

EDBoX 1000 SD/HD Decoder

MPEG-2 / MPEG-4 AVC Multi format decoder



► Description

EDBoX one of the leaders of encoding and decoding systems offer in a compact one-rack unit the latest in H.264/AVC (MPEG-4 part 10) 4:2:0/ 4:2:2* high quality standard definition compression technology, to help optimize bandwidth utilization in digital transmission setups. The optimized performance of EDBoX MPEG-4 and MPEG-2 encoders and decoders provides enhanced bandwidth efficiency with ultra-low bit rate encoding and decoding.

EDBoX systems are used in 24/7 environment e.g. studio links, news contribution, SNG and local TV content feeds for IPTV-headends and to achieve broadcast quality at lowest bit rate. With its powerful and market leading performance it enables operators to transmit many more channels within their available bandwidth over satellite, terrestrial networks, digital cable and IPTV providers.

► Product Overview

The EDBoX 1000 SD/HD multi-format decoder offers the premise to decode all of the video formats and resolutions in realtime be it MPEG-2 or MPEG-4 SD or HD as an option. Control of the decoder is supported via 4 line front panel interface, on board web application and SNMP. Two 1GB Ethernet ports are available, one for administration and the other one for streaming input. Additionally the decoder offers the possibility of IP forwarding to send out the incoming stream to various IP addresses as unicast and/ or multicast. EDBoX solutions offer a lot of extensive features where the user can control from every EDBoX unit any EDBoX unit via the frontpanel or over the webside, called EDBoX mapping. This offers the customer a great option to "see what happens" on local- and remoteside. Fabulous other features like autostart, video bitrate on the fly within 100ms, packetloss realtime information, forward error correction, pinging and tracertr the remote unit(s) and our market leading network line measurement tool to check the networkline between encoder and decoder makes the EDBoX 1000 SD/HD Decoder one of the leading units on the market.

► Main features

video:

- > MPEG-4 part 10 (H264) SD decoding
- > MPEG-4 part 10 (H264) HD decoding*
- > MPEG-2 SD decoding
- > MPEG-2 HD decoding*
- > 4:2:0 and 4:2:2* decoding
- > SD SDI and CVBS Output (PAL, NTSC)
- > Genlock for frame synchronization
- > Aspects ratios 4:3 and 16:9
- > Main & high profile up to level 4 (MP@L4)
- > Decoder follows the encoder with bit rate changed on the fly within 100ms
- > CABAC/CAVLC entropy decoding
- > Resolution up to Full HD
- > Transport input MPEG-2 TS stream, over UDP/IP, RTP, RTSP, TS over RTP
- > Unicast and multicast

audio:

- > SDI embedded (8 CHA)
- > AES/EBU 1 CHA (2 CHA*)
- > Analog Audio +6db (2CHA)
- > Audiochannel level changes
- > MPEG-1 LayerII
- > AAC LC / AAC-HEv1 / AAV-HEv2
- > LATM support
- > Dolby digital® pass through
- > Dolby digital® AC3 (6CHA*) encoding

specials & other options:

- > Transcoding SPTS/ MPTS MPEG-2 to H.264 AVC*
- > DVB ASI in/out*
- > Store on harddisk (up to 250GB)
- > Store and forward* (streaming higher bitrate over lower network incl. buffering)
- > IP forwarding to different unicast and multicast addresses in realtime
- > Extensive low latency streaming < 400ms
- > Video input preview screenshots on stand alone web interface
- > Automatic input format detection and switching

