

# Industry Solutions

Solutions for Broadcast, Education, Healthcare, Hospitality, Industrial, Military & Defense, Public Safety, Retail, Transportation, and Utilities



# Broadcast

The broadcast industry is changing in radical new ways. Enter the door of the future, redefine the way your users work and how your technologies are implemented.

Black Box high-performance KVM solutions support the latest industry trends like the shift to IP, virtualization, PCoIP Ultra, Cloud services, and productions with reduced (onsite) teams backed by remote control rooms and users. In addition, they can bridge legacy with new technology to protect your investments.

Black Box has been helping Broadcasters all over the world implement new workflows and secure control room solutions. Benefit from our experience and thought leadership.

## Solutions



KVM Matrix Switching and Extension



Simplified User Experience



Video Wall Controllers



AV and Room Control

## Customer Use Case: FOX

Since the COVID pandemic, events such as NASCAR 2020, which was run by FOX Sports, had to rearrange multiple roles to even take place. The usual team of 150 people was limited to 50 overall, which led to specific problems. FOX reached out to Black Box for a bandwidth-efficient IP-based solution for broadcast video and control signals via the public internet.

Black Box provided FOX Sports with the Emerald PE to extend video, transparent USB 2.0, and audio signals over the internet with lossless video frame compression. Furthermore, the KVM system enables remote control of replay and graphics systems.

The project optimized broadcasting with a flawless workflow.

## Featured Products



### Emerald® KVM over IP

Serves as an infinitely scalable universal access system, giving users the flexibility to connect to physical and virtual machines, along with anywhere, anytime IP access using extremely low bandwidth. Full 4K/HD video interoperability, 1-touch control room setups, and a high degree of automation through Emerald's APIs, give users valuable flexibility and ease of use.



### Control Bridge® Multisystem Control

Easily connect and control everything in your control room, including room conditions, through one platform. Or change your complete control room setup with just one click. Simplify workflows with configurations custom-made for you.



### Emerald GE Gateway

This IP-Gateway facilitates collaboration allowing up to 8 users seamless access to the same virtual machines over PCoIP, PCoIP ultra, or RDP.



### Emerald Multiviewer

Redefine the way your users work by providing seamless access to up to 16 physical or virtual systems and monitoring them simultaneously in any size and arrangement on multiple 4K/5K screens.



### KVM Extenders

Get reliable remote access to critical IT assets in your production environment with our broad range of KVM extenders.



### MCX - Next-Generation AV over IP

Distribute AV content with no source-to-display latency over IP. Combine the contents of multiple sources and display them on limitless screens, or create a video wall tailored to your needs.

# Corporate

Black Box empowers businesses of all sizes by aligning IT and communications solutions to desired business outcomes.

Today, Network, IoT and AV applications need to scale rapidly, giving users access to complex data at increasing speeds through a future-proof, reliable IT Infrastructure.

The digital workspace continues to connect more employees at distributed offices. Data information assurance, ergonomic desktops, and remote system access are vital for the success. Meeting and visualization tools must provide optimum team information and collaboration.

## Solutions



Networking and IT Infrastructure



Simplified User Experience



Collaboration and Visual Communication



Secure Remote Access

## Customer Use Case:

Joy Mining Machinery wanted to standardize communications, provide real-time metrics, promote plant competition and reduce safety issues and lost-time accidents. To do this, they needed to centralize control of company branding and messaging across 55 global facilities. They turned to Black Box, who rapidly designed, configured and provided a world-class digital signage distribution system based on the iCOMPEL platform that allowed the company to create, schedule and manage messages site-wide from one location.

As a result, Joy Mining has seen improved communications, productivity, OTD and a reduction in safety issues and accidents. The COVID pandemic broke out, nothing was the same again. Events such as NASCAR 2020, which was run by FOX Sports, had to rearrange multiple roles to even take place. The usual team of 150 people was limited to 50 overall, which led to specific problems.

## Featured Products



### Enterprise-AV Distribution

Distribute AV content across your network to multiple screens, create compelling video walls and display latest company insights for employees and guests.



### Enterprise-Remote USB Access

Put USB 3/2/1 devices where you need them. Connect remote devices such as printers, scanners, storage devices, and hard drives to a local computer anywhere from 50 feet to 6 miles away.



### Out of Band Management - Console Servers

Manage remote mission-critical IT, network and power devices and create seamless fail-over paths to meet enterprise uptime requirements.



