Draco

K476-4U, K476-8U, K476-4U2

U-Switch

User Manual

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1 About This Manual

1.1 Scope

This manual describes how to install your U-Switch, 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

The following symbols are used in this manual:

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.

2 Safety Instructions

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

Installation

- ➔ Only use in dry, indoor environments.
- ➔ The U-Switch and the power supply units can get warm. Do not install components in an enclosed space without any airflow.
- ➔ Do not place the power supply directly on top of the device.
- ➔ 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.
- ➔ Do not connect the link interface to any other equipment, particularly network or telecommunications equipment.
- ➔ 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 U-Switch. There are no user serviceable parts inside.
- ➔ Please contact your dealer or manufacturer if there is a fault.

3 Description

3.1 Application

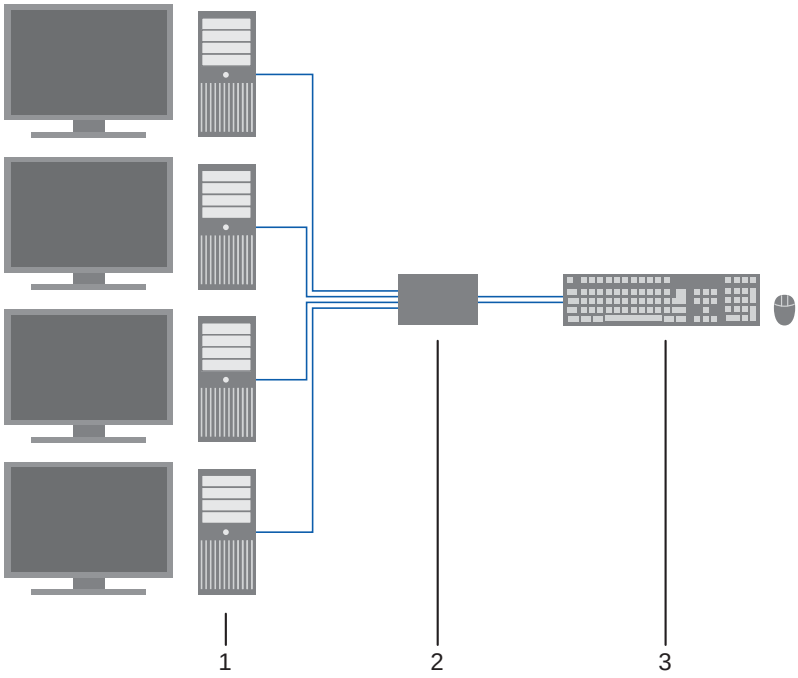
The U-Switch is used to communicate between several sources (computer, CPU, KVM Extender CON Units) and several monitors with one keyboard and mouse set only.

The U-Switch is especially suitable for use with KVM switches and KVM extenders in the Draco family.

3.2 System Overview

The U-Switch is connected to sources (computer, CPU, KVM extender CON Units) using the cables supplied.

Keyboard and mouse are connected to the device.



1 Sources (computer, CPU, KVM Extender CON Units)

2 U-Switch

3 Keyboard, mouse

See Chapter 4.3, Page 15 for installation examples.

3.3 Product Range

Model	Description
K476-4U	U-Switch 4 Port
K476-8U	U-Switch 8 Port
K476-4U2	U-Switch for parallel switching of 2x4 ports

3.4 Upgrade Kits

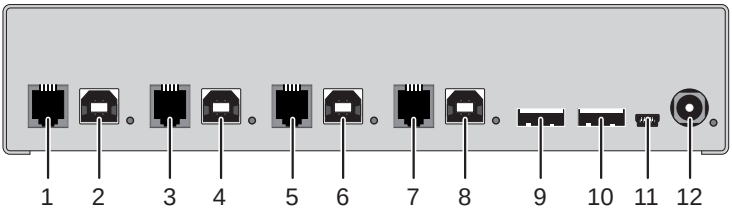
Model	Description
455-8G	19"/1U rack mount kit to mount up to 2 devices
455-1K	Mounting plate to mount by screws
455-2K	Mounting plate to mount by snap on

