



Hydra – TSP

Professional TS Processor

H.264 to MPEG-2 Transcoder & ATSC PSIP



HYDRA-TSP is a powerful video processor providing future-proof functionality through licensable software and modular hardware options. Leveraging state-of-the-art, and industry standard, IP and satellite interfaces with legacy inputs and outputs with powerful and proven software modules to offer DTV Innovations' most flexible, adaptable, and cost-effective edge receiver/decoder/transcoder.

State-of-the-art Inputs and Outputs

Available IP inputs and outputs supporting SRT, RIST, Zixi, and SMPTE-2022 along with multiple DVB-S/S2 L-band demodulator (inputs) and ASI options to meet your changing requirements and to easily interface with equipment typically encountered in a broadcast facility.

Content Security

Secure your valuable content with optional BISS or AES 128 & 256-bit decryption/encryption to ensure only those with permission have access.

Service Blocking/Transport Stream Grooming

Choose only the services required at each location by “cherry-picking” the desired services and blocking any unwanted services received in an MPTS-TS and building a new SPTS-TS or MPTS-TS.

Powerful Transcoding

When properly licensed, transcode between HEVC/H.264/MPEG-2 formats in the most commonly used 4K, HD, and SD video resolutions. Flexible audio decoding/transcoding supporting MPEG-1 layer II, and AAC to allow a bandwidth efficient backhaul while providing an ATSC 1.0 compliant OTA output.

Flexible Configuration & Management

Integrated web server supporting common browsers with an intuitive menu structure augmented by a front-panel LCD and keypad and SNMP to provide easy local and remote control and monitoring.

KEY FEATURES*

- Transcode/Decode HEVC, H.264, MPEG-2 SD/HD/UHD options
- Multiple audio decode/encode options
- BISS decryption option
- L-band DVB-S, S2 satellite interface option
- Multiple ASI input/output options
- SD/HD-SDI output option
- Process multiple input streams options
- Service blocking
- Service remuxing
- PSIP generation and table editing
- Redundant Power Supplies

*some features may require appropriate software licenses and/or hardware modules

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March 2024. Specifications subject to change without notice.



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Video	
MPEG-2 4:2:0 (MP@ML&HL) @ up to 80 Mbps MPEG-2 4:2:2 (422@ML&HL) @ up to 80 Mbps MPEG-4 4:2:0 (HP@L.4.1) @ up to 50 Mbps MPEG-4 4:2:2 8&10bit (Hi422P@L4.2&5.0) @ up to 50 Mbps HEVC Main, Main 10, Main 422 10, level 5.1 @ 40 Mbps max ⁽²⁾	Output Resolutions: 4096x3072/2560/2304/2160/1716; 30996x2160; 3840x2400/2160/1600/1080 ⁽²⁾ 1920/1440/1280/960x1080;1280/960/640x720 720/704/544/528/480/352x576; 720/704/640/544/528/480/352 x 480 <i>Max frame rate: 60 fps depending in resolution</i>
Audio Codecs	
MPEG-1 Layer II, AAC-LC, AAC-HEv1/v2 Dolby E, Linear PCM pass through	
Data	
Data Input (SCTE35, CC)	Data Output (CC 608, CC 706)
Front Panel	
Front panel with LCD Menus Bright indicator LEDs (Status, Alarm, Fail)	Keyboard for input & navigation Presets import and export from USB
Rear Panel	
IP interface 2 x GbE (Management and Monitor, TSolP) MPEG2-TS over SMPTE-2022 [UDP/RTP (Unicast/Multicast)] ⁽²⁾ SRT ⁽²⁾ , ZIXI ⁽²⁾ , RIST ⁽²⁾	ASI interface 8 x DVB-ASI – BNC type connector 75 Ω ⁽¹⁾ <i>Base configuration: 2 x Input 2x output</i>
Multiplexer	
Routing relationship between inputs and outputs: Any input to any output Support SI/PSI/PSIP Tables Maximum Data rate ASI (input/output) in modes MPTS/STPS: 100 Mbps ATSC Static Tables Generation	Dynamic PSIP Support ⁽²⁾ PID processing: Filtering, Remapping, Demux/Remux, Pass-through EIT processing: Remux, Pass-thru ⁽²⁾
Transcoding	
Multi-services: <i>Base configuration: 2 x HD/SD TS Channel ⁽¹⁾</i> Video transcoding profiles: H.264 AVC HP@L4.2; H.264 AVC MP@L4.2; H.264 AVC BP@L4.1 MPEG-2 MP@ML&HL; 422@ML&HL Audio transcoding codecs MPEG-1 Layer II; AAC (LC/HE) Transcoding modes: H.264 to MPEG-2 and MPEG-2 to H.264 MPEG-1 LI, AAC	Video Aspect Ratios: HD →SD (16:9→4:3) SD →HD (4:3→16:9 or 4:3→14:9) Video Output Bitrate: MPEG-2: 0.6 to 20 Mbps H.264: 0.3 to 20 Mbps Audio Output Bitrates: MPEG-1 Layer II: 32 - 384 Kbps AAC: 32 - 504 Kbps <i>Additional compressed audio pairs up to 8 pairs ⁽²⁾</i>
Demodulator ⁽⁴⁾	
RF demodulator L-Band input Frequency Range: 950-2150 MHz (L-Band) Automatic, Manual DVB-S/S2/S2x ⁽⁵⁾ selection	DVB-S, S2, S2X ⁽⁴⁾ QPSK, 8PSK, 16APSK Symbol rate range for QPSK to 16APSK up to 45 MBaud 32APSK, Symbol rate range for 32APSK up to 40 MBaud Roll-Off: 0.35, 0.25, 0.20, 0.15, 0.10, and 0.05
Configuration & Management	
Firmware/Licenses/Configuration Update Web Graphic User Interface Presets configurations memory slots SNMP Communication Agent ⁽²⁾	Security and Conditional Access BISS Modes 0, 1, E ⁽²⁾ AES-128 & 256 – bit Encryption ⁽²⁾⁽³⁾
Hardware	
Chassis: 1RU rackmount ears included Data Processing: 4Gbps	
Power Requirements	
Redundant Power Supply 90 to 240 VAC @ 50/60 Hz Power Consumption: Max. 400 W	

⁽¹⁾ Expandable Activation Port/TS Channel - License Upgrade Option

⁽²⁾ License Upgrade Option

⁽³⁾ Depending on MPEG TSolP Protocol

⁽⁴⁾ Hardware option

⁽⁵⁾ Upgrade Software for Modulator option

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