



Timecode Reader/Generator

Model TPRO-IP



- **IRIG-A and IRIG-B timecode reader**
- **IRIG-B timecode generator**
- **Freewheel capability**
- **Time-Tag input**
- **Programmable start/stop time output and interrupt capability**

The TPRO-IP performs timing and synchronization functions referenced to an input timecode signal. The board synchronizes its on-board clock to the incoming timecode. The on-board clock's time is also provided as an IRIG-B output. Other features include a time-tag TTL input and a programmable "match" start/stop time output (with interrupt capability).

The board continues to increment time ("freewheel") in the absence of an input timecode. Thus, by setting the initial time via the bus, the board can be used as an IRIG-B timecode generator.

The input timecode is automatic and can be enabled/disabled via the bus. A propagation delay offset can be specified to compensate for cable delays. The timecode input is an amplitude modulated sine wave. An automatic gain control (AGC) circuit permits a wide range of input amplitudes.

The timecode input is differential; the board does not reference this signal to ground. A single-ended input (referenced to ground) is also acceptable.



Specifications

Timecode Input

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

Amplitude: 1.2 V_{p-p} min, 8.0 V_{p-p} max

Polarity: Detected automatically

Input Impedance: <10K Ohms

Input Time Accuracy: Better than 100 ppm

Common Mode Voltage: Differential input, 100 V max

Timecode Output

Code Format: DC level shift IRIG-B (B002)

Amplitude (Mark): 2.6 V_{p-p} typical

Output Impedance: 600 Ohms

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
(1 μ S resolution)

Propagation Delay Setting: Programmable

Synchronization Time: <80 seconds

Stability:

Disciplined to timecode: 5×10^{-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 1

Rise/Fall Time: 500 nS max

Repetition Rate: 2000 events per second maximum

Timing Resolution: 1 μ S

Match Output

Output Voltage:

High: 3.8 V min at 6 mA

Low: 0.4 V max at –6 mA

Settability: 1 μ S

General

Size: H 99.06 mm, L 45.72 mm (industry pack size)

Power (from bus):

+5 V \pm 5%, 100 mA typical

150 mA max

+12 V \pm 5%, 100 mA max

Operating Temperature: 0° to +70° C (32° to +158° F)

Storage Temperature: –40° to +60° C (–40° to +140° F)

Relative Humidity: 0% to 95%, non-condensing

Ordering Information

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