

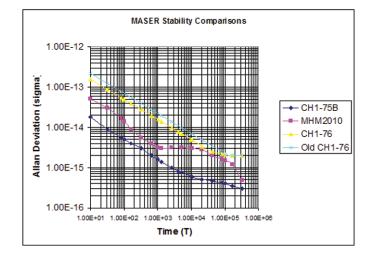
## CH1-76 PASSIVE HYDROGEN MASER

The CH1-76 Passive Hydrogen MASER is a frequency standard of a passive type. As in an active MASER the CH1-76 comprises a beam source, a sorting magnet and a storage quartz bulb situated in a cavity and coated with fluoroplastic. The Passive MASER differs from the Active MASER in that an atom medium in a bulb is not self-excited and provides an atom emission caused by an external signal the frequency of which is nearly equal to the hydrogen atoms emission frequency. Thanks to this the requirements to a cavity quality (Q) are reduced.



## **APPLICATIONS**

- National Timekeeping National Frequency Standards VLBI Navigation Telecommunications GPS Satellite Monitoring Astro Laser Range Finding Laboratory Standard Astronomy Baseline Definition
- Calibration Calibration of Caesium or Rubidium and Quartz Climatology Defense Determination or Earth Rotation Earthquake Research Fast Missile Tracking Geodesy Geodynamics
- Glacial Movement Gravity Prospecting Intelligence Plate Tectonics Position fixing Secure Communications Space Navigation Support of Radar Heat Transport



Specifications subject to change without notice



## CH1-76 PASSIVE HYDROGEN MASER

## **S**PECIFICATIONS

Frequency Outputs	500 4 · 0 2 \/mma	Spurs	
(2) 5MHz, sine (2) 1Hz pulse (1 pps)	50Ω, 1±0.2 Vrms 50Ω, >2.5V peak	Harmonics Non-Harmonics	<30 dBc <100 dBc
Pulse Width Rise Time Jitter	10 to 20 μs <30 ns <0.1 ns	Power Input - AC	220 Vac, ±10%, 100,120 V±10%, 240 V+5-10%; 45-65Hz
Clock Synchronization	,	Dever Input DC (automotic bottony back up)	
Automatic within 200 ns of rei		<b>Power Input - DC (automatic battery back-up)</b> As an alternative to AC, the CH176 can be powered by	
Amplitude	2.5 to 5V	an external 22-30 VDC supply.	
Stability (5MHz Outputs)	Aller $\lambda$ (arises $-\pi/(2 - 1)$	an external 22-30 VDC	supply.
Avg Time $\tau(s)$	Allan Variance σy(2,τ)	Dower Concumption	(AC) -140.)(A
1-		Power Consumption	(AC) <140 VA
1s	≤1.5E-12		(DC) <90 watts
10s	≤ 5E-13		
100s	≤1.5E-13	Warm-up Time	≤10 hours to lock (typically 6 hrs)
1000s	≤ 5E-14		
1 hour	≤ 3E-14	Operating Temp	+5 to +35°C
1 day	≤ 1E-14		
		Storage Temp	-50°C to +50°C
Temp/Freq Coefficient	≤2E-14		
		Magnetic Sensitivity	±2E-14/Gauss
Drift	≤1.E-15/day		
		Pressure	630 to 795 mm Hg (84 - 106 kPA)
Accuracy	±1.5E-12/years		
-	-	Humidity	Up to 80% at 25°C
Frequency Trim Range	1E-10		
1 9 6		Size (HxWxD)	11" x 19" x 22" (28x48x56 cm)
Setting Resolution	1E-14		
g		Weight	120 lbs (55kg)
Retrace	≤3E-14 after 24 hrs of op.		oo (oog)
Ronado		Warranty	1 year (2 - 5 year options)
Phase Noise (dBc)			
Hz from carrier	5MHz outputs	Service Life	15 years
1	-100		
10	-120		
100	-140		
1000	-150		
10000	-150		

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