

### FEATURES



# TECHNICAL SPECIFICATIONS

- Real-time digital transmission of HD/SD full motion imagery
- H.264/MPEG-4 AVC (Part 10) Baseline/Main/High Profiles (Optional MPEG-2)
- HD/SD-SDI or Composite Video Input Interface
- 1080p/1080i/720p/480i/576i
- Primary/Secondary Video Encoding
- MPEG-2 compliant TS multiplexing
- Synchronous Serial or Ethernet TS Interfaces
- Fully configurable network interface
- Data Rates from 128Kbps to 25Mbps
- <50ms Encode Latency
- Stereo/dual-channel audio inputs per channel
- MPEG-1 Layer I/II Audio Compression
- Metadata Support
  - ◆ Synchronous VANC
  - ◆ Serial
  - ◆ Ethernet
  - ◆ Optional KLV Encoding
- MISB/STANAG Compliant
- IRIG-B Time Input (Optional)
- Serial or Ethernet port configurable
- Airborne Qualified Package

The Model 6820R 2-Channel Encoder is an HD/SD video encoder that compresses video and audio signals, multiplexing them with metadata and other system information for real-time video transmission applications. The 6820R is capable of simultaneously encoding two channels of video with resolutions up to 1080p. Utilizing the H.264 (MPEG-4 AVC Part 10) video compression algorithm, the encoder provides high quality video transmission at various resolutions and a wide range of bandwidths. The unit is built on an advanced multimedia architecture that extends encoding to multiple channels without increasing size and power. A "Primary/Secondary" encoding feature enables a second, lower resolution, lower bit rate copy of the video input to be independently configured and streamed simultaneously for a maximum of four streams.

Designed for any airborne application, and specifically military ISR missions, the 6820R is compliant with the full motion video standards developed by the US Government's Motion Imagery Standards Board (MISB). This includes compliance with the video compression, KLV metadata, and transport stream profiles required to ensure interoperability in US and Allied processing, dissemination, and exploitation (PED) systems. Full DO-160/MIL-810 environmental and EMI qualification ensures the 6820R meets flight-worthiness requirements.

The 6820R is easily integrated into any FMV system, providing for legacy composite or S-video inputs and all SMPTE standards. The unit provides Ethernet and synchronous serial transport interfaces along with multi-format metadata interfaces. Serial or Telnet control, and an easy to use web-GUI are provided for encoder set-up.

**VIDEO INPUT**

**Ports** Two independent inputs  
**Format** SD/HD/3G-SDI (SMPTE) or Composite, Auto-detect format, resolution, frame rate  
**Levels** .3Vp-p; 75 Ohms/1Vp-p, 75 Ohms

**VIDEO COMPRESSION**

**Algorithm** H.264 /MPEG-4 AVC (Part 10)  
**Profile** Baseline/Main/High  
**Resolutions** 1080p/1080i/720p/480i/576i  
**Frame Rate** 1-60  
**GOP Structure** Inter/Intra; Variable Size

**TRANSPORT STREAM**

**Ports** Ethernet or RS-422  
**Protocol** ISO/IEC 13818-1  
MPEG-2 Transport Stream containing Video/Audio/Data  
**Data Rate** 128Kbps - 20Mbps  
**Ethernet Protocol** Transport Stream over UDP, unicast or multicast  
**RS-422 Protocol** Transport Stream over synchronous serial interface

**ETHERNET INTERFACE**

**Format** 10/100/1000 Base T, Auto Sense Bitrate, Auto Detect Duplex  
**Configuration** DHCP or Static Address

**METADATA INTERFACE**

**Ports** Asynchronous serial (2), UDP (2), SDI-VANC (2)  
**Format** KLV or unformatted data

**TIME INTERFACE**

**Ports** 1PPS/IRIG-B, SDI-VANC  
**1PPS Levels** 0-10Vp-p; 50 Ohms

**CONTROL**

**Ports** Asynchronous Serial (1), Telnet, Web Browser  
**Serial Levels** RS-232/RS-422  
**Serial/Telnet Protocol** Delta's 3-character command set

**AUDIO INPUT**

**Ports** Two independent stereo inputs  
**Format** Balanced (Line Level)  
**Levels** 2.8Vp-p (1Vrms)  
**Impedance** 10K Ohms

**AUDIO COMPRESSION**

**Channels** None, Left, Right, Stereo  
**Algorithm** MPEG-1 Layer I/II or ADPCM  
**Sample Rates** 48Ksps  
**Sync** Lip synchronized with video

**LATENCY**

**Encoder** <50ms (per channel)  
**Enc/Dec Tandem** <100ms

**ENVIRONMENTAL (DO-160D)**

**Temp/Alt (Op)** DO-160D, Section 4, Category D2 - 55°C to +70°C  
**Temp/Alt (Non-Op)** DO-160D, Section 4, Category D2 - 55°C to +85°C  
**Humidity** DO-160D, Section 6, Category B 5%-95% RH, non-condensing  
**Vibration** DO-160D, Section 8, Category S, Figure 8-3, Profile M  
**Shock** DO-160D, Section 7, Category A, Figure 7-2, Operational (6g, 11ms, sawtooth)

**EMI**

**MIL-STD-461E** CS101, CS114-116, RS103, RE102, CE-102  
**DO-160E** Section 18, AF Conducted Susceptibility  
Section 21, Conducted Emissions

**POWER**

**Volts** +28VDC  
**Watts** 20W

**SIZE / WEIGHT**

**Chassis** 2.5"H x 4.5"W x 7"D / 3.75 lbs.

