

# ENC3443

Advanced 12 channels MPEG-2 H.264  
SD/HD Encoder



**ENC3443** is especially well-suited for satellite, terrestrial broadcast and premium cable or IPTV applications, as well as various other kinds of content aggregation today. The hardware platform has been widely deployed for **MPEG-2** and **MPEG-4 AVC HD** broadcasting applications with impressive audio encoding features: MPEG1 Layer II, MPEG2-AAC, MPEG4-AAC, Dolby Digital AC3 (2.0) audio encoding (Optional), and AC3 (2.0/5.1) pass through.

**ENC3443** supports the most demanding video applications. It offers codec and transport flexibility, interoperability and feature richness, and equipped with 12 channels HDMI or HD-SDI inputs and multiple codec standard, delivering the highest compression performance in all formats — SD MPEG-4 AVC, HD MPEG-4 AVC, SD MPEG-2, HD MPEG-2, — allowing users to broadcast more channels.

It provides ultra-high quality video for your contribution workflows, IP as well as the DVB ASI output that meets MPEG-TS stream standard. The product is ideal for a broad range of applications including contribution and distribution.

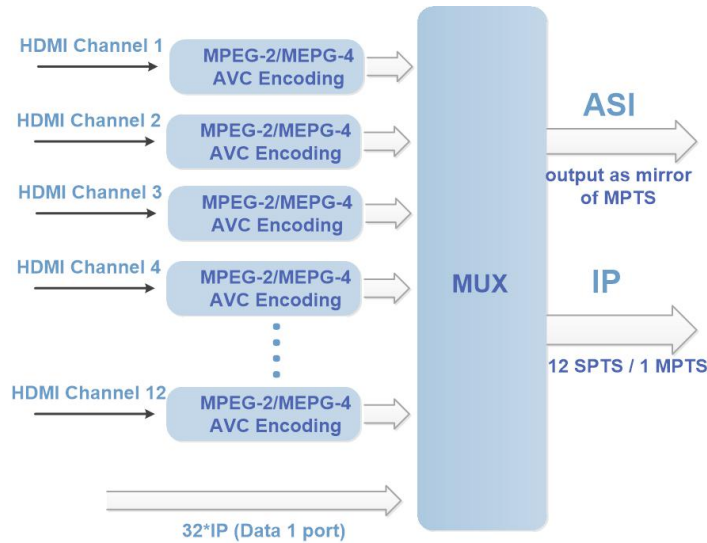
## Features

- Up to 12 channels HDMI per chassis (1-RU), SDI optional
- 32\*IP input(Data 1 port) over UDP and RTP
- Superior-quality low-bitrate MPEG-2 and MPEG-4 AVC encoding of SD or HD video pre-processing technologies
- Automatic SD & HD Detection
- Audio encoding: MPEG1 Layer II, MPEG2-AAC, MPEG4-AAC, Dolby Digital AC3 (2.0) encoding (Optional), AC3 (2.0/5.1) passthrough
- VCT(Virtual Channel Table) support for 8VSB ATSC and DVB-C QAM
- Flexible GOP structures with B-frame and P-frame insertion in Manual
- The dialogue normalization function of AC3 encoding nicely
- 12 channels CC (Closed Caption) EIA 608 and EIA 708
- Simultaneous output via 12\*SPTS/1\*MPTS over UDP/RTP IP
- 1\*ASI output as mirror of MPTS
- CBR & VBR rate control
- PCR correction to accurately correct several PCR of the input data
- PID remapping, PSI/SI information creation by automatic or external
- Low power consumption and high reliability with MTBF(Mean Time Between Failure)  $\cong$  87600 Hours
- Easy-to-Use System Management via Web

## Applications

- Diverse Application Needing AVC and MPEG-2 Flexibility
- Satellite, ATSC, Cable TV headend applications
- Concurrent ASI and IP delivery for multi-path transmission
- TV studio station

Principle Chart



TECHNICAL SPECIFICATIONS

Input Interfaces

Number of Channels	12 Ports
SD-SDI	SMPTE 259M - 270Mbit/s
HD-SDI	SMPTE 292M - 1.485Gbit/s
HDMI	1.4a HDCP
12 channels CC (closed caption) input	
Connector	BNC (75 Ohm)
32 IP input over UDP and RTP through DATA 1 port	

Stream output

	1 ASI output as mirror of MPTS
	MPTS and 4*SPTS IP output over UDP and RTP/RTSP
	DVB Filter Null packet
	7x188bytes TS packet length
	2*1000M Base-T Ethernet interface, Data 1 and Data 2
	Multicast, Unicast
Total Bitrate	<1000Mbps

Video Processing

Resolution

Input	1920*1080@60p, 1920*1080@50p, 1920*1080@60i, 1920*1080@50i, 1280*720@60p, 1280*720@50P, 720*480@60i, 720*576@50i
Output	1920*1080@60p, 1920*1080@50p, 1920*1080@60i, 1920*1080@50i, 1440*1080@60i, 1440*1080@50i, 1280*720@60p, 1280*720@50P, 720*576@50p, 720*576@50i, 720*576@30p, 720*576@25p, 720*480@60p, 720*480@60i, 720*480@30p, 720*480@25p, 320*240@60p, 320*240@50p, 320*240@30p, 320*240@25p, 320*180@60p, 320*180@50p, 320*180@30p, 320*180@25p, 960*540@50i, 704*576@50i, 704*480@60i, 640*576@50i, 640*480@60i, 544*576@50i, 544*480@60i,

