or a switch-on with the default configuration.
	deactivated	Starting the matrix after a restart or a switch-on with the last saved configuration (default).

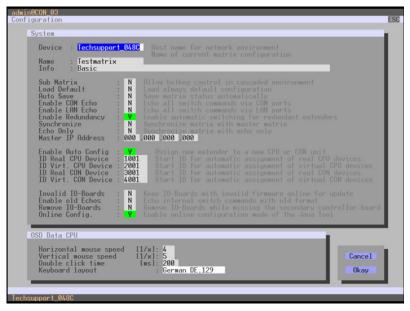
Field	Selection	Description
Auto Save	activated	Save the current configuration of the matrix in the flash memory periodically. Note: During the save operation, the matrix will not be operational. Saving takes place every 600 seconds, as long as changes of the configuration or switching operations have 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 serial interface. Note: This function should be enabled when using a media control via serial interface.
	deactivated	Function not active (default)
Enable LAN 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 ore more matrices.
	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 slave matrix to the switch status of the master matrix.
	deactivated	Function not active (default)
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	Numerical value	Set the network address of the master matrix (default value: 000.000.000.000)

Field	Selection	Description
Ivalid IO- Boards	activated	Keep I/O boards with incorrect or invalid firmware online in the matrix.
		Note : In order to keep an I/O board with wrong or damaged firmware online in the matrix, the maintenance mode of the matrix will be activated. During maintencance mode, you can only work.
	deactivated	Shut down I/O boards with incorrect or invalid firmware automatically (default).
Remove IO- Boards	activated	Shut down of I/O boards in Draco tera 576 if the 2nd CPU board is not available. Connection will be disconnected.
	deactivated	Function not active (default)
Online Config.	activated	Activate Online Configuration option for Java tool.
	deactivated	Function not active (default)
Hor. Mouse Speed 1/x	1-9	Adjustment of the horizontal mouse speed, 1 = slow, 9 = fast (default value: 4)
Ver. Mouse Speed 1/x	1-9	Adjustment of the vertical mouse speed, 1 = slow, 9 = fast (default value: 5)
Double Click Time	100-800	Adjustment of the time slot for a double click (default value: 200 ms)
Keyboard layout	Region	Set the OSD keyboard layout according to the keyboard used (default: German (DE))

Configuration

OSD

→ Select Configuration > System in the main menu.



Menu Configuration – System

You can select the following buttons:

Button	Function
Cancel	Reject changes
Save	Save changes

									• ×	
Eile Edit Device Extras 2										
Den Save Reload Connect Disco	Activate Online Configuration	Save Online Changes	Download Uplo		Flash Update.	Device Finder	✓ System Check	Save Status		
20161103043008_SWITCH_01.zip	Master 😣									
	System - System Data									
Status ×		D Data (CPU)								
Control ×		0 Data (01 0)							1	
								V S	how Help	
Administration ¥	Device	SWITCH_01								
Assignment ¥		Host name for netw	ork environment (rec	ommended chara	cters: a-z, A-Z, 0-	9,)				
, ioong internet in the second s	Name	NBC Grid								
System *		Name of current ma	trix configuration							
System Data Access	Info	11-03-2016								
Switch		Description of curre	nt matrix configuratio	n						
Network Date and Time	Sub Matrix									
Matrix Grid		Allow hotkey control in cascaded environment								
	Load Default									
Definition ¥			cold start or a restar	of the matrix, the	configuration sto	red in Default will I	be always activated	1		
	Auto Save									
		Save matrix status a	automatically							
	Enable COM Echo									
	Enable LAN Echo	Echo all switch com	mands via communic	ation ports						
	Enable LAN ECRO		mands via LAN ports							
	Enable Redundancy									
	chable heading and		vitching for redundar	t extenders						
	Synchronize									
		Synchronize matrix	with master matrix							
	Echo Only									
								Apply	Cancel	

Menu System – System Data

5.4.2 Automatic ID

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

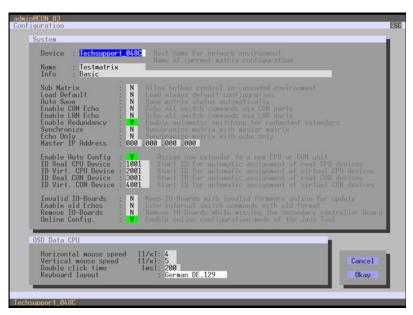
You have the following options to access the menu:



You can select the following settings:

Field	Selection	Description
Enable Auto Config	activated	Automatic creation of a new CPU or CON Device if new extender units are connected (default)
	deactivated	Function not active
ID Real CPU Device	Numerical value	Initial value of the automatic ID for real CPUs (default value: 1000)
ID Virtual CPU Device	Numerical value	Initial value of the automatic ID for virtual CPUs (default value: 2000)
ID Real CON Device	Numerical value	Initial value of the automatic ID for real CONs (default value: 3000)
ID Virtual CON Device	Numerical value	Initial value of the automatic ID for virtual CONs (default value: 4000)

OSD

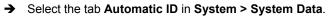


→ Select Configuration > System in the main menu.

Menu Configuration - System

You can select the following buttons:

Button	Function
Cancel	Reject changes
Save	Save changes



		nect Activate Online Configurat	ion Save Online Changes	Download Upload	Montoring Plash	update Device Finder	System Check Si	ave Status
		System - System Data						
tatus	¥	General Automatic ID	SD Data (CPU)					
ontrol	¥							Show H
ministration	¥	Enable Auto Config						
		Change Hard Coning		it to a new CPU or CON d	levice			
signment	×	ID Real CPU Device	1000					
stem	\$		Start ID for automat	ic assignment of real CPU	devices			
stem Data		ID Virtual CPU Device	2000					
cess		ID Real CON Device	Start D for automat	ic assignment of virtual CI	PU devices			
witch etwork		ID Real CON Device		ic assignment of real CON	devices			
ate and Time		ID Virtual CON Device	4000					
atrix Grid			Start ID for automat	ic assignment of virtual Cl	ON devices			
finition	¥							

Menu System – Automatic ID

5.4.3 Access

The access configuration is set in this menu.

You have the following options to access the menu:



You can select the following settings:

Field	Selection	Description
Force User Login	activated	The user has to login with a user name and a password once to enter OSD. Thereafter the user remains logged in until he explicitly logs out or an auto logout is effected. Note: When using the Force User Login function, 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)
Enable Console 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)
	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)

Configuration

Field	Selection	Description
Enable new User	activated	Newly created users automatically receive access to all CPUs
	deactivated	Function not active (default)
Enable new CON	activated	Newly created CON Devices automatically receive access to all CPUs
	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 (default)
OSD Timeout	0-999 seconds	 Period of inactivity after which OSD will be closed automatically. Select 0 seconds for no timeout (default: 0 seconds)
Auto Logout	0-999 minutes	 Period of inactivity of a logged-in user at a console after which he will be automatically logged out. There may be a disconnect because of the logout, depending on the defined rights in each CON and user ACL. 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	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.
	deactivated	Function not active (default)
Show CPU	activated	Permanently show the name of the currently connected CPU Device in the Connection Info box.
	deactivated	Function not active (default)

OSD



→ Select Configuration > Access in the main menu.



Menu Configuration – Access

You can select the following buttons:

Button	Function
Cancel	Reject changes
Save	Save changes



→ Select System > Access in the task area.

e Edit Device Est Edit Device Est Seve Reload	\$	a ^{re}	Activate Online Co	for solid	L.			Ŧ		1		System Check	-	
20161103043008_5				ingui autori	Jave Charle Cha	iyes over	ueu. vy		normating	riesi opusie.	. Device reider.	- aysien crieck.	. dave dialus.	
	-		stem - Access	_	_	_	_	-	_	_	_	_	_	_
Status	3	sy	stelli - Access											Show H
Control	3	E Are	cess Settings											Silow H
Administration	3	_	ce User Login											
Assignment	3	Ena	able User ACL		Require user									
System	\$	Ent	able Console ACL		Enable CPU A									
System Data Access Switch		OR	User/CON ACL		Enable CPU A									
Network Date and Time Matrix Grid		AN	D User/CON ACL		AND user and									
Definition		Ena	able New User		Enable CPU a	ccess for new	users							
		Ena	able New CON		Enable CPU a	ccess for new	CON devi							
		Aut	o Disconnect		Disconnect or	onsole from cu	vent CPU	pon os	pening the OS	0				
		os	D Timeout [sec]		0 Specify inacti									
		Aut	to Logout (min)		0									
					specify inacti	vity time for all	ometic us	n roĝoi	ut (p = deact)	ated, -1 = unlimit	6d)			
													Appl	Cano

Menu System – Access

5.4.4 Switch

The configuration of the switching parameters is set in this menu.

You have the following options to access the menu:



You can select the following settings:

Field	Selection	Description
Video Sharing	activated	 The user can switch to any CPU as an observer, including ones that are already assigned to another user (observer without keyboard/mouse access). Note: Switching with the key <space>, not <enter>.</enter></space> The operator will not be informed if further users connect as an observer to the CPU that is connected to his console.
	deactivated	Function not active (default)
Force Connect	activated	 The user can connect to every single CPU 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)
Force Disconnect	activated	Extension of Force Connect : If the user connects as an operator to a CPU already related to another user, the previous user will be disconnected. Note: To share K/M control Force Disconnect has to be deactivated.
	deactivated	Function not active (default)

Configuration

Field	Selection	Description					
CPU Auto Connect	activated	If a console is not connected to a CPU, you can establish an automatic connection to the next available CPU by hitting any key or mouse button.					
	deactivated	Function not active (default)					
CPU Timeout	0 – 999 minutes	Period of inactivity after which a console will be automatically disconnected from its current CPU (default value: 0 minutes)					
Keyboard Connect	activated	Activate request of K/M control by keyboard event (key will be lost)					
	deactivated	Function not active (default)					
Mouse Connect	activated	Activate request of K/M control by mouse event					
	deactivated	Function not active (default)					
Release Time	0-999 seconds	 Period of inactivity of a connected console after which K/M control can be requested by other consoles connected to the CPU. Note: Set "0" for an immediate transfer in real-time. Only one console can have keyboard and mouse control at the same time. The other consoles that are connected to the same CPU have a video only status (default 					
		value: 10 seconds)					
Macro Single Step	activated	Execute macro commands sequentially					
oreb	deactivated	Function not active (default)					



If the **Keyboard Connect** and/or **Mouse Connect** options are activated, the **Release Time** condition will have to be met until a new user will gain control.

OSD



→ Select Configuration > Switch in the main menu.

Enable Video Sharing : Y Force Connect : Y Force Disconnect : N	
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]: 0	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
Macro Single Step : N	Execute macros in single step mode Cancel Okay

Menu Configuration - Switch

You can select the following buttons:

Button	Function
Cancel	Reject changes
Save	Save changes



→ Select System > Switch in the task area.

an Save Reload Cons		ct Activate Online Configural	ion Save Online Changes	Download Upload	Monitoring	Flash Update	Device Finder.	System Check	Save Status	
20161103043008_SWITC	H_01.zip Ma	aster 🛛								
Status	¥	System - Switch								
Control	*								6	Show H
		Switch Settings								
Administration	*	Enable Video Sharing	1							
Assignment	*		Allow shared video	access to CPU						
Assignment	*	Force Connect		ccess to CPU, other conso						
System	*	Force Disconnect	Emoroe narkyw ac	cess to CPU, other conso	es retain viges					
System Data		Force Disconnect		cess to CPU, other conso	es are discon	rected				
Access		CPU Auto Connect								
Switch		cr o hato connect		silable CPU, requires keybr	and or mouse					
Network Date and Time		CPU Timeout [min]	0							
Matrix Grid			Specify inactivity pr	eriod at currently connecte	d CPU after w	hich CPU will be o	isconnected aut	omatically (0 = dea	activated)	
		Keyboard Connect	1							
Definition	¥		Enable CPU control	request by keyboard activ	ty					
		Mouse Connect	2							
			Enable CPU control	request by mouse activity						
		Release Time [sec]	2							
			Specify inactivity tir	ne to accept CPU control r	equest from an	other console				
		Macro Single Step								
			Execute macros in	a single step mode						
	-									
									Apply	Canci

Menu System – Switch

5.4.5 Network

The network configuration is set in this menu.

You have the following options to access the menu:



You can select the following settings:

Field	Selection	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. 2nd field for redundant CPU board
	deactivated	Function not active (default)
IP address	Byte	Input of the IP address, if DHCP is not active (default: 192.168.100.99) Note : 2nd field for redundant CPU board
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) Note : 2nd field for redundant CPU board
Multicast	Byte	Input of the Multicast address, if there is a Matrix Grid in use within a Multicast group (default: 255.255.255.255)
Gateway	Byte	Input of the subnet mask in the form "192.168.1.1", if DHCP is not active Note : 2nd field for redundant CPU board
API Service	activated	LAN interface at the Draco tera activated for access via Java tool (API service port 5555)
	deactivated	Function not active
FTP Server	activated	FTP server for transmission of configuration files activated.
	deactivated	Function not active

Configuration

Field	Selection	Description
Syslog #1/#2	activated	Syslog server for status request is active
	deactivated	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)
LDAP	activated	LDAP for the request of information from a user administration is active
	deactivated	Function not active (default)
LDAP TLS/SSL	activated	Enable a secured transmission (transport layer security) for the Active Directory access.
	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)
LDAP Base DN	Text	Input of the LDAP Base DN according to the existing stucture of the user directory
Trace	DEB	Activate debug messages in Trace (default: NO) 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 CPU board.
	INF	Activate information messages in Trace (default: NO)
	NOT	Activate notification messages in Trace (default: YES)
	WAR	Activate warning messages in Trace (default: YES)
	ERR	Activate error messages in Trace (default: YES)

Field	Selection	Description
Syslog #1/#2	DEB	Activate debug messages in Syslog (default: NO)
		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 CPU board.
	INF	Activate information messages in Syslog (default: NO)
	NOT	Activate notification messages in Syslog (default: YES)
	WAR	Activate warning messages in Syslog (default: YES)
	ERR	Activate error messages in Syslog (default: YES)



Activate the modified network parameters by restarting the matrix.

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

OSD



→ Select Configuration > Network in the main menu.

guration Network Interfac		
DHCP	:е : Г	
IP Address Subnet Mask Gateway	12	92 168 100 099 192 168 100 098 55 255 255 000 255 255 255 000 0 000 000 000 000 000 000 000
Multicast	: 2	55.255.255.255 Grid Multicast or Broadcast (255.255.255.255)
Network Services	:	
API Service		🖳 Enable API Service port (5555)
FTP Server		Enable FTP Server for configuration file transfers
		N Enable System Server #1 00 .000 .000 .000 :514
Syslog Syslog Server	#2: #2: 0	N Enable System Server #2 80 .000 .000 .000 :514
LDAP LDAP TLS/SSL LDAP Server LDAP Base DN	1	N Enable authentication with Active Directory Server Enable Concerninger Security for Active Directory access 00 000 000 000 389
Log Levels	_	
Trace Syslog Syslog	: D #1: D #2: D	EB N INF N NOT Y WAR Y ERR Y
Syslog	#1: D	EB N INF N NOT Y WAR Y ERR Y

Menu Configuration – Network

You can select the following buttons:

Button	Function
Cancel	Reject changes
Save	Save changes

Release of Network 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 only will have to be released, if you want to use the respective function.

Function	Port
FTP	21
DNS	53
SNTP	123
SNMP	161/162
LDAP	389
Syslog	514
API	5555
Broadcast	5556
Matrix-Grid	5557

Java Tool

→ Select System > Network in the task area.

Save Relad Connect 20161103043008 SWITCH 0		onfiguration Save Online Changes	Townload Upload	Monitoring	Plash Update.	Revice Finder	System Check.	Save Status	
	System - Networ	k							
Status	General Syslog	SNMP LDAP							
Control	*							V s	how Help
Administration	* Network Interface 1	(Online changes require a mate	ix restart)					_	
Assignment	8 DHCP	Dynamic configurati	on of network parameters	via DHCP serv	ver				
System	A IP Address	100 . 125 . 14	. 101						
System Data	Subnet Mask	255 . 255 . 25	5.0						
Access Switch	Gateway	100 . 125 . 14	1.1						
Network	MAC Address	00.21 5F.02.01.1							
Date and Time Matrix Grid	Network Interface 2	(Online changes require a mat	ix restart)						
	DHCP								
Definition	8		on of network parameters	via DHCP serv	ver				
	IP Address	0.0.0	. 0						
	Subnet Mask	0.0.0	. 0						
	Gateway	0.0.0	. 0						
	MAC Address	00.21.5F.02.dem							
	Multicast (Online chi	anges require a matrix restart)							
	Multicast	255 . 255 . 25							
	Network Services II	Grid Multicest or Bro Online changes require a matrix	adcast (255.255.255.255						
	API Service	Jame changes require a mano	a start of						
								Apply	Cano

Menu System – Network

5.4.6 Date and Time

Date and Time are set in this menu, based on Simple Network Time Protocol (SNTP).

You have the following options to access the menu:



You can select the following settings:

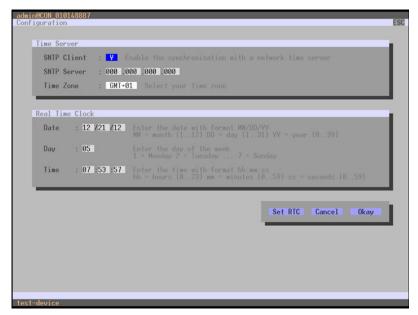
Field	Selection	Description
SNTP Client	activated	Enable network time server synchronization
	deactivated	Function not active (default)
SNTP Server	Byte	Input of the SNTP server IP address (default: 000.000.000.000)
Time Zone	Region	Set your specific time zone
Month	1–12	Enter month
Date	1–31	Enter date
Year	1–99	Enter year
Day	1–7	Enter day of the week
Hours	0–23	Enter hour
Minutes	0–59	Enter minute
Seconds	0–59	Enter second



Date format according to the English notation.

OSD

→ Select Configuration > Date+Time in the main menu.



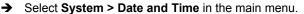
Menu Configuration – Date + Time

In order to configure a time server, proceed as follows:

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

In order to set the real time clock without using SNTP, proceed as follows:

- 1. Set the current date in the **Date** field.
- 2. Set the current Day in the Day field.
- 3. Set the current time in the **Time** field.
- 4. Press the **RTC** button to confirm your settings.



	nect Disconnec	t Activate Online Con	infiguration Save Online Changer	Download	Tokad. Monitoring	Flash Update.	Device Finder	System Check	Save Status	
20161103043008_SWITC										
Status	* 0	ate and Time								
Control	*									Show H
		NTP (Online changes	s require a matrix restart)							
Administration	* \$	NTP								
Assignment	¥		Enable network ti	ne server synchro	nisation					
		NTP Server	0,0,	0.0						
System	* T	ime Zone	(GMT) Coordin	ated Universal T	ime, Casablanca, D	ublin, Lisbon, L	ondon 💌			
System Data										
Access	R	leal Time Clock								
Switch Network	D	ate And Time	Tue 2017-06	-20 * 0	9:24:46	GetLoca	al Time			
Date and Time			Date and time of r	eal time clock		Get local time of t	this computer			
Matrix Grid										
Definition	*									

Menu Configuration – Date and Time

In order to configure a time server, proceed as follows:

- 1. Enable SNTP option.
- 2. Enter the IP address of your SNTP server in the SNTP Server field.
- 3. Select your time zone in the **Time Zone** field.
- 4. Press the **Apply** button to confirm your settings.
- 5. Restart the matrix. The system time will be now provided by the SNTP server.

In order to set the real time clock without using SNTP, proceed as follows:

- 1. Set the current date in the **Date and Time** field.
- 2. Set the current time in the **Day and Time** field.
- 3. Press the **Apply** button to set the system time.
- 4. Option: If you want to receive the time from your currently used computer, press the **Get Local Time** button.

5.5 User Settings

You have the option to configure the following user settings:

5.5.1 User

New users and their user settings and permissions are set in this menu. You have the following options to access the menu:

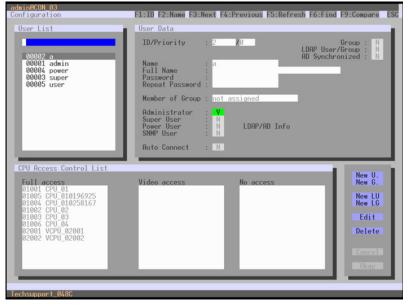


You can select the following settings:

Field	Selection	Description
Name	Text	User name (case sensitive)
Password	Text	User password (case sensitive)
Repeat Password	Text	Repeat user password (case sensitive)
Member of Group	Selection	Define the assignment to a user group
Administrator	activated	 Permission for system configuration and all switching operations User has administrator rights
	deactivated	Function not active.
Super User	activated	Permission to switch any console to any CPU in Extended Switching .
	deactivated	Function not active.
Power User	activated	 User has user rights Permission to switch consoles to CPUs in Extended Switching according to the CON or User ACL
	deactivated	Function not active.
SNMP User	activated	Permsision to use SNMP V3 (encrpyted)
	deactivated	Function not active.
Auto Connect	activated	Re-establish the previous user connection after login
	deactivated	Function not active

OSD

→ Select Configuration > User in the main menu.



Menu Configuration – User

You can select the following buttons:

Button	Function
New	Create a new user
Edit	Edit an existing user
Delete	Delete an existing user
Cancel	Reject changes
Save	Save changes

Java Tool



→ Select Definition > User in the task area.

n Save Reload Co	onnect Disco	nnect	Activate	Online Configuration Save	Online Changes	Townload.	Upload	Monitoring	Plash Update.	Device Finder	System Check	Save Status	
🖇 admin@192.168.170	.59 Master	0											
Status	¥	Det	finition	- User									
Control	¥				T D					Ade	ministrator		AD S
			ID	Name	Nam					Su	per User		
Administration	¥	01	00001	admin	Full P	lame				Pos	wer User		
Assignment	*	02	00002	superuser									
		03	00003	poweruser		sword					MP User		
System	¥	04	00005	fabian	Prior	ity	0	1 a		LD	AP Login		
Definition	*	06	00005	harry	_					Aut	o Connect		
EXT Units		07	00007		1		atual Car	orites Mad					
CPU Devices								orites Mac	_				
CON Devices							ccess	10		Access		No Access	
User Groups					ID ID	Name		10	Name		ID	Name	
						Use i	itys do ao	+ «n> to chang	e the access core	itrol lists. Use righ	t hand mouse clic	k to select action	

Menu Definition - User

You can select the following buttons:

Button	Function
New	Open a new user configuration
Delete	Delete an existing user
Apply	Create a new user account
Cancel	Reject changes

In order to configure a user access rights for CPUs, proceed as follows:

- 1. Select a user in the User list.
- By clicking the right mouse button once on a CPU in one of the respective access lists (Full Access, Video Access and No Access) two lists for selection will appear in which the respective CPU can be moved and the access rights can be changed.
- 3. Confirm the configuration with the **Apply** button.

In order to create a new user, proceed as follows:

- 1. Press the New button.
- 2. Select a template of an existing user if applicable (Choose template).
- 3. Press the **OK** button.
- 4. Set a user name.
- 5. Set a password.
- 6. Set general access permissions.
- 7. Set user permissions for CPU access (paste function).
- 8. Set user favorites for OSD access.
- 9. Press the Apply button to save the new user settings.

You can select the following keyboard commands:

Function	Keyboard Command
Add CPU to list Full Access	<f></f>
Add CPU to list Video Access	<v></v>
Add CPU to list No Access	<n></n>

5.5.2 Favorite List Users

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 16 different CPUs.

The switching of the favorites is done via 'Hot Key' using the keyboard (see Chapter 6.1.1, Page 201).

You have the following options to access the menu:



OSD



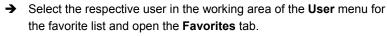
admin@CON_010148887 User Favorites	F1:ID F2:Name	F3:Next	F4:Previous	F5:Refresh	F6:Find	ESC
CPU Devices	Favorites/CPU Data User 00001 admin User Favorites 1 01008 CPU 05 2 01008 CPU 05 3 02000 VCPU 02000 4 02001 VCPU 02001 5 6 7 8 9 9 10 11 12 13 14 15 16		CPU devic 01006 CP CPU assig CON conne Status ONLINE EXT list	e U_04 ned		
				Cancel	Okay	1
SWITCH_01		_				

Menu Assignments – User Favorites

To create a favorite list for you own user, proceed as follows:

- Select a CPU to be moved to the favourite list on the CPU Devices list. Press <a> to move a CPU Device to the favourite list. Remove a CPU by pressing <r>.
- The order of the CPU Devices within the favorite list can be changed by pressing th <+> and <->.
- 3. Press the **Save** button to save the settings.

Java-Tool



n Save Reload Connect Dia	sconnect	Activate	Online Configuration Save Online 6	Changes	Townload.	Upload	Monitoring	Flash Upda		Finder	System Check.	Save Status	
🖇 admin@192.168.170.59 Mas	ter 😟												
Status V	De	finition	- User										
Control ¥			7	ID		2				Adm	inistrator		AD S
Control •		ID	Name	Name						Sun	er User	80	
Administration ¥	01	00001	admin										
		00002	superuser	Full N	ame					POW	ver User		
Assignment ¥	03	00003	poweruser	Pass	word	*******				SNI	IP User		
System ¥	04	00004	user	Priori	ty	0				LDA	PLogin		
	05	00005	fabian							Auto	Connect		
Definition *	06	00005	harry	4								-	
EXT Units	07	00007	a	CPU	Access Co	ntrol Fav	orites Mac	ros					
CPU Devices CON Devices					CPU	Device ava	itable			F	avorite CPU D	evices	
User				ID	Name					ID	Name		
Groups				1002	CPU_B	SHCV			01	1006	CPU_Fabia	n	1
				1004	CPU_H	tumle			02	1003	CPU_0101	48830	-
				1005	CPU_C	hristian			03	1009	CPU_01013	25523	
				1007	CPU_B	HCR			04	2001	VCPU_Fails	over	
				1001	CPU_F	ibian_2			05				
				1008	CPU_H	arry			06				
				2004	VCPU_	Test		_	07				
				1011		0000007							-
				1010	CPU_B				09				_
				1012		10221850			10				
				1013	GROUP					Day Inc.	rs <+> and <->	to move CB1	
				Lana	CRILS	dich.	_			(10 mm	a the man buy		

Menu Definition - User

To create a favorite list for any user, proceed as follows:

- Select the CPUs in the CPU available list that should be added to the favorite list (CPU assigned). By pressing the <Ctrl> at the same time, more than one CPU Device can be marked.
- Press the > button to move the marked CPU Devices to the favorite list. If you press the >> button, the first eight CPU Devices from the CPU available list will be moved to the favorite list (CPU assigned).
- 3. The order of marked CPU Devices within the favorite list can be changed by pressing <+> and <->.
- In order to remove marked CPU Devices from the favorite list, press the < button. If you press the << button, all CPU Devices will be removed from the favorite list.

