ServSwitch DKM & ServSwitch DKM FX

Delivers instant switching in four different modes for data centre, control room, pooling and similar applications.

» Scalable DVI KVM Matrix Switch supports up to 288 ports with fibre or copper cable.

» Rich interface options for various video formats and peripherals.

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Features

- High resolution DVI-D output up to 1920 x 1200/60 Hz
- Support various video formats such as DVI-D, VGA, SDI, 3G SDI, HD-SDI, EGB, RGBHV and composite
- USB-keyboard/mouse plus USB 2.0 peripherals, serial data as well as analogue and digital audio options
- Modular Design allows flexible user/computer matrix configuration up to 288 ports
- Server and users connect to the ServSwitch DKM/DKM FX via DKM KVM Extender series
- CATx- and fibre connections up to 10 kilometres
- Multiple control options and ganged switching
- High availability with redundant power supplies
- Highly secure with dedicated user profiles and sniffing protection

Virtually instantaneous switching and the transmission of high-quality DVI-D signals are what make the Black Box® ServSwitch™ DKM/DKM FX switching system a milestone in innovative KVM switching.
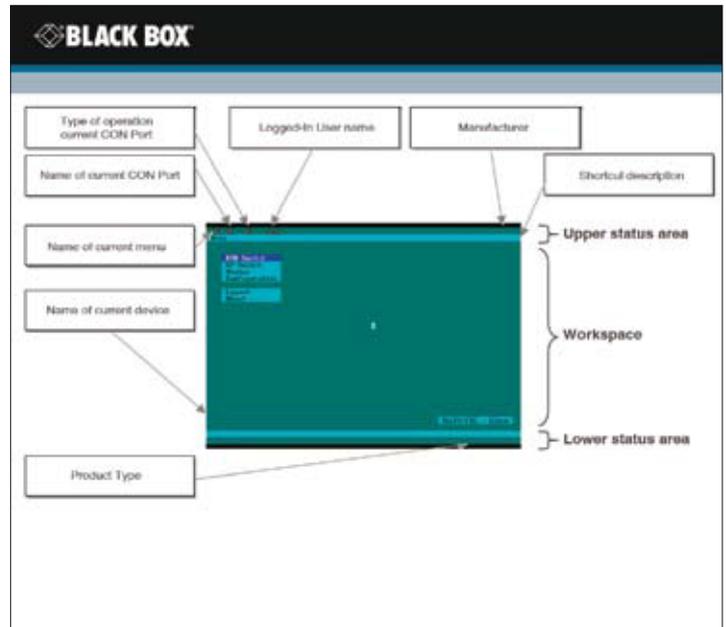
ServSwitch DKM is a scalable matrix switch that supports DVI-D and transmits besides USB Human Interface Device (HID), also transparent USB 2.0, serial RS-232 signals, analogue and digital audio. Options for SDI and analog video complete the interface portfolio.

Users and computers are flexibly added to the DKM system through DKM KVM Extender units. Extend signals up to 140 metres over CATx, up to 1000 metres over multimode fibre or up to 10 kilometres over single-mode fibre without any losses in the video quality.
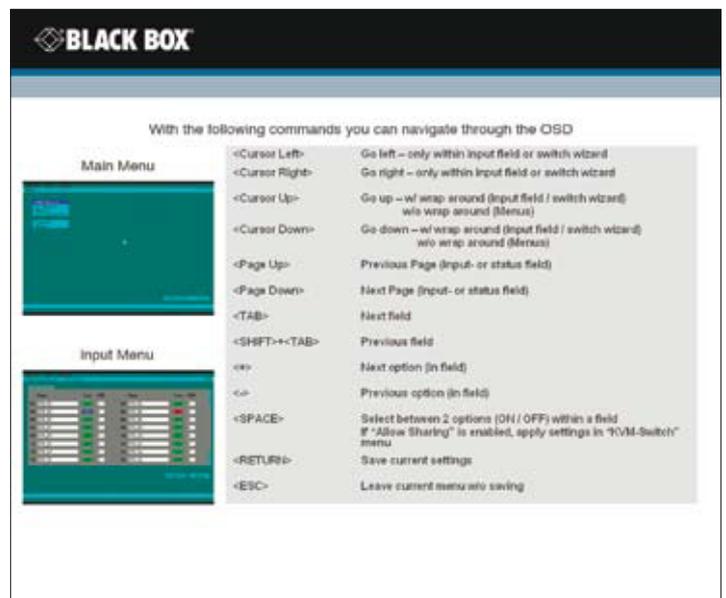
Certain modes of the single-head KVM switching support a transparent serial interface at up to 19 kbps and hardware handshaking. Use it to control a single device requiring full hardware handshaking or up to three devices without handshaking. In dual-head mode, devices support TxD and RxD only, with no hardware handshaking.

