Matrox **Maevex™ 5100 Series**

LAN

PowerStream
control SW

Maevex Decoders

Maevex Encoder

Maevex Decoder

Maevex 5100 Series H.264 Encoders and Decoders
Affordable Full HD, Low-Bandwidth AV-over-IP

matrox®

Maevex 5100 Series –
Distribute & record at excellent quality and low bandwidth

The Matrox Maevex video distribution over IP solution includes the Maevex 5100 Series encoders and decoders that can extend or record up to 1080p60 video and audio over a standard IP network at user-defined low bitrates for excellent quality and minimal network bandwidth consumption. The Maevex encoder streams or records high-quality video and audio and uses the H.264 video compression standard. It can stream to Maevex decoders or any device or PC that supports the required network protocols. It can also record to a shared network or NAS drive. The robust Maevex PowerStream Plus software application is included with the hardware and is used to remotely discover, manage, and adjust the Maevex network and lets administrators conveniently define multiple stream parameters and balance network bandwidth consumption and quality. The PowerStream Plus API and Maevex 5100 Series REST API are also available and grant integrators and developers the ability to build personalized Maevex control applications and/or to integrate Maevex functionality in existing or even third-party applications.

Key benefits:

Encoding:
- Encode/record up to 1080p60 and 1920x1200 video and audio
- H.264 compression for high-quality, low-bandwidth AV-over-IP
- Support for wide-screen and standard aspect ratios and many resolutions
- Scale streams before distribution for lower bandwidth consumption
- HDMI or analog audio support
- Open encoding allows for third-party software decode (e.g. VLC)

Recording:
- Record up to 1080p60/1920x1200 to NAS or shared network drive
- Control frequency and duration of recording
- Schedule the start time and date of recording sessions
- Recorded user-defined file name includes timestamp for easy file management

Network management:
- Operates on standard 100/1000 Mb Ethernet networks
- Auto-detect and discover Maevex units on subnet (DHCP server required)
- Full/half-duplex mode and static IP address support
- CBR, VBR support
- Network bitrate control (100 Kbps – 25 Mbps)

Failsafe:
- Play back pre-recorded content on the decoder in case of a network disruption or if encoder stops streaming (e.g. loss of power)
- Programmable time delay before failsafe activates
- Resumes last streaming activity upon power return

PowerStream Plus control software:
- Remotely manage the entire Maevex network from one application
- Compatible with Maevex 5100 and 6100 Series
- Fine-tune encode/decode parameters and adjust bitrates
- Conveniently access IP address, bitrate, and other vitals
- Scale and crop content to fit different outputs
- Included with Maevex 5100 (free download)

Maevex APIs:
PowerStream Plus API
- Based on easy-to-use .NET programming language for Windows and Mono for Linux
- Supports rapid customization and command-level access

REST API
- Lower-level API for even greater flexibility and direct access to Maevex 5100 units
- Flexible and portable software development

Other benefits:
- Daisychain decoders and extend network via integrated network switch
- Failure resilience—power, network, and encode/decode auto-recovery features
- Reliable, solid-state, energy-efficient design
- Local real-time pass-through and confidence preview on encoder
- PowerStream-controlled user access from secured PC
- Detailed LED indicators for easy and effective troubleshooting
- Customizable bitmap for encoder/decoder splash screen
- Rackmountable with optional rackmount tray and accessories
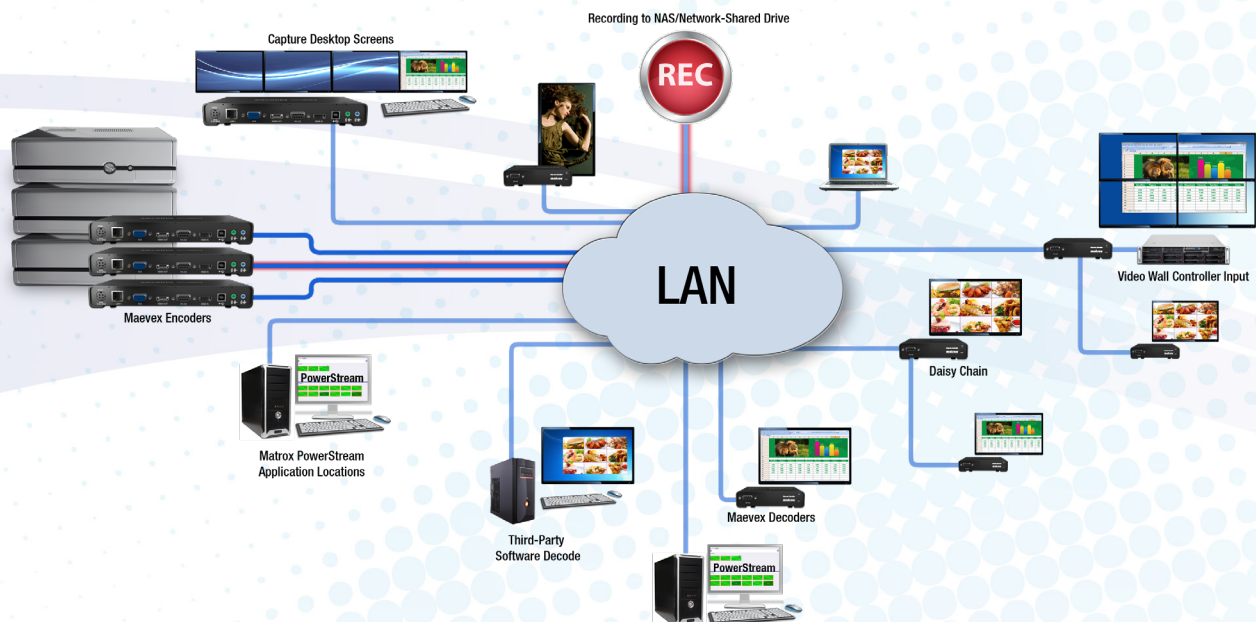
Applications