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>-<F16> function keys (see Chapter 6.1.3, Page 203).



In order to execute user macros the user has to be logged in to the matrix.

You can select the following settings:

Field	Selection	Description
Function (01–16)	Connect (P1=CON, P2=CPU)	Set bidirectional connection from console P1 to CPU P2
	Connect Video (P1=CON, P2=CPU)	Set video connection from console P1 to CPU P2
	Disconnect (P1=CON)	Disconnect console P1
	Logout User	Logout current user
	Set Real CPU (P1=VCPU, P2=RCPU)	Assign a virtual CPU to a real CPU
	Set Virtual CON (P1=RCON, P2=VCON)	Assign a real console to a virtual console
	Push (P1=CON)	The user's KVM connection is forwarded to console 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 console P1. The user's connection remains unchanged (KVM or video only).

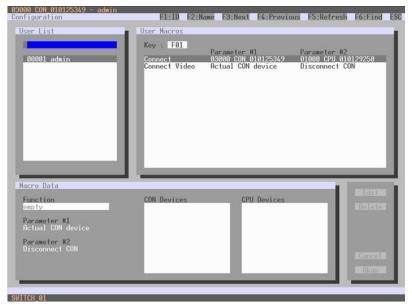
Field	Selection	Description
	Get (P1=CON)	The user's console gets a KVM connection to the CPU that is currently connected to console P1. The connection of console P1 is changed into a video only connection.
	Get Video (P1=CON)	The user's console gets a video only connection to the CPU that is currently connected to console P1. The connection of console P1 remains unchanged (KVM or video only).
	Login User console P2	Login a certain user P1 at console P2
P1	CON or CPU Device	Name of CON or CPU Device
P2	CPU or CPU Device	Name of CON or CPU Device

You have the following options to access the menu:



OSD

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



Menu Configuration – User Macros

In order to create a macro for the selected user, proceed as follows:

- 1. Select in the **Key** field the function key for which a macro has to be created.
- Select the position in the Key list where a macro command is to be inserted.
- 3. Select a macro command in the Macro Data field.
- Set the necessary parameters P1 and P2 (e.g. CON Devices or CPU Devices) for the selected macro command.
- 5. Confirm your selection by pressing <Enter> and repeat the process for further macro commands, if necessary.

Java Tool

→ Select in the working area of the Definition > User menu the user for which macros are to be created and open the Macros tab.

n Save Reload Connect D	sconnect	Activate	Online Configuration Save Online C	hanges	Townload.	Upload	Monitoring	Flash Update	Revice Finder	System Check	Save Status	
🖇 admin@192.168.170.59 Mar	ter 😟											
Status ¥	De	finition										
Control ¥			8	10		2			Adm	inistrator		AD S
	#	ID	Name	Nam	e	superuse	H.		Supe	er User	190	
Administration ¥		00001	admin	Full	lame				Dow	er User		
Assignment ¥	02		superuser									
	03	00003	poweruser user		sword					IP User		
System ¥	04	00004	fabian	Prior	rity	0	*		LDA	P Login		
Definition A	06	00006	harry						Auto	Connect		
EXT Units	07		a	4	U Access Ci	obal Em	oriton Mar					
User Groups					F1	Function	S2 S3 S4	56 58 57 5	P1	2[513[514][518]	P2	
	-			01	Connect (F	1=CON, P2	=CPU)	03009 CON	040086238	01003	CPU_010148830)
				02	Connect P	ivate (P1=C	ON, P2=	03010 CON	010231869	01007	CPU_BVHCR	
				03	Get (P1=D	DN)		Current CON	Device			
				04								
				05								
				06								
				07								
				08								
				09			-					
								Сору Кау Масто	s 💼 Paste	e Key Macros	T Delete K	ey Macro

Menu Definition - User

In order to create a macro for the selected user, proceed as follows:

- 1. Select in the **Key** field the function key for which a macro has to be created.
- Select in the Function column the commands that should be part of the macro. The selection list is opened by a double click on the empty fields.
- 3. Select in the **P1** and **P2** columns the respective parameters for the macro functions (e.g. corresponding consoles and CPUs).
- 4. Confirm your selections by pressing the **Apply** button.

For an efficient macro configuration the following context functions are available:

→ Via right click on the Macros tab, macros can be assigned to other users by using the Assign Macros to ... function and can be copied from other users by using the Copy Macros from ... function. → Via right click 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 Reset Key Macros function.

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 logically or thematically subdivide the users. 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.

You have the following options to access the menu:



OSD

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

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

The group is created now.

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

- 1. Select **Configuration > User** in the main menu.
- 2. Select the user you want to assign to a User Group.
- Select the User Group for the assignment in the field Member of Group using the cursor up and down keys.
- 4. Press the button Okay.

The user is assigned to the User Group now.

Java-Tool

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

- 1. Select the tab **User Groups** in the menu **Definition > Groups** of the task area.
- 2. Press the button **New Group**.

A popup window will be opened.

- 3. Select Create a standard Group in the popup window and press Ok.
- 4. Enter a group name into the field Name.
- 5. Press the button **Apply**.

The group is created now.

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

- 1. Select the tab **User Groups** in the menu **Definition > Groups** of the task area.
- 2. Select the User Group to be assgined with a user.
- 3. Select a user in the list **CPU/Group available** that you want to assigne to the User Group.
- 4. Move the highlighted user to the list **CPU/Group assigned**.
- 5. Press the button Okay.

The user is assigned to the User Group now.

5.6 Extender Settings

All extender units are managed in this menu. This includes the creation of new extender units and the deletion of existing extender units.

The extender unit describes the connection of an physical extender to the matrix. Every extender board with a direct cable connection to the matrix is recognized as an extender unit. Dual-Head KVM extenders will be recognized as two independent extender units.

0

KVM Extenders automatically create extender units inside the matrix.

You have the following options to access the menu:



You can select the following settings:

Field	Selection	Description
ID	Text	Numerical value of the extender ID (KVM extenders: ID is provided by extender unit (Serial No.) and cannot be changed)
Name	Text	Name of the extender unit
Fixed	activated	Create an extender unit with a fixed port assignment (default)
	deactivated	Function not active.
Port	1–288 (depending on the matrix)	Port number of the extender unit

OSD

→ Select Configuration > EXT Units in the main menu.

10135668 CPU/CON assigned 1x1 010135668 01003 CPU 010207794 N Port 1/2 : 11 /0 Universal : N 0SD Data Invues speed I1/x1: 5 1 mouse speed I1/x1: 5 I1/x1: 5 1 mouse speed II/x1: 5 II/x1: 5 2 layout : German DE, 129 Identified ode : variable Variable FDU selection : N N connection info : N N time [sec]: 0 I
tal mouse speed [1/x]: 4 1 mouse speed [1/x]: 5 Click time [msl: 200 d layout : German DE,129 ode : variable r OSD Data CPU selection : N connection info : N time [sec]: 0 tal position : 0
CPU selection : N connection info : N connection info : N time [sec]: 0 tal position : 0
l position : 0
utput Signals CW1 CW2
VI/VGA-CON (video) N N ID-CPU (keyb., mouse.) W N duio (analog, digital) N N S232 (serial) N N SB-CPU (embedded) N N SB-CPU (anadalone) N N niversal-CPU N N accade-CPU N N

Menu Configuration – EXT Units

You can select the following buttons:

Button	Function
New	Create a new extender unit
Edit	Edit an existing extender unit
Delete	Delete an existing extender unit
Cancel	Reject changes
Save	Save changes

The settings for the tab General OSD Data are described in Chapter 5.13.2, Page 145.

Java Tool



→ Select Definition > EXT Units in the task area.

Det	finition - EX									
Det	finition - EX									
			1							
	ID	Name	. 10			C	PUICON Assigned	1		
01	010165938	CPU_BSHCV	Name							
			Port			Re	dundant Port			
			Fixed							
-										
			Extend	er Type Firmwa	are Version	General OSD I	Data Extender (OSD Data		
06	012345681	EXTCPU_Christian							and Mary	Expert Vie
07	040028266	EXTCON_Christian	·ype					stand	and mew	Cybell Me
08	010204215	CON_Harry		Name		E	Basic	Mod A		Mod B
09	010198383	CPU_Helmut_02	DWHDM	/VGA (video)						
10	010198384	CPU_Helmut_01	HID (keyb	oard, mouse)						
11	010198380	CON_Helmut_01	Analog Ar	idio						
12	010198381	CON_Helmut_02								
13	010184996	EXT_CON_Fabian_1								
14	020000004	EXT_CPU_Fabian_1								
15	010231854	EXT_CPU_Fabian_2								
16	010235255	CPU_Harry								
17	010221850	EXT_010221850	Cascade	CON						
18	040081455	EXT_040081455								
19	010180137	EXT_010180137								
20	040085238	EXT_040085238								
-	-	-								
	03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19	03 010203253 04 010187232 05 010317479 06 01234581 07 040028253 08 010204215 09 010198334 10 010198334 11 010198334 12 010198344 13 01018836 14 02000044 15 01023545 16 01023545 17 010221450 18 040081425 19 01040037 20 04008238	00 01020253 CONL_Testerson 2 04 01017222 CiT_001017222 05 01021742 CiT_001214am_2 05 01021742 CiT_00124am_2 05 01021742 CiT_00124am_2 06 01020475 CONL/Mam 07 0402256 CiT_00124am_2 08 010142475 CONL/Mam 09 010198334 CPU_HermL_01 10 010198334 CPU_HermL_02 11 010198334 CONL/Mam_01 12 010198334 CONL/MermL_01 13 010198334 CONL/MermL_02 14 02000004 CiT_CONL/Falam_1 15 010231554 CiT_CONL/Falam_1 16 010231555 CiT_010221150 17 010221150 CiT_010221150 18 CONL/Mark CiT_010221150 19 01010107 CiT_04001407 20 400084258 CiT_040022180	Tot Tot wasse Exc. () hy wasse 0 01020225 COL, () Holeboar Filed 04 01017722 EXC, () OIL, () Holeboar Filed 05 01021702 EXC, () OIL, () Holeboar Filed 06 012245081 EXT COPU, Chaisan, 2 Filed Filed 07 04002269 EXT COPU, Chaisan, 2 FILed () Holeboar Filed 09 01002425 EXT COPU, Chaisan, 2 FILed () Holeboar Filed () Holeboar 00 01004838 CPU, Heimut, 0, 1 Filed () Holeboar Filed () Holeboar 10 01018838 CPU, Heimut, 0, 1 Filed () Holeboar Filed () Holeboar 11 01018838 CPU, Heimut, 0, 1 Holeboar Filed () Holeboar 12 01018838 CPU, Jelemut, 0, 1 Holeboar Filed () Holeboar 12 01018838 CPU, Jelemut, 0, 1 Holeboar Filed () Holeboar 13 01018839 CPU, Jelemut, 0, 1 Holeboar Holeboar 14 02000004 CPU, CPU, Falaun, 2	Image: Constraint of the second sec	Image: Sec: Sec: Sec: Sec: Sec: Sec: Sec: Se	Image: Second	Image: Sec: Sec: Sec: Sec: Sec: Sec: Sec: Se	Image: Sec: Sec: Sec: Sec: Sec: Sec: Sec: Se	Image: Sec: Sec: Sec: Sec: Sec: Sec: Sec: Se

Menu Definition - EXT Units

You can select the following buttons:

Button	Function
New	Create a new extender unit
Delete	Delete an existing unit
Apply	Confirm changes of an extender unit
Cancel	Reject changes

5.6.1 Flex-Port Extender Units

Extenders with auto-ID functionality are automatically recognized and cannot be created manually. This is the Flex Port function of the matrix.



The connection of a fixed port extender unit (e. g. USB 2.0) to a Flex-Port can cause unintended results.

5.7 USB-2.0-Extender

This chapter helps you to configure and use your USB 2.0 extenders. These extenders will have to be connected to standard I/O boards in this case. USB 2.0 extenders can be configured for independent switching or can be assigned to already existing KVM extenders.

You have the following options to configure the extenders:



OSD



→ Select Configuration > EXT Units in the main menu.

admin@CON_010167832 Configuration		F1:I	D F2:Name F3:Next F4:Prev	ious F5:Refresh	F6:Find
EXT Units 010135668 EXT 010135668 010167832 EXT 010167832 010208724 EXT 010208247 0102087794 EXT 010207794 016090105 EXT 016090105 040011492 EXT 040011492		Fixed Gener Hori: Vert Doub Keyb Vide Exter Enab Enab Upda Disp Hori:	: 10135668 : EXT 010135668 d: N. Port 1/2 : 11 /0 ral OSD Data zontal mouse speed [1/x]: ical mouse speed [1/x]: le click time [ms]: oard Layout [ms]: oard Layout [ms]: o mode [ms]: nder OSD Data le Connection info [ms]:	4 5 German DE,129 Variable N N N 0	
EXT Type Input Signals DVI/VGA-CPU (video) HID-CON (keyb., mouse) Audio (analog, digital) RS232 (serial)	CW1 V N N N	CH2	Output Signals DVI/VGA-CON (video) HID-CPU (keyb., mouse) Audio (analog, digital) RS232 (serial) USB-CPU (embedded)	CH1 CH2 N N N N N N N N N N	New Edit Delete

Menu Configuration - EXT Units

- 1. In order to configure a USB 2.0 extender unit, press the **New** button. An extender with an eight-digit ID will be created, starting with digit 9.
- 2. Assign an appropriate name to the extender in the **Name** field.

- 3. Enter the port number of the matrix physically connected to the USB 2.0 extender unit into the **Port** field.
- In order to configure the created extender as a CON Unit, set the USB-CON (standalone) option to Y (C#1 in the Input Signals column) and confirm by pressing the Okay button.
- In order to configure the created extender as a CON Unit, set the USB-CPU (standalone) option to Y (C#1 in the Output Signals column) and confirm by pressing the Okay button.
- In order to create an individually switchable Device for the USB 2.0 CON extender, select Configuration > CON Devices and press the New R button.

Alternatively, you can assign the USB 2.0 CON extender to an already existing CON Device. For this purpose, select the Device and move the USB 2.0 CON extender from the **EXT available** field into the **EXT assigned** field.

- 7. Give an appropriate name to the new Device in the **Name** field.
- Repeat the steps 6. and 7. for all USB 2.0 CPU extenders in the Configuration > CPU Devices menu.
- If you use parallel operation within the matrix, set the Release Time in the Configuration > Switch menu to 10 s or more (see Chapter 5.13.6, Page 157).
- 10. Restart all I/O boards on which USB 2.0 extenders have been configured or alternatively restart the matrix.

The USB 2.0 extender are now configured and can be used.

Java Tool

	Accessed Online	Configuration Save Online Cl	hanges	Download .	Upload	Monitoring	Flash Update	Device Finder	System Check	Save Status.	
er 😣											
De	finition - EX	TUnits									
		7	10				CP	UICON Assigned			
	ID	Name	. Harry								
01	010165938	CPU_BSHCV		·							
02	010148830	EXT_010148830	Port				Re	dundant Port			
03	010203253	CON_Testroom 2	Fixed								
04	010187232	EXT_010187232	Gu		1000		0	the Landard			
05	010231479	EXT_CON_Fabian_2	Exte	moer Type	Filmwa	re version	General OSD L	ata Eitender	/su uata		
06	012345681	EXTCPU_Christian	Туре						Stan	dard View	Expert View
07	040028266	EXTCON_Christian							-		
08	010204215	CON_Harry			Name				Mod A		Mod B
09	010198383	CPU_Helmut_02									
10	010198384	CPU_Helmut_01			nouse)						
11	010198380	CON_Helmut_01									
12	010198381	CON_Helmut_02	Digital	Audio							
13	010184996	EXT_CON_Fabian_1	R\$232	2/RS422 (s	erial)						
14	020000004	EXT_CPU_Fabian_1	USB-0	CON (embe	edded)						
15	010231854	EXT_CPU_Fabian_2	USB-C	CON (stand	falone)						
16	010235255	CPU_Harry	Univer	sal-CON							
17	010221850	EXT_010221850	Casca	de-CON							
18	040081455	EXT_040081455									
19	010180137	EXT_010180137									
20	040085238	EXT_040086238									
	# 01 02 03 04 05 06 07 08 09 10 11 11 12 13 14 15 16 17 18 19	ID 01 010156998 02 010148330 03 01020223 04 01087224 05 010231470 06 01023470 07 040023475 08 010204215 09 01098333 10 010983341 11 01049300 12 01098333 13 010583361 14 0200004 15 01023454 16 01022455 17 01022480 18 040084251 19 016980127 20 040084238	D Name 01 1015538 CPU_BIS-VV 0 02 1015538 CPU_BIS-VV 0 03 10120255 CPU_FISH08480 0 04 10197222 EXT_010142810 0 05 101201475 CPU_FISH09 0 06 10204555 CPU_FISH09 0 07 40022265 EXTCOTL_Christian 0 08 101018038 CPU_HermL_01 11 10 10198383 CPU_HermL_01 11 11 10198383 CPU_HermL_01 11 12 10198383 CPU_HermL_01 11 13 10198383 CPU_HermL_01 11 14 02000040 EXT_CPU_FISH11 14 15 10231545 EXT_CPU_FISH11 14 102000040 EXT_CPU_FISH11 15 10231545 EXT_CPU_FISH11 14 020000405 EXT_CPU_FISH11 14 02001455 14 10201555 EXT_CPU_FIS	ID Name ID 01 0105038 CPU_BSEV_STATUS Name 01 01016380 EXT_01014830 Pott 02 010148830 EXT_01014830 Pott 04 01020233 COU_Febroard Fixed 05 01021427 EXT_01014830 EXT_01014722 06 01021470 EXT_0014_Falsar_2 EXT 06 010204215 COLL_Christian Type 06 010204215 COLL_Christian EVIDINIA 10 01018330 CPU_HeimsL_01 Diplati 11 01018380 EXT_CPU_Fabian_1 122 13 01018830 CPU_HeimsL_01 Diplati 14 02000004 EXT_CPU_Fabian_1 USH 15 01021850 CPU_HeimsL_01 USH 16 01022350 CPU_HeimsL_01 USH 16 01022350 CPU_HeimsL_01 USH 16 01022350 CPU_HeimsL_01 USH 17 010221850<	V Name D 9 0 Name Name 01 010556938 CPU_BENCY Name 02 01044830 EXT_01044830 Port 03 01002055 CML_Fieldsom Port 04 01917222 EXT_01044830 EXTON 06 019234479 EXT_CON_LINIAND Type 06 01923452 CON_LHamy_O D19104004 07 04022325 CON_LHamy_O D191040040 09 01919333 CPU_LHamy_O D191040040 10 019192380 CON_LHAMW_O Natiog Ando 11 019192380 CON_LHAMW_O Natiog Ando 12 019198381 COL_LINIAN_O Natiog Ando 13 01919838 COL_LINIAN_O Natiog Ando 14 020000004 EXT_COL_LINIAN_O Natiog Ando 15 019231454 EXT_COL_LINIAN_O Natiog Ando 16 019231455 CPU_LINIAN_O Natiog Ando 16	V D Name P 01 10195538 CPU_BSHCV Port 02 010430255 CPU_BSHCV Port 03 01053155 COULT_SHEAD Port 04 01053155 COULT_SHEAD Port 05 010231479 CRT_COULT_SHEAD Port 06 01234581 EXTCPU_CHISIS Port 06 01053155 COULT_SHEAD Port 06 01053153 CPU_LHIMIL_D Port 08 01053154 CPU_LHIMIL_D Port 10 01053155 CPU_LHIMIL_D Port PortONIVCA (Motor _ 11 01053155 CPU_LHIMIL_D PortONIVCA (Motor _ PortONIVCA (Motor _ 12 01053156 CPU_LHIMIL_D PortONIVCA (Motor _ PortONIVCA (Motor _ 13 01051550 CPU_LHIMIL_D PortONIVCA (Motor _ PortONIVCA (Motor _ 14 02000004 EXT_COVU_FABUR_L UtBR Covt (Mandamor) PortONIVCA (Motor _ 14 0200000000	V Name 01 101555938 CPU_gBsec/ 201914830 EXT_51014830 03 101020255 CPU_gBsec/ 201914830 EXT_51014830 04 101020255 CPU_gBsec/ 201914830 EXT_51014830 04 1010201255 CPU_gBsec/ 201914830 EXT_5011284012 06 101234698 EXTOPL_Christon 201914933 Framework Version 06 101234698 EXTOPL_Christon 20191494 Type 06 1012054215 CON_Hamy 2019164440 CON_Hamy 2019164440 06 1012054215 CON_Hamy 2019164440 CON_Hamy 20191644405 10 101919838 CPU_HeimL_01 HIG (Neptoact mouse) 11 101919838 CPU_HeimL_01 HIG (Neptoact mouse) 12 101918988 CPU_Falam_1 USe CON (embedded) 13 101918998 CPU_Falam_1 USe CON (embedded) 14 002000000 EXT_CON_Falam_1 USe CON (embedded) 15 10231454 EXT_GON_Falam_1 USe CON (embedded) 16 10231454 EXT_GON_FA	V D Name CP 01 10155538 CPU_B545C Part Re 02 01041303 CFU_01045C Part Re 03 010201253 CCU_1045C Part Re 04 010201253 CCU_1045C Part Re 04 010201253 CCU_1045C Part Re 04 010201253 CCU_1045C Part Re 06 01221426 EXTCOL_Christian Part Part 06 01224565 EXTCOL_Christian Part Part 06 010204215 COU_14IMIN_0 Part Part 10 010198033 CPU_14IMIN_0 Part Part 11 010198045 CPU_14IMIN_0 Part Part 12 019180435 CPU_14IMIN_0 Part Part 13 01918046 EXT_COV_1745MIN_1 Part Part 14 02000004 EXT_COV_1745MIN_1 Part Part	V O Hame CPUICON Assigned 01 101505255 CPU_SBNCY Name Port Redundant Port 02 01014830 EXT_01014830 Port Redundant Port 03 010202555 CON_FISHOUT Fixed Image: Port Redundant Port 04 01020255 CON_FISHOUT Fixed Image: Port Fixed 05 01020255 CON_FISHOUT Fixed Image: Port Fixed 06 012245681 EXTCPU_Christian Fixed Image: Port Port Fixed 08 010108235 CON_FISHOUT Context Port Port Port Port Port Port Port Por	V D Name CPUCON Assigned 01 101052055 CPU_DBNA2 Port Redendant Port 03 010023255 COL_TONICANA Filed Port Redendant Port 06 012324581 CUT_OOL_SISS. COL_TONICANA Filed Port Redendant Port 06 012324581 CUT_OOL_CONST Filed Filed <filed<filed< td="" td<=""><td>V D CPUICOL Assigned 01 1010502000 CPUICOL Assigned 01 1010502000 CPUICOL Assigned 02 01044333 CUT_01044330 CUT_01044330 03 010203255 COULT_0184000 Port Redendant Port 03 010231479 CUT_COULT_018400 Filted Filted 04 010231479 CUT_COULT_018400 Filted Filted 06 012244581 EUTOPU_CONSTANCE Filted Filted FiltedederType 06 01021479 CUT_COULT_018480 FiltedederType FiltedederType FiltedederType 06 010158033 CPU_Helmud_C2 FiltedederType FiltedederType FiltedederType 10 010158033 CPU_Helmud_C1 FiltedederType FiltedederType FiltedederType 11 010158033 CPU_Helmud_C1 FiltedederType FiltedederType 11 010158033 CPU_Helmud_C1 FiltedederType FiltedederType 12 010158033 CPU_Helmud_C1 <</td></filed<filed<>	V D CPUICOL Assigned 01 1010502000 CPUICOL Assigned 01 1010502000 CPUICOL Assigned 02 01044333 CUT_01044330 CUT_01044330 03 010203255 COULT_0184000 Port Redendant Port 03 010231479 CUT_COULT_018400 Filted Filted 04 010231479 CUT_COULT_018400 Filted Filted 06 012244581 EUTOPU_CONSTANCE Filted Filted FiltedederType 06 01021479 CUT_COULT_018480 FiltedederType FiltedederType FiltedederType 06 010158033 CPU_Helmud_C2 FiltedederType FiltedederType FiltedederType 10 010158033 CPU_Helmud_C1 FiltedederType FiltedederType FiltedederType 11 010158033 CPU_Helmud_C1 FiltedederType FiltedederType 11 010158033 CPU_Helmud_C1 FiltedederType FiltedederType 12 010158033 CPU_Helmud_C1 <

→ Select Definition > EXT Units in the task area.

Menu Definition – EXT Units

1. Press the **New** button.

A popup window opens.

 Select (Templates) in the selection box, if you want to use a template for a USB 2.0 CON Unit (USB CON Unit) or a USB 2.0 CPU Unit (USB CPU Unit).

An extender with an eight-digit ID will be created, starting with digit 9.