The ServSwitch DKM features hotkey controls and an on-screen display (OSD). Use the OSD to name connected devices and configure the system. A front-panel display with remote control is also available. Switching can be done remotely via the RS-232 serial interface, hotkeys, the OSD, or the TCP/IP interface.

For ultimate plug-and-play support, ServSwitch DKM/DKM FX has DDC read capability to receive true EDID information from the attached displays. The digital ServSwitch DKM does not need skew compensation like analogue KVM switches do; the maximum video resolution is supported over the full distance

Main Menu Screen

Computer Configuration Page

Setup and Operation Modes

You can configure the ServSwitch DKM/DKM FX KVM Matrix Switch in several ways. Connect the switch to CATx or fibre cabling, which then connects to the CPU/server with a local transmitter and, on the other side, connects to a receiver (user station) supporting USB keyboard/mouse, one up to four DVI-D monitors plus various user peripherals. With the included software the ServSwitch DKM and DKM FX also allow a very convenient remote configuration and management.

KVM Matrix Switch

The DKM KVM Matrix Switch operates in different configurations connecting 8, 16 or 32 inputs (computers) with up to 8 or 16 outputs (user). The brand new ServSwitch DKM FX offers a fully scalable matrix with 160- or 288-ports freely assignable to user or computer ends. A smaller 80-port version will be available as of November, a 40-port version as of December 2011.

Each computer within the DKM system connects to a DKM transmitter with signal extension up to 10 kilometres depending on the cable media.

Each user is connected to the DKM system through a DKM receiver unit. DKM transmitters and receivers are available with a large variety of interface combinations.

Controlling and switching can be utilised through a serial port, hot keys, the OSD or the built-in network interface. The matrix configuration is ideal for control rooms, post production and digital signage applications. The system has proved particularly well within the broadcast operations environment.

Control Room

You can connect the DKM/DKM FX KVM Matrix Switch to servers and monitors. The OSD enables the user to switch monitors between any connected CPU, and the hotkeys enable the user to switch between one USB keyboard/mouse for all the monitors.
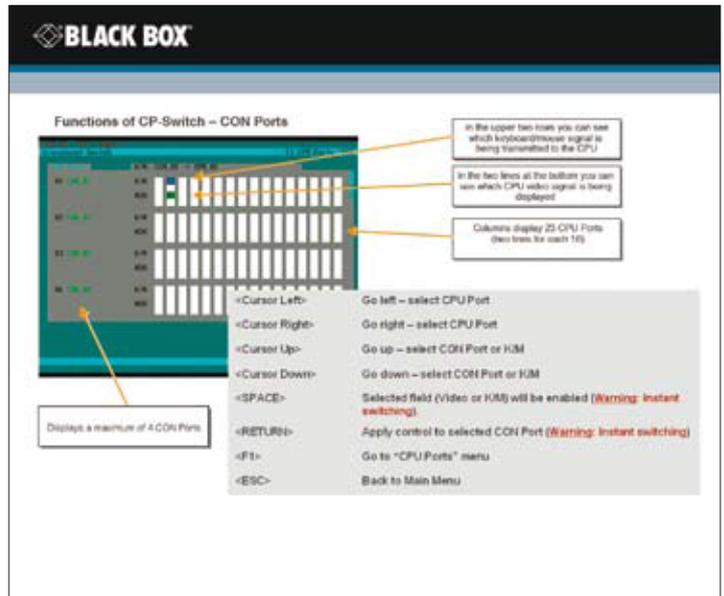
You can easily select your target from the list of available CPUs.
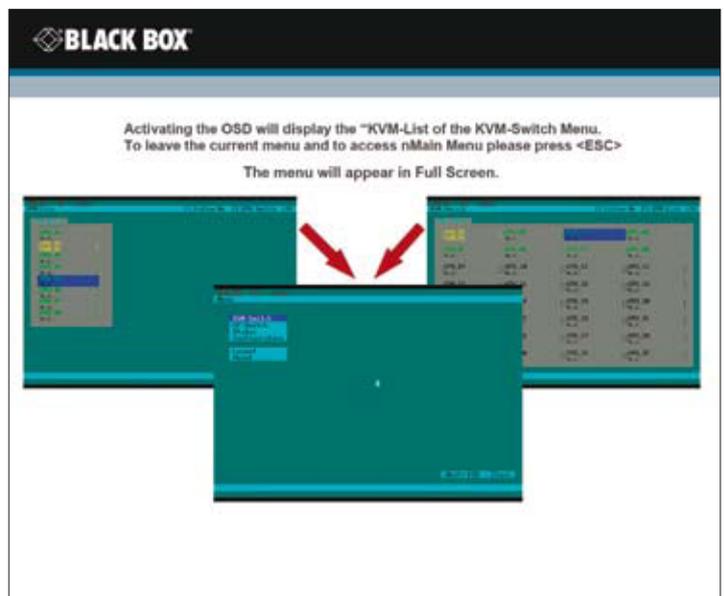
Share Mode

