

## MULTI-CHANNEL HD/SD ENCODER

### FEATURES



The Model 6880R Multi-Channel Video Encoder compresses high definition and standard definition video and audio signals, multiplexing them with metadata and other system information for real-time video transmission and recording applications. The 6880R is a modular design, providing flexibility in the number of encoding channels by installing or removing dual-channel modules. The unit is capable of simultaneously encoding up to 8 channels of video with resolutions up to 1080p when fully populated. 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 16 streams.

Designed for any airborne or ground-mobile application, and specifically military ISR missions, the 6880R is compliant with the full motion video (FMV) standards developed by the US Government's Motion Imagery Standards Board (MISB) and STANAG. 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 6880R meets flight-worthiness requirements.

The 6880R is easily integrated into any FMV system, providing auto-detection for composite video and all SMPTE standards. A fully configurable Ethernet interface allows for easy integration into any airborne or mobile network. Multi-format metadata interfaces are available along with serial, Telnet, or web-GUI for encoder set-up.

# 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
- Fully configurable network interface for Transport Stream and Control
- Data Rates from 128Kbps to 20Mbps/Channel
- <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
- 1PPS/IRIG-B Time Input
- Serial or Ethernet port configurable
- Airborne Qualified Package

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## MULTI-CHANNEL HD/SD ENCODER

### VIDEO INPUT

**Ports** Up to 8  
**Format** HD/SD-SDI (SMPTE) or Composite  
**Levels** .3Vp-p; 75 Ohms/1Vp-p, 75 Ohms  
**Connector** SMC

### VIDEO COMPRESSION

**Algorithm** H.264 /MPEG-4 AVC (Part 10)  
**Format** Baseline/Main/High  
**Resolutions** 1080p/1080i/720p/480i/576i  
**Frame Rate** 24-60  
**GOP Structure** Inter/Intra; Variable Size

### TRANSPORT STREAM

**Ports** Two  
**Protocol** ISO/IEC 13818-1  
MPEG-2 Transport Stream  
Video/Audio/Data  
**Format** 10/100/1000 Ethernet IP  
**Configuration** DHCP or Static Address  
Selectable Ports  
Auto Sense Full/Half Duplex  
Unicast/Multicast  
**Data Rate** 128Kbps - 20Mbps  
**Connector** Circular MIL

### METADATA INTERFACE

**Ports** Three (per channel)  
**Protocol** KLV/Clear  
**Format** SDI-VANC/Ethernet/Serial  
**Connector** Circular MIL

### TIME INTERFACE

**Ports** One  
**Protocol** 1PPS Sync/Free-run/IRIG-B  
**Format** 0-10Vp-p; 50 Ohms  
**Connector** Circular MIL

### CONTROL

**Ports** Two  
**Format** Serial or Ethernet (Telnet/Web Browser)  
**Protocol** Delta's 3-character mnemonics

### AUDIO INPUT

**Ports** Two (per channel)  
**Channels** None, Left, Right, Stereo  
**Format** Balanced (Line Level)  
**Levels** 2.8Vp-p (1Vrms)  
**Impedance** 10K Ohms  
**Connector** Circular MIL

### AUDIO COMPRESSION

**Algorithm** One  
**Format** MPEG-1 Layer I/II  
**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  
Section 22, Lightning Pin Injection  
Level 3, Waveform 5A

### POWER

**Volts** +28VDC  
**Watts** 25-70W  
**Connector** Circular MIL

### SIZE / WEIGHT

**Chassis** 4.71"H x 5.6"W x 8.44"D / 8-10lbs.



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300 Welsh Road, Building 3 • Horsham, PA 19044-2294 • Tel (215) 657-5270 • Fax (215) 657-5273 • [www.delta-info.com/ddv](http://www.delta-info.com/ddv)