- 3. Give an appropriate name to the extender in the Name field.
- Enter the port number of the matrix physically connected to the USB
 2.0 extender unit into the **Port** field.
- 5. Confirm your settings by pressing the **Apply** button.
- The USB 2.0 CON extenders now has to be either assigned to an existing CON Device in the menu **Definition > CON Devices** or a new CON Device has to be created for the assignment by pressing the **New** button.

- The USB 2.0 CPU extenders now has to be either assigned to an existing CON Device in the **Definition > CPU Devices** menu or a new CON Device has to be created for the assignment by pressing the **New** button.
- If you use parallel operation within the matrix, set the Release Time in the Configuration > Switch menu to 10 s or more (see Chapter 5.13.6, Page 157).
- 9. Restart all I/O boards on which USB 2.0 extenders have been configured or alternatively restart the matrix.

The USB 2.0 extenders are now configured and can be used.



Created extender 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.

In order to make a fixed port available again for Flex-Port extender units after deleting a fixed port extender unit, a restart of the I/O board is necessary.

5.8 Extenders for UNI I/O Boards (USB 2.0 / USB 3.0)

This chapter will help you to configure and use your USB 2.0/3.0 extenders. For the use of USB 3.0 extenders you need at least one UNI I/O board and SFP modules based on 6.25 Gbit/s for the matrix.

You have the following options to configure the system:



OSD

admin@CON 010167832 F1:ID F2:Name F3:Next F4:Previous F5:Refresh F6:Find ESC CPU/CON assigned 01003 CPU_010207794 10135668 EXT 010135668 Name 010135668 EXT 010135668 010167832 EXT_010167832 010167832 EXT_010167832 010203247 EXT_010203247 010203794 EXT_010203794 016090105 EXT_016090105 040011492 EXT_040011492 Fixed : N Port 1/2 : 11 /0 Universal : N General OSD Data Vertical mouse speed Double click time Keyboard layout [1/x]: [1/x]: [ms]: 200 German DE,129 variable Video mode Extender OSD Data Enable CPU selection Enable connection info Update connection info N Display time Horizontal position [sec]: Vertical position New Output Signals Input Signals CH1 C#2 C#1 CH2 DVI/VGA-CPU (video ..) HID-CON (keyb., mouse..) Audio (analog, digital) RS232 (serial ..) USB-CON (embedded) USB-CON (standalone) Universal-CON Cascade-CON DVI/VGA-CON (video ..) HID-CPU (keyb., mouse..) Audio (analog, digital) RS232 (serial ..) USB-CPU (embedded) USB-CPU (standalone) Universal-CPU Cascade-CPU Edit NN N ICH 01

→ Select Configuration > EXT Units in the main menu.

Menu Configuration - EXT Units

1. Insert the SFP modules into the matrix and connect the extenders according to the required application.

One extender will be created for each SFP module in the **EXT Units** list. The appropriate names always start with "UNI".

- 2. In order to configure a CON Unit, select one of the extenders in the **EXT Units** list that are physically connected to a USB CON Unit.
- Edit the extender by setting the USB-CON (standalone) option in the Input Signals field to Y for C#1. Set additionally the Universal-CPU option in the Output Signals field to N for C#1.
- In order to configure a CPU Unit, select one of the extenders in the Ext Units list that are physically connected to a USB CPU Unit.
- Edit the extender by setting the USB-CPU (standalone) option in the Output Signals field to Y for C#1. Set additionally the Universal-CPU option in the Input Signals field to N for C#1.

- The edited EXT Units for the respecting USB CON Units now have to be either assigned to an existing CON Device or you have to create a new CON Device by using the New R. button for an assignment in the Configuration > CON Devices menu.
- The edited EXT Units for the respecting USB CPU Units now have to be either assigned to an existing CPU Device or you have to create a new CPU Device by using the New R. button for an assignment in the Configuration > CPU Devices menu.
- If you use parallel operation within the matrix, set the Release Time in the Configuration > Switch menu to 10 s or more (see Chapter 5.13.6, Page 157).
- 9. Restart the matrix.

The USB extenders are completely configured now and can be used.

Java-Tool

		Activate Online	Configuration Save Online Cha	nges Downl	oad Upload	Monitoring	Flash Update I	Revice Finder S	ystem Check	Save Status	
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Status	* De	nniuon - EX									
Control	*			ID .			CPU	CON Assigned			
	-	ID	Name	Name							
Administration	* 01	010165938	CPU_BSHCV	Port			Red	undant Port			
Assignment	¥ 02	010148830	EXT_010148830				- Not	anguitt Port			
	03	010203253	CON_Testroom 2	Fixed							
System	¥ 04	010187232	EXT_010187232	Extender	Type Firmwa	re Version	General OSD Da	ta Extender Of	SD Data		
Definition	8 05	010231479	EXT_CON_Fabian_2				_				-
	* 06 07	012345681	EXTCPU_Christian	Туре					Stan	dard View	Expert Vier
EXT Units CPU Devices		040028266	EXTCON_Christian		Name		Ba	sic	Mod A	1 1	Mod B
CON Devices	08	010198383	CON_Harry	DWHDMW	SA (video)						
User	10	010198383	CPU_Helmut_02 CPU_Helmut_01	HID (keyboa	rd, mouse)						
Groups	10	010198380	CON_Helmut_01	Analog Aud	0						
	11	010198380	CON_Helmut_01	Digital Audio							
	12	010184996	EXT_CON_Fabian_1	R\$232/R\$4	22 (serial)						
	13	020000004	EXT_CPU_Fabian_1	USB-CON ((bebbedme						
	14	010231854		USB-CON (
	15	010231854	EXT_CPU_Fabian_2 CPU_Harry	Universal-C							
	10	010235255	EXT_010221850	Cascade-C	ON						
	18	040081455	EXT_040081455								
	19	010180137	EXT_010180137								
	20	040085238	EXT_040085238								
	20										
	-	•	•								
	Al	ssign Settings t	Copy Settings from.					New Unit	Delete Unit	Apply	Cance

→ Select **Definition > EXT Units** in the task area.

Menu Definition - EXT Units

1. Insert the SFP modules into the matrix and connect the extender according to the required application.

One extender will be created for each SFP module in the **Ext Units** list. The appropriate names always start with "UNI".

- In order to configure a CON Unit, select one of the extenders in the Ext Units list that are physically connected to a USB CON Unit.
- Select the item UNI CON USB in the Type selection box of the Extender Type tab and confirm your settings by pressing the Apply button.
- 4. Restart the I/O board upon request in the popup window by pressing the **Yes** button.
- In order to configure a CPU Unit, select one of the extenders in the Ext Units list that are physically connected to a USB CPU Unit.
- Select the item UNI CPU USB in the Type selection box of the Extender Type tab and confirm your settings by pressing the Apply button.
- 7. Restart the I/O board upon request in the popup window by pressing the **Yes** button.
- The edited EXT Units for the respecting USB CON Units now have to be either assigned to an existing CON Device or you have to create a new CON Device by using the New button for an assignment in the Definition > CON Devices menu.
- The edited EXT Units for the respecting USB CPU Units now have to be either assigned to an existing CPU Device or you have to create a new CPU Device by using the New button for an assignment in the Definition > CPU Devices menu.
- If you use parallel operation within the matrix, set the Release Time in the System > Switch menu to 10 s or more (see Chapter 5.13.6, Page 157).

The USB extenders are completely configured now and can be used.

5.9 **Configuration of SDI**

This chapter will help you to configure the matrix for the use of SDI. Using SDI requirest least one I/O board and appropriate SFP modules according to the SDI video signal to be used.

You have the following options to configure the system:



OSD



→ Select Configuration > EXT Units in the main menu.

onfiguration		F1:1	D F2:Name F3:Next F4:Pre	vious F5:Refresh	F6:Find	E
EXT Units 010135668 EXT 010135668 010167832 EXT 010167832 010203247 EXT 010203247 010203794 EXT 010203794 016090105 EXT 016090105 040011492 EXT_040011492		Genei Hori: Vert Doub Keyb Vide Enab Enab Enab Upda Disp Hori:	: 10135668 : EXT 010135668 d : N Port 1/2 : 11 /0 ral OSD Data zontal mouse speed [1/x]: ical mouse speed [1/x]: le click time [ms]: and layout :	4 200 German DE,129 variable N N		
EXT Type Input Signals	C#1	C#2	Output Signals	CH1 CH2	New	
VI/VGA-CPU (video) HID-CON (keyb., mouse.) Audio (analog, digital) RS232 (serial) USB-CON (embedded) USB-CON (standalone) Universal-CON	-	****	DVI/VGA-CON (video) HID-CPU (keyb., mouse) Audio (analog, digital) RS22 (serial) USB-CPU (embedded) USB-CPU (embedded) USB-CPU (standalone) Universal-CPU Cascade-CPU		Edit Delete Cancel	

Menu Configuration - EXT Units

1. Insert the SFP modules into the matrix.

One extender will be created for each SFP module in the EXT Units list. The appropriate names always start with "UNI".

- In order to configure a SDI input select one of the extenders in the EXT Units list that corresponds to the respective SFP and is intended to be used as input.
- Edit the extender by setting the Universal-CPU option in the Output Signals field to Y for C#1. Set additionally the Universal-CON option in the Input Signals field to N for C#1.
- 4. In order to configure a SDI output select one of the extenders in the **EXT Units** list that corresponds to the respective SFP and is intended to be used as output.
- Edit the extender by setting the Universal-CON option in the Input Signals field to Y for C#1. Set additionally the Universal-CPU option in the Output Signals field to N for C#1.
- The edited EXT Units for the SDI inputs now have to be either assigned to an existing CPU Device or you have to create anew CPU Device by using the New R. button for an assignment in the Configuration > CPU Devices menu.
- The edited EXT Units for the SDI outputs now have to be either assigned to an existing CON Device or you have to create a new CON Device by using the New R. button for an assignment in the Configuration > CON Devices menu.
- 8. Restart the Matrix.

The SDI inputs and outputs are completely configured now and can be used.

Java-Tool

		Activate Online	Configuration Save Online C	hanges	Download Up	ioad Monitoring	Flash Update.	. Device Finder	System Check	Save Status.	
admin@192.168.170.59 Master											
Status V	Det	finition - EX		11							
Control 🛛 🗸		ID	Name	. 10			C	PU/CON Assigne	d		
	01	010165938	CPU BSHCV	* Nam	ie 👘						
Idministration ¥	02	010148830	EXT_010148830	Port			R	edundant Port			
Assignment ¥	03	010203253	CON_Testroom 2	Fixe	d 🔲						
-	04	010187232	EXT_010187232								
System ¥	05	010231479	EXT_CON_Fabian_2	Et	ender Type F	irmware Version	General OSD	Data Extender	OSD Data		
Definition *	06	012345681	EXTCPU_Christian						-		
EXT Units	07	040028266	EXTCON_Christian	Туре					Stan	dard View	Expert View
CPU Devices	08	010204215	CON_Harry		N	ame		Basic	Mod A		Mod B
DON Devices	09	010198383	CPU Helmut 02	DWH	DMI/VGA (video						
Jser Groups	10	010198384	CPU_Helmut_01	HID (keyboard, mous	ie)					
	11	010198380	CON_Helmut_01	Analo	g Audio						
	12	010198381	CON_Helmut_02	Digita	Audio						
	13	010184996	EXT_CON_Fabian_1	R\$23	2/RS422 (seria	()					
	14	020000004	EXT_CPU_Fabian_1	US8-	CON (embedde	d)					
	15	010231854	EXT_CPU_Fabian_2	US8-	CON (standalo	10)					
	16	010235255	CPU_Harry	Unive	rsal-CON						
	17	010221850	EXT_010221850	Case	ade-CON						
	18	040081455	EXT_040081455								
	19	010180137	EXT_010180137								
	20	040085238	EXT_040085238								
		-									

→ Select Definition > EXT Units in the task area.

Menu Definition - EXT Units

1. Insert the SFP modules into the matrix.

One extender will be created for each SFP module in the **EXT Units** list. The appropriate names always start with "UNI".

- In order to configure a SDI input select one of the extenders in the EXT Units list that corresponds to the respective SFP and is intended to be used as input.
- Select the item UNI CPU in the Type selection box of the Extender Type tab and confirm your settings by pressing the Apply button.
- 4. Restart the I/O board upon request in the popup window by pressing the **Yes** button.
- In order to configure a SDI output select one of the extenders in the EXT Units list that corresponds to the respective SFP and is intended to be used as output.
- Select the item UNI CON in the Type selection box of the Extender Type tab and confirm your settings by pressing the Apply button.

- 7. Restart the I/O board upon request in the popup window by pressing the **Yes** button.
- The edited EXT Units for the SDI inputs now have to be either assigned to an existing CPU Device or you have to create a new CPU Device by using the New R. button for an assignment in the Configuration > CPU Devices menu.
- The edited EXT Units for the SDI outputs now have to be either assigned to an existing CON Device or you have to create a new CON Device by using the New R. button for an assignment in the Configuration > CON Devices menu.

The SDI inputs and outputs are completely configured now and can be used.

5.10 CPU Settings

New CPU Devices are configured in this menu including their assignment to extenders.

The assignment helps to describe and switch more complex computer configurations (e.g. Quad-Head with USB 2.0) in the matrix.

You have the following options to access the menu:



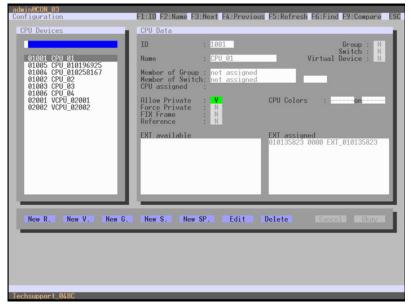
You can select the following settings:

Field	Selection	Description
ID	Text	ID of the CPU Unit (see Chapter 5.4.2, Page 87).
Member of Group	Selection	Assign the CPU Device to a group.
Member of Switch	Selection	Assign a CPU Device for a CPU Switch to the respective CPU Switch.
Name	Text	Name of the CPU Device.
Virtual Device	activated	Create new CPU Device as a virtual one.
	deactivated	Function not active (default).

Field	Selection	Description
Allow Private	activated	Allow switching to the respective CPU Device in Private Mode
	deactivated	Function not active (default).
Force Private	activated	Force switching to the respective CPU only in Private Mode.
	deactivated	Function not active (default).
Fix Frame	activated	Force showing a red frame when switching to the respective CPU.
	deactivated	Function not active (default).
Reference	activated	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.
	deactivated	Function not active (default).
CPU Colors	Selection list	Select color of font and background of permanently shown CPU Device

OSD

→ Select Configuration > CPU Units in the main menu.



Menu Configuration - CPU Devices

Button	Function
New R.	Create a new real CPU Device
New V.	Create a new virtual CPU Device
New G.	Create a new CPU Group
New S.	Create a new CPU Switch (484 series)
New SP.	Create a CPU for a CPU Switch
Edit	Edit an existing CPU Device
Delete	Delete an existing CPU Device
Cancel	Reject changes
Save	Save changes

You can select the following buttons:

Java Tool



→ Select Definition > CPU Devices in the task area.

n Save Reload Connect Disc	sonnect	Activate	Online Configuration Save Online		Townload.	Upload	Monitoring	Flash Update.	. Device Finder	System Check.	Save Status	
🖇 admin@ 192.168.170.59 Mastr	er 😣 🛛											
Status ¥	De	finition	- CPU Devices									
Control ¥			Ÿ	10					CPU Assigned			
		ID	Name	Name					CON Connecte	d		
Administration ¥	01	01002	CPU_BSHCV	Virtual D	evice							
Assignment ¥	02	02001	VCPU_Fallover CPU_010148830	Allow Pr								
	03	01003	CPU_Helmut									
System ¥	04	01004	CPU_Christian	Force Pr								
Definition A	06	01005	CPU_Fabian	Fix Fram								
	07	01007	CPU_BVHCR	Referen	ce							
EXT Units CPU Devices	08	01007	CPU_Fabian_2	Extend	er Annionr	nent Co	N Access Co	otrol Litear 4	ccess Control			
CON Devices	09	01008	CPU_Harry	Letterio		fer availab		inter Ober				
User Groups	10	01009	CPU_010125523	ID						Extender assign		
or only a	11	02004	VCPU_Test	D	Name I	Port H	ted. Port		* 10	Name Port	Red. Port	
	12	01011	CPU_020000007					1000				
	13	01010	CPU BSHCV					++				
	14	01012	CPU_010221850					-				
	15	01014	CPU-Switch									
								4				
								44				3
												۳
									Use keys <	<+> and <-> to n	tove extender	

Menu Definition - CPU Devices

You can select the following buttons:

Button	Function	
New	Open a new CPU Device	
Delete Delete a new CPU Device		
Apply Confirm a created CPU Device		
Cancel	Reject changes	
>	Assign selected extender units	
>>	Assign all available extender units	
<	Remove selected extender units	
<<	Remove all extender units	

You can select the following keyboard commands:

Function	Keyboard Command
Change assignment number of EXT unit upwards	<+>
Change assignment number of EXT unit downwards	<->

In order to create a new CPU Device, proceed as follows:

- 1. Press the **New** button.
- 2. Select a real CPU (Create a real CPU) or a virtual CPU (Create a virtual CPU) or a template of an existing CPU (Choose template).

A template can only be used if there is at least one existing CPU Device.

- 3. Press the OK button.
- 4. Determine all parameters that are relevant for the CPU.
- 5. To confirm the new CPU, press the **Apply** button.

In order to access a new CPU via matrix, an assignment of one or more CPU type extender units is required. Proceed as follows:

- 1. Select the new CPU in the CPU Devices list.
- 2. Select one or more extenders in the Extender available list.
- Perform the assignment by pressing the > button. To assign all available extenders to the CPU, press the >> button.

The assignments are displayed in the Extender assigned list.

4. Confirm the assignment by pressing the **Apply** button.

In order to remove an extender assignment, proceed as follows:

- 1. Select a CPU in the **CPU Devices** list.
- 2. Select one or more extenders in the **Extender assigned** list.
- 3. Remove the assignment with the < button. To remove all existing assignments, press the << button.
- 4. Confirm the removal with the **Apply** button.



5.11 CPU Groups

The KVM matrix allows to bundle the CPU Devices of a configuration into CPU groups. The groups can be used to logically or thematically subdivide the CPU Devices. 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.

You have the following options to configure CPU groups:



OSD

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

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

The 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.
- Select the CPU Group for the assignment in the field Member of Group using the cursor up and down keys.
- 4. Press the button **Okay**.

The CPU Device is assigned to the CPU Group now.

Java Tool

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

- Select the tab CPU Groups in the menu Definition > Groups of the task area.
- Press the button New Group.
 A popup window will be opened.
- 3. Select **Create a standard Group** in the popup window and press **Ok**.
- 4. Enter a group name into the field **Name**.

Press the button Apply. The group is created now.

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

- 1. Select the tab **CPU Groups** in the menu **Definition > Groups** of the task area.
- 2. Select the CPU Group to be assgined with a CPU Device.
- Select a CPU Device in the list CPU/Group available that you want to assigne to the CPU Group.
- 4. Move the highlighted CPU Device to the list CPU/Group assigned.
- Press the button Okay.
 The CPU Device is assigned to the CPU Group now.

5.12 Configuration CPU Switch (484 Series)

The CPU Switch (484 Series) 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.

You have the following possibility to configure the CPU Switch:



OSD

To configure the CPU Switch for an individual switching of the single inputs, proceed as follows:

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

A new CPU Switch will be created.

- 3. Enter a CPU Switch name into the field **Name**.
- 4. Assign an EXT Unit to the CPU Switch into the field **EXT assigned**.
- Press the button New SP..
 A new CPU (input) for a CPU Switch will be created (Port 1).
- 6. Assign the created CPU (5.) 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. Press the button Okay.

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

5.13 Console Settings

You have the option to perform the following console settings:

5.13.1 CON Devices

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

You have the following options to access the menu:



You can select the following settings:

Field	Selection	Description
ID	Text	ID of the CON Unit (see Chapter 5.4.2, Page 87).
Priority	0-999	Priority of the CON Device. 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.
Show Macro List	activated	Show the macro list instead of the CPU selection list.
	deactivated	Function not active (default).
Virtual Device	activated	Create new CON Device as a virtual one.
	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	activated	Force user login at this CON Device.
	deactivated	Function not active (default).

Field	Selection	Description
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 without video signal, a blank screen will appear surrounded by an orange frame.
	deactivated	Function not active (default).
Disable OSD	activated	Disable OSD access for the respective CON Device.
	deactivated	Function not active (default).
CPU Colors	Selection list	Select color of font and background of permanently shown CPU Device
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	0-99 seconds	Retention period until switching to the next CPU Device.

Configuration

Field	Selection	Description
Port Mode	activated	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.
	deactivated	Function not active (default).
Redundancy Off	activated	Function is not active.
	deactivated	Automatically switch to the second link of a connected redundant CON Unit when losing the primary link of a CPU Unit (default).
Reference	activated	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
	deactivated	Function not active (default).

OSD

→ Select Configuration > CON Devices in the main menu.

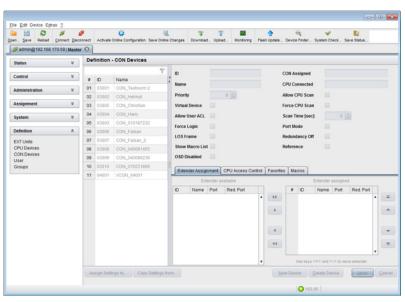
Configuration CON Devices 99003 CON 01 99005 CON 010238843 09008 CON 010238836 09006 CON 010238209 09004 CON 023209 09004 CON 023209 09004 CON 03 09004 CON 04 09007 CON 040062369 04001 CON 040062369 04001 CON 040062369	El:ID E2:Name E3:Next F4:Previo CON Data ID/Priority : 3003 K0 Name :: CON 01 Show Macro List : N Allow User ACL : N LOS Frame : N Disable 0SD : N CPU Colors :	Virtual Device : N Allow CPU Scan : N Force CPU Scan : N Scan Time IsecI: 0 Port Mode Reference OF : N Reference F : N EXT assigned 010189131 0000 EXT_010189131
CPU Access Control List Full access 01001 CPU 01 01002 CPU 02 01003 CPU_03	010 010 010 020	Access New R. 35 CPU_010196925 New V. 96 CPU_01258167 Edit 10 VCPU_02001 Edit 02 VCPU_02002 Delete Cancol Okay

Menu Configuration - CON Devices

You can select the following buttons:

Button	Function		
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		
Save	Save changes		

Java Tool



→ Select Definition > CON Devices in the task area.

Menu Definition – CON Devices

You can select the following buttons:

Button	Function	
New	Open a new CON Device	
Delete	Delete a new CON Device	
Apply	Confirm a created CON Device	
Cancel	Reject changes	
>	Assign selected extender units	
>>	Assign all available extender units	
<	Remove the selected extender units	
<<	Remove all extender units	

You can select the following keyboard commands:

Function	Keyboard Command
Decrease assignment number of the extender unit	<+>
Increase assignment number of the extender unit	<->

In order to create a new console, proceed as follows:

- 1. Press the **New** button.
- Select a real console (Create a real Console) or a virtual console (Create a virtual Console) or a template of an existing console (Choose template).

0

A template can only be used, if there is at least on existing CON Device.

- 3. Press the **OK** button.
- 4. Determine all parameters that are relevant for the console.
- 5. To confirm a created console, press the Apply button.

To run a CPU via a matrix, one or more CON Units (extender) must be assigned. To place an assignment, proceed as follows:

- 1. Select the console in the **CON Devices** list that has to be assigned to an extender.
- Select the extender in the Extender available list that should be assigned to the CON.
- Perform the assignment by pressing the > button. To assign all available extenders to the console, press the >> button. The assignments are displayed in the Extender assigned list.
- 4. Confirm the assignment by pressing the **Apply** button.

In order to remove an extender assignment, proceed as follows:

- 1. Select the console in the CON Devices list to be modified.
- 2. Select the extender(s) in the Extender assigned list to be removed.
- 3. Remove the assignment with the < button. To remove all existing assignments, press the << button.
- 4. Confirm the changes by pressing the **Apply** button.

In order to configure CPU access rights of consoles, proceed as follows:

- 1. Select a console in the CON Devices list.
- 2. Open the CPU Access Control tab.
- 3. Assign new access rights by using the right mouse button or the respective keyboard commands (cf. below).
- 4. Confirm the configuration by pressing the **Apply** button.

You can select the following keyboard commands:

Function	Keyboard Command
Add CPU to list Full Access	<f></f>
Add CPU to list Video Access	<v></v>
Add CPU to list No Access	<n></n>

5.13.2 Mouse and Keyboard

The OSD configuration for mouse and keyboard is made in this menu.

You have the following options to access the menu:



You can select the following settings:

Field	Selection	Description
Hor. Speed 1/x	1–9	Adjustment of the horizontal mouse speed, 1 = slow, 9 = fast (default value: 4)
Ver. Speed 1/x	1–9	Adjustment of the vertical mouse speed, 1 = slow, 9 = fast (default value: 5)
Double Click	100–800	Adjustment of the time slot for a double click (default value: 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



The mouse and keyboard settings are console specific and can be set separately for each console.

OSD



→ Select Configuration > EXT Units in the main menu.

AdmineCON 03 Configuration CON Devices 93003 CON 01 93005 CON 010218843 93008 CON 010218843 93006 CON 010233209 93004 CON 02 93001 CON 03 93002 CON 04 93002 CON	F1:10 F2:Name F3:Next F4:Previous CON Data 10/Priority : 3003 %0 Name : CON 01 Show Macro List: W HIlow User ACL : W Force Lografic : W LOS Frame : N Disable 050 : N EXT available	E5:Refresh F6:Find E9:Compare ESC Virtual Device : N Allow CPU Scan : N Force CPU Scan : N Scan Time Iscel: 0 Port Mode : N Reference : N EXT assigned 010189131 0000 EXT_010189131
Full access 01001 CPU 01 01002 CPU 02 01003 CPU 03 Techsupport 0480	01004 01006 02001	New R. CPU 010196925 CPU 010258167 CPU 010259167 CPU 02002 CPU 02002

Menu Configuration - EXT Units

You can select the following buttons:

Button	Function
Cancel	Reject changes
Save	Save changes

Java Tool

→ Select Definition > EXT Units in the task area.