Share Mode enables more than one user to have access to the same CPU at the same time. This mode can be executed with all of the above mentioned configurations. It is often used in control rooms to allow a super administrator troubleshooting or applying updates.

Group Switching

Additionally, the KVM matrix switch enables port grouping, meaning you can partner any combination of ports and ensure they switch in tandem (presets). This way, when you switch CPUs, monitors being used in Share Mode follow automatically.

Matrix (cross point) mode: set video and K/M on different ports

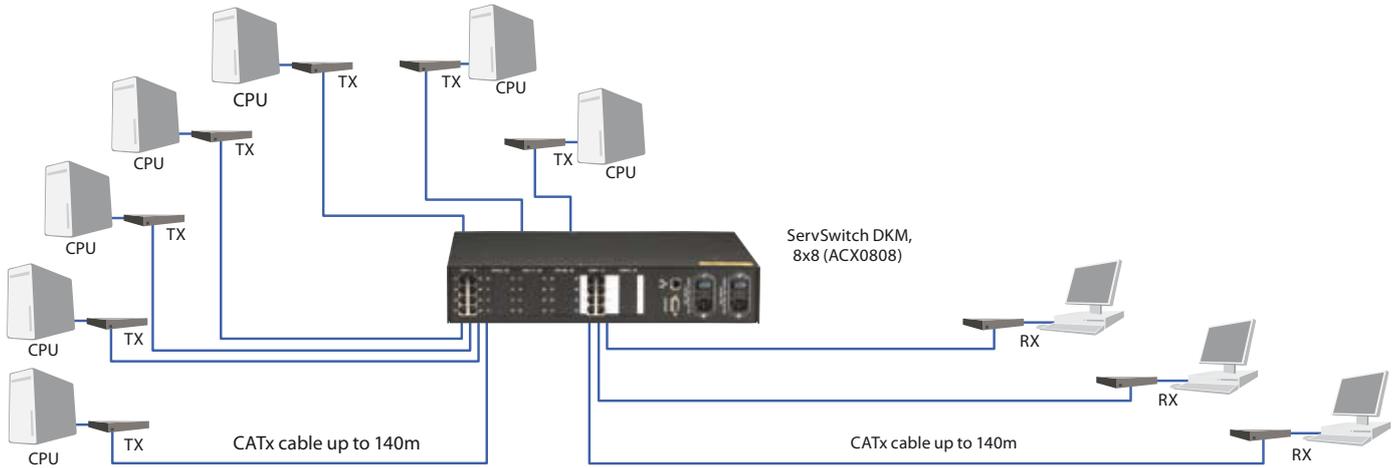KVM Switch mode: shows which computers are active

