ServSwitch™ DKM and ServSwitch DKM FX KVM Matrix Switches

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

Features

- Support various video formats: DVI-D, VGA, serial digital interface (SDI), 3G SDI, HD-SDI, EGB, RGBHV, and Composite.
- High-resolution DVI-D output up to 1920 x 1200 at 60 Hz.
- USB keyboard/mouse plus USB 2.0 peripherals, serial data, as well as analog and digital audio options.
- Modular design enables 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 fiber connections up to 10 kilometers (6 mi).
- 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 USB Human Interface Device (HID), transparent USB 2.0, analog or digital stereo audio, and serial RS-232 signals. Options for SDI and analog video complete the interface portfolio.

Users and computers can easily be added to this flexible system through the DKM KVM Extender units. Extend KVM signals up to 460 feet (140 m) over CATx, up to 400 meters (1312.3 ft.) over multimode fiber, or up to 1000 meters (3280 ft.) over single-mode fiber—all with no losses in 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 analog KVM switches do; the maximum video resolution is supported over the full distance.

Setup and Operation Modes

You can configure the ServSwitch DKM DVI-D KVM Switch in several ways. Connect the switch to CATx or fiber 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, up to four DVI-D monitors plus various user peripherals. With the included software, the ServSwitch DKM and DKM FX enable a very convenient remote configuration and management.
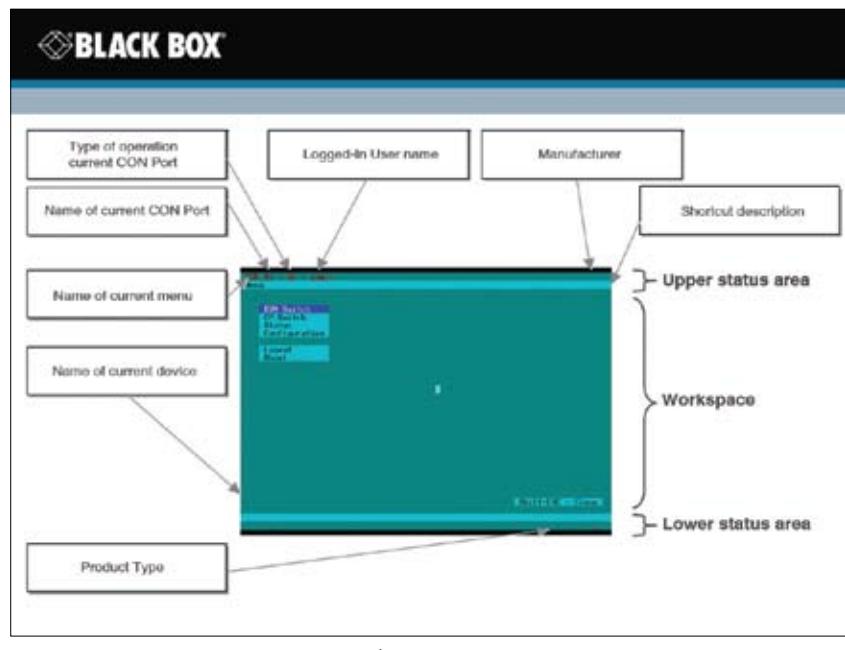
Main Menu screen
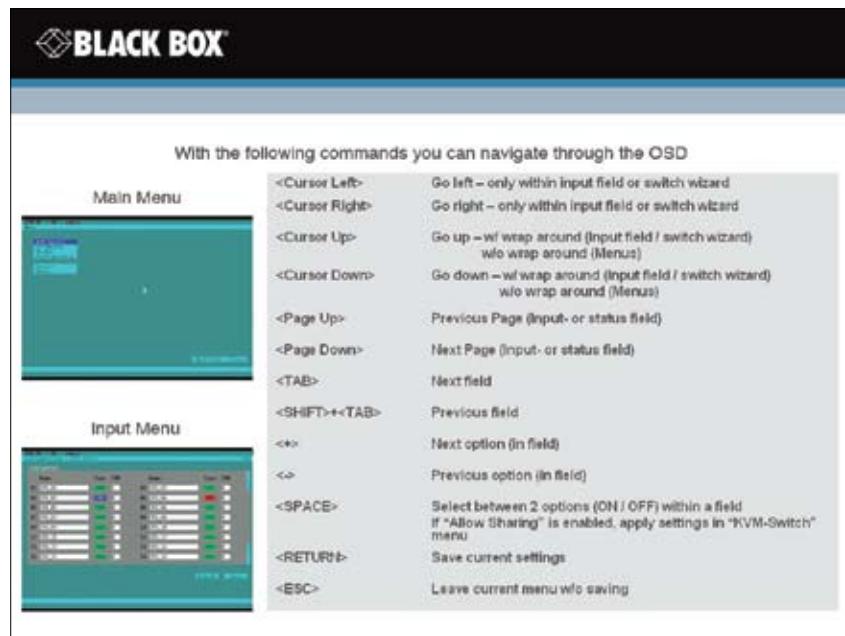
Computer Configuration page

