HD VIDEO & MATRIX PERIPHERAL SWITCHING

LEADING-EDGE TECHNOLOGIES THAT DELIVER UNPARALLELED PERFORMANCE

Flexible, instantaneous crosspoint switching and peripheral extension of full HD video for broadcast, post-production, and command and control rooms.

Black Box provides an innovative, hybrid matrix switching solution that supports multiple signal types — the DKM FX and FXC HD Video and Matrix Switching system. This DKM FX platform replaces multiple devices with one hybrid solution that supports routing, switching, multi-point distribution of SDI, 3G-SDI, HD-SDI, HDMI, and DVI video standards, dual link extension, and state-of-the-art KVM functionality. This game-changing product replaces up to four single-purpose devices with one robust solution, saving customers time, money, complexity, and potential integration issues.

This chassis-based, modular crosspoint switching system enables you to configure HD KVM switching and DVI routing exactly as needed. Mix and match fiber and CATx ports through cards and SFPs that are plugged into the system’s slots. The configurations are nearly limitless.

The switch comes with a controller card, which has USB keyboard/mouse and DVI monitor connectors for local KVM administration; an RJ-45 port for interfacing with the network and a client machine that can control all functions from any console without the need for an external RS-232 device. Because the card has a built-in CPU, you can control all functions from any console without the need for an external CPU or media control. OS platform independent, the switch enables one or more chassis to be connected and still run from one chassis. Installing the Java utility enables users to create presets and macros that can be executed remotely. Furthermore, the Syslog/SNMP license enables remote monitoring. The DKM can also be cascaded when a chassis is fully populated, or when a user wants to access a remote DKM chassis. The Cascade software upgrade enables one or more chassis to be connected and still run from one administrator. Alternatively, users can join chassis in different rooms or buildings (if using fiber) where they can remotely manage the system.

FEATURES

• A scalable, highly reliable video and peripheral matrix switching and routing system that supports high-resolution HD-SDI, HDMI, DisplayPort 1.1 and 1.2, DVI, VGA and KVM in one flexible, scalable product
• Supports high-quality, full-frame digital video, and 4K/UHD (ultra high-def) digital resolutions up to 3840 x 2160 (60 frames per second)
• Modular platform with up to 576 bidirectional ports that make moves, adds and changes fast and easy
• Choose from CATx and single-mode fiber SFP modular card interfaces. Single-mode fiber interface cards also work over multimode fiber
• Enables mixing of media on inputs and outputs – CATx in and fiber out, or vice versa.
• Included control card supports management via KVM, network, or serial console. N+1 power supplies supplied
• Switches in less than one frame. Hot-key switching enables user to bypass the standard on-screen display for instant access to critical systems
• Compatible with DNF control panels
• External switching via Black Box ControlBridge AV and KVM Control Processor
• Manage DKM and virtual servers through InvvisaPC and Bouilla

SIMPLIFY OPERATIONS WITH CONTROLBRIDGE

DKM FX makes managing several workstations through a DKM system, consider streamlining your process with ControlBridge. This control panel supports DKM application that gives you instant, one-touch control over multiple CPUs and coins.

The ControlBridge automatically synchronizes with the DKM database and delivers all computer / user station pointers to the screen, allowing you to seamlessly switch sources to different endpoints.

Give multiple users fast, reliable access to high-quality, real-time digital video – plus a host of peripherals across the enterprise – with the DKM FX HD Video and Matrix Switching system.

This chassis-based, modular crosspoint switching system enables you to switch and extend KVM and peripherals over extremely long distances. Use it in any application where many users have to interface with CPUs and other high-end AV equipment that supports high-quality video.

SUPPORTED INTERFACES

- DVI-D, VGA, HDMI, COMPOSITE, RGBHV, SDI, HD-SDI, 3G-SDI
- USB-HD, USB 2.0, USB 3.0, ANALOG/DIGITAL AUDIO, RS-232, RS-422, PS/2

The DKM system is designed for video and broadcasting applications, or for mission-critical control/command rooms – anywhere HD video extension and distribution are vital. 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.

This scalable, flexible system enables you to configure HD KVM switching and DVI routing exactly as needed. Mix and match fiber and CATx ports through cards and SFPs that are plugged into the system’s slots. The configurations are nearly limitless.

The switch comes with a controller card, which has USB keyboard/mouse and DVI monitor connectors for local KVM administration; an RJ-45 port for interfacing with the network and a client machine that has the DKM Java tool installed; and a serial port for control via an external RS-232 device. Because the card has a built-in CPU, you can control all functions from any console without the need for an external CPU or media control. OS platform independent, the switch and its controller card can be accessed by Windows, Linux and/or Mac OS users.

SWITCHES WITHIN MILLISECONDS

Users can switch seamlessly and almost instantaneously from any source to another with the DKM. It takes just milliseconds for this to happen (similar IP-based solutions can take as long as 15 seconds to perform this action).

REDUCES DOWNTIME

Module in design, the DKM FX enables you to change peripheral and CPU connections on the fly and ensure zero downtime. Add or remove cards and SFPs in the slots and reroute inputs and outputs while the DKM FX system’s up and running.

DESIGNED FOR EASY EXPANSION

Add connections and change inputs/outputs as your enterprise needs evolve. When a department purchases new hardware, just slide a new interface card into the chassis. You can also cascade multiple switch chassis if you exceed the number of available ports.

