Haivision

Makito X4 Series

Makito X4 solutions from Haivision provide the following:

- Real-time video encoding, streaming and decoding
- Up to 4K UHD video resolutions
- Quad HD video encoding and decoding with stream synchronization
- 4:2:2 chroma subsampling
- 10-bit pixel depths for wide color gamut and HDR

- 12G-SDI, 6G-SDI, 3G-SDI, and HD-SDI inputs and outputs
- SMPTE ST 2110 video, audio, and ancillary metadata inputs
- Native support for SRT streaming
- Rack-mounting in high density 1RU or 4RU chassis for up to 84 HD/21 UHD channels
- Compact, ruggedized and fanless options

The Makito X4 series of encoders and decoders are designed for the most demanding live low latency video applications, supporting up to four simultaneous 1080p50/60 HD video encodes or decodes. The Makito X4 Encoder and Decoder can also support up to 2160p50/60 4K UHD video resolutions with metadata and up to 32 channels of digital audio. Encode and decode live video in HEVC and H.264 over any IP network.

Makito X4 Video Encoder

The Makito X4 Video Encoder encodes live video from SDI or SMPTE ST 2110 sources as H.264 and HEVC streams at very low latency. As the original SRT encoder, the Makito X4 is ideal for live video applications requiring real-time collaboration such as field contribution, bidirectional interviews, return feeds, confidence monitoring, and remote production with synchronized multi-camera feeds.

Makito X4 Video Decoder

The perfect companion to the Makito X4 Encoder, the Makito X4 Decoder provides low latency decoding for 4K, HD, and HDR video.

Capable of encoding and decoding video in real-time with 8- or 10-bit pixel depths, PQ and HLG transfer functions for HDR, and 4:2:0 or 4:2:2 chroma subsampling, Makito X4 Encoders and Decoders support the most demanding low latency end-to-end applications.

Featuring Haivision's unique Stream Sync technology, ensure synchronization of multiple IP streams based on timecode embedded by Makito X4 Encoders. Stream Sync supports multi-camera remote production of live video over IP networks including the internet, providing a cost-effective alternative to satellite and dedicated fiber networks and reduces the costs associated with deploying large teams of personnel & resources at remote event locations.

The Makito X4 Video Encoder and Video Decoder are both available as either an appliance or a blade and offer the highest density of video encoding and decoding available on the market with up to 84 HD or 21 UHD video channels within a single 4RU rack module.

Makito X4 Rugged Video Encoder

Designed for encoding within the most demanding environments, the Makito X4 Rugged delivers high-quality, low latency HEVC/H.265 and AVC/H.264 video from analog and digital sources with resolutions up to 3840x2160p60 (4K UHD).

The Makito X4 Rugged offers the flexibility to encode video from a broad range of video sensors using SDI inputs, including 12G-SDI for 4K sources, and 3G-SDI for HD sources. Compliance with KLV metadata standards ensures that interoperability is achieved within an all-weather MIL-STD-810G/DO-160 appliance.

Makito X1 Rugged Video Encoder

The Makito X1 Rugged is the smallest, lightest, and most power-efficient ruggedized video encoder on the market. With dual encoding cores, the Makito X1 can encode a single channel of HD 1080p60 or SD video with H.265/HEVC and H.264/AVC compression, and offers independent control of scaling, cropping, and encoding parameters.

Haivision EMS & Haivision Hub

The Haivision EMS software and Haivision Hub cloud SaaS provides broadcast engineers and system administrators with a web-based interface for centrally managing a video streaming ecosystem based on Haivision encoders and decoders, across multiple sites.

High Quality
Delivers pristine quality live encoded video, even at low bitrates, making it ideal for transport across any network including satellite or internet.

Ultra Low Latency
Ideal in applications where end-to-end latency must be as low as possible. Respond in real-time to mission-critical video information.

4K Broadcast Quality Video
Encode live video up to 4K/UHD for streaming over IP networks. Supporting up to 4:2:2 chroma sub-sampling and 10-bit pixel depths for wide color gamut and HDR workflows.

Next-gen Compression
Flexible encoding & compression, adapting to different network environments and applications. HEVC (H.265) options reduce bandwidth by up to 50% compared to H.264.

Remote Production with Stream Sync
Synchronize multi-camera workflows, providing a cost-effective alternative to deploying large teams of personnel & resources at remote event locations.

SRT
Assure pristine video quality, even when faced with packet loss, jitter, latency, and fluctuating bandwidth from unpredictable networks.

Secure
Secure end-to-end unicast or multicast video distribution & AES 128/256 bit encryption.

Ruggedized and Fanless
Designed for demanding portable and space-constrained applications, ruggedized and fanless options stand up to high operating temperature environments.

