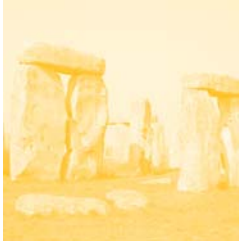


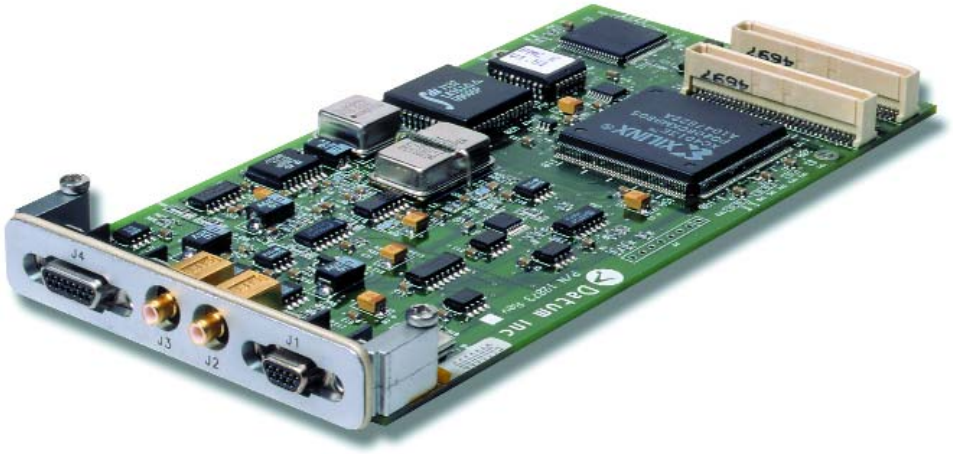
BUS LEVEL PRODUCTS

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

Features

PCI Local Bus Operation
GPS or Time Code Inputs
Time Code Outputs
Pulse Rate Outputs
Frequency Outputs (1, 5, or 10 MHz)
External Event Capture Register/Interrupt
Programmable Periodic Output/Interrupt
Programmable Time Strobe Output/Interrupt
10 mm Stacking Height
Micro-Miniature or SMB Output Connectors
Fully Supports "BUSMODE" Enabling
IEEE 1344 Compliant IRIG B Time Code

PMC Time & Frequency Processor



Overview

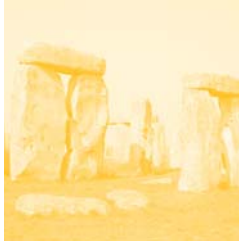
The Datum bc635/637PMC receiver module provides precision time and frequency reference to the host computer system and peripheral data acquisition systems. Time is acquired from either the GPS satellites using a supplied antenna/ receiver (bc637PMC only) or from time code signals, typically IRIG B. Integration of the module is facilitated with optional drivers for Windows 95/98/2000/XP, Linux Solaris or VxWorks.

Central to the operation of the module is a disciplined 10 MHz oscillator and 100 nanosecond clock. Current time (days to 100 nS) can be accessed across the PCI 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 time is lost, the module will continue to maintain time (flywheel).

Both time code generation and translation are supported. The generator supplies IRIG B time code output that is synchronized to the input time source. The translator decodes IRIG A, IRIG B or NASA 36.

An Event Time Capture feature provides a means of latching time for an event input. The module can also be programmed to generate a periodic pulse rate as well as to generate a single time strobe at a predetermined time.

Model bc635/637PMC



BUS LEVEL PRODUCTS

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

Specifications

Real Time Clock

Bus Request Resolution	100 nanoseconds
Latency	Zero
Major Time Format	Binary or BCD
Minor Time Format	Binary

Time Code Translator

Time Code Formats	IRIG A, IRIG B*, NASA 36 (Modulated or DCLS)
Time Accuracy	<5 µS (modulated) <1 µS (DCLS)
Modulation Ratio	3:1 to 6:1
Input Amplitude	500 mV to 5V P-P
Input Impedance	>10KΩ

* See IEEE 1344 Compliance below

Time Code Generator

Time Code Format	IRIG B*
Modulation Ratio`	3:1
Output Amplitude	4 V P-P (fixed) into 50Ω
DC Level Shift	TTL/CMOS

* See IEEE 1344 Compliance below

IEEE 1344 Compliance

The translator processes the 27 control function bits of IRIG B time code as set forth in IEEE 1344 (see page 52 of this catalog). The 27 control function bits provided by the input IRIG B time code are output in the generated IRIG B time code one time frame after received. If the input IEEE 1344 bits are not present in the input IRIG B time code, the last two digits of year are placed in bits 1-9 of the control function field of the generated IRIG B time code.

Timing Functions

Heartbeat Clock (TTL, 50Ω)	Programmable Periodic, <1 Hz to 250 kHz
Time Strobe (TTL, 50Ω)	Programmable 1 µSec through hours
Event Capture (TTL, 50Ω)	100 nSec resolution, zero latency
1 PPS Pulse Rate (TTL, 50Ω)	Positive edge on-time

Disciplined Oscillator

Frequency	10 MHz
Outputs	1, 5, or 10 MHz (selectable)
Rate Stability	5E-8 short term 'tracking' 5E-7 /day long term 'flywheeling'
Sync Sources	GPS, Time Code, 1 PPS, 10 MHz

PCI Local Bus™

Specification	Fully compliant with IEEE P1386/Draft 2.0 and IEEE P1386.1/Draft 2.0
Size	Standard (2.913" x 5.866")
Stacking Height	10 mm
Device Type	PCI Target, 32 bit, 5V signalling
Data Transfer	Byte, Half Word, Word
Interrupt Levels	Automatically Assigned (PnP)
Power	+5 VDC @ 350 mA

GPS Subsystem (bc637PMC only)

Time Accuracy	<1 µSecond
Position Accuracy	10 to 20 meters SEP (SA off)
Maximum Velocity	300 meters/sec (1,080 KPH)
Number of Channels	6
Receiver Frequency	1.575 GHz (L1, C/A code)
Time to First Fix	Brief power off: 1.5 minutes (1, 3, and 4 satellites) Worst case: 5 to 15 minutes
Solution Modes	1, 3, and 4 satellites

Connector Types

J1 - GPS Interface	9-pin micro 'DP'
J2 - Time Code In	SMB socket
J3 - Time Code Out	SMB socket
J4 - Module I/O	15-pin micro 'DP'

Environment

	Module	Ant/Rcvr
Temperature:		
Operating	0° C to 70° C	-40° C to 70° C
Storage	-30° C to 85° C	-55° C to 85° C
Humidity:		
Operating	5% to 95%*	95%

*non-condensing

Options

ACUTIME GPS Firmware**
ACUTIME Antenna/Receiver**
Extended Length GPS Antenna Cable
Isolation Transformer Time Code Input
'D' Connector (J1) to BNC Adapter
15 pin high-density 'DP' to 15 pin 'DP' Adapter Cable
Drivers: Windows 95/98/2000/XP, and Linux
LabVIEW, Solaris, VxWorks
Contact factory for additional driver support

**part of upgrade from bc635PMC to bc637PMC

Specifications subject to change without notice.

Datum-TT&M • 34 Tozer Road • Beverly, MA 01915-5510 • Tel: +1-978-927-8220 • Fax; +1-978-927-4099
USA Toll Free: 1-800-544-0233 • Web: www.datum.com • E-mail: ttmsales@datum.com