3.5 Accessories

Model	Description
260-5U	International power supply unit 100...240VAC / 5VDC / 4 A

3.6 Device Views

3.6.1 Model K476-4U



Rear View

1 Connect to RJ10 / 4P4C (Port 1)

2 To CPU 1: USB-HID

3 Connect to RJ10 / 4P4C (Port 2)

4 To CPU 2: USB-HID

5 Connect to RJ10 / 4P4C (Port 3)

6 To CPU 3: USB-HID

7 Connect to RJ10 / 4P4C (Port 4)

8 To CPU 4: USB-HID

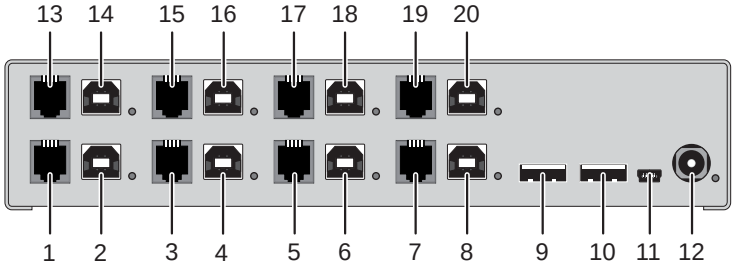
9 Connect to USB-HID devices 1

10 Connect to USB-HID devices 2

11 Service port

12 Connect to 5VDC power supply

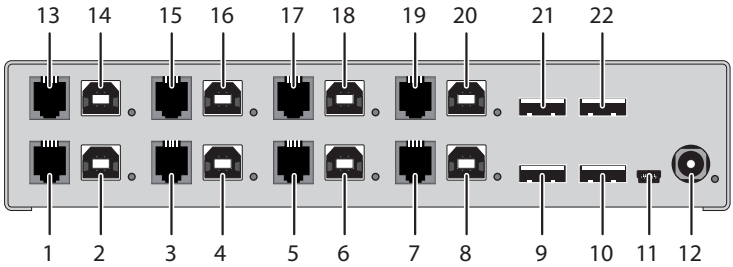
3.6.2 Model K476-8U



Rear View

1 Connect to RJ10 / 4P4C (Port 1)
2 To CPU 1: USB-HID
3 Connect to RJ10 / 4P4C (Port 2)
4 To CPU 2: USB-HID
5 Connect to RJ10 / 4P4C (Port 3)
6 To CPU 3: USB-HID
7 Connect to RJ10 / 4P4C (Port 4)
8 To CPU 4: USB-HID
9 Connect to USB-HID devices 1
10 Connect to USB-HID devices 2
11 Service port
12 Connect to 5VDC power supply
13 Connect to RJ10 / 4P4C (Port 5)
14 To CPU 5: USB-HID
15 Connect to RJ10 / 4P4C (Port 6)
16 To CPU 6: USB-HID
17 Connect to RJ10 / 4P4C (Port 7)
18 To CPU 7: USB-HID
19 Connect to RJ10 / 4P4C (Port 8)
20 To CPU 8: USB-HID

3.6.3 Model K476-4U2



Rear View

1 Connect to RJ10 / 4P4C (Port 1)
2 To CPU 1.1: USB-HID
3 Connect to RJ10 / 4P4C (Port 2)
4 To CPU 2.1: USB-HID
5 Connect to RJ10 / 4P4C (Port 3)
6 To CPU 3.1: USB-HID
7 Connect to RJ10 / 4P4C (Port 4)
8 To CPU 4.1: USB-HID
9 Connect to USB-HID devices 1
10 Connect to USB-HID devices 2
11 Service port
12 Connect to 5VDC power supply
13 Connect to RJ10 / 4P4C (Port 5)
14 To CPU 1.2: USB-HID
15 Connect to RJ10 / 4P4C (Port 6)
16 To CPU 2.2: USB-HID
17 Connect to RJ10 / 4P4C (Port 7)
18 To CPU 3.2: USB-HID
19 Connect to RJ10 / 4P4C (Port 8)
20 To CPU 4.2: USB-HID
21 Connect to USB-HID devices 3
22 Connect to USB-HID devices 4

