L3’s PCM330E is a 4th generation, sub-miniature programmable data acquisition system, especially suited to today’s small weapons and UAS tactical and flight test applications.

L3 Telemetry & RF Products (L3 T&RF) PCM330E delivers advanced capabilities to acquire, convert and process today’s high data rate signals. The PCM330E provides a flexible, high performance platform, supported by state-of-the-art signal conditioning for the most demanding applications.

Its flight heritage based on the highly successful PCM300 & 600 families of data acquisition products (thousands have been provided for smart weapons, UAS and launch vehicle programs). The PCM330E brings unparalleled acquisition capabilities while continuing to set new standards for size, weight and power constrained applications.

Users may select from a multifunctional suite of acquisition modules to develop a data acquisition solution that meets tough modern day requirements in a cohesive and flexible fashion. Special design constraints were considered to deliver superior capabilities for high-speed serial data interfaces, video and fast sample rate analog and discrete data acquisition channels.

Easy configuration set-up, control and monitoring is accomplished via L3 T&RF VistaTec™, a telemetry and avionics user application, with an intuitive graphical user interface that is additionally coupled with L3 ground processing capabilities. This provides a complete fully integrated, end-to-end solution for the Instrumentation and Flight Test engineer.

Driven by customer demands for increased functionality, performance and channel density, the PCM330E is the encoder that customers are turning to when they need small size, high data rates, high performance tolerances and an unmatched history of successful in-flight performance.

FEATURES

- Small footprint/volume for compact telemetry systems requirements
- High speed operation up to 40 Mbps
- User programmable through PC interface
- Programmable signal conditioning
- Modular design for ease of expendability
- Designed to interface with a large variety of functional modules
- Embedded encryption available with NSA approval
- Configurable from 1 to 15 modules
ABBREVIATED SPECIFICATIONS

RECEIVER / COMMAND DECODER

Bit Rate
- 78.125 Kbps to 20 Mbps, Filtered
- 78.125 Kbps to 10 Mbps, Filtered Biphase
- 78.125 Kbps to 40 Mbps, Unfiltered

Bits/Word
- 8 to 16

Words/Frame
- 2048 max.

Frames/Major Frame
- 1024 max.

Frame sync
- 8 to 32-bits

Output Format
- NRZ-L, Bi0-L, RNRZ-L

Preamodulation Filter
- Linear phase; IRIG compliant waveform

Serial Channels
- 2 Sync
- 2 Async

Analog Accuracy/ADC Resolution
- SAM310 (36 ch) ±0.5%/12-Bits
- ASM310 (16 ch) ±0.5%/12-Bits
- FSM310 (8 ch) ±0.5%/16-Bits

Volume (encoder body)
- ~2.33 x 3.14 x (0.92 + X * 0.40)

Approximate Weights
- Power Supply (PSM320) ~0.48 lb., one per system
- Program Controller (PCM320) ~0.12 lb., one per system
- Top & Bottom Covers, Pads, Hardware ~0.20 lb., one set per system
- Guidance System Interface (GSI310) ~0.11 lb.
- Single-Ended Analog/Discrete (SAM310) ~0.11 lb.
- Analog Sensor (ASM310) ~0.11 lb.
- Filtered Sensor (FSM310) ~0.16 lb.

POWER REQUIREMENTS

Steady-State Input Voltage
- 17-40 VDC

Over and Reverse Voltage
- ±45 VDC Protection

EMI
- Compliant with MIL-STD-461E: CE101, CE102 (with shielded power cables), RE101, RE102, RS103
- MIL STD461F: CS106

Input Voltage Transients
- Compliant with MIL-STD-704A except for the power interrupt specification and 28 VDC spike specification (complies with MIL-STD 461F transient withstand)

Power Supply Maximum Output Power
- 80 W (all conditions)

Worst Case Module Loads
- PCM320 – 3W
- GSI310 – 0.5W
- SAM310 – 2.4W
- ASM310 – 2.3W + excitation
- FSM310 – 6.1W + excitation, default amplifier option

* ENVIRONMENTAL

Temperature
- Operating -40 °C to +85 °C
- Storage -54 °C to +125 °C

Vibration
- Random 20 grms, 20 to 2000 Hz
- Acceleration 45 g all axis

Shock
- 800 g, 0.5ms, half-sine shaped pulse

Humidity
- 1 to 98% Relative

* Environmental levels based on completed qualifications.