



NDS3543D

DVB-S2X Encoder Modulator



Product Overview

NDS3543D DVB-S/S2/S2X Encoder & Modulator is an integrated device with multifunction. Its pluggable design makes it convenient to change encoding module (SDI/HDMI/YPbPr/CVBS...) as needed. It is also equipped with 1ASI input for re-mux and modulation.

The signal source could be from CCTV cameras, Blue-ray players and etc. It adopts user-friendly web-based operation interface to effectively manage the device and carefully protect your content with its BISS function. Featured with its high performance and low cost, NDS3543D is especially adequate for the TV station or DSNG system to encode SD/HD programs and output to uplink.

Key Features

- HEVC/H.265, MPEG-4 AVC/H.264, MPEG2 SD/HD Encoding Module optional
- SDI/HDMI/YPbPr/ CVBS...in & 1*ASI in
- Multiple channel audio inputs optional
- Support **DVB-S/S2/S2X** RF output (950-2150MHz) and ASI output
- QPSK, 8PSK, 16APSK, 32APSK Constellations
- **Support RF CID setting**
- Support RF 24V power output



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

- Support Low latency
- Support BISS function
- Support 10MHz reference clock
- Support Web NMS and front panel LCD & Keyboard control
- Upgrade device through web NMS

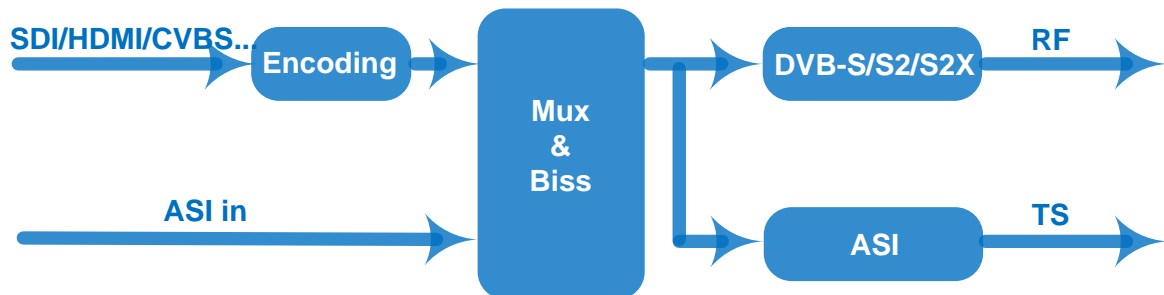
CID TEST SAMPLE ILLUSTRATION

The screenshot displays the 'DVB Carrier ID Extraction' web interface. On the left, a navigation menu includes HOME, CONFIG., MONIT., SCAN, CID, and STATUS. The main area shows the following configuration and status:

- CID Extraction:** ON
- RF Input Selected:** RF Input 1
- L-Band CID Frequency:** 999.993
- Demod Lock:** Green indicator
- CID Synchro:** Green indicator
- CID Demod:** Green indicator
- CID Content Available:** Green indicator
- CID Extraction Progress:** A green progress bar is shown.
- Global Unique Identifier:** AA:AA:BB:CC:DD:EE:FF:00:11 (Green indicator)
- Format:** 1 (Green indicator)
- Latitude:** 6.55.36,N (Green indicator)
- Longitude:** 26.21.44,E (Green indicator)
- Telephone:** +000000223344556677 (Green indicator)
- User Data:** 5555252525252 (Green indicator)

At the bottom, the 'Commands List' shows a dropdown menu with 'Get_Address' selected. Below this, there are fields for 'Set_Standby_Unlock' and 'TX TX 11 33 010103'. The bottom status bar includes indicators for Connected (Green), Traffic (Yellow), Alarm (Grey), Demod/FEC 1 (Green), Demod/FEC 2 (Red), ASI 1 (Green), and ASI 2 (Red).