ServSwitch DKM Legend

TX = Transmitters. Can be single-, dual- or quad-head.
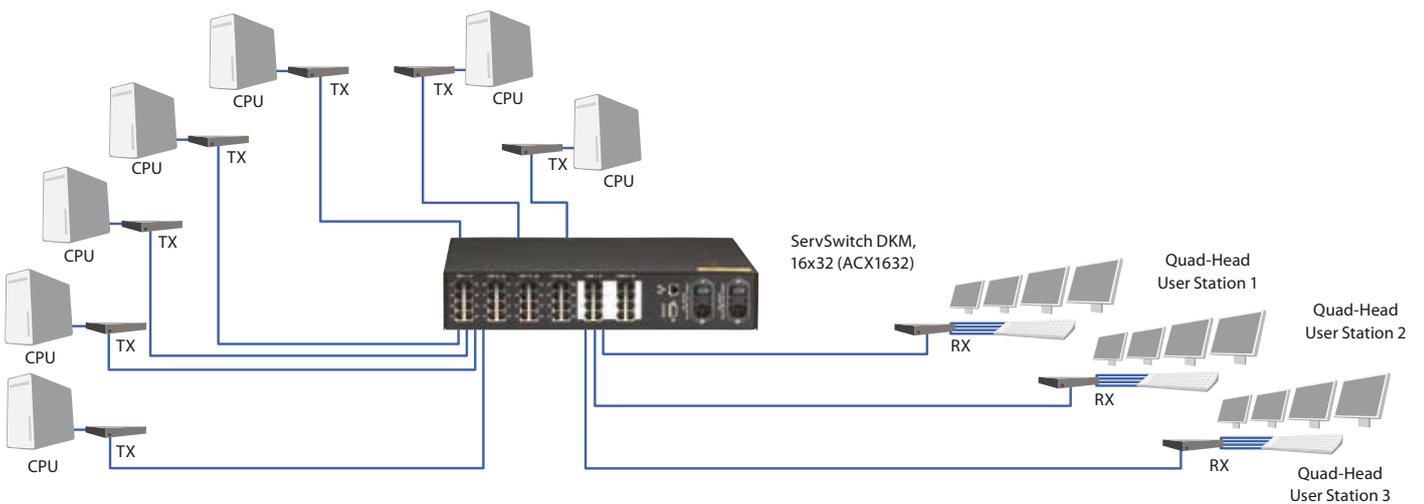
RX = Receivers. Can be single-, dual- or quad-head.

Cabling:

These diagrams only show one cable for space reasons. The DKM switch uses CATx cabling (one, two, or four strands for single-, dual-, or quad-head applications) or fibre cabling (multi mode or single-mode, in pairs) depending on the distance.