Mouse and keyboard settings are made in the OSD Data tab.

n Save Reload Connect Disc	-	Activate Online	Configuration Save Online C	hanges	Downloa	d Upked	Monitoring	Flash Update.	Device Finder	System Check	Save Status
S admin@192.168.170.59 Maste	1	finition - EX									
Status ¥	De	nnition - EX									
Control ¥		ID	Name	, ID				ci	PUICON Assigne	d	
Administration 8	01	010165938	CPU BSHCV	Nam	ne						
Administration 0	02	010148830	EXT_010148830	Por	t			Re	dundant Port		
Assignment ¥	03	010203253	CON_Testroom 2	Fixe	bd						
System ¥	04	010187232	EXT_010187232	_							
System ¥	05	010231479	EXT_CON_Fabian_2	E	dender Typ	pe Firmwa	ere Version	General OSD I	Data Extender	OSD Data	
Definition *	06	012345681	EXTCPU_Christian	He	orizontal I	Aouse Speer	I FINI	4 0			
EXT Units	07	040028265	EXTCON_Christian								
CPU Devices	08	010204215	CON_Harry	Ve	ertical Mo	use Speed [1/x]	5 🔹			
CON Devices User	09	010198383	CPU_Helmut_02	De	ouble Clici	k Time [ms]		200			
Groups	10	010198384	CPU_Helmut_01	Ke	ryboard L	ayout		English (US, 10	3P) *		
	11	010198380	CON_Helmut_01	Vi	deo Mode			Variable			
	12	010198381	CON_Helmut_02								
	13	010184996	EXT_CON_Fabian_1								
	14	020000004	EXT_CPU_Fabian_1								
	15	010231854	EXT_CPU_Fabian_2								
	16	010235255	CPU_Harry								
	17	010221850	EXT_010221850								
	18	040081455	EXT_040081455								
	19	010180137	EXT_010180137								
	20	040085238	EXT_040086238								
		-	-								

Menu Definition - EXT Units

5.13.3 Extender OSD

In this menu the settings for the Extender OSD can be adjusted. These are local settings that can be made individually for each console.

You can select the following Extender OSD settings:

Field	Selection	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> button within the selection list opens the standard OSD.</f7>
	deactivated	Function not active (default)
Enable	activated	Enable Extender OSD (default: YES)
Connection Info	deactivated	Function not active
Update Connection	activated	Update connection changes during fade- in of Extender OSD (default: YES)
Info	deactivated	Function not active
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)



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 Connections** function is deactivated, the Extender OSD only appears when switching via OSD.

You have the following options to access the menu:



OSD

admin@CON 010167832 F1:ID F2:Name F3:Next F4:Previous F5:Refresh F6:Find ESC Configuration CPU/CON assigned 01003 CPU_010207794 10135668 EXT 010135668 Name 010135668 EXT_010135668 010167832 EXT_010167832 010167832 EXT_010167832 010203247 EXT_010203247 0102037794 EXT_0102037794 016090105 EXT_016090105 040011492 EXT_040011492 Fixed : N Port 1/2 : 11 /0 Universal : N General OSD Data Vertical mouse speed Double click time Keyboard layout [1/x]: [1/x]: [ms]: 200 German DE,129 variable Video mode Extender OSD Data Extender USD Vata Enable CPU selection Enable connection info Update connection info Display time Horizontal position Vertical position N [sec]: New Input Signals C#1 C#2 **Output Signals** C#1 CH2 Edit DVI/VGA-CPU (video ..) HID-CON (keyb., mouse..) Audio (analog, digital) RS232 (serial ..) USB-CON (embedded) USB-CON (standalone) Universal-CON Cascade-CON DVI/VGA-CON (video ..) HID-CPU (keyb., mouse.) Audio (analog, digital) RS232 (serial .) USB-CPU (embedded) USB-CPU (standalone) Universal-CPU Cascade-CPU N TCH_01

→ Select Configuration > EXT Units in the main menu.

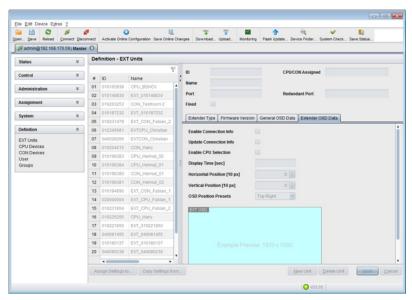
Menu Configuration - EXT Units

In order to change the Extender OSD settings, proceed as follows:

- Select the console extender in the EXT Units list whose Extender OSD settings has to be adjusted.
- 2. When confirming the selection by pressing <Enter>, the respective console extender will be enabled for editing.



Java-Tool



→ Select Definition > EXT Units in the task area.

Menu Definition - EXT Units

In order to change the Extender OSD settings, proceed as follows:

- 1. Select the console extender in the **EXT Units** list for which the Extender OSD settings are to be adjusted.
- 2. Open the Extender OSD Data tab.
- Adjust the desired settings and confirm your changes by pressing the Apply button.

5.13.4 Favorite List Consoles

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 16 different CPUs.

The switching of the favorites is done via 'Hot Key' using the keyboard (see Chapter 6.1.1, Page 201).

You have the following options to access the menu:



OSD



→ Select Assignments > CON Favorites in the main menu.

admin@CON_010148887 CON Favorites	F1:ID F2:Name F3	3:Next F4:Previous	F5:Refresh	F6:Find	ESC
CPU Devices	Favorites/CPU Data CON Device 03005 CON_010148887 CON Favorites 1 01008 CPU_010129394 2 01009 CPU_010129394 3 01007 CPU_03 4 01006 CPU_04 5 6 7 8 9 10 11 12 13 14 15 16	Status ONLINE EXT list	U_04 ined	146543	
			Cancel	Okay	l
Use key <a≻ a="" add="" cpu="" to="" your<br="">SWITCH 01</a≻>	list				

Menu Assignments - CON Favorites

To create a favorite list for your own console, proceed as follows:

- Select a CPU to be moved to the favorite list on the CPU Devices list. Press <a> to move a CPU Device to the favorite list. Press <r> to remove a CPU from the favorite list.
- The order of the CPU devices within the favorite list can be changed by pressing <+> and <->.
- 3. Press the Save button to save the settings.

Java Tool

→ Select the user in the working area of the CON Devices menu for the favorite list and open the Favorites tab.

n. Save Reload Connect Dis	connect	Activate	Online Configuration Save	Coline Changes	Townload	Upload	Monitoring	Plash Update	Device	Finder	System Check	Save Status		
🖇 admin@192.168.170.59 Mast	er 🛛 🛛													
Status ¥	De	finition	- CON Devices											
Control ¥				7 10		3001			CON As	signed				
		-	Name CON_Testroom 2	Name		CON_Ter	stroom 2		CPU Co	nnected				
Administration ¥		03001		Priorit		0			Allow C	PU Scar	10			
Assignment ×	02	03002	CON_Helmut CON_Christian		Device				Easter (PU Sca				
	04	03005	CON_Harry											
System ×	05		CON_010187232	Allow	User ACL				Scan T	ime (sec		4		
Definition *	06	03005	CON_Fabian	Force	Login				Port Mc	de				
EXT Units	07	03007	CON Fabian 2	LOSF	ame				Redund	lancy Of	T 🗐			
CPU Devices		03008	CON_040081455	Show	Macro List				Referen	nce .	1			
	08													
CON Devices	08	03009	CON_040081455	OSD	isabled									
				1					- T					
CON Devices User	09	03009	CON_040086238	1	der Assigr	ment CP		ntrol Favori	ies Ma					
CON Devices User	09 10	03009 03010	CON_040086238 CON_010231869	Exter	der Assigr CPU			ntrol Favori		F	Favorite CPU De	evices		
CON Devices User	09 10	03009 03010	CON_040086238 CON_010231869	Exter	CPU Name	Device avai				ID I	Name			
CON Devices User	09 10	03009 03010	CON_040086238 CON_010231869	Exter 10 1002	der Assigr CPU Name CPU_B	Device ava		ntrol Favori	# 01	1D 1004	Name CPU_Helmu		•	3
CON Devices User	09 10	03009 03010	CON_040086238 CON_010231869	Exter 1002 2001	CPU Name CPU_B CPU_B	Device avai			# 01 02	F 1004 1008	Name CPU_Helmu CPU_Harry	t	i	
CON Devices User	09 10	03009 03010	CON_040086238 CON_010231869	Exter 1002 2001 1003	CPU CPU Name CPU_BI VCPU_BI CPU_01	ment CP Device avai SHCV allover 0148830		•	# 01 02 03	F 1004 1008 1005	Name CPU_Helmu CPU_Harry CPU_Fablar	ıt.	Û	
CON Devices User	09 10	03009 03010	CON_040086238 CON_010231869	Exter 1002 2001 1003 1007	CPU Name CPU_Bi CPU_Bi CPU_01 CPU_01	ment CP Device avai SHCV allover 0148830 HCR		•	101 02 03 04	F 1004 1008	Name CPU_Helmu CPU_Harry	ıt.	Î	
CON Devices User	09 10	03009 03010	CON_040086238 CON_010231869	Exter 1002 2001 1003 1007 1001	der Assigr CPU Name CPU_B VCPU_J CPU_01 CPU_B CPU_F	ment CP Device avait SHCV allover 0148830 HCR blan_2		* >>	# 01 02 03 04 05	F 1004 1008 1005	Name CPU_Helmu CPU_Harry CPU_Fablar	ıt.	Î	
CON Devices User	09 10	03009 03010	CON_040086238 CON_010231869	Exter 1002 2001 1003 1007 1001 1009	der Assign CPU Name CPU_B CPU_01 CPU_01 CPU_F CPU_F	ment CP Device avaits SHCV ailover 0148830 HCR bian_2 0125523		• •	# 01 02 03 04 05 06	F 1004 1008 1005	Name CPU_Helmu CPU_Harry CPU_Fablar	ıt.	1	
CON Devices User	09 10	03009 03010	CON_040086238 CON_010231869	Exter 1002 2001 1003 1007 1001 1009 2004	CPU_B CPU_B CPU_B CPU_D CPU_D CPU_D CPU_D CPU_D CPU_D VCPU_D	ment CP Device ava SHCV ailover 0148830 HICR bilan_2 0125523 est		• •	# 01 02 03 04 05	F 1004 1008 1005 1005	Name CPU_Helmu CPU_Harry CPU_Fablar CPU_Christe	it 1 ian	Û	
CON Devices User	09 10	03009 03010	CON_040086238 CON_010231869	Exter 1002 2001 1003 1007 1001 1009	der Assign CPU Name CPU_B CPU_01 CPU_01 CPU_F CPU_F	ment CP Device ava SHCV ailover 0148830 HICR bilan_2 0125523 est		* >>	# 01 02 03 04 05 06	F 1004 1008 1005 1005	Name CPU_Helmu CPU_Harry CPU_Fablar	it 1 ian	1	

Menu Definition – CON Devices

To create a favorite list for any console, proceed as follows:

- Select the CPUs in the CPU available list that should be added to the favorite list (CPU assigned). At the same time, multiple CPU Devices can be marked by pressing and holding <Ctrl>.
- Press the > button to move the marked CPU Devices to the favorite list. If you press the >> button, the first eight CPU Devices from the list will be moved to the favorite list (CPU assigned).

- 3. The order of marked CPU Devices within the favorite list can be changed by pressing <+> and <->.
- To remove marked CPU Devices from the favorite list, press the < button. If you press the << button, all CPU Devices will be removed from the favorite list.

5.13.5 Console 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>-<F16> (see Chapter 6.1.3, Page 203).

Field	Selection	Description
Function (01–16)	Connect (P1=CON, P2=CPU)	Set bidirectional connection from console P1 to CPU P2
	Connect Video (P1=CON, P2=CPU)	Set video connection from console P1 to CPU P2
	Disconnect (P1=CON)	Disconnect console P1
	Logout User	Logout current user
	Set Real CPU (P1=VCPU, P2=RCPU)	Assign a virtual CPU to a real CPU
	Set Virtual CON (P1=RCON, P2=VCON)	Assign a real console to a virtual console
	Push (P1=CON)	The KVM connection is forwarded to console P1 and is changed to a video only connection.

You can select the following settings:

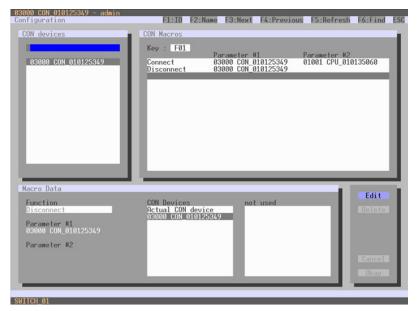
Field	Selection	Description
	Push Video (P1=CON)	The video signal of the current connection (KVM or video only) is forwarded to console P1. The connection remains unchanged (KVM or video only).
	Get (P1=CON)	The console gets a KVM connection to the CPU that is currently connected to console P1. The connection of console P1 is changed into a video only connection.
	Get Video (P1=CON)	The console gets a video only connection to the CPU that is currently connected to console P1. The connection of console P1 remains unchanged (KVM or video only).
	Login User	Login a certain user P1 at console P2
P1	CON or CPU Device	Name of CON or CPU Device
P2	CPU or CPU Device	Name of CON or CPU Device

You have the following options to access the menu:



OSD

→ Select via Configuration > CON Macros in the main menu the console for which a console macro is to be created.



Menu Configuration - CON Macros

In order to create a macro for the selected console, proceed as follows:

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

Java-Tool

 Select the console in the working area of the Definition > CON Devices menu for which a macro has to be created and open the Macros tab.

a. Save Reload Connect Dis	connect	Activate	Online Configuration Save Online	ine Changes	Download	Upload Ma	entoring	Plash Update.	. Device Finder	System Check.	Save Status	
admin@192.168.170.59 Mast	er 😣											
itatus ¥	De	finition	- CON Devices									
Control ¥			5	10		3001			CON Assigned			
		ID	Name	Name		CON_Testroo	m 2		CPU Connected			
dministration ¥	01	03001	CON_Testroom 2	Prior	tu.	0 1			Allow CPU Sca	121		
Assignment ¥	02	03002	CON_Helmut									
· · · · · ·	03	03005	CON_Christian		al Device				Force CPU Sca			
System ¥	04	03004	CON_Harry	Allow	User ACL				Scan Time [sec	1	4	
Definition A	05	03005	CON_010187232 CON_Fabian	Force	Login				Port Mode			
	05	03005	CON_Fabian_2	LOS	rame	N			Redundancy Of	r 🗐		
EXT Units CPU Devices	08	03008		Show	Macro List				Reference	10		
DON Devices			CON_040081455	050								
Jser	09	03009	CON_040086238	OSD	Disabled							
	09 10	03009 03010	CON_040086238 CON_010231869	1			cess Co	introl Favorit				
Jser	09	03009	CON_040086238	1	Disabled	iment CPU Ac	F3 F4	F8 F8 F7 F		2 F13 F14 F15 F		
Jser	09 10	03009 03010	CON_040086238 CON_010231869	Extr	Disabled	iment CPU Ac	F3 F4	F8 F8 F7 F	es Macros	2 F13 F14 F15 F		
Jser	09 10	03009 03010	CON_040086238 CON_010231869	Exte	Disabled Inder Assign	ament CPU Ac	F3 F4 53 54	F8 F8 F7 F	es Macros	2 F13 F14 F15 F 2 513 514 515 5	18	
Jser	09 10	03009 03010	CON_040086238 CON_010231869	Extended to the second	Disabled Inder Assign F1 Connect We	Function	F3 F4 53 54 2=C	F8 F8 F7 F1 55 58 57 51	es Macros 1 79 710 711 71 2 29 510 511 31 P1 010187232	2 P13 P14 P15 P 2 913 914 915 9 01003 0	11 P2	
Jser	09 10	03009 03010	CON_040086238 CON_010231869	Extr Key U	Disabled Inder Assign F1 Connect We	Function Function Bee (P1=CON, P wate (P1=CON, P	F3 F4 53 54 2=C	F8 F8 F7 F1 58 58 57 50 03003 CON	es Macros 1 ro rio rii ri 2 so sio sii si P1 010187232 040081455	2 P13 P14 P15 P 2 913 914 915 9 01003 0	P2 CPU_010148830	
Jser	09 10	03009 03010	CON_040086238 CON_010231869	Exte Key # 01 02	F1 Connect Pr	Function Beo (P1=CON, P Nate (P1=CON, CON)	F3 F4 53 54 2=C	F8 F8 F7 F1 55 58 57 51 03003 CON, 03008 CON,	es Nacros re F10 F11 F1 se 510 511 51 P1 010187232 040081455 040081455	2 P13 P14 P15 P 2 913 914 915 9 01003 0	P2 CPU_010148830	
Jser	09 10	03009 03010	CON_040086238 CON_010231869	Exte Key 01 02 03	F1 Connect We Connect Pr Push (P1+0	Function Beo (P1=CON, P Nate (P1=CON, CON)	F3 F4 53 54 2=C	rs rs rs r7 ri ss ss s7 si 03003 CON, 03008 CON, 03008 CON,	es Nacros re F10 F11 F1 se 510 511 51 P1 010187232 040081455 040081455	2 P13 P14 P15 P 2 913 914 915 9 01003 0	P2 CPU_010148830	
Jser	09 10	03009 03010	CON_040086238 CON_010231869	Extr Key # 01 02 03 04	F1 Connect We Connect Pr Push (P1+0	Function Beo (P1=CON, P Nate (P1=CON, CON)	F3 F4 53 54 2=C	rs rs rs r7 ri ss ss s7 si 03003 CON, 03008 CON, 03008 CON,	es Nacros re F10 F11 F1 se 510 511 51 P1 010187232 040081455 040081455	2 P13 P14 P15 P 2 913 914 915 9 01003 0	P2 CPU_010148830	
Jser	09 10	03009 03010	CON_040086238 CON_010231869	Extx Key # 01 02 03 04 05	F1 Connect We Connect Pr Push (P1+0	Function Beo (P1=CON, P Nate (P1=CON, CON)	F3 F4 53 54 2=C P2=C	F8 F8 F7 F1 85 58 57 51 03003 CON, 03008 CON, 03008 CON, 03009 CON, 03009 CON, 03009 CON,	es Nacros re F10 F11 F1 se 510 511 51 P1 010187232 040081455 040081455	2 F13 F14 F15 F 2 S13 S14 S15 0 1003 0 1009	P2 CPU_010148830 CPU_010125523	ilacr

Menu Definition – CON Devices

In order to create a macro for the selected console, proceed as follows:

- 1. Select in the **Key** field the function key for which a macro has to be created.
- 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.
- 3. Select the respective parameters for the macro functions (e.g. corresponding consoles and CPUs) in the **P1** and **P2** columns.
- 4. Confirm your inputs by pressing the **Apply** button.

For an efficient macro configuration the following context functions are available:

- → When clicking on the Macros tab, macros can be assigned to other consoles by using the Assign Macros to ... function and can be copied from other consoles by using the Copy Macros from ... function.
- → 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 Reset Key Macros function.

5.13.6 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.



In order 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 6.14, Page 230).

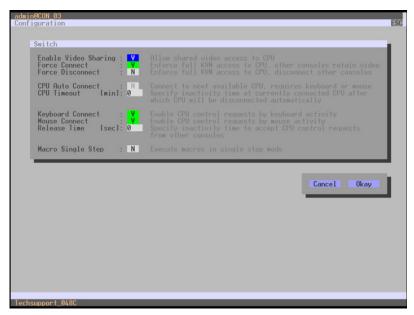
When taking over control within 10 s, any assigned USB 2.0 / 3.0 extenders, if available, will not be switched due to security and stability aspects.

The shared operation will be deactivated between CON Devices with a different priority as well as the Release Time.

You have the following options to configure shared operation:



OSDSelect Configuration > Switch in the main menu.



Menu Configuration - Switch

In order to configure shared operation, proceed as follows:

- 1. Activate the Enable Video Sharing function.
- 2. Activate the Force Connect function.
- 3. Activate the **Keyboard Connect** function, if taking over control by a keyboard event should be possible.
- 4. Activate the **Mouse Connect** function, if taking over control by a keyboard movement should be possible.
- 5. Define a **Release Time** of inactivity (0 999 sec.) after which control can be taken over.

Java-Tool

Save Reload C	onnect Discor	nect Activate Online Configurat	ion Save Online Changes	Download Upload	Monitoring	Flash Update.	Device Finder.	System Check	Save Status	
admin@192.168.17	0.59 Master	8								
tatus	¥	System - Switch								
ontrol	¥	Switch Settings								Show
dministration	¥	Enable Video Sharing	Allow shared video	access to CRU						
ssignment	¥	Force Connect	2							
ystem ystem Data	*	Force Disconnect		cess to CPU, other cons						
ccess witch		CPU Auto Connect		alable CPU, requires keyt						
etwork ate and Time atrix Grid		CPU Timeout [min]	120 Specify inactivity pe	riod at currently connect	led CPU after w	hich CPU will be	disconnected aut	omatically (0 = dea	activated)	
efinition	¥	Keyboard Connect	Enable CPU control	request by keyboard act	vity					
		Mouse Connect	Enable CPU control	request by mouse activit						
		Release Time [sec]	1	ne to accept CPU control		other coasele				
		Macro Single Step	Execute macros in a							
				ange any more						

→ Select System > Switch in the task area.

Menu System – Switch

In order to configure shared operation, proceed as follows:

- 1. Activate the Enable Video Sharing function.
- 2. Activate the Force Connect function.
- 3. Activate the **Keyboard Connect** function, if taking over control by a keyboard event is to be permitted.
- 4. Activate the **Mouse Connect** function, if taking over control by a keyboard movement should be possible.
- 5. Define a **Release Time** of inactivity (0 999 sec.) after which control can be taken over.

5.13.7 Multi-Screen Control

This menu configures the USB-HID switching operation, allowing a CON Device with several monitors to control several connected sources (computers, CPUs). Smooth switching can be performed for up to eight connected sources by dragging the mouse pointer beyond the respective monitor to an adjacent one.

Monitors can be arranged side-by-side, in a grid layout or completely free.



When using sources (computers, CPUs) in multi-head operation (e.g. dual-head), switching only works manually via keyboard commands. Noncompliance may have a negative influence on the stability of the system. 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.



In order to enable Multi-Screen Control, all Extender Units assigned to the related CON Device, must be physically connected to the same block of 8 ports on the I/O board of the matrix.

When configuring Multi-Screen Control via OSD, the number of supported monitors is limited to four. This limitation also applies to the use of older hardware.



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

You have the following options to access the menu:



OSD

→ Select Assignments > Multi-Screen Control in the main menu.

	One row with four screen	ns or two rows with two s	
Manual : N	Reduce switching to manu Disable automatic switch		
Screen #1	Screen #2	Screen #3	Screen #4
CON_010125349			
Enabled : <mark>V</mark> Control : N Owner : shared Frame : 0 sec	Enabled : N Control : N Owner : Frame : sec	Enabled : N Control : N Owner : Frame : sec	Enabled : N Control : N Owner : Frame : sec
			Cancel Okay

Menu Assignments – Multi-Screen Control

In order to configure the Multi-Screen Control, proceed as follows:

- 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.
- Activate Manual option, if USB-HID switching is to be restricted to keyboard commands (see Chapter 6.7, Page 218).
 Manual switching allows the use of multi-head consoles.
- 3. Ensure that the **Enabled** option is set to **Y** on all displays in order to activate the respective display for Multi-Screen Control.
- Select one or more control displays within the CON Device by setting the Control function to Y in the display field.
 Control displays are referred to the extender units within the Multi-Screen Control that are connected to keyboard and mouse.

- When using the **Owner** function, you can determine which control display is permitted for USB-HID switching to the different displays. Select that display from the list. In order to make a display accessible to all neighboring control displays, set the **Owner** function to **shared**.
- 6. Use the **Frame** function to configure a red frame that shows the current display with mouse control after the expiration of a selectable timer.

The frame to fade in can be individually activated by using a timer >0 seconds.

Java-Tool

→ Select Assignment > Multi-Screen Control in the main menu.

ontrol dministration fatrix Firmware Update	¥ * 01	Block	Enabled	Control	रू Screens	Hanual					
dministration	x 01		Enabled	Control	Screens						
	^					•	Reduce switche Disable automation	g to manual aveils transferring with a			
latrix Firmware Lindate					[nta], CON_Heimut, [n/a], [n/a], [n/a], [n/a], [n/	Arrangemen					
	02	3			(nia), (nia), CON_Harry, (nia), (nia), (nia)			ur displays or two		here displays each	
idender Update divate Configuration	03	4	_	_	[nia], [nia], [nia], CON_Christian, [nia], [nia], [1 2 3				
iscellaneous	04	8	×	x	CON_Fabian, CON_Fabian_2, (via), (via), (via), (via)						
elinition	8										
							Name	Enabled	Control	Owner	Frame
						Screen 1	CON Fabian	10	N.	03006 CON_Fabian	
						Screen 2	CON_Fabian_2	88		Shared	
						Screen 3	not available	10	10	Shared	
						Screen 4	not available			Shared	
						Screen 5	not available		10	Shared	
						Screen 6	not available			Shared	
						Screen 7	not available	10	10	Shared	
						Screen 8	not available			Shared	

Menu Assignment – Multi-Screen Control

In order to configure the Multi-Screen Control, proceed as follows:

 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.

- Activate Manual option, if the USB-HID switching is to be restricted to keyboard commands (see Chapter 6.7, Page 218). Manual switching allows the use of multi-head consoles.
- 3. 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 arangement (The free arrangement allows a flexible positioning of the displays for diverse applications.)