KLV Metadata
Supports full-motion video requiring STANAG and MISP compliant Key-Length-Value (KLV) metadata.
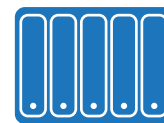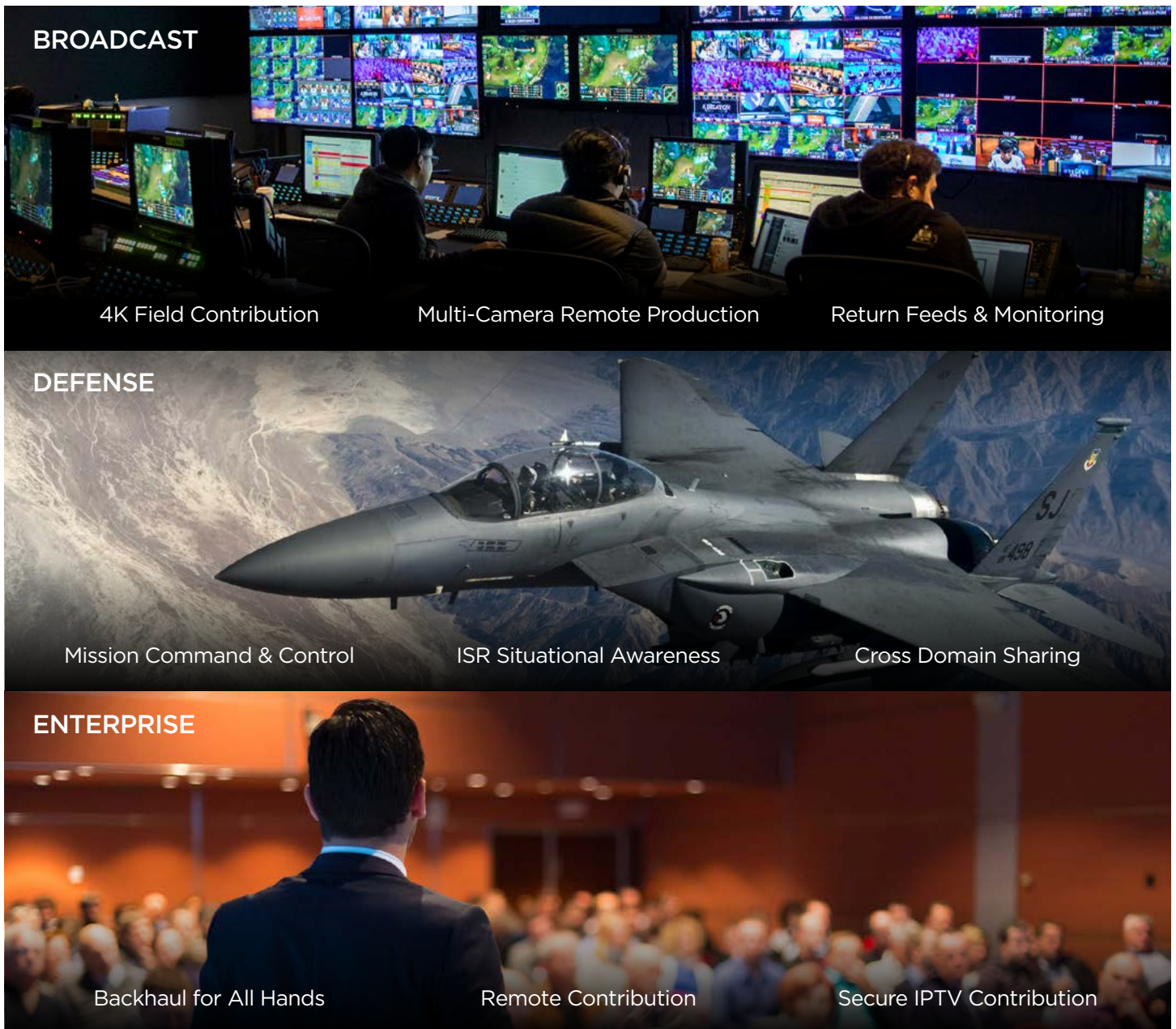
High Density
Highly flexible deployment from ultra-compact appliance to 21 blade (4RU) chassis. Ideal where size, weight and power considerations are critical.

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Powerful Features for Defense, Broadcast, and Enterprise

The Makito X4 series of encoders and decoders with native SRT protocol support are designed to address the most rigorous low latency video applications in the broadcast, defense and enterprise markets. With Network Adaptive Encoding, Stream Sync, and SRT, Makito X4 Video Encoders and Decoders can transport live events over any IP network including the public internet. Makito X4 Encoders also ensure uninterrupted low latency live video transport across redundant IP network paths with Path Redundancy. Further increase the reliability of real-time SRT video streams by enabling redundant SRT streams over two different network paths.

The excellent picture quality at low bandwidths and the lowest end-to-end latency of the industry makes the Makito X4 platform ideal for a broad range of applications.

The Makito X4 series is ideal for live, interactive and headend applications and is used in:

BROADCAST

4K Field Contribution   Multi-Camera Remote Production   Return Feeds & Monitoring

DEFENSE

Mission Command & Control   ISR Situational Awareness   Cross Domain Sharing

ENTERPRISE

Backhaul for All Hands   Remote Contribution   Secure IPTV Contribution

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BROADCAST: Contribution | Collaboration

Contribution

Leverage Makito X4 Video Encoders and Decoders and the public internet as part of a cost-effective solution that provides audiences with more content from remote locations or across LAN or WAN networks. Haivision solutions address the challenges of distributed workflows, remote production and collaborating with offsite parties – helping expand your workflows.
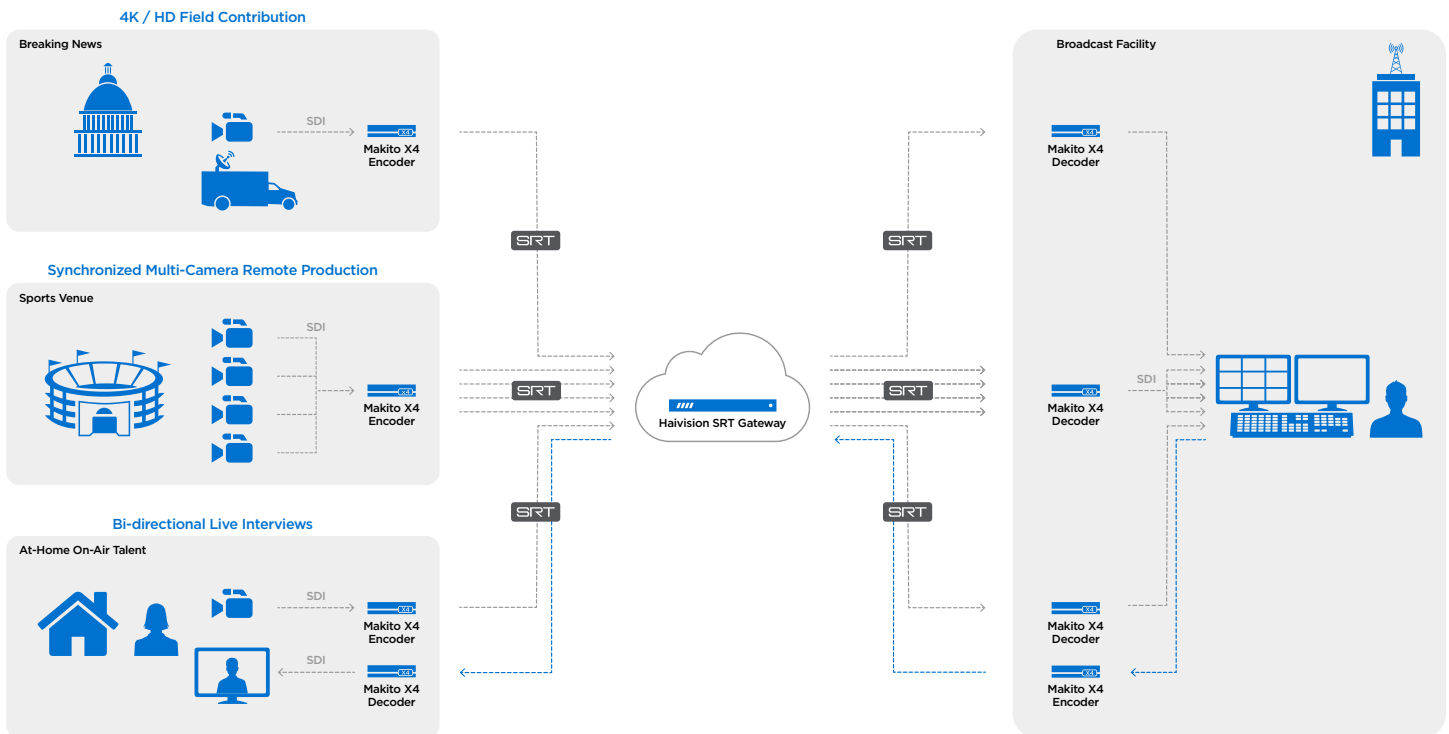
4K Field Contribution
Meeting the growing demand for live event and local news coverage can be challenging for today's broadcasters. Internet-based video transport offers a flexible and cost-effective alternative to satellite or dedicated fiber for transporting live video from remote venues or from the field back to broadcast centers. The Makito X4 Video Encoder encodes high-quality, ultra-low latency streams over any type of network, including 5G wireless networks, public internet and satellite links, making it the ideal solution for futureproof field contribution.