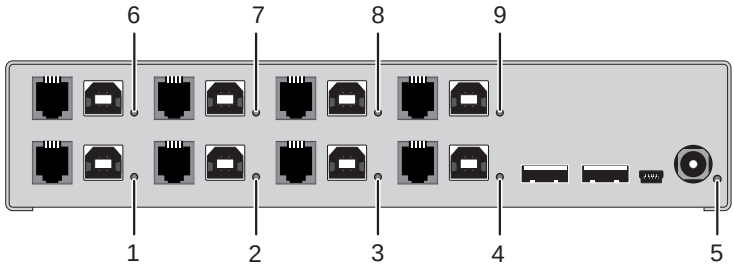
USB-B connectors 1.2–4.2 must be connected to additional USB-HID modules on the extender in order to allow parallel switching with USB-B connectors 1.1–4.1.

3.7 Status LEDs

The U-Switch is fitted with a multi color LED on both sides for indication of connection status:

Front View

Pos.	LED	Status	Description
1	**Status** (green)	Off	Device not ready
		On	Device ready
2	**Power** (red)	Off	Power supply not available
		On	Power supply available



Rear View

Pos.	LED	Status	Description
1	**USB Status** CPU 1 (green)	Off	No connection to CPU 1
		On	Connection to CPU 1
2	**USB Status** CPU 2 (green)	Off	No connection to CPU 2
		On	Connection to CPU 2
3	**USB Status** CPU 3 (green)	Off	No connection to CPU 3
		On	Connection to CPU 3
4	**USB Status** CPU 4 (green)	Off	No connection to CPU 4
		On	Connection CPU 4
5	**Power** (red)	Off	Device not ready
		On	Device ready
6	**USB Status** CPU 5 (green)	Off	No connection to CPU 5
		On	Connection to CPU 5
7	**USB Status** CPU 6 (green)	Off	No connection to CPU 6
		On	Connection to CPU 6
8	**USB Status** CPU 7 (green)	Off	No connection to CPU 7
		On	Connection to CPU 7
9	**USB Status** CPU 8 (green)	Off	No connection to CPU 8
		On	Connection to CPU 8

4 Installation

4.1 Package Contents

Your extender package contains the following items:

- U-Switch
- 5VDC international power supply unit
- German power cord
- Quick Setup
- 4x USB cable (1.8 m, type A to type B)

Additional content for K476-8U / K476-4U2:

- 4x USB cable (1.8 m, type A to type B)

If anything is missing, contact your dealer.

4.2 System Setup

First time users are recommended to setup the system with the CPU Unit and the CON Unit 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.

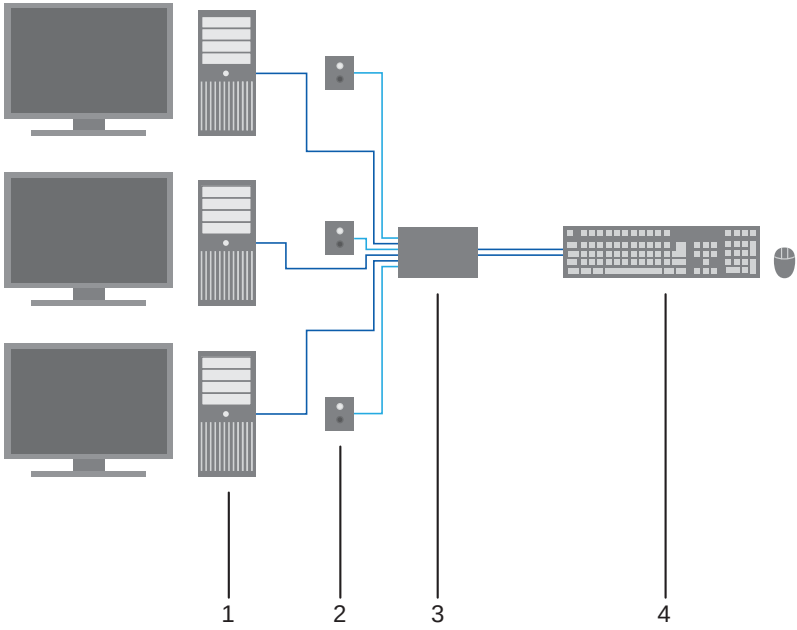
1. Switch off all devices.
2. Connect the USB cables to the CPUs (CON Units) and to the U-Switch.
3. Connect mouse and keyboard to the U-Switch.
4. Connect the 5VDC power supply with the U-Switch.
5. Power up the system.