Distribute and record high-quality video and audio with applications in healthcare, automation/production, education and training, security, banking, transportation, and dynamic digital signage. Additionally, Maevex can serve collaborative video wall and control room environments by making it easier to distribute and integrate data and video. In control rooms for example, Maevex serves as a seamless, standardized IT solution to deliver desktop, video, and other content to the video wall as well as share operator display outputs, desktops, and applications.

Extremely cost-effective, Maevex takes full advantage of existing and standardized COTS IT networking equipment and networks within these environments. In many cases, Maevex can run video and audio on existing data networks without requiring any special segregation or network management. Send data as well as high-resolution video at very low bandwidth, with excellent-quality results.

The need for high-quality, low-bandwidth video distribution on non-proprietary, standardized IT equipment is common in many application areas and Maevex can serve ProAV installers and integrators as an excellent, versatile, and cost-effective solution in their product portfolio. Contact Matrox today for a product demonstration.

Distribute and switch multiple 1080p60 video streams over the network

Maevex units support cost-effective one-to-one unicast, one-to-many unicast, and one-to-many multicast streams over a standard IP network using off-the-shelf networking equipment. An integrated network switch on the decoder enables Maevex daisychaining and/or network extension. When deploying Maevex encoders and decoders, users and operators can choose to encode as many streams as their network bandwidth can accommodate and each decoder can capture and display all of the streams available. See and hear all channels at each decoder via "virtual" network-based matrix switching. Leverage the ability to operate on standard 100/1000 Mb Ethernet networks at low bandwidth and let your IP network do the switching with no additional equipment and with simple and easy-to-use stream/channel identification for easy and effective channel switching.

Maevex PowerStream Plus API and REST API for complete reach and control

The Maevex 5100 Series comes bundled with Maevex PowerStream Plus—a robust software application for remote management of the entire Maevex network topology. Available upon request, PowerStream Plus API allows access to the entire application feature set and supports a range of customization options, from the creation of a straightforward, single-function application to full integration of all PowerStream Plus features into a fully customized and branded application. PowerStream Plus is based on the .NET framework.

For even greater flexibility and direct access to the Maevex devices themselves, the Maevex 5100 Series REST API is available. The REST API allows for direct control of the state of individual Maevex devices and provides for a more flexible and portable software development environment. The Maevex 5100 Series REST API provides methods for accessing every feature in Maevex 5100 Series products. Code developed with the Maevex 5100 Series REST API addresses the 5100 Series encoders and decoders using HTTPS and follows the principles of Representational State Transfer (REST) using simple HTTPS payloads in Protocol Buffers (Protobuf) format.

Matrox Maevex 5100 Series – Specifications

Maevex 5150 Encoder:

Video Input
- HDMI with digital L-PCM audio
- DVI via DVI-to-HDMI adapter
- Resolutions up to 1920x1080p60, 1920x1200(60Hz) and many more wide-screen and standard-definition resolutions

Video Output
- HDMI with digital L-PCM audio, local pass-through w/o scaling or confidence preview w/ optional scaling
- DVI via HDMI to DVI-D adapter, local pass-through w/o scaling or confidence preview w/ optional scaling
- HD15, Analog VGA – confidence preview w/ optional scaling
- Resolutions up to 1920x1080p60, 1920x1200(60Hz), 1920x1080i50, 1920x1080i60
- Procamp control: contrast, brightness, saturation, hue
- Scaled output
  (i.e., 1080p60 input/720p60 scaled output)

Audio Line-In
3.5mm analog stereo audio

Audio Line-Out (Local Pass-Through)
3.5mm analog stereo audio

Network Connector
RJ45

Maevex 5150 Decoder:

