



Timer/Counter/Analyzer with 2.8 nanosecond resolution

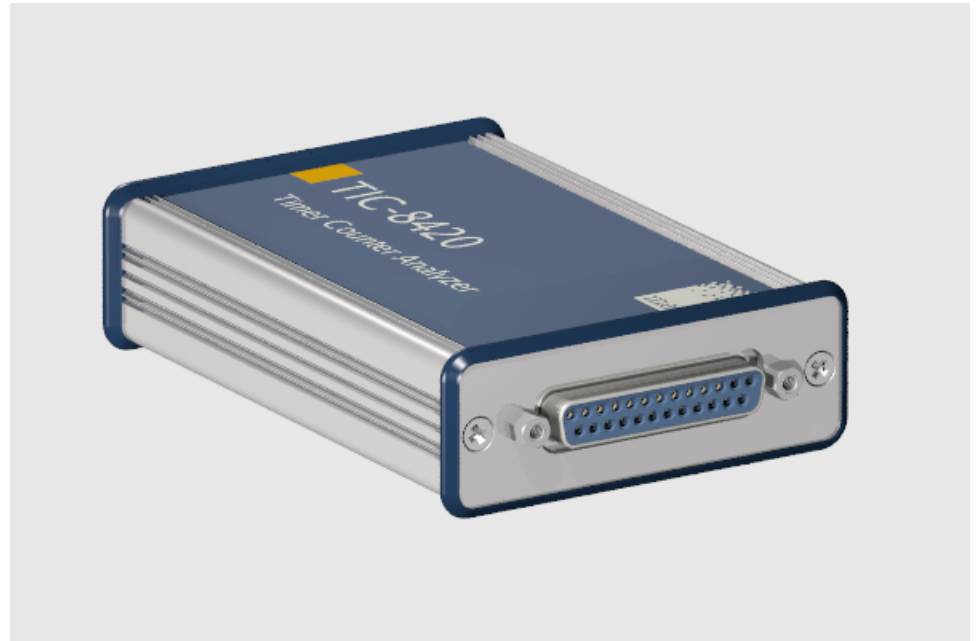
- Digitizes Time Intervals
- USB controlled instrument
- TTL/CMOS logic inputs/outputs
- Flexible Arming/Triggering
- Linux 32/64-bit

Features

- 2.8 ns resolution, 6 ns minimum Pulse Width, 100 MHz fMax
- Two independent input channels
- External reference and trigger channels
- Jitter, Frequency, Time Interval, Pulsethickness Measurements
- Two channel start/stop measurements
- Repetitive measurements: Single-Stop Histogram, Multi-Stop Histogram

Applications

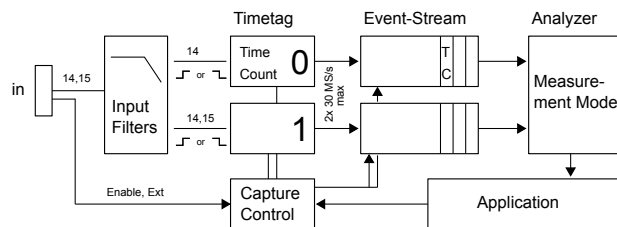
- Edge Counter, Time Stamping
- Pulse-Width, Pulse, Semi-Period, Frequency, Period, Position Measurement
- Simple Pulse, Pulse Train, Frequency Generation
- Time-to-digital conversion (TDC)
- Time-of-flight (TOF) measurements



Overview

The TIC-8420 is a novel Timer/Counter/Analyzer based on digitization of time intervals in pulse trains with 2.8 ns resolution.

TIC Architecture

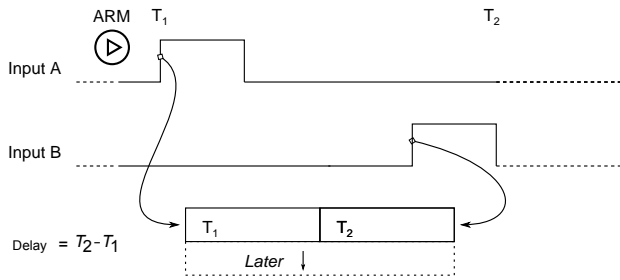


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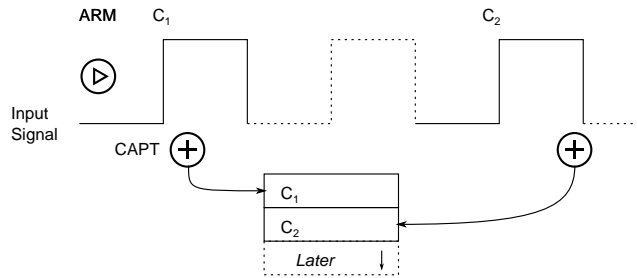