   When powering the U-Switch, a boot process will be enabled. The duration depends from the size of the U-Switch (4 port version: ca. 30 s, 8 port version: ca. 50 s).

   Only after completion of the boot process, the U-Switch can be used and keyboard and mouse will be enabled.

4.3 Example Applications

This section illustrates typical installations of the U-Switch:



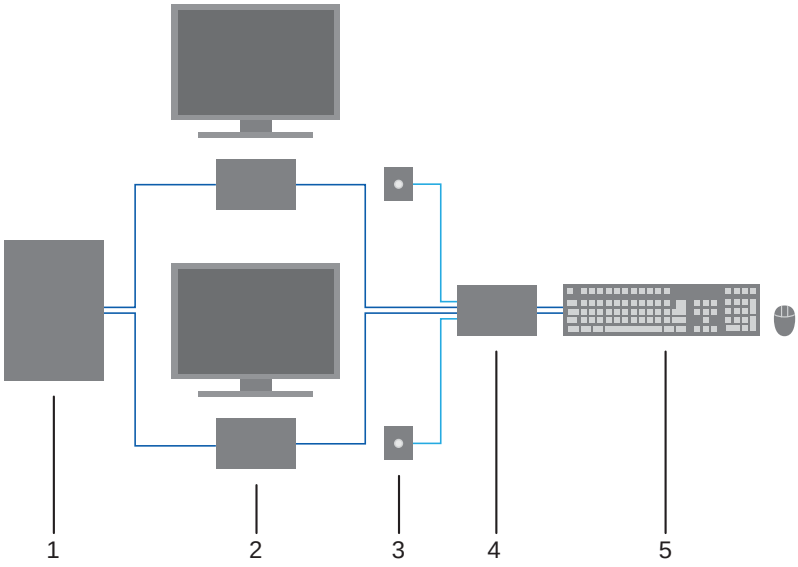
U-Switch (Direct CPU connection)

1 Source (computer, CPU)

2 Switch button (see Chapter 5.3, Page 18)

3 U-Switch

4 Keyboard, mouse



U-Switch (In combination with Draco KVM switch)

1 Draco KVM Switch

2 CON Units

3 Monitor LEDs (see Chapter 5.2, Page 18)

4 U-Switch

5 Keyboard, mouse

5 Configuration

5.1 Command Mode

The U-Switch has a Command Mode that allows several functions via keyboard command 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 no keyboard command is executed within 10 s after activating Command Mode, it will be automatically deactivated.

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 <Right Shift> (or 'Hot Key')
Exit Command Mode	<Esc>
Change 'Hot Key' sequence	<current 'Hot Key'>, <c>, <new 'Hot Key' code>, <Enter> Until 2011-30-09: <Left Ctrl> + <Left Shift> + <c>, <'Hot Key' Code>, <Enter>

<Key> + <Key>	Press keys simultaneously
<Key>, <Key>	Press keys successively
2x <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 (2012-01-12)
2	2x <Scroll>
3	2x <Left Shift>
4	2x <Left Ctrl>
5	2x <Left Alt>
6	2x <Right Shift>
7	2x <Right Ctrl>
8	2x <Right Alt>

In a KVM switch configuration, choose different 'Hot Keys' for the KVM Extender and the Draco 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>

Reset 'Hot Key'

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

5.2 External Display (optional)

The U-Switch has a RJ10 interface at each USB-HID port for CPUs (see Chapter 7.1.2, Page 23). It provides the current status of the port, e.g. for control of a status LED.