### LAN-Extension - Media Converters

Extend the reach of your network over fiber and provide better connectivity all over your campus. Straightforward installation means quick, hassle-free deployment.



### Remote Computer Access

Allow users secure access to remote computers over copper- and fiber cables or IP. Lock your critical computers, while empowering users with an unchanged working experience.



### 4K Desktop Switching

Control two or four computers or laptops from a single user station with 4K video, audio, serial and USB 3/2/1 support. Simplify connectivity for users working from home and inside the office.

# Education

On high school or college campuses or in other educational venues, communication is key. Black Box offers digital signage for emergency messaging and information sharing that informs both students and staff of upcoming events, schedule changes, and other relevant digital content. We also offer video distribution products to route content to screens and infrastructure products that keep IT systems running efficiently and effectively.

## Solutions



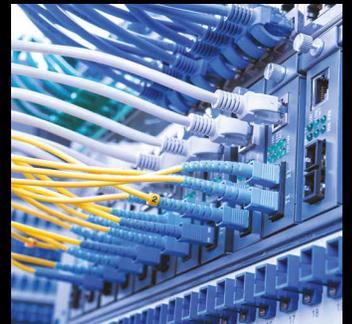
Room Scheduling



Emergency Messaging and Information Sharing



Video Switching and Distribution



Infrastructure

## Customer Use Case: La Roche College

La Roche College wanted a digital signage system that could display news, events, emergency notifications, Twitter feeds, and other social media sites to engage students and staff. Their challenge was finding an intricate networked digital signage system that could display live student and user-generated content in real time. They decided on a world-class digital signage system based on the iCompel® platform from Black Box.

The system met all their requirements while keeping them on budget and providing enhanced communications for students, faculty, and other staff.

## Featured Products



### iCompel® Digital Signage Player

Maximize student, staff, and faculty participation with this easy-to-use digital signage solution that supports every type of content. Integrate it with your emergency system to enhance school safety.



### Quad Multiviewer

Control four video sources from one keyboard and mouse. Combine video from those four systems and display contents in any layout on one big monitor. Compare, Collaborate, Educate.



### Reserva Room Booking System

Booking a meeting room shouldn't be a hassle. The IN-SESSION room scheduling system allows you to easily locate and instantly reserve meeting rooms with the tap of a button or the swipe of a touch panel.



### 4K Presentation Switcher

Easily connect, extend, and switch any wired video source to any conference room display. This switcher's simplicity and best-in-class features help you save time and deliver professional presentations.



### KVM Extenders

Easily access distant computers from the classroom over your existing network cabling. Get an instant unchanged user experience with our broad range of KVM Extenders.



### GigaTrue® CAT6 Lockable Patch Cable

Get premium network connectivity, performance, and security in your school system. This cable stays locked in place until you decide to take it out.

# Healthcare

Delivering quality healthcare to patients is the number one challenge healthcare providers face. Your patients depend on you for the best in care.

Black Box's modern healthcare solutions use emerging technologies and leading IT solutions that enhance patient outcomes in clinics, hospital rooms, operating rooms, and everywhere in between.

## Solutions



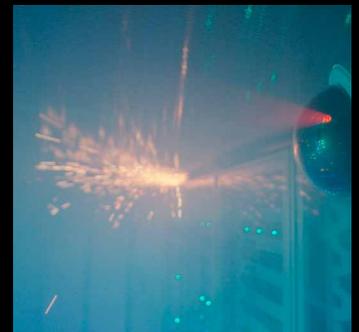
Signal Switching and Extension



Visual Communications and Wayfinding



Infrastructure and Connectivity



Environmental Monitoring (IoT)

## Case Study: High-Tech Improvements in the OR

Today's operating rooms (ORs) contain modern equipment, such as robotic arms with installed cameras. A digital OR customer wanted to connect a camera over a distance to the medical visualization system, which must provide optimum video quality and be 100% accurate and transparent to the system. They also needed to replace outdated analog modular extenders.

Black Box recommended compact DisplayPort Active Optical Cables (AOCs) to the OR customer. All-in-one AOC cables manufactured exactly to the OR's configuration guarantee clear, crisp video displays on the visualization system so doctors can see even the most intricate details.

The new AOC solution eliminated signal delays and even the slightest change or color reduction while transporting video signals in real-time. The all-in-one cable solution also reduced clutter in the OR and at the user station. The medical staff now enjoys a secure, optimized working environment with neater, more efficient processes and improved workflows. The customer is very satisfied with the Black Box solution.

