Haivision

Piranha

Low Latency H.264 Video Encoder & Decoder With Metadata Support

Low Latency Performance Communications The Piranha™ video system provides low latency video compression for IP transport and incorporates full support for combined metadata applications such as ISR (Intelligence, Surveillance, Reconnaissance), UAV (Unmanned Airborne Vehicle), and KLV (Key-Length-Value) systems. The metadata is incorporated within the MPEG-2 transport stream assuring timecode accuracy. The Piranha features performance, reliability, and flexibility with 150 millisecond end-to-end latency and advanced networking features such as logical multicast and traffic shaping.

ISR Workhorse The Piranha encoding/decoding (codec) system is ideal for ISR mission deployment, typically relaying video feeds as delivered by unmanned airborne vehicles and other data rich camera systems. Based on Haivision's telecom grade architecture, Piranha delivers deterministic performance over long periods of time. It can be tuned to deliver low latency video over a wide spectrum of network capabilities. The resolution, frame rate, and compression bitrate can be adjusted on-the-fly to achieve optimal video quality.

H.264 with KLV Serial and Line 21 Closed Caption The Piranha supports both KLV data via a serial port and line 21 closed caption data from the video signal with H.264 video compression and video frame time stamping.
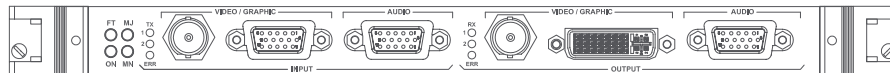
Power Features The Piranha supports H.264 encoding of standard definition video in either analog format (composite/s-video) or digital format (SDI). The encoding resolution (Full-D1 or Half-D1), the video bitrate (150kbps to 5Mbps), and the frame rate (3 to 30 frames per second) are all independently adjustable to assure the optimal video quality for any bandwidth requirements. As with all Haivision technology, encoding adjustments are "on-the-fly" and take effect immediately. Reducing the latency between video capture and delivery is essential to mission-critical video transmission or remote system control. The Piranha delivers absolutely consistent performance with end-to-end latency as low as 180 milliseconds. The Piranha is available as a single encoder/decoder in a 1RU configuration or as a 5 encoder/decoder blades in a 3RU configuration.

Product **Features**   Product **Benefits**

Product Features	Product Benefits
Low latency	Under 150ms end-to-end latency for reliable mission critical video consumption
KLV/CoT metadata support	Inject metadata from embedded video or serial port
"On-the-fly" video setting adjustment	Tune encoders for best picture quality without restarts
Frame and blade system	Extensible with field replaceable components
Single channel support	1RU 2-slot chassis supporting a single video/metadata encoding channel
Multi channel support	3RU 6-slot chassis supporting up to 4 video/metadata channels

VIDEO ENCODING / DECODING
H.264 AVC (MPEG-4 part 10)
Resolution NTSC/PAL
    Full-D1 720x480/576
    Half-D1 352x480/576
Bit Rates:
    Encoder: 150 kbps to 6 Mbps
    Decoder: 150 kbps to 5 Mbps
Rate Control:
    CBR/VBR
Latency (end-to-end):
    180 to 300 milliseconds
Compression Standard:
    H.264 AVC (MPEG-4 part 10)
    ISO/IEC 14496-10
    Baseline & Main Profiles
    Level 3.0 and lower Intermediate Levels
    I, IP, IBP, IBBP framing
    Variable Group of Picture (GOP) size with
    Intraframe
    Insertion at scene cut
    Support of CABAC & CAVLC

AUDIO ENCODING / DECODING
MPEG AAC
Compression Standard:
    MPEG-2 AAC-LC ISO/IEC 13818-7
    MPEG-4 AAC-LC ISO/IEC 14496-3
Audio Channels:
    Up to 4 per video channel
Bit Rates:
    32 to 448 kbps per audio pair
Frequency Response:
    0 Hz to 22 kHz
A-V Synchronization:
    Under 20 milliseconds

IP NETWORK INTERFACE
Standard:
    Ethernet 10/100 Bas-T, auto-detect, Half/Full-duplex
Connector:
    RJ45
Networking Protocols:
    H.264 over RTP (RFC 3984)
    Transport Stream over UDP / RTP
    RTP / RTCP
    Traffic shaping

