

Product Brief

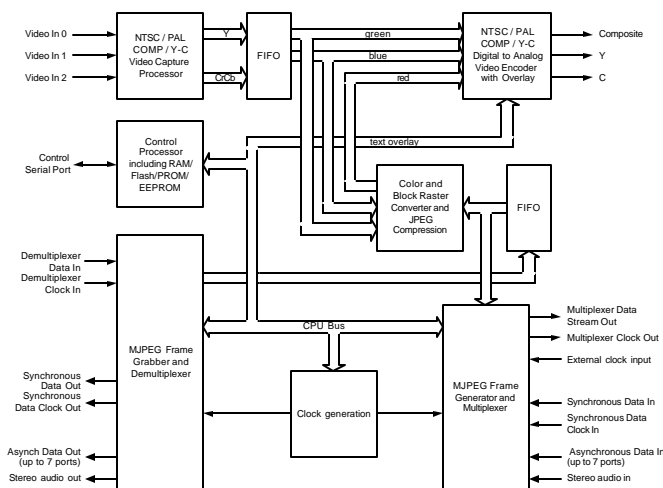
Enerdyne Codec2X29 Video Compression/Sensor Multiplexing System

FEATURES:

- High-Quality, Low-Latency MJPEG Compression
- Allows tradeoff of frame rate, image quality, and output bit rate from 20 kbps to 20 Mbps
- NTSC or PAL, Composite, Y/C, or monochrome formats
- Multiplexing of multiple channels of synchronous data, asynchronous data, and toll quality digitized audio
- JPEG restart markers minimize error propagation effects

Enerdyne's Codec2X29 Video Compression and Multiplexing System represents the state of the art in video capture and sensor data transmission for applications such as UAVs or surveillance. It provides industry best flexibility in aggregation of sensor data into a single-bit stream in a package occupying only 29 cubic inches.

Codec2 block diagram



The Codec2X29 is the next generation design of Enerdyne's industry-leading ENC1000A29 product, adding a wide range of multiplexing features to allow attachment of telemetry and sensor data to the compressed video stream with no requirements for synchronization of bit rates among different sensor data sources. The highly integrated design requires only a fraction of the power, volume and weight of previous codec and multiplexing solutions.

The Codec2X29E is used as the encoder and multiplexer in a typical system configuration, while the Codec2X29D is the decoder and demultiplexer. Both devices use the same Codec2 circuit card to perform all processing functions.

VIDEO

- Motion JPEG video compression and decompression. Includes restart markers for fast error recovery. Compression quantization can be set in 240 steps.
- Video formats: PAL, NTSC, CCIR and RS-170 monochrome
- Frame rate: up to 30 FPS (NTSC) or 25 FPS (PAL) automatically adjusted to fill available bandwidth in the multiplexer bit stream based on the quantization level chosen by the user. Thus very high quality images can be obtained even with low bandwidth.

- Interlace: supports two user-selectable methods of handling interlace – stacked fields (useful when significant motion makes it preferable to compress fields independently) or interlaced fields (more efficient when motion is limited)
- Resolution options: 560 or 280 per line. 480 or 240 lines per frame (NTSC) or 576 or 288 lines per frame (PAL)
- Crop: 3 crop modes: 100%, 85%, 65%
- On screen display: Text OSD available at decoder
- Video adjustments: brightness, tint, saturation
- Input camera feeds: 3 composite video feeds or 1 Y/C, selectable by command line. SMA type connectors
- Output monitor feeds: 1 Y/C, 1 composite. SMA type connectors
- Built-in color bars for testing

MULTIPLEXING

- Synchronous data: one port (clock and data) at any rate up to 15 Mbps (must be less than multiplexer bit stream rate). Automatic clock reconstruction at the decoder for any clock rate. Signal format is RS-422 or TTL.
- Asynchronous data: 7 serial ports at up to 115 kbaud. RS-232 or TTL signal levels.
- GPS port: accepts industry standard NEMA format GPS information on one of the async ports. Tags individual video frames with GPS.
- Audio: 2 audio ports at mic levels (encoder) and line levels (decoder). Digitized at 64 kbps ulaw (toll quality).
- Real-time clock: integral real-time clock can be used to tag video frames with time of day.
- Multiplexed bit stream: synchronous clock and data format. Clock can be externally or internally sourced at any bit rate from 19.2 kbps to 20.0 Mbps. Internally generated clock can be set in 1 kHz steps. Signal format is TTL or RS-422.

CONTROL

Command line interface via RS-232 serial port. Commands are text strings in the format "cmd <argument list>".

INPUT POWER: 28 VDC per MIL-STD-704 normal operation. Max current draw is 450 mA at 28 VDC

ENVIRONMENTAL

- Cooling by conduction to the mounting baseplate
- Operating temp: -20 to +70C baseplate temperature
- Non-operating: -40 to +85C
- Altitude: 70,000 feet
- Humidity: to 95% non condensing
- Shock and Vibration: consistent with fixed wing and helicopter environments in MIL-STD-810F

Size: 29 cubic inches (5"x4"x1.45")
Weight: 25 ounces

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