## Featured Products



### MediaCentro IPX HDMI over IP

Create eye-catching, engaging displays with this video extender. It's scalable so you can add transmitters and receivers as you add sources and displays.



### iCompel® Digital Signage Player

Create, manage and update digital signage content easily with this digital signage system. Customize your in-store content by location. Ideal for use with edge-blending projectors.



### Emerald® KVM over IP

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### USB 3.0/2.0 Extenders

USB 3.0 / 2.0 Extenders overcome the distance between medical imaging equipment in the imaging room and host computers in the technician room, without compromising image quality.



### Console Server

This fully redundant console server with dual power supplies and dual Gigabit Ethernet ports allow IT administrators 24/7 out-of-band control. The console server features a POTS modem and enterprise-grade security.



### Active Optical Cables - Displayport/HDMI

This high-quality and ultra-thin EMI/RFI-resistant fiber cable connects to cameras, robots, and screens in the OR.

# Hospitality

AV technology plays a major role in the hospitality industry. It can be used as classic and simple digital menu signage in your café or to outfit an entire shopping mall and entertainment district with the latest AV offerings.

Black Box is here to outfit your space with superior AV coupled with IoT solutions, designed for the needs of a wide variety of organizations within the hospitality industry.

## Solutions



AV Extension



Digital Signage



Internet of Things



Room Booking  
and Control

## Case Study: Shannon Brewing Company

Shannon Brewing Company wanted to enhance video entertainment in the bar area, monitor equipment in the brewing area, and track the environmental parameters of the facility remotely. The whole system needed multiple video walls with additional individual features.

Black Box replaced the client's old system with a brand new MCX-AVoIP, a ControlBridge® touch panel, an iCompel® Digital Signage Player, and AlertWerks. Through this AV solution, 4K 60 Hz video and audio could be distributed and extended in real-time without any lag, delay screen blinks, or any image distortion. The ControlBridge touch panel offers stunning true-color images, is easy to use, and is connected by a single Ethernet cable. iCompel® has all software preinstalled and supports many media formats. To solve tracking problems, an AlertWerks device monitors temperature, humidity, air pressure, and water leaks.

The satisfied customer stated that the system is "incredible" and easy to use.

## Featured Products



### MediaCento AV over IP

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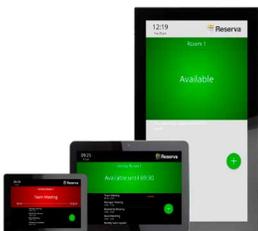
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### Reserva Room Booking

Booking a meeting room shouldn't be a hassle. The Reserva room scheduling system allows you to easily locate and instantly reserve meeting rooms with the tap of a button or the swipe of a touch panel and also add information to it.



### AlertWerks AW3000

This IoT Gateway is unique in the market with virtualization of sensor data working on LoRaWAN, Wi-Fi®, and BLE by using automation, visualization, and analytics. Through its fast recognition and early alert notification, failures can be prevented.

# Industrial

Industrial environments present much harsher conditions than those found in typical office environments. They face extreme temperatures, humidity, and large amounts of dirt and soot and corrosive materials that can ruin IT equipment. They can also contain devices such as motors and mechanical switches, which emit a substantial amount of electromagnetic interference (EMI).

Black Box has a full range of solutions designed to automatically perform, distribute signals, and visualize processes in the toughest environments.

## Solutions



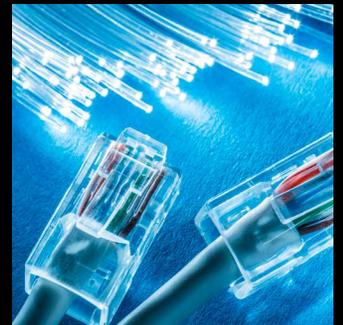
Redundant and Remote Networks



Data Visualization and Real-Time Process Control



Industry 4.0 Automation through Sensors



Cabling and Infrastructure

## Case Study: Monitoring Crucial Environmental Conditions for EDF

The electric utility company EDF (Électricité de France S.A.) covers every sector of the energy business and is a global leader in low-carbon energy. Most of their substations are located at high points to guard against flooding and intrusion. Because of the geographical position and circumstances, the Corsica plant required remote supervision, crucial switching, and protection and control equipment. They also requested a monitoring tool to view the status of different environmental conditions, such as temperature and humidity.

