EN-200 1080PAVC Super-Low Latency Encoder

- **Dedicated ASI, IP or RF Sports Contribution**
- **UHD(4K) Contribution**
- **At Home Production**
- **High-Efficiency Trunking at 1, 2, & 3 Frame Latency with Frame Accurate Sync**

Adtec Digital's EN-200 contribution class encoder supports the most demanding video applications with super-low latency, UHD(4K) and high definition synchronous AVC encoding.

The EN-200 offers premium features and exceeds requirements in its power-efficient 1-RU chassis. Standard features include redundant power supplies and enhanced control and monitoring via front-panel, browser and SNMP.

Video support includes UHD(4K) and high definition synchronous AVC encoding. It can process up to sixteen audio channels with comprehensive compression options. The on-board L-Band and IF-Band modulator satisfies your DVB-CID requirements with premium DVB-S2X modes up to 256APSK.

- 3G-HD/SDI 1080p50/59.94 fps Encoding
- AVC (H.264) 4:2:0 /4:2:2 Video Encoding
- 3G-SDI via 3G Copper and Fiber SFP Video Interfaces
- MP1L2, DD, AAC-LC, HE-AAC (2.0 and 5.1)
- Passthrough DD, Dolby E, and LPCM
- End-to-End and Interoperable Solution
- 1, 2, and 3 Frame End-to-End Latency
- Simultaneous ASI, RF (DVB-S2X and DVB-CID), and IP Transport (SMPTE 2022 FEC, UDP, RTP, RTMP, Zixi)

Offering super-low latency and frame accurate sync, Adtec's EN-200 is an integral part of UHD(4K) and At Home Production solutions.

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VIDEO ENCODER PROFILES

MPEG 4 /AVC HD/SD Profiles:

H.264 MPEG 4 SD
(ITU-T H.264 ISO 14496-10)
4:2:0 Chroma: High Profile, Level 3.0
4:2:2 Chroma: High Profile, Level 3.0
Data rates: 0.7 - 20Mb/s

H.264 MPEG 4 HD
(ITU-T H.264 ISO 14496-10)
420 Chroma: High Profile, Level 4.1
422 Chroma: High Profile, Level 4.1
Data Rates: 1.5 - 80Mb/s

Supported Resolutions:

480i59.94, 576i50 Level 3.0 to Level 3.2
1080p50/59.94 (Level 4.2)
1080i50/59.94, 720p50/59.94 (Level 4.1)

.: ALL INPUTS OPERATE CONCURRENTLY:.

SD-SDI / HD-SDI / 3G-SDI INPUT

Standard:

SD - SMPTE 259M-C - 270Mbit/s with embedded audio per SMPTE 272M A, B, and C
HD - SMPTE 292M - 1.485Gbit/s with embedded audio per SMPTE 299M
3G-SDI Level A and Level B
Connector: 1 X BNC (75 Ohm)

SFP Input

Standard:

SD-SDI, HD-SDI, and 3G-SDI
(3G-SDI Level A and Level B)
Connector: Open SFP cage for SFP optical module

CVBS Input

Standard:

SD NTSC or PAL D1 Composite Video
Connector: 2 X BNC (75 Ohm)

AUDIO PROCESSING PROFILES

Audio Encoding:

Up to eight pairs (sixteen channels) of audio
MPEG 1 Layer 2, AAC-LC (2.0/5.1), AAC-HE v1/v2 and AAC-6.0 surround encode
Dolby Digital AC-3 stereo
(Up to 4 stereo pairs)

Audio Passthrough:

Dolby E 5.1/2.0/1.0, AC-3, LPCM, Linear Acoustic

Audio Inputs:

Digital audio input for uncompressed LPCM or compressed bit stream processing on AES or SDI

AES Audio
Standard: AES3
Connector: 8 X BNC (75 Ohm)

SDI Embedded Audio
Standard: Digital audio embedded per SMPTE 272M (SD) and SMPTE 299M (HD)
Connector: 1 X SFP module or 1 X BNC (75 Ohm)

Analog Balanced Stereo input via DB15 male connector. Clip level 18dB.
Connector: DB15 (10k Ohm)

CONDITIONAL ACCESS

Standard:

DVB Common Scrambling Algorithm Basic Interoperable Scrambling System (BISS)
BISS 0/1/E

VBI / VANC PROCESSING

Waveform / Ancillary:

Closed Captioning, AFD, OP47, Teletext, VITC and WSS
CEA 608 -> 708 Up-Conversion

DVB-ASI OUTPUT

Standard:

Asynchronous Serial Interface
IS013818-1 MPEG 2 Transport Stream per EN 50083-9 (188 Byte Only)
Connector: 3 X BNC (75 Ohm)

IP OUTPUT

Standard:

Four (4) unique TCP, UDP, or RTP (RFC 3550) encapsulated routes with SMPTE 2022 (COP3 FEC).
188 byte DVB packet size, 7 per IP packet

Output Rates: 1 - 150Mbps
MPEG 2 RTP v2 transport (RFC 3550)
MPEG 2 UDP transport

Output Rates: 1 - 50Mbps
RTP SMPTE 2022-1 2007 FEC

Output Rates: 1 - 25Mbps
TCP Transport
Zixi Feeder

Connector: 2x RJ45 10/100/1000 GigE

PHYSICAL

Operating Temperature (Ambient):

-20C to 40C / -4F to 104F

Storage Temperature (Ambient):

-30C to 80C / -22F to 176F

Measurements:

(H X W X D)
1.75" X 19" X 18"
44.45mm X 482.6mm x 457.2mm

Weight:

EN200 9 lbs. / 4.08kg.
EN200/IF/LB/10M 14 lbs. / 6.35kg.

