

# Matrox® Monarch™ EDGE

## 4K/Multi-HD Remote Production Encoder



Affordably produce live, multi-camera sporting events, while minimizing on-site expenses by keeping talent in-house with Monarch EDGE. A compact, robust, and low-power remote production encoder, Monarch EDGE synchronizes and securely delivers remote camera feeds to the master control room or the cloud for production with remarkably low latency. Programs destined for web or over-the-top (OTT) delivery can select the 4:2:0 8-bit encoder version, while the 4:2:2 10-bit capable Monarch EDGE encoder version is ideal for demanding, broadcast-quality productions.

### Boundless Productions, Small Footprint

Easily produce multi-angle live events by extending the production studio to any remote location with a network connection. Monarch EDGE can encode up to four camera feeds from HD or 3G-SDI sources. When an in-studio 4K production requires a remote feed, Monarch EDGE can accept either 4K signals over 12G-SDI, or a quad 3G-SDI to deliver a full-4K stream. For events that require more cameras, its compact footprint ensures that two units will fit into a single 1RU space.

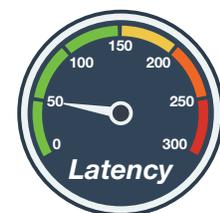


### Built for High Quality 10-bit H.264 Encoding

The optimized H.264 engine powering Monarch EDGE keeps data rates exceptionally low without sacrificing quality. I-frame-only streams reaching 150 Mbps can be delivered if quality is a high priority. Each input can be streamed at resolutions up to 1080p60 using the High 4:2:2 H.264 encoding profile. Furthermore, multiple processes can be performed on each input by powerful scaling and de-interlacing engines. This enables each input to be streamed at multiple resolutions and bitrates simultaneously, which is useful for remote monitoring.

### Exceptionally Low Encode Latency

In live productions, potential signal sources must be synchronized. If a remote production encoder takes too long to transfer the signal from the field to the production system, delivering crisp cuts between local and remote feeds can prove difficult. High latency often means long delays between video capture and delivery, making live productions appear unsynchronized and unprofessional. With an exceptionally low 50ms of latency between video capture and stream output, Monarch EDGE achieves some of the lowest latencies on the market, ensuring seamless productions.



### Keep it In-sync

All channels encoded by Monarch EDGE will be locked to a single clock, and the streams generated will have timestamps to allow any decoder to realign the streams at output. For the very best results, the cameras feeding the encoder should be genlocked together to ensure each frame is captured in phase. Monarch EDGE offers a genlock output jack with a signal that can be distributed to those cameras if an in-house sync is not available.

SRT RTSP  
RTMP  
MPEG-2 TS

### Flexible Streaming Options

There are a variety of streaming protocols available to Monarch EDGE users. On closed networks, MPEG-2 TS or RTSP streams can be selected for delivery. For cloud-based destinations, or when the network is congested, SRT may be more appropriate. SRT is a new open-source format that provides the reliability of RTMP, while reducing latency, for use on open networks. SRT streams can also be encrypted if security is a concern.

### Tally and Talkback<sup>1</sup>

Monarch EDGE provides tally signals and talkback channels to facilitate bi-directional communication between on-site camera operators and in-studio personnel. These provisions on the device help reduce the amount of equipment required on site.



### Connectivity for Today and Tomorrow

Monarch EDGE offers flexible, future-proof connectivity with 3G, 12G SDI, and ST 2110 over 25 GbE network connections. Inputs are auto-detectable and allow for a wide range of connectivity to devices such as cameras, switchers, vision mixers or routers. Additionally, audio can be selected from two channels of embedded audio per video input, or balanced analog audio connectors.

### Convenient, Centralized Control

Monarch EDGE Control Hub is a powerful application that provides remote-control management and configuration over all network-connected encoders from a central location. This powerful software provides authorized users with high-level views of all devices on the network, and enables full access and control from a single, easy-to-use interface.



### Preview Inputs First

Allowing up to four simultaneous input previews on a single desktop monitor, Monarch EDGE ensures that videos are ready to be produced. Monarch EDGE Control Hub allows users to effortlessly configure how they would like to preview sources of input. Users can choose to view one input, cycle through inputs, or view four inputs simultaneously.

### Robust and Practical Design

Monarch EDGE was built with reliability in mind. An LCD screen on the front of the appliance allows the user to quickly access its status and configuration settings. A locking power connector safeguards against connection loss during production. Redundant Ethernet (1 GbE) ports allow users to control the device from one port while sending video from a second port. Users can opt to send the same streams from each port while taking completely separate network paths. Finally, Monarch EDGE's compact design ensures it can be installed in a fly-pack, OB van, or with a second Monarch EDGE unit in a 1RU-rack space.



1. These features must be supported at the decode end of the production chain with the help of custom integration by the user or vision mixer provider.

### Contact Matrox

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