



# Active Hydrogen Maser VCH-1003M Option LT

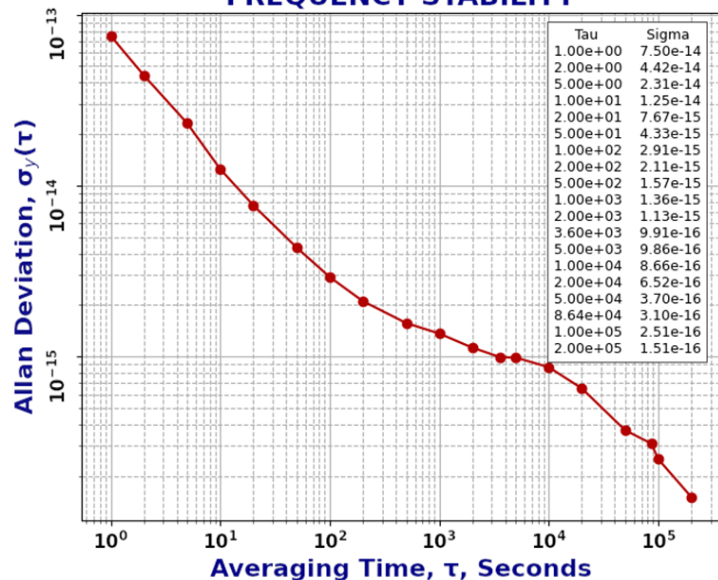


The VCH-1003M Option LT is a **high-performance hydrogen maser** with low phase noise output signals. Extremely high frequency stability is provided by state-of-the-art technology and internal stand-alone Cavity Auto Tuning system.

### Key Applications:

- ◆ Metrology;
- ◆ Radio Astronomy & navigation;
- ◆ Time keeping;
- ◆ Scientific research.

**FREQUENCY STABILITY**



## VCH-1003M Option LT Specifications

Outputs :-

Waveform	Qty	Amplitude	Width	Rise time	Termination
5MHz (sine)	2	1 ±0.2 V <sub>RMS</sub>	-	-	50 Ω
10 MHz (sine)	2	1 ±0.2 V <sub>RMS</sub>	-	-	50 Ω
100 MHz (sine)	2	1 ±0.2 V <sub>RMS</sub>	-	-	50 Ω
1 Hz (pulse) PPS	2	>2.5 V	15±5 μs	<3 ns	50 Ω

Frequency stability,  $\sigma_y$  (3,  $\tau$ ):

		Option LT	Notes
		1 s	$\leq 8.0 \times 10^{-14}$
10 s	$\leq 1.4 \times 10^{-14}$		
100 s	$\leq 4.0 \times 10^{-15}$		
1000 s	$\leq 1.5 \times 10^{-15}$		
1 hour	$\leq 1.0 \times 10^{-15}$		
1 day*	$\leq 4.0 \times 10^{-16}$		

	Offset	Option LT		
		5MHz	10MHz	100MHz
SSB Phase Noise, dBc/Hz	1 Hz	$\leq -122$	$\leq -116$	$\leq -96$
	10 Hz	$\leq -135$	$\leq -129$	$\leq -109$
	100 Hz	$\leq -149$	$\leq -143$	$\leq -122$
	1 kHz	$\leq -156$	$\leq -149$	$\leq -130$
	10 kHz	$\leq -158$	$\leq -152$	$\leq -152$
	100 kHz	$\leq -158$	$\leq -152$	$\leq -152$

Temperature sensitivity (+10 to +35) °C :	$< 1.5 \times 10^{-15} / ^\circ\text{C}$
Magnetic sensitivity/Gauss :	$< 5.0 \times 10^{-15}$
Relative Frequency accuracy	$\leq \pm 1 \times 10^{-13}$
Frequency trim range / Resolution:	$1.0 \times 10^{-10} / 1.0 \times 10^{-16}$
Input: 1 PPS Synchronization	$\leq 25$ ns
Harmonics @5 MHz :	$< -30$ dB
Non-harmonics @5MHz:	$< -100$ dB
Power:	100 to 240 VAC 22-30VDC x 2
Power consumptions:	150 VA / 100W
Operating temperature range:	(10...35) °C (Recom +22°C)
Humidity:	$< 80\%$ @ 25
Dimension(WxHxD) mm:	550x1010x550
Weight:	~105 kg

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