



EC-3224H/HV

Multi-Channel Encoder



- ◆ **Video Encoding:** HEVC/H.265 & MPEG 4 AVC/H.264
- ◆ **Audio Encoding:** MPEG-1 Layer 2, LC-AAC, HE-AAC, HE-AAC V2, AC3 Passthrough
- ◆ **Ultra Low Bit Rate:** Save 75% Bandwidth
- ◆ **Enhance Picture Quality:** Advanced Compressing Algorithm
- ◆ **Advanced Pretreatment:** De-interlacing, Noise Reduction, Sharpening
- ◆ **OSD (Logo, QR Code) insertion**—Optional as per order



**News Channel/Movies**

**1Mbps Full HD**



**B frame(IBBP) GOP Structure**



**Full HD 1080P**



**Decoder/STB**

**STB Available with Ensurity CAS**

**Decoding Chipset: Montage CS8051**

**NationalChip GX3201H**



**Sports Channel**

**2Mbps Full HD**

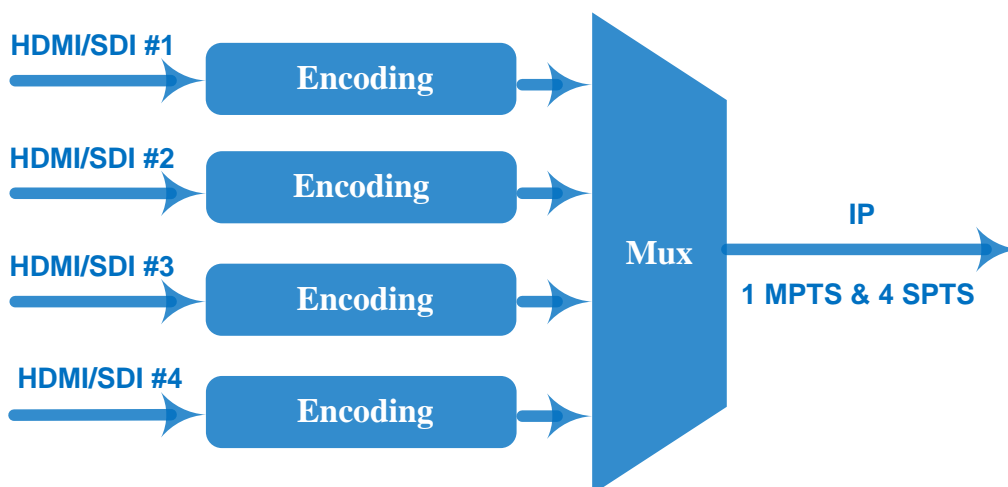


**HDMI 1.4**



**HDCP 1.4**

## Principle Chart of Per Module



## Technical Specification

|                       |   |  |  |                |   |   |
|-----------------------|---|--|--|----------------|---|---|
| <b>Input</b>          | 4/8/12×HD-SDI or HDMI(1.4) input for option, HDCP 1.4 |  |  |                |   |   |
| <b>Video Encoding</b> | <b>DX3224 H</b>                                       | Encoding Format  | HEVC/ H.265, MPEG 4 AVC/H.264---DX3224H  |                |   |   |
|                       |   | Resolution   | 1920×1080_60P,1920×1080_59.94P,1920×1080_50P,<br>1280×720_60P, 1280×720_59.94P, 1280×720_50P               |                |   |   |
|                       |   |  | Input: 1920×1080_60i,1920×1080_59.94i,1920×1080_50i<br>Output:1920×1080_60P,1920×1080_59.94P,1920×1080_50P |                |   |   |
|                       | <b>DX3224 HV</b>                                      | Encoding Format  | HEVC/ H.265, MPEG 4 AVC/H.264---DX3224HV   |                |   |   |
|                       |   | Resolution   |  | Input          | Output  |   |
|                       |   |  | H.264  |                | <b>2*1920×1080_60P/59.94P<br/>(HDMI 3 and HDMI 4)</b> | <b>2*1920×1080_60P/59.94P<br/>(HDMI 3 and HDMI 4)</b> |
|                       |   |  |  |                | 4*1920×1080_60P/59.94P                                | 4*1920×1080_30P/29.97P                                |
|                       |   |  |  |                | <b>2*1920×1080_50P<br/>(HDMI 3 and HDMI 4)</b>        | <b>2*1920×1080_50P<br/>(HDMI 3 and HDMI 4)</b>        |
|                       |   |  |  |                | 4*1920×1080_50P                                       | 4*1920×1080_25P                                       |
|                       |   |  |  |                | <b>2*1920×1080_60i<br/>(HDMI 3 and HDMI 4)</b>        | <b>2*1920×1080_60P<br/>(HDMI 3 and HDMI 4)</b>        |
|                       |   |  |  |                | 4*1920×1080_60i                                       | 4*1920×1080_30P                                       |
|                       |   |  |  |                | 4*1920×1080_60i                                       | 4*1920×1080_60i                                       |