Bi-Directional Live Interviews
With the Makito X4 Video Encoder and Decoder, broadcasters have the power to enable real-time commentary on breaking news, sports or current events. Satellite and custom networks can be costly, difficult to schedule and require long lead times. With Haivision encoders and decoders, you can deliver low latency, bi-directional HD video from venues and other remote locations to broadcast studios for live interviews. All you need is a public internet connection, Haivision video streaming solutions and the SRT protocol.

Synchronized Remote Production
Haivision Remote Production workflows allow you to cover a wide range of live events including sports, musical performances or news, with reduced setup time and on-site teams – enabling you to keep more staff at the broadcast facility or in their home office. With Stream Sync, the Makito X4 transmits low latency multi-camera synchronized feeds from venue to the broadcast studio over cost-effective IP networks; boost your productivity and satisfy the need for more content without the logistical challenges or costs of onsite deployment.

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Collaboration

Expand your workflows beyond the facility with Makito X4 Encoders and Decoders. Supply remote and at-home personnel with low latency video wherever they might be located, for collaborative workflows including remote monitoring, remote operation and enabling on-location teams with return feeds.

Return Feeds
As part of a complete end-to-end workflow, Haivision Makito X4 Encoders and Decoders ensure that remote talent can see live program feeds, multi-viewers, prompters and more with low latency, enabling them to see what's going on air before the public can.

Remote Monitoring
Makito X4 Video Encoders are suitable for many broadcast contribution workflows. With the addition of Haivision SRT Gateway, low latency feeds from a Makito X4 Encoder can be distributed to remote talent, producers and operators via their mobile device or desktop – enabling distributed production teams to collaborate from anywhere, even when on-the-go.

Remote Operation
Combining virtual desktop workflows with Makito X4 and SRT enables remote operators to interactively control on-location broadcast equipment such as replay or graphics systems from the broadcast studio or home, all while seeing high quality, full frame rate live low latency video. The video can also be replicated for "over the shoulder workflows" with remote directors.
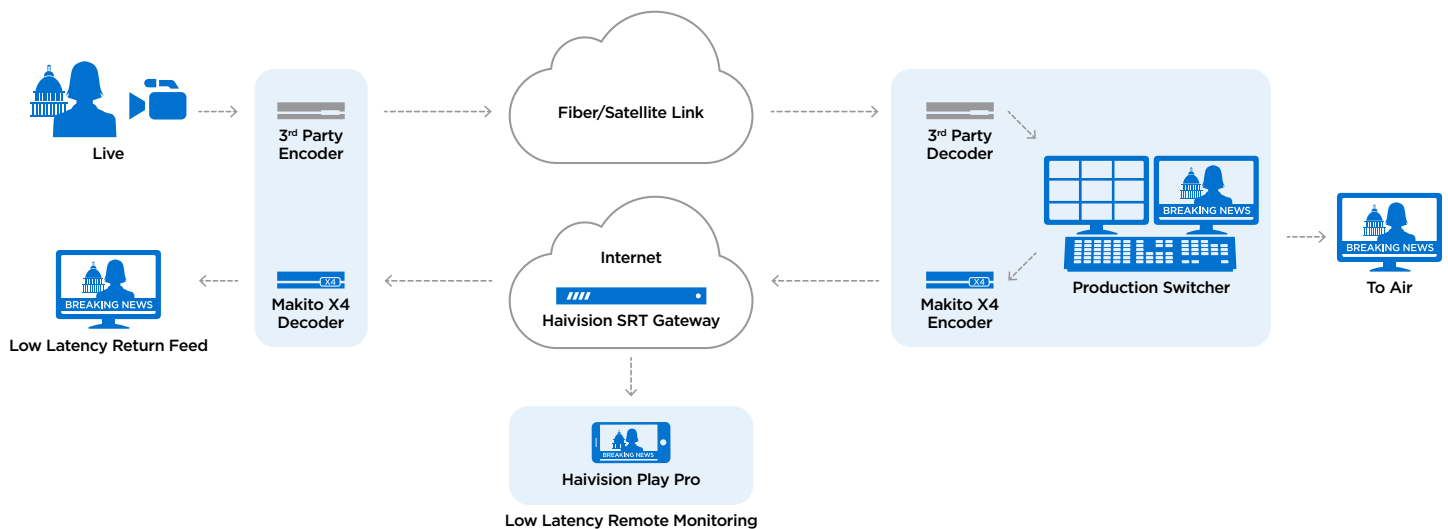
DEFENSE: Situational Awareness | Test & Training Ranges | Monitoring & Assessment

