

# PC03V

## VMEbus Time Code Reader

### KEY FEATURES

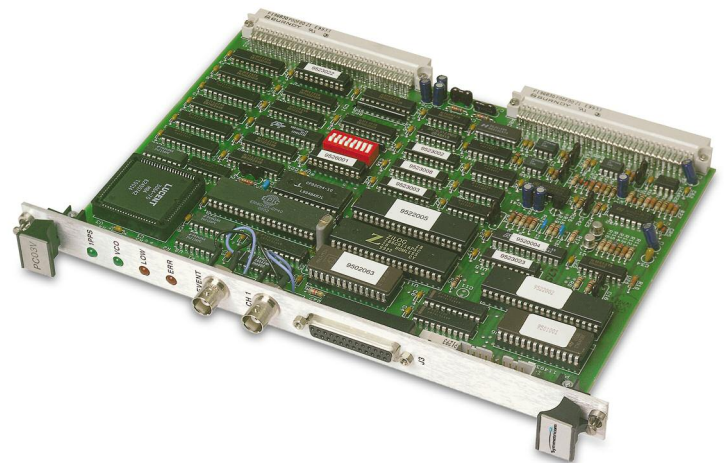
- Translates IRIG A, IRIG B, IRIG G, 2137, XR3, NASA 36
- Translates Codes Forward, Reverse, High Speeds, Low Speeds
- Accepts Carrier Frequencies from 125 Hz to 500 kHz
- Zero Latency Access to Decoded Time
- Two Programmable Time Coincident Strokes/Interrupts
- Programmable Heartbeat Pulse/Interrupt
- External Event Time Capture/Interrupt

Symmetricom's PC03V is a double height VMEbus module designed to translate serial time code signals and to provide additional capabilities not normally found in a single board time code reader. Any of the six most commonly used time codes are translated in either the forward or reverse direction and at tape speeds that are slower or faster than real time. This makes the PC03V an ideal unit for use in tape search applications.

Time output resolution depends on the code type and whether the time code is coming in at the real time rate (i.e., from a satellite receiver or a central timing facility) or at a non-real time rate (i.e., from a magnetic tape recorder). When processing a time code at the real time rate, a synchronized 1 MHz time base reference maintains time of day (TOD) down to a resolution of 1 microsecond.

In the case of a non-real time rate, the PC03V maintains TOD to carrier cycle resolution (e.g., 1 mS for IRIG B with a 1 kHz carrier).

High speed time tagging applications require minimal access time (the time from the data request until the requestor receives the data – termed latency). To minimize this latency, the PC03V continually maintains current time from microseconds to days. In response to either a VMEbus READ at the PC03V Base Address Location (CAPTR, time capture register) or an external time capture strobe, the current time is transferred to, and held in, four 16 bit output registers for subsequent access across the bus. Internal handshake protocol logic ensures that the transfer does not take place during state changes.



VMEbus Time Code Reader

## PC03V Specifications

### ELECTRICAL SPECIFICATIONS

- Time code input
  - Code formats: IRIG A, B, G; XR3, 2137, NASA 36
  - Carrier range: 125 Hz to 500 kHz
  - Code direction: Forward and reverse
  - Modulation ratio: 3:1 to 6:1
  - Input amplitude: 500 mV to 10 V P-P
  - Input impedance: >10K $\Omega$
- Time data
  - Bus request resolution:
    - 4 ms - XR3
    - 1 ms - IRIG B, 2137 & NASA 36
    - 100  $\mu$ s - IRIG A
    - 10  $\mu$ s - for IRIG G
  - Bus request latency: Zero
  - Time format: Binary coded decimal (BCD)
- Timing functions
  - Heartbeat: TTL, active low, programmable periodic
  - Strobes 1 & 2: TTL, active high or low, 1  $\mu$ S to Hours
  - Event capture: TTL, positive or negative edge triggered, 50 nS minimum width
- VMEbus interface
  - Specification: Meets VMEbus Spec, Revision C.1
  - Size: 6Ux4HP (160 mm); B-size, single width
  - Address space: A16, AM codes \$29 and \$2D, 256 bytes
  - Data transfer: D16
  - Interrupter: D08(O), I(1-7), ROAK
  - Power:
    - +5 VDC @ 1.7A
    - +12 VDC @ 100 mA
    - 12 VDC @ 100 mA

### ENVIRONMENTAL SPECIFICATIONS

- Temperature: 0°C to 50°C
- Humidity: 10% to 80%, non-condensing
- Connector types
  - Time code inputs: BNC
  - Event input: BNC
  - Signal I/O: 25 pin 'D' socket; P2, rows A & C
  - PDC output: 20 pin header



**SYMMETRICOM, INC.**  
2300 Orchard Parkway  
San Jose, California  
95131-1017  
tel: 408.433.0910  
fax: 408.428.7896  
info@symmetricom.com  
www.symmetricom.com