Model TPRO-IP

Version 1.3

Multi-function Timecode Reader/Generator

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.

Features

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

Specifications

Timecode Input

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

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

Polarity
Detected automatically

Input Impedance
>10K ohms

Input Time Accuracy
Better than 100 ppm

Common Mode Voltage
Differential input, 100V max

Timecode Output

Code Format
dc level shift IRIG-B (B002)

Amplitude (mark)
2.6Vp-p typical

Output Impedance
600 ohms

Match Output

Output Voltage
3.8V min at 6mA (high)
0.4V max at –6mA (low)

Setability
1uS

Time-tag Input

Input Voltage
–0.5V min, +0.8V max for logic 0
+2.0V min, +5.5V 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
2000 events per second max

Timing Resolution
1 uS

General

Size
99.06 mm (3.9") x 45.72 mm (1.8")
(Industry Pack size)

Bus Type
Single, 16-bit

Power
+5V ±5%, 100mA typical
150 mA max
+12V, ±5%, 100mA max

Operating Temperature
0 to +70 C

Storage Temperature
–40 to +60 C

Humidity
0 to 95% non-condensing

On-board Clock

Resolution
1 uS

Range
366:23:59:59:999999

Date Format
Integer (001–366)

Propagation Delay Correction
–1000 uS through +8999 uS
(1 uS resolution)

Propagation Delay Setting
Programmable

Synchronization Time
<8 seconds

Stability
Disciplined to timecode: 5×10^{-7}
Undisciplined: 1×10^{-6}

Ordering Information

Model TPRO-IP (+ option #)

Options

–M
Syncs to 1PPS input instead of time code

–O
High performance oscillator

Drivers

All major operating systems are supported

KSI
A Division of DSPCon, Inc.

KSI Corp. 380 Foothill Road, Suite 102 Bridgewater, NJ 08807 (866) KSI-KSI3 Fax (866) 593-2080 E-mail: info@ksi-corporation.com

www.ksi-corporation.com