* optional

▲ Broadcast

▲ IPTV

▲ SNG

▲ Studio Links

▲ Corporate streaming

▲ MobileTV

▲ Webcasting

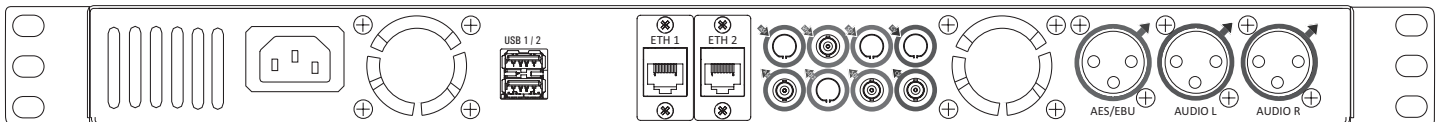
EDBoX 1000 SD/HD Decoder Specifications Release 3.0	
Video OUT	
Composite output	
Systems	PAL (B, D, G, H, I, K, M and N) and NTSC M
Video level	0 dBV nominal
Impedance	75 Ω unbalanced
Return loss	> 35 dB, 10 Hz to 5.5 MHz
Noise	< -55 dB RMS weighted relative to 0.7 V
Frequency response	0.3 dB peak-to-peak; 0.2 to 4.2 MHz
Differential gain/phase	≤2% / ≤2°
Aspect Ratio	4:3, 16:9
SDI output	
Format	SMPTE 259M (SD-SDI) SMPTE 292M (HD-SDI)*
Systems	1080i, 720p, 625/25, 525/25
Impedance	75 Ω unbalanced
Connector	BNC
Bit rate	270 Mbit/s ± 10 ppm
Aspect Ratio	4:3, 16:9 or auto-detect on VII or WSS
Genlock input	
Format/ Impedance	BNC / 75 Ω unbalanced
DVB - ASI *	
Connector / Impedance	BNC 75 Ω unbalanced
Format ASI IN	ASI standard: EN50083-9 *
Format ASI OUT	ASI standard: EN50083-9 *
TS bit rate IN/OUT	up to 100 Mbps
Audio OUT	
Outputs	Analog, digital or AES/EBU and SDI embedded.
Connector	BNC and XLR
Number of channels	1 x stereo / 2 x mono
Analog Audio	
Impedance	600 Ω or >20 kΩ balanced
CMRR	>50 dB, 1 kHz
Clipping level	-6 to +20 dBu, 500 mdBu increments
Return loss	>15 dB, 0.1 to 6.0 MHz
Input level	0.5 to 2 Vpp nominal
Sample rate	48 kHz
AES/EBU Digital Audio	
Output level	2 to 7 Vpp nominal, min. 500 mV
Channels	1 x stereo / 2 x mono (2 x stereo / 4 x mono *)
Impedance	110 Ω balanced
Return loss	>21 dB, 0.1 to 6.0 MHz
Embedded Audio	
Channels	8
Resolution	20 bits
Format	SMPTE 272M
Sample frequency	48 kHz (locked to video)
Video decoding SD (standard definition)	
MPEG-4 AVC Part 10 (H.264) and MPEG-2	
Decoding	MPEG-4 AVC Part 10 and MPEG-2 MP@ML
Decoding level	MP@L3
Decoding format	4:2:0 MP@ML 4:2:2 MP@ML*
Aspect ratio	16:9 and 4:3; auto mode based on WSS or VII
Decoding rate	500kb - 15 Mbps
H Resolutions	720, 704, 544, 528, 480 and 352 and any other resolution
V Resolutions	480 (for 525/29.97) and 576 (for 625/25) and any other resolution
Systems	525/29.97 Hz and 625/25 Hz
Video decoding HD (high definition)	
Decoding	MPEG-4 AVC Part 10 and MPEG-2 MP@ML
Decoding level	MP@L4
Decoding format	4:2:0 MP@ML 4:2:2 MP@ML*
Aspect ratio	16:9
Decoding rate	1.5 to 55 Mbit/s
H Resolutions	1920, 1440, 1280 720, 704, 544, 528, 480 and 352 and any other resolution
V Resolutions	1080i, 720p, 480 (for 525/29.97) and 576 (for 625/25) and any other resolution
Audio decoding	
Audio codecs	MPEG-1 Layer II, AAC-LC, HE-AACv1, HE-AACv2, Dolby Digital (AC-3) *
Sample rates	48 kHz
Layer II decoding modes	stereo, dual channel, single mono, joint stereo
Layer II decoding rate	32 to 384 kbits/s
AAC-LC and HE-AAC bit rates	variable, 14 to 320 kbit/s
AAC-LC and HE-AAC decoding modes	stereo, dual channel, single mono, joint stereo
Dolby Digital (AC-3) decoding modes	1/0 center, 2/0 stereo, 5.1, 6.1 *
Dolby Digital (AC-3) decoding and pass	56 to 640 kbit/s