|                       |   |  |  |                | <b>2*1920×1080_50i<br/>(HDMI 3 and HDMI 4)</b>        | <b>2*1920×1080_50P<br/>(HDMI 3 and HDMI 4)</b>        |
|                       |   |  |  |                | 4*1920×1080_50i                                       | 4*1920×1080_25P                                       |
|                       |   |  |  |                | 4*1920×1080_50i                                       | 4*1920×1080_50i                                       |
|                       | 4*1280×720_60P  |  |  | 4*1280×720_60P |   |   |
|                       | 4*1280×720_50P  | 4*1280×720_50P   |  |                |   |   |
|                       | H.265   | 4*1920×1080_60P/59.94P   | 4*1920×1080_60P/59.94P   |                |   |   |
|                       |   | 4*1920×1080_50P  | 4*1920×1080_50P  |                |   |   |
|                       |   | 4*1920×1080_60i  | 4*1920×1080_60P  |                |   |   |
|                       |   | 4*1920×1080_60i  | 4*1920×1080_30P  |                |   |   |
|                       |   | 4*1920×1080_50i  | 4*1920×1080_50P  |                |   |   |
|                       |   | 4*1920×1080_50i  | 4*1920×1080_25P  |                |   |   |
|                       |   | 4*1280×720_60P   | 4*1280×720_60P   |                |   |   |
|                       |   | 4*1280×720_50P   | 4*1280×720_50P   |                |   |   |
|                       | Chroma  | 4:2:0  |  |                |   |   |
|                       | Bitrate (per channel)                                 | 0.5Mbps~20Mbps (HEVC/ H.265)<br>4 Mbps~20Mbps (MPEG 4 AVC/H.264) |  |                |   |   |
|                       | Rate Control  | CBR/VBR  |  |                |   |   |
|                       | GOP Structure   | IBBP, IPPP   |  |                |   |   |
|                       | Advanced Pretreatment                                 | De-interlacing, Noise Reduction, Sharpening                      |  |                |   |   |
| <b>Audio</b>          | Encoding Format                                       | MPEG-1 Layer 2, LC-AAC, HE-AAC, HE-AAC V2, AC3 Passthrough       |  |                |   |   |

|                      |  |  |
|----------------------|--|--|
| <b>Encoding</b>      | Sampling rate  | 48KHz  |
|                      | Bit-rate(each channel)   | 48Kbps~384Kbps (MPEG-1 Layer 2 & LC-AAC)<br>24 Kbps~128 Kbps (HE-AAC)<br>18 Kbps~56 Kbps (HE-AAC V2) |
|                      | Audio Gain   | 0~255  |
| <b>Stream output</b> | 1 MPTS and 4 SPTS output over UDP/RTP/RTSP per module, Base-T Ethernet interface (1000M/100M self-adaption) (unicast/ multicast)<br>IP null packet filterd |  |
| <b>System</b>        | Web based management   |  |
|                      | Chinese-English control interface  |  |
|                      | Ethernet software upgrade  |  |
| <b>Miscellaneous</b> | Dimension (W× L× H)  | 482mm×328mm×44mm   |
|                      | Approx weight  | 5kg  |
|                      | Temperature  | 0~45℃(work), -20~80℃ (Storage)   |
|                      | Power  | AC 100V-220V±10%, 50/60Hz  |

