

TECHNICAL SPECIFICATION

Hardware

Physical Size:

L 210mm x W 190mm x D 75mm,* Weight 1200g

*Dimensions include connectors

Operating Temperature:

-32° to +70°, non-condensing

Input Voltage:

DC 9V-36V

Power Consumption:

7W max

5.5W nominal <1.5W Standby mode <0.1W Sleep mode

Camera Input:

2 x BNC composite input

Storage Temperature:

-40° to +90°

Rating:

DO160E

Video Input Format:

PAL / NTSC / SECAM

Front Panel Connectors

USB Configuration of the unit is via USB. The USB connector has been provided to allow connection to serial based devices

RJ45 RJ45 Ethernet connector for BGAN and network lines

Video Input Amphenol BNC connector for Camera 1

LEDs Used for information on start up and configuration

Rear Panel Connectors

Video Input Amphenol BNC connector for Camera 2 Power A 3 pin amphenol 62GB connector is provided to support aircraft or battery operation

10 Pin Connector A 10 pin amphenol 62GB connector is provided to support a Synchronous RS232 serial connection for military radios

10 Pin Connector A 10 pin amphenol 62GB connector is provided to support a Asynchronous RS232 serial connection for commercial radios

7 Pin Connector A 7 pin amphenol 62GB connector is provided to support RS422 / RS485 for control of cameras or other devices

Communications

Network Connectivity: 10/100 RJ45 Ethernet connector for ADSL and network lines

Satellite Connectivity: 10/100 RJ45 Ethernet for Inmarsat Aero SB Lite

Synchronous Connectivity: 15 pin Amphenol 62GB connector

Asynchronous Connectivity: 10 pin Amphenol 62GB connector

PTZ Connectivity: 7 pin Amphenol 62GB connector for camera control via RS422 or RS485. Currently supports Pelco P & D, Canon VC-C4/5, Sony Visca, David Horn. Other protocols may be integrated on request

Bandwidths Supported: 4Kbps to 1.5Mbps

Software

Viewers Supported: Software available for Windows PC, and Windows Mobile 5/6

Video Frame Sizes Supported: From 128 x 96 up to 352 x 288 (CIF) at frame rates of 0.1 to 25fps (PAL)

High Resolution Image Retrieval: Enhanced definition (up to 704 x 576) over user-definable areas via high quality JPEG

Encryption: Built in AES 256 encryption in addition to support for IP Sec VPN connections

Minimum Server Specification: 2GHz Processor, Windows Server 2003 or Linux preferred, 512mb RAM, Sun Java JRE 1.5.0 or later

KEY POINTS

• Dual Video

Dual video inputs to allow for 2 camera operation and for remote selection of the desired camera feed.

• Form factor

The unit is designed to be as compact and robust as possible, and has DO160E rating with no moving parts for silent operation. Small enough to be installed where necessary onboard any desired location on the aviation platform.

• Power

One of the key requirements of the unit is low power. Even when encoding at the maximum frame rate of 25fps, the power requirement is less than 8.5 watts and this will reduce significantly when using military radios over reduced bandwidths. Nominal figure 5.5 watts. An additional feature of the system is a standby mode, sub 1 watt, plus a sleep mode effectively reducing the power requirement to 0.1 watt when not actively in use.

• Communications

Satellite connectivity for Inmarsat Aero SB Lite is available via the RJ45 Ethernet port.

Synchronous connectivity for Military Satcom radios such as the AN/PRC117F via the dedicated Synchronous connector or via the RJ45 Ethernet port for Military IP enabled radios.

Asynchronous connectivity for commercial radios via the dedicated Asynchronous connector.

• Configuration

The unit is configured via USB key pen which can be undertaken in advance or in the field.

The software ensures that the previous configuration is always stored locally and is therefore available should re-configuration fail for any reason.



Tel. UK: +44 (0) 1562 885522

Email: edward@satlink.co.uk

www.satlinkhawkeye.com

www.satlink.co.uk



Introduction

There are many excellent Codecs on the market to manage live video streaming. However there is now one designed specifically to manage live video streaming over low bandwidth-low bandwidth constraints imposed by antenna size restrictions on aircraft etc. The "Hawkeye" Aero is the most superior form of live video transmission over low bandwidth now available. The Hawkeye Codec is not MPEG 4, it does not use H264 compression, but is a unique patented algorithm developed over 12 years by Scottish scientists. Our platform enables superior delivery of real time global surveillance solutions. MPEG4 cannot effectively handle quality video bandwidths under 128kbps - Hawkeye does with ease!

The Hawkeye codec is unique. It has been specifically designed to run over meshed or low bandwidth networks - Iridium, Ku band and Inmarsat BGAN satellite etc and even effectively processes live video over two way radio as low as 12 Kbps. The image quality remains high regardless of the bandwidth available - at higher bandwidths it simply has to work less hard to process the data stream!

Live video is transmitted and viewed from any location with onboard PTZ cameras controlled remotely.

Full DO160E accreditation allows aircraft design installation engineers to fit Hawkeye to most aircraft today.



Technology

The HAWKEYE video encoder from Satlink Secure Systems Ltd has been specifically designed to meet the exacting requirements of military and commercial aviation customers.

The unit is designed for installation onboard aviation platforms and enables real-time, low latency video to be viewed over narrow bandwidth networks primarily, satellite networks, military tactical radios either synchronous or IP, commercial asynchronous radios and the Internet with quality, reliability and useability unmatched by current standards-based products. The HAWKEYE solution is built on the core proprietary video codec that was developed specifically for real-time video streaming. Able to support true fixed rate encoding, the codec provides constant high frame rate coding without the bandwidth variability inevitable in other systems.

The ability to sustain a constant high frame rate at low bandwidths is vital for effective camera telemetry control, to minimise operator fatigue and to allow for the perception of behaviour or intent. For example the assessment of an individual's behaviour as unusual or threatening requires close to full frame rate video. This is achievable by the HAWKEYE video codec with the delivery of real-time constant frame rate video regardless of the variability in the source content which is in sharp contrast to the standards based codecs that rely on frame dropping to hit a target bandwidth.

At the heart of the system is the secure server application, enabling multiple encoders and viewers to work together securely and seamlessly to create a fully scalable architecture. The system provides access to video feeds by decision makers anywhere without the need for fixed infrastructure. Video streams can also be played on wireless devices such as PDAs while maintaining exceptional clarity and full PTZ control of cameras at the viewer end gives the system maximum flexibility. Offering fixed high frame rate video, multiple users distributed globally can observe live events and in real time tilt and zoom the camera to alter the field of view.

With user definable frame rates and frame sizes, the HAWKEYE video encoder can be configured to match your specific operational requirements. Where bandwidth is fundamentally limited, the technology offers the only useable solution to live video transmission with high quality, real-time video.