Principle Chart



Technical Specifications

- H.265/H.264 video format
- Up to 4 stereo audio inputs
- OSD Insertion



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

Single HDMI/SDI/YPbPr Input

| Video | | | |
|------------|---|--|----------------------|
| Encoding | HEVC/H.265; MPEG-4 AVC/H.264 | | |
| Input | HDMI/SDI/YPbPr | | |
| Resolution | Input | Output | Interface Applicable |
| | 1920×1080_60P, 1920×1080_60i, 1920×1080_59.94P, 1920×1080_59.94i | 1920×1080_60P | HDMI SDI |
| | 1920×1080_50P, 1920×1080_50i | 1920×1080_50P | |
| | 1280×720_60P, 1280×720_59.94P, | 1280×720_60P | |
| | 1280×720_50P | 1280×720_50P | YPbPr |
| | 1920×1080_60i, 1920×1080_50i, 1280×720_60P, 1280×720_50P | 1920×1080_60i, 1920×1080_50i, 1280×720_60P, 1280×720_50P | |
| | Bit rate | 4Mbps~20Mbps (for MPEG-4 AVC/H.264) 0.5Mbps~20Mbps (HEVC/H.265) | |

| | |
|-----------------------|---|
| Chroma | 4:2:0 |
| Rate Control | CBR/VBR |
| GOP Structure | IBBP, IPPP |
| Advanced Pretreatment | De-interlacing, Noise Reduction, Sharpening |

| Audio | |
|-------------|--|
| encoding | MPEG-1 Layer 2, LC-AAC, HE-AAC, HE-AAC V2, AC3 Passthrough |
| Input | Digital: HDMI/SDI/AES; Analog: XLR AES/SDI: Up to 4 stereos |
| Channel | HDMI: 1 stereo XLR: Up to 2 stereos |
| Sample rate | 48KHz |
| Bit rate | 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 |



Single HDMI/SDI/YPbPr/CVBS Input

Video

| | | | |
|------------|--|---|----------------------|
| Encoding | MPEG-2 HD/SD or MPEG-4 AVC/H.264 HD/SD | | |
| Input | HDMI/SDI/YPbPr/CVBS | | |
| Resolution | Input | Output | Interface Applicable |
| | 1920×1080i@60 | 1920×1080, | HDMI SDI YPbPr |
| | 1920×1080i@59.94 | 1440×1080, | |
| | 1920×1080i@50 | 1280×1080i, 960×1080i | |
| | 1280×720p@60 | 1280×720, | HDMI SDI YPbPr |
| | 1280×720p@59.94 | 960×720p, | |
| | 1280×720p@50 | 640×720p | |
| | 720×576i@50 | 720×576, 704×576, 640×576, 544×576, 528×576, 480×576, 352×576 | SDI, CVBS HDMI |
| | 720×480i@59.94 | 720×480, 704×480, 640×480, 544×480, 528×480, 352×480 | SDI CVBS HDMI |

| | |
|-----------------------|---|
| Bit rate | 0.5– 60.00 Mbps |
| Rate Control | CBR |
| GOP Structure | Auto, IP, IPB, IPBB, IPBBB |
| Aspect Ratio | 4:3, 14:9, 16:9 (for SD video) 16:9 (for HD video) |
| Chroma | 4:2:0, 4:2:2 |
| Advanced Pretreatment | De-interlacing, noise reduction, sharpening |
| Audio | |
| encoding | MPEG-1 Layer II, HE-AAC (v1&v2), LC-AAC, DD AC3 (2.0), DD AC3 passthrough (for SDI in) |
| Input | Digital: HDMI/SDI/AES; Analog: XLR |
| Channel | AES/SDI: Up to 4 stereos HDMI: 1 stereo XLR: Up to 2 stereos |
| Sample rate | 48KHz |
| Bit rate | 32Kbps~384Kbps |
| Low delay options | 150ms, 200ms, 350ms, 650ms |



Single SDI Input

Video

| | |
|-------------|--|
| Input | SDI*1 |
| Encoding | MPEG2; MPEG4 AVC/H.264 |
| Bit rate | 1-19.5Mbps |
| AspectRatio | 4:3, 16:9 |
| Resolution | 1920*1080_60P, 1920*1080_50P, (-for MPEG4 AVC/H.264 only) 1920*1080_60i, 1920*1080_50i, 1280*720_60p, 1280*720_50P 720*480_60i, 720*576_50i |

Audio

| | |
|-------------|---|
| encoding | MPEG1 Layer II, MPEG2-AAC, MPEG4-AAC, AC3(Optional) |
| Sample rate | 48KHz |
| Bit rate | 64kbps, 96kbps, 128kbps, 192kbps, 256kbps, 320kbps |