Crosspoint Matrix

Quad-Head Application

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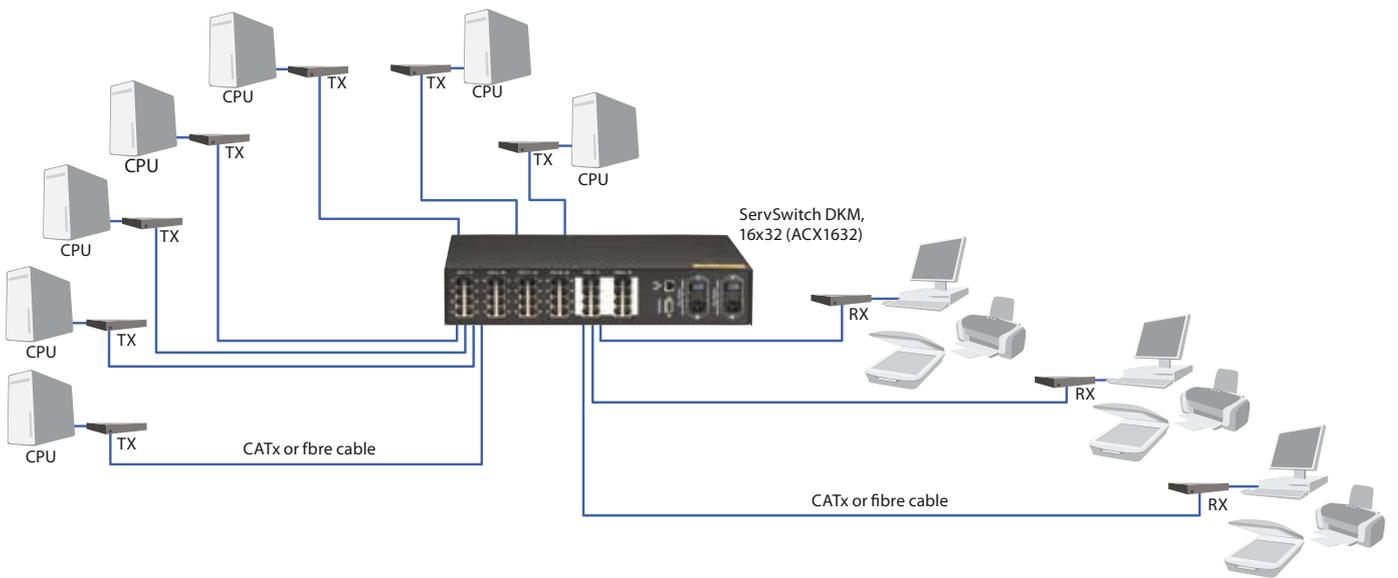
ServSwitch DKM Legend

TX = Transmitters. Can be single-, dual- or quad-head.

RX = Receivers. Can be single-, dual- or quad-head.

Cabling:

These diagrams only show one cable for space reasons. The DKM switch uses CATx cabling (one, two, or four strands for single-, dual-, or quad-head applications) or fibre cabling (multi mode or single-mode, in pairs) depending on the distance.

Single-Head USB 2.0 Application

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ServSwitch DKM

DKM Switching for up to 16 users and 32 computers

ServSwitch DKM 16 x 32
ACX1632

TECHNICAL DATA

Connectors —
  Control via TCP/IP: (1) RJ-45 10/100Mbps;
  Control via RS-232/V.24: (1) DB9 Bu.
  Power: (2) IEC 320 C14, 100 to 240 VAC;
  Pre-configured DKM housings also:
  ACX0808: User: (8) RJ-45 F, CPUs: (8) RJ-45 F;
  ACX0816: User: (8) RJ-45 F, CPUs: (16) RJ-45 F;
  ACX0824: User: (8) RJ-45 F, CPUs: (24) RJ-45 F;
  ACX0832: User: (8) RJ-45 F, CPUs: (32) RJ-45 F;
  ACX1616: User: (16) RJ-45 F, CPUs: (16) RJ-45 F;
  ACX1624: User: (16) RJ-45 F, CPUs: (24) RJ-45 F;
  ACX1632: User: (16) RJ-45 F, CPUs: (32) RJ-45 F;

Resolution — W-UXGA: 1920x1200 at 60Hz;
  up to 24-bit colour depth
Distances (max.) —
  CATx: 140m; solid STP CAT5e recommended;
  Multi mode: up to 1000m
  Single-mode: 10km @ 9/125 µm
Interface Options — DVI-D, DVI-I (VGA in), SDI, USB HID, USB 2.0
  transparent, analog audio, digital audio, serial RS-232
Indicators — 2.5" LCD display
Size — 8.4H x 4.4W x 43.5D cm
Weight — 6.1 kg

Item	Item-No
ServSwitch DKM	
pre-configured housing with (1) power supply	
8 users to 8 computers	ACX0808
8 users to 16 computers	ACX0816
8 users to 24 computers	ACX0824
8 users to 32 computers	ACX0832
16 users to 16 computers	ACX1616
16 users to 24 computers	ACX1624
16 users to 32 computers	ACX1632
ServSwitch DKM	
empty housing with (1) power supply for configurations with fiber extenders	
0 users to 0 computers	ACX0000
ServSwitch DKM Accessory	
Internal power supply (hot-swapable)	ACXPSR
Expansions Cards	
8-port user or computer, CATx	ACX8CAT
8-port user or computer, SFP	ACX8SFP
8-channel OnScreen-Menu (order one each per 8 users)	ACX8OSD
SFP-Modules for the expansion card ACX8SFP	
CATx	ACXSFPC
Multi mode	ACXSFPM
Single-mode	ACXSFPS

