

ENC3441/3445

PREMIUM MPEG-2 H.264

4 channels Contribution Encoder



Low Latency

DIBVISION | DIBSYS



ENC3445 has proven itself as the most advanced encoding platform for DVB-C QAM Cable, USA ATSC Off Air, DVB-T, DVB-C, DMBT, ISDB-T Clear Modulation applications available today. The hardware platform has been widely deployed for **MPEG-2** and **MPEG-4 AVC HD** broadcasting applications with **Low latency** and Dolby **Digital AC-3** Audio, **closed captioning** and redundant AC power supplies support.

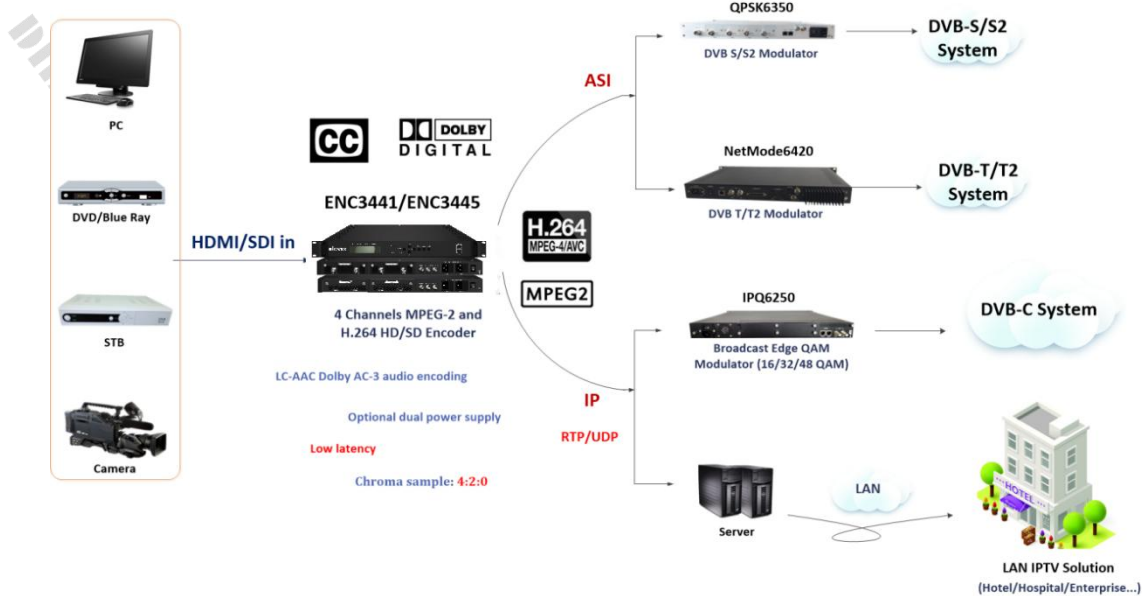
ENC3445 supports the most demanding video applications. It offers codec and transport flexibility, interoperability and feature richness, and equipped with 4 channels HDMI or HD-SDI inputs and multiple codec standard (MPEG-2 and MPEG-4 AVC/H.264 video encoding and MPEG2, MPEG2-AAC, MPEG4-AAC, Dolby Digital AC3(2.0)(optional) audio encoding). 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

- Superior-quality low-bitrate MPEG-2 and MPEG-4 AVC encoding of SD or HD video pre-processing technologies
- Up to 4 channels SD/HD-SDI or HDMI per chassis (1-RU)
- Automatic SD & HD Detection
- 1080p(only h.264), 1080i, 720p@50/60fps
- MPEG2, MPEG2-AAC, MPEG4-AAC, Optional Dolby Digital AC3(2.0)(optional) audio encoding
- The dialogue normalization function of AC3 encoding nicely
- VCT(Virtual Channel Table) support for 8VSB ATSC and DVB-C QAM
- Flexible GOP structures with B-frame and P-frame insertion in Manual of Low delay mode
- **Support resolution downscale conversion**
- 18Mbps MPEG2 HD application in DVB-C and ATSC standard
- Support CC (closed caption) EIA 608 & EIA 708 & Line 21 (for SDI input version only)
- Simultaneous output via 4*SPTS & 1*MPTS over UDP/RTP/RTSP IP, ASI
- CBR rate control
- PCR correction to accurately correct several PCR of the input data
- PSI/SI information creation by automatic or external
- Low power consumption and high reliability with MTBF(Mean Time Between Failure) \leq 87600 Hours
- Easy-to-Use System Management via Web/LCD Panel
- Dual Power Supply Support

