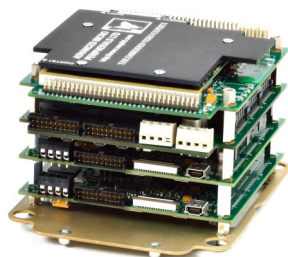


New rugged video appliance offers a unique competitive advantage to UAV system builders

AMP's microHydra is a COTS multi-channel video acquisition appliance ideally suited for UAV applications such as surveillance and reconnaissance where more functionality is essential in rugged, compact environments.



The microHydra offers a unique new competitive advantage to UAV video systems builders through its application-specific, dense functionality, easy customization and elimination of the development cycle. The appliance is implemented with multiple intelligent video processors on a PC/104 stack linked to a central processor and storage over a GBit Ethernet fabric. Ready to go and ready-packaged into a rugged, watertight conduction-cooled IP67 rated enclosure with sealed MIL-D38999 connectors, this compact appliance brings dense functionality into the space-constrained environments inevitable in UAVs.



The microHydra supports up to 8 PAL/NTSC/RS-170 recording channels for capturing multiple live video cameras, RS-170 signals and FLIR. In addition, two HD-SDI inputs supporting KLV meta-data (to STANAG 4609) extraction and processing are provided to handle high-end imaging of EOIR HD

sources including L3-Wescam turrets. The compact appliance also provides optional sensors and features

Key Features

- ◆ 8 PAL/NTSC/RS-170 video channels
- ◆ High quality, Ultra Low Latency H.264 video compression
- ◆ Video Latency less than 40ms Glass-to-Glass (G2G)
- ◆ Gigabit Ethernet
- ◆ Rugged IP67 enclosure
- ◆ 4 channels audio input
- ◆ Vehicle-protected Power Supply
- ◆ MIL-D38999 connectors for secure cabling



**Advanced Micro
Peripherals**

THE EMBEDDED VIDEO EXPERTS



including Controller Area Network (CAN), 3-Axis Accelerometer, Altimeter, a 3-Axis Digital Magnetometer (e-compass), and Gyroscope.

Additionally, sensor data is combined with video compliant STANAG4609 for IP streaming.

Military systems builders can demonstrate or deploy the microHydra immediately on delivery as the appliance includes application firmware ready to record video from a range of sensors. Configuration then becomes a simple matter of choosing an appropriate mix of sensors and adding any project-specific functions as required. As always, AMP kicks it up a notch by providing extra hardware functionality which is extremely accommodating, allowing the user to choose I/O modules from the vast PC/104 ecosphere and plug them into the microHydra stack.

This advanced level of integration ushers in the concept of the Demo-Configure-Deploy (DCD) cycle, making the microHydra a valuable tool for military systems builders endeavouring to reduce cost and time to demonstration and deployment as they squeeze ever more functionality into diminishing volumes; a scenario highlighted by DoD demands for more demonstrations of new technologies – at high Technology Readiness Levels (TRLs) - earlier in the development cycle.

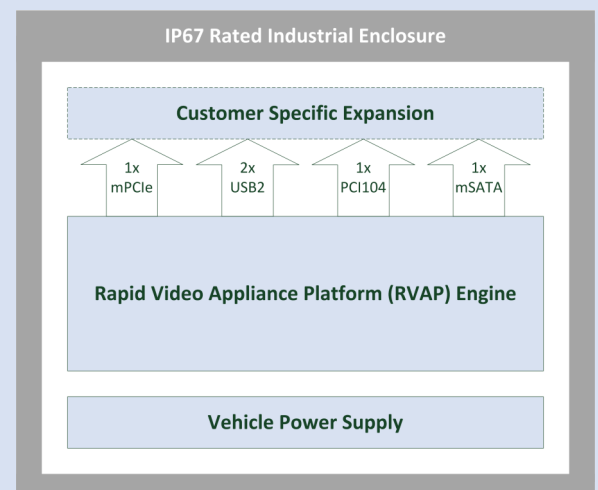
The microHydra is one of AMP's Ready Video Appliance Platforms (RVAP).