Including OSD (Logo(QR code) smart advanced logo insertion - support jpg/jpeg/gif/bmp/png files - drag and drop to any position  
QR Code: creat QR code quickly; ad text/logo; custom size - drag to any position on the screen.

## Technical Comparison

|   | NDS3224V-HDMI  | NDS3224V-SDI   | DX3224H  | DX3224HV   |  |
|---|--|--|--|--|--|
| <b>Input Interface</b>  | 4/8/12*HDMI  | 4/8/12*SDI   | 4/8/12*HDMI/SDI  | 4/8/12*HDMI/SDI  |  |
| <b>Video Encoding</b>   | H.265, H.264   | H.265, H.264   | H.265, H.264   | H.265,H.264  |  |
| <b>Audio Encoding</b>   | MPEG-1 Layer 2, LC-AAC, HE-AAC, HE-AAC V2, AC3 Passthrough |  |  |  |  |
| <b>Input Resolution</b>   | H.265  | <b>3840x2160P@30*2CHs</b><br>1920x1080P@50/60*4CHs<br>1280x720P@50/60*4CHs | 1920x1080P@50/60*4CHs<br>1280x720P@50/60*4CHs<br>1920x1080I@50/60*4CHs | 1920x1080P@50/60*4CHs<br>1920x1080I@50/60*4CHs<br>1280x720P@50/60*4CHs | 4*1920x1080_60P/59.94P<br>4*1920x1080_50P<br>4*1920x1080_60i<br>4*1920x1080_50i<br>4*1280x720_60P<br>4*1280x720_50P  |
|   | H.264  | <b>3840x2160P@30*1CH</b><br>1920x1080P@50/60*2CHs<br>1280x720P@50/60*4CHs  | 1920x1080P@50/60*2CHs<br>1920x1080I@50/60*2CHs<br>1280x720P@50/60*4CHs |  | <b>4 or 2*1920x1080_60P/59.94P</b><br><b>4 or 2*1920x1080_50P</b><br><b>4 or 2*1920x1080_60i</b><br><b>4 or 2*1920x1080_50i</b><br>4*1280x720_60P<br>4*1280x720_50P  |
| <b>Output Resolution</b>  | H.265  | Same as input resolution   | 1920x1080P@50/60*4CHs<br>1280x720P@50/60*4CHs                          | 1920x1080P@50/60*4CHs<br>1280x720P@50/60*4CHs                          | 4*1920x1080_60P/59.94P<br>4*1920x1080_50P<br>4*1920x1080_30P<br>4*1920x1080_25P<br>4*1280x720_60P<br>4*1280x720_50P  |
|   | H.264  |  | 1920x1080P@50/60*2CHs<br>1280x720P@50/60*4CHs                          | 1920x1080P@50/60*4CHs<br>1280x720P@50/60*4CHs                          | <b>2*1920x1080_60P/59.94P</b><br><b>(HDMI 3 and HDMI 4)</b><br><b>2*1920x1080_50P</b><br><b>(HDMI 3 and HDMI 4)</b><br>4*1920x1080_30P/29.97P<br>4*1920x1080_25P<br>4*1920x1080_60i<br>4*1920x1080_50i<br>4*1280x720_60P<br>4*1280x720_50P |
| <b>OSD</b>  | N/A  | N/A  | Optional as per order  | Optional as per order  |  |
| <b>Caption Language</b>   | N/A  | N/A  | Not support caption  | Not support caption  |  |
| <b>Note:</b> “CH” means encoding channel, different encoding format can encode different channel with different resolution. |  |  |  |  |  |