Situational Awareness

Designed for ISR platforms and video backhaul systems, Makito X4 Rugged and Makito X1 Rugged Encoders help to optimize video and metadata transmission across areas where bandwidth is limited and expensive. Enable situational awareness and exploitation for Command & Control (C2) operations centers and Common Operating Picture (COP) systems.
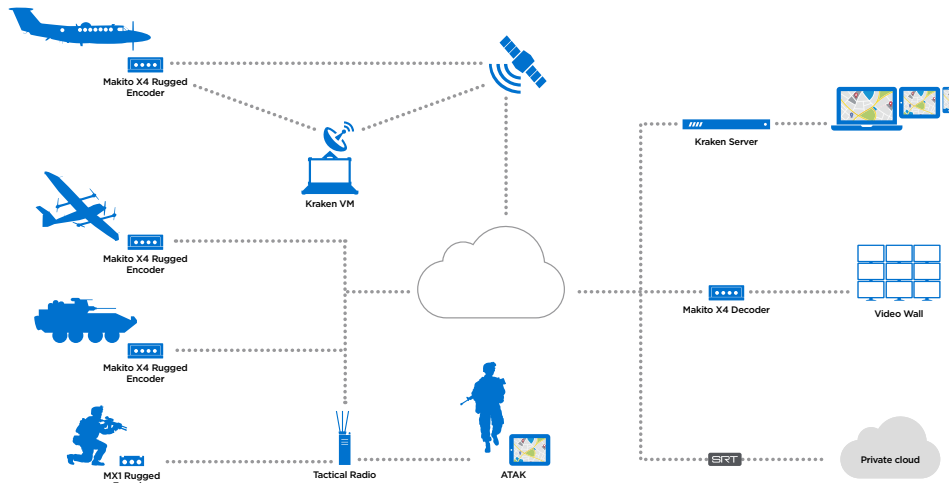

Test & Training Ranges

Makito X4 Encoders and Decoders provide the capability to stream multiple synchronized sources with extremely low latency and frame accurate KLV so that analysts, engineers, unit commanders and troops can monitor and review systems tests and training exercises in real-time and on-demand.

Monitoring & Assessment

Makito X4 Encoders are part of a high-quality, low-latency, encrypted video distribution workflow. Distribute live and recorded video securely and reliably for monitoring and assessment. Haivision has the only video distribution system certified by the U.S. Department of Defense Information Network Approved Products List (DoDIN APL).
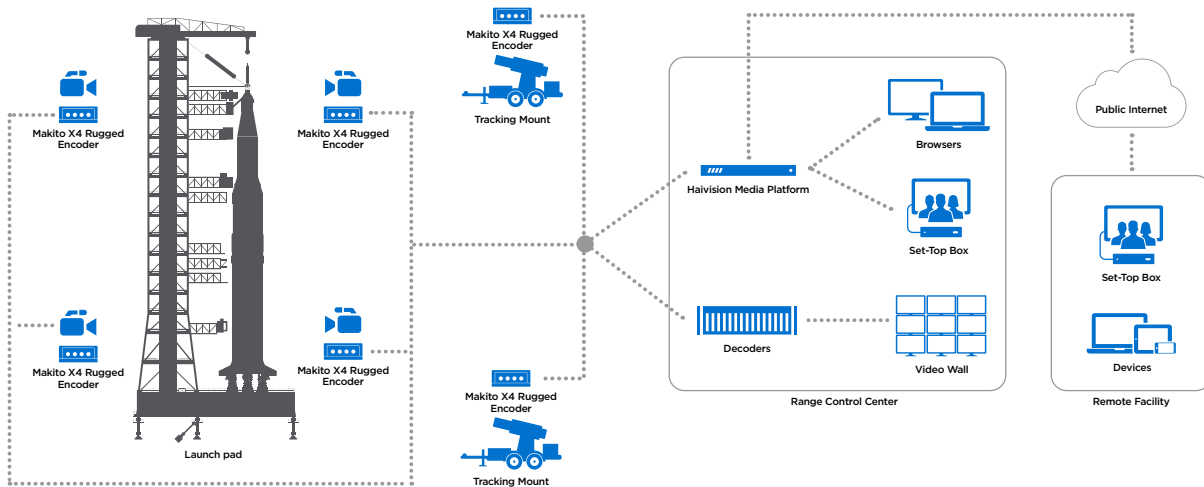
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ENTERPRISE: Corporate Communications

