



H.265 & H.264 Video Encoders and Decoders





Z3
Technology®

ABOUT Z3 TECHNOLOGY

Z3 Technology is an industry-leading, USA-based manufacturer of H.265, H.264 and MPEG-2 video encoding solutions. Our ZEUS® family of video encoder and decoders has been around for over 10 years and offers a wide range of encoding products to provide real-time streaming and recording to fit a variety of needs. Offering 1RU and compact systems capable of encoding broadcast quality video in resolutions up to 4K, our ZEUS line of video encoders is ideal for a wide range of applications across the globe.

We are headquartered in Lincoln, Nebraska with engineering offices in Chicago, Illinois. From our subsidiary office in Japan to our team of video professionals, we know the needs of the broadcast community and serve customers in applications worldwide.



BROADCAST VIDEO ENCODING • IP STREAMING • UAV
SECURITY & INDUSTRIAL • CORPORATE & EDUCATION • DIGITAL SIGNAGE



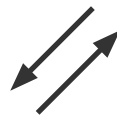
COMPLETE HARDWARE AND SOFTWARE SOLUTIONS

Our family of video encoders and decoders offer the ultimate in flexibility and performance at a competitive price. Equipped with encoding and decoding capabilities, users no longer need two systems for their applications.

H.265 / H.264 MPEG-2

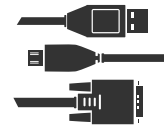
H.265, H.264 & MPEG-2 Encoding

Our ZEUS™ encoders and decoders offer the latest in compression with H.265, H.264 and MPEG-2 video in broadcast-quality resolutions.



Versatile Configuration

Leverage twice the capabilities in one system with products featuring both encoding and decoding capabilities.



I/O Combinations

Each product was designed with a variety of input/output options to give users flexibility with their product.

FEC

Forward Error Correction

Take advantage of industry standard Forward Error Correction protocols, including Pro-MPEG, integration with ZixiFeeder™ and SRT.



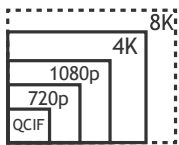
Streaming Formats

Our encoders support essential streaming formats including: RTP, RTMP, RTSP, UDP and others.



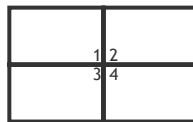
Video Bitrate Ranges

We offer a wide range of video bitrates ranging from <1- 50 Mbps as well as the ability to change bitrates on-the-fly.



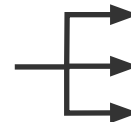
Resolutions

Encode broadcast-quality H.265 or H.264 video in Ultra HD, HD and SD resolutions with automatic resizing.



Multi-Channel Options

Powerful systems with encoding options ranging from one to four channels in HD and UHD resolutions.



Multi-Resolution Encode

Encode one source into multiple resolutions (SD or HD) and bitrates.



Closed Captioning

Many of our broadcast encoders feature SD and HD Closed Captioning to meet your video requirements.



Low Power

Our encoders feature low power consumption with options as low as 3W.



