nanoHydra-HD2

Dual channel HD-SDI Video Streaming Appliance

The nanoHydra-HD2 is a dual channel, Ultra Low Latency (ULL) IP video streaming appliance, capable of capturing, compressing and concurrently streaming 2 HD-SDI channels with a latency of under 50ms. This rugged video appliance is ideal for rapid deployment in demanding applications in Military, Communications, Transportation and Energy industries.

The nanoHydra-HD2 features a dedicated hardware H.264 / H.265 compression engine that can encode both video channels at up to 1080p60. The flexible RTSP/RTP streaming engine supports Unicast and Multicast and streams each channel over the GigE Ethernet to client systems for low latency viewing and analysis.

The nanoHydra-HD2 supports extraction of KLV metadata from the incoming HD-SDI inputs. The captured metadata is extracted and embedded into the encoded stream for client processing and display. Metadata can also be captured directly from the ethernet interface as RTP (RFC 6597 compliant) or RAW UDP data.

The nanoHydra-HD2 has an integrated power supply and can be driven from a regulated 9-20V DC input. The system is housed in a rugged, watertight, conduction cooled, IP67 rated enclosure with sealed MIL-D38999 connectors and is ready to be installed into mobile platforms and harsh environments.

Key Features

- Dual HD-SDI inputs at up to 1080p60 (SMPTE 292M, SMPTE 424M)
- High quality, Ultra Low Latency H.264/H.265 video compression
- Video Encode Latency less than 50ms
- KLV metadata capture
- Gigabit Ethernet
- Rugged IP67 enclosure
- 9V to 20V Power Supply
- MIL-D38999 connectors for secure cabling
- Rapid Deployment

RVAP

The nanoHydra-HD2 is one of AMP's Ready Video Appliance Platforms (RVAP). Using proven rugged PC/104 modules with a custom designed IP67 enclosure, our RVAP are SWaP optimised COTS solutions for a wide range of embedded video requirements.

Contact us for details on how RVAP can help in your project.

Rev A.00
Subject to change without notification

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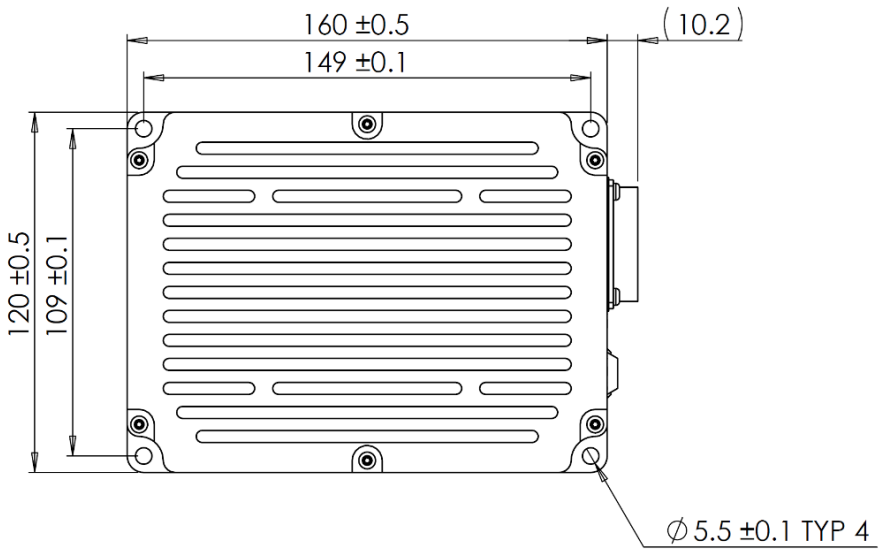
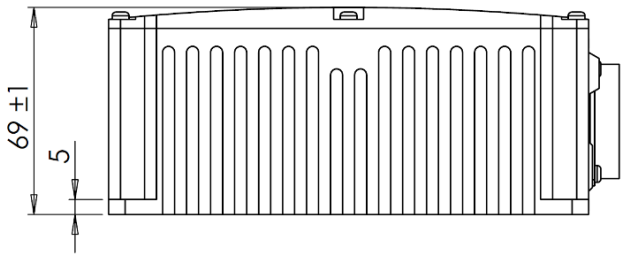
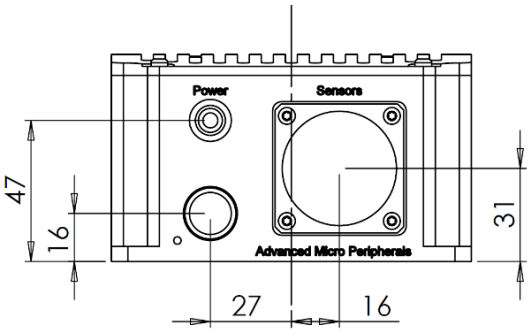
Mechanical Drawing







