



## DiviCom<sup>®</sup> Encoder

### MV 100

#### Product Description

Today, more bandwidth is required to support the rapidly growing number of High Definition and niche channels, as well as to provide an increasingly personalized viewing experience. Advanced compression technology can reduce video and audio bandwidth requirements by 50 percent compared to current MPEG-2 performance, enabling operators to deliver twice the number of services into a given bandwidth.

Harmonic's Divicom<sup>®</sup> MV 100 standard definition encoder, supporting MPEG-4 AVC, SMPTE VC-1 or MPEG-2 compression in a single rack-unit system, is the ideal solution for operators who wish to transition to advanced encoding today or want to protect their MPEG-2 encoding investment for the future.

The MV 100 offers software-selectable compression, analog or digital signal inputs, and IP or ASI outputs in a cost-effective, compact package. It is a natural fit for all broadcast or on-demand encoding applications demanding the highest quality video at the lowest bit-rates. The MV 100—backed by Harmonic's track record of innovation, interoperability, and exceptional support—offers a highly flexible, high-performance SD encoding platform for IPTV, satellite, cable or terrestrial environments.

With thousands of Harmonic encoders delivering video to tens of millions of viewers around the world, Harmonic is a recognized leader in advanced digital video solutions.

#### Benefits of the DiviCom MV 100

- **Sub 2 Mbps Performance** – The MV 100 helps further lower bit-rates with advanced compression tools such as all intra prediction modes, nested sub-macroblock motion prediction modes, block-based field/frame decisions and CABAC. Processing power to spare, more powerful decision-making and filtering tools enable the MV 100 to continue to set the standard for MPEG-2 compression performance.
- **Pre-processing** – Sophisticated pre-encoding decision-making and adaptive noise reduction are essential to the success of aggressively low bit-rate encoding, and come standard on the MV 100. The LookAhead multi-pass architecture performs billions of processing cycles per second on video picture characterization and multiple exhaustive motion estimation processes to drive both the filters and the encoding.
- **Flexibility** – The MV 100 supports all broadcast video and audio compression standards. The audio and video codecs can be changed via a simple software licensing option. Analog or digital inputs, and IP or ASI outputs support any headend architecture.
- **Ease of Operation** – Factory presets and highly adaptive filtering make operating the MV 100 simple.
- **Interoperability** – Harmonic's experience, leadership in industry forums, and relationships with decoder providers ensure the smoothest integration possible.
- **Compact footprint** – The 1-RU chassis maximizes valuable headend real estate.
- **Management** – Harmonic's NMX Digital Service Manager™ simplifies mass configuration, monitoring, and automated redundancy in both centralized and distributed architectures.

## Video Encoding

- MPEG-4 Part 10 Main Profile, Level 3 (H.264, AVC)
- CBR and VBR bit-rate control
  - Macroblock-level adaptive field/frames (MBAFF)
  - 4x4 integer transform
  - All intra prediction modes
  - 1/4 PEL ME
  - I/P/B picture support
  - CABAC
  - Adaptive deblocking

- SMPTE VC-1 Advanced Profile, Level 1
- CBR bit-rate control
  - Interlace and progressive bit-stream syntax supported
  - AC prediction
  - 1/4 PEL ME
  - I/P/B picture support
  - Adaptive deblocking

- MPEG-2 Main Profile, Main Level 3
- CBR and VBR bit-rate control
  - I/P/B picture support
  - Encoding rate 4:2:0 = 0.3 to 15 Mbps

## Video Specifications

Video Processing	LookAhead multi-pass processing ENRGY™ noise reduction/filtering Impulse noise reduction Motion compensated temporal filter Edge adaptive texture filter Adaptive non-linear spatial filter Noise level estimation
Aspect Ratios	4:3 and 16:9
Inverse Telecine	3:2 pulldown
Vertical Resolutions	576, 288 (PAL), 480, 240 (NTSC)
Horizontal Resolutions	720, 704, 640, 544, 528, 480, 352
VBI Support	WINK; NABTS; WST (Teletext); WSS; VPS; AFD
Closed Captioning	ATSC Line 21 CC (EIA-608); XDS; DTVCC (External EIA-708); DiviCom Line 21 CC; DVS-157 (GI) CC; ITU-R B0.1294 CC; SAUD CC; DMV1 CC; DVS-157 + SAUD CC

## Audio Encoding

- MPEG-1 Layer II 2 Ch. 56-384kbps
- Dolby Digital™ (AC-3) 2 Ch. 56-448kbps
- AAC 2 Ch. Bit rate 32 to 384 kbps
- aacPlus™ 2 Ch. Bit rate 16 to 128 kbps
- Audio pass-through Dolby E, AC-3 (AAC is an option)

## Audio Specifications

Analog Digitizing Resolution	24 bits
Analog Input Level Adjustment	0 to +20 dBV in 0.5 dBV steps

Operating Modes	Mono, dual channel, stereo, joint stereo
Sampling Frequencies	32 kHz, 44.1 kHz, 48 kHz

## Inputs and Outputs

Video Inputs	SDI Serial digital component (625 or 525 line) or analog composite (PAL or NTSC)
Digitizing Resolution A/D SNR	10 bits > 52 dB rms
Audio Inputs	2, 4 or 6 stereo pairs, Digital (AES3/EBU or S/PDIF) or Analog (balanced/unbalanced)
Outputs	MPEG-2 transport stream, Dual, redundant IP (100baseT) or ASI outputs

## System Management

- NMX Digital Service Manager
- Front panel control
- Software upgrade via Ethernet

## Power

Input Voltage Range	85-132 VAC or 170-264 VAC (Optional 48 VDC power supply)
Line Frequency	47–63 Hz
Typical Consumption	150 W

## Environmental

Cooling	Dual fans; air flow front to side
Operating Temperature Range	0° to 50° C 32° to 122° F
Storage Temperature Range	–20° to 80° C –4° to 176° F
Operating Humidity	< 95% non-condensing
Electro-Magnetic Compliance	FCC Part 15 Class A, EN 55022 Class A, EN 50082-1:1997, CE mark (89/336/EEC)
Safety	UL/cUL 1950, EN 60950, CE mark (73/23/EEC)

## Physical

Dimensions (WxHxD)	19" x 1.75" x 24" (1-RU) 48.26 cm x 4.45 cm x 61 cm
Weight	22 lbs./10 kg



Harmonic Inc.  
549 Baltic Way  
Sunnyvale, CA 94089

Tel: +1.408.542.2500  
Fax: +1.408.542.2511  
www.harmonicinc.com

© 2005 Harmonic Inc. All rights reserved. Harmonic, the Harmonic logo, DiviCom, ENRGY and NMX Digital Service Manager are trademarks, registered trademarks or service marks of Harmonic Inc. in the United States and other countries. Other company, product and service names mentioned herein may be the trademarks of their respective owners. All product and application features and specifications are subject to change at Harmonic's sole discretion at any time and without notice.  
08/05