

Product Introduction

The STM-RB-N series rubidium atomic clock is a typical rubidium lamp-pumped atomic clock, characterized by good short-term stability, small size, light weight, short lock time, and low power consumption. The product supports external 1PPS automatic taming for better accuracy and smaller frequency drift, and is widely used in fields such as navigation and positioning, power, rail transit, and communications.

Product Features

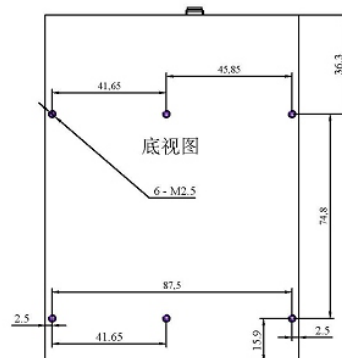
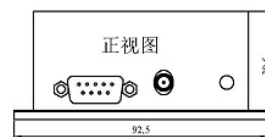
- 1PPS Taming Function
- Fast lock and tame, frequency accuracy better than $5E-11$ within 300 seconds after power on
- High stability: $6E-13/s$
- Low aging rate: $\leq 2.0E-12/day$
- Wide temperature operation
- High-resolution digital frequency adjustment ($5E-13$)

Technical Specifications

Product Features	Specification Name	Performance Parameters	Remarks	
RF Output Parameters	Frequency	10MHz	1 sine wave output, SMA interface	
	Output Power	$11 \pm 2dBm$	Load Impedance 50Ω at 10MHz	
	Factory Accuracy	$< 5E-11$	$+25^\circ C$	
	Short-term Stability	Regular Model C: $< 5.0E-12/1s$; $< 4.0E-12/10s$; $< 3.0E-12/100s$		
		Professional Model P: $< 3.0E-12/1s$; $< 2.0E-12/10s$; $< 6.0E-13/100s$		
		High Performance H: $< 6.0E-13/1s$; $< 6.0E-13/10s$; $< 5.0E-13/100s$		
		Domestic Model G: $< 5.0E-12/1s$; $< 4.0E-12/10s$; $< 3.0E-12/100s$		
	Phase Noise	Regular Model C:		Professional Model P:
		1Hz $\leq -95dBc/Hz$	10Hz $\leq -130dBc/Hz$	100Hz $\leq -145dBc/Hz$
		1kHz $\leq -150dBc/Hz$	10kHz $\leq -155dBc/Hz$	
		High Performance H:		Domestic Model G:
		1Hz $\leq -115dBc/Hz$	10Hz $\leq -135dBc/Hz$	100Hz $\leq -150dBc/Hz$
1kHz $\leq -158dBc/Hz$		10kHz $\leq -160dBc/Hz$		
Timekeeping Accuracy	$< 0.5\mu s/24h(P/H)$	$< 0.8\mu s/24h(C/G)$		
Frequency Reproducibility	$< \pm 2E-11(P/H)$	$< \pm 5E-11(C/G)$		
Aging Rate	$< \pm 2.0E-12/d(P/H)$	$< \pm 5.0E-12/d(C/G)$		
Harmonic	$< -40dBc$			
Spurious	$< -80dBc$			
Frequency-Temperature Characteristics	$< 3.0E-10 (0^\circ C \text{ to } 50^\circ C)$; $< 6.0E-10$ (others)			
1PPS Output	Rise Time	$< 2ns$		
	Pulse Width	500us~500ms(default is 100ms)		
PPS Taming	Level	$> 4.5V (1M\Omega/15pF \text{ load})$		
	PPS Input	3.3v~+5.5V		
Monitoring and Control	Tamed Accuracy	$< 1E-12$	Power on within 2 hours, tamed time greater than 1 day	
	Frequency tuning accuracy	$< 5.0E-13$	Adjustment range: $\pm 1.0E-6$	
	Locking Time	$< 3min$	$+25^\circ C$	
Power Supply Voltage	Status Monitoring	Rubidium Clock Lock and Tame Lock Indicator	High level lock (5V) Low level unlock (0V)	
	Communication Monitoring	RS-232		
	Input Voltage	$+16 \sim 28VDC$		
Environmental Monitoring	Maximum Current	1.4 A ($+25^\circ C$)		
	Steady-state current	$< 0.5A (+25^\circ C)$		
	Power Supply Interface	DB9 Male		
Appearance	Operating Temperature	$-40^\circ C \sim +60^\circ C$		
	Storage Temperature	$-55^\circ C \sim +85^\circ C$		
Weight	Relative Humidity	$\leq 85\%$ non-condensing (operating state)		
	Weight	490g		
Dimensions	Dimensions	127mm×92.5mm×39.6mm		



External Dimensions



Selection Guide

STM-Rb-N C ← ①

① Specification Options: C (Standard), P (Professional), H (High Performance), G (Domestically Produced).