Example Applications

- Surveillance and Reconnaissance
- Vehicle Safety
- Training and Simulation
- Machine Vision
- Remote Supervision
- Maritime Operations
- Pipeline Inspection
- Diagnostic Imaging
- Border Security
- Public Space Surveillance
- Pilot Observation
- Infrastructure monitoring

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Technical Specification

Digital Video Input

Dual HD-SDI input at up to 1080p60 (SMPTE 292M, SMPTE 424M)
Standard resolutions supported include:
- 1080p60, 1080p50, 1080p30, 1080p25
- 720p60, 720p50

H.264 Video Compression

ITU-T H.264 (ISO/IEC 14496-10), supported profiles:
- Baseline profile
- Main profile (I,P frame coding only)
- High profile (I,P frame coding only) at level 4.1

Dual HD encode at full frame rate
Supports Variable Bit Rate (VBR)
Support Constant Bit Rate (CBR)
Real-time multi stream H.264 Ultra Low Latency encode

H.265 Video Compression

ITU-T H.265 (ISO/IEC 23008-2), supported profiles:
- Main profile (I,P frame coding only)

Dual HD encode at full frame rate
Supports Variable Bit Rate (VBR)
Support Constant Bit Rate (CBR)
Real-time multi stream H.265 Ultra Low Latency encode

Ultra Low Latency (ULL)

Less than 50ms video encode latency

KLV Metadata

Embedded KLV metadata captured from HD-SDI input
Metadata capture from Ethernet: RPT (RFC 6597) or raw UDP
Supports MISB 0601.9. MISB 0604.3
Synchronised with video

Streaming

RTSP/RTP Multicast or Unicast streaming
RTSP (RFC2326) and RTP (RFC3350) support
RTSP/RTP over TCP
RTP over UDP

Network Interface

Gigabit Ethernet for RTSP/RTP streaming and control

Control

Web front end
RTSP command interface

Power

9-20V regulated DC input

Mechanical

Milled from solid Aluminium Alloy block
Size: 160 x 120 x 69 mm (6.3 x 4.7 x 2.7 inch) LWH
MIL-D38999 Connectors

Environmental

Operating temp –40˚C to +70˚C
IP67 dust-proof, water immersion to 1m

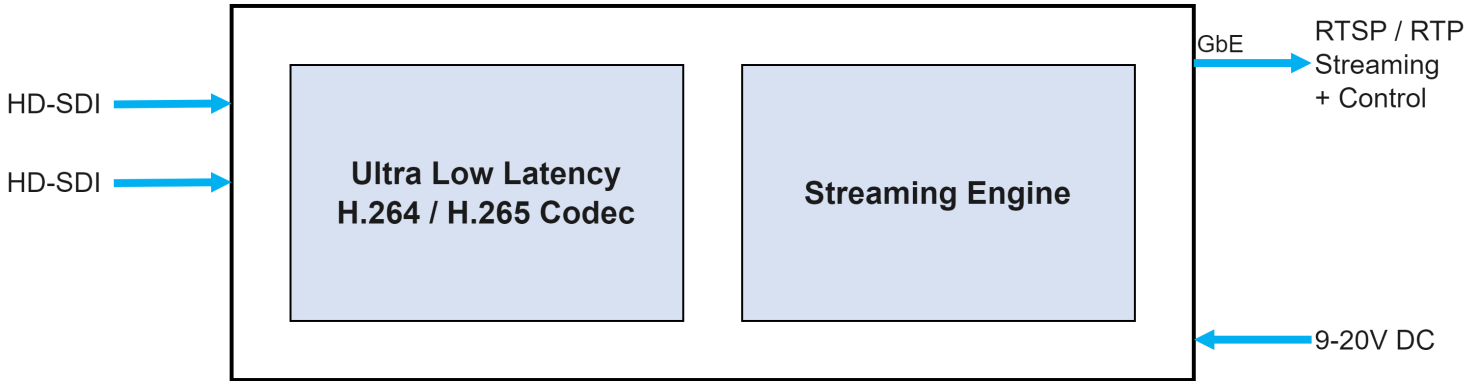
Standards Compliance

MIL-STD-810G[1]

Ordering Information

nanoHydra-HD2
Ultra Low Latency Dual channel HD-SDI video streamer

Functional Diagram



[1] The AMP nanoHydra family is designed to meet MIL-STD-810G requirements. Individual configurations are qualified through similarity with a base nano-Hydra configuration.

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