KVM Matrix Switch

The DKM KVM Matrix operates in different configurations connecting 8, 16, or 32 inputs (computers) with up to 8 or 16 outputs (users). The ServSwitch DKM FX offers a fully scalable matrix with 160 or 288 ports freely assignable to user or computer ends. Smaller versions with 40 and 80 ports are also available.

Each computer within the DKM system connects to a DKM transmitter with signal extension up to 10 kilometers (6.2 mi), 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 number of interface combinations.

Control the switch with the serial (RS-232) port, hotkeys, the OSD, or via the built-in Web interface. The matrix configuration is ideal for control rooms, post-production, and digital signage applications. The system works particularly well within the broadcast operations environment.

Control Room Mode

You can connect the DKM/DKM FX KVM 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 the previously mentioned configurations. It is often used in control rooms to enable a super administrator to troubleshoot or apply 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

NOTE: Transmitters and receivers can be copper- or fiber-based. Computer and expansion cards can also be copper- or fiber-based.
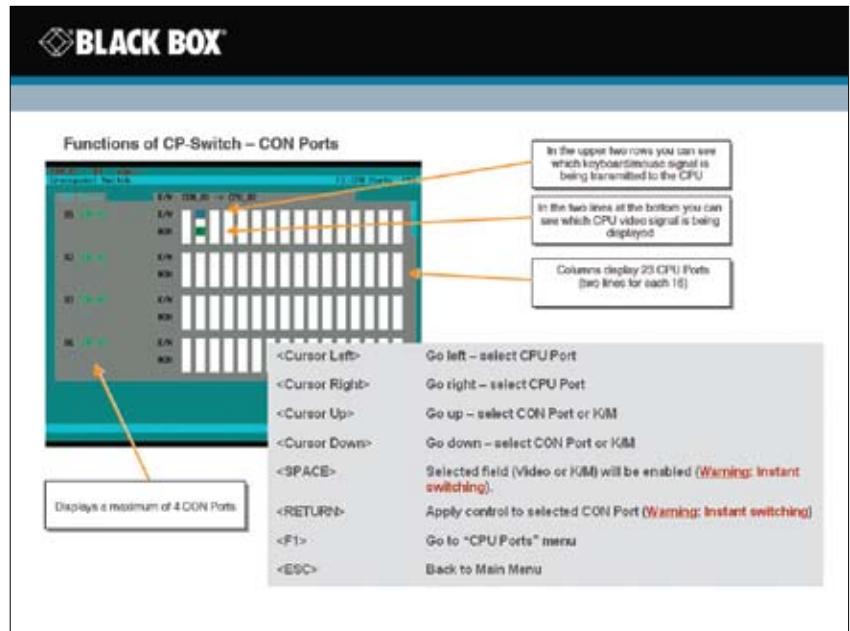
Matrix (crosspoint) mode: set video and K/M on different ports
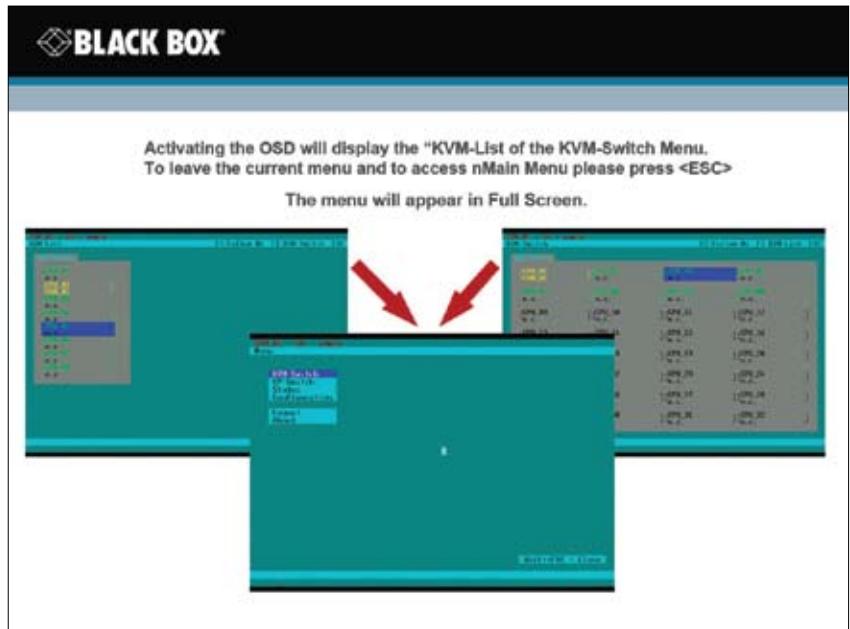
KVM switch mode: shows which computers are active

