harmonic

DiviCom®
Ion™ AVC HD

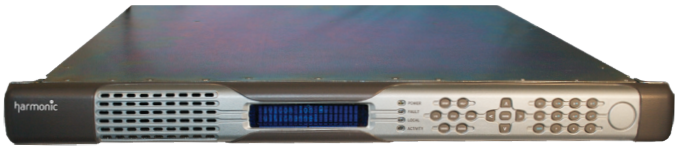
HD MPEG-4 AVC (H.264) Multi-Channel Encoder

HIGHLIGHTS

- Advanced MPEG-4 AVC MP@L4 video compression
- Low resolution channels option for PiP applications
- MPEG-2 TS/UDP over IP output
- 4 - channel CBR
- LookAhead encoding
- Flexible GOP control with fixed, capped, variable and closed/open GOP choices
- Supports multiple HD formats including 1080i and 720p
- Ultra-low bit rate encoding
- Digital video inputs with embedded audio
- Fixed capability of 12 stereo audio channels
- Dolby® AC-3, AAC/HE-AAC and MPEG1 Layer II native encoding, multi-channel pass-through

As the rollout of MPEG-4 AVC (H.264) services continues, service providers must balance the increasing demand for high-quality digital video services and ever expanding program choices with the mandate to control costs. With more features than other encoders and transcoders in its class, Harmonic's DiviCom® Ion™ AVC HD multi-channel MPEG-4 encoder is designed to cost-effectively address key deployment and operational issues.

The Ion AVC HD encoder incorporates four high-quality encoders and twelve stereo audio pairs in a single rack-unit (1-RU) chassis. Leveraging Harmonic's market-leading MPEG-2 and MPEG-4 AVC compression technology, the Ion AVC HD combines three generations of AVC encoding know-how with the density and cost-effectiveness of the Ion platform.



The Ion AVC's encoding flexibility allows operators to quickly expand their HD service offerings while minimizing capital and operating expenses. Able to deliver four simultaneous MPEG-4 AVC HD channels in high and low resolution formats, operators can increase revenue per program and customer satisfaction by flexibly delivering multiple services to any device.

With its standard IP interfaces, the Ion AVC HD is yet another key element of Harmonic's offering of an all-IP virtual headend. Supporting constant bit-rate (CBR) encoding, the Ion AVC HD is designed primarily with the needs of telco and cable service providers in mind. Telco operators can quickly and efficiently launch HD services by reducing the cost per channel without sacrificing compression efficiency. The Ion AVC HD is also ideal for switched service delivery architectures for telco and cable service providers.

BENEFITS OF THE ION AVC ENCODER

- **Performance -** Delivers broadcast-quality video for any type of content at 6.0 to 8.0 Mbps.
- **Software-selectable encoding flexibility -** Operators can deliver MPEG-4 channels in high or low resolution, within a given bandwidth, without compromising video quality.
- **Multiple audio formats -** Supports a large range, from MPEG-1 Layer II, AC-3, AAC/HE-AAC encoding to multi-channel pass-thru.
- **Density -** By offering a fixed configuration of four HD channels and the option for simultaneously delivering low resolution channels for picture-in-picture (PiP), operators can provide multiple, feature-rich services utilizing less space than required in a traditional headend.
- **Flexible video, audio and VBI format conversion** – The Ion AVC HD encoder offers unequalled flexibility to support various formats, which means that operators are not constrained by the inbound video, audio and VBI format, bit rate and resolution.
- **New applications** – The Ion AVC HD is well suited for switched architecture and other environments. .
- **Support for all-IP infrastructure -** The Ion platform's native IP interface seamlessly integrates into scalable, low-cost IP networks.
- **Network management -** Harmonic's NMX Digital Service Manager™ simplifies mass configuring, monitoring and automated redundancy in both centralized and distributed architectures.

VIDEO SPECIFICATIONS

Video Compression (4:2:0 Encoding)	Main channels: MPEG-4 AVC[1], MP@L4 Low resolution channels: MPEG-4 AVC MP@L1.3
Aspect Ratios	16:9
Video Formats	1080i and 720P
Resolutions	1080i x 1920, 1440, 1280, 960 pixels and 720P x 1280, 960 pixels
Encoding Bit-Rate	1 to 20 Mbps (4:2:0 CBR)
Ancillary Data	Closed Captioning VANC extraction per SMPTE 334M External caption server per SMPTE 333M Placement in video ES per ATSC CS-TSG-659r1
Video Input Filtering	Horizontal filter

AUDIO SPECIFICATIONS

Input-type	Embedded in SDI
Number of channels	Up to 3 stereo pairs per video service
Audio Formats	MPEG Layer II, Dolby Digital (AC-3), AAC, HE-AAC native encoding, AC-3 pass-through
Operating Modes	Mono, dual channel, stereo, joint stereo
Encoding Bit-Rate	MPEG Audio Layer II: 56 to 384 kbps Dolby Digital (AC-3): 56 to 448 kbps AAC: 32 to 384 kbps HE-AAC: 32 to 128 kbps
Sampling Frequencies	32 kHz, 44.1 kHz, 48 kHz
THD + Noise	< 0.05% at 1 kHz with 48 kHz sampling
Frequency Response	< 3 dB 20 Hz to 20 kHz at 384 kbps /48 kHz

INPUTS AND OUTPUTS

Video Inputs	Up to 4 Serial Digital SMPTE 292M (HD-SDI)
Audio Inputs	Embedded; up to 3 stereo pairs per video input
Video/Audio Outputs	MPEG-2 transport stream over UDP/IP (redundant 100/1000 BaseT connectors)

SYSTEM MANAGEMENT

NMX Digital Service Manager

POWER

Input Voltage Range	85-132 VAC or 170-264 VAC 42-60 VDC
Line Frequency	47-63 Hz
Typical Consumption	260 W (4 channels)

ENVIRONMENTAL

Cooling	9 fans; air flow front to side
Operating Temperature Range	0º to 40º C 32º to 122º F
Storage Temperature Range	-20º to +80º C -4º to +176º F
Operating Humidity	< 95% non-condensing
Electromagnetic Compliance	FCC Part 15 Class A CE Mark (EN 55022 Class A and EN 50082-1:1997)
Safety	UL 1950 and cUL C22.2#950 EN 60950
Compliant with RoHS Directive 2002/95/EC	

PHYSICAL

Dimensions (W x H x D)	48.26 cm x 4.45 cm x 60.69 cm 19" x 1.75" x 24"
Weight	24 lbs. / 11 kg

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