

# Magicbox HD4S

1/4/16 chs HDMI/HD-SDI H.265/H.264

IPTV Encoder



**Magicbox HD4S series** HDMI/HD-SDI input, it is the world's New Generation HEVC H.265/H.264 hardware encoder in a professional grade, compact streaming appliance. Its advanced HEVC compression enables users to stream broadcast quality 1080p video with up to 50% bandwidth savings compared to today's H.264 standards.

**Magicbox HD4S series** boasts an all-hardware compression chip for real time encoding with advanced audio and meta data handling – all packaged in a portable device with low power consumption, which makes it possible to take next generation HEVC encoding from the server rooms into the field for professional and industrial applications with easy integration to education, health care, IPTV, conference, remote education, news interview, banking, transportation and other industries.

## Next-Generation HEVC/H.265 Streaming Reduces IPTV Bandwidth Costs

Whether it's from live news broadcasting in the field, Point-to-Point contribution of HD video, live streaming from or within sports venues or fast move picture - demand for high quality real-time video anywhere, anytime is growing. The increase of video services translates to rising expenses for purchasing more satellite, cellular or other dedicated network bandwidth. The Encoder's cutting edge HEVC compression and streaming capabilities allows broadcasters, IPTV providers, A/V teams, corporate IT to reduce Operating Expenses (OPEX) for video streaming projects while managing demand for more video services and requests for higher quality video on existing bandwidth capability.

## Flexible Connectivity Options with H.264 Backward Compatibility

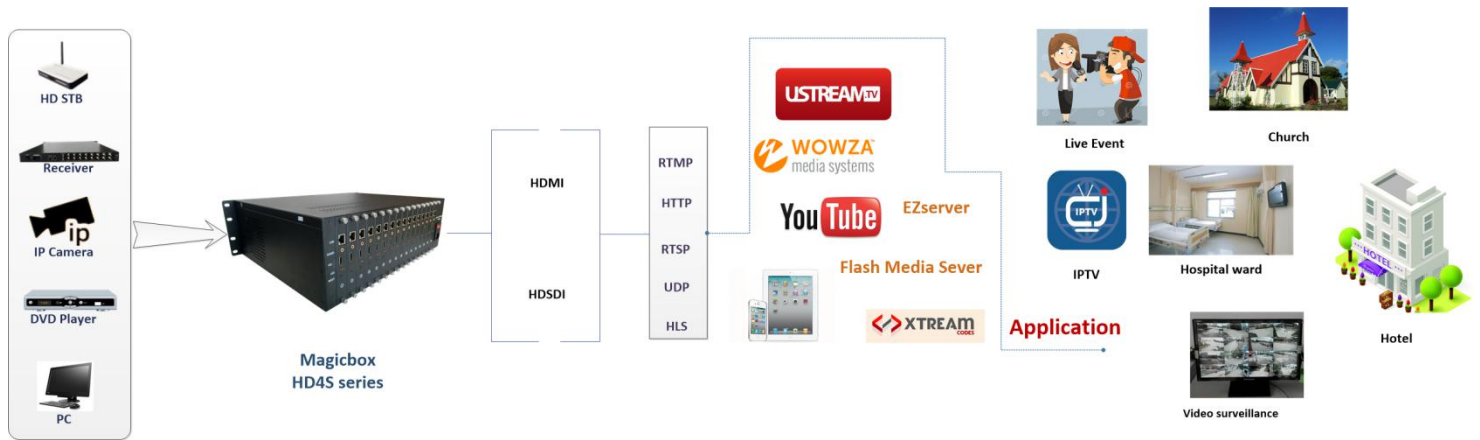
A built-in video matrix enables routing of video sources to both the HEVC and H.264 compression cores for generating streams in both H.265 and H.264 formats. The on-board hardware scaler can be used for real-time downscaling, frame-sampling and flexible cropping options delivering the most optimized video output for your application.