ServSwitch DKM

Crosspoint Matrix Configuration

CPU
TX
TX
CPU
CPU
TX
CPU
TX
CPU
TX
CPU
TX
CPU
TX

ServSwitch DKM, 8x8 (ACX0808)

RX
RX
RX

CATx Cables

CATx Cables

Quad-Head Application
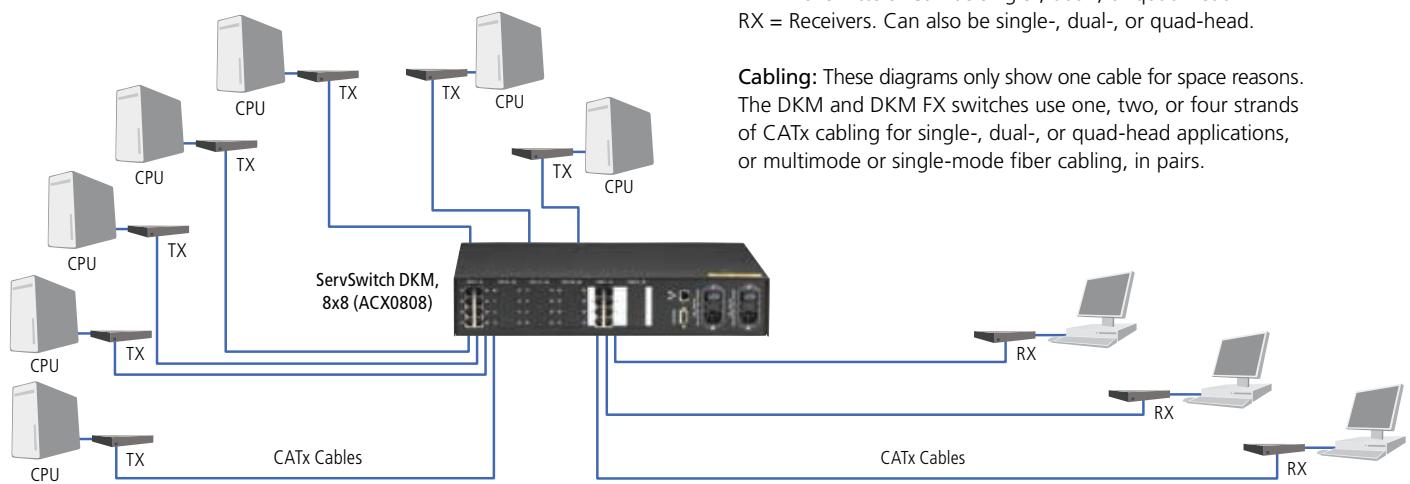
ServSwitch DKM Legend

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

Cabling: These diagrams only show one cable for space reasons. The DKM and DKM FX switches use one, two, or four strands of CATx cabling for single-, dual-, or quad-head applications, or multimode or single-mode fiber cabling, in pairs.