Measurement Modes

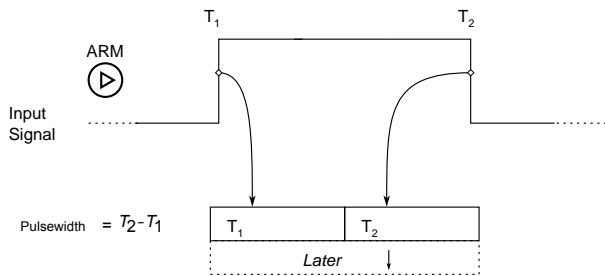
MDEL Measurement Mode



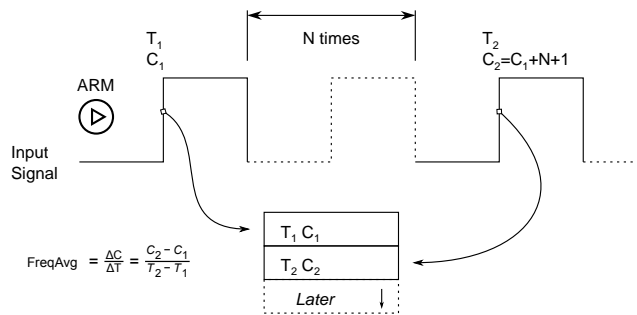
MTOC Measurement Mode



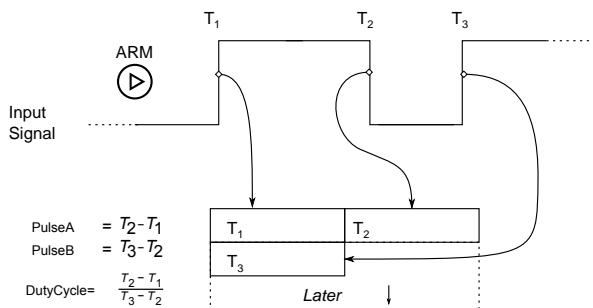
MPWI Measurement Mode



MFAV Measurement Mode



MPUL Measurement Mode



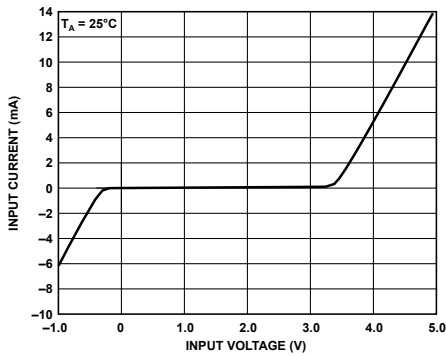
Specifications

Timebase

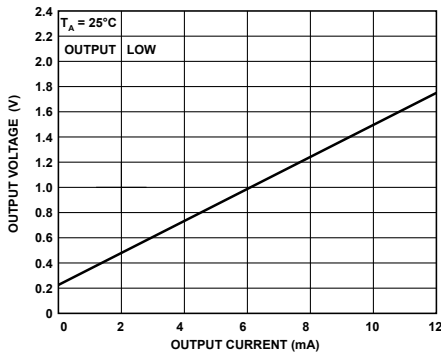
Stability (vs. ambient temperature): ± 3.0 ppm
Aging (first year): ± 2.0 ppm

Electrical Data

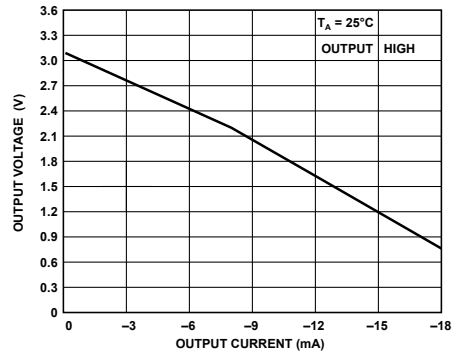
Overvoltage Protection (permanent, all inputs): $-5.0V \dots +8.7V$
Overvoltage Protection (peak, max. 10 ms, 2% duty cycle): $\pm 20V$
Input Characteristics (Pull-down $33k\Omega$ at each input):
 Logic L $\leq 0.8V$, Logic H $\geq 2.0V$



Output Characteristics (low):



Output Characteristics (high):



Supply Voltage (USB): $5V \pm 5\%$

Supply Current (USB): 150 mA max.

Environmental and Physical

Size (excluding connectors): 111 mm L x 76 mm W x 29 mm H

Weight: 160 g

Operating ambient temperature: $0 \dots 50^\circ C$

Storage temperature: $-20 \dots 80^\circ C$

Relative humidity: 5 ... 95%, noncondensing

USB connector: Extraction force $\geq 15N$, Mating force $\leq 35N$

Ordering Information

TIC-8420 - Instrument, USB cable (1m), Software Download Card

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