5.3 External Control (optional)

The U-Switch has a RJ10 interface at each USB-HID port for CPUs (see Chapter 7.1.2, Page 23). The current switching status can be changed by means of a contact-closure switch.

5.4 Firmware Update

The U-Switch can be updated via service port. In order to perform an update, proceed as follows:

1. Remove all USB cables from the CPU ports of the U-Switch.
2. Connect from a computer to the U-Switch via mini USB cable.

   As a result, the U-Switch will open a flash drive.
3. Copy the provided firmware files to the U-Switch. You do not have to adhere to a special sequence.
4. Restart the U-Switch.
5. Before putting the U-Switch into operation again, you have to reconnect to USB cables to the U-Switch with the power switched off.

6 Operation

6.1 Switching a Source

6.1.1 Switching via Keyboard

From your console, you can switch between different monitors using a keyboard sequence as follows:

1. Open Command Mode with the 'Hot Key' (see Chapter 5.1, Page 17).
2. Enter the number of the specific source or monitor and confirm with the <Enter> key.

   Command Mode will close and the keyboard LEDs will return to their previous status.

   Keyboard and mouse are connected to the specified source or monitor.

When using the numeric keypad for switching, a confirmation of the switching operation by using the <Enter> key is not necessary.

6.1.2 Switching via Mouse (Panning)

When panning the mouse cursor beyond the border of the monitor, you can switch from your console to monitors located horizontally or vertically.

Monitors that are only arranged horizontally or vertically (e. g. 4x1, 8x1, 1x4, 1x8) have to be operated with the one-dimensional Multi-Screen mode. Monitors that are arranged vertically and horizontally (e. g. 2x2, 4x2) have to be operated with the two-dimensional Multi-Screen mode.

When using sources (computers, CPUs) in multi-head operation (e.g. dual-head), the switching is only working manually via keyboard commands. Any non-observance may have a negative influence on the stability of the system.
The function cannot be guaranteed when using wireless keyboards and mice.

1. Activate the switching via mouse by executing the following keyboard sequences:
   - One-dimensional mode (horizontal): 'Hot Key', <x>, <1>, <Enter>
   - One-dimensional mode (vertical): 'Hot Key', <x>, <3>, <Enter>
   - Two-dimensional mode: 'Hot Key', <x>, <2>, <Enter>

2. Move the mouse pointer beyond the border of the monitor to the adjacent horizontal or vertical monitor.

   Switching to the new monitor will occur instantly.

3. Deactivate the switching via mouse by executing the following keyboard sequence:
   'Hot Key', <x>, <0>, <Enter>

4. Unused or non-connected ports should be deactivated, if switching via mouse is in use. In order to deactivate a port, switch to it at first (manual switching). Afterwards deactivate the port by using the following keyboard sequence:

   – 'Hot Key', <x>, <d>, <Enter>

5. Re-activate the port by using the following keyboard sequence:

   – 'Hot Key', <x>, <e>, <Enter>

6. Re-activate all ports at the same time by using the following keyboard sequence:

   – 'Hot Key', <x>, <c>, <Enter>

Port 1 cannot be deactivated. When switching to a deactivated port, the respective port flashes periodically.

Additional software for calibration and positioning of the mouse pointer is not necessary.

6.1.3 External Switching (optional)

Optionally, you can connect a button with a RJ10 interface to switch to the respective source or monitor.

The RJ10 interface is separately available for each USB-HID port with CPU connection.

7 Specifications

7.1 Interfaces

7.1.1 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 memory devices, choose our devices with transparent USB support.