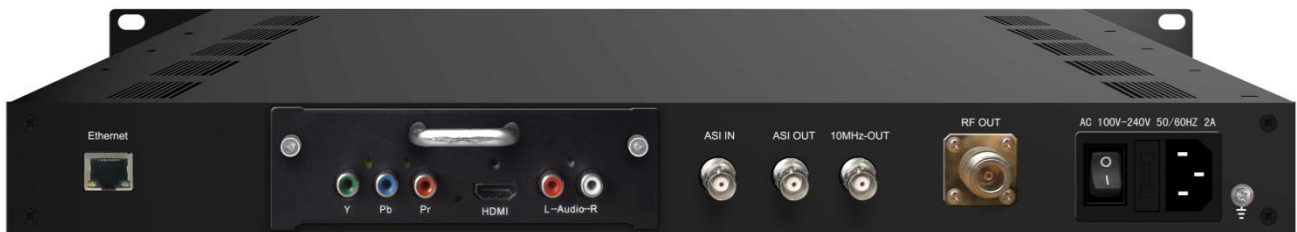
Single HDMI Input-Low latency

Video

| | |
|------------|--|
| Input | HDMI*1 |
| Encoding | MPEG2; MPEG4 AVC/H.264 |
| Bitrate | 1-19.5Mbps |
| Resolution | 1920*1080_60P, 1920*1080_50P, (-for MPEG4 AVC/H.264 only) 1920*1080_60i, 1920*1080_50i, 1280*720_60p, 1280*720_50P 720*480_60i, 720*576_50i |

Audio

| | |
|-------------|---|
| encoding | MPEG1 Layer II, MPEG2-AAC, MPEG4-AAC |
| Sample rate | 48KHz |
| Bit rate | 64kbps, 96kbps, 128kbps, 192kbps, 256kbps, 320kbps |



HDMI/YPbPr/CVBS Input

Video (HDMI)

| | |
|-----------|------------------------|
| Interface | HDMI*1 |
| Encoding | MPEG2; MPEG4 AVC/H.264 |
| Bitrate | 1-19.5Mbps |

| | |
|------------|--|
| Resolution | 1920*1080_60P, 1920*1080_50P, (-for MPEG4 AVC/H.264 only) 1920*1080_60i, 1920*1080_50i, 1280*720_60p, 1280*720_50P |
|------------|--|

| Audio (HDMI) | |
|--------------------|--------------------------------------|
| Encoding | MPEG1 Layer II; MPEG2-AAC; MPEG4-AAC |
| Interface | HDMI*1 |
| Sample rate | 48KHz |
| Bit rate | 64/96/128/ 192/256/320kbps |
| Video (YPbPr/CVBS) | |
| Interface | YPbPr*1/CVBS *1 |
| Encoding | MPEG2; MPEG4 AVC/H.264 |
| Bitrate | 1-19.5Mbps |

| Resolution | CVBS: 720x576_50i (PAL); 720x480_60i (NTSC) |
|-------------|--|
| | YPbPr: 1920*1080_60i, 1920*1080_50i; 1280*720_60p, 1280*720_50P |
| | |
| Audio (L/R) | |
| Encoding | MPEG1 Layer II; MPEG2-AAC; MPEG4-AAC |
| Interface | 1*Stereo/2*mono |
| Sample rate | 48KHz |
| Bit rate | 64/96/128/ 192/256/320kbps |



2*(S-Video + YPbPr + CVBS) Input

| Video | |
|------------|--|
| Encoding | Option 1: MPEG-2 MP@ML(4:2:0) Option 2: MPEG-2 & MPEG-4 AVC/H.264 (4:2:0) |
| Input | 2*S-Video/YPbPr/CVBS (RCA Type) |
| Resolution | 720*576 (PAL); 720*480 (NTSC) |
| Bit rate | Option 1: 1~19.50 Mbps Option 2: 1~10.00 Mbps |