## Features

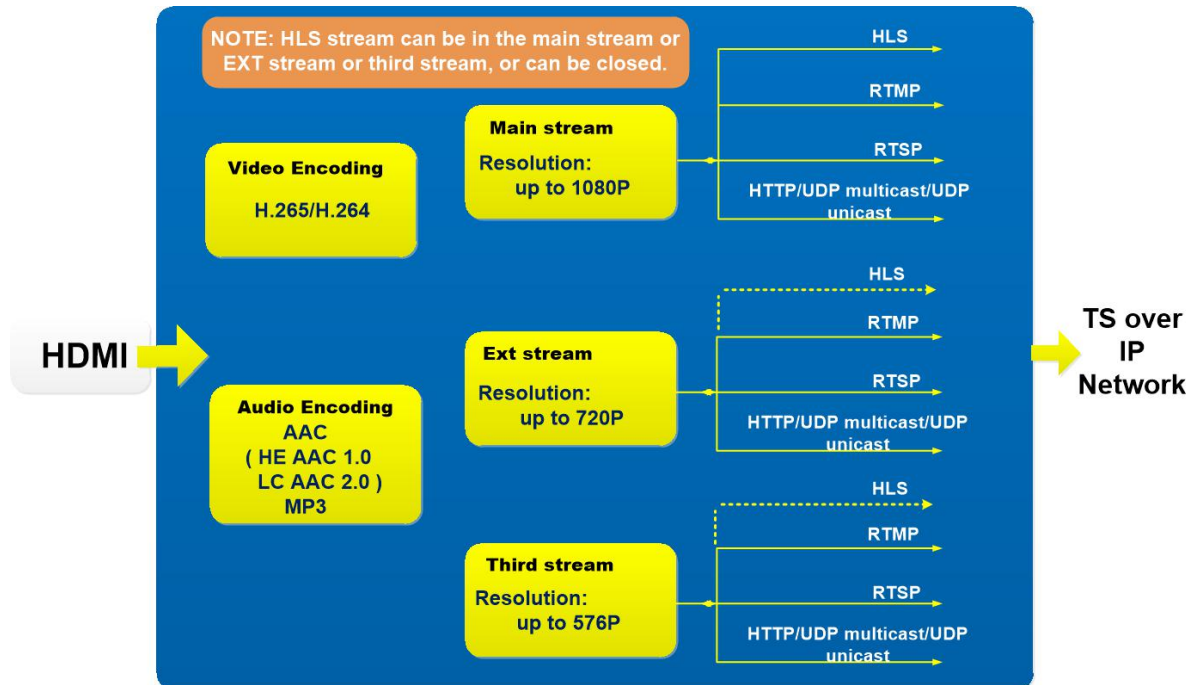
- HDMI (HDCP), Blue Ray HD, HD-SDI input
- Number of input channels: Single, Quad, Sixteen
- Full HD 1080P60, 1080I60, 1080P50, 1080I50, 720P60, 720P50, 576P, 576I, 480P, 480I Multiple resolution HDMI signal input
- H.264, H.265, BP/MP/HP hardware encoding
- 3 streams out, Each HDMI input source simultaneously support up to 1080P
- Support multi protocol output, RTSP, RTP, RTMP, HLS(option) one of HTTP/UDP multicast/UDP unicast protocol out simultaneously
- support insert picture LOGO, PNG/BMP format.
- AAC, MP3, G.711 and other audio coding format
- Separate audio output supported
- Adaptive aspect ratio only in H.264 encoding
- Next-generation HEVC / H.265 compression reduces network bandwidth by up to 50% compared to H.264
- Support RTMP push flow, (classic mode and URL mode) , support IP address and domain names, ONVIF protocol
- Supports both HEVC and H.264 – built for the future without losing support for legacy receivers/decoders
- Web page video preview function, facilitate the implementation of adjustment
- Support RTSP, RTP, HTTP, HLS(option) UDP multicast, UDP unicast and other real time flow and TS flow
- Network interface using 1000M full duplex mode
- HD-to-SD downscale conversion
- OSD supported, rolling captions
- Timing reboot function
- Support CBR and VBR mode, 50Kbps ~ 12Mbps
- USB power supply supported, 5V or 3.7V
- Low power design
- WEB Management
- Easy-to-Use System Management

