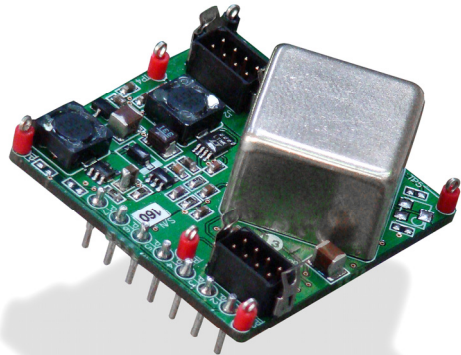


HPTR

HIGH PRECISION TIMING REFERENCE



Actual Size

PRODUCT DESCRIPTION

HPTR is a high precision timing reference with low power consumption. It is ideal for accurate timing and navigation applications where access to external timing sources such as GPS is not always possible. The HPTR provides a standard 1 PPS output which is highly stable. Typically, an initial system timing calibration is performed to establish the time offset of the HPTR which is then used to maintain highly accurate timing.

Some applications of HPTR include:

- Navigation beacons - accurate one-way range measurements using only a passive receiver;
- Long Baseline navigation – accurate range measurements with fewer calibrations and less vessel time;
- Underwater Unmanned Vehicle (UUV) - fewer resurfacings needed to recalibrate time to GPS;
- Data loggers and surveillance nodes - time difference errors between nodes greatly reduced.

The HPTR is currently being used for high precision sub-sea positioning in the oil and gas industry and for navigation during Mine Counter Measure (MCM) operations by the Royal Australian Navy.

KEY FEATURES

- High precision timing
- Low power consumption
- 1 PPS output
- Self calibrates to 1 PPS reference (GPS)
- Compact size and weight
- Wide power supply voltage range
- Ideal for:
 - Maritime deployment
 - Navigation aids
 - Autonomous vehicles
 - One way acoustic ranging
 - Undersea defence ranges and MCM navigation
 - Oil and gas sub-sea positioning systems
 - Time tagged event logging

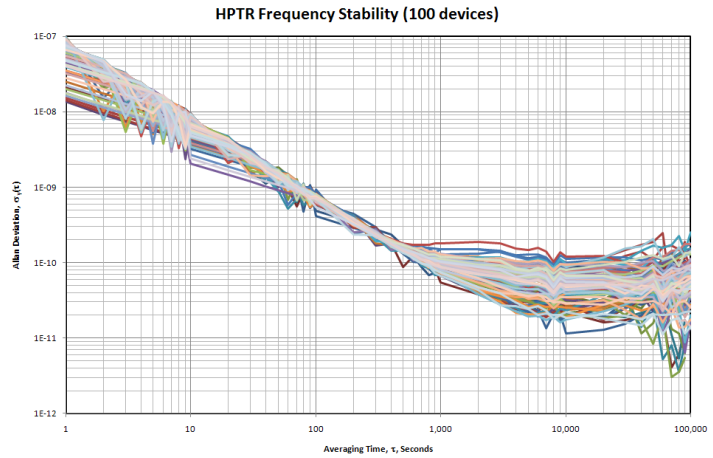


HIGH PRECISION TIMING REFERENCE

PERFORMANCE SPECIFICATION

Features

- 1 PPS output stable to better than 1e-9 (1 ppb) per day— refer to Stability Graph
- Self calibrates phase and frequency offset by adjustment to external 1 PPS reference (GPS)
 - Automatically phase locks to 1 PPS (GPS) reference when connected within 2 minutes
 - Automatically corrects its frequency offset when connected to 1 PPS reference (GPS) within 2 hours



Outputs

- 1 PPS (Active High, 100 μ S, frequency compensated)
- 10 MHz (Uncompensated, 50% duty cycle, accuracy 1e-5 (10 ppm))
- 3.3 V LVCMOS logic levels

Inputs

- 1 PPS (GPS) reference for self calibration, 3.3 V to 5 V TTL logic level

Environmental Limits

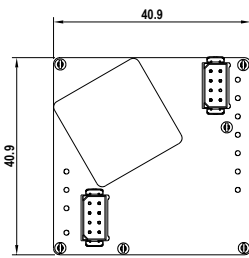
	35 °C version	70 °C version
Calibrated temperature range	3 to 35 °C	3 to 70 °C
Maximum operating temperature *	50 °C	70 °C
Minimum operating temperature*	-30 °C	-30 °C
Shock per MIL-STD-202, 30 G, 11 mS		
Vibration per MIL-STD-202, 5 G to 500 Hz		

Power Consumption

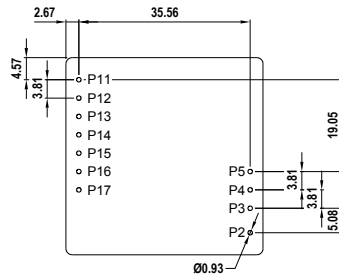
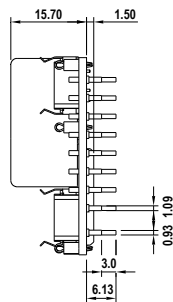
	35 °C version	70 °C version
At room temperature (25 °C)	< 80 mW	< 220 mW
At ocean temperature (4 °C)	< 120 mW	< 300 mW
Supply 2.97 to 5.5 VDC		

Dimensions

Weight	14 g (0.5 oz)
Length	40.9 mm / 1.61 "
Width	40.9 mm / 1.61 "
Height	18.8 mm / 0.74 "



TOP VIEW



VIEW ON PINS

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Nautronix