



# 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

# pHMaser 1008

## FREQUENCY STABILITY

Allan Deviation	
1 Hz bandwidth	
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

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 $\Omega$ / 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 $\Omega$ /TTL
Pulse width	10 $\mu\text{s}$	>10 ns	
Rise time	<10 ns	<1 $\mu\text{s}$	
User settable		$\pm 25$ 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	1/2 hour	
External Battery	+24V	15 hours	BAT1

## 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

- $\text{CE}$  compliance
- EN 55022 Class A

## MECHANICAL

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

## WARRANTY

- 2 years extendable to total: 3 / 4 / 5 year

[W3 / W4 / W5]