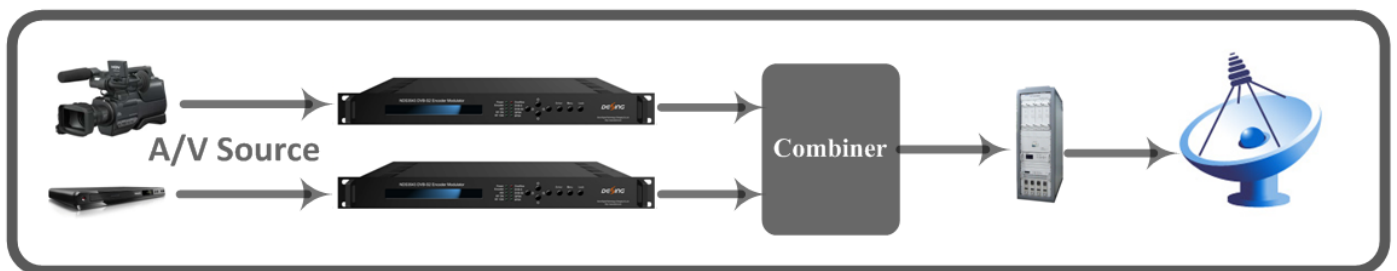
| Audio | |
|-------------|---|
| encoding | Option 1: MPEG1 Layer II Option 2: MPEG1 Layer II; LC-AAC; HE-AAC and Dolby Digital AC3 2.0 (Optional) |
| Input | 2 Stereo/Mono |
| Sample rate | 48KHz |
| Bit rate | 64kbps, 96kbps, 128kbps, 192kbps, 256kbps, 320kbps |

Generals

| | | | | |
|---------------------------|--|-------------|----------------------------------|---|
| Input Interface | 2*CVBS; 1/2*SDI; 1*HDMI; 1*(HDMI/YPbPr/CVBS 3-in-1); 1*(HDMI/SDI/YPbPr 3-in-1); 1*(HDMI/SDI/YPbPr/CVBS 4-in-1) optional ASI input | | | |
| Output | DVB-S/S2/S2X RF output ; ASI output as mirror of RF | | | |
| Modulation Section | Standard | DVB-S | DVB-S2 | DVB-S2X |
| | Outer coding | RS Coding | BCH Coding | BCH Coding |
| | Inner coding | Convolution | LDPC Coding | LDPC Coding |
| | Constellation | QPSK | QPSK, 8PSK, 16APSK, 32APSK | QPSK, 8PSK, 8APSK , 16APSK, 32APSK |
| | FEC/ Convolution | 1/2, 2/3, | QPSK: 1/2, 3/5, 2/3, 3/4, | QPSK: 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, |

| | | | | |
|----------------------|------------------|--------------------------------------|--|--|
| | Rate | 3/4, 5/6, 7/8 | 4/5, 5/6, 8/9, 9/10 8PSK: 3/5, 2/3, 3/4, 5/6, 8/9, 9/10 16APSK: 2/3, 3/4, 4/5, 5/6, 8/9, 9/10 32APSK: 3/4, 4/5, 5/6, 8/9, 9/10 | 9/10, 13/45, 9/20, 11/20 8PSK: 3/5, 2/3, 3/4, 5/6, 8/9, 9/10, 23/36, 25/36, 13/18 8APSK: 5/9-L, 26/45-L 16APSK: 2/3, 3/4, 4/5, 5/6, 8/9, 9/10, 1/2-L, 8/15-L, 5/9-L, 26/45, 3/5, 3/5-L, 28/45, 23/36, 2/3-L, 25/36, 13/18, 7/9, 77/90 32APSK: 3/4, 4/5, 5/6, 8/9, 9/10, 2/3-L, 32/45, 11/15, 7/9 |
| | Roll-off Factor | 0.2,0.25,0.35 | 0.2, 0.25, 0.35 | 0.05, 0.10, 0.15, 0.2, 0.25, 0.35 |
| | Symbol Rate | 0.5~45Msps | 0.5~40Msps (32APSK); 0.5~45Msps (QPSK/8PSK/16APSK) | 0.5~40Msps(32APSK); 0.5~45 Msps (QPSK/8PSK /8APSK/16APSK) |
| | RF range | 950-2150MHz | | |
| | Output level | +3dBm~-28.5dBm | | |
| BISS | Mode 1, Mode E | | | |
| System | Local Control | LCD + control buttons | | |
| | Remote Control | Web NMS | | |
| | Low Latency Mode | Normal, Mode 1, Mode 2 | | |
| | Language | English | | |
| Physical Spec | Demission | 410×460×44mm (W*L*H) | | |
| | Temperature | 0~45℃ (operation), -20~80℃ (storage) | | |
| | Power Supply | AC 100-240V 50/60Hz 2A | | |

System Connection Sample



Order Guide

| | NDS3543A | NDS3543C | NDS3543D |
|------------------------|----------|----------|----------|
| DVB-S/S2 | ● | ● | ● |
| DVB-S2X | | | ● |
| RF Output(950-2150MHz) | | ● | ● |
| IF Output(50-200 MHz) | ● | | |