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Find the *Microsemi / Symmetricom / Datum TTM635VME-VCXO* at our website: *Click HERE*

Symmetricom

TTM635/637VME & TTM350/357VXI

VME/VXI Time & Frequency Processors

KEY FEATURES

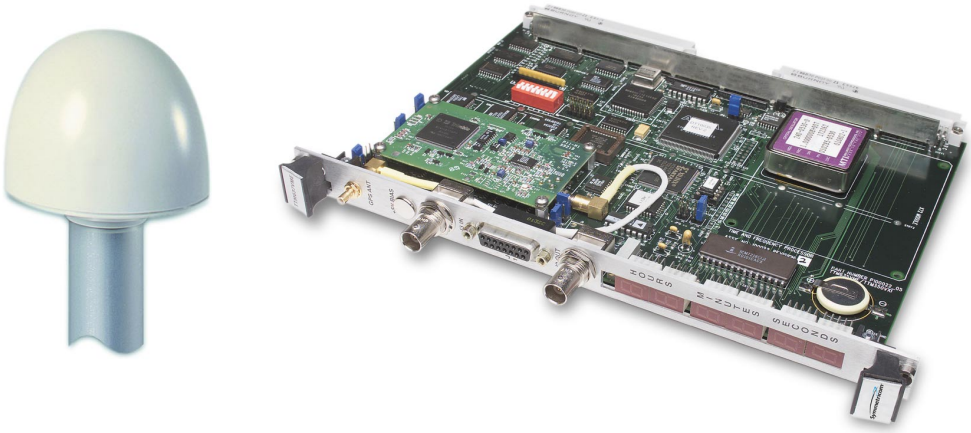
- 6U, Single Width VME or VXI Module
- Optional VXI C-Size Configuration
- GPS or Time Code Inputs
- Time Code Output
- 1 PPS Pulse Rate Output/Interrupt
- Frequency Outputs (1, 5, 10 MHz)
- External Event Capture/Interrupt
- Programmable Periodic Output/Interrupt
- Programmable Time Strobe Output/Interrupt
- Battery Backed Clock
- Extensive Driver Support

Symmetricom's TTM635/637VME and TTM350/357VXI time and frequency processor modules provide precision time and frequency reference to the host computer and peripheral data acquisition systems. Time is acquired from either the GPS satellites using a supplied antenna/receiver (TTM637VME and TTM357VXI only) or from time code signals, typically IRIG B. Integration of the module is facilitated with optional drivers for several operating systems (see Options). Time is displayed on the front panel (hours, minutes, seconds) via LED digits.

Central to the operation of the module is a disciplined 10 MHz oscillator and 100 nanosecond clock. Current time (days to 100 nanoseconds) can be accessed across the bus with zero latency, which allows for very high speed time requests. The oscillator is rate matched (disciplined) to the input time source and drives the precision 10 MHz frequency output and time code generator circuitry. If the time source is lost, the module will continue to maintain time (flywheel). If power is lost, a +/-10 PPM battery backed clock is available to maintain time.

Both time code generation and translation are supported. The generator supplies IRIG B or IRIG H time code output that is synchronized to the input time source. The translator decodes IRIG B, 2137 or XR3 time code inputs.

An event time capture feature provides a means of latching the time of an event input and/or generating a bus interrupt that is coincident with an external TTL pulse. The module can also be programmed to generate a periodic pulse rate/interrupt as well as to generate a strobe/interrupt at a single predetermined time.



VME Time & Frequency Processor (shown with optional antenna and on-board receiver, TTM637VME).

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TTM635/637VME - TTM350/357VXI Specifications

