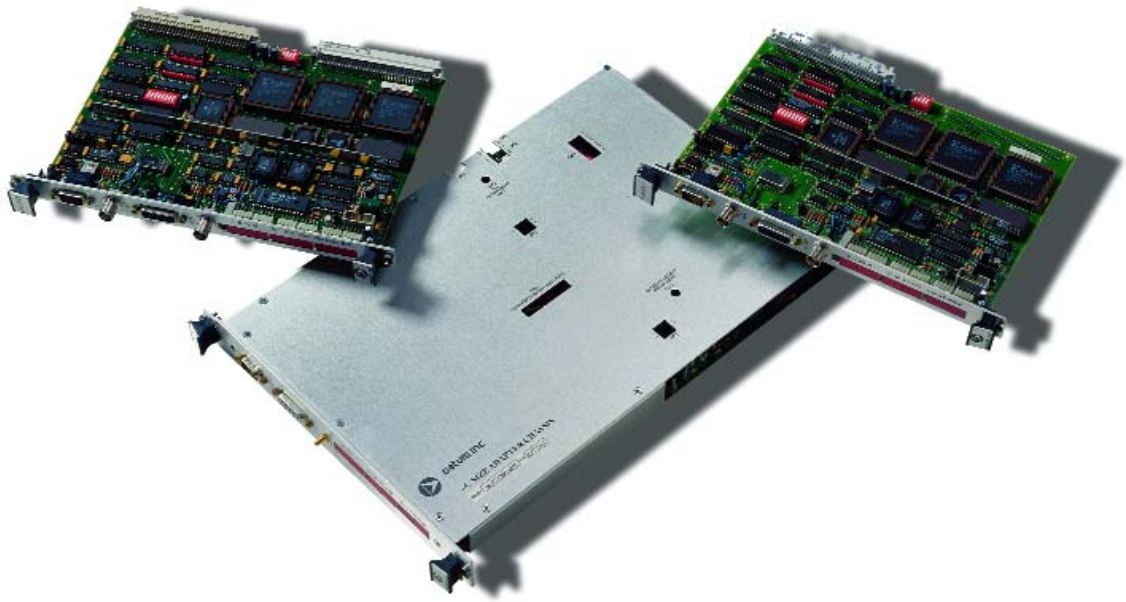
BUS LEVEL PRODUCTS

VME, VXI, PCI, PC/AT/XT, Sbus, SBX

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

VME/VXI Time & Frequency Processors



Overview

The Datum bc635/637VME and bc350/357VXI 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 (bc637VME and bc357VXI 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.

Models bc635/637VME - bc350/357VXI

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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 B (modulated or DCLS) IRIG A (DCLS only) 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)
Modulation Ratio	3:1
Output Amplitude	0 V to 10 V P-P (adjustable)
DC Level Shift	TTL/CMOS

Timing Functions

Heartbeat (TTL/50)	Programmable Periodic 2.3 mHz to 2.5 MHz
Time Strobe (TTL/50)	Programmable, 1mS through hrs
Event Capture (TTL)	100 nS resolution, zero latency
1 PPS Pulse Rate (TTL/50)	Positive edge on-time

Disciplined Oscillator

Frequency	10 MHz
Outputs (50)	1, 5, or 10 MHz (selectable)
Rate Accuracy:	
Standard VCXO	5E-8 short term (tracking) 5E-7/day long term (flywheeling)
Optional Oven Oscillator	2E-9 short term (tracking) 5E-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

Specifications subject to change without notice.

GPS Subsystem (bc637VME & bc357VXI only)

Time Accuracy	<±2 microseconds
Position Accuracy	10 to 20 meters SEP (SA off)
Maximum Velocity	300 meters/second (1,080 KPH)
Number of Channels	6
Receiver Frequency	1.757 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

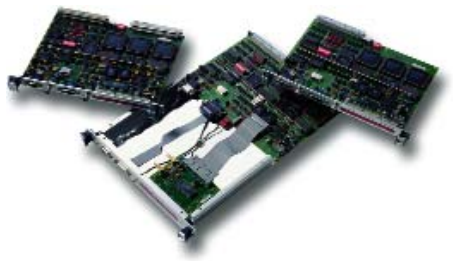
Temperature:	Module	Ant/Rec
Operating	0° C to 70° C	-30° C to + 70° C
Storage	-50° C to 125° C	-55° C to +100° C
Humidity:		
Operating	5% to 95%* *non-condensing	95%

Options

IRIG A Decoding
NASA 36 decoding
ACUFIRM GPS Firmware**
ACUTIME GPS Antenna/Receiver**
Antenna Cable
Extender Modules
Isolation Transformer Time Code Input
Ovenized Crystal Oscillator
'D' Connector (J1) to BNC Adapter

S4Driver	Driver for SUNOS Version 4.x
S5Driver	Driver for Solaris Version 2.x
UVDriver	Generic UNIX System V Driver
VX5DRV	Vx Works Real Time OS Driver
LVDRIVER	LabVIEW Driver

**Part of upgrade from bc635VME to bc637VME
or from bc350VXI to bc357VXI



VME and **VXI** cards all use 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.

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