

- Single or Dual Channel HD/SD H.264 / MPEG-4 AVC Encoder
- 3G/HD/SD-SDI and Analog (Composite) inputs, IP and ASI outputs
- Embedded and Analog Audio inputs
- Closed Captions SD and HD support
- Direct HTTP streaming, HTTP Live Streaming (HLS)
- UDP/RTP Unicast and Multicast streaming, ASI streaming
- RTMP streaming (compatible with Adobe Flash players)



Made in the USA

Business Benefits

The NOVUS - H.264 (MPEG-4 AVC) Encoder is the market leading real time compression solution that delivers unrivalled HD and SD video quality. Combined with the flexible openGear platform, the solution provides operators with the industry's most powerful, cost effective architecture for delivering broadcast and streaming video services.

Flexible Networking

The encoder supports a rich set of video networking protocols including UDP, RTP, RTMP, Direct HTTP, HTTP Live Streaming (HLS), permitting reliable video delivery over any IP network. Robust network transport is achieved using SMPTE 2022 forward error correction (FEC). Direct processing technology delivers precise IP network packet timing.

High Density

The low power, high density, stackable 2RU chassis with dual front loading hot-swap power supplies enables up to 20 High Definition or Standard Definition video services to be encoded and streamed simultaneously.

Control & Monitoring

The DashBoard™ Network Control and Monitoring software is used for remote control, monitoring and software updates

The NOVUS is a feature-rich high performance broadcast single-channel or dual-channel H.264 MPEG-4 AVC HD/SD video encoder that delivers up to 20 individual or simulcast HD/SD channels in a completely hot-swappable, stackable, and fault tolerant chassis.

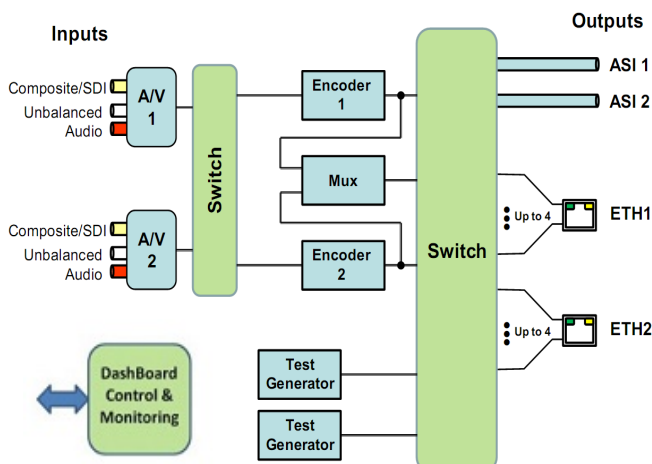
Operators can take advantage to deliver multiple High Definition and Standard Definition video services simultaneously with NOVUS unique video encoding design.

Based on the openGear architecture the NOVUS has been designed to meet the demanding requirements of the IPTV, professional broadcast, enterprise video delivery, streaming video markets. NOVUS encoder is equipped with the latest advances in video compression technology to deliver unsurpassed video quality at ultra low bitrates.

Simultaneous support of DVB-ASI, broadcast video over IP, RTMP and HTTP Live Streaming allows content to be freely distributed over virtually any video network.

Key Features

- Single or Dual-Channel model. Fits into any openGear chassis.
- Video Inputs: Analog (Composite), SD-SDI, HD-SDI, and 3G-SDI, software selectable.
- Audio Inputs: unbalanced analog stereo L/R, SDI embedded digital stereo, balanced XLR (on request). Optional support for second stereo pair (available for NOVUS-G1).
- Outputs: 2 ASI ports and 2 Ethernet ports, supporting 100 Mb/s and 1 Gb/s operation.
- Replication: each encoded stream can be replicated on both ASI ports and 4 times on Ethernet port.
- Support for UDP/RTP on Ethernet, Unicast and Multicast.
- Support for RTMP streaming (compatible with Adobe Flash Players)
- Support for Direct HTTP streaming and HTTP Live Streaming (HLS).
- Support for SMPTE 2022 FEC on Ethernet (optional).
- Closed-Captioning support (both EIA-608 and EIA-708 captions).
- AFD extraction and insertion support.
- Audio Encoding support: MPEG-1 Layer II and AAC-LC
- Support for pre-compressed Dolby AC-3 pass-through embedded in SDI inputs.
- Built-in multiplexer for Dual-Channel model: each output can be configured to carry either encoder as a Single Program Transport Stream (SPTS), or both encoders as a Multi Program Transport Stream (MPTS).
- Two internal test packet generators (which can be used to generate ASI or IP test streams).
- Management and Control via openGear chassis



ORDERING INFORMATION

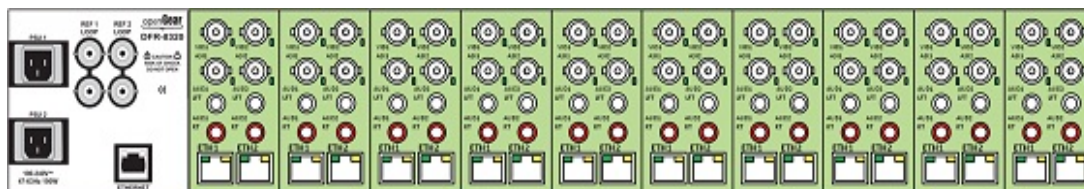
- NOVUS-G1 - Single-Channel H.264 SD encoder card
- NOVUS-G2 - Dual-Channel H.264 SD encoder card