Ready Video Appliance Platforms (RVAP)

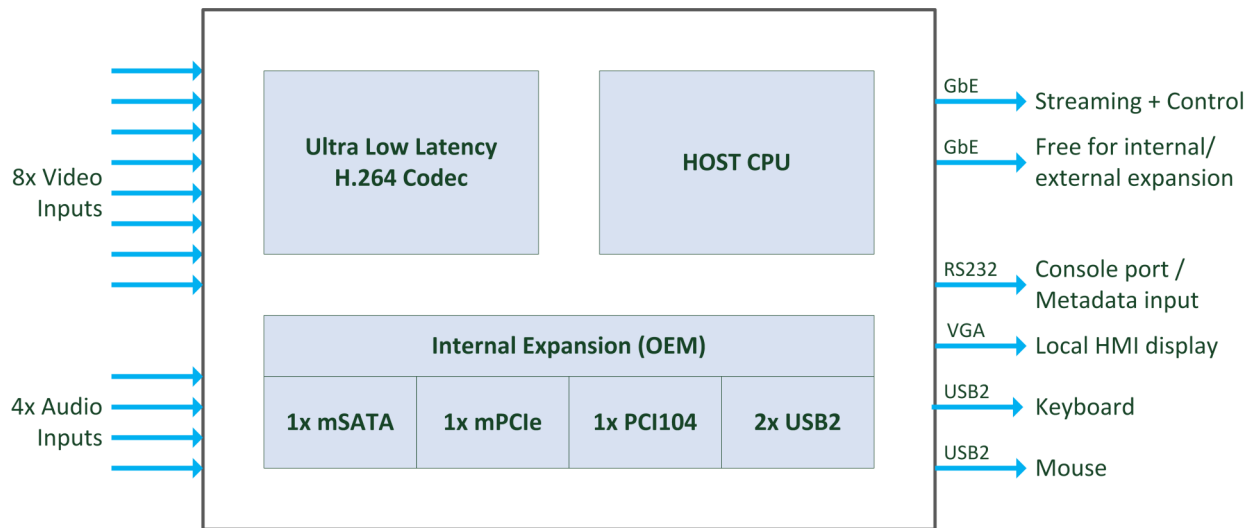
The AMP Ready Video Appliance Platforms (RVAP) are highly integrated and rugged fully operational COTS video processing appliances based on combination of high performance multi-core CPUs, application-specific low power video processors, deployment-ready application Firmware, all pre-integrated into a rugged modular enclosure system.

The modular and rugged PC104 internal architecture provides flexibility for adding project-specific hardware enhancements. The built-in application Firmware for each RVAP class is targeted at specific class of video handling functionality while providing sufficient flexibility for project-specific customization to facilitate rapid OEM deployment.

