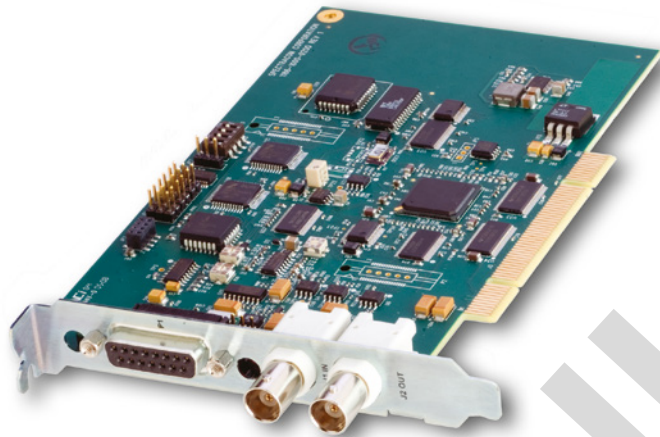


Timecode Reader/Generator

Model TPRO-PCI-66U



- PCI local bus operation
- PCI-X compatible
- Universal PCI bus signaling (3.3V and 5.0V/33 or 66 MHz)
- Autodetects IRIG-A, B, or NASA36 time code inputs; optional 1PPS input
- $\pm 1\text{ms}$ accuracy to input
- Zero latency time reads
- Freewheel capability
- IRIG-B timecode generator
- External event time capture/interrupt
- Programmable frequency output/interrupt
- Programmable alarm output/interrupt

The TPRO-PCI-66U is a synchronized timecode reader/generator card. The input timecode format (IRIG-B, IRIG-A, or NASA36) is automatically detected and synchronization to the input timecode is automatic, enabled/disabled through the PCI bus.

The board can synchronize to an external 1PPS in lieu of an incoming timecode. The TPRO-PCI-66U provides precise, zero latency time via the PCI bus on 33 and 66 MHz systems. With a 32-bit data interface, the unit offers better than 1 μs data access. Universal signaling allows the unit to function in either 5.0V or 3.3V backplanes.

The 10 MHz oscillator, central to the TPRO-PCI-66U timing functions, permits the board to increment time (“freewheel”) based on the last known reference in the absence of an input source. When the timing reference is re-established, the board synchronizes automatically.

The TPRO-PCI-66U may be used as an IRIG-B timecode generator. The user simply sets the initial time through the PCI bus. A propagation delay offset may be specified to compensate for cable delays. Other features include multiple event time-tag TTL inputs, a programmable periodic pulse or “heartbeat,” and a programmable “alarm” start/stop time output.

Key to the TPRO-PCI-66U functionality is the ability to generate interrupts. With one of the many available Orolia driver packages, the user may configure the card, using interrupt-driven algorithms that support our customers’ unique applications. The software packages include a demonstration program to exercise the board’s functionality as well as a clock utility to synchronize the host system.



Specifications

Timecode Input

Code Format (Autodetect): IRIG-A (A132), IRIG-B (B122), NASA36

Amplitude: 1.2 Vp-p min, 8.0 Vp-p max

Polarity: Detected Automatically

Modulation Ratio: 2:1 min, 3:1 typ, 4:1 max

Input Impedance: >10K Ohms

Input Time Accuracy: Better than 100 ppm (not suitable for tape playback)

Common Mode voltage: Differential input, ± 100 V max

Timecode Output

Code Format: IRIG-B (B122)

Amplitude: 2.6 Vp-p typical

Modulation Ratio: 3:1

Output Impedance: 600 Ohms

1PPS Sync Input

Input Voltage: 2.4 V min, 16.0 V max (high)

Rise/Fall Time: 500 nS max

Trigger Edge: Rising

1PPS Accuracy: Must be 100 ppm or better

On-Board Clock

Resolution: 1 μ S

Range: 366:23:59:59:999999

Date Format: Integer (001-366)

Propagation Delay Correction:

-1000 μ S through +8999 μ S

Propagation Delay Setting: Programmed over bus

Synchronization Time: <20 seconds

Stability: Disciplined to timecode: 2×10^{-7}

Undisciplined: 1×10^{-6}

Time-Tag Input

Input Voltage:

-0.5 V min, +0.8 V max for logic 0

+2.0 V min, +5.5 V max for logic 1

Tags rising edge

Input Current: <5 mA for logic 0 and logic 1

Rise/Fall Time: 500 nS max

Repetition Rate: 1000 events per second maximum

Timing Resolution: 1 μ S

Heartbeat Output

Output Voltage:

High: 3.8 V min at 6 mA

Low: 0.4 V max at -6 mA

Wave Shape: Pulse or squarewave (programmable)

Pulse Width: 150 nS min, 450 nS max

Pulse Polarity: Negative

Squarewave: 45%-55%

Timing: Falling edge on-time

Range: 1.000 μ S to 21.845 mS in 1 μ S steps (1 MHz to 45.7771 Hz)

Power-on Default Rate: 100 PPS (Pulse)

Time Match Output

Output Voltage:

High: 3.8 V min at 6 mA

Low: 0.4 V max at -6 mA

Settability: 1 μ S

Bus Interface

PCI Local Bus

3.0 compliant

PCI-X compatible

32-bit data interface better than 1 μ s data access

General

Size: H 106.7 mm, L 175.26 mm

Power (from bus):

+5 Vdc @ 425 mA max

+12 Vdc @ 225 mA max

-12 Vdc @ 50 mA max

Operating Temperature: -30° to +70° C (-22° to + 156° F)

Storage Temperature: -40° to +80° C (-40° to +176° F)

Connectors: BNC and DB-15

Agency Approvals



Drivers

Linux* 64/32 bit, Windows 64/32 bit, Solaris 10

*Contact Sales for specific kernel versions.

Ordering Information

TPRO-PCI-66U Timecode Reader/Generator (+ option #)

Option

-CC: Conformal Coating