

PASSIVE HYDROGEN MASER VCH-1006

VCH-1006 Passive Hydrogen Maser is a small size hydrogen maser with the best frequency stability. Extremely high frequency stability is provided by state-of-the-art technology. Full digital processing of modulation and servo loop signals is realized. Ideal for high-accuracy measurements applications.

Key applications:

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

Specifications

Output signals:

Sine: 5 MHz; 10 MHz; 100 MHz, (1±0.2) V RMS into 50 Ω load.

Pulse: 2,048 MHz (square pulse), (1,5÷2,8) V (pp) into 75 Ω (ITU-T G.703 part13).

1Hz, positive polarity pulse, width (15±5) μs, TTL level at 50 Ω, rise time: <15 ns.

Metrological characteristics are given in the table:

Relative frequency accuracy	$\pm 3 \cdot 10^{-13}$ (factory calibration)	
Output signals frequency corrector	resolution	$1 \cdot 10^{-15}$
	tuning range	$1 \cdot 10^{-10}$
Frequency stability (Allan deviation at 25±1C°, environmental effects are excluded)	1 s	$\leq 7.0 \cdot 10^{-13}$
	10 s	$\leq 2.0 \cdot 10^{-13}$
	100 s	$\leq 7.0 \cdot 10^{-14}$
	1 hour	$\leq 2.0 \cdot 10^{-15}$
	1 day	$\leq 7.0 \cdot 10^{-15}$





	Frequency offset	Spectral density
Phase noise spectral density (dBc/Hz) (5 MHz output)	1 Hz	≤ -110 Home
	10 Hz	≤ -130 News
	100 Hz	≤ -145 Products
	1000 Hz	≤ -155 Projects
Manual synchronization to external 1 pps TTL signal accuracy	≤ ±50 ns	Technologies Company
Temperature sensitivity in temperature operating range (+5 ÷ +35 C°)	≤ ±2 · 10 ⁻¹⁴ 1/C°	Downloads
Magnetic sensitivity	≤ ±2 · 10 ⁻¹⁴ 1/Oersted	

Digital control and monitoring: all operating parameters on local LCD display or remotely.

Interface: RS-232C.

Power: AC, (100 ÷ 240)V, (50 ÷ 60)Hz, or DC, (27⁺³ -₅)V.

Power consumption: 120 VA AC, 80 W DC.

Dimensions (W×H×D): 470 mm×200 mm×530 mm.

Weight: 31 kg.

Warranty: 3 years.

Life time: 15 years.

Category **Legacy**

« PREVIOUS

Active Hydrogen Frequency Standard VCH-1003A

E-MAIL: admin@vremya-ch.com

PHONE: +7 (831) 421-02-94





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