Encoding	MPEG-2; MPEG-4 AVC/H.264
MPEG-2 Bit-rate	1.0 Mbps ~ 19 Mbps
H.264 Bit-rate	0.8 Mbps ~ 19 Mbps
Profiles	H.264 High, Main, Baseline
	Mpeg2 High, Main
Levels	Level 5.2-5.1
	Level 4.2-4.0
	Level 3.2-3.0
	Level 2.2
Bitrate Control	VBR, CBR
GOP Structure	B frame=2(<=3); P frame=4(<=6)
Aspect Ratio	4 : 3, 16 : 9
Chroma	4:2:0 (MPEG-2/AVC)
Advanced Preprocessing	Noise reduction, Sharpening

Audio Processing

Encoding	MPEG1 Layer II, MPEG2-AAC, MPEG4-AAC, AC3 (2.0/5.1) passthrough Dolby Digital AC3 (2.0) encoding (Optional),
Sampling rate	48KHz
Resolution	24 bit
Bit-rate	64, 96, 128, 192, 256, 320Kbps
Audio Gain	0 – 400%
dialogue normalization	-31 to -1dB

Data Processing

Closed Captioning	EIA 608, EIA 708, Line 21, Off
PSI/SI Edition	PMT PID, VIDEO, Audio, PCR PID, Service ID Program Name, Service Provider PCR Interval
PIS/SI Creation	NIT, SDT, PMT Select to Auto, External, Close
VCT (Virtual Channel Table)	Mode: CVCT, TVCT Major/Minor Channel Number Modulation Mode/Carrier Frequency/TSID

Multiplexing

Maximum PID	
Remapping	180 input per channel
Function	PID remapping ( automatically or manually) Accurate PCR adjusting Generate PSI/ SI table automatically

Management

Configuration	Web Interface
Port	RJ45, 100BaseT
Language	English

Environment

Voltage range	AC 110V± 10%, 50/60Hz, AC 220 ± 10%, 50/60Hz
Operation Temperature	0 ~ 45°C
Storage Temperature	-20 ~ 80°C
Dimensions	482mm (L) x 400mm (W)x 44mm (H)
Weight	4.5 kg

Ordering Information

Models	Description
ENC3443---HDMI	12*Channels HDMI Inputs
ENC3443---SDI	12*Channels SD/HD-SDI Inputs

## ORDERING INFORMATION

Product category	Product Model	Detail Description	Application
Related Products	4* MPEG4 AVC Broadcast Encoder <b>ENC3345/ENC3341</b>	4* SD/HD-SDI or HDMI(HDCP) inputs, H.264/AVC, MPEG1 L2, AAC(option), 1080P, 1080I, 720P, 576I, 480I, 60/59.94/50fps; 4*SPTS/1*MPTS over UDP/RTP, DVB-ASI out;	-DVB-C/DVB-T2/DVB-S2 -Deliver video to IP, ASI -TV Studio Station
	4* MPEG2/AVC Broadcast FullHD Encoder <b>ENC3445/ENC3441</b>	4* SD/HD-SDI or HDMI(HDCP) inputs, MPEG2/H.264, MPEG1 L2, AAC, AC3 (option),1080P, 1080I, 720P, 576I, 480I, 60/59.94/50fps; 4*SPTS/1*MPTS over UDP/ RTP, DVB-ASI out; <b>Close Caption, Low latency</b>	-DVB-C/ATSC -Low latency encoding -MPEG-2 HD
	4* HD-SDI H.264 IPTV Encoder <b>Caster-T315</b>	4 * SD/HD-SDI or HDMI input, H.264/AVC, MPEG1 L2/AAC/AC3/Passthrough 1080P, 1080I, 720P, 576I, 480I, 30/25fps; SPTS over UDP/RTMP/RTSP/HLS /HTTP	-Cable TV operator; IPTV -Distributee Video to Ethernet -Wowza Server, Android/Apple
Companion Products	Professional DVB-S2 Satellite Modulator <b>QPSK6350</b>	1* 100M FE port/4*ASI inputs, DVB-S2 QPSK/8PSK/16APSK/32APSK modulation, 1pps/10Mhz, 24DVC over L band RF out, 0.5-45Mbaud (QPSK/8PSK/16APSK); 1-40mbaud(32APSK); BISS encryption	-Satellite Uplink -End to end Microwave transmission -Hotel
	Carrier-grade IP QAM Modulator <b>IPQ6250</b>	Up to 48QAM, 16 QAM no-adjacent/Two GbE IP per Module, 3 Modules /48QAM per 1RU, Annex A/B/C, Multiplexer/Scrambling; 5Year Warranty	-Cable TV operator -Distribute video to QAM Network
	IP to 6x ATSC Modulator <b>IPM6000A</b>	Two GbE IP input; 16QAM/32QAM/8*DVB-T/ <b>8*ATSC</b> /6*ISDB-T RF out as mirror of IP out	-Low cost digital TV operator; Hotel; -DVB-ATSC/ISDB-Tb
	PREMIUM HD-SDI MPEG2 /AVC HD Encoder Modulator <b>EMI3445/ENC3440</b>	4 HDSDI or HDMI/AV/YPbPr inputs, MPEG1 L2/AAC/AC3/AC3 Pass; Up to 1080p60/ 59.94/50fps; MPEG2/H.264;Low delay;4*DVB-C/2*ISDB-T/ 2*DVB-T/ <b>4*ATSC</b> ;DVB-ASI in/ASI out/4 SPTS UDP/RTP IP	-DVB-ATSC off air -Campus, Hotel, Hospital, Public place, Airport lobby