7.1.2 RJ10 / 4P4C

This interface is used to establish a customer-specific communication with the U-Switch.

External Status LED

To control an external LED to indicate the status of a port:

Connect the anode of the LED to pin 1 and the cathode to pin 2. Use a suitable series resistor that you connect in series. The interface supplies 3.3 V output voltage with 15 mA max.

External Button

To control a port by an external button, use an NC (normally closed) contact as a switch. This contact has to short-circuit pin 3 and pin 4 to operate.

7.2 Supported Peripherals

7.2.1 USB-HID Devices

The U-Switch will support most USB-HID devices, including the vast majority of keyboards and mice currently on the market. Many other kinds of HID devices such as bar-code scanners and touch screens may also be compatible

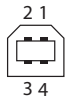
It is not possible to guarantee support for all available USB-HID devices. In certain cases, custom firmware may be required.

USB-HID (and other) devices that are not supported as standard will normally operate with our devices featuring transparent USB support.

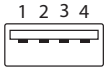
Please note that concurrent operation of more than two USB-HID devices is not possible even if you use a USB hub.

7.3 Connector Pinouts

Connector USB Type B

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

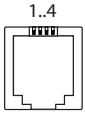
Connector USB Type A

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

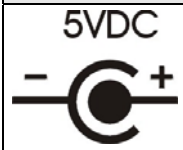
Connector Mini USB Type B

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

RJ10 / 4P4C

Picture	Pin	Signal
	1	LED +
	2	LED –
	3	Dry Contact
	4	GND

Power Supply

Picture	Pin	Signal
	Inside	VCC (+5VDC)
	Outside	GND

7.4 Power Supply

Voltage	5 VDC
Power Requirement	• K476-4U: max. 500 mA • K476-8U: max. 700 mA • K476-4U2: max. 700 mA

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

7.6 Size

U-Switch	209 x 143 x 42 mm (8.2" x 5.6" x 1.7")
Shipping Box	280 x 180 x 130 mm (11.0" x 7.1" x 5.1")

7.7 Shipping Weight

U-Switch	0.6 kg (1.3 lb)
Shipping Box	1.1 kg (2.4 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%.

4-Port U-Switch	487,000 POH
8-Port U-Switch	361,000 POH
2x 4-Port U-Switch	357,000 POH

8 Troubleshooting

8.1 USB-HID

Diagnosis	Possible Reason	Measure
Keyboard LEDs **Shift** and **Scroll** are flashing	Keyboard in Command Mode	➔ Press <Esc> to leave Command Mode.
USB device without function	No USB-HID device	➔ Connect USB-HID device.
	USB-HID device is not supported	➔ Check compatibility. ➔ Contact dealer if necessary.

9 Technical Support

Prior to contacting support please ensure you have read this manual, and then installed and set-up your U-Switch as recommended.

9.1 Support Checklist

To efficiently handle your request it is necessary that you complete a support request checklist (Download). Please ensure that you have the following information available before you call:

- Company, name, phone number and email
- Type and serial number of the device (see bottom of 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

9.2 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.

10 Certificates

10.1 CE Declaration Of Conformity

The products listed below in the form as delivered comply with the provisions of the following European Directives:

2004/108/EG Council Directive on the approximation of the laws of the Member States relating to electromagnetic compatibility

CE Marking

Product list:

K476-4U, K476-8U, K476-4U2

The products comply with the following harmonized standards for Information Technology Equipment:

- EN 55022: 2010/AC:2011 (Class A)
- EN 55024:2010 + A1:2001 + A2:2003
- EN 61000-3-2:2006+A1:09+A2:09
- EN 61000-3-3:2008
- EN 61000-6-2:2005

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.

Manufacturer:

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Maybachstrasse 11
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Deutschland

Oberteuringen, 01 July 2014

The Management

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.

10.2 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.

10.3 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.

10.4 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.

11 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 (http://www.ddwg.org). 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.