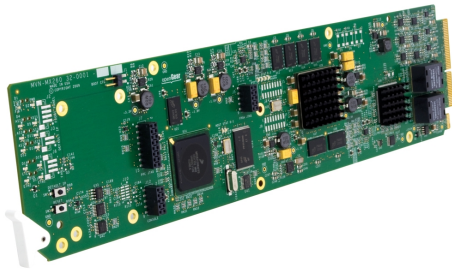


9990-TRX-MPEG • Multi-Standard Broadcast Transcoder



The **9990-TRX-MPEG Multi-Standard Broadcast Transcoder** offers a powerful transcoding solution combining IPTV, professional broadcast, enterprise video delivery, and streaming video environments, making it ideally suited for content repurposing, edge transcoding, and video distribution network bandwidth optimization.

The 9990-TRX-MPEG is a full-featured quad-channel video transcoder using the latest advances in video compression technology to ensure excellent video quality at low bit rates. Simultaneous support of DVB-ASI, broadcast over IP, MPEG-DASH Streaming, and HTTP Live Streaming allows content to be freely distributed over virtually any video network.

The 9990-TRX-MPEG provides transcoding of two video services (channels) using either MPEG-2 or MPEG-4 AVC codecs in SD format and the output of MPEG-1 Layer II services. The single program can be outputted over ASI and IP interfaces individually or simultaneously. License options allow easy scalability via easy to install software uploads without removing or powering-down the card.

The openGear® card form factor and DashBoard™ remote control makes for easy integration into existing terminal equipment environments.



FEATURES

Dual-channel multi-standard HD/SD transcoding standard – scalable for additional transcoding using software licenses as simple downloads

Supports MPEG-1 Layer II, AAC, and Dolby® AC-3 audio inputs

Full, future-proof “any-to-any” multi-standard codec support – adapts services from both MPEG-2 and MPEG-4 AVC systems

Low-power, high-density design; <14 Watts – up to 10 cards per frame

IP transmission using unicast or multicast

Gigabit Ethernet and DVB-ASI input/outputs

Audio pass-through

VBI and closed-captioning pass-through

Easy integration and control/monitoring via DashBoard remote control

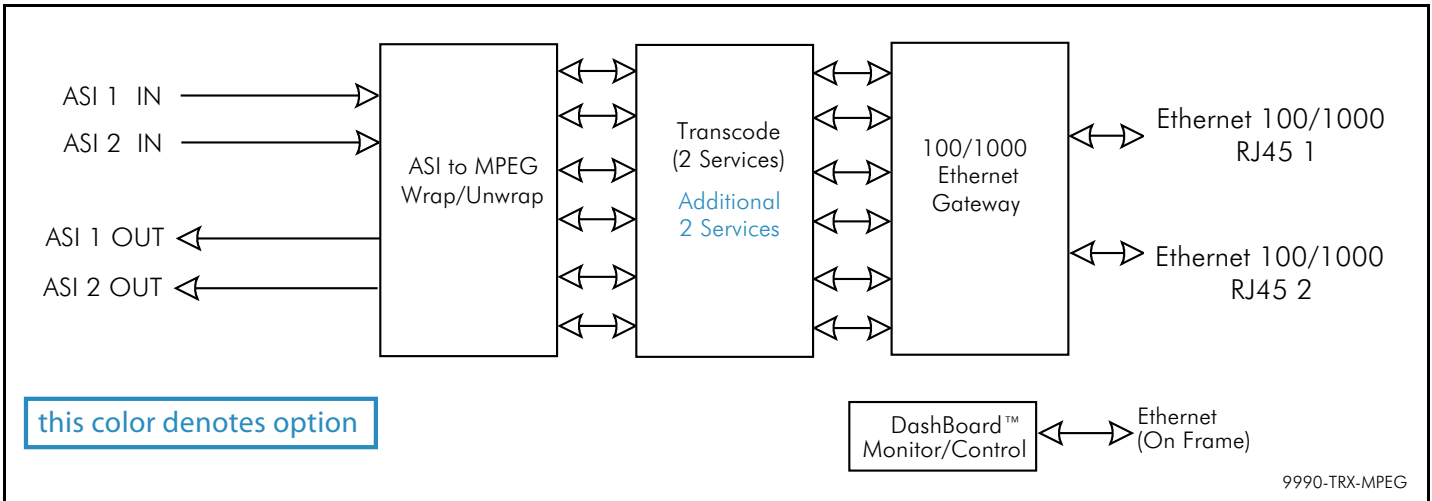
Hot-swappable

Five year warranty

OPTIONS

+TRX2 – Adds two transcoding licenses

+TRXDDEC – Dolby® decoding license (per video service (channel))



