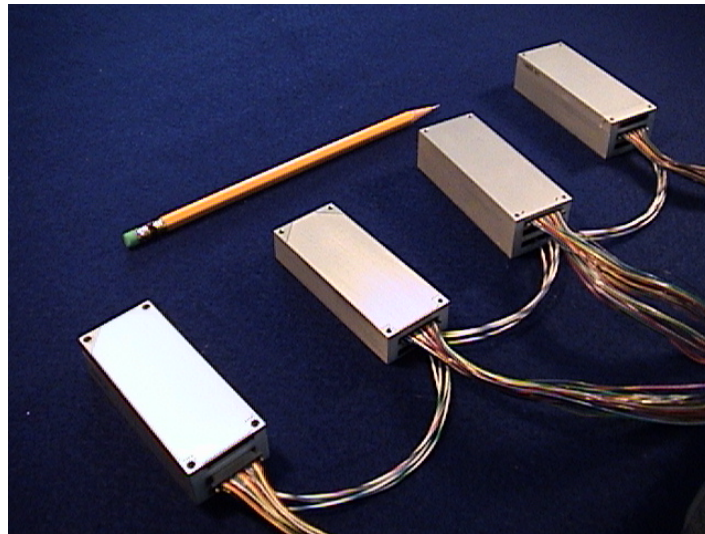


# QUAD TRON, INC.

## DISTRIBUTED MICRO PCM ENCODER SYSTEM

STANDALONE OR CONTROLLER / REMOTE UNITS  
UNITS ASSEMBLED FROM USER DEFINED MODULES  
SINGLE POINT PROGRAMMING  
FULLY PROGRAMMABLE SIGNAL CONDITIONING



### OTHER STACKABLE MODULES

4&12 CHANNEL THERMOCOUPLE W/REFERENCE JUNCTION BOX

32 CHANNEL, HIGH LEVEL, SINGLE ENDED MULTIPLEXER

DUAL BRIDGE SIGNAL CONDITIONER AND EXCITATION

IRIG TIME -B AND/OR GPS READER/GENERATOR

SOLID STATE RECORDER (FLASH MEMORY)

4 CHANNEL CURRENT SOURCE EXCITATION

0.25 OR 2.0 WATT TRANSMITTER

RS422 ASYNC MODULE

2540 W. MAPLE AVE.  
FEASTERVILLE, PA 19053  
PHONE: 215-757-4200

[www.quadtron.com](http://www.quadtron.com)

[info@quadtron.com](mailto:info@quadtron.com)

## **MICRO PCM ENCODER SYSTEM STANDALONE OR CONTROLLER/REMOTE**

### **Key Features and Advantages:**

Quad Tron's MICRO PCM Encoder, mates with a 0.25 or 2.0 watt Transmitter for an ULTRA RUGGED solution. Quad Tron's PCB capability along with the availability of fine pitch components and fine pitch connectors has allowed for these encoders to be fabricated at a level of integration beyond sub-miniature.

The Quad Tron MICRO PCM Encoder provides ultra small size in an environmentally rugged package. The same MICRO PCM Encoder can be configured as a standalone or controller or remote unit. Each controller or remote unit is configured with the BASE section (Isolated Power Supply, Logic and Pre-Mod Filter) that allows the customer to stack and interchange additional MICRO modules on top, for example, Multiplexers, Signal Conditioning, Thermocouples, Flash Memory Recorder and etc to meet customer requirements. The distributed bus from the MICRO Series Encoder can have the option to be interfaced on a CAIS Bus, using Quad Tron's CAIS Bus interface module that also operates with Quad Tron's CAIS compatible PCM2002 Series Encoders.

Mechanically the units can be stacked one on top of the other or used as separate units up to 100 feet in total length. Multiple remotes can be attached to one controller to increase the number of channels in the same frame format. A 4 wire distributed bus (2 twisted pairs) is used to electrically connect multiple units. This bus is LVDS or RS485. Programming of multiple connected units is performed through the controller to minimize wiring (single point programming.) The PCM Encoder is programmed via any Personal Computer Com Port with Windows based software provided. The unit accepts RS232 directly from the computer Com Port or RS422 format for remote programming.

### **Typical Two (2) Channel Configuration with Bridge Excitation:**

#### **Electrical Specifications:**

##### **Analog Inputs:**

2 Differential Inputs with full signal conditioning, simultaneous sampling, programmable.

Gain: High resolution programmable with 16,000 possible gains from 1 to 10,000.

Offset: High resolution programmable with 8,000 offsets from -5V to +5V.

Anti aliasing Filters: High resolution programmable with 8,000 cutoff frequencies from 5 Hz to 20 kHz.

Allowable input signal levels on either input from -5V to + 5V.

Maximum Input  $\pm$  40 volts will not damage any analog input.

2 Bridge Voltage Excitation Provided: Bipolar with  $\pm$  5V for a 10V, 350-ohm bridge.

## **PCM Encoder Operation Parameters:**

### Bit Rate:

Programmable, DC to 5 mega bps in a distributed configuration.  
Programmable, Up to 20 mega bps in standalone configuration.