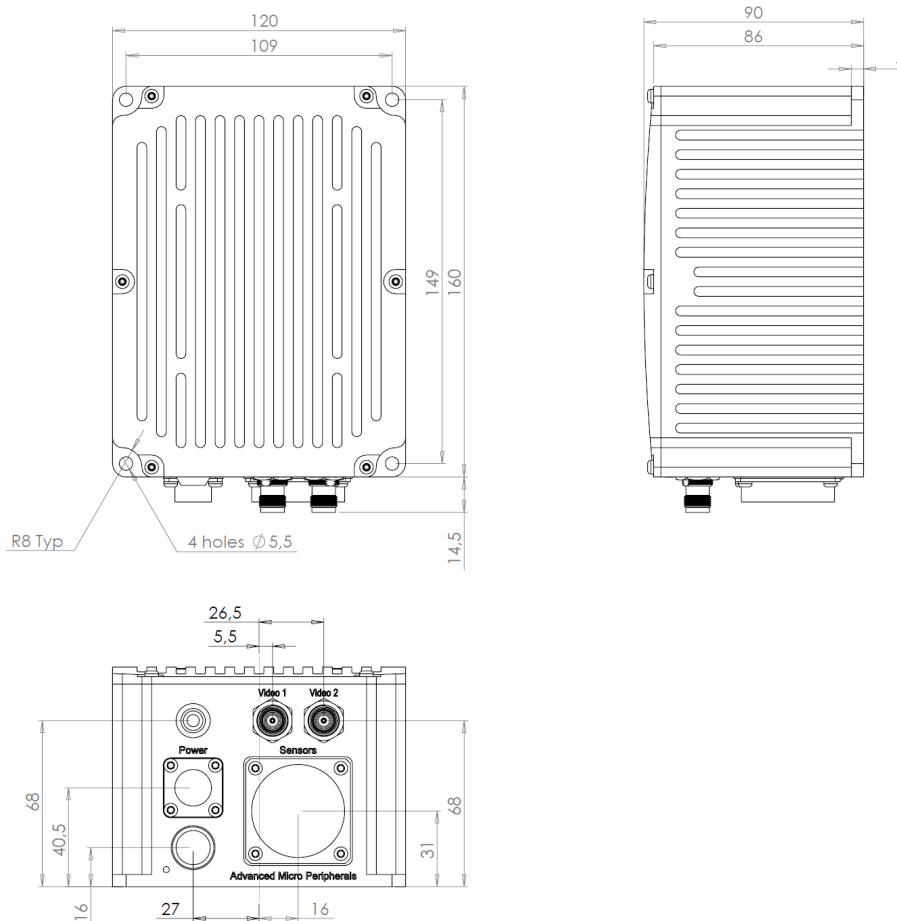




Functional Diagram



Mechanical Drawing





Technical Specification

Analog Video Input

Up to 8 independent PAL/NTSC/RS-170 inputs
10bit analog-to-digital converters

Audio inputs

4 independent mono audio inputs
Line level inputs

H.264 Video Compression

ITH-T H.264 (ISO/IEC 14496-10)
Supported profiles:
Baseline profile
Main profile (I,P frame coding only) level 4.1
8x D1 full size encode at full frame rate (25/30fps)
Supports VBR/CBR
Real-time Ultra Low Latency capture

Ultra Low Latency (ULL) Streaming

Less than 40ms glass-to-glass (G2G) latency
Transport Stream to GBit Ethernet
Multicast or Unicast streaming

Stanag 4609 Encoding

KLV or XML from Ethernet / RS232 / USB
MISB dictionaries supported for KLV generation:-
Standard 601.2, 102.5, EG 104.5, 801.2

Vetronix Features

Controller Area Network (CAN)
eCompass
Gyroscope
Accelerometer
Altimeter

Meta Data Input

KLV over RS232 or Ethernet

Power and size (of ULL Streaming Engine)

Less than 12W power consumption
Single PC/104 stack location

Network Interface

2x 1Gbit Ethernet ports supporting 10/100/1000 Base T
GbE 1 for Streaming and Control
GbE 2 for internal/external expansion

Configuration HMI

VGA output
Keyboard and Mouse inputs (on 2x USB2)

Internal OEM expansion

1x mSATA socket
1x miniPCle Socket (option for 4)
1x Spare PCI104 stack level (option for 2)
2x USB2 ports (in addition to 2 routed to MIL connector)

Power

12-36V DC input
Regulated +5V output at up to 10A
Vehicle load-dump protection
Surge protection—up to 100V (MIL-STD-1275D)
Spike protection—up to 250V (MIL-STD-1275D)
Reverse voltage protection

Mechanical

Milled from solid Aluminium Alloy block
Size: 160 x 120 x 90 mm (6.3 x 4.7 x 3.5 inch) LWH
Weight XXX
MIL-D38999 Connectors

Environmental

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

Our range of RVAP classes is always increasing. Latest classes provided include: -

| | |
|------------------------------|---|
| DEFSTAN002-82 Server | Raw Video capture (PAL/NTSC/RS-170) and streaming |
| Hybrid Video Recorder | STANAG 4609 video and KLV Encoding and Playback |
| EOIR Mission Recorder | Multi-channel HD-SDI and FLIR video recording |

Spend less time and money designing and developing rugged video solutions. Choose your RVAP and any project-specific I/O functions, and AMP will quickly integrate a working prototype solution for you.

