

Specification	AXIOM1000	Rev.: 1	Date: 2014-08-26
Oscillator type: UHF Ultra-Low Phase Noise OCXO in Connectorized Package			

Parameter	min.	typ.	max.	Unit	Condition
Frequency range	300		1500	MHz	
Standard frequencies	1000.000			MHz	
Frequency stability					
Initial tolerance @ +25°C			±300	ppb	@ V _C = 5.0 V
vs. operating temperature range	Option 1 & 2 See tables 1 & 2				steady state
vs. supply voltage variation (pushing)			±10	ppb	V _S ±5%
vs. load change (pulling)			±5	ppb	R _L ±5%
Long term (aging) per day		±1	±2	ppb	after 30 days operation
Long term (aging) 1 st year		±100	±200	ppb	after 30 days operation
Frequency adjustment range					
Electronic Frequency Control (EFC)	±1	±2		ppm	
EFC voltage V _C	1.0	5.0	9.0	V	
EFC slope (Δf / ΔV _C)	Positive				
EFC input impedance	100			kΩ	
RF output					
Signal waveform	Sine wave				
Load R _L	50			Ω	±5%
Output level	+11	+13	+15	dBm	(Note 2)
Harmonics		-40	-35	dBc	
Sub-harmonics (multiples of f _{OUT} /10)		-45	-40	dBc	(Note 3)
Spurious			-90	dBc	
Warm-up time @ +25°C			5	min	Δf _{final} /f ₀ < ±0.1 ppm
Phase noise @ 1000 MHz (Note 4)		-115 -143 -150	-110 -140 -145 -150	dBc/Hz dBc/Hz dBc/Hz dBc/Hz	@ 100 Hz @ 1 kHz @ 10 kHz @ ≥100 kHz
Supply voltage V _S	11.4	12.0	12.6	V	(Note 5)
Current consumption (steady state)			300	mA	@ +25°C
Current consumption (warm-up)			700	mA	
Enclosure (see drawing) (LxWxH)	50.0x50.0x21.0 max.			mm	
Weight			60	g	
Packing	Palette				

Notes:

1. Terminology and test conditions are according to IEC60679-1 and MIL-PRF-55310, unless otherwise stated
2. Other output level on request
3. Depending on frequency multiplication factor may be lower or higher than 10
4. Please consult factory for phase noise of other frequencies
5. Other supply voltages on request

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	15	V	V_C to GND
Storage Temperature	-55	+125	°C	

Frequency stability vs. temperature

Option 1	Stability [ppb]
05	±5
10	±10
25	±25
50	±50
100	±100
200	±200

Table 1

Lower Temperature		Upper Temperature	
Option 2	T [°C]	Option 2	T [°C]
0	0	A	+50
1	-10	B	+60
2	-20	C	+70
3	-30	D	+75
4	-40	E	+80
5	-55	F	+85

Table 2

Standard: "1B" = -10°C to +60°C

Temperature range [°C]	Frequency stability [Option 1]					
	05	10	25	50	100	200
0 ~ +50	-	O	X	X	X	X
-10 ~ +60	-	O	X	X	X	X
-20 ~ +70	-	O	X	X	X	X
-30 ~ +70	-	-	O	X	X	X
-40 ~ +75	-	-	O	O	X	X
-40 ~ +85	-	-	-	O	X	X
-55 ~ +85	-	-	-	-	X	X

Table 3 "Availability"