The customer partnered with Black Box and started a test phase with our AlertWerks product. The system consists of base units, or ServSensor hubs, and probes or intelligent sensors. After successfully completing the test phase, EDF Corsica decided to equip 24 remote substations with the AlertWerks solution, sending data from temperature, humidity, and AC/DC sensors to central hubs connected to supervisor sites via IP.

EDF is pleased with Black Box because now they no longer need to go onsite to troubleshoot equipment. Supervisors get real-time alerts by email or SMS when issues are detected.

### Featured Products



#### AlertWerks AW3000

This IoT gateway works over LoRaWAN, Wi-Fi®, and BLE to automate, visualize, and perform analytics for sensor data. It prevents failures by recognizing errors and sending early alerts about equipment malfunctions.



#### Industrial Media Converters

Choose from a wide variety of industrial media converters designed to provide the utmost performance in the toughest environments. They are ideal for extending the distance of copper devices such as IP cameras and wireless access points.



#### Industrial Ethernet Switch

This extensive range of hardened Ethernet switches provides reliable performance in demanding security/surveillance and automation applications. It includes managed, unmanaged, and PoE switches.



#### Freedom II KM Switches

Switch between four or eight computers by moving a mouse from screen to screen. Perform functions that would normally require eight separate keyboard/mouse sets with one keyboard and mouse, freeing up desk space.



#### Emerald KVM over IP

This KVM-over-IP system extends and switches pixel-perfect video over an IP network. Access and control remote systems, visualize and monitor process data in real time to allow operators easy workflows with great situational awareness and instant responses.



#### iCompel® Digital Signage Player

Unique application-based digital signage player stores data locally, ensuring you're covered if the network connection is lost due to extreme conditions.

# Military & Defense



Meeting stringent military and defense standards is a challenge, and security has no compromise. Downtime is not an option. You need reliable and proven IT solutions, 24/7. Working with Black Box means facing the challenges with ease. As a trusted and certified partner serving military and defense organizations for over 40 years, we understand your specific compliance and procurement requirements.

## Solutions



Secure Desktop



Fiber to the Desktop



Command and Control



Data Center and IT Infrastructure

## Customer Use Case: Police Service Organization Boosts Security with NIAP-Certified KVM Switch

In law enforcement, keeping confidential or classified information secure is a must. A high-profile police agency asked Black Box: how do we keep networks with varying levels of classification separate from public networks or the internet? Multiple users inside the agency do not need to access all internal networks – especially those that contain the most sensitive information.

To solve their problem, Black Box team members visited the customer to see their workstation setup and talk with their IT teams. We recommended a NIAP certified Desktop KVM switch to guarantee security by keeping private networks separate from public networks, so members of the organization can only access networks based on their permissions granted.

### Featured Products



#### NIAP 4.0-Certified Secure KVM Switches

This broad line of secure KVM products securely switch peripherals between multiple computers and devices with different classification levels while protecting confidential information. The ergonomically designed KVM switches optimize workflows and save space.



#### Emerald® KVM over IP

This KVM-over-IP system extends and switches pixel-perfect HD or 4K video over an existing or dedicated IP network. It also greatly improves operator workflows in control room settings. Please contact us for EAL4+ compliant solutions.



#### MCX Next-Generation AV over IP

Distribute AV content with no source-to-display latency over IP. Combine the contents of multiple sources and display them on limitless screens, or create a video wall tailored to your needs.



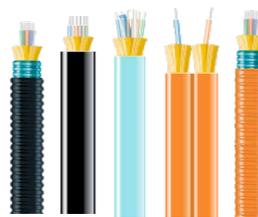
#### Micro Mini Media Converters

Bring fiber to the desk or extend your network to the field with cost-effective media converters available with or without PoE, for office and harsh environments.



#### iCompel® Digital Signage Player

Unique application-based digital signage player stores data locally, ensuring you're covered if the network connection is lost due to extreme conditions.



#### Fiber Cabling

Choose from a broad range of singlemode and multimode fiber cables. Pre-terminated and custom-made fiber cables are available from our in-house manufacturing facility.

# Public Safety

Public safety affects everyone. Communicating and visualizing critical information are the most important tasks necessary to keep the public safe from crime or harm. Black Box can help out in this case by providing high quality, real-time video and information sharing between operation centers, such as police departments, and central locations, like subway stations or other crowded places. These features result in improved situational awareness, faster response time, and better public security.