Easy-to-Use HTTP GUI

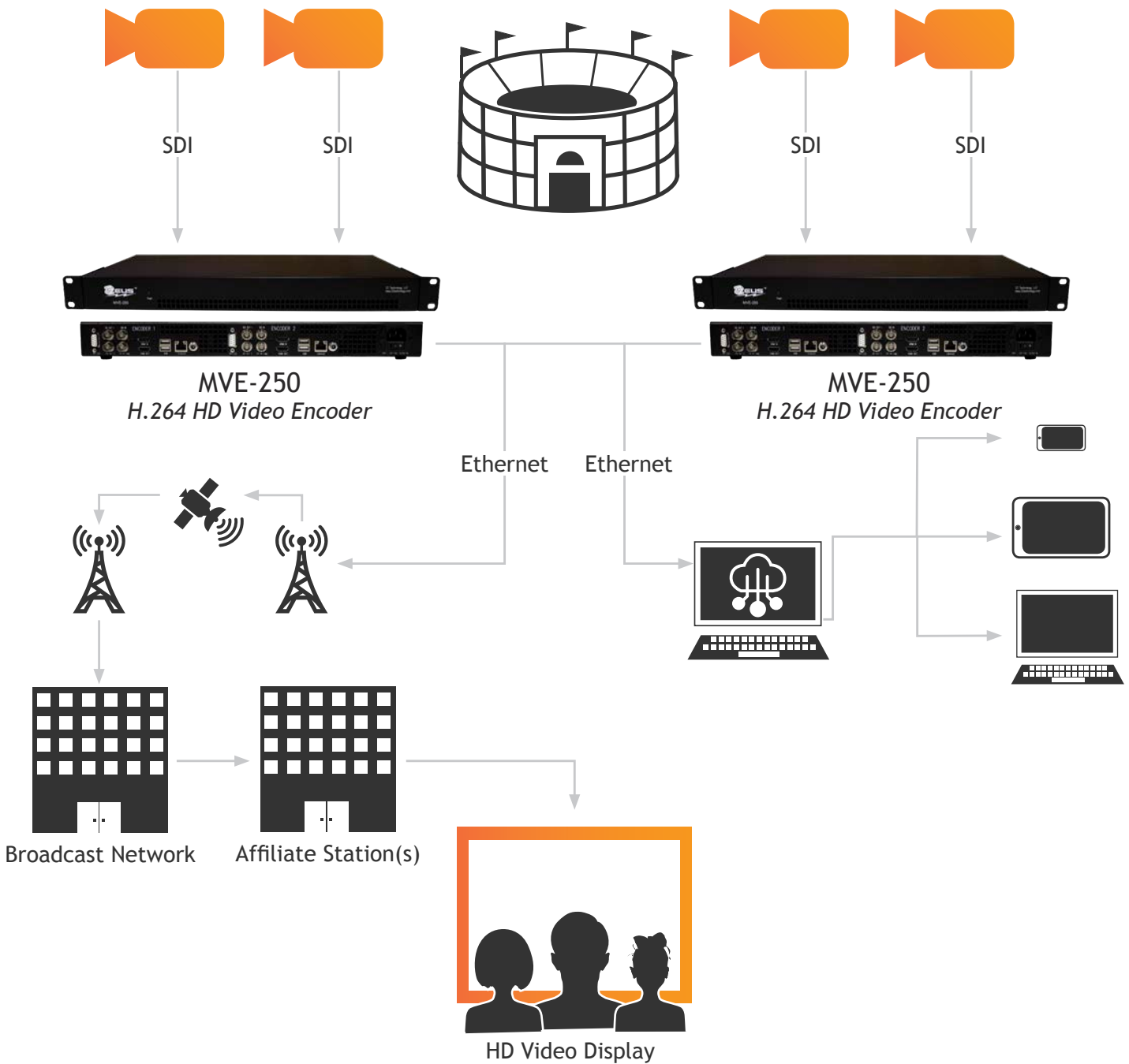
Utilize our HTTP-based user interface to customize encode/decode settings and manage access with password authentication.



BROADCAST VIDEO ENCODING

Dual Channel SDI Encoding

In the diagram below, there are two MVE-250's receiving content from four SDI sources and utilizing ASI to send the information over an established network. From here, the Broadcast Network can decode and make the content readily available for Affiliate Station(s) and consumer viewing. With the flexibility of the MVE-250, users can also send the channels over Ethernet to a CDN, Web Server or Social Network for viewing on mobile, tablet and desktop devices.



