



CORNET SWITCHING SYSTEMS

Intelligent VDO® Terra-10

One to Four-Channel H.264 SD Encoder



The iVDO Terra-10 is a unique single up to four-channel H.264 video encoder card in a small form-factor with metadata and audio capability. The iVDO Terra-10 addresses the need for a small, light-weight encoder in a mobile, transportation or surveillance market and is perfect for tight spaces that require multistream capability such as UAV's and ROV's.

The iVDO Terra-10 handles encoding of standard definition NTSC/PAL composite signals into an H.264 stream.

The iVDO Terra-10 card offers:

- One to four composite video inputs and one looped composite video outputs
- One stereo audio input and a single stereo audio output
- One EIA-232/EIA-422 serial port
- Metadata receptors for 4 video channels
- Pass-through for Com ports 1 and 2

Metadata

Metadata is accepted by the iVDO Terra-10A encoder through a com port or a UDP socket. It is then transported with an independent program identifier in the transport stream.

The unit has adjustable IP packets for streaming and Layer III QoS – Dif Serv.

IP Packets

The iVDO Terra-10 offers both multicast and unicast IP packets that are user configurable letting video stream to single or multiple sites as required. Both elementary and transport streams are available.

Management

Management and configuration is available via a Web browser and SNMP. Separate login for supervisors, operators, and technicians.

Key Features

- Single-channel to four-channel, standardsbased H.264 encoding over 64 Kbps to 6 Mbps, dependent on inclusion of metadata and audio
- Interlaced or progressive scanning
- One loop-out video port for local testing
- Transport (TS) and elementary (ES) streams available
- STANAG 4609 compliance
- Ethernet network port/uni- and multi-casting
- Management/configuration via web browser, and command line
- Metadata support for externally sourced data
- Serial metadata available on Com port 2
- Loopback support for Com ports 1 and 2

Applications

- Emergency first responders (police, fire ambulances)
- Homeland Security
- DoD Surveillance

Specifications

Video

Format: NTSC color, B/W composite, 30 fps (29.97), 2:1 interlaced, compliant with EIA-170/EIA-170A PAL color, B/W, composite, 25 fps, 2:1 interlaced
Compliant with CCIR 624
Composite mini BNC (f)

Resolution: 720x480 Full DI, 640x480 VGA, 360x480 Half DI, 360x240 CIF and 180x120 QCIF (NTSC), 720x576 Full DI, 640x576 VGA, 360x576 Half DI, 360x288 CIF and 180x144 QCIF (PAL)

Frame Rate: 1, 5, 10, 15, and 30 fps (NTSC)
1, 5, 10, 15, and 25 fps (PAL)

Encoding: ISO/IEC 14496-10 compliant
H.264, Baseline and Main Profile

Integrated H.264 Features:

- Quarter Pel Motion Estimator
- Deblocking filter
- Frame, Field, and Adaptive Coding
- Intra Prediction
- Interlace or Progressive Scanning

GOP Structure: I, IP

Video Parameters: Brightness, contrast, hue, saturation, and sharpness, user settable

Latency: <120 msec.

Video Input: 1.0Vpp +/- 3dB

Video Bandwidth: 64 Kbps to 8 Mbps dependant on number of channels, metadata, and audio

Video Stream: STANAG 4609 compliant

Stream Type: Elementary: when selected, RFC3984 governs 264 RTP stream.
Transport: when selected, RFC2250 governs MPEG-2 TS per ISO/IEC 13818-1:2000 containing video and audio ES.
Metadata present as a user stream in TS.

Metadata

Ingests external metadata via serial com port or UDP socket.

Audio

- ACC
- Mono or Stereo audio input
- 48 KHz sample rate

Connectors

Input Video: 1x mini BNC (f) 75 ohm unbalanced, composite video
Amphenol 31-0655

Multi-functional port: 8-pin mini-din (f)
• Audio input: L & R channels (input)
• Loop-thru video output

3.5mm jack: Audio output: L & R channels (loop-out)

Serial: 15-pin Micro D-sub - Molex 83612-9020

Ethernet: RJ-45, 10/100BaseT, autosensing, half/full duplex

IP Address

One Static IP address for the encoder, classes A, B or C configurable by the user. Four Static Multicast addresses for H.264 streams.

Network

Protocols: RTP, UDP, TCP/IP, HTTP, IGMP V1/V2, ICMP

IP Packets: Unicast and Multicast (IGMP V2)

File transfer: TFTP, Configuration files saved to a PC via TFTP or Webinterface

Serial Port Specifications

- RS-232/422 asynchronous port
- Multi function COM port:
 1. Metadata input port for transport stream
 2. Simple bidirectional pass through port
- Standard data rates from 300 bps to 230400 bps
- Stop bits 1 and 2 bits; data bits 6, 7, 8; Parity: none, even, odd
- IP socket to Encoder serial port

Management & Configuration

- Built-in web browser
- SNMPV1,V2

Mechanical

PCB

Dimension: .68" h x 4.31" D x 3.02" w

Weight: 4 oz

Chassis

Dimension: 1.18" h x 4.68" D x 3.29" w (with protruding connectors)

Weight: 1 lb

Electrical

AC/DC Converter: Input voltage: 100 - 240 VAC 60/50 Hz

Output voltage: 12 VDC, max 1.5 amps

DC Input: +5VDC to +24VDC

Consumption: 10 W max total

Environmental

Operating Temperature: -40°C to +74°C - PCB (-40°C to +74°C - Chassis)

Storage Temperature: -50° C to +80° C

Humidity: 5% - 95% non-condensing

Safety: UL 60950