CPU
TX
TX
CPU
CPU
TX
CPU
TX
CPU
TX
CPU
TX
CPU
TX

ServSwitch DKM, 16x32 (ACX1632)

RX
Quad Head User Station 1

RX
Quad Head User Station 2

RX
Quad Head User Station 3

Single-Head KVM/USB 2.0 Mode

CPU
TX
TX
CPU
CPU
TX
CPU
TX
CPU
TX
CPU
TX

ServSwitch DKM, 16x32 (ACX1632)

RX
RX
RX

CATx or Fiber Cables

CATx or Fiber Cables
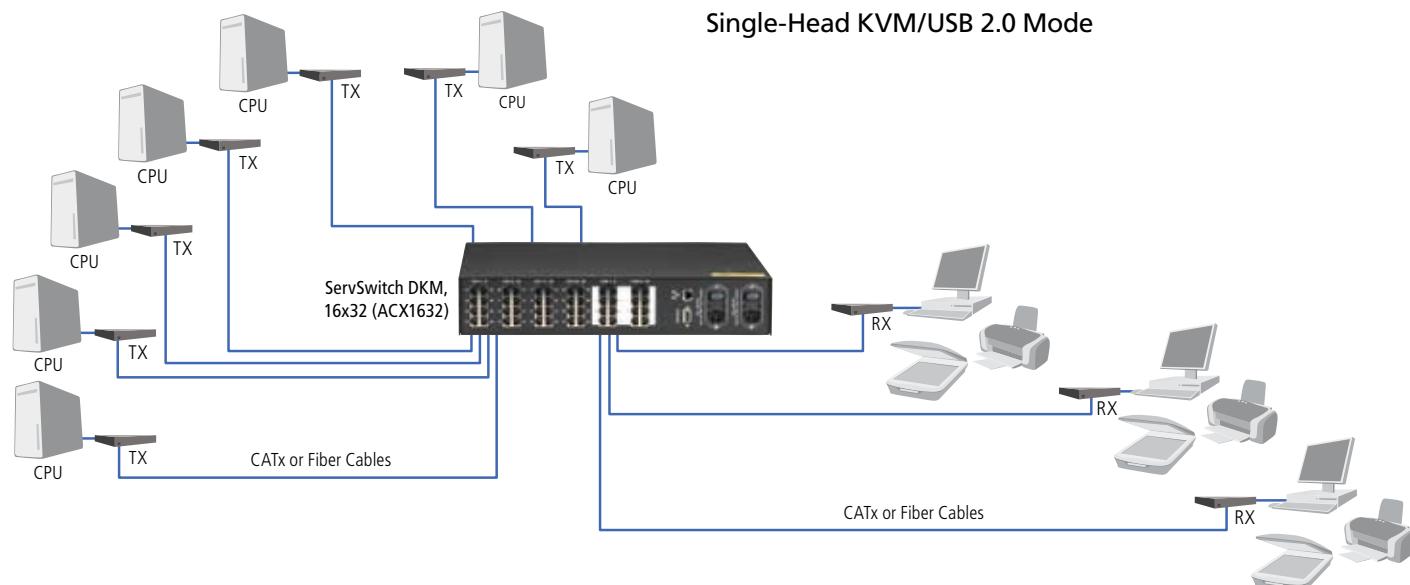
ServSwitch DKM FX Matrix KVM Switch

For flexible and super-fast crosspoint switching of Full-HD video in KVM enterprises.

ServSwitch DKM FX (ACX080)

ServSwitch DKM FX (ACX160)

ServSwitch DKM FX (ACX288)

- A scalable, highly reliable KVM matrix switching and DVI routing system.
- Very flexible. Any port can be an input or an output.
- Supports high-quality, full-frame DVI-D video.
- Nearly instantaneous video switching. Virtually no delay or blanking.
- Full HD compatible. Boast digital resolutions up to 2560 x 1600.
- Can be used with remote ServSwitch DKM extenders for extra-long links.
- Choose from CATx and single-mode fiber SFP modular card interfaces. Single-mode fiber interfaces will also work over multimode fiber.

This chassis-based, modular crosspoint switching system enables you to switch and extend HD video, audio, and serial data over extremely long distances. Use it in any application where many users have to interface with CPUs and other high-end AV equipment supporting high-quality video. Plus it works as a video matrix switch.

The DKM FX is especially ideal for enterprise networks and mission-critical control/command rooms, as well as video production or broadcasting applications where HD video is everything. Many users can connect their KVM consoles to various multimedia sources (computer, CPUs, servers, etc.), either locally or in a distant room or office via the switch.

