

Seamless Switch™ Technology: Delivering the Fastest Professional A/V Content Experience



VM5808H
HDMI Matrix Switch with Scaler

Introduction

Professional audio/video solutions are increasingly used to deliver timely information and targeted content to businesses and consumers. Today, multiple video displays and digital signage are everywhere – utilized in corporate facilities, airports, terminals, university campuses, hospitals, government offices and retail stores. They are widely used in business-critical applications such as industrial monitoring, traffic control, surveillance, entertainment and gaming, and military environments.

In addition to traditional video and graphics, the next-generation experience requires supporting full HD-1080p and 3D video content. Given the broad array of screens, resolution, and distance parameters, performance, reliability and quality can be challenging.

Delivering the Right Signal

Surveillance applications and live-streaming events such as racing, auctions, and gaming require complex configurations that integrate multiple video sources and different resolutions. To ensure a consistent viewing experience, eliminating the possibility of blank screens or content not delivered in real-time, video switching must be instantaneous.



Racing & Gaming

Horse racing and gaming operators rely on video to deliver live-streaming content and entertainment. Races are captured by multiple camera angles to deliver an immersive viewing experience in real-time. Each camera is connected to a central control room where



the video is then delivered and displayed to various video walls and large screens for spectators to watch.

It is vital for operators to program and queue video feeds, especially as horses approach the finish line. They need the capability to reliably switch video and other interactive content to manage their gaming operations, eliminating blank screens or time-delayed activity.

Surveillance

Video surveillance operations on campuses and in corporate facilities, shopping malls and casinos rely on a multitude of cameras to effectively monitor real-time activity. Similar to racing and gaming applications, videos feeds from cameras are sent to a control room where personnel can switch from different angles to observe and monitor. Blank screens would compromise their ability to ensure safety and mitigate theft.



Traffic Control

Traffic control centers need to continuously monitor conditions captured by different cameras from many locations such as intersections and roadways. It is vital to be able to easily switch to video feeds to highlight traffic, accidents, road work or other closures.

Seamless Switching Solution

Latency and unstable performance issues from multiple video feeds can be impacted by several different factors, including HDMI signal, video timing (resolution), AVI InfoFrame, deep color and audio.

Seamless Switch

ATEN's Seamless Switch™ technology provides a unique capability to deliver consistent performance and reliability. Integrated into the VM5808H HDMI Matrix Switch, the built-in Seamless Switch™ utilizes ATEN's scaler technology in FPGA to process the video content. This helps to unify the video format for the display even when the matrix switch connects displays with different format sources. With the unique scaler function, the HDMI Matrix Switches can be integrated with video walls to easily and flexibly scale up and scale down video outputs to meet various video display requirements.

Alternative solutions utilize generic CrossPoint IC in their switching solutions. This approach causes video signal loss in a short period of time when the video feed or content is changed. When this occurs, a blank screen is rendered. Integrating FPGA for each port on the VM5808H HDMI Matrix Switch provides the capability to individually process diverse and complex signals, thus improving performance and eliminating any occurrence of blank screens. ATEN's solution provides continuous video streams, ensuring a positive viewing experience without any frame loss.

Additionally, ATEN's EDID functionality allows video sources to communicate with the display and its native resolution. Through EDID the source generates the necessary video characteristics to support the needs of the display and ensures optimal image quality as well as overall system reliability.

Summary

Regardless of how professional audio/video is being deployed, it is important that applications and live-streaming content are delivered efficiently. Each project has its own unique set of requirements, and performance and reliability can be impacted by a variety of factors.

ATEN's HDMI matrix solutions with Seamless Switch™ can be utilized to support a broad range of applications and live-streaming activities without compromising performance and reliability. The advantage of the Seamless Switch™ technology is that mixed environments with different video sources and monitors will not be impacted by signal loss and degraded resolution.

Utilizing ATEN's HDMI matrix product line with Seamless Switch™ function will provide a flexible, yet powerful and highly reliable solution to support business-critical operations.



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