INCLUDED IN DELIVERY

- (1) ServSwitch DKM Switch with (1) internal power supply
- (2) 1.8m power cord
- (1) IR remote control with 32 buttons
- (1) 1.8m serial cable DB9 M/F
- (2) rackmount kit with (10) screws
- Manual on CD-ROM

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ServSwitch DKM FX

DKM Switching with free assignable user/computer matrix configuration

ServSwitch DKM FX
ACX080

ServSwitch DKM FX
ACX160

ServSwitch DKM FX
ACX288

TECHNICAL DATA

Resolution — DVI-D SL: 2048x1152 at 60Hz; up to 24-bit colour depth

Distance (max.) —
CATx: 140m; solid STP CAT5e recommended;
Multi mode: up to 1.000m
Single-mode: 10km @ 9/125 µm

Connectors — Control via TCP/IP: (1) RJ-45 10/100Mbps;
Control via RS-232/V.24: (1) DB9 F
Power: (2) IEC 320 C14, 100 to 240VAC

Intrface Options — DVI-D, DVI-I (VGA in), SDI (SD,HD,3G), USB HID, USB 2.0 transparent, analogue audio, digital audio, serial

Management — OSD on every console, Ethernet (Web, FTP, Telnet, SNMP), serial or infrared

Power — (1) or (2) internal power supplies, 90-240VAC, 2x150W, redundancy option

Size —
ACX048: 19"/3U, 483 x 133 x 230 mm
ACX080: 19"/4U, 483 x 178 x 230 mm
ACX166: 19"/9U, 483 x 400 x 330 mm
ACX288: 19"/13U, 483 x 578 x 330mm

Weight — ACX048: 8,9kg; ACX080: 11,1kg
ACX166: 26,3kg, ACX288: 34,6kg

Item	Item-No
ServSwitch DKM FX	
free configurable housing with (1) controller cards and (1) power supply	
48-ports	ACX048
80-ports	ACX080
160-ports	ACX160
288-ports	ACX288
8-port I/O-Cards for the DKM FX housings	
CATx 8-port RJ-45	ACXI08-C
Multimode 8-port SFP	ACXI08-MM
Single-mode 8-port SFP	ACXI08-SM
SFP-Modules for I/O-Cards	
CATx	ACXSFPC
Multi mode	ACXSFPM
Single-mode	ACXSFPS
SDI I/O Card for DKM FX housing	available soon
ServSwitch DKM Accessories	
Power supply for ACX048/ACX080	ACX080-PS
Power supply for ACX160	ACX160-PS
Power supply for ACX288	ACX288-PS
Spare fan module for ACX048/ACX080	ACX080-FAN
Spare air filter for ACX048/ACX080	ACX080-FIL
Spare fan module for ACX160/ACX288	ACX288-FAN
Spare air filter for ACX160/ACX288	ACX288-FIL

ServSwitch DKM Modular KVM Extenders

4-Slot DKM KVM Extender
housing with 4 modules and
1 power supply

- Connect users and computers to your ServSwitch DKM/DKM FX while extending them simultaneously over large distances.
- Order one transmitter each for every computer connected to the DKM.
- Use one receiver for each user within the DKM system.
- Choose the cable media depending on your range requirements: CATx up to 140m, Multi mode up to 1000m, single-mode up to 10,000 metres.
- DVI-D video with resolutions up to 1920 x 1200 at 60Hz over the full distance, options for VGA in, SDI and many other analogue video formats.
- Peripheral options for USB HID, transparent USB 2.0, RS-232, analogue and digital audio.
- 2-, 4-, 6- or 21-port housings available with or without redundant power.
- Also work as a standalone point-to-point KVM Extension without DKM Switch.

Combine your interfaces depending on your individual needs

Step 1:

Order one base module with DVI-D video (optional also DVI plus VGA in) and two USB HID ports.