## MAIN APPLICATIONS

- IPTV, conference, remote education, Network radio, Live audio
- Backhaul/Monitoring for Broadcasters
- VOD, multiscreen headend
- Point-to-Point video contribution
- Streaming Full Motion Video to Desktop, TV and Mobile Devices over bandwidth-limited pipes



Diagram



## TECHNICAL SPECIFICATIONS

### Video Inputs

	1*HDMI /HD-SDI per module 1/4/16 channels optional
Progressive	1920x1080 @ 60/59.94/50/24/23.98 Frames per second 1280x720 @ 60/59.94/50 Frames per second
Interlaced	1920x1080i 29.97/25 frames per second Video Input Format is Auto-Detected

### Audio Inputs

Processes first two channels of audio embedded in HDMI input signal  
Unbalanced analog stereo input via 1/8" (3.5mm) jack(option)

### OUTPUTS

IP Output type	RJ45 providing 10/1000Base-T Ethernet with Static or DHCP addressing;
Protocol	RTMP/RTSP/HTTP/UDP/HLS/RTP/ONVIF
Multi-Screen	Up to 3 channels High def. and any resolution of streams simultaneously out per

### Users Interface

Computer Based control	HTTP via standard PC or web browser using Command Center. The simple Control API and SDK is also available to programmers to create their own application
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### Pre-processing

Frame rate	from 5fps to 45fps
Image setting	Video adjustments (Brightness, contrast, Saturation, Hue)
Image insertion	OSD insertion
Enhancement filter	Deinterlacing; Noise reduction; Sharpening; Visual Optimizing; Filtering

### HEVC/H.265 Video Encoding

Bitrate mode	VBR, CBR
First stream	1920*1080, 1280*720, 1024*576, 850*480, 720*576, 704*576, 640*480, 640*360, auto
Second Stream	1280*720, 800*450, 720*576, 720*408, 704*576,640*480, 640*360, 352*288, 320*240, 320*180, auto
Third stream	720*576, 720*408, 704*576, 640*480, 640*360, 352*288, 320*240, 320*180, auto
H.265 Encode	MPEG-H HEVC (ISO/IEC 23008-2) Main Profile Level 4.1 (4:2:0 8-bits)

### H.264/MPEG-4 Part 10 (AVC) Video Encoding

Bitrate mode	VBR, CBR
First stream	1920*1080, 1280*720, 1024*576, 850*480, 720*576, 704*576, 640*480, 640*360, auto
Second Stream	1280*720, 800*450, 720*576, 720*408, 704*576,640*480, 640*360, 352*288, 320*240, 320*180, auto
Third stream	720*576, 720*408, 704*576, 640*480, 640*360, 352*288, 320*240, 320*180, auto
H.264 Encode	MPEG-4 AVC/H.264 (ISO/IEC 14496-10 MPEG-4 AVC – Rec. ITU-T H.264) Baseline Profile L3 Main Profile L3 and L4 High Profile L4 and L4.2
<b>Bitrate of Res.</b>	
720x576 (D1)	800-1500kbps
1080x720p (HD)	1200-2500kbps
1920x1080p (Full HD)	3500-6000kbps
Video Bitrate	16kbps to 12Mbps

### Audio Encoding

Audio encoding	AAC, MP3
Bit Rates	Range from 48 kbps to 256 kbps, Adjustable
Resample Rate	32Khz, 44.1Khz
Audio Channel	L+R, L, R

### Control

	1000M Base T Ethernet, RJ45,auto-negotiation Management via Web Language English/Chinese
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### Environment

Power Supply	+12V (Compact size), 220V (1RU/3RU)
Power consumption	<5W (compact), 80W (1/3RU)
Operation temperature	0 -50°C (32 -122°F)
Storage temperature	-40-70°C (-40-158°F)
Dimensions	180x110x50 mm (Compact) 430mm x 250mm x 45mm (1RU) 560*450*270 mm (3RU)
Weight	1.0kg (Compact); 4.0kg (1RU); 7.5kg (3RU)

### Ordering Information

1 channel HDMI input ---	Magicbox HD4015
4 channels HDMI inputs ---	Magicbox HD4045
16 channels HDMI inputs ---	Magicbox HD4165