TECH SPECS

Resolution — DVI-D SL: 2048 x 1152 at 60 Hz; up to 24-bit color depth
Distances (Max.) —
  CATx: 460 feet (140 m); solid STP CAT5e recommended;
  Multimode: 3281 feet (1000 m);
  Single mode: 6 miles (10 km) @ 9/125 um
Connectors —
  Control via TCP/IP: (1) RJ-45 10/100 Mbps;
  Control via RS-232/V.24: (1) DB9 F;
  Power: (1) or (2) IEC 320 C14, 100 to 240 VAC
Interface — DVI-D, DVI-I (VGA input), SDI SD, HD, SG), USB HID, USB 2.0 transparent, analog audio, digital audio, serial RS-232
Management — OSD on every console, Ethernet (Web, FTP, Telnet, SNMP), serial or infrared
Power — (1) or (2) internal power supplies, 90–240 VAC, 2 x 150 W, redundancy option
Size —
  ACX048: 3U (5.25"H) x 19"W x 9.1"D
  ACX080: 4U (7"H) x 19"W x 9.1"D
  ACX166: 9U (15.75:H) x 19"W x 12"D
  ACX288: 13U (22.75"H) x 19"W x 12"D
Weight — ACX048: 19.6 lb. (8.9 kg); ACX080: 24.5 lb. (11.1 kg); ACX166: 58 lb. (26.3 kg); ACX288: 76.2 lb. (34.6 kg)

ServSwitch DKM DVI-D KVM Matrix Switch

Rich interface options for various video formats and peripherals. One switch does it all.

What's included:
- ServSwitch DKM switch with (1) internal power supply
- (2) 6-ft. (1.8-m) U.S. power cords
- 32-button IR remote control
- 6-ft. (1.8-m) DB9 M/F serial cable
- (2) rackmount ears with (10) mounting screws
- CD-ROM with user's manual

TECH SPECS

Distances (Max.) —
  CATx: 460 feet (140 m); solid STP CAT5e recommended;
  Multimode: 3281 feet (1000 m);
  Single mode: 6 miles (10 km)
Resolution — W-UXGA: 2048 x 1152 at 60 Hz; up to 24-bit color depth
Interface — DVI-D, DVI-I (VGA input), SDI, USB HID, USB 2.0 transparent, analog audio, digital audio, serial RS-232
Connectors —
  Control via TCP/IP: (1) RJ-45 10/100 Mbps;
  Control via RS-232/V.24: (1) DB9;
  Power: (1) or (2) IEC 320 C14, 100 to 240 VAC;
  Pre-configured DKM housings also:
    ACX0808: User: (8) RJ-45, CPUs: (8) RJ-45;
    ACX0816: User: (8) RJ-45, CPUs: (16) RJ-45;
    ACX0824: User: (8) RJ-45, CPUs: (24) RJ-45;
    ACX0832: User: (8) RJ-45, CPUs: (32) RJ-45;
    ACX1616: User: (16) RJ-45, CPUs: (16) RJ-45;
    ACX1624: User: (16) RJ-45, CPUs: (24) RJ-45;
    ACX1632: User: (16) RJ-45, CPUs: (32) RJ-45
Indicators — 2.5" LCD display
Size — 3.3"H x 1.7"W x 17.4"D (8.4 x 4.4 x 43.5 cm)
Weight — 13.1 lb. (6.1 kg)

ServSwitch DKM Modular Housing and Extenders

Flexible, modular KVM extension system takes video, USB, and serial peripherals long distances.

*ServSwitch DKM Housing
for Modular KVM Extenders
(ACXMODH4)*

ACX1MR-DHID-C

ACX1MT-DHID-C

Features

- Connect users and computers to your ServSwitch DKM/DKM FX while extending them simultaneously over long distances.
- Order one transmitter for each computer connected to the DKM.
- Use one receiver for each user within the DKM system
- Choose the cable media depending on your distance requirements. Over CATx, go up to 460 feet (140 m); over multimode fiber, go 3281 feet (1000 m); and over single-mode fiber, go up to 6 miles (10 km).
- Get DVI-D video with resolutions up to 2048 x 1152 at 60Hz over the full distance, options for VGA in, SDI, and many other analog video formats.

- Peripheral options for USB HID, transparent USB 2.0, RS-232, analog, and digital audio.
- 2-. 4-, 6-, or 21-port housing available with or without redundant power.
- Also work as a standalone, point-to-point KVM extension without a DKM switch.

Here to help you 24/7.