Step 2:

Choose the expansion modules for every additional signal, you intend to switch and expand over the DKM system.

Step 3:

Determine the appropriate housing depending on your number of interface cards. Consider also free space for future expansion. Select one housing each for the transmitter and the receiver side. Choose a power option with or without redundancy.

Step 4:

Verify your application requirements with our product specialists for plausibility and quoting.

Item	Item-No
ServSwitch DKM Housing for Modular KVM Extenders	
2-slot with one power supply	ACXMODH2
2-slot with one power supply and redundancy option	ACXMODH2R
4-slot with one power supply	ACXMODH4
4-slot with one power supply and redundancy option	ACXMODH4R
6-slot with one power supply and redundancy option	ACXMODH6R
21-slot with one power supply and redundancy option	ACXMODH21R
ServSwitch DKM Accessories for Modular Housings	
Redundancy Options	
Redundancy Upgrade excl. power supply for 2-slot housing ACXMODH2	ACXMODH2-R
Redundancy Upgrade excl. power supply for 4-slot housing ACXMODH4	ACXMODH4-R
Redundant power supply for ACXMODH2R, ACXMOD2-R	ACXMODH2-PS
Redundant power supply for ACXMODH4R, ACXMOD4-R	ACXMODH4-PS
* Please call our Free Tech Support for redundant power supplies for larger housing with 6 and more ports.	
19" Rack-mount Kit	
for 2-/4-slot housing (ACXMODH2, ACXMODH2R, ACXMODH4, ACXMODH4R)	ACXMODH-RMK

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ServSwitch DKM KVM Extender Modules for Modular Housing

USB 2.0 Expansion

Basic Transmitter Module
DVI-D plus USB HID

Basic Receiver Module
DVI-D plus USB HID

Item	Item-No
ServSwitch DKM Transmitter Modules for Modular Housing s	
CATx Basic Modules	
Single DVI-D plus (2) USB HID	ACX1MT-DHID-C
Single DVI/VGA in/ DVI-D out + (2) USB HID	ACX1MT-DVHID-C
* occupies 2-slots of housing space	
CATx Peripheral Module	
(4) USB 2.0 transparent	ACX1MT-U2-C
Fibre Basic Module	
Single DVI-D plus (2) USB HID	ACX1MT-DHID-SM
Single DVI/VGA in/ DVI-D out + (2) USB HID *	ACX1MT-DVHID-SM
* occupies 2-slots of housing space	
Fiber Peripheral Module	
(4) USB 2.0 transparent	ACX1MT-U2-SM
Upgrade Module	
(2) USB HID	ACX1MT-HID
Bidirectional analogue audio plus RS-232	ACX1MT-AR
Bidirectional analogue uni-directional digital audio plus RS-232	ACX1MT-ARD
(2) USB HID, bidirectional audio plus RS-232	ACX1MT-ARH
Uni-directional digital audio	ACX1MT-DA
(2) USB HID plus uni-directional digital audio	ACX1MT-DAH
Bidirectional digital Audio	ACX1MT-DAX

Item	Item-No
ServSwitch DKM Receiver Modules for Modular Housings	
CATx Basic Modules	
Single DVI-D plus (2) USB HID	ACX1MR-DHID-C
Single DVI-D out + (2) USB HID & Infrared R/C	ACX1MR-DVHID-C
CATx Peripheral Module	
(4) USB 2.0 transparent	ACX1MR-U2-C
Fibre Basic Module	
Single DVI-D plus (2) USB HID	ACX1MR-DHID-SM
Single DVI-D out + (2) USB HID & Infrared R/C	ACX1MR-DVHID-C
Fibre Peripherial Module	
(4) USB 2.0 transparent	ACX1MR-U2-SM
Upgrade Module	
(2) USB HID	ACX1MR-HID
Bidirectional analogue audio plus RS-232	ACX1MR-AR
Bidirectional analogue uni-direct. digital audio plus RS-232	ACX1MR-ARD
(2) USB HID, bidirectional audio plus RS-232	ACX1MR-ARH
Uni-directional digital audio	ACX1MR-DA
(2) USB HID plus uni-directional digital audio	ACX1MR-DAH
Bidirectional digital audio	ACX1MR-DAX

Note: You may operate Single-mode KVM Extender Modules also over multimode cable.