## Solutions



KVM Switching  
and Extension



Collaboration and  
Control



Video Switching and  
Extension



Real-Time Data  
Visualization

## Use Case: Upgrading a Command and Control Room in a New Police Station

Moving can be difficult, especially for a police department. A Danish police station had to face many challenges, such as finding new equipment that was compatible to the new environment and old system. Black Box was the first point of call. Also required were fast switching times, redundancy, and hot swappability, to avoid potential downtime.

Black Box implemented a DKM FX Matrix Switching System to provide multiple users simultaneous access and the ability to work over a mix of structured cabling (copper and fiber). The DKM FX solution has two video walls, one 13 x 6 ft and one 6 x 6 ft, connecting rooms with five desks, and multiple users throughout 24/7 shifts.

Black Box not only helped to master the difficulties but we also enabled a better workflow and higher security.

### Featured Products



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#### Quad Multiviewer

Control four servers from one keyboard and mouse. Display video from those four servers on one big monitor in real-time or on cascaded monitors.



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#### VideoPlex 4000 Video Wall Controller

VideoPlex gives users the flexibility to create individually shaped video walls with four or more HDMI displays. There are no restrictions for the screen arrangements or sizes. Freely scale and position images, including rotations of up to 270.



#### ControlBridge® Multisystem Control

Easily connect and control everything in your control room, including room conditions, through one platform. Or change your complete control room setup with just one click. Simplify workflows with configurations custom-made for you.

# Retail

A tablet that can  
replace your laptop



Nowhere more than in retail environments is the potential to drive revenue by serving dynamic, hyper-targeted digital signage content quite so strong. Black Box offers digital signage and video wall solutions that give you the power to display the content you want where you want in real time to improve sales and awareness. Even better, our signage solutions boast picture-perfect quality that's certain to capture any potential customer's attention.

## Solutions



Wayfinding



Digital Signage and  
Video Wall



AV Distribution



Infrastructure and  
Connectivity

## Application Scenario: Retail

Digital signage technology allows you to add creative elements to your in-store experience, keeping your brand fresh and generating excitement for customers. In one such application for a Las Vegas event center, the technology solution displays content over box office windows, on kiosks, in the retail space, and over the entrance to a theater.

### Featured Products



#### MediaCento AV Distribution

Create eye-catching, engaging displays with this video extender. It's scalable so you can add transmitters and receivers as you add sources and displays or create and control a small video wall.



#### KVM Extenders

Connect cashier locations with the system in the back room of your store with these KVM Extenders.



#### VideoPlex 4000 Video Wall Controller

This standalone display wall controller/scaler outputs high-resolution DVI video up to 4K to multiple monitors. Display content that informs and attracts your customers.



#### MCX Next-Generation AV over IP

Distribute AV content with no source-to-display latency over IP. Combine the contents of multiple sources and display them on limitless screens, or create a video wall tailored to your needs.



#### Active Optical Cables

Active Optical Cables extend 4K HDMI video hundreds of feet without any additional software or devices. They are ideal for displaying high-quality images to customers.



#### iCompel® Digital Signage Player

Create, manage, and update digital signage content easily with this digital signage system. Customize your in-store content by location. It's ideal for use with edge-blending projectors.

# Transportation



Watching over transportation operations and keeping them on time comes down to having the right technology infrastructure in place. Black Box's comprehensive portfolio of connectivity products help you track every issue, delay, and emergency happening in transportation environments in real-time and visualize them on screens or video walls. With a reliable, well-connected, and redundant control room, operators can make informed decisions instantly to keep commuters at airports, railway stations, subways, and bus stations safe and on-schedule.

## Solutions



Control Room Operations



Railway Automation and Connectivity



Security Monitoring



Passenger Information and Wayfinding

## Case Study: Large Metro System

In public transportation, protecting citizens from personal and property crimes is a challenge. Monitoring, transmitting, and recording real-time images via CCTV increases passenger safety.

A large metro system wanted an affordable system to extend KVM signals over CATx and fiber for their CCTV surveillance system. They also desired to connect serial (RS-232) joysticks for smooth operation. The whole system spans from less than 320 feet to 1800 feet.

Black Box recommended a KVXLC extender to reach the necessary distances of 320 feet over copper cable, and single-monitor fiber DVI extenders to extend signals up to 1800 feet over singlemode fiber cable. To top it all off, we delivered a USB to serial converter to support the joysticks the customer required. The metro system was happy with the resulting system, and placed a second order.

