# Rubidium Atomic Audio Clock

PERF10 — 10 MHz rubidium atomic audio clock

Perfection 10 10 MHz Rubidium Atomic Clock



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SRS Stanford Research Systems



- $\cdot$  Eight 10 MHz, 75  $\Omega$  outputs
- ±0.05 ppb accuracy
- · 10 year aging less than 5 ppb
- · Ultra-low phase noise (<-150 dBc/Hz @ 10 kHz)
- Compatible with Antelope<sup>™</sup> and dCS<sup>™</sup> equipment
- · Optional 12 VDC redundant power input with automatic switchover

### PERF10 Rubidium Audio Clock

Perfection is a high standard — but your studio clocks deserve nothing less. That's why we designed the PERF10, to offer audio professionals and demanding audiophiles a frequency reference of staggering accuracy and unmatched stability.

Up until now, atomic clocks marketed for audio use have been designed around commercial off-the-shelf rubidium clocks designed for the communications market — not audio. And while these rubidium clocks may have good long-term stability, they were never designed to provide low shortterm jitter.

The PERF10 is built around Stanford Research Systems' own PRS10 rubidium oscillator. By designing and building the oscillators ourselves, we're able to craft an instrument perfectly matched to the demanding requirements of audio master clocks. Starting with an oven stabilized, 3rd overtone, varactor tuned, SC-cut crystal oscillator, the PERF10 offers both the accuracy and stability associated with rubidium clocks and unmatched jitter performance—30 dB better phase noise at 10 Hz off carrier than a competing "Swiss-made" rubidium clock.

And because we don't have to buy our oscillators from an outside source, we can offer you perfection — at an affordable price.

· PERF10 ... \$4695 (U.S. list)

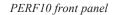


## **PERF10 Specifications**

PERF10 has eight 10 MHz, 75  $\Omega$  outputs compatible with all master clocks that accept a 10 MHz reference input.

Option 01 allows the unit to be powered from an external 12 VDC power source. When equipped with Option 01 PERF10 can be powered solely from an 12 VDC source, or the DC and AC power sources can be connected simultaneously with the DC supply providing an automatically switched redundant power source in the event of an AC failure.







PERF10 rear panel

# **Rubidium Oscillator**

Accuracy at shipment
Aging (after 30 days)

Spurious harmonics

Phase noise (SSB)

Short-term stability

(Allan variance)

 $\begin{array}{l} \pm 0.05 \ ppb \ (\pm 5 \times 10^{-11}) \\ < 5 \times 10^{-11} \ (monthly) \\ < 5 \times 10^{-9} \ (yearly) \\ 5 \times 10^{-9} \ (20 \ years, \ typ.) \end{array}$ <-60 dBc  $<-130 \, \text{dBc} (10 \, \text{Hz})$  $<-140 \, \text{dBc} (100 \, \text{Hz})$  $<-150 \, dBc (1 \, kHz)$  $<-150 \, \text{dBc} (10 \, \text{kHz})$  $<2 \times 10^{-11}$  (1 s)  $<1 \times 10^{-11} (10 \text{ s})$  $<2 \times 10^{-12}$  (100 s)

Warm-up time

#### Outputs

Number of outputs Output impedance Output amplitude

#### **Environment**

Operating temperature +10 °C to +40 °C Storage temperature Relative humidity

#### General

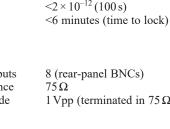
AC power	90 to 132 VAC or 175 to 264 VAC
-	47 to 63 Hz, 50 W
DC power	12 VDC, 54 W
*	(when equipped with Opt. 01)
Dimensions	19"×3.5"×10.125" (WHD)
Weight	10lbs.
Warranty	One year parts and labor on defects
	in materials and workmanship

 $75 \Omega$ 1 Vpp (terminated in  $75 \Omega$ )

-55 °C to +85 °C 95% (non-condensing)

# **Ordering Information**

PERF10	10 MHz rubidium audio clock	\$4,695
Option 01	12 VDC power input	\$495



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