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

- Select one or more control displays within the CON Device by setting the Control function to Y in the respective display field. Control displays are referred to the extender units within the Multi-Screen Control that are connected to keyboard and mouse.
- When using the **Owner** function, you can determine which control display is permitted for USB-HID switching to the different displays. Select that display from the list.
 In order to make a display accessible for all neighboring control displays, set the **Owner** function to **shared**.
- 6. Use the **Frame** function to configure a red frame that shows the current display with mouse control after the expiration of a selectable timer.

The frame to fade in can be individually activated by using a timer >0 seconds.

5.13.8 Active Directory

The KVM matrix can be synchronized with the directory service Active Directoy with regard to user authentication. This allows the user to login at the KVM matrix using login information from the Active Directory service.

The connection between KVM matrix and the Active Directory server is established via OpenLDAP and periodically synchronized every 5 minutes. The integration of Active Directory is only available with the controller board 480-CTRL2.

You have the following options to to configure the service:



OSD

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

- 1. Create the user group **KVMMatrixUser** in your Active Directory domain (Active Directory setting).
- Add the Active Directory users to the user group who are relevant for the KVM matrix and should be able to authenticate at it. (Active Directory setting).
- 3. Select an existing Active Directory bind user or create a new one (Active Directory setting).
- 4. Select **Configuration > Network** in the main menu of the KVM matrix.
- 5. Activate the function **LDAP**.
- Enter the respective IP address and port number under LDAP Server (default port number: 389)
- Enter the LDAP Base DN into the respective field (e.g. dc=example,dc=com).
- 8. Select Configuration > User in the main menu of the KVM matrix.

Configuration

admin@CON_03 Configuration	F1:ID F2:Name F3:N	ext F4:Previous F5:Refre	sh F6:Find F9:Compare ESC
User List	User Data		
00002 a	ID/Priority	: 2 /0	Group : N LDAP User/Group : N
00002 a 00001 admin 00004 power 00003 super 00005 user	Name Full Name Password Repeat Password	a	AD Synchronized : N
	Member of Group	not assigned	
	Super User Power User	: V : N : N LDAP/AD Info : N	
	Auto Connect		
CPU Access Control List			
Full access 01001 CPU 01 01005 CPU 010196925 01004 CPU 02 01003 CPU 02 01003 CPU 03 01006 CPU 04 02001 VCPU 02001 02002 VCPU_02001	Video access	No access	New U. New E. Edit Delete Cancel Okas

Menu Configuration – User

- 9. Create a new LDAP user (bind user) by pressing New LU.
- 10. Enter a user name into the field Name.
- 11. Enter the login name of the bind user from the Active Directory into the field **Login Name**.
- 12. Enter the password of the bind user from the Active Directory into the field **Password**. The password also acts as local password, if the Active Directory service is not available.
- 13. Save your settings and restart the KVM matrix.

The Active Directory users will be then synchronized with the KVM matrix and imported into its configuration.

Single Active Directory users can be subsequently imported into the KVM matrix. Thereby there is no synchronization. These single users are not subject to the Active Directory group structure. To create a user, proceed as follows:

- 1. Select Configuration > User in the main menu of the matrix.
- 2. Create a new LDAP user, by pressing the button New LU.

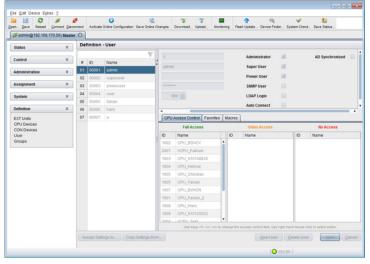
- Enter a user name into the field Name. At the same time the name is the login name at the matrix, if the Active Directory service is not available.
- 4. Enter the complete domain name of the Active Directory user into the field **Login Name** (e.g. firstname.lastname@example.com).
- 5. Enter the local password for the user into the field **Password**.
- 6. Save your settings.

The Active Directory can be used now.

Java Tool

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

- 1. Perform steps 1-3 as mentioned in the section OSD (OSD, page 164).
- 2. Select the tab LDAP under System > Network in the task area.
- 3. Activate the function LDAP.
- 4. Enter the respective IP address and port number into the field **LDAP Server** (default port number: 389).
- 5. Enter the LDAP **Base DN** into the respective field (e.g. dc=example,dc=com).
- 6. Select **Definition > User** in the task area.



Menu Configuration – User

7. Create a new LDAP user (bind user) by pressing the button **New User**.

A popup window will appear.

- 8. Select Create a LDAP User in the popup window.
- 9. Enter a user name into the field Name.
- 10. Enter the login name of the bind user from the Active Directory into the field **Login Name**.
- 11. Enter the password of the bind user from the Active Directory into the field **Password**. The password also acts as local password, if the Active Directory service is not available.
- 12. Save your settings and restart the KVM matrix.

The Active Directory users will be then synchronized with the KVM matrix and imported into its configuration.

Single Active Directory users can be subsequently imported into the KVM matrix. Thereby there is no synchronization. These single users are not subject to the Active Directory group structure. To create a user, proceed as follows:

- 1. Select the tab LDAP under **System > User** in the task area.
- Create a new LDAP user by pressing the button New User. A popup window will appear.
- 3. Select Create a LDAP User in the popup window.
- 4. Enter the complete domain name of the Active Directory user into the field **Login Name** (e.g. firstname.lastname@example.com).
- 5. Enter a local password into the field **Password**.
- 6. Save your settings.

The Active Directory can be used now.

5.14 Saving and Loading of Configurations

You have the option to set the following administration of configurations:

5.14.1 Active Configuration

You have the following option to access the menu:



→ Select Configuration > Save in the main menu.

By selecting this menu item, the active configuration of the matrix is saved to the permanent matrix memory. By default, the last configuration that has been saved in this way will be restored after a restart of the matrix.



Changing or saving configurations blocks the matrix 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 5.3.2, Page 79).

5.14.2 Saving of Configurations (internal)

In this menu the current matrix configuration is saved to predefined storage locations. However, it does not replace the buffering of configuration (see Chapter 5.14.1, Page 168).

You have the following options to access the menu:



In **Active**, the name and detailed information of the current configuration are shown. This configuration can be saved.

In **Default** and **File #1** to **File #8**, the name and detailed information of the respective saved configuration are shown. These storage locations can be overwritten.

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 deleted.

OSD

You have the possibility to save the created configuration within eight storage locations in the matrix (**File #1** – **File #8**). Additionally a configuration can also be saved as default configuration.

- 1. Select **Configuration > Save As...** in the main menu.
- 2. Select the required storage location (File #1 File #8) or Default.

Basic Default Testmatrix Basic File #1 Standard Factory settings File #2 Standard Factory settings File #3 Standard Factory settings File #4 Standard Factory settings File #5 Standard Factory settings File #6 Standard Factory settings File #7 Standard Factory settings
Basic File #1 Standard Factory settings File #2 Standard Factory settings File #3 Standard File #4 Standard File #5 Standard File #5 Standard File #5 Standard File #6 Standard File #6 Standard File #6 Standard File #7 Standard File #7 Standard File #7 Standard
File W2 Standard File W3 Standard File W3 Standard File W4 Standard File W5 Standard File W5 Standard File W6 Standard File W6 Standard File W6 Standard File W7 Standard
File W2 Standard Factory settings File W3 Standard Factory settings File W4 Standard Factory settings File W5 Standard Factory settings File W6 Standard Factory settings File W6 Standard Factory settings File W7 Standard Factory settings File W7 Standard
File #3 Standard Factory settings Factory settings File #4 Standard Factory settings Factory settings File #5 Standard Factory settings Factory settings File #6 Standard File #7 Standard File #7 Standard
File W4 Standard Factory settings File W5 Standard Factory settings File W6 Standard Factory settings File W7 Standard
File #5 Standard Factory settings File #6 Standard Factory settings File #7 Standard
File #6 Standard Factory settings File #7 Standard
File #7 Standard
Factory settings File W8 Testmatrix_V0303
1x CON (1), 46x Fixports (2-47), 1x CPU (48)

Menu Configuration – Save as

Java Tool

In order to save the configuration into the internal matrix memory, proceed as follows:

- 1. Select File > Upload in the menu bar.
- 2. Enter the IP address of the matrix, your user name and your password and confirm your inputs with the **Next** button.
- 3. Select the storage location in that the configuration has to be saved (default or config01 config08) and confirm with the OK button.

Connect	
Hostname / IP Address User Password	192.168.170.59 admin *****
	User

Menu File - Upload

5.14.3 Loading of Configurations (internal)

Previously saved configurations are loaded in this menu.

You have the following options to load configurations from files:



In Active, the currently loaded configuration is displayed.

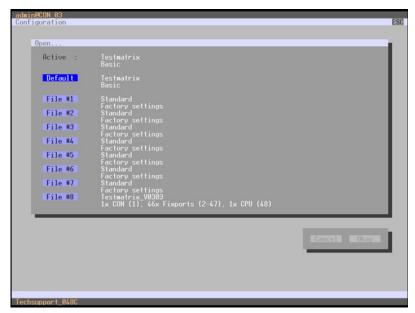
In addition to the default configuration, up to eight further configurations can be loaded.

The selection of the configuration to be loaded can be made between eight personalizable configurations and the default settings.

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

OSD

- 1. Select **Configuration > Open** in the main menu.
- 2. Select the desired configuration.
- 3. Load the configuration by pressing <Enter>.



Menu Configuration – Open...

Java Tool

- 1. Select Administration > Activate Configuration during online-mode in the task area
- 2. Select the desired configuration.
- 3. Load the configuration by pressing the **Activate** button.

Status v Control v Administration A Matrix Firmare Update Exchande Update Exchande Configuration Miscellanceus System v Definition v E	Adi	Pre-Configuration: PEC-Co	Name Info Ser Ser Ser	figuration Service_Grid Techsupport Name Ace_Grid_HHA Ace_Grid_HHA Ace_Grid_HHA			y settings 1 2015-12-17	Info	IP Add DHCP DHCP	fress	Version V03.03 V03.01
Control V Administration A Matrix Firmware Update Exclusion Codate Activity Configuration Maccellaneous Xecellaneous System V	Act 01 02 03 04 05 05	File Default (default dtc) File #1 (config01.dtc) File #2 (config02.dtc) File #3 (config03.dtc) File #4 (config04.dtc)	Name Info Ser Ser Ser	Service_Grid Techsupport Name vice_Grid vice_Grid_HHA vice_Grid_HHA	• • • • • • • • • • • • • • • • • • •	Datum	2015-12-17		DHCP	Iress	V03.03
Administration A Matrix Fernware Update Extended Update Activate Configuration Macellaneous V Assignment V System V	01 02 03 04 05 06	File Default (default.dtc) File #1 (config01.dtc) File #2 (config02.dtc) File #3 (config03.dtc) File #4 (config04.dtc)	Info Sen Sen Sen Sen	Techsupport Name vice_Grid vice_Grid_HHA vice_Grid_HHA		Datum	2015-12-17		DHCP	fress	V03.03
Matrix Firmware Update Extender Update Activate Configuration Miscellaneous Assignment & System &	02 03 04 05 06	Default (default.dtc) File #1 (config01.dtc) File #2 (config02.dtc) File #3 (config03.dtc) File #4 (config04.dtc)	Sen Sen Sen	Name vice_Grid vice_Grid_HHA vice_Grid_HHA		Datum	2015-12-17		DHCP	iress	V03.03
Extender Update Advate Configuration Miscellaneous Assignment ¥ System ¥	02 03 04 05 06	Default (default.dtc) File #1 (config01.dtc) File #2 (config02.dtc) File #3 (config03.dtc) File #4 (config04.dtc)	Sen Sen Sen	vice_Grid vice_Grid_HHA vice_Grid_HHA		Datum	2015-12-17		DHCP	iress	V03.03
Extender Update Advate Configuration Miscellaneous Assignment ¥ System ¥	02 03 04 05 06	File #1 (config01.dlc) File #2 (config02.dlc) File #3 (config03.dlc) File #4 (config04.dlc)	Sen Sen Sen	vice_Grid_HHA		Datum	2015-12-17				
Miscellaneous Assignment ¥ System ¥	03 04 05 06	File #2 (config02 dbc) File #3 (config03 dbc) File #4 (config04 dbc)	Ser Ser	vice_Grid_HHA					DHCP		102.01
Assignment ¥ System ¥	04 05 06	File #3 (config03.dtc) File #4 (config04.dtc)	Ser			Datum					
System ¥	05 06	File #4 (config04.dtc)		vice_Grid_HHA					DHCP		V03.01
System ¥	06		Ser			Datum	2015-12-17		DHCP		V03.01
	-	File #5 (config05.dtc)		vice_Grid_HHA		2016-0	05-27		DHCP		V03.01
Definition ¥	07		Star	ndard		Factory	y settings		192.168.1	99.00	V02.11
vennon v		File #6 (config06.dtc)	Star	ndard		Factory	y settings		192,168.1	99.00	V02.11
	08	File #7 (config07.dtc)	Stat	ndard		Factory	y settings		192.168.1	99.00	V02.11
	09	File #8 (config08.dtc)	Sta	ndard		Factory	y settings		192.168.1	99.00	V02.11
									Activate	Car	cel R

Menu Administration – Activate Configuration

5.14.4 Saving of Configurations (external)

Configurations can be saved as a files that can be stored independent of the matrix.

You have the following option to access the menu:



- 1. Select 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 it is to be saved.



Configurations are always saved in a file with the ending dtc.

W:\				—X —
Look <u>I</u> n:	documents (\\winserver) (W:)		
📄 3D		ac_photonics	📄 agere	📄 amd
a Ampere	Netzteile	📄 Acal Bfi	📄 agilent	📄 amp
aardvark		葿 ad	AJA	🚞 amphe
abracon		adventiq	📄 akm	📄 analog
📄 absopuls	e	🚞 aem	🚞 altera	🚞 anglia
-				•
File <u>N</u> ame:	tera8_defa	ult		
Files of <u>T</u> ype:	(*.dtc)			•
			s	ave Cancel

Menu File – Save As

5.14.5 Loading of Configurations (external)

Externally saved configurations are opened and activated in this menu.

You have the following option to load configurations from files:



- 1. Select **File > Open...** during offline-mode and select the storage location of the configuration file that has to be opened.
- 2. Open the configuration by pressing the **Open** button.
- 3. Select **File > Upload** in the menu bar to transfer the opened configuration to the matrix. Enter the necessary parameters.
- Select Matrix > Connect in the menu bar to make a connection between the matrix and the Java tool. Enter the necessary parameters.
- 5. Select **Administration > Activate Configuration** and select the configuration to be activated.
- 6. Confirm the process with the Activate button.

The opened configuration is activated.

W:\				×
Look In:	documents ((\\winserver) (W:)		
📄 3D		ac_photonics	📄 agere	📄 amd
📄 8 Ampere	Netzteile	📄 Acal Bfi	agilent	📄 amp
📄 aardvark		📄 ad	AJA	📄 amphe
📄 abracon		adventiq	📄 akm	📄 analog
📄 absopuls	е	📄 aem	altera	📄 anglia
-				•
	_			
File <u>N</u> ame:	default			
Files of <u>T</u> ype:	(*.dtc)			•
			Оре	en Cancel

Menu File – Open...

5.15 Export and Import Options

The Draco tera offers the ability to read out available configuration lists (extender, CPUs, consoles and users) for export and import again via Java tool. You have the following option to handle configuration lists.

Exported configuration lists are always saved in .csv format that allows offline editing with common spreadsheet applications.

You have the following option to export or import configuration lists:



5.15.1 Export Options

Configuration lists are exported in this menu. In order to export, proceed as follows:

- 1. Select File > Export in the menu bar.
- 2. After opening the menu, select the list to export.
- 3. Select the storage location for the export file.
- 4. Confirm the export with the **Finish** button.

Export	
Steps 1. Select Type 2. Export Configuration to CSV File	Select Type
	 Extender CPU Console User CPU Groups User Groups
	< <u>Back</u> Next> Einish Cancel

Menu File - Export

5.15.2 Import Options

Configuration lists are imported in this menu. In order to import, proceed as follows:

- 1. Select **File > Import** in the menu bar of an offline configuration.
- 2. After opening the menu, select the list to import (Extender, CPU, Console or User).
- 3. Select the directory of the list to import.
- 4. Confirm the import with the **Finish** button.



Importing configuration lists is only possible in offline configurations.

Import	
Import <u>Steps</u> 1. Select Type 2. Import Config from CSV File	Select Type Extender CPU Console User CPU Groups User Groups
	<back next=""> Einish Cancel</back>

Menu File – Import...

5.16 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.

In order to connect Tie Lines to the matrices, you have to create intended Master/Slave CON and Master/Slave CPU Devices that have to be switched within the cascaded environment.

You have the following options to configure Matrix Cascading:



General Preparation

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

OSD

 Select Configuration > EXT Units in the main menu of the master matrix.

		1:ID F2:Name F3:Next F4:Pr	evious iomeriesi	FO.FINU
EXT Units 010135668 EXT 010135668 010167832 EXT 0101367832 0102007247 EXT 0102007247 010200724 EXT 010200724 016090105 EXT 016090105 040011492 EXT_040011492	IN F GHVCKV	I Data D : 10135668 ame : EXT 010135668 ixed : N Port 1/2 : 11 / eneral OSD Data orizontal mouse speed [1/x] ertical mouse speed [1/x] ouble click time [ms] ouble click time [ms] ouble click time [ms] evboard layout ideo mode xtender OSD Data nable CPU selection nable connection info isplay time [sec] orizontal position ertical position	: 4 200 German DE,129 variable : N : N : N	
EXT Type				New
DVI/VGA-CPU (video) HID-CON (keyb., mouse) Audio (analog, digital) RS232 (serial) USB-CON (embedded) USB-CON (standalone) Universal-CON	CH1 CH2 N N N N N N N N N N N N N N N N N N N	Output Signals DVI/VGA-CON (video) HID-CPU (keyb., mouse.) Rudio (analog, digital) NS222 (serial) USB-CPU (embedded) USB-CPU (embedded) USB-CPU (standalone) Universal-CPU Cascade-CPU	C#1 C#2	Edit Delete Cancel Okay

Menu Configuration - EXT Units

1. Press the New button.

A new Extender Unit will be created that is needed for the connection of Tie Lines.

- 2. Enter an appropriate extender name into the Name field.
- 3. Enter a port number into the **Port** field according to the required connection of the Tie Line.
- If the Tie Line should be directed from the Sub to the Master, set the Cascade-CON option to Y (C#1) in the Input Signals column.
 If the Tie Line should be directed from the Master to the Sub, set the Cascade-CPU option to Y (C#1) in the Output Signals column.
- 5. Save your settings by pressing the Okay button.
- If you have created a Master/Slave CON Unit, select Configuration > CON Devices in the main menu of the master matrix and press the New R button.

A switchable CON Device will be created.

 If you have created a Master/Slave CPU Unit, select Configuration > CPU Devices in the main menu of the master matrix and press the New R button.

A switchable CPU Device will be created.

- 8. Enter an appropriate Device name into the Name field.
- Assign the previously configured Extender Unit to the just created Device by moving the Extender Unit from the Ext available field into the Ext assigned field and save your settings.
- 10. Repeat steps 1 to 9 for the Sub Matrix.
- 11. Select **Configuration > System** in the main menu of the Sub Matrix and set the **Sub Matrix** option to **Y**.

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

- 12. Restart all I/O boards on which any Master/Slave CON or CPU Units have been configured or alternatively restart the matrix.
- Connect the Tie Lines to the matrices. Ensure that each Master/Slave CON on one matrix is connected to Master/Slave CPU on the other matrix in order to achieve switchability between two matrices.

The Matrix Casacading is now configured and can be used. Additional Tie Lines are configured accordingly. The use of cascading is described in Chapter 6.1.4, Page 204.

Java Tool

- 1. Connect to the Master Matrix and activate the **Online Configuration Mode**.
- Select the menu Definition > EXT Units in the task area and press the New button.

A popup window opens.

		Activate Online	Configuration Save Online	Changes	Download Upload	Montoring	Plash Upda	e Device Finder	System Check	Save Status	
🖇 admin@192.168.170.5		efinition - EX	TUnits	_							
Status	*										
Control	*	ID	Name	Port	, ID			CPUICO	N Assigned		
. designation of the second	* 0		CPU_BSHCV	0	A Name						
Administration	• 0		EXT 010148830	0	Port			Redund	lant Port		
Assignment	* 0		CON_Testroom 2	0	Fixed						
None of the second s			EXT_010187232	0	4						-
System	* 0		EXT_CON_Fabian_2	42	Extender Ty	Firmware	Version G	eneral OSD Data	Extender OSD I	Data	
Definition	* 0	012345681	EXTCPU_Christian	29	Type				Chan	tard View	Expert Vi
EXT Units	0	040028266	EXTCON_Christian	28	.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				otano	and your	Expen Vi
CPU Devices	0	010204215	CON_Harry	20		Name		Basic	Mod A	V	Mod B
CON Devices User	0	010198383	CPU_Helmut_02	3	DWHDMI/VGA	(vídeo)					
iroups	1	010198384	CPU_Helmut_01	4	HID (keyboard	mouse)					
	1	010198380	CON_Helmut_01	2	Analog Audio						
	1	010198381	CON_Helmut_02	1	Digital Audio						
	1	010184996	EXT_CON_Fablan_1	41	R\$232/R\$422	(serial)					11
	1	020000004	EXT_CPU_Fabian_1	33	USB-CON (en	bedded)					
	1	5 010231854	EXT_CPU_Fabian_2	34	USB-CON (sta	ndalone)					
	1	010235255	CPU_Harry	27	Universal-CO						
	1	010221850	EXT_010221850	0	Cascade-COM						
	1	040081455	EXT_040081455	0							
	1	010180137	EXT_010180137	0							
	2	040085238	EXT_040086238	0							
		-	_								
		Assign Settings (Copy Settings to	om.,				New Unit	Delete Unit	Apply	Çan

Menu Definition - EXT Units

 If the Tie Line should be directed from the Sub to the Master, select Master/Slave CON Unit in the Choose Extender Type selection box.

If the Tie Line should be directed from the Sub to the Master, select **Master/Slave CPU Unit** in the **Choose Extender Type** selection box.

- 4. Enter an appropriate extender name into the Name field.
- 5. Enter a port number into the **Port** field according to the required connection of the Tie Line.
- 6. Confirm your settings by pressing the **Apply** button.

 If you have created a Master/Slave CON Unit, select Definition > CON Devices in the task area of the master matrix and press the New button.

A switchable CON Device will be created.

 If you have created a Master/Slave CPU Unit, select Definition > CPU Devices in the task area of the Master Matrix and press the New button.

A switchable CPU Device will be created.

- 9. Enter an appropriate extender name into the Name field.
- 10. Assign the previously configured Extender Unit to the just created Device by moving the Extender Unit from the Extender available field into the Extender assigned field and save your settings by pressing the Apply button.
- 11. Connect to the Sub Matrix and repeat steps 1 to 10.
- 12. Select **System > System Data** in the task area of the Sub Matrix and activate 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>.

- 13. Restart all I/O boards on which any Master/Slave CON or CPU Units have been configured or alternatively restart the matrix.
- Connect the Tie Lines to the matrices. Ensure that each Master/Slave CON on one matrix is connected to Master/Slave CPU on the other matrix in order 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 6.1.4, Page 204.

5.17 Matrix Grid

In this menu you can configure a Matrix Grid in order to connect two or more matrices. 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 connections between two matrices have to be established by so called Grid Lines that are connected between particular I/O ports as connecting links. The Grid Lines can be used bidirectionally and can respectively handle a full access connection of a CON Device to a CPU Device.

The number of Grid Lines in the system specifies, if a CON Device can be switched to a CPU Device in Non-Blocking Access or in Blocking Access and has to be separately determined for each Grid environment.

In this case Non-Blocking Access means that a Grid Line for a crossmatrix switching operation of a CON Device to a CPU Device is available at any time.

Whereas Blocking Access means that for a certain switching operation no Grid Line may be available according to the switching status within the Grid. The result will be that no cross-matrix switching will be possible.

You have the following options to configure a Matrix Grid:



Administration of Settings

Within a Matrix Grid you have to differ between settings that have to be made locally for each matrix and settings that can be made globally so that they are valid for the whole Matrix Grid.

The settings in the following menus have to be made separately for each matrix or within the master matrix in order to affect all matrices in the Grid:

System, Access, Switch, Network, Date + Time, SNMP, Matrix Grid, Multi-Screen Control The settings in the following menus have to be made globally and only once within the Matrix Grid:

EXT Units, CPU Devices, CON Devices, User, CON Macros, User Macros, CON Favorites, User Favorites, Virtual CPU Devices, Virtual CON Devices



If global settings are made in the respective menus, they will be immediately available on each matrix within the Matrix Grid.

General Preparation

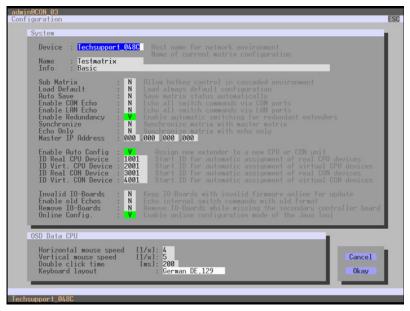
The following requirements have to be fulfilled before starting the Matrix Grid configuration:

- The Matrix Grid function (Bundle 4) must be activated on all matrices to be connected to the Grid by a license key (see Chapter 5.21, Page 199).
- 2. Firmware V03.10 must be installed on all matrices to be connected to the Grid.
- 3. All matrices to be connected to the Grid must be within the same TCP/IP network (see Chapter 5.4.5, Page 98).
- 4. The port 5556 needed for network communication must not be blocked by a firewall.

OSD

In order to configure a Matrix Grid, proceed as follows. The following configuration steps have to be repeated for each matrix separately:

→ Select Configuration > System in the main menu.