### Bits Per Word:

6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, programmable.

### Synchronization Pattern:

Synchronization pattern and sub frame ID's are programmable.

### Frame Format:

Any frame format is programmable with sub frames and super commutation allowed. A counter may also be programmed within the frame format.

### PCM Code Outputs:

Single Ended PCM output 1  
RS422 PCM output 1  
Single Ended PCM output 2  
RS422 PCM output 2  
RS422 PCM output 3

One PCM code output is programmable to the following codes:

NRZ-L	BIO-L	
NRZ-M	BIO-M	RNRZ-L (randomized data)
NRZ-S	BIO-S	

### Other Outputs:

Zero Degree Clk,  
Word Pulse,  
Frame Pulse,  
TTL levels.

### Pre Mod Filter Output:

PMF output and return available at J1 connector. The PMF input is one of the programmable code outputs internally selected.

### ASYNCR Input (RS232 or RS422)

Input for ASYNCR data acquisition, (GPS, etc.)  
-Includes 1K word FIFO

### Power: Operates from 5Vdc to 16Vdc.

Power Ground is isolated from analog input ground and digital ground, (and excitation ground.)

**Mechanical:**

Size: Power Supply, Base3, Dual Bridge Signal Conditioner and Excitation:  
Length 3.50 inches; Width: 1.25 inches; Height: 1.180 inches  
Connectors: TYCO

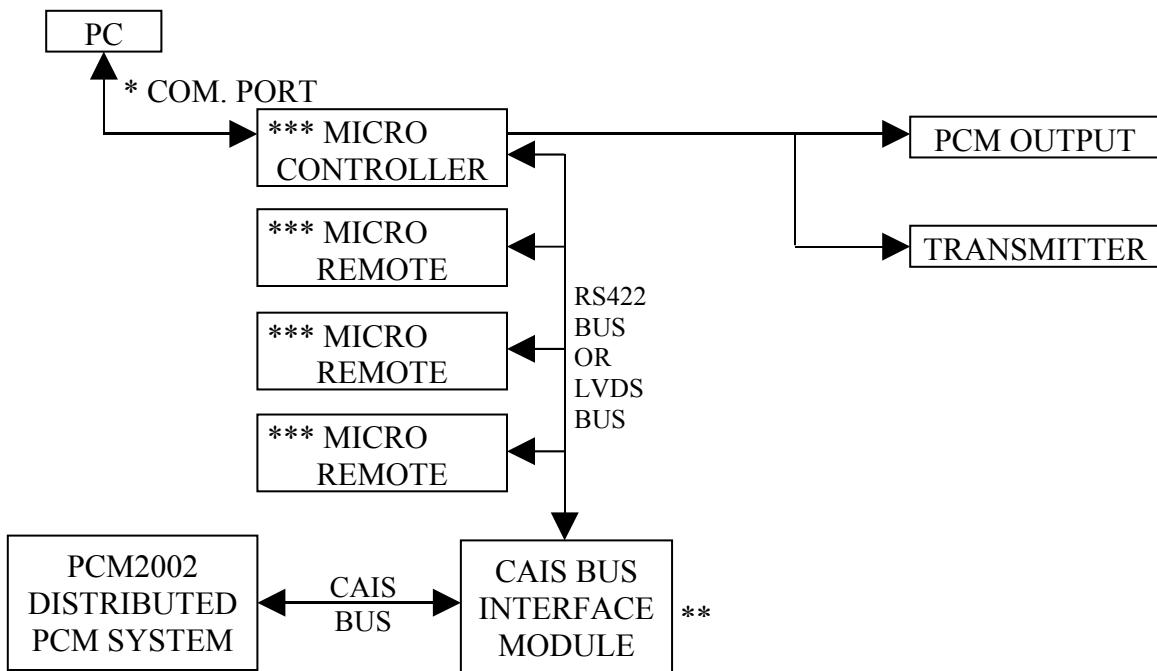
**Environmental:**

Operating Temperature: -40°C to +85°C  
Storage Temperature: -55°C to +125°C  
Humidity: Relative humidity of 85% for two hours at 65°C.  
Altitude: Unlimited  
Vibration: 20g's RMS from 5 to 2000Hz in each major axis.  
Acceleration: Constant acceleration of 100g's in each axis.  
Shock: 100g's for 10m second in each major axis.

**OTHER STACKABLE MODULES BASED ON CUSTOMER REQUIREMENTS:**

Solid State Recorder (Flash Memory)  
0.25 or 2.0 Watt Transmitter  
16 Channel, High Level Input or 8 Differential  
4 & 12 Channel Thermocouple  
IRIG TIME-B and/or GPS Reader/Generator  
RS422 ASYNC Module  
2 Channel Programmable, Gain Amplifier

2 Channel Bridge Voltage Excitation  
Output Filters, 2 Pre Mod Filters  
16 Channel Bi-Level Module  
32 Channel, High Level Multiplexer  
USB2 Read Unit  
CAIS Bus Interface  
4 Channel Current Source Excitation



\* SINGLE POINT PROGRAMMING.  
\*\* OPTIONAL CAIS BUS.  
\*\*\* MODULAR