ELECTRICAL SPECIFICATIONS

- Real time clock
  - Bus request resolution: 100 nanoseconds
  - Bus request latency: Zero
  - Major time format: Binary or BCD
  - Minor time format: Binary
- Time code translator
  - Time code formats: IRIG A, IRIG B (modulated or DCLS)
    XR3, 2137 (modulated only)
  - Modulation ratio: 3:1 to 6:1
  - Input amplitude: 500 mV to 5 V P-P
  - Input impedance: >10KΩ (AC coupled)
- Time code generator
  - Time code format: IRIG B (modulated or DCLS)
    IRIG H (DCLS only)
  - Output amplitude: 0 V to 10 V P-P (adjustable)
  - DC level shift: TTL/CMOS
- Timing functions
  - Heartbeat (TTL, 50Ω): Programmable periodic
    2.3 mHz to 2.5 MHz
  - Time strobe (TTL, 50Ω): Programmable, 1mS through hrs
  - Event capture (TTL, 50Ω): 100 nS resolution, zero latency
  - 1 PPS pulse rate (TTL, 50Ω): Positive edge on-time
- Disciplined oscillator
  - Frequency: 10 MHz
  - Outputs (50): 1, 5, or 10 MHz (selectable)
  - Rate accuracy
    - Standard VCXO: 5.0E-8 short term (tracking)
      5.0E-7/day long term (flywheeling)
    - Optional oven oscillator: 2.0E-9 short term (tracking)
      5.0E-8/day long term (flywheeling)
  - Sync sources: GPS, time code, 1 PPS, 10 MHz
- VME/VXI Bus
  - Size: 6Ux160 mm; B size, single width
    Optional VXI-C configuration
  - Address space: A16, AM codes $29 and $2D,
    64 bytes
  - Data transfer: D16
  - Interrupter: D08(O), I(1-7), ROAK
  - Power: +5 VDC @ 1.5 A
    +12 VDC @ 50 mA
    +12 VDC @ 250 mA (GPS)
    -12 VDC @ 30 mA
- GPS Subsystem (bc637VME & bc357VXI only)
  - Time accuracy: <±1 microsecond
  - Position accuracy: 10 to 20 meters SEP (SA off)
  - Maximum velocity: 300 meters/second
    (1,080 KPH)
  - Number of channels: 8
  - Receiver frequency: 1.575 GHz (L1, C/A code)
  - Time to first fix: Brief power off: 1.5 min.
    (1, 3 and 4 satellites)
  - Solution modes: 1, 3 and 4 satellites
- Environment

	Module	Ant/Rec
Temperature		
Operating:	0°C to 70°C	-30°C to + 70°C
Storage:	-50°C to 125°C	-55°C to +100°C
Humidity		
Operating:	5% to 95%*	95%
	*non-condensing	

DRIVERS

- VME VxWorks Driver
- VME SUNOS Version 4.x Driver
- VME Solaris Version 2.x Driver
- VME Generic UNIX System V Driver
- VME HP Unix Version 9/10 Driver
- VME HP RT 1.x/2.x Driver

OPTIONS

- GPS Upgrade Kit
- Spare or Extended Antenna Cable***
- Spare RF Antenna
- Spare GPS Receiver
- Lightning Arrestor
- ACUTIME GPS Antenna/Receiver
- ACUFIRM GPS Firmware
- VXI C-size Extender
- 'D' Connector (J1) to BNC Adapter
- Ovenized Crystal Oscillator****
- Isolation Transformer Time Code Input
- Conformal Coat
- Ruggedized Version

ORDERING INFORMATION

• TTM635VME-VCXO	VME IRIG board w/Standard Crystal Oscillator
• TTM637VME-VCXO*	VME GPS board w/Standard Crystal Oscillator
• TTM350VXI-VCXO	VXI IRIG board w/Standard Crystal Oscillator**
• TTM357VXI-VCXO*	VXI GPS board w/Standard Crystal Oscillator**
• TTM635VME-OCXO	VME IRIG board w/Ovenized Crystal Oscillator
• TTM637VME-OCXO*	VME GPS board w/Ovenized Crystal Oscillator
• TTM350VXI-OCXO	VXI IRIG board w/Ovenized Crystal Oscillator**
• TTM357VXI-OCXO*	VXI GPS board w/Ovenized Crystal Oscillator**
• TTM637VME-L-VCXO*	VME GPS board w/Acutime antenna/receiver option

* includes GPS antenna/receiver and 50' (15 m) cable

** please specify VXI-B or VXI-C to ensure system compatibility

*** contact factory regarding longer cabling requirements

**** factory installed option

VME and VXI cards all use a common design. The main difference is that the VXI modules do not include the P2 bus connector. The VXI-C module is functionally identical to the VXI-B module, the only difference being the length of the module. When ordering, please specify VME, VXI-B or VXI-C to ensure system compatibility.



VME and VXI cards

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