Transport Input	
IP TS Input	
Number of inputs	2 (ETH2 can be used for administration and streaming out)
Type of connector	Eight-pin RJ-45, MDI 10/100/1GB interface
IP format	Multicast, unicast
Format	UDP/IP
TS receiving	MPEG over IP
TS packet	length 188 bytes, 204 RS on, 204 RS off
Control and Management	
Management interface	Ethernet 10/100/GB Base-T on RJ-45
Front panel	LCD 4 lines character display with menu and input keys
Protocol	WEB, SNMP, EDBoX manager
Special Features	
Latency	< 250 ms encoder only, 400 ms end to end (encoder-decoder)
Multi-coding	H.264 and MPEG-2 decoding
Transcoding	SPTS/MPTS MPEG-2 to H.264 AVC up to 3 channels *
Store to disk	Harddisk realtime recording up to 250 GB
Network measurement range	measure the bandwidth availability and max bandwidth throughput
IP forwarding	Unicast and multicast IP forwarding to max. 10 different IP addresses
Environmental	
Dimensions (W x H x D)	482.6 x 44.5 x 560 mm
Operation temperature range	0 to +45°C
Weight	7 kg
Cooling	Forced cooling with air flow from front to back
AC Power	
Voltage range	100 to 240 V AC $\pm 10\%$
Line frequency	47 to 63 Hz
Power consumption	≤ 107 W (110 V), ≤ 104 W (220 V)

subject can change without notice ver. 04-2009

* optional

Decoder Connector Panel



Ordering information

Description	Order Number
EDBoX SD1000 Decoder: Broadcast H.264 AVC/ MPEG-2 realtime decoder, fullID1 Resolution up to 720x576 PAL/NTSC. TS / RTP over IP up to 15Mbps, Video Out CBVS/SDI, Audio output analog +4db XLR (2CHA), AES-EBU XLR (2CHA), SDI embedded out up to to 8 CHA, Web Based Management, 4 lines frontpanel, AAC HE v1/v2 & MPEG 1 Layer II audio decoding	EDB24
EDBoX HD Decoder: Broadcast H.264 AVC & MPEG-2 MP@ML realtime decoder, Resolution up to 1080i. TS / RTP over IP up to 75Mbps, Video Out simultaneous CBVS/SDI (only SD), Audio out analog +4db XLR (2CHA), AES-EBU XLR (2CHA), SDI embedded up to to 8 CHA, Web Based Management, 4 lines frontpanel, AAC HE v1/v2 & MPEG 1 Layer II audio decoding	EDB41
Firmware options	
WM9 decoder upgrade for EDBoX SD 1000 Decoder : Firmware upgrade to decode in realtime with WM9 codec. After upgrade user can choose between AVC H.264 and WM9 codec	EDB83
IP Transcoding upgrade for EDBoX AVC Decoder: Firmware upgrade to catch SPTS (single program transport stream) or MPTS (multi program transport stream) over IP and transcode in realtime from MPEG2 TS to H.264 AVC codec or the other way round and send it out over IP	EDB36
FEC (forward error correction upgrade for all EDBoX AVC H.264 & MPEG2 SD Encoder/Decoders: FEC based on FECcop3	EDB84
Dolby Digital (AC-3) 6 CHA decoding	EDB85
4:2:2 chroma format for H.264 / AVC/ MPEG-2 SD and HD	EDB43
Hardware options	
ASI INPUT for EDBoX AVC H.264 and MPEG2 SD Encoder / Decoder: Hardware upgrade ASI input interface (270 Mbps)	EDB87
ASI OUTPUT for EDBoX AVC H.264 and MPEG2 SD Encoder / Decoder: Hardware upgrade ASI output interface (270 Mbps)	EDB88
IP Transcoding upgrade for EDBoX AVC H.264 SD Encoder include DVB ASI OUT: Firmware upgrade to catch SPTS (single program transport stream) or MPTS (multi program transport stream) over IP and transcode in realtime from MPEG2 TS to H.264 AVC codec and send it out over DVB ASI hardware interface	EDB37