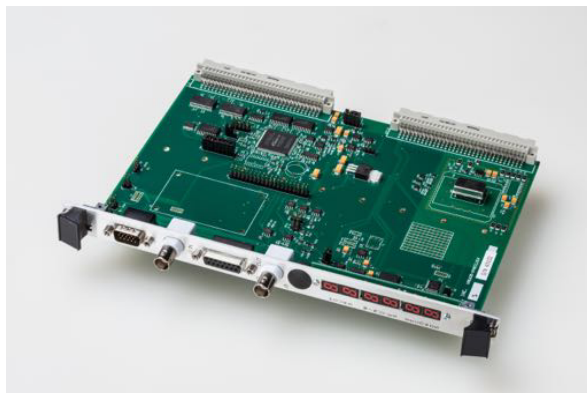# VME635091-SYNCCLOCK

VME Time & Frequency Processor
P/N 011000157
KEY FEATURES

- 6U, Single Width VME
- Time Code Inputs
- Time Code Output
- 1PPS Pulse Rate Output/Interrupt
- Frequency Outputs (1, 5, 10 MHz)
- External Event Capture/Interrupt
- Programmable Periodic Output/Interrupt
- Programmable Time Strobe Output/Interrupt

Brandywine Communications' VME635091-SYNCCLOCK time and frequency processor module provides precision time and frequency reference to the host computer and peripheral data acquisition systems. Time is acquired from time code signals, typically IRIG B. 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).

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 B 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 asto generate a strobe/interrupt at a single predetermined time.

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)
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)
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 1PPSpulserate(TTL, 50Ω): Positive edge on-time

Disciplined oscillator

Frequency:	10 MHz
Outputs (50):	1, 5, or 10 MHz (selectable)

Rate accuracy

Standard oven oscillator:	2.0E-9 short term (tracking) 5.0E-8/day long term (flywheeling)
Sync sources:	Time code, 1PPS

VME Bus

Size:	6Ux160 mm; B size, single
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

Environment

Temperature	**Module**
Operating:	0°C to 70°C
Storage:	-50°C to 125°C
Humidity	
Operating:	5% to 95%* *non-condensing

Options

- Isolation Transformer Time Code Input

Connectors

J1 Timing I/O: 15-pin 'DS'

Pin	Direction	Signal
1	Input/Output	Ovenized Oscillator Output
2		Ground
3	Output	Strobe
4	Output	1 PPS
5	Output	Time Code (AM)
6	Input	External Event
7	Input	Time Code
8		Time Code Return/Ground
9	Output	Oscillator Control Output
10		Not Used
11	Output	Time Code (DCLS)
12		Ground
13	Output	1,5,10 MHz
14	Input	External 1 PPS
15	Output	Periodics

J2 Out Time Code: BNC
J3 In Time Code: BNC
J4 Timing I/O: 15-pin 'DP'
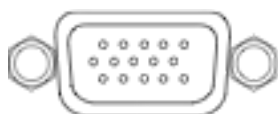
Pin	Direction	Signal
1	Input	RS-422 Rx(+)
2	Input	RS-422 Rx(-)
3	Output	DCLS Out(+)
4	Output	DCLS Out(-)
5		Ground
6		Not Used
7		Not Used
8	Input	DCLS In (+)
9	Input	DCLS In (-)
10		Ground
11		Not Used
12		Not Used
13		Not Used
14		Ground
15		Not Used

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