


pH MASER 1008

Passive Hydrogen Maser Clock



State-of-The-Art Performance & Features

- High frequency stability
- Energy efficient
- Ideal for high-accuracy measurements applications.
- Small size
- Input for external GPS calibrator for automatic signals frequency calibration.
-  Standards



High Frequency Stability

- Allan deviation (1Hz bandwidth):

1 s	$5 \cdot 10^{-13}$
1 hour	$9 \cdot 10^{-15}$
1 day	$4 \cdot 10^{-15}$

Maximum cumulated drift

- 10 years $1 \cdot 10^{-11}$

Low Phase Noise (5MHz)

- -105 dBc/Hz @ 1Hz
- -155 dBc/Hz @ 1kHz

High Electromagnetic Compliance

- EN 55022 Class A

Advanced Features

- Auto cavity Tuning capability
- Remote monitoring

Warranty

- 2 years, extendable to 5

Lifetime

- >15 years

Key Applications

- National Time Keeping Service
- Space tracking and navigation
- Verification of metrological parameters of frequency signals sources
- Scientific researches

FREQUENCY STABILITY

Allan Deviation (1 Hz BW)	
1Hz bandwidth	Standard*
1 s	$5 \cdot 10^{-13}$
10 s	$2 \cdot 10^{-13}$
100 s	$5 \cdot 10^{-14}$
1 h	$9 \cdot 10^{-15}$
1 d	$4 \cdot 10^{-15}$

PHASE NOISE (BW=0.5 Hz)

Output Hz	5 MHz [dBc/Hz]
1	-105
10	-130
100	-145
1k	-155

ENVIRONMENTAL

Temperature sensitivity	$< 2 \cdot 10^{-14} / ^\circ\text{C}$
Magnetic sensitivity	$< 4 \cdot 10^{-14} / \text{G}$

OUTPUTS

Sine 50 Ω / 1Vrms \pm 0.2				
5 MHz	10 MHz	100 MHz	1 MHz	2.048 MHz
2	2	1	1	1 (square)

1 PPS TIMING	Output	Sync Input	Rem
Amplitude	2.5 V	2.5 V	50 Ω /TTL
Pulse width	10 μs	> 10 ns	
Rise time	< 10 ns	< 1 μs	
User settable		± 25 ns/step	
Second 1PPS option			PPS2

POWER

	Nominal		Rem
AC	115/ 230 V	$\pm 10\%$	50-60Hz
DC	24 V	22-30 V	4 A typical
Power	90 W	80 W 100 W	Operation / Standby / Warm up
Internal Battery	24V	4 hours	BAT

ADVANCED FEATURES

- All operating parameters on LCD touch screen display
- Remote monitoring: RS 232 / USB
- Auto cavity Tuning
- Internal GPS calibrator and antenna (dual band) [Option GPS]

CONTROL

- Frequency resolution $1 \cdot 10^{-15}$
- Frequency tuning range $\pm 1 \cdot 10^{-10}$

ELECTROMAGNETIC COMPLIANCE

- **CE** compliance
EN 55022 Class A

MECHANICAL

- Size (WxDxH) 53x47x20 cm
21 x 18.5 x 8"
- Weight 33 kg / 73 lb

WARRANTY/MAINTENANCE

- 2 years extendable to total: 3 / 4 / 5 year [W3 / W4 / W5]