MANAGEMENT INTERFACE
Standard:
    RS-232
    RJ45 to RS-232 DB-9 Management Cable Req'd.
Management:
    HTTP (web browser)
    Command line over SSH/Telnet/RS-232
    FTP/TFTP
    SNMPv3

4 PORT SERIAL DATA INTERFACE CARD
Standard:
    RS-232/RS-422
    RS-232 up to 115.2 kbps
    RS-422 up to 115.2 kbps
    RJ45 Connectors
    RJ45 to RS232 Adaptor Included
Specifications:
    Key Length Value (KLV) or Cursor on Target (CoT)
    Metadata Multiplexing per MISB RP 0604
    Synchronous Mode
    KLV per SMPTE 336M
    MISB 0601.3

PIRANHA ANALOG ENCODER BLADE
Video Inputs/Outputs:
    S-Video 4-pin Mini-DIN
    Composite 75Ω BNC
Audio Inputs/Outputs:
    4 analog audio channels
    Balanced XLR connectors**
    Unbalanced RCA connectors**
    ** *DB15 breakout req'd, specify when ordering*

PIRANHA DIGITAL ENCODER BLADE
Video Inputs/Outputs:
    Composite 75W BNC
    SDI SMPTE — 259M-C 75 Ω BNC
    Audio Inputs/Outputs
    4 analog audio channels
    Balanced XLR connectors**
    Unbalanced RCA connectors**
    ** *DB15 breakout req'd, specify when ordering*
    Embedded Audio supported on SDI

PHYSICAL CHARACTERISTICS

PIRANHA 1020, 2 slot (1RU)
Temperature:
    Operating: 0° to 50° C (32° to 122° F)
    Non-operating: -40° to 70° C (-40° to 158° F)
Dimensions:
    44mm H x 438mm W x 305mm D
    (1.75"H x 17.25"W x 12"D)
Power Requirements:
    110-240V AC; 125 W max.
Weight:
    Approximately 4.5 kg (10 lbs)
Relative Humidity:
    Up to 95% without condensation
Certification:
    UL/CSA/CE, RoHS/WEEE
Compliance:
    EN 55022/55024
    FCC Part 15, Subpart B, Class A
Rackmount:
    19" included

PIRANHA 1060, 6 slot (3RU)
Temperature:
    Operating: 0° to 50° C (32° to 122° F)
    Non-operating: -40° to 70° C (-40° to 158° F)
Dimensions:
    130mm H x 438mm W x 343mm D
    (5.125"H x 17.25"W x 13.5"D)
Power Requirements:
    110-240V AC or -48V DC; 200 W max.
Weight:
    Approximately 9.1 kg (20 lbs) fully loaded
Relative Humidity:
    Up to 95% without condensation
Certification:
    UL/CSA/CE, RoHS/WEEE
Compliance:
    EN 55022/55024
    FCC Part 15, Subpart B, Class A
Rackmount:
    19" included

Piranha

Piranha Product Portfolio & Ordering Information **

HD Server Transcoding Software	B-PIR1000-HM4ED	**Piranha H.264 Analog Encode Blade -** S-Video and Composite Video, 4 Channel Audio
Piranha H.264 Digital Encode Blade	B-PIR1000-HM4EDC-SDIO	**Piranha H.264 Digital Encode Blade -** SDI and Composite Video, 4 Channel Audio
Piranha 1060 Chassis	F-1060-PIR-AC	**6 slot chassis with HOST Blade (AC Power Supply) -** US Gov't Specification
Piranha 1020 Encoder	S-1020-PIR-SD-EA	**Configured System -** Standard Definition Analog H.264 Low Latency Encoder with Serial Port Data Channel, Hai1020 1U Format - US Gov't Specification
Piranha 1060 2A Encoder	S-1060-PIR-SD-2EA	**Configured System -** Standard Definition 2 Encoder Analog H.264 Low Latency Encoder with Serial Port Data Channel, Hai1060 3U Format - US Gov't Specification
Piranha 1060 2D Encoder	S-1060-PIR-SD-2ED	**Configured System -** Standard Definition 2 Encoder Analog/Digital H.264 Low Latency Encoder with Serial Port Data Channel, Hai1060 3U Format - US Gov't Specification

** For complete pricing and ordering, contact us at sales@haivision.com or your certified Haivision reseller

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