

DTS-300MB PCM Encoder is a miniature programmable data acquisition system suited for rockets, unmanned aerial vehicle (UAV) and flight test missions. The encoder transmits data in a IRIG-106 Chapter 4, fixed bit rate PCM stream.

Mechanically additional stackable modules can be mount on top of the DTS-300-MB to expand capabilities for high-speed serial data interfaces, fast sample rate analog and discrete data acquisition channels.

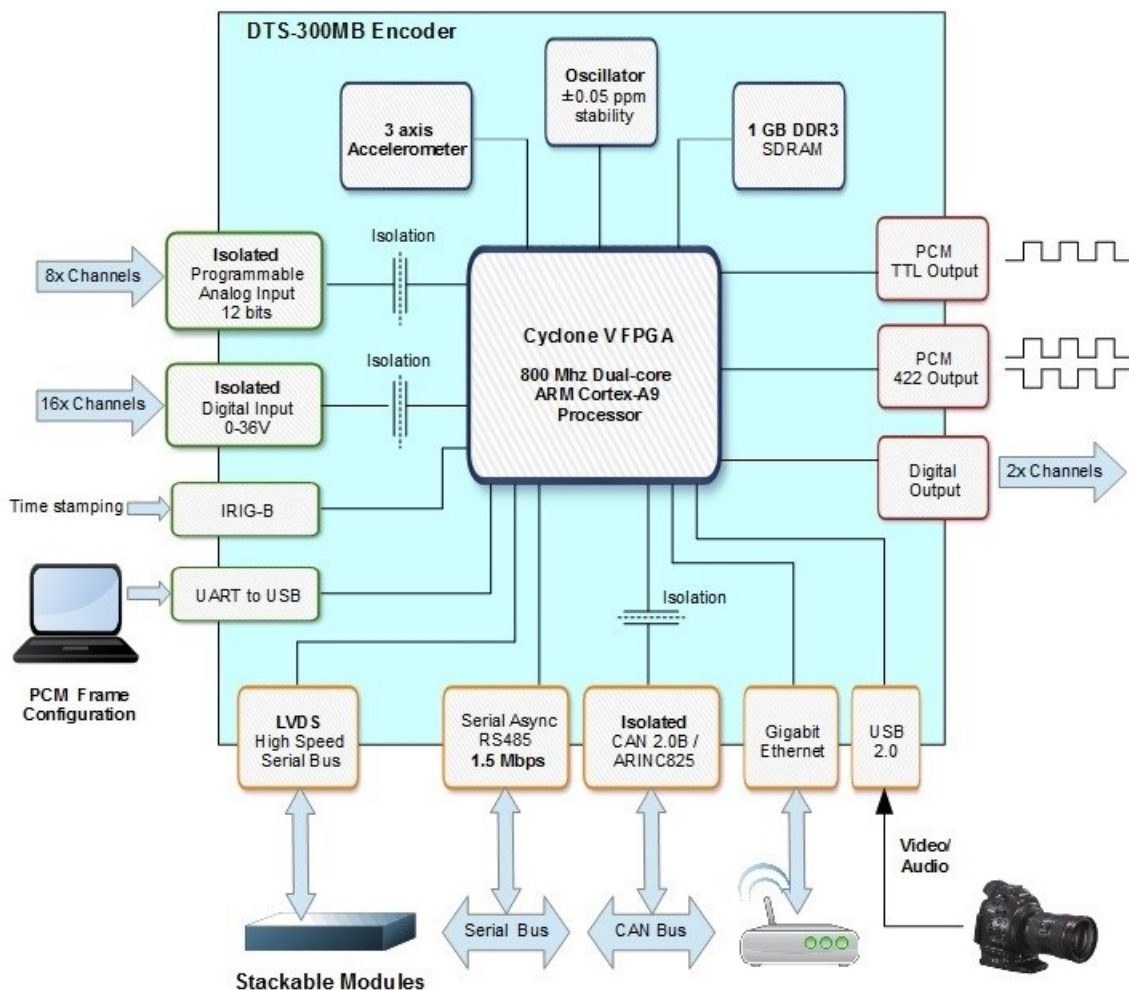
Easy configuration setup is accomplished via a telemetry user application with an intuitive graphical user interface (GUI), that is additionally coupled with ground processing capabilities. A unique set of programmable PCM Frame and parameters is applied to both, decoder and encoder units, simplifying test engineering work.