Combine interfaces depending on your individual needs. These new DKM/DKM FX components are part of a modular system. You need to contact Black Box to have them assembled to fit your application. To configure your ServSwitch DKM/DKM FX setup, call our FREE Tech Support at **724-746-5500**.

ServSwitch DKM Compact KVM Extenders

Use in the DKM/DKM FX chassis or as standalone, point-to point KVM extension.

ServSwitch DKM Transmitter CATx
Single DVI, USB HID Plus Digital Audio
(ACX1T-12D-C)

ServSwitch DKM Receiver CATx
Dual DVI Plus USB HID (ACX1R-22-C)

Features

- Connect users and computers to your ServSwitch DKM/DKM FX while extending them simultaneously over long distances.
- Order one transmitter for each computer connected to the DKM.
- Use one receiver for each user within the DKM system
- Choose the cable media depending on your distance requirements. Over CATx, go up to 460 feet (140 m); over multimode fiber, go 3281 feet (1000 m); and over single-mode fiber, go up to 6 miles (10 km).
- Compact housing enables high-density mounting within 19" racks (up to four devices in 1U).
- Peripheral options for USB HID, transparent USB 2.0, RS-232, analog, and digital audio.
- 2-. 4-, 6-, or 21-port housing available with or without redundant power.
- Also work as a standalone point-to-point KVM extension without a DKM Switch.

NOTE: You may also operate single-mode KVM extender modules over multimode cable.

TECH SPECS

Distances (Max.) —
   CATx: 460 feet (140 m); solid STP CAT5e recommended;
   Multimode: Up to 3281 feet (1000 m);
   Single mode: 6 miles (10 km)
Resolution — 1920 x 1200 at 60 Hz; up to 24-bit color depth
Connectors — See ordering information below
Power — External power supply, 100–240 VAC, 50–60 Hz
Size (per Unit) — Single DVI-D: 4.1"H x 1.1"W x 1.7"D
   (10.5 x 2.9 x 4.3 cm)
   Dual DVI-D: 4.1"H x 1.6"W x 5.6"D (10.5 x 4.1 x 14.3 cm)

Item	Code
ServSwitch DKM Compact Transmitters	
CATx	
Single DVI-D Plus (2) USB HID	**ACX1T-11-C**
Single DVI/VGA In/ DVI-D Out Plus (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**
Fiber	
Single DVI-D Plus (2) USB HID	**ACX1T-11-SM**
Single DVI/VGA In/ DVI-D Out Plus (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	Code
ServSwitch DKM Compact Receivers	
CATx	
Single DVI-D Plus (2) USB HID	**ACX1R-11-C**
Single DVI-D Out Plus IR-RC (2) USB HID	**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**
Fiber	
Single DVI-D Plus (2) USB HID	**ACX1R-11-SM**
Single DVI-D Out Plus IR-RC (2) USB HID	**ACX1R-11V-SM**
Single DVI-D Plus (4) USB HID	**ACX1R-12A-SM**
Single DVI-D Plus (2) USB HID and Digital Audio	**ACX1R-12D-SM**
Single DVI-D Plus (2) USB HID and (4) USB 2.0	**ACX1R-13-SM**
Dual DVI-D plus (4) USB HID	**ACX1R-22-SM**

NOTE: Single-mode KVM Extender Modules can also be operated over multimode fiber cable.

NOTE: Combine extender modules depending on your individual needs. These new DKM components are part of a modular system. You will need to contact Black Box to have them assembled to fit your application. To configure your ServSwitch DKM setup, call our FREE Tech Support.

ServSwitch DKM and DKM FX

Item	Code
ServSwitch DKM DVI-D KVM Switches	
8 Users to 8 CPUs	**ACX0808**
8 Users to 16 CPUs	**ACX0816**
8 Users to 24 CPUs	**ACX0824**
8 Users to 32 CPUs	**ACX0832**
16 Users to 16 CPUs	**ACX1616**
16 Users to 24 CPUs	**ACX1624**
16 Users to 32 CPUs	**ACX1632**
ServSwitch KVM	
Empty Housing with (1) Power Supply for Configurations with Fiber Extenders	
0 Users to 0 CPUs	**ACX0000**
ServSwitch DKM Internal Power Supply (Hot Swappable)	**ACXPSR**
ServSwitch DKM Expansion Cards	
8-Port Users or CPUs, CATx	**ACX8CAT**
8-Port User or CPUs, SFP	**ACX8SFP**
8-Channel On Screen Menu	**ACX8OSD**

NOTE: Order one ACX8OSD for every 8 users (1 for 8 users, 2 for 16 users, and so on.)

