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

ARQ support (optional)

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 an SD video quality. The solution provides operators with the most powerful, cost effective architecture in the industry 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 techno-logy delivers precise IP network packet timing.

High Density

The encoder can support up to 2 Standard Definition or High Definition videio services to be encoded and streamed simultaneously. Encoder can be used standalone, or combined in a1RU rack mount tray (3 encoders per tray).

Control & Monitoring

The DashBoard™ Network Control and Monitoring software is used for remote control, monitoring and software updates
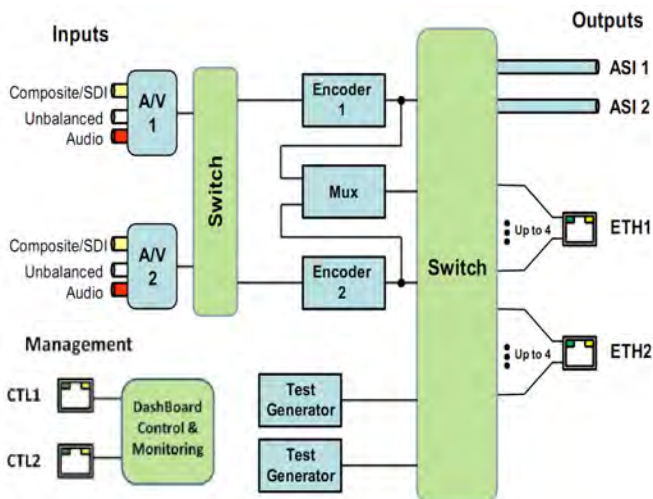
The NOVUS is a feature-rich high performance broadcast single-channel or dual-channel H.264 MPEG-4 AVC HD/SD video encoder that delivers up to 2 individual or simulcast HD/SD channels in a standalone desktop chassis. The dual model of NOVUS has built-in multiplexer and can output 2 individual or one multiplexed ASI and IP streams. If desired, up to 3 units can be installed in a 1RU rack mount tray, providing 6-channel H.264 HD/ SD encoding.

The NOVUS has been designed to meet the demanding requirements of the IPTV, Telco, professional broadcast, enterprise video delivery, and 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.
• Video Inputs: Analog (Composite), SD-SDI, HD-SDI, and 3G-SDI, software selectable.
  Input video auto-detection.
• Audio Inputs: unbalanced analog stereo L/R, SDI embedded digital stereo, balanced XLR (on request).
  Optional support for up to 4 stereo pairs.
• 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).
• Audio Encoding support: MPEG-1 Layer II and AAC-LC (optional)
• 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
• RIST/ARQ - Automatic Repeat Request, Error Correction assigned for live video over IP / internet based on the Reliable Internet Streaming Transport (RIST) standard (optional)
• Two internal test packet generators (which can be used to generate ASI or IP test streams).
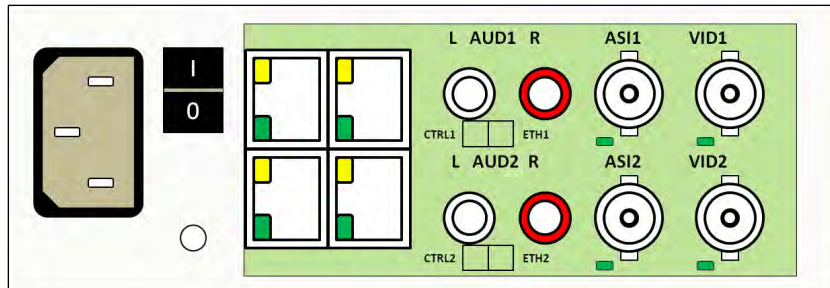• Separate Ethernet ports for streaming and control.

ORDERING INFORMATION

NOVUS-1E   -   Single-Channel H.264 SD encoder
NOVUS-2E   -   Dual-Channel H.264 SD encoder

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-AAC   - MPEG-4 AAC-LC audio encoding, one stereo pair per video

OPT-2AUD   - support for 2 audio stereo pairs per video

OPT-4AUD   - support for 4 audio stereo pairs per video (only for NOVUS-1E)

OPT-ARQ   - support for RIST/ARQ

OPT-RACK - 1RU rack mount tray (holds up to 3 NOVUS encoders)

Rear panel configuration: NOVUS-1E, NOVUS-2E

Rack mount 1RU Tray:

**Holds up to 3 NOVUS units
(up to 6 encoding channels)**

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)
	Optional - up to 4 stereo pairs for NOVUS-1E
	Optional - up to 2 stereo pairs per video for NOVUS-2E
	Unbalanced Analog L/R, RCA
	Balanced 600 Ohm XLR (on request)
	Dolby Digital AC3 pass through

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/**30/29.97/25**
- 1080 x 1920/1440i - 25/29.97/30/59.94/60/50
- **1280**x **720**/960/**640p** - **25/29.97/30** /5**0**/59.94/60
- 960 x 540 - 25/29.97

Standard Definition
- 480 x 720/704/640/528 - 29.97
- 720 x 480p - 25/29.97/30
- 640 x 360p - 25/29.97/50/59.94
- 576 x 720/704/640/528 - 25
- 720 x 576p - 25
- 640 x 480p - 29.97
- 528 x 480p - 29.97
- 640 x 576p - 25
- 528 x 576p - 25

Lower Resolutions
- 480x270, 320x240, 320x180

Audio Encoding
- MPEG-1 layer II, one stereo pair per video
- Optional - up to 4 stereo pairs for NOVUS-1E
- Optional - up to 2 stereo pairs per video for NOVUS-2E
- MPEG-4 AAC-LC, one stereo pair per video - optional
- Dolby® Digital AC-3 pass-through
- Audio A/V sync adjustment , manual - up to 100 msec

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

Management and Control
- 2x 10/100/1000Base-T Ethernet (RJ-45)
- Configuration import/export
- Visual fault warning
- In-band and out-of-band control
- SNMP v1,v2
- Accurate bit rate control
- Startup to streaming under 45 Sec

Physical & Power

Dimensions:
(W x D x H) 1**46** x **356** x 44mm
Weight: 2.75 lbs (1.25 kg)

Desktop or 1RU rack mountable tray available - 3 modules per tray

Fanless design

Power Consumption
11 W maximum

Power Supply:
Built-in, self cooled, fanless
Input 100-250 VAC 47-63Hz

Environmental Conditions

Operating Temperature:
0°Cto 50°C (32°F to 122°F)

Operating Humidity:
5% to 95% (non-condensing)

Compliance
- **CE:** CE marked in accordance with 89/336/EEC**,** 72/23/EEC and 1999/5/EEC
- **UL:** UL approval   **RoHS:** 2011/65/EU
- **US FCC:** Part 15   **WEE:** 2012/19/EU
- **EMC:** EN55022, EN55024, EN6100-3-2