

PRECISION TIMING

XHTF1011 Rubidium Frequency Standard

The XHTF1011 High Accuracy Rubidium Oscillator delivers wide-temperature operation from -40°C to +70°C with selectable stability, phase-noise, and temperature options, fast 1PPS disciplining, and RS-232C control for airborne, vehicular, and shipborne time-frequency systems.

Overview

The **XHTF1011 High Accuracy Rubidium Oscillator** is designed to provide unparalleled frequency accuracy and stability in demanding applications. Its compact form factor, high reliability, and robust performance make it ideal for integration into critical time-frequency systems. For inquiries, please [contact us](#).

Features

- Operates effectively across a wide temperature range (-40°C to +70°C).
- Compact structure with high reliability.
- Fast 1PPS discipline and synchronization.
- Specialized unlock holding function for enhanced stability.
- RS-232C serial communication interface for control and monitoring.
- Suitable for harsh environments, including airborne, vehicular, and military applications.

Applications

- Integrated into time-frequency systems requiring high reliability and harsh environment tolerance, such as airborne, vehicular, and shipborne platforms.

Main Specifications

Core Specifications

Specification		Details	
Short-term Stability	Option-05	1s	5E-12
	++::++	10s	1.5E-12
	++::++	100s	5E-13
	Option-10	1s	1E-11
	++::++	10s	3E-12
	++::++	100s	1E-12
	Option-30	1s	3E-11
	++::++	10s	1E-11
	++::++	100s	3E-12

Specification		Details	
Aging (Frequency Drift)	Option-05	<5E-13/day	
	Option-30	<3E-12/day	

Specification		Details	
Phase Noise (SSB)	Option-U	@1Hz	-87 dBc/Hz

Specification		Details	
	+++::++	@10Hz	-107 dBc/Hz
	+++::++	@100Hz	-142 dBc/Hz
	+++::++	@1kHz	-152 dBc/Hz
	+++::++	@10kHz	-155 dBc/Hz
	Option-L	@1Hz	-80 dBc/Hz
	+++::++	@10Hz	-90 dBc/Hz
	+++::++	@100Hz	-130 dBc/Hz
	+++::++	@1kHz	-145 dBc/Hz
	+++::++	@10kHz	-150 dBc/Hz
	Option-N	@1Hz	-75 dBc/Hz
	+++::++	@10Hz	-85 dBc/Hz
	+++::++	@100Hz	-125 dBc/Hz
	+++::++	@1kHz	-140 dBc/Hz
	+++::++	@10kHz	-145 dBc/Hz

Specification		Details	
External 1PPS Quick Discipline		60 minutes	10 ⁻¹¹ level
		90 minutes	10 ⁻¹² level

Specification		Details	
Adjustment range	Internal mechanical adjustment	>-1E-9~+1E-9	
	External electric level adjustment	>-1E-9~+1E-9	
	Software adjustment	>-1E-9~+1E-9	

Specification		Details	
Status monitoring	Lock state indication	<0.4V lock	>4V unlock
	Hold state indication	<0.4V holding	>4V non-holding

Specification		Details	
Temperature	Option T	1.5E-10	
	Option J	3E-10	
	Option P	5E-10	

Pin Connection Details

Pin Number	Function	Pin Number	Function
1	GND	9	1PPS Output
2	RXD (RS-232C)	10	Lock Status
3	TXD (RS-232C)	11	Holding State
4	GND	12	N/A
5	+24 VDC	13	N/A

Pin Number	Function	Pin Number	Function
6	+24 VDC	14	GND
7	Frequency Adjustment	15	GND
8	1PPS Input	—	