Isolated digital and analog inputs block high voltage, isolate grounds and prevent noise currents from entering the local ground and interfering with or damaging sensitive circuitry.

DTS-300MB can merge Chapter 10 packets with async serial data such as CANBus messages and video MPEG-2/H.264 into the PCM Stream.

Key Features

- IRIG 106 Class II Compliance
- High speed operation up to 10 Mbps
- ± 0.05 ppm bit rate stability
- Asynchronous Data Rates up to 1.5 Mbps
- Rugged Modular Construction
- Digital Inputs
- Analogue Inputs with programmable gain amplifier
- High ESD immunity for all digital and analog inputs
- IRIG-B time acquisition
- Standard serial digital interfaces: CAN, USB, Ethernet and UART
- IRIG 106 Chapter 10 real-time streams
- Multiplex High Definition (HD) video source into a fixed bit rate PCM stream



PCM Encoder

Standard	IRIG 106 Class II
Output Data Rates	10 bps to 10 Mbps ± 0.05 ppm
Output Format	NRZ-L, NRZ-M, NRZ-S, BiØ-L, BiØ-M, BiØ-S
Data Polarity	Normal or Inverted
Data Alignment	MSB first or LSB first
Output Levels	TTL and RS-422
Major Frame Length	1 to 1024 Minor Frames per Major Frame
Minor Frame Length	48 to 16.384 bits per Minor Frame
Word Length	6 to 16 bits
Frame Sync Pattern	Up to 33 bits
Sub-Frame Sync	SFID

ANALOG INPUTS

Inputs	8 isolated 12-Bit ADC channels
Isolation Barrier	Maximum working insulation voltage VIORM 560 V peak 2500 V RMS for 1 minute per UL 1577
Channel-Independent Programmable Inputs	$\pm 10V$, $\pm 5V$, $\pm 2.5V$, $\pm 1.25V$, $\pm 0.64V$ 0 to 10V, 0 to 5V, 0 to 2.5V, 0 to 1.28V
Resistive Input Impedance	1 MΩ for each channel
Overvoltage Protection	$\pm 20V$ for each channel
Alarm	High and Low Thresholds per Channel
Noise Filter	Second-Order, Low-Pass Filter (LPF) for each channel

DIGITAL INPUTS

Inputs	16 isolated digital channels
Isolation Barrier	Maximum working insulation voltage VIORM 560 V peak 2500 V RMS for 1 minute per UL 1577
Channel Inputs	0V to 36V
Overvoltage Protection	$\pm 40V$ for each channel
Alarm	Overtemperature or Undervoltage
Noise Filter	Digital glitch filter provides debouncing and filtering of noisy sensor signals. The time constant of this filter can be programmable from 0 to 3ms

DIGITAL OUTPUTS

Channels	2 channels not isolated can be used for internal signaling
Electrical standard	TTL

IRIG-B Time Code Reader

Input Signal:	1 KHz ASK (Amplitude Shifting Key) amplitude modulated
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3 AXIS ACCELEROMETER

Range	± 2 g, ± 4 g, ± 8 g, ± 16 g
Resolution	4 mg/LSB

CANBUS ARINC-825

Data Rates	Up to 1 MBit/s
Protocols	Controller Area Network (ISO 11898) ARINC825 CANaerospace
Channels	One isolated Channel
Isolation Barrier	2500 V RMS
Time Stamping	IRIG-B time stamping for all messages

SERIAL ASYNC

Channels	One channel used as DTE (Data Terminal Equipment) device
Data Rates	Up to 1.5 MBit/s
Electrical standard	RS 485
Operation	Full duplex
Communication Format	Data bits: 5,6,7,8 Stop bits: 1, 1.5, 2 Parity: odd, even, no parity

UART TO USB

Description	USB to asynchronous serial data transfer interface
Data Rates	300 baud to 3 Mbaud

POWER SUPPLY

Input Voltage Range	10 VDC to 42 VDC
Overv & Reverse Voltage	$\pm 45V$

ENVIRONMENTAL

Temperature	Operation: -40 °C to $+85$ °C Storage: -54 °C to $+125$ °C
Humidity	0% to 90% Relative

DIMENSIONS

Size	110 x 70 x 30 length, width, height (mm)
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