Menu Configuration - System

- 1. Enter a unique name for each matrix into the **Device** field. Each name only may exist once within the Matrix Grid.
- Enter a unique Grid name into the Name field. The Grid name has to be same within all Grid matrices.
- 3. Select Configuration > Matrix Grid in the main menu.

Configuration

admin@CON_03 Configuratio	3 on				ESC
Matrix	Grid				
N	Enable	Matrix Grid			
	Active	Device	Ports	Active Device	Ports
	N N N N N N N N N N N N N N N N N N N	ification of a	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	N N N N N N N N N N N N N N N N N N N	0 0 0 0 0 0 0 0 0 0 0
					Cancel Okay
Techsupport	_048C				Draco tera

Menu Configuration – Matrix Grid

- 4. Activate the Enable Matrix Grid function.
- 5. Write all device names of the Grid matrices into the Matrix Grid list, starting in the left column. Based on the listings, a Grid master will be automatically determined for the Matrix-Grid. The more on the top a matrix is listed in the matrix Grid list, the more likely the matrix is considered in the automatic master selection, provided that certain criteria like system availability are fulfilled.
- Activate the single matrices in the Matrix Grid list by enabling the Y (YES) function.
- Enter the number of chassis ports for each matrix (8, 16, 32, 48, 64, 80, 160 or 288).
- 8. Restart all matrices, beginning with the master matrix.

The Matrix Grid can be used now and offers the possibility for a crossmatrix switching of CON Devices to CPU Devices.

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Java Tool

➔ In order to use the Matrix Grid execute the configuration wizard in the menu System > Matrix Grid. It guides you through the configuration of Matrix-Grids.

	sinect Disconn	ect Activate Online		Market Changes	Townload.	Upload	Monitoring	Plash Update	Revice Finder.	System Check.	Save Status	
🖇 admin@192.168.170.5	59 Master	3										
Status	¥	Matrix Grid										-
Control	¥											Show
		Matrix Grid Config	uration	St	ert Grid Wize	ird (online)						
Administration	*	Matrix Grid Enable	d									
Assignment	*		Active	De	ice	IP address	/Hostna	Ports		Master	Connec	t to Matrix
		Matrix 01	1	tera8		192.168.1	0.59	8		60	# 0	onnect
System	*	Matrix 02	1	tera48		192.168.1	10.58	48			Ø 0	onnect
System Data		Matrix 03				0.0.0.0		0			#0	snnect
Access		Matrix 04				0.0.0.0		0			# 0	conect
3witch Vetwork		Matrix 05				0.0.0.0		0			#0	sanect
Date and Time		Matrix 05				0.0.0.0		0			#0	onnect
Matrix Grid		Matrix 07				0.0.0.0		0			#0	innect
		Matrix 08				0.0.0.0		0			#0	onnect
Definition	¥	Matrix 09				0.0.0.0		0			#0	innect
		Matrix 10				0.0.0.0		0			#0	conect
		Matrix 11	10			0.0.0.0		0			#0	onnect
		Matrix 12				0.0.0.0		0			# 0	onnect
		Matrix 13				0.0.0.0		0			#0	bunect
		Matrix 14				0.0.0.0		0			#0	onnect
		Matrix 15				0.0.0.0		0			#0	onnect
		Matrix 16				0.0.0.0		0			#0	onnect
		Matrix 17				0.0.0.0		0			# 0	onnect
		Matrix 18				0.0.0.0		0			# 0	onnect
		Matrix 19				0.0.0.0		0			# 0	onnect
		Matrix 20				0.0.0.0		0			#0	onnect

Menu System – Matrix Grid

5.18 USB-HID Ghosting

This function allows specific keyboard and mice descriptors (device descriptions) to be permanently stored in the CPU unit. This eliminates the need to register and deregister the keyboard and mouse on an operating system each time there is a shared use of a source (computer, CPU) by two or more consoles within a KVM matrix.

Next to the use of Hot Keys commands (see Chapter 6.14, Page 230) the activation and management of the USB-HID Ghosting information can also be handled centrally via KVM matrix to reach all connected KVM extenders at the same time.

You have the following option to option to perform the central management of USB-HID Ghosting information:



General Preparation

To use the USB-HID Ghosting management via Tera tool, this requires that USB-HID Ghosting has been already activated at a CPU Unit via Hot Key command or the USB-HID Ghosting information is already available as a file with the extension .dhg.

Java Tool

Several general options are available. For these options select the menu **Definition > EXT Units** in the task area, select an EXT Unit (CPU) and open the tab **USB-HID Ghosting**:

- To read the USB-HID Ghosting information of an EXT Unit (CPU), select it and press the button **Read** in the symbol bar of the tab.
- To locally store existing USB-HID ghosting information of an EXT Unit (CPU), select it and press the button **Save As...**
- To delete existing USB-HID ghosting information of an EXT Unit (CPU), press the button **Reset**.

To transmit any manually activated USB-HID Ghosting information of a single EXT Unit (CPU) to other extenders, proceed as follows:

 Connect to the KVM matix via Java tool and activate the Online Configuration mode in the symbol bar.

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 Select the menu Definition > EXT Units in the task area and select the EXT Unit (CPU) with active USB-HID Ghosting.

a. Save Reload Connect	2isconnect	Activate Online	Configuration Save Online		s Dor	wnibad U;	Tobad	Monitori	ng Flas	h Update	Device Finde	r System		Save Status	
🖇 admin@192.168.170.59 M	aster 😟						*******								
Status	De	finition - EX	T Units												
Control					8	ID D	123	45681			CPU	Assigned	0	1005 CPU_C	hristian
	-	ID	Name	Port		Name	EXT	CPU_C	hristian						
Administration	\$ 01	010165938	CPU_BSHCV	0	1	Port	29				Rede	ndant Port			
Assignment	02	010148830	EXT_010148830	0							Nobe	mand POIL			
	03	010203253	CON_Testroom 2	0		Fixed			_	_			_		_
System	s 04	010187232	EXT_010187232	0		Extende	rType	Firmwa	are Versio	USB-	HID Ghostin	EDID	EDID	2	
Definition	05	010231479 012345681	EXT_CON_Fabian_2 EXTCPU_Christian	42	- 11	la	10	T	÷			×	Σ		
	00	012345681	EXTCON_Christian	29		Open Sa	ve As	Read	Transmit	Activate	Deactivate R		Hgn		
EXT Units CPU Devices	08	010204215	CON_Harry	20	- 18	General									
CON Devices	09	010198383	CPU_Helmut_02	3	- 11	USB-HID-	Ghostin	9	Active						
User Groups	10	010198384	CPU_Helmut_01	4		USB-Type			Keyboar	rd + Mous	e i				
Groups	11	010198380	CON_Helmut_01	2	- 11	Keyboard	1								
	12	010198381	CON_Helmut_02	1	- 11	Vendor II	0		0x04B3						
	13	010184996	EXT_CON_Fabian_1	41	- 11	Vendor N	lame		LITE-ON	Technol	ogy				
	14	020000004	EXT_CPU_Fabian_1	33		Product	D		0x3025						
	15	010231854	EXT_CPU Fabian_2	34		Product	Name		4etVista	Full Widt	Keyboard.				
	16	010235255	CPU Harry	27		USB Vers	nois		01.01						
	17	010221850	EXT_010221850	0		HID Versi	ion								
	18	040081455	EXT_040081455	0		Mouse									
	19	010180137	EXT_010180137	0		Vendor II)		0x17EF						
	20	040085238	EXT_040086238	0											01013
		-	-		. "	A	ttention	Reading	and writ	ing the Us	8-HD Ghost	ang results	in a she	ort interrupt of	the con

Menu Definition - EXT Units

- 3. Select the tab USB-HID Ghosting.
- Press the button Read. The current USB-HID Ghosting information of the EXT Unit (CPU) is read out and shown. At the same time, the USB-HID connection will be disconnected for a few seconds.
- 5. Press the button **Assign...**.

A popup window will appear.

- Select the those EXT Units (CPU) in the field Available to assign settings to that are intended to receive the USB-HID Ghosting information.
- 7. Press the respective button to move the EXT Units (CPU) into the field **Assign settings to...**.
- Press the button Next >, confirm the occuring notification and finally press Next > again.
- 9. Press the button **Start** to activate the transmission and press the Button **Finish** as soon as the transmission is completed.

To load a USB-HID Ghosting template (.dhg file extension) for a further distribution proceed as follows:

- 1. Press the button **Open** in the tab **USB-HID Ghosting**.
- 2. Select the respective template with the file extension .dhg and press the button **Select**.
- 3. Select the EXT Unit (CPU) the USB-HID Ghosting template should be transmitted to and press the button **Transmit**.
- 4. If required, the USB-HID Ghosting information can be transmitted to any connected extender by pressing the button **Assign...**.



During reading and writing USB-HID Ghosting information, there will be a short interrupt of the USB-HID and video signal.

5.19 Management of DDC Information (EDID)

By default, the KVM extenders transmit the factory preset DDC (EDID) to the sources (computer, CPU). This information is suitable in most cases.

For special requirements, DDC information can be retrieved and uploaded as a binary file to both the CPU Unit and the CON Unit.

Next to the use of Hot Keys commands (see Chapter 6.14, Page 230) the activation and management of the DDC information can also be handled centrally via KVM matrix to reach all connected KVM extenders at the same time.

You have the following option to manage DDC Information:



General Preparation

To use the DDC information management via Tera tool, this requires that DDC information has been already transmitted at a CPU Unit via Hot Key command or the DDC information is already available as a file with the extension .bin.

Java Tool

Several general options are available. For these options select the menu **Definition > EXT Units** in the task area, select an EXT Unit (CPU) and open the tab **EDID**:

- To read the DDC information of an EXT Unit (CPU), select it and press the button **Read** in the symbol bar of the tab.
- To locally store existing DDC information of an EXT Unit (CPU), select it and press the button Save As....
- To set existing DDC information of an EXT Unit (CPU) back to factory default, press the button **Reset**.

To copy any manually transmitted USB-HID Ghosting information of a single EXT Unit (CPU) to other extenders, proceed as follows:

- 1. Connect to the KVM matix via Java tool and activate the **Online Configuration** mode in the symbol bar.
- Select the menu Definition > EXT Units in the task area and select the EXT Unit (CPU) with already transmitted EDID information.

Save Reload Connect Disc		Activate Online	Configuration Save Online	e Changes	Download	To Upload	Monitori	ng Flash	Update.	. Device Finder.	System Check	Save Status
admin@192.168.170.59 Mastr	-											
Status 🛛 🕅	Det	finition - EX	TUnits									
Control ¥				1	0	12	345681			CPU As	signed	01005 CPU_Christia
		ID	Name	Port	Name	EX		hristian				
Administration ¥	01	010165938	CPU_BSHCV	0	Port					Destant	ant Port	0
technoment M	02	010148830	EXT_010148830	0						Nedund	ant Port	0
Assignment ×	03	010203253	CON_Testroom 2	0	Fixed							
System ¥	04	010187232	EXT_010187232	0	Extend	ter Type	Firmer	re Version		HID Ghosting		22
		010231479	EXT_CON_Fabian_2	42		III	T	NUM .	×	X		
Definition *	_	012345681	EXTCPU_Christian	29	Open S	ave As		Transmit	Reset	Assign		
EXT Units	07	040028266	EXTCON_Christian	28	General	1						
CPU Devices CON Devices	08	010204215	CON_Harry	20	Manufa	cturer N	ame	IVM :				
User	09	010198383	CPU_Helmut_02	3	Produc	Code		PL2473H	H.			
Groups	10	010198384	CPU_Helmut_01	4	Serial N	umber			19			
	11	010198380	CON_Helmut_01	2	Handa	cturer W	laak	7				
	12	010198381	CON_Helmut_02	1		cturer Ye						
	13	010184996	EXT_CON_Fabian_1	41			ear					
	14	020000004	EXT_CPU_Fabian_1	33	EDID Ve							
	15	010231854	EXT_CPU_Fabian_2	34		ecksum		Valid				
	16	010235255	CPU_Harry	27	Extende							
	17	010221850	EXT_010221850	0	Pixel Cl	ock [Mh	2]	148.50				
	18	040081455	EXT_040081455	0	H. Activ	e Pixels		1920				
	19	010180137	EXT_010180137	0	V. Activ	e Pixels		1080				
	20	040085238	EXT_040086238	0	· A	Attentior	Reading	and writi	ing the E	DID results in a	short interrupt	of the connection.
		-			1011							

Menu Definition - EXT Units

3. Select the tab **EDID**.

4. Press the button **Read**.

The current DDC information of the EXT Unit (CPU) is read out and shown.

- Press the button Assign....
 A popup window will appear.
- Select those EXT Units (CPU) in the field Available to assign settings to that are intended to receive the USB-DDC information.
- 7. Press the respective button to move the EXT Units (CPU) into the field **Assign settings to...**.
- Press the button Next >, confirm the occuring notification and finally press Next > again.
- 9. Press the button **Start** to activate the transmission and press the Button **Finish** as soon as the transmission is completed.

To load a DDC information template (.bin file extension) for a further distribution proceed as follows:

- 1. Press the button **Open** in the tab **EDID**.
- 2. Select the respective template with the file extension .bin and press the button **Select**.
- 3. Select the EXT Unit (CPU) the DDC template should be transmitted to and press the button **Transmit**.
- 4. If required, the DDC Ghosting information can be transmitted to any connected extender by pressing the button **Assign...**.

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5.20 Firmware Update

5.20.1 Matrix Update

The firmware of the matrix can be updated in this menu.

You have the following option to access the menu:



Java Tool

Only use computers to update the matrix that are not integrated into the KVM extender / matrix setup.

Ensure that the computer used for the update is not set into stand by mode or sleep mode during the update.

Ensure that your configuration has been saved externally before you start the update.

For reasons of network stability, an update via WLAN is not recommended.

Preparation

Take the following steps in order to be prepared for the matrix update:

- 1. Save the matrix configuration externally (see Chapter 5.14.4, Page 173).
- Open Extras > Options in the menu bar and insert in the setting Firmware Directory the directory from which the update files should be standardly sourced.
- 3. Put all hot spare boards into the matrix.
- 4. Activate the Syslog function (see Chapter 3.9, Page 43) for the monitoring of the update, if unlocked via license key.



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.

Performing the Update

Take the following steps in order to be prepared for the matrix update:

 Select Administration > Update Matrix Firmware in the task area. All updateable components of the matrix will be automatically selected and highlighted in green.

en Save Reload Connec	A ST t <u>Disconnect</u>	Activate Online Configurati	on Save Online Changes	Download	Upload Monitorin	g Flash Update.	Device Finder	System Check	Save Status	
20170405090349_SWITCH_	_01.zip 😣									_
Status	¥ Ad	ministration - Matrix	Firmware Update							
Sector		date Protocol								
Control	*								Additional selection (opti
Administration	A Slot	Name	Туре	Cur. Version	Upd. Version	Cur. Date	Upd. Date	Status	Update	
Matrix Firmware Update	00	🖾 🌒 MATX160	CPU	F03.00	F03.05	2015-01-28	2017-06-20	Available		
Extender Update		MATXDVI	OSD	F01.14		2013-02-26				
Activate Configuration		MATXHID	HID	F04.00		2015-02-03				
Miscellaneous	01		108	F03.00	F03.05	2015-01-28	2017-06-20	Available	2	
Assignment	*	MATXOSD	OSD	F03.06		2014-10-02				
	02	E MATXCAT	108	F03.00	F03.05	2015-01-28	2017-06-20	Available		
System	¥	MATXOSD	OSD	F03.06		2014-10-02				
D-E-M	8 03	E MATKCAT	108	F03.00	F03.05	2015-01-28	2017-06-20	Available		
Definition	•	MATXOSD	OSD	F03.06		2014-10-02				
	04		108	F03.00	F03.05	2015-01-28	2017-06-20	Available		
		MATXOSD	OSD	F03.06		2014-10-02				
	05	E MATXCAT	108	F03.00	F03.05	2015-01-28	2017-06-20	Available		
		MATXOSD	OSD	F03.06		2014-10-02				
	06		108	F03.00	F03.05	2015-01-28	2017-06-20	Available	2	
		MATXOSD	OSD	F03.06		2014-10-02				
	07	E MATKCAT	108	F03.00	F03.05	2015-01-28	2017-06-20	Available	1	
		MATXOSD	OSD	F03.06		2014-10-02				
	08	I MATXCAT	108	F03.00	F03.05	2015-01-28	2017-06-20	Available	_	
		MATXOSD		F03.06		2014-10-02				
		a minimum	line	643.44	PAR AF				-	
		Overwrite active firmware				e/DracoTera///030		1100	Bri	0w8

Menu Administration – Update Matrix Firmware

- 2. Start the update by pressing the **Update** button in the appearing pop up window.
- 3. Restart the Matrix after the update by pressing the **Restart matrix** button in the lower part of the working area.



For a safe initialisation of the matrix, a cold start (power cycle) is recommended.

5.20.2 Extender Update

The firmware of the extenders connected to the matrix can be updated in this menu.

You have the following option to access the menu:



Preparation

Take the following steps in order to be prepared for the extender update:

1. Save the matrix configuration externally (see Chapter 5.14.4, Page 173).

Open Extras > Options in the menu bar and insert the name of the directory from which the update files should be sourced in Firmware Directory.

2. Connect all hot spare extenders to the matrix.



For reasons of network stability, an update via WLAN is not recommended.

Performing the Update in Standard Mode (parallel Update)

 Select Administration > Update EXT Firmware in the task area. The standard mode for the parallel update will be selected by default and the Upload Firmware tab will be opened.

20170405090349_SWITC	-							
Status	¥ Ad	ministration - Exte	nder Update					
Control	8	Parallel Mode (rec			executed separately on ea			
. desinistration	•	 Sequential Mode 			der to update specific ext	enders		
Administration	×	ep 1: Upload Firmware	Step 2: Update Firms	ware				
Matrix Firmware Update Extender Update	Firm	ware File XIP	ublic/DracoTeral/201705	24_V0304/Default/201	70515_classic.efw	Brow	NSO	
Activate Configuration	Ave	ilable Firmware Files				_		
Miscellaneous		Name	Туре	Version	Date	Selected		
Assignment	* 0	1 EXTOPU	EXT	F02.47	2016-05-30	2		
		2 EXTCON	EXT	F03.11	2017-03-08	2		
System	¥ 0	3 EXTHVCPU	EXT	F01.02	2016-05-31	2		
Definition	* 0	4 EXTICPU	EXT	F01.35	2017-05-15	2		
		5 HIDCPU	HID	F04.01	2017-02-13	2		
	0	6 HIDCON	HID	F04.01	2017-02-13	2		
	0	7 CONVGPU	GPU	F01.46	2017-05-09	3	Ŧ	
	Upl	oad Progress		0%		U	beolo	
	Upl	oad Messages						

Menu Administration – Update EXT Firmware

- Before the actual update process, all firmware files have to be uploaded to the respective I/O boards on that extenders will have 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. Start the upload and distribution of the update files by pressing the **Upload** button.



By performing the upload process, no update files will be installed. the update process can be performed at a later time. If there are not selected all I/O cards, the upload of the update files will be performed in sequence. 4. After finishing the upload process successful completion will be confirmed by a popup message. If you want to directly start the actual update process, you will have to confirm this by pressing the Yes button. You will be immediately forwarded to the Update Firmware tab.



When updating an identical or an older firmware version than the version currently installed, the **Force Update** option in the lower part of the working area must be enabled.

	at Disconne	ct Activate Online Co	onfigurati	on Save Online Changes	Townload.	Upload	Monitoring	Flash Update	Device Finde	r System Chec	k Save Status
0170405090349_SWITCH	L01.zip 🙆	1									
itatus	8	Administration - I	Extend	ler Update							
Control	¥	 Parallel Mode Sequential Mode 						tely on each M pecific extende			
dministration	*	Step 1: Upload Firm	ware	Step 2: Update Firmwar	0						
latrix Firmware Update Extender Update ctivate Configuration fliscellaneous		Enable Downgrade		his checkbox when downg	ading the firm	ware or up	odating the cum	only installed fire	nware again.		
		Update Progress				0%				Jpdate	
ssignment	¥	Update Messages									
ystem	¥										
efinition	*										

Menu Administration – Update EXT Firmware

5. Start the actual update process by pressing the Update button.



Just before the update process, all affected I/O boards will be set into **Service Mode** and retrieved gradually after finishing the respective updates.

Performing the Update in Expert Mode (sequential Update)

Take the following steps in order to be prepared for the extender update:

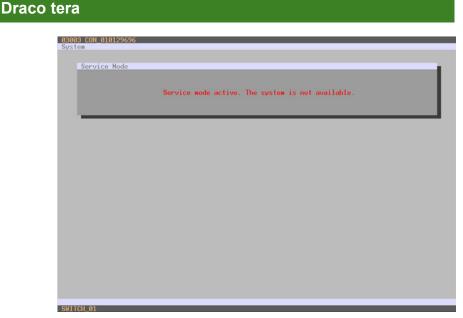
 Select Administration > Update EXT Firmware and select Sequential Mode in the upper part of the working area. All updateable extenders will be automatically selected and highlighted in green.

		Activ	ate Online Configura	ation Save Online Change	s Down		. Monitoring P	lash Update Dev	e Finder Syste		Status	_
20170405090349_SWITCH_01.2		minis	tration - Exter	der Undate								
Status ¥												
Control ¥		_	rallel Mode (reco quential Mode				ecuted separatel ler to update spec	y on each I/O boar	rđ			
Administration *					inai upuai	le invoe in oro	er to oposie sper	and exterioers				
	U	odate F	irmware Proto	col								
Matrix Firmware Update Extender Update										Addition	nal selection	option
Activate Configuration		ID		Name	Port	Type	Cur. Version	Upd. Version	Cur. Date	Upd. Date	Update	
Miscellaneous				EXTHIVOPU		EXT	B01.02	F01.02	2016-05-31	2016-05-31		
	5			HIDCPU		HID	B00.00	F04.01	2001-01-01	2017-02-13	V	
Assignment ¥				EXTMSD		MSD	B02.38		2016-01-29			
System ¥	97	۲	40066534	EXT_040066534	103	CPU UNIT					•	
				EXTCPU		EXT	B02.47	F02.47	2016-05-30	2016-05-30		
Definition ¥				HIDCPU		HID	B04.01	F04.01	2016-02-16	2017-02-13	2	
				EXTMSD		MSD	B02.38		2016-01-29			
	98	8	40066535	EXT_040066535	104	CPU UNIT					2	
				EXTCPU		EXT	B02.47	F02.47	2016-05-30	2016-05-30		
				HIDCPU		HID	B04.01	F04.01	2016-02-16	2017-02-13	2	
				EXTMSD		MSD	B02.38		2016-01-29			
	99	Ξ	40066533	EXT_040066533	105	CPU UNIT					2	
				EXTCPU		EXT	B02.47	F02.47	2016-05-30	2016-05-30		
				HIDCPU		HID	B04.01	F04.01	2016-02-16	2017-02-13	2	
	_			EXTMSD	_	MSD	B02.38		2015-01-29			
		Extende	r firmware version	conflict			X'Public/Drac	oTeral/20170524_	V0304/Default2	0170515_classi	c.etw Br	owse
		Ianual	update of EXTMSD	EXTMSD recommended						1	Update	Reloa
		Wrong	nodule type (CPU/C	ON mismatch)						_		

Menu Administration – Update EXT Firmware

 Set the matrix into Service Mode upon request in the popup window or via Matrix > Activate Service Mode in the menu bar.

During activation, 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. In addition, the Service Mode is indicated by a red tool icon in the lower part of the working area.



OSD View Service Mode

- 3. Start the update by pressing the **Update** button in the lower part of the working area.
- Quit Service Mode after updating after responding to the confirmation request in the popup window or via Matrix > Deactivate Service Mode in the task area.
- Verify after the update in the Java tool via Administration > Update EXT Firmware in the Protocol tab of the Expert Mode, if the updates for all extenders have been installed correctly.

5.21 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 your distributor.

You have the following option to access the menu:

5	5
JA	VA

Java Tool

In order to activate a function bundle, proceed as follows:

 Select Administration > Miscellaneous > License Management in the task area.

II.zip \Theta			
¥ Miscellaneous			
	Update OSD Update Additionals		
*			Show
A Serial Number			
S/N Backplane	40020584		
Active Licenses			
Presets (Tool only)	9		
Extended Switch (Tool only)	2		
* API	2		
¥ SNMP	2		
Syslog	3		
Matrix Grid	1		
Multi-Screen Control	2		
Activate License			
License Key			
	Activate		
	SN Backplane Active Locenses Presets (Tool only) Extended Switch (Tool only) API SNBP Syslog Matrix Grid Multi: Screen Control Activate License	Serial Number SN Backgane s0020544 ACtive Licenses Presents (Tool only) Presents (Tool only) Image: Apple and the second only on the second on	Serial Number SNB Secklance 4020054 Active Licenses

Menu Administration – Miscellaneous – License Management

- Enter your license key in the working area under Activate Bundles in the License Key field.
- In order to activate the license key press the Activate button. The new functions will be immediately enabled, a restart of the matrix will not be necessary.

6 Operation

The Draco tera 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 Java tool (network connection required)
- via a media control (network or serial connection required)

6.1 Operation via 'Hot Keys'

6.1.1 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 Command Mode with the 'Hot Key'.

Shift and **Scroll** LEDs on the keyboard will flash, if Command Mode is activated.

2. Enter the index number of the new CPU from the list of favorites and confirm with <Enter>.

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 favourite 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 Command Mode with the 'Hot Key'.

Shift and **Scroll** LEDs on the keyboard will flash, if command mode is activated.

2. Enter the index number of the new CPU from the list of favorites and confirm with <left Shift>, <Enter> pressed at the same time.

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 Command Mode with the 'Hot Key'.

Shift and **Scroll** LEDs on the keyboard will flash, if command mode is activated.