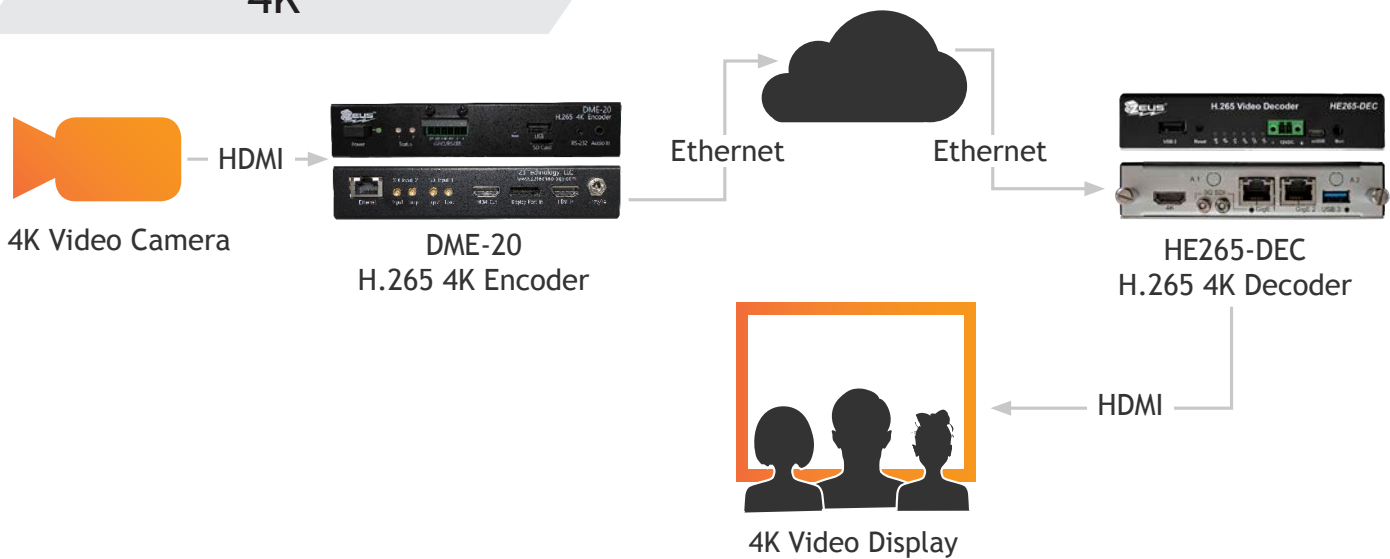


HD & 4K H.265 VIDEO STREAMING

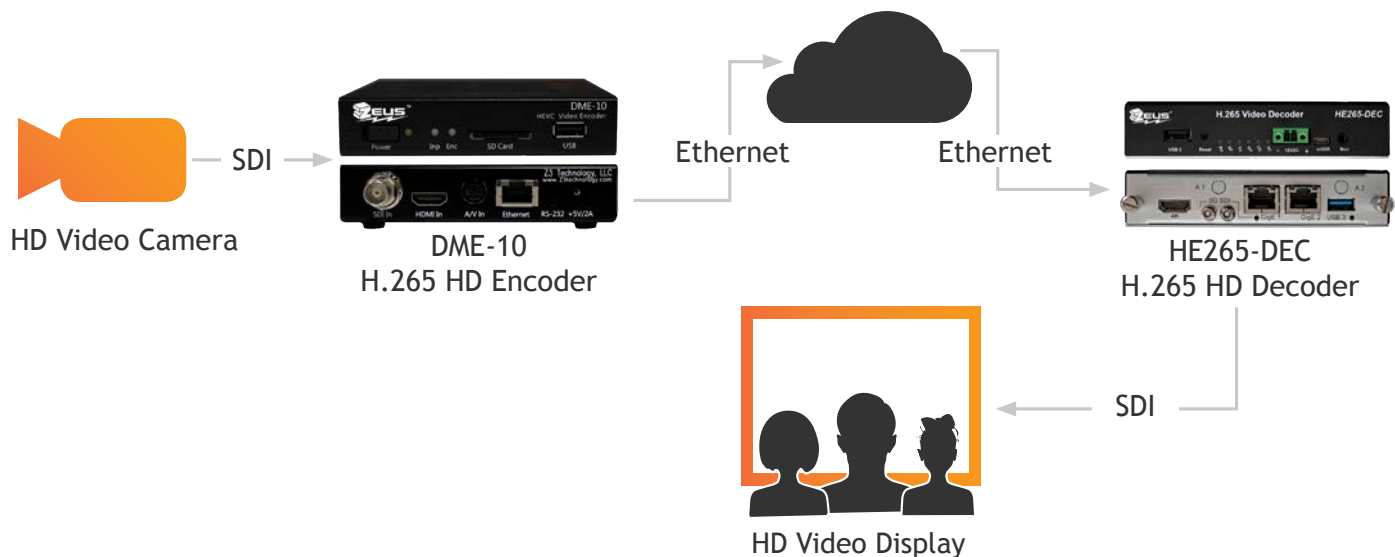
Point-to-Point Solution

The diagrams below demonstrate H.265 4K and HD video being encoded by either the DME-20 or DME-10 and sent over a network to be decoded by the HE265-DEC and displayed on a TV. Encoders equipped with H.265 typically use 50% of the bandwidth of an H.264 encoder. H.265 encoders, such as the DME-20 or DME-10, are able to send video in a lower bitrate, with higher quality, when compared to an H.264 encoder.