Item	Code
ServSwitch DKM SFP Modules for the ACX8SFP Expansion Card	
CATx	**ACXSFPC**
Single-Mode Fiber	**ACXSFPS**
ServSwitch DKM FX	
Free Configurable Housing with (1) Controller Card and (1) Power Supply	
48 Ports	**ACX048**
80 Ports	**ACX080**
160 Ports	**ACX160**
288 Ports	**ACX288**
8-Port I/O Cards for DKM FX Housings	
CATx RJ-45	**ACXI08-C**
Single-Mode SFP	**ACXI08-SM**
SFP Modules for I/O Cards	
CATx	**ACXSFPC**
Single-Mode	**ACXSFPS**
SDI I/O Card for DKM FX Housing	**Available soon.**
ServSwitch DKM Housing for Modular KVM Extenders	
2-Slot with (1) Power Supply	**ACXMODH2**
2-Slot with (1) Power Supply and Redundancy Option	**ACXMODH2R**
4-Slot with (1) Power Supply	**ACXMODH4**
4-Slot with (1) Power Supply and Redundancy Option	**ACXMODH4R**
6-Slot with (1) Power Supply and Redundancy Option	**ACXMODH6R**
21-Slot with (1) Power Supply and Redundancy Option	**ACXMODH21R**

Item	Code
ServSwitch DKM Transmitter Modules for Modular Housings	
CATx Basic Modules	
Single DVI-D Plus (2) USB HID	**ACX1MT-DHID-C**
Single DVI/VGA In/ DVI-D Out Plus (2) USB HID	**ACX1MT-DVHID-C**
Occupies (2) slots of housing space.	
CATx Peripheral Module	
(4) USB 2.0 Transparent	**ACX1MT-U2-C**
Fiber Basic Module	
Single DVI-D Plus (2) USB HID	**ACX1MT-DHID-SM**
Single DIV/VGA In/DVI-D Out Plus (2) USB HID	**ACX1MT-DVHID-SM**
Occupies (2) slots of housing space.	
Fiber Peripheral Module	
(4) USB 2.0 Transparent	**ACXMT-U2-SM**
Upgrade Module	
(2) USB HID	**ACX1MT-HID**
Bidirectional Analog Audio Plus RS-232	**ACX1MT-AR**
Bidirectional Analog Audio, Unidirectional Digital Audio, Plus RS-232	**ACX1MT-ARD**
(2) USB HID, Bidirectional Audio, Plus RS-232	**ACX1MT-ARH**
Unidirectional Digital Audio	**ACX1MT-DA**
(2) USB HID, Plus Unidirectional Digital Audio	**ACX1MT-DAH**
Bidirectional Digital Audio	**ACX1MT-DAX**
ServSwitch DKM Receiver Modules for Modular Housings	
CATx Basic Modules	
Single DVI-D Plus (2) USB HID	**ACX1MR-DHID-C**
Single DVI/VGA In/ DVI-D Out Plus (2) USB HID	**ACX1MR-DVHID-C**
Occupies (2) slots of housing space.	
CATx Peripheral Module	
(4) USB 2.0 Transparent	**ACX1MR-U2-C**
Fiber Basic Module	
Single DVI-D Plus (2) USB HID	**ACX1MR-DHID-SM**
Single DIV/VGA In/DVI-D Out Plus (2) USB HID	**ACX1MR-DVHID-SM**
Occupies (2) slots of housing space.	
Fiber Peripheral Module	
(4) USB 2.0 Transparent	**ACXMR-U2-SM**
Upgrade Module	
(2) USB HID	**ACX1MR-HID**
Bidirectional Analog Audio Plus RS-232	**ACX1MR-AR**
Bidirectional Analog Audio, Unidirectional Digital Audio, Plus RS-232	**ACX1MR-ARD**
(2) USB HID, Bidirectional Audio, Plus RS-232	**ACX1MR-ARH**
Unidirectional Digital Audio	**ACX1MR-DA**
(2) USB HID, Plus Unidirectional Digital Audio	**ACX1MR-DAH**
Bidirectional Digital Audio	**ACX1MR-DAX**

888-327-3114 | blackbox.com/go/ServSwitchDKM