 Enter the index number of the new CPU from the list of favorites and confirm with <Space>.

At the same time Command Mode is closed and the console is connected to the new CPU with video only.

Example: Switching to favourite CPU 1 with video only

<left Shift>, <left Shift>, <1>, <Space>

Switch to previous CPU

1. Start Command Mode with the 'Hot Key'.

Shift and **Scroll** LEDs on the keyboard will flash, if Command Mode is activated.

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.

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.

Disconnect current Connection

- Start Command Mode with the 'Hot Key'. Shift and Scroll LEDs on the keyboard will flash, if Command Mode is activated.
- Press the key <Backspace> of your keyboard. The Command Mode is closed and the console is disconnected from the previous connected CPU.

6.1.2 Scan Mode

Scan Mode enables fast switching between video signals from different CPUs registered as favorites without continuously using the 'Hot Key'. Switching between two video signals can even take place within one frame.

- 1. Start command mode with the 'Hot Key'. **Shift** and **Scroll** LEDs on the keyboard will flash, if command mode is activated.
- 2. Press the key <Left Shift> and hold it down. You can now enter the index numbers of the various CPUs from the list of favorites with the keyboard and immediately switch to the video signal of the respective CPU after entering the index number.
- 3. Leave Scan Mode by pressing <Left Shift> + <Esc>.



Optimal results can be achieved by the use of as identical resolutions as possible. This contributes to a smooth and seamless function of the scan mode.

6.1.3 Function Keys <F1>-<F16>

In Command Mode you can retrieve the macros 1–32 with the function keys <F1>–<F16> on the connected standard keyboard instead of the special macro keyboard.

Executing macros 17-21 is realized by the simultaneous use of the key <left Shift>.

The stored command sequence for the appropriate function key is executed and Command Mode is left immediately.



It is not necessary to use <Enter> to confirm selection of macros.

6.1.4 Addressing of Main and Sub Matrices

The Draco tera can be cascaded over two levels. You can either send the commands (including opening the OSD) to the main or the sub matrix.

When in command mode, you can select whether commands should be handled in the main or the sub matrix.

OSD Access

- OSD access to the main matrix:
 <Left Shift>, <Left Shift>, <m> (optional), <o>
- OSD access to the sub matrix:
 <Left Shift>, <Left Shift>, <s>, <o>

In order to do a cross-matrix switching, proceed as follows:

- Open the OSD of the master matrix with the following keyboard sequence: <'Hot Key'>, <o>
- Select the CPU device configured as Tie Line in the CPU selection list and press <Enter> to switch onto.
- 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 select <s>, all prospective commands will be sent to the sub matrix, but not if the Command Mode is left in the meantime.

6.2 KVM-Switching

You have the following option to perform switching operations with the Draco tera:



OSD

→ Select Switch in the main menu.



By pressing <F8>, inactive CPU devices can be shown in order to expand the current view.

	ID F2:Name F3:Next F4:Previous F5:Refresh	TO A THU PALAT TO SHOW PARONDALE
U Devices CPU 010231843 CPU_02	CON/CPU Data CON device 03001 CON_03 CON assigned CPU connected Status UNLINE EXT list 010203267 0043 EXT_010203267	CPU device 01007 CPU_010231843 CPU assigned CON connected 03009 CON_010231876 Status ONLINE EXT list 010231843 0029 EXT_010231843
<space></space>	Video only access with keyboard & mouse	disabled
<space> <enter></enter></space>	Video only access with keyboard & mouse Full access in standard mode with video	
<enter></enter>	Full access in standard mode with video	

Menu Switch

To switch the console to any available CPU, proceed as follows:

- 1. Select in the **CPU Devices** list on the left hand side that one that should be connected to the CON Device.
- Confirm desired connection type with the appropriate keyboard command.

Draco tera

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.

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.

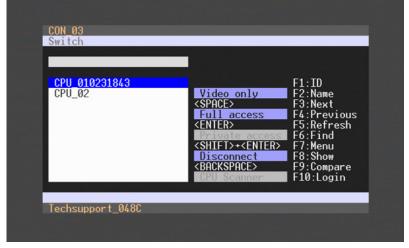
In order to use the selection list for CPU Devices, proceed as follows:

- Activate the Enable CPU Selection List option in the Configuration menu for those consoles where the selection list for CPU Devices should be available.
- 2. Execute the key sequence for opening the OSD. The selection list immediately appears in the preset position of the extender OSD.



Pressing <F8> hides inactive CPU Devices to provide a clearer overview.

 Execute the desired switching operation by pressing the respective key (see Chapter 6.3, Page 208).
 In order to prevent a switching operation and access OSD, press <F7>.



In order to close the selection list, press <Esc>.

Example view Selection list CPU Devices

Activating the automatical 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 scan mode, refer to Chapter 5.13.1, Page 139.

You have the following option to activate the scan mode:



In order to activate scan mode, proceed as follows:

- Define a favorite list for the respective CON Device or user (see Chapter 5.13.4, Page 151 for CON Devices or see Chapter 5.5.2, Page 109 for users)
- 2. Start Command Mode with 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.
- 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.

6.3 Extended Switching

You have the following options to perform switching operation with the Draco tera:



OSD

To switch any console to any available CPU, proceed as follows:

→ Select Extended Switch in the main menu.



Pressing <F8> hides inactive CPU Devices to provide a clearer overview.

win@CON_03 tended Switch	F1:ID F2:Name F3:Next F4:Previo	ous F5:Refresh F6:Find F9:Compare
ON Devices	CON/CPU Data	
	CON device 03009 CON_010231876	CPU device 01007 CPU_010231843
03003 CON_01 03005 CON_010218843	CON assigned	CPU assigned
03008 CON 010230836 03009 CON 010231876 03006 CON 010233209 03006 CON 02 03001 CON 03	CPU connected 01007 CPU_010231843 Status ONLINE	CON connected 03009 CON_010231876 Status ONLINE
03002 CON_04 03007 CON_040062369 04001 VCON_04001	EXT list	EXT list 010231843 0029 EXT 010231843:1
<pre><code colors<="" pre=""></code></pre>	t the CON device for extended switch	ning
<backspace> Disco</backspace>		

Menu Extended Switch

- Select in the CON Devices list on the left hand side that one that should be switched to a CPU Device and open it by pressing <Enter>.
- 2. Select in the **CPU Devices** list on the left hand side that one that should be connected to the open CON Device.

3. Confirm the desired connection type with the respective keyboard command.

Switching operations from the user's CON Device can only be performed on CPU Devices that are available in the **CPU Devices** list.

Field	Description						
CON device	Assigned physical extender unit (CON 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 extender units (CON Units)						
CPU device	Assigned physical extender unit (CPU Unit)						
CPU assigned	Real CPU Device that is assigned to a virtual CPU Device						
CON connected	Currently connected CON Device						
CPU status	Current connection status (CPU Device)						
EXT list	List of all available physical extender units (CPU Units)						

The following information is shown in this menu:

You can select the following switching functions:

Function	Keyboard Command
Set a video only connection.	<space></space>
Set a KVM connection.	<enter></enter>
Set a KVM connection in private mode (video sharing disabled).	<shift> + <enter></enter></shift>
Disconnect own CON Device from CPU Device.	<backspace></backspace>

Java Tool

You have two options to perform switching operations for the Draco tera via Java Tool:

Possibility 1:

→ Select Control > Extended Switch in the task area.

n Save Rebad Co	nnect Disco		Activate Online Configuration Save (Daline Changes	Download Upload	Monitoring	Flash Update Device Finder.	System Check Save Status								
20170405090349_SWIT	CH_01.zip	0														
Status	¥	Control - Extended Switch														
Control	*		Console		CPU											
Extended Switch		ID	Name	Full A	ccess	V	ideo Access	Private Access								
Presets		0300	1 Matplats 5	0104	2 Axon kontroll 1 🛃											
		03003	2 CAR-PK Rack	0105	0 Kontroll dator <											
Administration	¥	03003	3 Matrum Valbar	0104	5 Caspar TX 7											
Assignment	*	03004	4 PBSClient Pult58	0105	3 PB Client 58 🗲											
		03005	5 PBSClient Pult5A	0105	2 PB Client 5A											
System	¥	03001	6 PBSClient Pult38	0106	0 PB Client 38											
Definition	8	03007	7 PBSClient Pult3A	0105	9 PB Client 3A											
		03000	8 PBSClient Pult2A	0105	8 PB Client 2A											
		03001	9 PBSClient Pult28	0105	7 PB Client 28											
		03010	0 PBSClient Pult1A	0105	5 PB Client 1A 🛃											
		0301	1 PBSClient Pult18	0105	6 PB Client 18											
		03012	2 Pult 3 Valbar	0104	2 Axon kontroll 1 🚭											
		03013	3 Pult 2 Valbar	0102	3 Swift Monitor 🛃											
		03014	4 Pult 1 Valbar	0102	3 Swift Monitor <											
		03015	5 PBSClient Pult4	0107	3 PB Client 4											
		0301	6 MV Beredskap V			0	1079 MV Beredskap V									
		3017	1 MV BeredskapOLD			0	1082 MV PK H									
		0301	8 MV beredskap C			0	1080 MV Beredskap H									
		03019	9 Ber Valbar	0105	0 Kontroll dator 🛃											
		-	uto Send ide Devices w/o Extender Assignn	nent				Send	Rel							

Menu Control – Extended Switch

All connected consoles and the associated CPU connections are shown in columns in the working area in this menu.



Switching operations can only be performed in online mode. That means an active network connection is required between the matrix and the Java Tool.

- ➔ In order to set a KVM connection between a console and a CPU, double-click on the corresponding selection box within the Full Access column and select the requested CPU.
- ➔ In order to set a video connection between a console and a CPU, double-click on the corresponding selection box within the Video Only column and select the requested CPU.

➔ In order to set a Private Mode connection between a console and a CPU, double-click on the corresponding selection box within the Private Mode column and select the requested CPU.



If a CPU console does not have access rights, it will not appear in the list.

The following symbols are shown in the connection overview:

Symbol	Description
<	CON Device is connected via Shared Access with at least one further console to the same CPU. The CON Device has Full Access at the moment.
Y	CON Device is connected via Shared Access with at least one further console to the same CPU. The CON Device has a Video Access connection at the moment.

You can use the following buttons 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



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 and CPU Devices that are assigned to extenders are shown.

Possibility 2:

→ Select Status > Matrix View in the task area or select Status > Grid Port View when using a Matrix Grid.

n. Save Reibad D	Sonnect Disconnect	Activate	Online (Configura	tion Sa	ve Online (hanges	Down	load	Upload .	Monitor	ring	Plash Update	Device Fin	der System Che	ili) sk Save Stat	us	
20170405090349_SWI	TCH_01.zip 😣																	
Status	_ St.	itus - M	latrix \	/iew														
Matrix View Grid Port View Matrix Extender																		
Control	*	1 02	03	04	05	06 07	08	09	10	11	12 1	3 1	4 15	16 17	18			
Administration	¥	0 0	0	0	0	0 0	0 0	0	0	0	0	0	0					
Assignment	*									Q	▫	2						
System	*								₽	U					Option			
system									٦	c)		3				Automatic Reload Show Port Numbers		
Definition	×							=		ø						Grid Ports Local Ports		
	0		CAT	CAT	evice N	ame: Tal.	Text TX7	CAT	CAT	_	CAT C	AT C	AT			w Multi-Screen	Control	
	6									Q						Information		
	6							-			6				Sho	w Redundant Li	inka (L1/L2)	
	1	iP		F						•	A P	1				w USB-HID		
					금남			Ħ		ň					IO Port	Color Coding	1	
	1.00									9		리니	-		E fui	Access	Video	Acce
		0 0	0	0	0	0 0	0 0	0	0	0	0	0	0		Gric	Line	invalid	Port
															×No.	Access	Fixed F	fort
																Symbols		
																creen Contro	k	
															Redun	dancy		

Menu Status – Matrix View

In order to perform switching operations between CON and CPU Devices proceed as follows:

- 1. Move the mouse cursor to the port that has to be switched.
- Hold down the left 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.
- Release the left mouse button. A popup to select the available switching type (Full Access, Video Access or Private Mode) will be opened.
- Select the desired switching type. The switching operation will be immediately executed. At the same time all extender 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.

In order to disconnect existing connection between CON and CPU Devices proceed as follows:

- 1. Click on the port that is to be disconnected by using the right mouse button.
- 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.

6.4 Switching via Macro List

Next to executing macros via function keys <F1>-<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.

You have the following option to to use the Macro List:



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OSD

CON_01020 Macro Lis	03247 st	ESC
Key M	Macro	_
Nonice Constant	CF(CON_010203247,CPU_010178092) CV(CON_010189131,CPU_040001301)	
• F02• • F03•		
• F04•		
• F05•		
• F06•		
• F07•		
• F08• • F09•		
• F10•		
• F11•		
• F12•		
• F13• • F14•		
• F15•		
• F16•		
Techsuppo		

→ Select Macro List in the main menu.

Menu – Macro List

- 1. Make sure that you have already configured CON or user macros.
- Select the respective macro in the list tha you want to execute. If you want to execute a macro 17-32 (<Shift>< F1>-<F16>), press the key <Page Down> and select the macro afterwards.
- 3. Execute the macro by pressing the key <Enter>.

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.

6.5 Switching of single Extenders within Devices

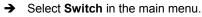
You can independently switch single extenders within configurations consisting of CON and CPU devices with multiple extenders.

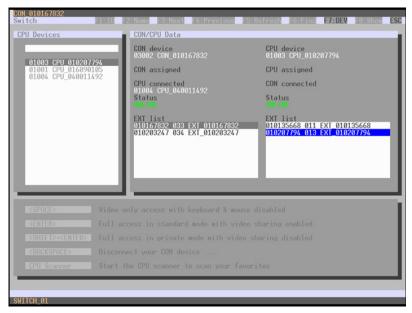
You have the following option to switch single extenders:



OSD

In order to switch a single extender a device with multiple extender, proceed as follows:





Menu – Switch

1. Select the respective CPU Device in the CPU selection list containg the extender you want to have access to.

- Press the function key <F7> on the keyboard. The standard will change into the switching mode for single extenders.
- 3. Select the extender you want to switch within your CON Device.
- Access the extender list of the selected CPU Device by pressng the key <**Tab**>.
- Select the CPU extender you want to switch to and press the key
 <Space> in order to execute the switching operation.



Switching of single extenders from a Device is only possible in video only mode. Single exenders of a Device that are already switched will be highlighted with "!".

6.6 CON Switch

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 'Hot Keys' or via OSD.

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.

You have the following option to switch to the local source:



OSD

CPU Devices		CON/CPU Data 03004 CON_0 CON assigned CPU connecte Status CMLINE EXT list 010182245 0	10182245 d		CPU devic 01005 CP CPU assig CON conne Status ONLINE EXI list	U_07 ned	F6:Find	
<space></space>	Video only a	access with	keyboard	& mouse	disabled			
<space> <enter></enter></space>					disabled sharing enabl	ed		
			mode wi				_	
<enter></enter>			mode wi mode wit					

→ Select Switch in the main menu.

Menu – CON Switch

In order to switch to a local source, proceed as follows:

- 1. If you are not in the **Switch** menu of the OSD, start Command Mode with the 'Hot Key' (see Chapter 5.1, Page 60).
- Press <o> to open OSD.
 You will see a list of all available CPUs as a start menu.
- 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.

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As an alternative, the following keyboard commands are available to switch to the local source:

Function	Keyboard Command
Switching to extender connection	<'Hot Key'>, <k>, <1>, <enter></enter></k>
Switching to extender connection 2 (only with redundant CON Units)	<'Hot Key'>, <k>, <2>, <enter></enter></k>
Switching to the local source (computer, CPU)	<'Hot Key'>, <l>, <enter></enter></l>

6.7 Multi-Screen Control

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 in two different ways:

Switching via Mouse

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 (see Chapter 5.13.7, Page 160).

In order 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.
- 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.

Switching via Keyboard

Switching of the USB-HID signal can also be achieved using the keyboard (configuration see Chapter 5.13.7, Page 160).

In order to perform a switching operation via keyboard command, proceed as follows:

1. Start Command Mode with the 'Hot Key' (see Chapter 5.1, Page 60).

 Select the target display by pressing the respective key on the numeric pad of the keyboard.
 The switching operation will be performed and the USB-HID signal

will be available at the target display.

You can select the following switching operations:

Keyboard Command	Function
<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

6.8 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.

- An extender unit with USB 2.0 will be created and assigned to an already existing device with existing KVM extender units (see Chapter 5.10, Page 131 or Chapter 5.13.1, Page 139).
- 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 5.10, Page 131 or Chapter 5.13.1, Page 139).

Switching of USB 2.0 signals uses Extended Switching functionality (see Chapter 6.3, Page 208).

When using parallel operation within the matrix, set the Release Time in the **Configuration > Switch** menu to 10 s or more (see Chapter 5.13.6, Page 157). Otherwise the connection of the USB 2.0 extender will not be established due to security and stability reasons.

6.9 Presets

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

You have the following option to access the menu:



→ Select Control > Presets in the task area.

n Şave Reload Çonne	ect Disconnect	Activate Online Configuration	Save Online Changes Downlo	ad Upicad Monitoring	Flash Update Device Find	er System Check Save Status
20170405090349_SWITCH	1_01.zip 😟					
Status	* Cont	rol - Presets				
Control	*	Console		CPU		Presets
Extended Switch	D	Name	Full Access	Video Access	Private Access	m M X
Presets		Matplats 5	01042 Axon kontr.			
	03002	CAR-PK Rack	01050 Kontroll da			Preset Studio
Administration	¥ 03003	Matrum Valbar	01046 Caspar TX 7			New Preset
Assignment	₩ 03004	PBSClient Pult58	01053 P8 Client 58			
	03005	PBSClient Pult5A	01052 PB Client 5A			1
System	\$ 03005	PBSClient Pult38	01050 PB Client 38			
Definition	¥ 03007	PBSClient Pult3A	01059 PB Client 3A			1
	03008	PBSClient Pult2A	01058 PB Client 2A			
	03009	PBSClient Pult2B	01057 PB Client 28			
	03010	PBSClient Pult1A	01055 PB Client 1A			
	03011	PBSClient Pult1B	01056 PB Client 1B			
	03012	Pult 3 Valbar	01042 Axon kontr <			
	03013	Pull 2 Valbar	01023 Swift Monitor <			
	03014	Pult 1 Valbar	01023 Swift Monitor <			
	03015	PBSClient Pull4	01073 PB Client 4			<no properties=""></no>
	03016	MV Beredskap V		01079 MV Beredskap V		Sho Propertese
	30171	MV BeredskapOLD		01082 MV PK H		
	03018	MV beredskap C		01080 MV Beredskap H		
	03019	Ber Valbar	01050 Kontroll da <			
	03020	PBSClient BerK1A	01078 PB Client 6A			*
		de Devices w/o Extender As de inactive Devices	signment			Se

Menu Control – Presets

To create a new switch macro proceed as follows:

1. Open a new switch macro by pressing on the **New** symbol in the right column of the working area.

You are asked if the existing connections should be taken over for the new switch macro.

 Set the desired switching operations in the corresponding columns (Full Access, Video Only or Private Mode) by using a double click on the appropriate selection box or use the function for a disconnect (Disconnect CPU). 3. Save the created switch macro by clicking the **Save** symbol in the right column of the working area.

A save dialog will be opened.

- 4. Enter a name or the new switch macro and confirm by pressing the **Ok** button in the save dialog.
- By clicking on a selected switch macro with the right mouse button, you can create a copy of the current switch macro when using the Save as... option.
- 6. Previously saved macros can be deleted by pressing the **Delete** symbol.

To load a predefined switching, proceed as follows:

- 1. Select the switch macro in the right column of the working area that has to be loaded.
- 2. Activate the selected switch macro by pressing the **Send** button on the bottom right of the working area.



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.

6.10 Switch & Preview

This function presents an optionally available upgrade for Draco tera KVM matrices and allows an IP based preview of various video signals. For this application, additional hardware in terms of an H264 IP encoder is required. The encoder includes 2 IP access points for the display of a live video and the video wall based on the configured layout.

You have the following option to access the menu:





The encoder is preconfigured when being shipped and has the IP address 192.168.100.97 per default.

Switching Operations

To use the function Switch & Peview proceed as follows:

- 1. Select the button Connect in the symbol bar and connect to the matrix that you would like to use.
- 2. Open a preconfigured monitor layout to be used via **Open Layout...** in the symbol bar. The layout file contains the file ending .dtl. If there is not layout available yet, it can be created via Layout Designer.
- To perform a switching operation, highlight the respective source (CPU Device) in the lower sector of the working area and move it to the intended CON Device in the monitor layout (drag & drop).
- To copy an existing connection to another monitor, highlight an already connected monitor (CON Device) and move it to the new monitor (drag & drop).
- 5. To disconnect an existing connection, highlight the respective CON Device and move it to the symbol **Disconnect**.



The connection will be immediately disconnected.

Menu – Default Layout



If a source (CPU Device) or a monitor (CON Device) is highlighted, the respective live video appears in the live view that can be found in the right lower corner.

New Monitor Layout

To create a new monitor layout proceed as follows:

- Press the button **Open Designer...** in the symbol bar. To open the desginer, an active connection to the matrix is obligatory. The designer will be opened.
- Press the button New in the symbol bar of the designer.
 A new design will be opened.
- Create new screens for your layout by pressing the button Add Screen... in the symbol bar.

A popup will be opened.

- 4. Select the **CON Device** in the popup that should be used for the intended screen. Define the following specifications if required:
 - Ratio: aspect ratio
 - **Title Position:** position of the monitor label
 - **Orientation:** monitor orientation
- 5. Repeat step 4. for each new monitor.
- To add switchable sources (computer/CPU) to the layout, press the button Add / Remove CPU....
- 7. Select the CPUs in the popup that should be used and insert those into the list **CPU assigned.**
- Press the button Settings in the symbol bar to make further necessary settings.
- Enter the appropriate URL of the encoder under Preview URL that should be used fpr the video preview. (default: rtsp://192.168.100.97/live1)
- Enter the appropriate URL of the encoder under Screen URL that should be used for the monitor layout. (Default: rtsp://192.168.100.97/live2)
- 11. Select the respective **Preview** und **Screen CON Devices** that are connected to the encoder and confirm your settings with **Ok**.

12. Press the button Layout Check... in the symbol bar to verify your new layout.

A summary for the new layout will appear.

13. Save your created layout by pressing the button **Save** and follow the instructions. If you externally store a layout, it will obtain the file ending .dtl.

Default Monitor Layout

To define a default layout, proceed as follows

- 1. Open an already created layout.
- 2. Press the button **Set As Default** in the symbol bar.

The open layout will be stored as default layout.

- 3. To delete a default layout, press the button **Delete Default** in the symbol bar.
- If there is open another layout other than the default layout, you can display the default layout by pressing the button Load Default in the symbol bar.

6.11 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 reestablished 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.

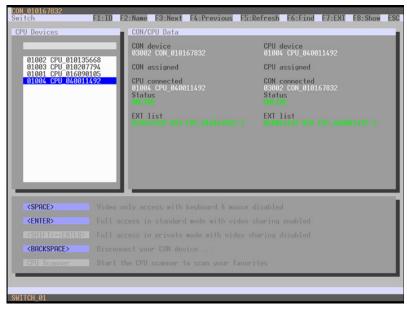
If needed, you can manually switch between Link 1 and Link 2 at the CON Unit (see Chapter 6.6, Page 216).

You have the following possibilities to check the status of redundancy:



OSD

→ Select Switch in the main menu.

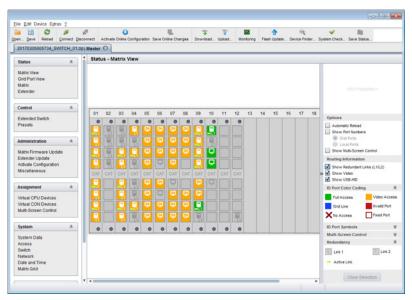


Menu – Switch

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**.



Java Tool



→ Select Status > Matrix View in the task area.

Menu Status – Matrix View

In order to check the connection status of the redundant KVM extenders, proceed as follows:

- Activate the checkbox Show Redundant Links (L1/L2) under Options on the right side of the working area.
- 2. Open the menu **Redundancy** on the right side of the working area, in order to receive the respective legend information.

Redundant connectors are highlighted in the **Matrix View** with **L1** and **L2**. The respectively active link is highlighted with a light green label.

6.12 Serial Interface



The Draco tera offers the option to switch via a serial interface (RS232).

Detailed information for the serial interface and the corresponding switching commands are available in form of an API (application programming interface) upon request.

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6.13 Power On and Power Down Functions

6.13.1 Restart

You have the following options to perform a restart:



OSD

- Select Configuration > Restart Matrix, Restart IO Board or Restart CPU Board in the main menu to restart either the matrix, the I/O boards or the CPU board.
- 2. Confirm the selection with Okay button.

The matrix, the I/O boards or the CPU board will be restarted with the current settings.

Java Tool

→ Select Matrix > Restart Matrix in the menu bar.

The matrix will be restarted with the current settings.



The boot process of the matrix might take longer, if there is no physical network connection available.

6.13.2 Factory Reset

You have the following option to perform a reset of the system:



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 DHCP) and the admin password.



If a firmware update has been installed since the delivery, the matrix will be set to the state defined there.

OSD

- 1. Select Configuration > Factory Reset in the main menu.
- 2. Confirm the selection with the Okay button.

The matrix will be reset to factory settings.

6.13.3 Power Down

You have the following option to perform a shut down of the system or single components:



OSD

In order to shut down the system, proceed as follows:

- 1. Select Configuration > Shut down Matrix in the main menu.
- 2. Confirm the selection with the **Okay** button.

The matrix will be shut down.



The fans will be switched to maximum speed after the shut down. Then the matrix can be disconnected from the power supply.

