



NDS3224V

HEVC/H.265 & MPEG 4 AVC/H.264
HD Encoder



OSD (Logo/QR Code) Insertion



Logo: support jpg/jpeg/bmp/gif/png file; drag to any position

QR Code: creat QR code quickly; add text/logo; custom size; drag to any position



All the specifications are subject to change without any further notice. All rights reserved.

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- ◆ **Ultra Low Bit Rate:** Save 75% Bandwidth
- ◆ **Enhance Picture Quality:** Advanced Compressing Algorithm
- ◆ **Advanced Pretreatment** De-interlacing, Noise Reduction, Sharpening



News Channel/Movies
1Mbps Full HD



Sports Channel
2Mbps Full HD



B frame(IBBP) GOP Structure



HDMI 1.4



Full HD 1080P



HDCP 1.4



Decoder/STB

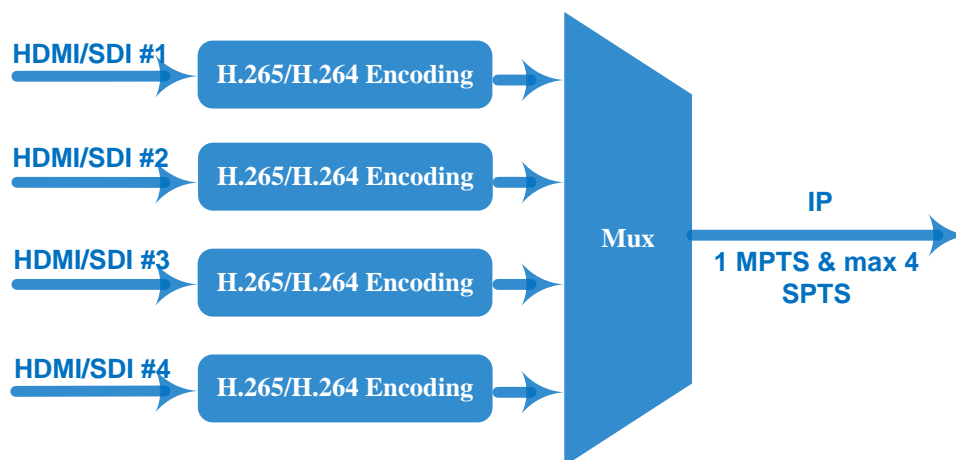
STB Available with Ensurity CAS
Decoding Chipset: Montage CS8051/CS8021



Up to 2160P 30Hz

Principle Chart of Per Module

(the number of encoding channels depend on encoding format and resolution)



Technical Specification



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Input	4/8/12×HD-SDI or HDMI (1.4) inputs for option, HDCP 1.4			
Video Encoding	Encoding Format	HEVC/ H.265 , MPEG 4 AVC/H.264		
	Resolution (HDMI V1, and SDI)	Input	Output	
			HEVC/H.265	MPEG-4 AVC/H.264
		4*1080P-50	4*1080P-50	2*1080P-50
		4*1080P-60	4*1080P-60	2*1080P-60
		4*1080I-50	4*1080P-50	4*1080I-50 2*1080P-50
		4*1080I-60	4*1080P-60	4*1080I-60 2*1080P-60
		4*720P-50	4*720P-50	4*720P-50
		4*720P-60	4*720P-60	4*720P-60
	Resolution (HDMI V2)	3840×2160_30P, 3840×2160_25P (Encoding 2 CHs per module for H.265, and encoding 1 CH for H.264) 1920×1080_60P, 1920×1080_50P (Encoding 4 CHs per module for H.265, and encoding 2 CHs for H.264) 1280×720_60P, 1280×720_50P (Encoding 4 CHs per module for H.264 and H.265)		
	Chroma	4:2:0		
H.265 Bitrate	0.5Mbps~20Mbps (each channel)			
Rate Control	CBR/VBR			
GOP Structure	IBBP, IPPP			
Advanced Pretreatment	De-interlacing, Noise Reduction, Sharpening			
Audio Encoding	Encoding Format	MPEG-1 Layer 2, LC-AAC, HE-AAC, HE-AAC V2, AC3 Passthrough		
	Sampling rate	48KHz		
	Bit-rate (each channel)	48Kbps~384Kbps (MPEG-1 Layer 2 & LC-AAC) 24 Kbps~128 Kbps (HE-AAC) 18 Kbps~56 Kbps (HE-AAC V2)		
	Audio Gain	0~255		
Stream output	IP (1 MPTS and maximum 4 SPTS) output over UDP/RTP/RTSP per module, 1000M/100M Base-T Ethernet interface (unicast/ multicast); IPv4, IPv6 output IP null packet filter			
System	Web based management			
	Chinese-English control interface			
	Ethernet software upgrade			
Miscellaneous	Dimension (W× L× H)	482mm×328mm×44mm		
	Approx weight	5kg		
	Temperature	0~45°C(work), -20~80°C (Storage)		
	Power	AC 100V-220V±10%, 50/60Hz		

Order Guide

	NDS3224V HDMI V1	NDS3224V HDMI V2	NDS3224V SDI
Input	4/8/12 HDMI	4/8/12 HDMI	4/8/12 SDI
Resolution	1080p, 1080i, 720p	4K-30p, 1080p, 720p	1080p, 1080i, 720p
OSD (logo/QR code) Insertion Function	support	N/A	optional

Dexin HEVC/H.265 encoder's advantages

1. Providing smooth TS for modulators

Dexin HEVC/H.265 encoder adopts Fujitsu chip which offers stable bitrate with lower fluctuation compared with other encoding chips, so it provides smooth TS for modulators. It is widely used in variety of digital distribution systems such as CATV digital head-end, satellite and terrestrial digital TV, etc.

2. Encoding with highest compression format—B frame (IBBP)

What is B Frame?

There are 3 major picture types used in the different video algorithms, they are I, P and B.

They are different in the following characteristics:

I-frames are the least compressible but don't require other video frames to decode.

P-frames can use data from previous frames to decompress and are more compressible than I-frames.

B-frames can use both previous and forward frames for data reference to get the highest amount of data compression.

Frame Type	Byte of data/KB	Compression Ratio
I	18	7:1
P	6	20:1
B	2.5	50:1

In one word, B frame is the highest compression format which makes it possible to process HD video at low bit rate. HEVC/H.265 encoder is not able to save bandwidth unless it is with B frame. In encoder parameters, B frame is often described in GOP (Group of Pictures) structure, like "IBBP".

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