4K

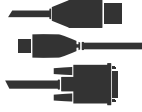


HD



BROADCAST VIDEO ENCODERS

BENEFITS



ASI Input, ASI Output and Gigabit Ethernet



1080i and 720p29.97 Resolution Support

FEC

Forward Error Control: Zixi Feeder and Receiver, Pro-MPEG, SRT*

MVE-150

1RU H.264 Video Encoder



MVE-250

Dual Channel 1RU H.264 Video Encoder



	<u>MVE-150</u>	<u>MVE-250</u>
Interfaces	1x HDMI Input 1x 3G-SDI Input 1x GbEth	1x HDMI Output 1x 3G-SDI Output 1x ASI Input 2x USB 2.0 1x RS-232
Supported Resolutions	H.264 BP, MP and HP encode and decode in resolutions up to 1080p60	
Output Formats	MPEG-2 TS, RTP, RTMP, RTSP, TSRTSP, MPTS and TS File	
Features	<ul style="list-style-type: none"> •Configurable total bitrate up to 50 Mbps •Custom Video Bitrate, GOP and VBV Size •Standard Definition Encoding for ISDB-T, DVB-H and Others •Supports Unicast and Multicast 	
Audio Interfaces	Embedded HDMI & Embedded SDI Audio	
Audio Codecs	AAC-LC and AAC-HE (supports up to 4 stereo pairs on SDI)	
Dimensions (LxWxH)	430 x 215 x 44 mm (16.93 x 8.46 x 1.72 inches)	430 x 215 x 44 mm (16.93 x 8.46 x 1.72 in)
Weight	2.80 kg (6.18 lb)	2.99 kg (6.59 lb)
Power	100-240 VAC External Power Supply	
Temperature & Humidity	Operating: 0 to 40°C at 20-80% Relative Humidity Storage: -10 to 65°C at 20-80% Relative Humidity	



Close Captions
EIA608 and EIA708



Live streaming via YouTube
Live, Facebook Live, Wowza
and Ustream



Easy controls via
HTTP-Based GUI

DME-05

Compact H.264 HD Video Encoder



DME-01

Compact MPEG-2 Video Encoder



	<u>DME-05</u>	<u>DME-01</u>
Interfaces	1x HDMI Input 1x HDMI Output 1x 3G-SDI Input	1x 3G-SDI Output 1x ASI Input 1x ASI Output 1x RS-232
Supported Resolutions	H.264 BP, MP and HP encode and decode in resolutions up to 1080p60	
Output Formats	MPEG-2 TS, RTP, RTMP RTSP, TSRTSP	MPEG-2 TS, RTP, RTSP and MPEG-2 TS over RTP
Features	<ul style="list-style-type: none"> •Configurable total bitrate up to 50 Mbps •Supports YouTube/Facebook Live •Supports Unicast and Multicast 	<ul style="list-style-type: none"> •Configurable total bitrate up to 16 Mbps •Standard Definition Encoding for ISDB-T, DVB-H and Others* •Supports Unicast and Multicast •Seamless Bitrate and Frame Rate Changes
Audio Interfaces	Embedded HDMI & Embedded SDI Audio	Analog Jacks and Embedded SDI Audio
Audio Codecs	AAC-LC and AAC-HE	
Dimensions (LxWxH)	142 x 130 x 34 mm (5.59 x 5.11 x 1.33 in)	186 x 123 x 29 mm (7.32 x 4.84 x 1.14 in)
Weight	613 g (1.35 lb)	722 g (1.59 lb)
Power	12V External Power Supply 12W typical consumption	12V External Power Supply 4W typical consumption
Temperature & Humidity	Operating: 0 to 40°C at 20-80% Relative Humidity Storage: -10 to 65°C at 20-80% Relative Humidity	

*Contact Z3 for customization options

**Up to 1080i/1080p30 when used with the MVE-20, MVE-10, MVE-02 or DME-01

H.265 IP STREAMING

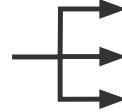
BENEFITS

FEC

Forward Error Control:
Zixi Feeder and Receiver,
ProMPEG, SRT*



Close Captions
EIA608 and EIA708



Stream One Source in
Multiple Resolutions
and Formats



Low Power
Consumption
(4.5W)

