

Automobile Museum Leverages Compact DKM System to Deliver an Unparalleled Interactive Experience for Visitors via a Touch Wall

- **Industry:** Hospitality & Entertainment
- **Client:** Automotive Museum
- **Region:** Europe
- **Solution:** KVM Matrix Switching
- **Product:** DKM Proprietary KVM Matrix

BACKGROUND

Car enthusiasts anticipate the glamour of a luxury vehicle in all its glory at an automobile museum. Visitors to the museum experience the thrill of a sportscar via an interactive video wall encounter. Cars in motion, mechanical information, and much more display on the Video Wall. The wall enables visitors to swipe through thousands of photos, illustrations, and posters, showcasing the history of luxury cars.

The museum was looking for a way to extend 20 DisplayPort video signals up to 4K at 30 Hz over fiber to its video wall.

THE CHALLENGE

Because the relevant devices have DisplayPort interfaces, the museum was faced with the challenge of DisplayPort's distance limit of 10 meters. To attain longer distances, the museum needed to use video extenders, but the transmitters must take up as little space as possible in the server cabinet. To transmit additional USB signals from a touch wall, they hoped to connect a transparent USB 2.0 extension. The museum wanted a system that was failureproof, so they required redundant power. To modernize the touch wall, the museum envisioned installing 20 new monitors in addition to the extender system.

Working with the museum, a large European integrator trusted Black Box for a solution because they had a longstanding relationship with us and a history of deploying Black Box extender solutions for other customers.

THE SOLUTION

Generally, a DisplayPort transmission that exceeds a distance of 10 meters is accompanied by problems. Video extenders are used to span beyond the 10 meters. Since Extenders usually require a receiver unit at the display side and a transmitter unit at the source, the transmitters take up a lot of space in a server cabinet. For space-saving highly reliable transmission, we chose the 21-port chassis that just takes 4RU of rack space for all 20 video cards and the transparent USB 2.0 extension. All units (the chassis hosting the transmitters and the receivers) support dual power supplies, providing the required power redundancy for their fail-safe operation. The transmitter cards and receivers connect perfectly to the existing fiber cabling in the museum, allowing not only visibly lossless 4K video transmission over a long distance but also immunity against possible EMI/RFI interference.

After Denis, sales representative at Black Box, proposed this solution, the integrator approached its contact at the museum with the assembly plans provided by Black Box, their offer, and the setup scope discussed in advance. The customer liked the solution very much. However, global supply chain issues caused a longer lead time for the 21-slot housing. To combat the problem, Denis offered the customer a demo unit available on short notice. The customer was pleased with the flexibility of the system, as cards can be easily and cost-effectively exchanged in the future. For this reason, the museum also ordered a few reserve cards right away, to replace existing cards in case of a failure.



The museum also acquired 20 new displays, which were procured via the integrator, in addition to the DKM extender system to update their video wall.

RESULTS

To address the museum's need to extend the distance between the source CPUs and the visitor video wall using existing fiber optic cables, Black Box recommended a DKM solution. As a result, 20 DisplayPort video signals can be extended via a compact DKM transmitter housing populated with transmitter cards over optical fiber to 20 individual receiver units placed behind the monitors. To connect the touch control, USB 2.0 signals are transmitted alongside the video via the Black Box system using fiber optics.

The installation, which is not yet completed, is part of the ongoing modernization of the museum. The solution will enable visitors to the museum to obtain detailed information about the car manufacturer. The multi-touchscreen will provide visitors with an interactive experience.

The DKM solution meets every one of the museum's requirements: it is failure-proof, is backed by redundant power, and its compact design takes up hardly any space in the server cabinet. The museum will be able to distribute DisplayPort signals up to 4K 30 Hz to the display over long distances via a compact system using the existing fiber optic cables. Cards can be replaced quickly and easily in case of failures or system changes. The museum is very well equipped for future technologies while maintaining compatibility with existing equipment. This means that they can react quickly to innovations and changes in requirements to deliver a state-of-the-art interactive user experience to its visitors."