Applications

- Lowest latency encoding
- Diverse Application Needing AVC and MPEG-2 Flexibility
- Satellite, ATSC, Cable TV headend applications
- Concurrent ASI and IP delivery for multipath transmission



TECHNICAL SPECIFICATIONS

Input Interfaces

Number of Channels 4 Ports
 SD-SDI SMPTE 259M - 270Mbit/s
 HD-SDI SMPTE 292M - 1.485Gbit/s
 ASI 1x BNC
 Connector 1x BNC (75 Ohm)
 HDMI 1.3 HDCP
 Embedded audio via SDI, HDMI

Stream output

2x ASI outputs, ports, BNC interface
 1000M Base-T Ethernet, RJ45
 1*MPTS and 4*SPTS over IP, DVB
 Filter Null packet
 7x188bytes TS packet length
 UDP, RTP,RTSP
 Multicast, Unicast
 <850Mbps

Total Bitrate

Video Processing

Resolution

Input	Output
1920*1080_60P	1920*1080_60P, 1920*1080_60i, 1440*1080_60i, 1280*720_60P, 720*480_60i
1920*1080_50P	1920*1080_50P, 1920*1080_50i, 1440*1080_50i, 1280*720_50P, 720*576_50i
1920*1080_60i	1920*1080_60i, 1440*1080_60i, 720*480_60i
1920*1080_50i	1920*1080_50i, 1440*1080_50i, 720*576_50i
1280*720_60P	1280*720_60P, 720*480_60i
1280*720_50P	1280*720_50P, 720*576_50i
720*480_60i	720*480_60i
720*576_50i	720*576_50i

Frame rates 50, 60fps
 Encoding MPEG-2; MPEG-4 AVC/H.264
 MPEG-2 Bit-rate 1.0 Mbps ~ 19.5Mbps
 H.264 Bit-rate 1.0 Mbps ~ 19.5Mbps
 Profiles H.264 High, Main, Baseline
 Mpeg2 High, Main
 Levels Level 5.0-5.1
 Level 4.2-4.0
 Level 3.2-3.0
 Level 2.2
 Bitrate Control CBR
 GOP Structure B frame=2(<=3); P frame=4(<=6)
 When set Normal in Low delay, Could be change B, P frames
 Aspect Ratio 4 : 3, 16 : 9
 Chroma 4:2:0 (MPEG-2/AVC)
 Low Delay Normal
 Mode 1
 Mode 2
 Manual
 Advanced Preprocessing Noise reduction, Sharpening

Audio Processing

Encoding MPEG2, MPEG2-AAC, MPEG4-AAC, Dolby AC-3 (optional)
 Sampling rate 48KHz
 Resolution 24 bit
 Bit-rate 64, 96, 128, 192, 256, 320Kbps
 Audio Delay -1000 ~ +1000ms
 Audio Gain 0 - 400%
 dialogue normalization -31 to -1dB

Data Processing

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

PSI/SI Creation
 VCT (Virtual Channel Table)

Management

Local interface LCD + control buttons
 Configuration Web Interface
 Port RJ45, 100BaseT
 Language English
 Save/Restore/Facture Set/Backup/Load Setting/Reboot

Environment

Cooling air flow front to side
 Voltage range 100 to 120/200 to 240V AC ±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

Products Information

Models	Description
ENC3441	4Channels HDMI Inputs, AC3-optional
ENC3445	4Channels SD/HD-SDI Inputs, AC3-optional
ENC3440	4Channels HDMI/YPbPr/AV inputs. AC3-optional

ORDERING INFORMATION

Product category	Product Model	Detail Description	Application
Related Products	4* MPEG4 AVC Broadcast Encoder ENC3345/ENC3341	4*SDI inputs or 4*HDMI inputs or 2*SDI+2*HDMI inputs, H.264/AVC, MPEG1 L2, AAC(option), 1080P, 1080I, 720P, 576I, 480I, 60/50fps; 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* HD-SDI H.264 IPTV Encoder Caster-T315	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 -Distributtee Video to Ethernet -Wowza Server, Android/Apple
Companion Products	Professional DVB-S2 Satellite Modulator QPSK6350	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 Mircrowave transmission -Hotel
	Carrier-grade IP QAM Modulator IPQ6250	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 IPM6000A	Two GbE IP input; 16QAM/32QAM/8*DVB-T/ 8*ATSC /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 EMI3445/ENC3440	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/ 4*ATSC ;DVB-ASI in/ASI out/4 SPTS UDP/RTP IP	-DVB-ATSC off air -Campus, Hotel, Hospital, Public place, Airport lobby