

Specification	AXRB1031	Rev.: 3	Date: 2022-09-14
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Oscillator type: **Miniature Rubidium Oscillator in 50 x 50 mm Package**

Features:

- Miniature Rubidium Oscillator
- Compact 50 x 50 mm Package (OCXO compatible)
- Low cost allows OCXO substitution
- Low power consumption <6 W Steady-state
- RS-232 Communication
- Applications: UMTS, LTE, 5G, CDMA, WiMAX etc.
- Equivalent to ELECSPN XHTF1031R



Ordering Code

Model	Revision	Frequency [MHz]
AXRB1031	Rev.3	10.000

Example: AXRB1031_Rev.3 – 10.000 MHz

Parameter	min.	typ.	max.	Unit	Condition
Nominal output frequency	10.000			MHz	
Frequency stability					
Initial tolerance at delivery @ +25°C			±0.05	ppb	
vs. operating temperature range			±0.60	ppb	steady state
Long term (aging) per day			±0.005	ppb	
Long term (aging) per month			±0.05	ppb	
Retrace @ +25°C			±0.02	ppb	1 h after 24 hrs OFF
Frequency adjustment range					
Electronic Frequency Control (EFC)	±1	±2		ppb	
EFC voltage V_c	0		5	V	
EFC slope ($\Delta f / \Delta V_c$)	Positive				
EFC input impedance	10			k Ω	
RF output					
Signal waveform	Sine wave				
Load R_L	50			Ω	±5%
Output level	+7			dBm	
Harmonics			-30	dBc	
Phase noise		-95 -125 -135		dBc/Hz dBc/Hz dBc/Hz	@ 10 Hz @ 100 Hz @ 1 kHz
Short-term stability (ADEV)			$5 \cdot 10^{-11}$ $2 \cdot 10^{-11}$ $5 \cdot 10^{-12}$		@ $\tau = 1$ sec @ $\tau = 10$ sec @ $\tau = 100$ sec
Warm-up time @ +25°C			7	min	Time to lock
Lock Detect		0	1.5	V	Locked
	3.5	5		V	Not locked
Supply voltage V_s (Note 2)	11.4	12.0	15.0	V	
Power consumption (steady state)			6	W	@ $V_s=12V$
Power consumption (warm-up)			20	W	@ $V_s=12V$
Operating temperature range	-30		+65	°C	
Enclosure (see drawing) (WxDxH)	50.8x50.8x25			mm	
Drawing number	AXZ10.01123.02				
Weight			150	g	
MTBF	100,000			hrs	

Notes:

1. Terminology and test conditions are according to IEC60679-1 and MIL-PRF-55310, unless otherwise stated
2. For model with 5V supply voltage see our AXRB1031H

Absolute Maximum Ratings

Parameter	min.	max.	Unit	Condition
Supply Voltage V_s	-0.5	$V_s + 10\%$	V	V_s to GND
Control Voltage V_c	-0.5	7	V	V_c to GND
Storage Temperature	-55	+85	°C	

Revision History

Rev.	Drawing	Date [dd.mm.yyyy]	Remarks	Author	Checked
1	D0	30.10.2018	First issue	HH	ME
2	D0	27.11.2018	ADEV, temperature range and drawing changed	HH	HH
2	D1	24.04.2019	Editorial changes	JH	HH
3	D0	26.09.2019	Short-term stability & retrace updated, temperature range changed, editorial changes	HH	HH
3	D1	11.11.2019	Power consumption (warm-up) corrected	HH	HH
3	D2	14.09.2022	Note "Bottom View" added to drawing	HH	HH