DELTA
Digital Video

MODEL 6810R
HD/SD VIDEO ENCODER

TECHNICAL SPECIFICATIONS

FEATURES

- 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 6810R HD/SD Video compresses video and audio signals, multiplexing them with metadata and other system information for real-time video transmission applications. The 6810R is capable of encoding HD/SD-SDI or composite analog 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 provides encoding at all H.264 profiles up to Level 4.2. 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.

Designed for any airborne application, and specifically military ISR missions, the 6810R 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 6810R meets flight-worthiness requirements.

The 6810R is easily integrated into any FMV system, supporting legacy composite and SMPTE SD/HD/3G-SDI 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 One
Format SD/HD/3G-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 1-60
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 - 25Mbps
Connector RJ-45
Format RS-422
Configuration Synchronous Serial
Data Rate 128Kbps - 20Mbps
Connector Circular MIL

METADATA INTERFACE

Ports Three
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 RS-232/RS-422; Telnet/Web Browser
Protocol Delta's 3-character mnemonics

AUDIO INPUT

Ports Two (one stereo)
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 chnnel)
Enc/Dec Tandem <100ms

ENVIRONMENTAL (DO-160D)

Temp/Alt (Op) DO-160D, Section 4, Category D2
-55ºC to +70ºC (+85ºC Capable)
Temp/Alt (Non-Op) DO-160D, Section 4, Category D2
-55ºC to +85ºC
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 11W
Connector Circular MIL

SIZE / WEIGHT

Chassis 5.6"D x 3.5"W x 2.475"H / 1.7lbs.

DELTA
Digital Video

A division of Delta Information Systems, Inc.

300 Welsh Road, Building 3 • Horsham, PA 19044-2294 • Tel (215) 657-5270 • Fax (215) 657-5273 • www.deltadigitalvideo.com