Available options:

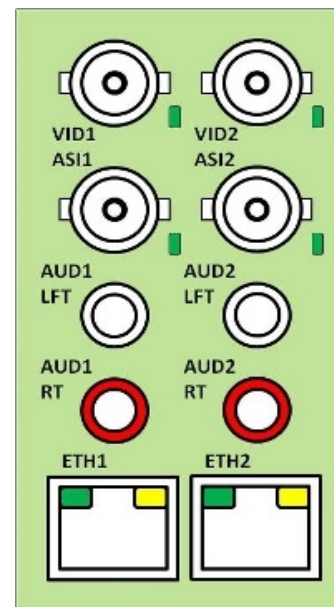
- OPT-1080i - support for 720p and 1080i encoding
- OPT-1080p - support for 720p, 1080i and 1080p encoding
- OPT-FEC - support for SMPTE 2022 FEC on Ethernet
- OPT-2AUD - support for second audio stereo pair (available for NOVUS-G1)

openGear

- DFR-8321-CN - 20 slot 2RU chassis with fans, controller card, single PSU. Holds up to 10 NOVUS cards (up to 20 channels)
- DFR-8300 - redundant hot-swappable PSU
- OPT-SNMP - SNMP support



Rear panel configuration: NOVUS-G1, NOVUS-G2



10 NOVUS-Gx cards (up to 20 channels) installed in a 2RU DFR-8321 openGear chassis

SPECIFICATIONS

Inputs

HD Video

3G-SDI (SMPTE 424M)
HD-SDI (SMPTE 292M)

SD Video

SD-SDI (SMPTE 259M) with EDH
Analog (Composite) video (PAL/NTSC)
SD-SDI 625 & 525 line standards

Connectors

BNC 75 Ohm, RCA (with BNC-to-RCA adapter)

Audio

Embedded SDI (one stereo pair per video)
Unbalanced Analog L/R, RCA
Balanced 600 Ohm XLR (on request)
Dolby Digital AC3 pass through
Optional second stereo pair (for NOVUS-G1)

Streaming Network Interface

2x 100/1000Base-T RJ-45 ports, auto-negotiate or fixed speed
2x DVB-ASI ports
213Mbit/s maximum ASI TS bit-rate per port

Network Protocols

UDP/IP (Unicast and Multicast)
RTP/IP (Unicast and Multicast)
SMPTE-2022 FEC (Pro-MPEG Cop3), row and column support (optional)
RTMP (compatible with Adobe Flash players)
HTTP Live Streaming (HLS): populates an external web server through FTP or SFTP
Built-in HTTP web server for small scale direct HTTP Live Streaming (HLS)
Direct HTTP Streaming: encodes directly to an HTTP connection
Automatically generates web pages with a video window for all supported modes (VLC plug in required)

Video Encoding

Settable bit rate
500kbps to 30Mbps

Single/Dual Channel HD Video

MPEG-4 AVC High profile at level 4.2 (HP@L4.2)
MPEG-4 AVC High profile at level 4.0 (HP@L4.0)
CBR & VBR

Single/Dual channel SD Video

MPEG-4 AVC Main profile at level 3.0 (MP@L3.0)
CBR & VBR

Video Resolutions

High Definition

1080 x 1920p - 60/50/23.98
1080 x 1920/1440i - 25/29.97/30/59.94/60/50
720 x 1280p/60 - 50/59.94/60
960 x 540 - 25/29.97

Standard Definition

480 x 720/704/640/528 - 29.97
360 x 640p - 29.97
576 x 720/704/640/528 - 25

Lower Resolutions

480x270, 320x240, 320x180

Audio Encoding

MPEG-1 layer II, one stereo pair per video (optional second stereo pair available for NOVUS-G1)
MPEG-4 AAC-LC, one stereo pair per video (optional second stereo pair available for NOVUS-G1)
Dolby® Digital AC-3 pass-through
Lip sync adjustment

Video Pre-processing

Advanced adaptive spatial filtering
Closed Captions CEA 608B & CEA-708C
WSS/AFD

Management and Control

10/100 Base-T Ethernet (RJ-45)
Configuration import/export
Visual fault warning
In-band and out-of-band control
Dataseafe automated card configuration
SNMP v1,v2
Accurate bit rate control
Startup to streaming under 45 Sec

Physical & Power

Dimensions:
2RU (W x D x H) 483 x 400 x 89mm
Stackable 19 inch rack units
Front to back airflow

Encoder Card Power Consumption
6 W per channel

Power Supply:
Hot swappable 100-250 VAC 47-63 Hz
Self cooled, 150W max
Second hot swappable PSU (optional)

Environmental Conditions

Operating Temperature:
0°C to 50°C (32°F to 122°F)
Operating Humidity:
5% to 95% (non-condensing)

Compliance

CE: CE marked in accordance with 93/68/EEC (22/07/03) Directive
UL: UL approval
US FCC: Part 15
EMC: EN55022, EN55024, EN6100-3-2