DME-20

4K H.265 Compact Video Encoder



DME-10

HD H.265 Compact Video Encoder



DME-20

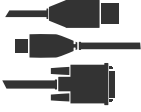
DME-10

Interfaces	1x HDMI Input 2x 3G-SDI Input 2x GPIO or UART	1x GbEth 1x USB 2.0 1x Micro SD	1x RS-232 1x RS-485 1x Display Port 1.1	1x HDMI Input 1x 3G-SDI Input 1x Composite Input	1x GbEth 1x USB 2.0 1x SD Card	1x RS-232
Supported Resolutions	H.265 encode in resolutions up to 2160p30 H.264 video from QCIF to 2160p30			HEVC/H.265 or H.264 encode in resolutions up to 1080p60		
Output Formats	RTP, RTSP, MPEG-2 TS over UDP, RTMP, TSRTSP, MPTS and TS File			MPEG-2 TS, RTP, RTSP, TSRTSP, RTMP and TS File		
Features	<ul style="list-style-type: none"> •Dual 3G-SDI encoding •Low latency •Fully controllable parameters: resolution, max bitrate, GOP and on-the-fly bitrate control •Interlace support for H.265 only 			<ul style="list-style-type: none"> •STANAG 4609/NGA MISP compliant (KLV) •Synchronous KLV data via SDI •Asynchronous KLV data via RS-232 •Ultra-Low Bandwidth Support •Interlace support for H.265 only 		
Audio Interfaces	Embedded HDMI, Embedded SDI Audio, Analog Audio			Embedded HDMI and Embedded SDI Audio		
Audio Codecs	AAC-LC and AAC-HE					
Dimensions (LxWxH)	157 x 78 x 30 mm (6.18 x 3.07 x 1.18 in)			116 x 115 x 24 mm (4.57 x 4.53 x 0.94 in)		
Weight	225 g (0.49 lb)			397 g (0.87 lb)		
Power	12V Power Supply 4.5W Typical consumption			5V External Power Supply 4.5W Typical Consumption		
Temperature & Humidity	Operating: 0 to 50 °C at 20-80% Relative Humidity			Operating: -5 to 65 °C at 20-80% Relative Humidity		

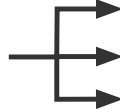
H.264 IP STREAMING



BENEFITS



Variety of Inputs
and Outputs



Stream One Source in
Multiple Resolutions
and Formats



Live streaming via YouTube
Live, Facebook Live, Wowza
and Ustream

DME-04

3G-SDI H.264 HD Video Encoder



DME-04

SME-01

HDMI H.264 Video Encoder &
Decoder



SME-01

Interfaces	1x HDMI Input 1x 3G-SDI Input 1x Composite Input	1x GbEth 1x USB 2.0 1x RS-232	1x HDMI Input 1x HDMI Output 1x Composite Input	1x GbEth 1x USB 2.0 1x RS-232
Supported Resolutions	H.264 BP, MP and HP encode in resolutions up to 1080p60		H.264 BP, MP and HP encode and decode in resolutions up to 1080p60	
Output Formats	MPEG-2 TS, RTP, RTMP, RTSP, TS RTP, TS File and RTMPS		MPEG-2 TS, RTP, RTMP, RTSP, TS RTP, MPTS and TS File	
Features	<ul style="list-style-type: none"> •Secure RTMP streaming •Standard Definition Encoding for ISDB-T, DVB-H and Others* •Closed Captioning (EIA-608, EIA-708) •Supports Unicast and Multicast 		<ul style="list-style-type: none"> •Configurable total bitrate up to 30 Mbps •Closed Captioning (EIA-608, EIA-708) •Supports YouTube Live and Facebook Live •Supports Unicast and Multicast 	
Audio Interfaces	Embedded HDMI and Embedded SDI Audio		Embedded HDMI Audio and Analog Audio	
Audio Codecs	AAC-LC and AAC-HE			
Dimensions (LxWxH)	157 x 122 x 33 mm (6.19 x 4.81 x 1.31 in)		98 x 81 x 21 mm (3.88 x 3.19 x 0.81 in)	
Weight	513 g (1.13 lb)		221 g (0.49 lb)	
Power	5V External Power Supply 6W Typical Consumption			
Temperature & Humidity	Operating: 0 to 40°C at 20-80% Relative Humidity Storage: -10 to 65°C at 20-80% Relative Humidity		Operating: 0 to 50°C at 20-80% Relative Humidity Storage: -40 to 70°C at 20-80% Relative Humidity	

*Contact Z3 for customization options

H.265 SOLUTIONS

ZCube™

4K Ultra Compact H.265 Encoder

- ONVIF Profile S/T Compliant
- Supports a Variety of Video Management Systems
- Simultaneous Streaming and Recording