Call our Free Tech Support
The above order information is only a selection of popular modules.
Please contact our Free Tech Support,
if you need additional interfaces.
Also, our DKM experts will be happy to assist you any time
with the composition and configuration of your DKM system.

ServSwitch DKM Accessories

ServSwitch DKM Compact KVM Extender

- Connect users and computers to your ServSwitch DKM/DKM FX while extending them simultaneously over large distances.
- Order one transmitter each for every computer connected to the DKM.
- Use one receiver for each user within the DKM system.
- Choose the cable media depending on your range requirements: CATx up to 140m, multi mode up to 1000m, single-mode up to 10,000 metres.
- Compact housings allow high-density mounting within 19" racks (up to 4 devices in 1U).
- DVI-D video with resolutions up to 1920 x 1200 at 60Hz over the full distance, single- and dual DVI-D versions, plus options with scalable VGA input.
- Peripheral interfaces for USB HID, USB HID supporting programmable function keyboard keys, USB 2.0, RS-232, analogue and digital audio.
- Powered through external power supply.

ServSwitch DKM Transmitter
CATx Single DVI, USB HID
plus digital audio
ACX1R-12D-C

ServSwitch DKM Receiver
CATx Dual DVI plus USB HID
ACX1R-22-C

Item	Item-No
ServSwitch DK M Compact Transmitter	
CATx	
Single DVI-D plus (2) USB HID	ACX1T-11-C
Single DVI/VGA in/ DVI-D out + (2) USB HID	ACX1T-11V-C
Single DVI-D plus (4) USB HID	ACX1T-12A-C
Single DVI-D plus (2) USB HID and digital audio	ACX1T-12D-C
Single DVI-D plus (2) USB HID and (4) USB 2.0	ACX1T-13-C
Dual DVI-D plus (4) USB HID	ACX1T-22-C
Fibre	
Single DVI-D plus (2) USB HID	ACX1T-11-SM
Single DVI/VGA in/ DVI-D out + (2) USB HID	ACX1T-11V-SM
Single DVI-D plus (4) USB HID	ACX1T-12A-SM
Single DVI-D plus (2) USB HID and digital audio	ACX1T-12D-SM
Single DVI-D plus (2) USB HID and (4) USB 2.0	ACX1T-13-SM
Dual DVI-D plus (4) USB HID	ACX1T-22-SM

Item	Item-No
ServSwitch DK M Compact Receiver	
CATx	
Single DVI-D plus (2) USB HID	ACX1R-11-C
Single DVI-D out + (2) USB HID & Infrared R/C	ACX1R-11V-C
Single DVI-D plus (4) USB HID	ACX1R-12A-C
Single DVI-D plus (2) USB HID and digital audio	ACX1R-12D-C
Single DVI-D plus (2) USB HID and (4) USB 2.0	ACX1R-13-C
Dual DVI-D plus (4) USB HID	ACX1R-22-C
Fibre	
Single DVI-D plus (2) USB HID	ACX1R-11-MM
Single DVI-D out plus (2) USB HID & Infrared R/C	ACX1R-11V-MM
Single DVI-D plus (4) USB HID	ACX1R-12A-MM
Single DVI-D plus (2) USB HID and digital audio	ACX1R-12D-MM
Single DVI-D plus (2) USB HID and (4) USB 2.0	ACX1R-13-MM
Dual DVI-D plus (4) USB HID	ACX1R-22-MM

Note: You may operate Single-mode KVM Extender Modules also over multimode cable.

TECHNICAL DATA

Resolution — 1 920x1200 at 60Hz; up to 24-bit colour depth
Distance (max.) — CATx: 140 m; Multimode: 1000m,
   Single-Mode: 10 km
Connectors — see order information

Power — external power supply, 100-240 VAC, 50-60 Hz
Size per unit — Single DVI-D: 105 x 29 x 43 mm;
   Dual DVI-D: 105 x 41 x 143

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You'll find it at Black Box.