All Hands, Town Halls and Live Events

Communication is critical to efficient enterprise operations, and an effective communication strategy relies on selecting the right delivery channels. Haivision's portfolio of video streaming solutions including the Makito X4 series help enterprises connect with their employees, customers or partners with live or on-demand video distributed within a private corporate network or over the internet to home office employees anywhere.
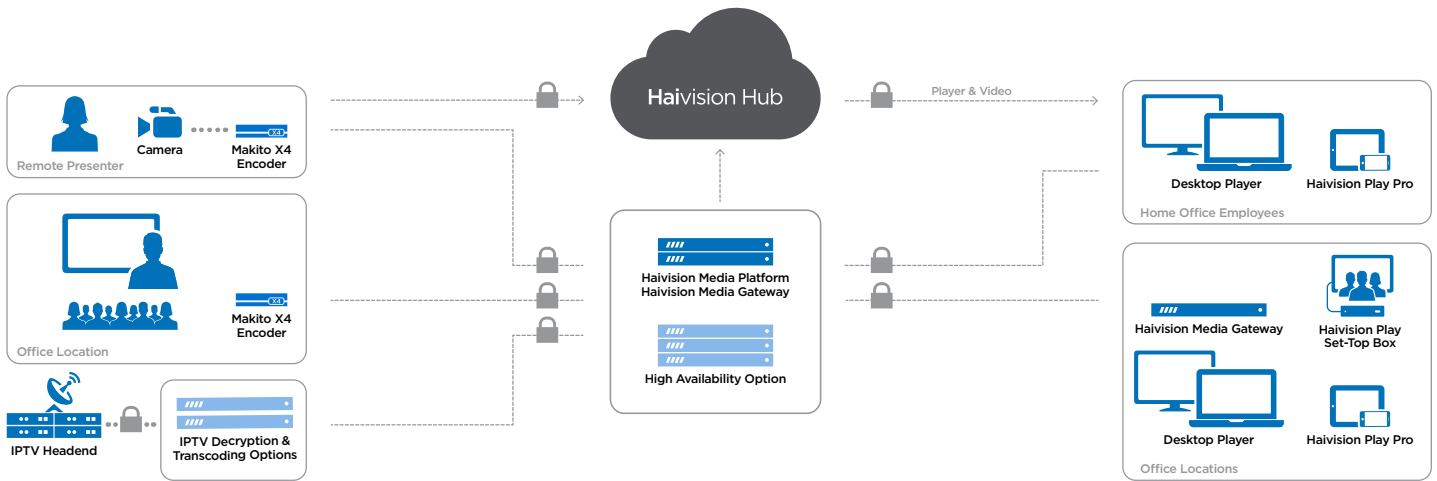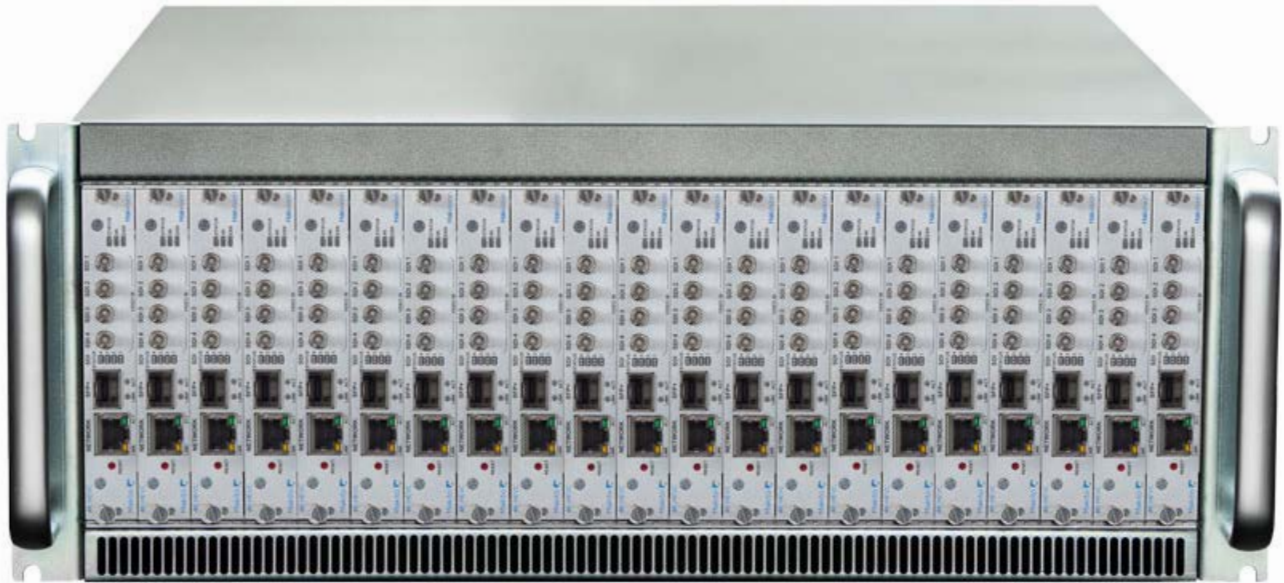
High Density, Flexible, and Scalable Chassis for Rack-Mounting Blades

Designed for high density deployment in server rooms or OB trucks, the MB series of chassis provide flexible and scalable solutions where rackmount installations are required and address any deployment – from single appliances up to the highest density possible in a 1RU or 4RU chassis. Haivision encoders and decoders are available as single product appliances or as independent mini blades.

High Density Multichannel Chassis
Haivision encoders and decoders are available as single product appliances or as independent mini blades. For installations where rack mounting is desired, Haivision offers a full range of rackmount kits to address any deployment – from single appliances up to the highest density possible in a 1RU or 4RU chassis.

MB6X High Density Six-Slot Chassis
The MB6X is designed to support fast deployments of Haivision's market-leading encoding/decoding systems in the most space constrained installations. The six-slot chassis can hold up to 6 Makito X4 blades, in just a single rack unit (1RU), making it the highest density system available. The MB6X is available with redundant AC power supplies so even if a single AC input or PSU fails, operation of the unit will not be interrupted.

MB21X High Density Twenty-One Slot Chassis
Designed for high density IP video encoding and decoding, the MB21X holds any combination of up to 21 Makito X4 products in a 7-inch rack (4RU) and also features replaceable fans and fully redundant power supplies. In addition, the MB21X provides a station alarm interface so as to notify operators when a power supply or fan failure has occurred. Redundant AC inputs and a field serviceable power supply allows the MB21X to continue operating even if an AC input is lost or a Power Supply Unit (PSU) fails.

Rackmounting Appliances

1RU or 2RU mounting brackets available for mounting one or two Makito X4 appliances (single or double height) in machine rooms racks.

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	Makito Encoders			Makito Decoders
	X1 Rugged	**X4**	**X4 Rugged**	**X4**
CHANNELS				
SD/HD	1	4	4	4
4K UHD		1	1	1
VIDEO INPUTS & OUTPUTS		ENCODER INPUTS		DECODER OUTPUTS
ANALOG				
Composite NTSC/PAL/PAL-M	•		•	
SD-SDI				
SMPTE 259M-C	•	•	•	•
HD-SDI				
SMPTE 292M	•	•	•	•
SMPTE 274M	•	•	•	•
SMPTE 296M	•	•	•	•
3G-SDI				
SMPTE 424M (Level A Only)	•	•		•
SMPTE 425M	•	•	•	•
6G-SDI				
SMPTE 2081		•	•	•
12G-SDI				
SMPTE 2082		•	•	•
UHD/4X3G-SDI				
SMPTE 425-5 (2SI)		•	•	•
SMPTE ST 2110				
MSA Compliant 10G SFP+		•		
VIDEO RESOLUTIONS				
4K UHD				
3840x2160p 60/59.94/50 Hz		†	†	†
3840x2160p 30/29.97/25 Hz		•	•	•
HD 1080				
1920x1080p 60/59.94/50/30/29.97/25/24/23.98 Hz	•	•	•	•
1920x1080i 60/59.94/50 Hz	*	*	*	*
HD 720				
1280x720p 60/59.94/50 Hz	•	•	•	•
1280x720p 30/29.97/25 Hz	•	•	•	•
SD				
720x480i 60/59.94 Hz	*	*	*	*
720x576i 50 Hz	*	*	*	*

† SDI inputs only
* HEVC only.