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SPECIFICATIONS

Power

14 Watts

Inputs/Outputs

2x 100/1000Base-T RJ-45 ports, auto-negotiate or fixed speed
 2x DVB-ASI input ports, BNC 75Ω
 2x DVB-ASI output ports, BNC 75Ω
 213Mbit/s maximum ASI TS bit-rate per port
 Ethernet
 Number of Ports: See Rear Module Options
 Cable Type: Standard straight-thru CAT-5e
 Connector Type: RJ-45
 Network Transport Protocols
 UDP/IP (Unicast and Multicast)
 RTP/IP (Unicast and Multicast)
 RTMP (Flash)
 HTTP Live Streaming (HLS): populates an external web server through FTP or SFTP
 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)

Transcode Modes

Multi-codec capable
 MPEG-2 to MPEG-4 AVC
 MPEG-4 AVC to MPEG-2
 SD/HD MPEG-2 to MPEG-2 and AVC to AVC re-encode
 - format conversion
 - rate reduction

Video Processing

Integrated downconversion
 - HD to SD
 - Sub-SD resolutions
 Adaptive deinterlacer
 Frame rate reduction
 AFD handling
 Closed captions and VBI passthrough
 Video Transcoding
 Input:
 MPEG-4 AVC HP @ L4.0, HP @ L4.2 (HD)
 MPEG-4 AVC MP @ L3.0 (SD)
 MPEG-2 HP @ HL (HD)
 MPEG-2 MP @ ML (SD)
 Output:
 MPEG-4 AVC HP @ L4.0, HP @ L4.2 (HD)
 MPEG-4 AVC MP @ L3.0 (SD)
 MPEG-2 HP @ HL (HD)
 MPEG-2 MP @ ML (SD)
 CBR & VBR
 1.5Mbps to 10 Mbps (profile dependent)

Video Formats

Input:
 1080 x 1920p 60/50
 1080 x 1920/1440i 25 29.97/30
 720 x 1280/960 50/59.94
 960 x 540 25/29.97
 480 x 720/704/640/528 29.97
 576 x 720/704/640/528 25
 640x480, 480x270, 320x240, 320x180

Video Formats (cont.)

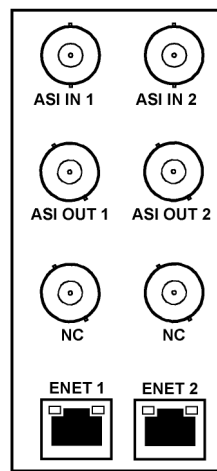
Output:
 1080 x 1920p 60/50
 1080 x 1920/1440i 25 29.97/30
 720 x 1280/960 50/59.94
 960 x 540 25/29.97
 480 x 720/704/640/528 29.97
 576 x 720/704/640/528 25
 640x480, 480x270, 320x240, 320x180
 29.97, 25, 15, 12.5, 7.5, 6.25 frames/sec

Audio Transcoding

Input:
 MPEG-1 layer II stereo
 MPEG-4 AAC-LC stereo and 5.1
 MPEG-4 HE-AAC 5.1
 Dolby AC-3 stereo, 5.1, 7.1
 Output:
 MPEG-1 layer II
 MPEG-4 AAC-LC
 Pass-through
 Conversion:
 5.1 -> 5.1, 2.0

Management

10/100/1000Base-T Ethernet (RJ-45)
 Configuration import/export
 Visual fault indicator
 SNMP v1,v2
 Datasafe™ automated card configuration
 Accurate bit rate control



RM20-9990-TRX-B

9990-TRX-MPEG • Multi-Standard Broadcast Transcoder

ORDERING INFORMATION

9990-TRX-MPEG Multi-Standard Broadcast Transcoder

RM20-9990TRX-B 20-Slot Frame Rear I/O Module (Standard Width) (2) ASI Input BNCs, (2) ASI Output BNCs, (2) Gigabit Transport Ethernet ports

RM20-9223-U 20-Slot Frame Rear I/O Module (Standard Width) (2) 3G/HD/SD-SDI/SD BNC Composite In, (2) DVB-ASI BNC Out, (4) Unbalanced Analog Audio RCA In, (2) 100/1000Base-T RJ-45 Ethernet

Options:

+TRX2 Add Transcoding License. Adds transcoding for two additional services.

+TRXDDEC Dolby® decoding license (per video service (channel))