BUILT-IN SIGNAL REPEATER CAPABILITIES

From its ports, the switch supports device-to-device single-mode fiber links up to 10 kilometers (6.2 mi) and CATx links up to 466 feet (140.2 m). These links can be to KVM users, DVI sources, servers and/or various peripherals. Used midway between an extender transmitter and extender receiver, the switch works as a repeater, essentially doubling your distance — up to 40 kilometers (24.8 mi) over fiber and 920 feet (282.8 m) over CATx. You can even configure CATx on an input for output on fiber, or vice versa, and execute it with all the previously mentioned configurations. It is often used in control rooms to enable a primary administrator to troubleshoot or apply updates.

SYSTEM ENHANCEMENTS FOR MANAGEMENT

Several system licenses are available to enhance the usefulness of the DKM system. Installing the Java utility enables users to create presets and macros that can be executed remotely. Furthermore, the Syslog/SNMP license enables remote monitoring. The DKM can also be cascaded when a chassis is fully populated, or when a user wants to access a remote DKM chassis. The Cascade software upgrade enables one or more chassis to be connected and still run from one administrator. Alternatively, users can join chassis in different rooms or buildings (if using fiber) where they can remotely manage the system.
FAST SWITCHING, MULTI-USER SHARING

Users such as directors, presenters and editors require an undisturbed work environment. They need to work way from loud or continuous noise and unnecessary heat. A distraction-free workplace is key to productivity and error-free results.

Additionally, broadcast is a collaborative environment. Many people need access to video and sound for review and editing. They need this access immediately in real time, and the quality of the work has to be very high.

KVM and HD video peripheral switching and extension solutions are ideal for broadcast environments. They enable access to many users at once, in real time, and to high-definition video signals, audio, serial, and USB peripherals. The configuration possibilities are endless. KVM and video peripheral switching and extension also offer flexible transmission options: CATx cable, fiber optic cable or IP-based extension.

In the diagram above, KVM and HD video peripheral extension is used to transmit every required signal from the central equipment room to the end users. DKM FX extender transmitters (A) take the signal from a computer and send it over cabling to the DKM FX extender receivers (B). Receivers provide all the necessary ports for connecting devices needed by the users (keyboard, mice, touchscreens, speakers USB peripherals). The system administrator can configure, switch and manage the system from another workstation (C) with web-based management software. Individual extension technologies can easily be combined in a freely scalable, high-performance switching matrix.

KVM and HD video and peripheral extension optimizes broadcast processes by using existing network infrastructure. Video signals, including DVI-D, DVI-D, DisplayPort 1.1 and 1.2, and HDMI, can be simultaneously transmitted with peripheral signals. The USB interface ensures that even specialty peripherals such as tablets and touchscreens can be easily integrated.

BROADCAST AND PRE- OR POST PRODUCTION

A command and control room (also referred to as a command and control center) is typically a secure room or building in a government, military or prison facility that operates as the agency’s dispatch center, surveillance monitoring center, coordination office, and alarm monitoring center all in one.

A command and control room setup requires multiple users to access video, CPUs and peripherals. Additionally, in a command and control application, one user needs to control the flow of information and switching.

With the DKM FX switching system, a command and control room setup can be extended through several rooms or buildings. A server room houses servers and the main management switch, plus all the CATx transmitters (A). CATx is used for the input because it is pre-existing in the infrastructure.

The outputs on the DKM FX populated chassis (D) are then fiber optic cables to the DKM FX receivers at each computer (B) distributed throughout another room (or to other buildings on campus). Using fiber optic cabling increases distance, prevents ground loops and corrects voltage disparity. Video distribution comes from a single workstation, and commanders (administrators) work at the keyboard/mouse workstations (C) while viewing video on a quad screen. In the setup above, you can see that the DKM FX video extension incorporates a dual-head application.
DKM FX COMPACT

DKM FX COMPACT MATRIX SWITCHES
- Use the cost-effective DKM FX Compact Switches to establish connections from consoles (monitor, keyboard, mouse and other peripheral devices) to sources, including computers and CPUs
- Uses CATx cabling for extension, and some models have SFP slots for fiber connectivity
- Series supports eight to 48 ports in a 1U chassis for easy mounting in server cabinets
- Redundant power supplies included

MIX OF FIBER AND CATX EXTENSION
Transmit and extend dual-DVI and USB-HID signals over a mix of CATx and fiber. A laptop running the Java utility license can manage the system over the LAN, and multiple users can access video and switch stations instantaneously and seamlessly. Workflow in a fast-paced, collaborative environment is supported with this hybrid, single-platform technology.

MODULAR KVM EXTENSION
- Compatible with DKM Compact Extenders
- Get DVI-2 video with resolutions up to 2048 x 1152 at 60 Hz over the full distance, with options for VGA, SDI and many other analog video formats
- Features peripheral options for USB HID, transparent USB 2.0, RS-232, digital audio and analog
- 2-, 4-, 6- or 21-port housing options with or without redundant power
- DisplayPort 1.2 video supports 4K resolutions

IMPROVE DKM WITH VIRTUALIZATION
Many businesses that have a DKM system now want to virtualize their assets. If you’re one of them, you’ll want a solution that grows instead of hinders your system. Enter InvisaPC and Boxilla. With InvisaPC, you can smoothly move your applications and systems to the cloud for more efficiency and flexibility in a control room or command center. Once everything’s virtualized, you can use Boxilla, an enterprise AV/IT system manager, to access and manage up to thousands of devices at once. Through a single dashboard, Boxilla allows you to monitor system security and performance from anywhere at any time. When your DKM works together with these platforms, you can expand it beyond private networks and connect it to other DKM systems both virtually and across the internet. Now you can instantly reach any server on your network, enabling you to make operations more productive.