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 Vp-p min, 8.0 Vp-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 Vp-p typical
Output Impedance: 600 Ohms

On-Board Clock
Resolution: 1 μS
Date Format: Integer (001–366)
Propagation Delay Correction: −1000 μS through +8999 μS (1 μS resolution)
Propagation Delay Setting: Programmable
Synchronization Time: <80 seconds
Stability:
  Disciplined to timecode: 5 x 10⁻⁷
  Undisciplined: 1 x 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 μS

Match Output
Output Voltage:
  High: 3.8 V min at 6 mA
  Low: 0.4 V max at –6 mA
Settability: 1 μS

General
Size: H 99.06 mm, L 45.72 mm (industry pack size)
Power (from bus):
  +5 V ±5%, 100 mA typical
  +12 V ±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
Model TPRO-IP