	Makito Encoders			Makito Decoders
	X1 Rugged	**X4**	**X4 Rugged**	**X4**
VIDEO ENCODING				
VIDEO COMPRESSION				
H.265/HEVC (ISO/IEC 23008-2)	●	●	●	●
H.264 (MPEG-4 AVC part 10 / ISO/IEC 14496-10)	●	●	●	●
High Profiles		●	●	●
Baseline & Main Profiles	●	●	●	●
Up to Level 5.2 (UHD) and lower intermediate levels		●	●	●
Up to Level 4.2 and lower intermediate levels	●	●	●	●
Up to Level 4 (1080p60) (HEVC)	●	●	●	●
8-bit pixel depth	●	●	●	●
10-bit pixel depth		●	●	●
HDR Transfer Function (HLG/PQ)	●	●	●	●
4:2:0 chroma sub-sampling	●	●	●	●
4:2:2 chroma sub-sampling		●	●	●
I, IP, IBP, IBBP framing	●	●	●	●
IBBBP, IBBBBP framing		●	●	●
Configurable Group of Picture (GOP) size	●	●	●	
Configurable frame rate	●	●	●	●
Slice-Based Encoding	●	●	●	●
Bit Rates (max bitrate depends on configuration)	32 kbps - 120 Mbps	32 kbps - 120 Mbps	32 kbps - 120 Mbps	32 kbps - 120 Mbps
Rate Control	CBR/VBR	CBR/VBR	CBR/VBR	CBR/VBR
AUDIO I/O				
EMBEDDED AUDIO				
SD-SDI SMPTE 272M	●	●	●	●
HD/3G-SDI SMPTE 299M	●	●	●	●
ANALOG AUDIO				
Stereo or Mono Input	●		●	
AUDIO ENCODING/ DECODING				
COMPRESSION STANDARD				
MPEG-2 AAC-LC ISO/IEC 13818-7	●	●	●	●
MPEG-4 AAC-LC ISO/IEC 14496-3	●	●	●	●
AUDIO CHANNELS				
32 embedded audio per blade		●	●	●
8 embedded audio per blade	●			
AUDIO BIT RATES				
From 14 to 576 kbps per audio pair	●	●	●	●
FREQUENCY RESPONSE				
From 20 Hz to 22 kHz	●	●	●	●

	Makito Encoders			Makito Decoders
	X1 Rugged	**X4**	**X4 Rugged**	**X4**
METADATA (OPTIONAL)				
INPUT METADATA				
KLV over SD-SDI/HD-SDI/3G-SDI	•	•	•	•
KLV or CoT over serial RS-232/422	•		•	
KLV or CoT over UDP/IP	•	•	•	
METADATA PROCESSING				
CoT to KLV conversion	•	•	•	
CoT Relay	•	•	•	
Insertion and KLV edits	•	•	•	
CC 608/708 pass-through	•	•	•	•
SMPTE 336M compliant	•	•	•	•
MISB 0601.14 compliant	•	•	•	•
MISB 0604.2 compliant	•	•	•	•
Asynchronous & synchronous modes as per MISB 0604.2	•	•	•	•
High precision timecode insertion as per MISB 0604.2	•	•	•	•
IP NETWORK INTERFACES				
STANDARD				
Ethernet 10/100/1000 Base-T, auto-detect, Half/Full-duplex	•	•	•	•
IPv4 / IPv6 (Static & DHCP)	•	•	•	•
Interfaces	1 Rugged	RJ45, SFP+	2 Rugged	RJ45, SFP+ (future)
STREAMING PROTOCOLS				
MPEG Transport Stream over UDP / RTP	•	•	•	•
Secure Reliable Transport (SRT)	•	•	•	•
RTSP (For specified devices)	•	•	•	
Unicast streaming	•	•	•	•
Multicast streaming (IGMP v3)	•	•	•	•
Multiple unicast streaming	•	•	•	•
Path Redundancy – SRT across multiple networks	•	•	•	
SAP (RFC 2974)	•	•	•	
MANAGEMENT INTERFACES				
STANDARD				
RS-232 Serial Interface	•		•	
Ethernet	•	•	•	•
MANAGEMENT				
HTTPS (web browser)	•	•	•	•
Command line	SSH/Telnet/RS-232	SSH/Telnet	SSH/Telnet/RS-232	SSH/Telnet
SFTP/TFTP/SCP	•	•	•	•
SNMP v3	•	•	•	•
Haivision EMS	•	•	•	•
ONVIF API	•	•	•	
REST API	•	•	•	•

	Makito Encoders			Makito Decoders
	X1 Rugged	**X4**	**X4 Rugged**	**X4**
ADVANCED FEATURES				
Network Adaptive Encoding	•	•	•	
Multi-bitrate (MBR) streaming	•	•	•	
HD/SD de-interlacing	•	•	•	
Image Scaling	•	•	•	
EIA-608-B/NTSC Line 21 closed captioning	•		•	
EIA-708-B/SDI closed captioning	•	•	•	•
Forward Error Correction (FEC)	•	•	•	•
AES encryption 128-bit or 256-bit with SRT	•	•	•	•
Aspect ratio configuration	•	•	•	
Active Format Description (AFD)	•	•	•	•
Wide Screen Signaling (WSS)	•		•	
Timecode (ATC_VITC)	•	•	•	•
Image Cropping	•	•	•	
Image Filtering	•	•	•	
Bi-directional serial passthrough	•		•	
Advanced Buffering Control				•
Still Image Insertion				•
Synchronized playback between decoders				•

Software Version

Makito X1 Rugged Encoder: **1.1**
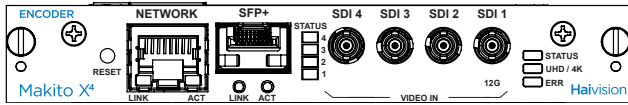
Makito X4 Encoder: **1.4**

Makito X4 Rugged Encoder: **1.4**

Makito X4 Decoder: **1.3**

	Makito Encoders			Makito Decoders
	X1 Rugged	**X4**	**X4 Rugged**	**X4**
DIMENSIONS (H x W x D)				
Millimeters	30.5 x 72.5 x 90.2	24 x 152 x 192	68 x 146.2 x 185.7	24 x 152 x 192
Inches	1.20 x 2.85 x 3.55	0.94 x 5.98 x 7.56	2.675 x 5.755 x 7.31	0.94 x 5.98 x 7.56
WEIGHT				
kg	0.372	1.08	1.93	1.08
lbs	0.82	2.37	4.25	2.37
POWER				
Blade/Appliance	5VDC; 6W at 70°C, 5W at 40°C	12VDC, 18W	28VDC Nominal	12VDC, 18W
APPLIANCE TEMPERATURE				
Operating (°C)	-40°C to 70°C	0°C to 40°C	-40°C to 70°C	0°C to 40°C
Non-operating (°C)	-45°C to 85°C	-30°C to 70°C	-45°C to 85°C	-30°C to 70°C
Operating (°F)	-25°F to 160°F	32°F to 104°F	-25°F to 160°F	32°F to 104°F
Non-operating (°F)	-49°F to 185°F	-22°F to 158°F	-49°F to 185°F	-22°F to 158°F
HUMIDITY				
%	up to 100% condensing	up to 95% non-condensing	up to 100% condensing	up to 95% non-condensing