## Featured Products



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### KVM Extenders

Get reliable remote access to critical IT assets in your production environment with our broad range of KVM extenders.



### iCompel® Digital Signage

Keep passengers informed of arrival times and delays with this easy-to-use digital signage product. Update in real-time with ease to keep content accurate.



### Industrial PoE/PoE+ Ethernet Switches

Easily connect IP cameras, passenger information systems, and control units with these hardened PoE-enabled Ethernet switches. Choose between powerful managed switches or plug-and-play unmanaged switches.



### MCX - Next-Generation AV over IP

Distribute AV content with no source-to-display latency over IP. Combine the contents of multiple sources and display them on limitless screens, or create a video wall tailored to your needs.

# Utilities

The current worldwide demand for electricity, water, and gas is unprecedented. Utility companies must meet this growing need for people, organizations, and entire nations. Companies require real-time access to multiple data sources and critical systems to efficiently manage plant operations. KVM and Video Wall technologies are essential solutions for these challenges.

Black Box can provide you with stable, redundant, reliable, and high-performance Video Wall and KVM technologies to keep your utilities control room running reliably, efficiently, and trouble-free.

## Solutions



KVM Signal Switching and Extension



Real-Time Data Visualization



Redundant and Remote Networking



Room Control and Environmental Monitoring (IoT)

## Case Study: Enabling Remote Control for Electricity Giant

A Spanish gas and electricity distributor needed to implement a control room to operate its power plants remotely without losing video quality, while maintaining the existing computers in their original location. Using fiber optic cabling was mandatory to connect everything long distances and avoid delays or loss of resolution.

Black Box recommended the KVM Extender to extend a console via IP over about 100 km. The Extender System proved to be the most flexible, future-proof solution because it can easily adapt to future changes and different connectivity needs inherent with using multiple interfaces.

This project has enabled the distributor to simplify their remote control room process and meets its strict quality stipulations. The customer is pleased with the resulting control room solution.

## Featured Products



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Control four servers from one keyboard and mouse. Display video from those four servers on one big monitor all at the same moment in real-time or on cascaded monitors.



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### Freedom KM Switches

Freedom is ideal in command and control applications. Not only can users switch between several computers just by moving the mouse, but they can also simultaneously access a mix of USB peripherals, including high-speed USB 2.0 devices.



### Emerald® KVM over IP

Serves as an infinitely scalable universal access system, giving users the flexibility to connect to physical and virtual machines, along with anywhere, anytime IP access using extremely low bandwidth. Full 4K/HD video interoperability, 1-touch control room setups, and a high degree of automation through Emerald's APIs, give users valuable flexibility and ease of use.



### Fallback Power Switch

The Fallback Power Switch is designed to provide reliable and safe power fallback for single power devices. Choose between automated switching between primary and secondary power circuits, manual AB switches or ganged switches



### AlertWerks AW3000

This IoT Gateway is unique in the market with virtualization of sensor data working on LoRaWAN, Wi-Fi® and BLE by using automation, visualization and analytics. Through its fast recognition and sending out early alerts, failures can be prevented. The product also seamlessly integrates with KVM and AV solutions from Black Box such as Emerald and MCX.



### DKM Proprietary KVM Matrix Switching

DKM is a proprietary (non-IP) high-performance KVM matrix switching platform that allows cross-point switching and extension of up to 4K video, peripheral, audio, and serial signals. The multilevel redundancy of the DKM family offers high reliability for 24/7 operation in critical environments.

# WHY BLACK BOX

## **Expertise**

Black Box project engineers can assist with system assessment, design, deployment and training.

## **Breadth**

Black Box offers the most comprehensive suite of engineered KVM, AV and infrastructure solutions in the industry.

## **Support**

Reflecting our commitment to complete satisfaction, our dedicated team of highly trained support technicians is available by phone free of charge, every day of the year.

## **Service Level Agreements**

Our service level agreements give customers access to technical support, product training, dedicated application engineers and more.

## **Experience**

Providing leading technology solutions since 1976, Black Box helps more than 175,000 customers in 150 countries build, manage, optimize, and secure IT infrastructures.

## **Warranties**

Multi-year warranties with multi-year extensions and replacement options are available.

## **Center of Excellence**

Black Box offers a Centre of Excellence, featuring professional services and support agreements that help optimize customers' systems and maximize uptime.