In order to shut down an I/O board, proceed as follows:

- 1. Select Configuration > Shut Down IO Board in the main menu.
- 2. Confirm the selection with the Okay button.

The I/O board will be shut down.

6.14 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

Keyboard Command	Description
<'Hot Key'>, <a>	Download of DDC information for the monitor connected to the CON Unit into the CPU Unit
<'Hot Key'>, <k>, <1>, <enter></enter></k>	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>	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>	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>	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>	Activate the emulation of already stored device descriptions in the CPU Unit
<'Hot Key', <h>, <d>, <enter></enter></d></h>	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>	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>	Switch to video channel 1 of the Dual-Head CPU Unit (482 series only)
<'Hot Key'>, <d>, <2>, <enter></enter></d>	Switch to video channel 2 of the Dual-Head CPU Unit (482 series only)

Matrix

Kayboard Command	Description
Keyboard Command	-
<'Hot Key'>, <o></o>	Open OSD
<'Hot Key'>, <m>, <o></o></m>	Open OSD of the master matrix in a cascaded environment
<'Hot Key'>, <s>, <o></o></s>	Open OSD of the sub matrix in a cascaded environment
<'Hot Key'>, <backspace></backspace>	Close the current connection of the own console
<'Hot Key'>,	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>	Switch to a source (computer, CPU) stored in the Favorite List with a KVM connection (video only or Private-Mode connection)
<'Hot Key'>, <f1> <f16></f16></f1>	Execute a predefined macro (macro 1-16)
<'Hot Key'>, <left shift=""> + <f17> <f32></f32></f17></left>	Execute a predefined macro (macro 17-32)
<'Hot Key'>, <c>, <new 'Hot Key'-Code>, <enter></enter></new </c>	Change the 'Hot Key' according to the predefined 'Hot Key' table
<'Hot Key'>, <c>, <0>, <new 'hot="" key="" key'="">, <enter></enter></new></c>	Define freely selectable 'Hot Key'
<'Hot Key'>, <f>, <new 'Hot Key'-Code>, <enter></enter></new </f>	Change the 'Hot Key' for direct OSD access according to the predefined 'Hot Key' table
<'Hot Key'>, <f>, <0>, <new 'hot="" key="" key'="">, <enter></enter></new></f>	Define freely selectable 'Hot Key' for direct OSD access
<'Hot Key'>, <num 0=""></num>	Switch the USB-HID signal to the user's display (CON Unit with keyboard and mouse)
<'Hot Key'>, <num 1=""></num>	Switching of the USB-HID signals to display #1
<'Hot Key'>, <num 2=""></num>	Switching of the USB-HID signals to display #2
<'Hot Key'>, <num 3=""></num>	Switching of the USB-HID signals to display #3
<'Hot Key'>, <num 4=""></num>	Switching of the USB-HID signals to display #4
-	

7 Specifications

7.1 Interfaces

7.1.1 DVI-D Single Link

The video interface supports the DVI-D protocol. All signals that comply with DVI-D Single Link norm can be transmitted. This includes monitor resolutions such as 1920x1200@60Hz, Full HD (1080p) or 2K HD (up to 2048x1152). Data rate is limited to 165 MPixel/s.

7.1.2 USB-HID

Our devices with USB-HID interface support a maximum of two devices with USB-HID protocol. Each USB-HID port provides a maximum current of 100 mA.

Keyboard

Compatible with most USB keyboards. Certain keyboards with additional functions may require custom firmware to operate. Keyboards with an integral USB Hub (Mac keyboards e.g.) are also supported.

Mouse

Compatible with most 2-button, 3-button and scroll mice.

Other USB-HID devices

The proprietary USB emulation also supports certain other USB-HID devices, such as specific touch screens, graphic tablets, barcode scanners or special keyboards. Support cannot be guaranteed, however, for every USB-HID device.



Only two USB-HID devices are supported concurrently, such as keyboard and mouse or keyboard and touch screen. A hub is allowed, but it does not increase the number of HID devices allowed. To support other USB 'non-HID' devices, such as scanners, web cams or

no support other USB 'non-HID' devices, such as scanners, web cams or memory devices, choose our devices with transparent USB support.

7.1.3 RJ45 (Network)

The communication of the Cat X 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.

7.1.4 RS-232 (Serial)

Communication takes place with a transmission speed of up to 115.2 KBaud, regardless of the file format. The transmission takes place with eight data bits and a stop bit, but without a parity bit. Limited hardware handshake (DSR) is possible.

7.1.5 RJ45 (Interconnect)

Communication between Cat X devices requires a 100BASE-T connection.

Connector wiring must comply with EIA/TIA-568-B (100BASE-T), with RJ45 connectors at both ends. All four cable wire pairs are used.

7.1.6 Fiber SFP Type LC (Interconnect)

Communication of fiber devices is performed via Gigabit SFPs that are connected to suitable fibers fitted with connectors type LC (see Chapter 7.2.2, Page 235).



The correct function of the device can only be guaranteed with SFPs provided by the manufacturer.



SFP modules can be damaged by electrostatic discharge (ESD).

➔ Please consider ESD handling specifications.

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7.1.7 SDI (Interconnect)

Communication of the SDI devices requires a mini coax connection with HD-BNC connectors or 3G SFPs with transmission speeds of 0.36 Gbit/s (SD-SDI, SMPTE 259M), 1.485 Gbit/s (HD-SDI, SMPTE 292M) and 2.97 Gbit/s (3G SDI).

7.2 Interconnect Cable

7.2.1 Cat X

A point-to-point connection is required. Operation with several patch fields is possible. Routing over an active network component, such as an Ethernet Hub, Router or Matrix, is not allowed.

➔ Avoid routing Cat X cables along power cables.



To maintain regulatory EMC compliance, correctly installed shielded Cat X cable must be used throughout the interconnection link.



To maintain regulatory EMC compliance, all Cat X cables need to carry ferrites on both cable ends close to the device.

Type of Interconnect Cable

The Draco tera requires interconnect cabling specified for Gigabit Ethernet (1000BASE-T). The use of solid-core (AWG24), shielded, Cat 5e (or better) is recommended.

Cat X Solid-Core 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

Cat X Installation Cable AWG24	140 m (400 ft)
Cat X Patch Cable AWG26/8	70 m (200 ft)

7.2.2 Fiber

A point-to-point connection is necessary. Operation with multiple patch panels is allowed. Routing over active network components, such as Ethernet Hubs, Matrixes or Routers, is not allowed.

Type of Interconnect Cable

(Cable notations according to VDE)

Type of cable	Specifications
Single-mode 9µm	 Two fibers 9µm 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 50µm	 Two fibers 50µm I-V(ZN)H 2G50 (in-house patch cable) I/AD(ZN)H 4G50 (in-house or outdoor breakout cable, resistant)
Multi-mode 62.5µm	 Two fibers 62.5µm I-V(ZN)HH 2G62,5 (in-house breakout cable) A/DQ(ZN)B2Y 4G62,5 (outdoor cable, with protection against rodents)

0

Only use Single-mode connection cables for fiber connections that are based on 3G SFPs.

Maximum Acceptable Cable Length

Type of cable	1.25 Gbps	3.125 Gbps
Single-mode 9µm	10,000 m (32,800 ft)	5,000 m (16,400 ft)
Multi-mode 50µm (OM3)	1,000 m (3,280 ft)	500 m (1,640 ft)
Multi-mode 50µm	400 m (1,300 ft)	200 m (650 ft)
Multi-mode 62.5µm	200 m (650 ft)	100 m (325 ft)



If you use single-mode SFPs with multi-mode fibers, you normally can increase the maximum acceptable cable length.

Type of Connector

Connector LC Connector

7.2.3 Coaxial



A point-to-point connection is necessary.

Type of Interconnect Cable

Cable Type	Specifications
Mini coaxial cable AWG 18	RG 6
	impedance 75 Ω

Maximum Acceptable Cable Length

Band Width	Maximum Acceptable Cable Length
0.270 Gbit/s	400 m (1,312 ft)
1.485 Gbit/s	140 m (459 ft)
2.970 Gbit/s	120 m (394 ft)

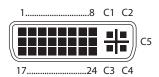
Type of Connector

Connector HD-BNC connector

Draco tera

- 7.3 Connector Pinouts
- 7.3.1 CPU Board

Connector DVI-D Single-Link



Pin	Signal	Pin	Signal	Pin	Signal
1	T.M.D.S data 2 -	9	T.M.D.S data 1 -	17	T.M.D.S data 0 -
2	T.M.D.S data 2 +	10	T.M.D.S data 1 +	18	T.M.D.S data 0 +
3	T.M.D.S data 2 GND	11	T.M.D.S data 1 GND	19	T.M.D.S data 0 GND
4	n.c.	12	n.c.	20	n.c.
5	n.c.	13	n.c.	21	n.c.
6	DDC Input (SCL)	14	+5VDC high impedance	22	T.M.D.S clock GND
7	DDC Output (SDA)	15	GND	23	T.M.D.S clock +
8	Internal use	16	Hot Plug recognition	24	T.M.D.S clock -
C1	Internal use			C3	Internal use
C2	n.c.	C5	GND	C4	Internal use

Connector USB Type A

Picture	Pin	Signal	Color
	1	VCC (+5VDC)	Red
	2	Data –	White
	3	Data +	Green
	4	GND	Black

D-Sub 9 (Serial) RS232, DCE

Picture	Pin	Signal	Pin	Signal
15	1	n.c.	6	DSR
	2	RxD	7	RTS
69	3	TxD	8	CTS
69	4	DTR	9	n.c.
	5	GND		

RJ45

Picture	Pin	Signal	Pin	Signal
	1	D1+	5	n.c
	2	D1–	6	D2–
	3	D2+	7	n.c
81	4	n.c	8	n.c

7.3.2 I/O Port Cat X

RJ45

Picture	Pin	Signal	Pin	Signal
	1	D1+	5	D3–
	2	D1–	6	D2–
	3	D2+	7	D4+
81	4	D3+	8	D4-

7.3.3 I/O Port SFP

Fiber SFP Typ LC

Picture	Diode	Signal
	1	Data OUT
	2	Data IN

7.3.4 I/O Port SDI

HD-BNC (SDI)

Picture	Pin	Signal
1 2	1	Data IN
	2	GND

7.4 Power Supply

Maximum Current / Voltage

Draco tera 576/576S	29 A, 90-264 V _{ac} , 50/60 Hz
Draco tera 288	12 A, 100-240 V _{ac} , 50/60 Hz
Draco tera 160	9 A, 100-240 V _{ac} , 50/60 Hz
Draco tera 80, 48	5 A, 100-240 V _{ac} , 50/60 Hz

Power Requirement

Draco tera 576	max. 635 W without I/O boards
Draco tera 576S	max. 300 W without I/O boards
Draco tera 288	max. 202 W without I/O boards
Draco tera 160	max. 188 W without I/O boards
Draco tera 80	max. 99 W without I/O boards
Draco tera 48	max. 94 W without I/O boards
I/O Board	max. 13 W

7.5 Environmental Conditions

Operating Temperature	41 to 113°F (5 to 45°C)
Storage Temperature	–13 to 140°F (–25 to 60°C)
Relative Humidity	Max. 80% non-condensing

Noise Emission

Sound Pressure Level (SPL)	K480-576/576S: max. 65 dBA per fan
	K480-288: max. 65 dBA per fan
	K480-160: max. 65 dBA per fan
	K480-080: max. 46 dBA per fan
	K480-048: max. 58 dBA per fan

Heat Dissipation

Thermal output	Corresponds to power consumption in Watt
	(W)

7.6 Size

Draco tera 576/576S

Matrix	483 x 1108 x 435 mm (19.0" x 43.6" x 17.1")
Shipping Box	800 x 1200 x 950 mm (31.5" x 47.4" x 37.4")

Draco tera 288

Matrix	483 x 578 x 330 mm (19.0" x 22.8" x 12.0")
Shipping Box	650 x 680 x 760 mm (25.6" x 26.8" x 29.9")

Draco tera 160

Matrix	483 x 400 x 330 mm (19.0" x 15.8" x 12.0")
Shipping Box	650 x 680 x 540 mm (25.6" x 26.8" x 21.3")

Draco tera 80

Matrix	483 x 178 x 230 mm (19.0" x 7.0" x 9.1")
Shipping Box	640 x 570 x 360 mm (25.2" x 22.4" x 14.2")

Draco tera 48

Matrix	483 x 133 x 230 mm (19.0" x 5.3" x 9.1")
Shipping Box	640 x 570 x 316 mm (25.2" x 22.4" x 12.4")

7.7 Shipping Weight

Draco tera 576/576S

Matrix	81.1 kg (178.2 lb)
Shipping Box	88.1 kg (194.2 lb)

Draco tera 288

Matrix	34.6 kg (76.2 lb) fully equipped
Shipping Box	41.1 kg (90.6 lb)

Draco tera 160

Matrix	26.3 kg (60.0 lb) fully equipped
Shipping Box	31.7 kg (69.9 lb)

Draco tera 80

Matrix	11.1 kg (24.5 lb) fully equipped
Shipping Box	15.6 kg (34.4 lb)

Draco tera 48

Matrix	8.9 kg (19.6 lb) fully equipped
Shipping Box	12.1 kg (26.7 lb)

7.8 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 (E_a) 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%.

Draco tera 576 chassis	50,000 POH
Draco tera 576S chassis	72,000 POH
Draco tera 288 chassis	260,000 POH
Draco tera 160 chassis	310,000 POH
Draco tera 80 chassis	320,000 POH
Draco tera 48 chassis	350,000 POH
CPU board	480,000 POH
I/O board SFP	500,000 POH
I/O board Cat X	410,000 POH
Draco tera 576/576S PSU	500,000 POH
Draco tera 288/160 PSU	200,000 POH
Draco tera 80/48 PSU	130,000 POH

8 Maintenance

The Draco tera contains various components and assemblies that can be maintained. All relevant components and assemblies are hot swappable and can be removed and exchanged during operation.

The following exchangeable components can be found within the Draco tera:

8.1 Power Supply Units

In order to exchange the power supply units, proceed as follows:

- 1. Make sure that the power cord cable is removed from the power supply that has to be exchanged.
- 2. Unlock the locking screw(s).
- 3. With the power supply units of Draco tera 288 and 160, turn the unlocked bracket down.
- 4. Pull the power supply unit out of the corresponding slot.
- 5. Push a new or maintained power supply unit into the slot and lock it accordingly.
- 6. Connect the power cord cable to the power supply unit. It will be recognized by the system and can be used afterwards.

8.2 Fan trays

In order to exchange the fan trays, proceed as follows:

- 1. Unlock the locking screw(s).
- 2. Pull the fan tray out of the corresponding slot by using the provided mount.
- 3. Push a new or maintained fan tray into the slot.
- 4. Lock the fan tray accordingly. It will be recognized by the system and can be used afterwards.

8.3 CPU Board

In order to exchange the CPU board, proceed as follows:

- Pull the locking pin slowly out of the CPU board up to the stop. Wait until the CPU board is deregistered from the matrix. The deregistration will be confirmed by a permanent green light of the status LED #1 on the CPU board (see Chapter 3.7.1, Page 22).
- 2. Remove all cables from the CPU board.
- Pull the CPU board out of the corresponding slot by using the locking pin.
- 4. Push a new or maintained CPU board into the slot and lock it accordingly.

A successful registration of the CPU board will be shown by a permanent green flashing of status LED #1.

5. Connect all cables to the CPU board according to the exchanged board.



When exchanging a CPU board the new one will automatically receive the current matrix configuration. During CPU board exchange the Draco tera should not be switched off.

8.4 I/O-Board

In order to exchange a I/O board, proceed as follows:

1. Pull the locking pin slowly out of the I/O board up to the stop.

Wait until the I/O board is deregistered from the matrix. The deregistration will be confirmed by a permanent green light of the status LED #1 on the CPU board (see Chapter 3.7.1, Page 22).

- 2. Remove all cables from the I/O board.
- Pull the I/O board out of the corresponding slot by using the locking pin.
- 4. Push a new or maintained CPU board into the slot and lock it accordingly.

A successful registration of the CPU board will be shown by a permantent green flashing of status LED #1.

 Connect all cables to the I/O board according to the exchanged board.

Draco tera



For a 24/7 operation it is recommended that a stock of critical spare parts is maintained, including a chassis.

8.5 Filter Pads

Filter pads should be checked regularly for accumulated dust and cleaned with low pressure compressed air or suction.

The inspection cycle depends on the ambient air and cannot be determined generally, but a period of 6 months should not be exceeded.

Filter pads or filter trays should be replaced at regular intervals not exceeding one year.

In order to replace a filter pad, proceed as follows:

- 1. Pull the filter pad together with the mounting frame out of the proper slot by using the handle.
- 2. Press the used filter pad out of the proper mounting frame.
- 3. Insert a new filter pad into the mounting frame.
- 4. Replace the mounting frame in the slot.

9 Troubleshooting

In the following chapters, support for problems with the Draco tera matrix is provided. It is assumed that fully operational CPU and CON Devices are available, which can be tested over a peer-to-peer connection using Cat X or fibre cables. Please refer to the relevant manuals for assistance with this if necessary.

9.1 External Failure

Diagnosis	Possible Reason	Measure
Matrix cannot be started anymore.	Fuse at the standard appliance outlet.	➔ Check fuse.

9.2 Video Interference

Diagnosis	Possible Reason	Me	asure
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.

9.3 Malfunction of Fans

Diagnosis	Possible Reason	Me	asure
Fans only run under full load	Communication to fan tray is not working	→ → →	Remove and reinstall fan tray. Swap both fan trays to the other slot. Restart the matrix.
Fans do not run, LED OK on	Fans defective	→	Contact your dealer.
Fans do not run, LED OK off	Power supply	→	Check power supply and power connection.

9.4 Malfunction of Power Supply Units

Diagnosis	Possible Reason	Mea	asure
Matrix cannot be started	Power supply units not locked correctly	→	Check lock and plug-in of the power supply units.
	No power supply available	^	Check if power supply cables are connected correctly.
	Power supply units are not switched on	ት	Check switch on the power supply units.

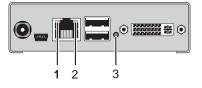
9.5 Network Error

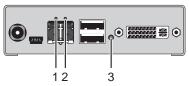
Diagnosis	Possible Reason	Measure
Network settings are not assumed after editing.	Restart of the matrix not yet completed.	→ Restart the matrix.

9.6 Failure at the Matrix

Diagnosis	Possible Reason	Measure
Serial control impossible or only restrictedly possible.	CPU and matrix operating at different Baud rates.	→ Change Baud rate in the matrix and CPU (see Chapter 5.3.2, Page 79).
Serial control via RJ45 port not possible.	Wrong network cable.	➔ Use a crossed network cable.
Port definitions as USB 2.0 invalid.	Restart of the matrix not yet completed.	➔ Restart the matrix.

9.7 Blank Screen







Rear View

Front View

Diagnosis	Possible Reason	Measure
Monitors remains dark after switching	Switching to a CPU Port without active Source (computer, CPU).	→ Switching to a CPU Port with an active source (computer, CPU).
operation	Connection of a console with a CON port or connection of a CPU to a CPU port not established correctly.	 Check CON and CPU port connections on the matrix.
LED 1 on or LED 2 off	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)
LED 3 off	Power supply	 Check power supply units and the connection to the power network.

10 Technical Support

Prior to contacting support please ensure you have read this manual, and then installed and set-up your Draco tera as recommended.

10.1 Support Checklist

To efficiently handle your request it is necessary that you complete a support request checklist (<u>Download</u>). 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 device)
- Date and number of sales receipt, 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

10.2 Shipping Checklist

- 1. To return your device, contact your dealer to obtain a RMA number (Return-Material-Authorization).
- 2. Package your devices carefully, preferably using the original box. Add all pieces which you received originally.
- 3. Note your RMA number visibly on your shipment.



Devices that are sent in without a RMA number cannot be accepted. The shipment will be sent back without being opened, postage unpaid.

11 Certificates

11.1 CE Declaration Of Conformity

The products listed below in the form as delivered comply with the provisions of the following European Directives:

- 2014/30/EU Council Directive on the approximation of the laws of the Member States relating to electromagnetic compatibility
- 2014/35/EU Council Directive on the harmonization of the laws of the Member States relating to the making available on the market of electrical equipment designed for use within certain voltage limits

CE

CE Marking

Product list:

480 Series

The products comply with the following harmonized standards for Information Technology Equipment:

- EN 55032:2012
- EN 55024:2010 + A1:2015
- EN 61000-3-2:2014
- EN 61000-3-3:2013
- EN 61000-6-2:2005
- EN 60950-1:2006/A2:2013

Manufacturer:

IHSE GmbH Maybachstrasse 11 88094 Oberteuringen Deutschland Oberteuringen, March 1st, 2017 The Management

mo Lithua



Use in a Domestic Environment

This is a Class A product. In a domestic environment, this product may cause radio interference in which case the user may be required to take adequate measures.

This declaration certifies the conformity to the specified directives but contains no assurance of properties. The safety instructions and installation guidelines noted in this manual shall be considered in detail. Compliance with the specifications for cable lengths and types is mandatory.

11.2 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.

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.

11.3 Product Safety

The product safety of the devices is proven by the compliance to the following standards:

- IEC 60950-1A1:2010
- EN 60950-1/A12:2011/A1:2010/A11:2009
- UL 60950-1-2007
- CAN/CSA-C22.2 60950-1-07

The compliance is verified and confirmed by TÜV Süd, Germany.



11.4 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.

11.5 RoHS/RoHS 2

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 (RoHS 2, RoHS II).

The device labels carry a respective marking.

12 Glossary

The following terms are commonly used in this guide or in video and KVM technology:

Term	Explanation
AES/EBU	Digital audio standard that is officially known as AES3 and that is used for carrying digital audio signals between devices.
Cat X	Any Cat 5e (Cat 6, Cat 7) cable
CGA	Color Graphics Adapter (CGA) is an old analog graphic standard with up to 16 displayable colors and a maximum resolution of 640x400 pixels.
Component Video	Component Video (YPbPr) is a high-quality video standard that consists of three independently and separately transmittable video signals, the luminance signal and two color difference signals.
Composite Video	Composite Video is also called CVBS and it is part of the PAL TV standard.
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, mouse and monitor
CPU Unit	Component of a KVM Extender or Media Extender to connect to a source (computer, CPU)
CVBS	The analog color video baseband signal (CVBS) is also called Composite Video and it is part of the PAL TV standard.
DDC	Display Data Channel (DDC) is a serial communication interface between monitor and source (computer, CPU). It allows a data exchange via monitor cable and an automatic installation and configuration of a monitor driver by the operating system.
DisplayPort	A VESA standardised interface for an all-digital transmission of audio and video data. It is differentiated between the DisplayPort standards 1.1 and 1.2. The signals have LVDS level.
Dual Access	A system to operate a source (computer, CPU) from two consoles

Term	Explanation	
Dual Link	A DVI-D interface for resolutions up to 2560x2048 by signal transmission of up to 330 MPixel/s (24-bit)	
Dual-Head	A system with two video connections	
DVI	Digital video standard, introduced by the Digital Display Working Group (<u>http://www.ddwg.org</u>). Single Link and Dual Link standard are distinguished. The signals have TMDS level.	
DVI-I	A combined signal (digital and analog) that allows running a VGA monitor at a DVI-I port – in contrast to DVI-D (see DVI).	
EGA	The Enhanced Graphics Adapter (EGA) is an old analog graphic standard, introduced by IBM in 1984. A D-Sub 9 connector is used for connection.	
Fiber	Single-mode or multi-mode fiber cables	
HDMI	An interface for an all-digital transmission of audio and video data. It is differentiated between the HDMI standards 1.0 to 1.4a. The signals have TMDS level.	
KVM	Keyboard, video and mouse	
Mini-XLR	Industrial standard for electrical plug connections (3 pole) for the transmission of digital audio and control signals	
Multi-mode	62.5µ multi-mode fiber cable or 50µ multi-mode fiber cable	
OSD	The On-Screen-Display is used to display information or to operate a device.	
Quad-Head	A system with four video connections	
RCA (Cinch)	A non-standard plug connection for transmission of electrical audio and video signals, especially with coaxial cables	
S/PDIF	A digital audio interconnect that is used in consumer audio equipment over relatively short distances.	
SFP	SFPs (Small Form Factor Pluggable) are pluggable interface modules for Gigabit connections. SFP modules are available for Cat X and fiber interconnect cables.	

Term	Explanation
Single Link	A DVI-D interface for resolutions up to 1920x1200 by signal transmission of up to 165 MPixel/s (24-bit).
	Alternative frequencies are Full HD (1080p), 2K HD (2048x1080) and 2048x1152.
Single-Head	A system with one video connection
Single-mode	9µ single-mode fiber cable
S-Video (Y/C)	S-Video (Y/C) is a video format transmitting luminance and chrominance signals separately. Thereby it has a higher quality standard than CVBS.
TOSLINK	Standardized fiber connection system for digital transmission of audio signals (F05 plug connection)
Triple-Head	A system with three video connections
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 HID devices include keyboards, mice, graphics tablets and touch screens. Storage, video and audio devices are not HID.
VGA	Video Graphics Array (VGA) is a computer graphics standard with a typical resolution of 640x480 pixels and up to 262,144 colors. It can be seen as a follower of the graphics standards MDA, CGA and EGA.

12.1 Matrix specific Glossary

Term	Explanation
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.
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.
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 time of inactivity from the respective CPU.
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.
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.
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.
Java Tool	Java based control and configuration tool for the Draco tera matrix.

Term	Explanation
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.
Mouse Connect	Matrix function that allows taking the mouse control of an inactive console.
Non-Blocking- Access	Matrix configuration where no user can be disturbed by an activity of another user.
OSD Timeout	Matrix function that closes the OSD automatically after a predefined period of time of inactivity.
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.
Tie Line	Communication connection to and between extension modules in a network environment.
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.