Rackmount Chassis

|	6 Blade			21 Blade
	F-MB6X-RAC	**F-MB6X-DC**	**F-MB6X-MED**	**F-MB21X-R**
DIMENSIONS (H x W x D)				
Rackmount Units	19" 1RU	19" 1RU	19" 1RU	19" 4RU
Millimeters	44.07 x 440.004 x 420.4	44.07 x 440.004 x 420.4	44.07 x 440.004 x 420.4	177.29 x 441.35 x 461.92
Inches	1.735 x 17.323 x 16.55	1.735 x 17.323 x 16.55	1.735 x 17.323 x 16.55	6.980 x 17.376 x 18.186
WEIGHT – EMPTY CHASSIS				
kg	7.94	7.94	7.94	14.52
lbs	17.5	17.5	17.5	32
POWER				
Internal Power Supply	90-264 VAC 47Hz-63Hz 300 Watt max	20-36 VDC 300 Watt max	90-264 VAC 47Hz-63Hz 300 Watt max	100-240 VAC 47Hz-63Hz 600 Watt max
APPLIANCE TEMPERATURE				
Operating (°C)	0°C to 50°C	0°C to 50°C	0°C to 50°C	0°C to 50°C
Non-operating (°C)	-40°C to 70°C	-40°C to 70°C	-40°C to 70°C	-40°C to 70°C
Operating (°F)	32°F to 122°F	32°F to 122°F	32°F to 122°F	32°F to 122°F
Non-operating (°F)	-40°F to 158°F	-40°F to 158°F	-40°F to 158°F	-40°F to 158°F
HUMIDITY				
%	up to 95% non-condensing			up to 95% non-condensing

Encoders

Makito X4 Encoder
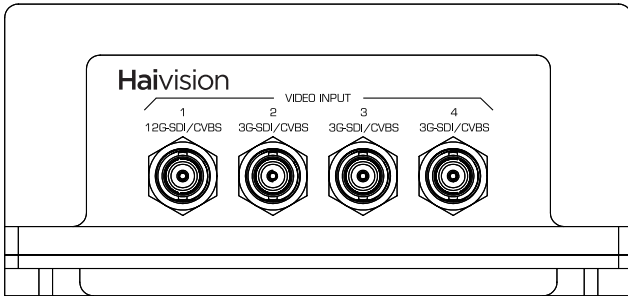
Makito X4 Rugged (Front)
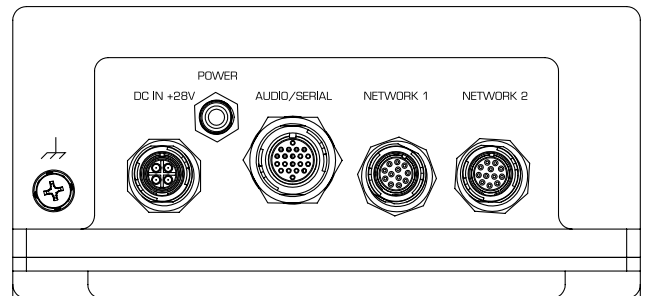
Makito X4 Rugged (Rear)
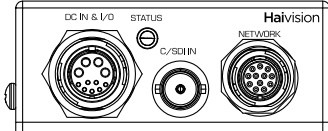
Makito X1 Rugged

Decoders

Makito X4 Decoder

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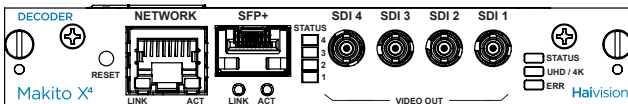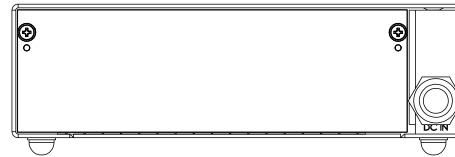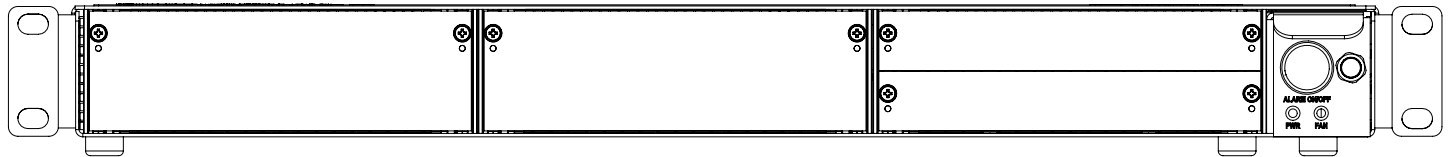
MB1

Rear

MB2
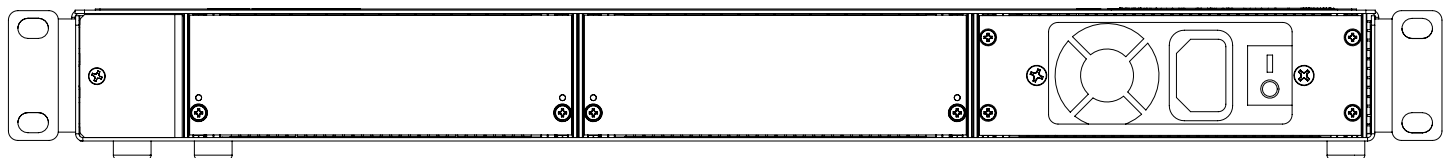

Rear

MB6X with DC Power Supply (MB6X-DC)