Network Connectors
2 x RJ45 (fully switched)

Video Output
- HDMI with digital L-PCM audio
- Resolutions up to 1920x1080p60, 1920x1200(60Hz) and many more wide-screen and standard-definition resolutions
- ProcAmp control: contrast, brightness, saturation, hue
- Destination cropping support
- Independent failsafe output

Audio Line-Out
3.5mm analog stereo audio

Video Encoding/Decoding:

Single-Channel HD
Up to 1920x1080p60 and 1920x1200(56Hz) and many more wide-screen and standard-definition resolutions

Compression Standard
H.264/MPEG-4 Part 10 (AVC)

Profiles
Main

Levels
Up to 4.2

Bitrates
100 Kbps to 25 Mbps

Rate Control
CBR, VBR, Favor Speed, Favor Quality, Adjustable GOP Size

Encoder Recording Mode

Record any supported resolution to NAS or shared network drive
File format: .mp4
User definable filename prefix
Auto timestamp in filename
Programmable
- Recording start date / time and duration
- Maximum file length
- File frequency

Full frame rate or user selectable from list

Audio Encoding/Decoding:

Compression Standard
MPEG-4 AAC-LC

Channels
2 channel (stereo), HDMI with digital L-PCM audio

Analog Sample Frequency
32, 44.1, and 48kHz

Bitrates
96, 128, 192, and 256 Kbps

Networking Interface:

100/1000base-T Ethernet
- 1000 Mbps full duplex
- 100 Mbps Half/full duplex

Streaming Protocols
RTSP/RTP/RTCP (all required) over UDP
Command & Control Protocols
HTTPS
IPV4 Support
Unicast, Multicast and Multi Unicast
DHCP (Default) / Fixed IP Address Support
CAT5-or-Better Network Cables

Software:

PowerStream Plus (free download)
- Compatible with Maevex 5100 Series and Maevex 6100 Series
- Network discovery
- Frame rate management
- Resolution control
- Scaling management
- Maevex network configuration & control
- Encoding and decoding control and manipulation
- Password protection
- Failsafe over network FW updates
- Third-party RS-232 connectivity
- Decoder Failsafe mode

PowerStream Plus API for Windows and Linux[1]
- Full-access to entire feature set via API
- .NET 4.5.1 or higher, standalone library and Mono 5.2 or higher for Linux

REST API[1]
- Available for lower-level development

Supported Operating Systems
- Microsoft® Windows® 10 (64-bit), Windows Server® 2016, Windows 7 (32-bit, 64-bit), Windows Server 2008 R2

Power Supply:

100-240V AC In, 5VDC Out, 15W
DIN4 Locking Power Connector
Power Cords Included
US, EU, UK

Regulatory:

CE/FCC/VCCI/ICES/C-Tick/KCC Class B, ROHS/ WEEE

Environmental:

Operating Temperature
0 to 45 degrees Celsius
Non-Operating Temperature
-40 to 55 degrees Celsius
Operating Humidity
20 to 80% (non-condensing)
Non-Operating Humidity
5 to 95% (non-condensing)

MTBF:

Encoder
135.05 years @ 40 degrees Celsius
(excl. power supply)
Decoder
164.81 years @ 40 degrees Celsius
(excl. power supply)
External Power Supply
11.45 years @ 25 degrees Celsius, full load
Fanless (no moving parts)

Mechanical:

Dimensions Encoder
21.59cm x 2.59cm x 10.16cm (8.50" x 1.02" x 4.00")
Dimensions Decoder
12.83cm x 2.59cm x 10.9cm (5.05" x 1.02" x 4.29")
Weight Encoder
378g (excl. external power supply and power cords)
Weight Decoder
286g (excl. external power supply and power cords)
Rackmountable with optional rackmount tray and accessories
Encoder: dual density - 1u
Decoder: triple density - 1u (horizontal mount); or 10-unit density in 3u (vertical mount)

Packaging Content:

Maevex Encoder unit
- CAT5E Ethernet cable, RJ45 male to male, 6'/182.88cm
- DVI adapter – DVI-D male to HDMI female
- 3.5mm analog stereo audio cable, male to male, 6'/182.88cm
- Power supply and power cords (see "Power supply")
- Quick setup guide and release notes (if applicable)

Maevex Decoder unit
- Power supply and power cords (see "Power supply")
- Quick setup guide and release notes (if applicable)

Ordering Information:

Maevex Encoder P/N
MVX-E5150F
Maevex Decoder P/N
MVX-D5150F
Maevex Encoder/Decoder Bundle P/N
MVX-ED5150F
Rackmount Kit P/N
RMK-19TRF (see user guide for details)
Angled Bracket Kit P/N
RMK-6BRKTF (see user guide for details)

1. Contact Matrox for more detail