X = available, O = available on request, - not available

Ordering Code

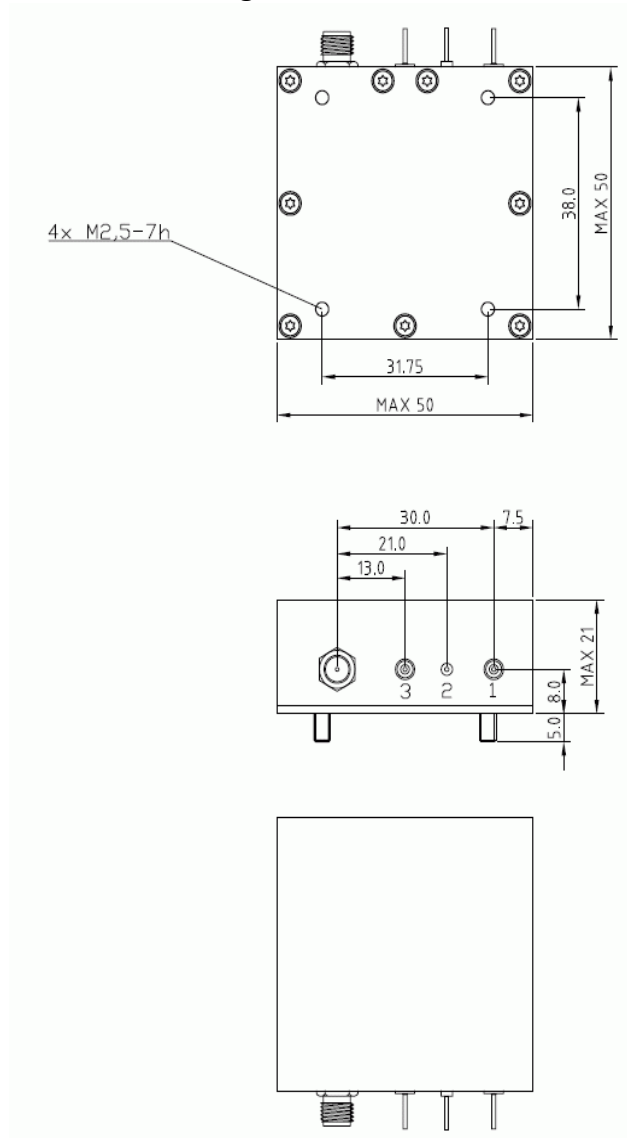
Model	Option 1 [Stability]	Option 2 [Temperature range]	Revision	Frequency [MHz]
AXIOM1000	Table 1	Table 2	Rev.1	1000.000

Example: AXIOM1000-25-1B_Rev.1 – 1000.000 MHz

Handling and Testing

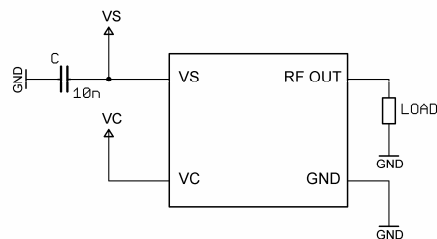
Parameter	Procedure		Source
Handling and Testing	Application Note AXAN-011		www.axtal.com
Processing	Application Note AXAN-012		www.axtal.com
Parameter	Procedure		Condition
Electrostatic discharge (ESD)			
THD devices	IEC60749-26	HBM	2000 V
SMD devices	IEC60749-27	MM	200 V
Washable	✘ Yes ☐ No		
RoHS- Compliant	✘ Yes ☐ No		

Enclosure drawing



Pin connections:

Pin #	Symbol	Function
1	V _S	Supply Voltage
2	GND	Ground
3	V _C	Control Voltage (EFC)
SMA	RF OUT	RF Output



* See Application Note AXAN-011

Environmental conditions

Test	IEC 60068 Part ...	IEC 60679-1 Clause	MIL-STD- 202G Method	MIL-STD- 810F Method	MIL-PRF- 55310D Clause	Test conditions (IEC)
Sealing tests (if applicable)	2-17	5.6.2	112E		3.6.1.2	Gross leak: Test Qc, Fine leak: Test Qk
Solderability Resistance to soldering heat	2-20 2-58	5.6.3	208H 210F		3.6.52 3.6.48	Test Ta Method 1 Test Td ₁ Method 2 Test Td ₂ Method 2
Shock*	2-27	5.6.8	213B	516.4	3.6.40	Test Ea, 3 x per axes 100g, 6 ms half-sine pulse
Vibration, sinusoidal*	2-6	5.6.7.1	201A 204D	516.4-4	3.6.38.1 3.6.38.2	Test Fc, 30 min per axes, 10 Hz - 55 Hz 0,75mm; 55 Hz - 2 kHz, 10g
Vibration, random*	2-64	5.6.7.3	214A	514.5	3.6.38.3 3.6.38.4	Test Fdb
Endurance tests - ageing - extended aging		5.7.1 5.7.2	108A		4.8.35	30 days @ 85°C, OCXO @25°C 1000h, 2000h, 8000h @85°C

Other environmental conditions on request

Data sheet is for information purposes only and may be subject to modifications or may be discontinued without notice.

Revision History

Rev.	Drawing	Date [dd.mm.yyyy]	Remarks	Author	Checked
1	D0	26.08.2014	First issue	HH	HH