Front (This is the same schematic as for MB6X-DC, MB6X-MED and MB6X-RAC)
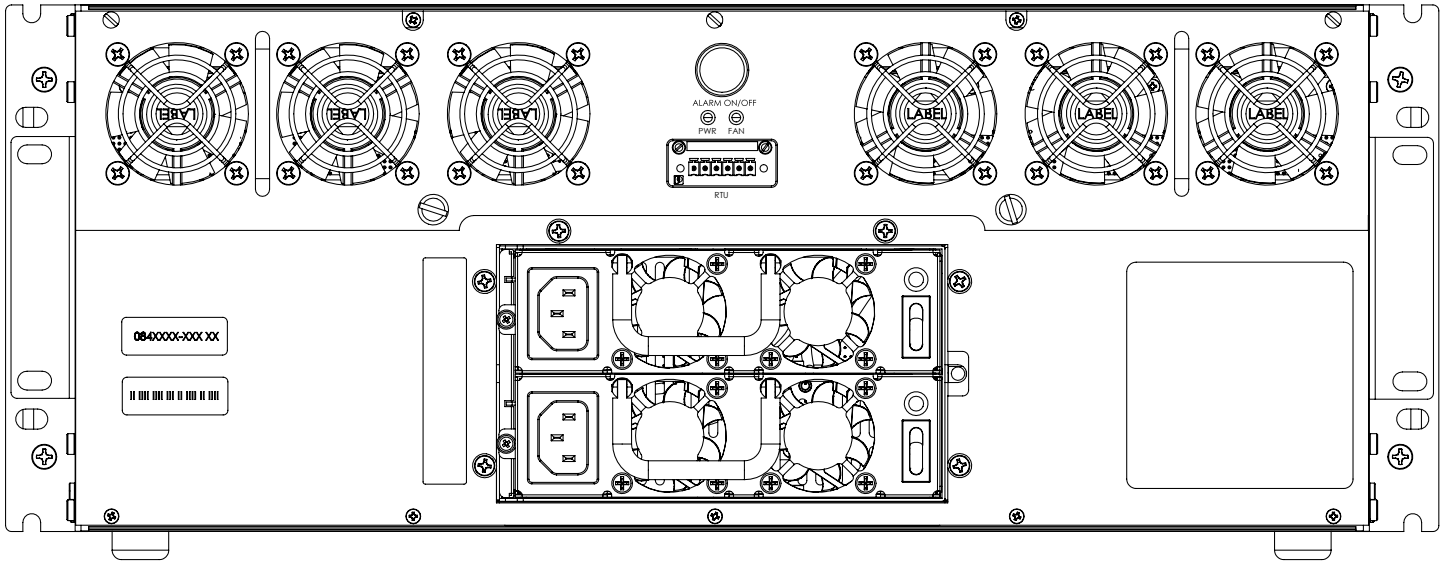

Rear

MB6X with Medical Power Supply (MB6X-MED)

Rear

MB6X with Redundant AC Power (MB6X-RAC)

Rear

MB21X

Rear - With dual power supplies, removable fans, and station alarm interface

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Product Name	SKU	Description
ENCODERS & DECODERS		
Makito X4 HD Video Encoder	**S/B-MX4E-SDI4**	Makito X4 SDI Encoder Appliance (S) or Blade (B) - H.264/AVC & H.265/HEVC IP Video Encoder - Quad channel 3G/HD/SD-SDI with UHD support
Makito X4 4K UHD Video Encoder	**S/B-MX4E-SDI4-UHD**	Makito X4 SDI Encoder Appliance (S) or Blade (B) - H.264/AVC & H.265/HEVC IP Video Encoder - Quad channel 3G/HD/SD-SDI with UHD support
Makito X4 HD Video Decoder	**S/B-MX4D-SDI4**	Makito X4 quad-channel decoder appliance (S) or blade (B)
Makito X4 4K UHD Video Decoder	**S/B-MX4D-SDI4-UHD**	Makito X4 quad-channel decoder appliance (S) or blade (B) with UHD support
Makito X4 Rugged HD Encoder w/ Metadata	**S-MX4E-R-SDI4-ISR**	Makito X4 Rugged encoder with four inputs; up to 1920x1080p60; 8x AVC/H.264 or HEVC/H.265 encoding engines; with KLV metadata.
Makito X4 Rugged 4K UHD Encoder w/ Metadata	**S-MX4E-R-SDI4-ISR-UHD**	Makito X4 Rugged encoder with four inputs; up to 3840x2160p60; 8x AVC/H.264 or HEVC/H.265 encoding engines; with KLV metadata.
Makito X1 Rugged HD Video Encoder Appliance w/ Metadata	**S-MX1E-R-SDI1-ISR**	Makito X1 Rugged appliance encoder with single input; up to 1920x1080p60; 2x H.265/HEVC or H.264/AVC encoding engines; with KLV metadata.
Makito X1 Rugged HD Video Encoder Board w/ Metadata	**B-MX1E-I-SDI1-ISR**	Makito X1 board encoder with single input; up to 1920x1080p60; 2x H.265/HEVC or H.264/AVC encoding engines; with KLV metadata; no heatsink for OEM integration.
Makito X4 HDR License	**SWO-MX4-HDR**	Software license option – Support HLG and PQ (ST 2084) transfer function
Makito X4 ST 2110 License	**SWO-MX4-2110**	Software license option – Enable SMPTE ST 2110 input with MSA compliant 10G SFP+ transceiver
RACKMOUNT KITS		
21 Slot Chassis with Dual Redundant AC for Makito X Blades	**F-MB21X-R**	Rackmount 4RU Chassis - Up to 21 Makito X4 mini-blades, Redundant Dual AC power supply, 100-240VAC 47Hz-63Hz, 600 Watt max.
6 Slot Chassis Redundant AC	**F-MB6X-RAC**	1RU Rackmount Chassis – Up to 6 Makito X4 mini-blades, Redundant AC power supply, 90-264VAC, 47Hz-63Hz, 300 Watt max.
6 Slot Chassis DC	**F-MB6X-DC**	Rackmount 1RU Chassis - Up to 6 Makito X4 mini-blades, DC power supply, 2-36 VDC, 300 watt max.
1RU appliance mounting bracket	**RU-MB1-1 RU-MB1-2**	1RU mounting bracket for one or two single-height appliance chassis
2RU appliance mounting bracket	**RU-MB2-1 RU-MB2-2**	2RU mounting bracket for one or two double-height appliance chassis

* For complete pricing and ordering, contact us at sales@haivision.com or your certified Haivision reseller.

Do you have specific OEM needs?

Contact us: **info@haivision.com** | **1-877-224-5445**