Power:

Redundant auto switching dual
100 - 240 VAC 50/60Hz

Wattage:

Start-up: 46 Watts
Operational: 45 Watts

Non-condensing humidity:

30% to 85%

MANAGEMENT

Front Panel Control with Password Protection Capability
Browser-based Web Interface with Advanced Security Features
SNMP v2c Available for NMS Integration
COM2 RS232 Serial Connectivity
Telnet Connectivity
FTP Connectivity

EN-200 1080PAVC Super-Low Latency Encoder

Hardware Models

All models include 1RU chassis, redundant AC power supplies, front panel, BISS, FEC, DolbyE Passthrough & VBI processing as standard features.

EN200	1080P AVC Super-Low Latency Encoder
EN200/IF/LB/10M	1080P AVC Super-Low Latency Encoder with DVB-S/S2/S2X modulator

Software Options

All keys are field upgradable.

M4-SD	Enables SD MPEG 4 (4:2:0 & 4:2:2) video encode.
M4-HD-420	Enables HD MPEG 4 (4:2:0) video encode. Supports 1080p encode.
M4-HD-422	Enables HD MPEG 4 (4:2:2) video encode.
MP1-AUD	Enables MPEG 1 Layer 2 audio encode. Supports 8 pairs.
DD-1-AUD	Enables Dolby Digital (AC3) 2.0, 1.0, or 5.1 mode audio encode. Supports 2 pairs of Dolby Digital 2.0 or 1 pair Dolby Digital 5.1.
DD-2-AUD	Enables Dolby Digital (AC3) 2.0, 1.0, or 5.1 mode audio encode. Supports 2 pair of Dolby Digital 2.0 or 1 Dolby Digital 5.1.
AAC-6.0 AUD	Enables AAC 6.0 audio encode. Supports 2 AAC 6.0 sets for a total of 12 audio pairs.
AAC-AUD	Enables AAC audio encode. Includes HE-AAC v1/v2 & AAC-LC. Supports 4 pairs. Can also be configured for two sets of 5.1 surround encoding for up to 12 channels.
REMUX	Enables ASI input via BNC connector for encoder cascade multiplexing. Manual PID/Program number config. required.
RTMP-TX	Adds capability for RTMP formatted IP output. Can stream to content delivery networks or web-based services that accept RTMP formats.
ZIXI-TX	Adds capability for Zixi Feeder Edge Point. Zixi Feeder capable of streaming to Zixi Broadcaster, up to 20Mb/s w/o FEC and up to 15Mb/s w/FEC. Zixi Link feature available when paired with the RD-71 (RD71-ZIXI-LINK-KEY required).

IF AND L-BAND MODULATOR

(EN-200/IF/LB/10M Model) - DVB-CID Compliant

Some specifications require purchase of feature keys. IF and L-Band outputs are not active simultaneously

Modulation Modes:
QPSK / 8PSK / 16APSK / 32APSK / 256APSK

Interface Rate:
50 kbit/s- 150 Mb/s
(modcod & interface dependent)

Baudrate Range:
0.05 - 54 Mbaud (modcod dependent)

Clean Channel Technology - Roll-off factors:
5%, 10%, 15%, 20%, 25%, 35%
for all modulations

IF Band Output:
Output level: -30 to +5dBm (+/- 2dB)
Frequency: 50 - 180MHz
Connector: 1 X BNC (50 Ohm)

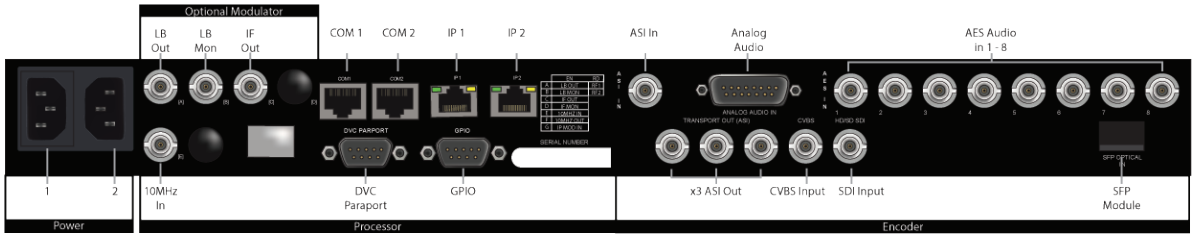
L-Band Output:
Output level: -35 to +5dBm (+/- 2dB)
Frequency: 950 - 2150MHz
Connector: 1 X BNC (50 Ohm)

L-Band Monitor Output:
Output level: -45 dBm (+/- 5 dB)
Frequency: Follows L-Band main output or fixed at 1050 MHz when IF output active.
Connector: 1 X BNC (50 Ohm)

Reference Input:
Level: -3 to +7 dBm
Frequency: 10 MHz
Connector: BNC (50 Ohm)

Modulator Software Options

IF/LB/10M-8PSK	Enables QPSK/8PSK with 5%-35% roll-off to 36 Mbaud.
IF/LB/10M-16APSK	Same as above, adds 16APSK.
IF/LB/10M-32APSK	Same as above, adds 32APSK.
IF/LB/10M-256APSK/S2X	Same as above, adds 256APSK, & DVB-S2X
IF/LB/10M-S2X	Adds DVB-S2X capability to 8PSK, 16APSK or 32APSK keyed unit.
IF/LB/10M-54M	Enables 54 Mbaud.
IF/LB/10M-CID	Enables RF Carrier ID information to be transported for vendor identification.



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