HE265-DEC

H.265 4K & HD Video Decoder

- Forward Error Correction via Zixi Receiver and SRT
- Redundant Streaming Support



ZCube™

HE265-DEC

Interfaces	1x Micro HDMI Input 1x Composite Output 1x GbEth	1x USB 2.0 1x RS-232	1x 4K HDMI Output 1x HDMI 1.4B Output 2x 3G-SDI Output	2x GbEth 1x USB 2.0 1x USB 3.0
Supported Resolutions	H.265, H.264 and MJPEG encode in resolutions up to 4K UHD & HD		H.265 decode in HD resolutions up to 2160p30, 1080p30, 1080p/i at 60fps and 720p60	
Streaming Formats	Output: RTP, RTSP, MPEG-2 TS and RTMP		Input: UDP/TSRTP, SRT, RTMP, HLS, Zixi, RTSP Client Output: UDP, RTP, SRT, RTMP Client, Zixi	
Features	<ul style="list-style-type: none"> •Low Latency, Low Power •Simultaneous encode of H.265 and H.264 •Power over Ethernet (PoE) •Compatible with ZEUS HE265-DEC decoder 		<ul style="list-style-type: none"> •EIA 708 captions, Subtitles: DVB EN 300743 on Screen Display. •Easy to use HTTP-based GUI 	
Audio Interfaces	Embedded HDMI, Microphone		Embedded HDMI & Embedded SDI Audio	
Audio Codecs	AAC-LC		MPEGIL2, AAC-LC, Dolby Digital Passthrough	
Dimensions (LxWxH)	66 x 66 x 66 mm (2.60 x 2.60 x 2.60 in)		260 x 130 x 27 mm (10.2 x 5 x 1 in)	
Weight	87.9 g (0.19 lb)		586 g (1.30 lb)	
Power	12VDC 4.5W typical consumption		12VDC	
Temperature & Humidity	Operating: -5 to 65°C at 20-80% Relative Humidity Storage: -10 to 70°C at 20-80% Relative Humidity			



PRODUCT GUIDE

	DME-20	DME-10	HE265-DEC	HE4K-R4	MVE-250	MVE-150	DME-05	ZCube™	MVE-40	DME-04	SME-01	DME-02	DME-01
CODEC													
H.265/HEVC	2160p30	1080p60	2160p30					2160p30					
H.264	2160p30	1080p60	2160p30	4x 2160p30	1080p60	1080p60	1080p60	2160p30	4x 1080i	1080p60	1080p60	1080p60	1080p30/ 1080i
MPEG-2													1080i
FEATURES													
PRO-MPEG					✓	✓	✓				(Decode)		
Zixi	✓	✓	✓		✓	✓	✓						
Closed Captions	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓
INPUT													
HDMI/DVI	✓	✓		4 (4K)	2	✓	✓	✓ (Micro)		✓	✓		
3G-SDI	2	✓			2	✓	✓		4	✓		✓	
HD-SDI													✓
Component													
Composite		✓						✓		✓	✓	✓	✓
Display Port	✓												
Analog L/R Audio												✓	✓
ASI					2	✓	✓		✓			✓	✓
OUTPUT													
ASI					2	✓	✓		✓			✓	✓
HDMI Passthrough	✓				2	✓						✓	
3G-SDI Passthrough	✓				2	✓			✓			✓	
HD-SDI Passthrough													✓
HDMI/DVI			✓ (4K)	4 (4K)	2	✓	✓				✓	✓	
3G-SDI			2		2	✓	✓					✓	
HD-SDI													✓
ADDITIONAL INTERFACES													
GbEth	✓	✓	2	4	2	✓	✓	✓	✓	✓	✓	✓	
Ethernet													✓
SD Card	✓ (Micro)	✓											✓
SATA2				2					2				
USB	✓	✓	✓ 2.0 & 3.0	4	4	2	2	✓	✓	✓	✓	2	
RS-232	✓	✓		4	2	✓	✓	✓	2	✓	✓	✓	✓
SPECIFICATIONS													
Power	12V	5V	12VDC	100-240 VAC	100-240 VAC	100-240 VAC	12V	12V	100-240 VAC	5V	5V	12V	12V
Rack Mount				✓	✓	✓			✓				

GLOBAL PARTNERSHIPS



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