HOPTROFF TIME

Dual satellite disciplined atomic timing cards

Dual independent traceable paths to UTC

SDAC is a high-accuracy clock source for timestamping and synchronization applications. It accepts primary timing signals such as GPS, GLONASS and 1PPS sources (e.g. PTP, NTP, NPL dark fibre). These discipline a Caesium 133 atomic clock to provide primary clock de-jitter and, in the event of primary signal loss, holdover.

The disciplined timing signal is available as 1PPS and 10MHz outputs.

Applications

SDAC is designed for use in 1U rack-mount IEEE 1588 grandmaster clocks and zero-footprint ("0U") ultra-low power atomic timekeeping solutions for co-located trading servers.

Initially developed for financial markets, the GDAC can also be used as the core timekeeping module in timestamping and synchronization applications in Telecoms, Broadcast, Power Generation and Defence.

The only way to verifiably maintain UTC is to source it via multiple independent traceable paths.

Only HoptroffTime™ delivers multiple independent paths from Bureau International des Poids et Measures in Paris across independent primary transmission media and multi-supplier chipset design technologies

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Specifications

GNSS source A

- ↗ Based on NV08C-CSM chipset
- ↗ GPS & GLONASS now
  Galileo & COMPASS when available
- ↗ ±15ns accuracy
- ↗ Antenna failure detection

GNSS source B

- ↗ Based on RXM-GNSS-TM chipset
- ↗ GPS & GLONASS now
  Galileo & COMPASS when available
- ↗ ±11ns accuracy

Caesium 133 atomic clock

- ↗ Allan deviation (1s): 8.0×10^{-11}
- ↗ Allan deviation (100s): 2.5×10^{-12}
- ↗ Outputs: 1PPS, 10MHz

Phase meter

- ↗ Measures phase to ±500ps resolution
- ↗ Capable of de-jittering to 1ns accuracy and providing 1µs holdover for up to 8 hours

Interfacing

- ↗ USB interface enumerates as 4 serial ports
- ↗ 2 active satellite antenna inputs
- ↗ 10MHz output, 1PPS input and output

Physical

- ↗ Credit card sized 86mm x 54mm
- ↗ Power consumption at USB power rail 100mA @5VDC (500mW)
- ↗ Total added power budget at line input embedded in a server 9mA @230VAC (2W)

SDAC satellite atomic timing card
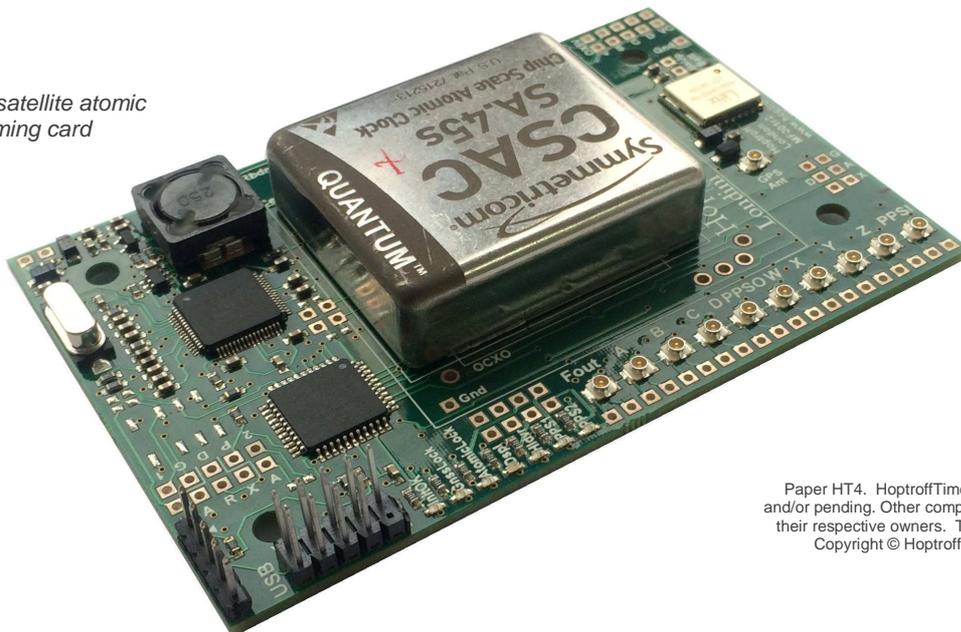
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