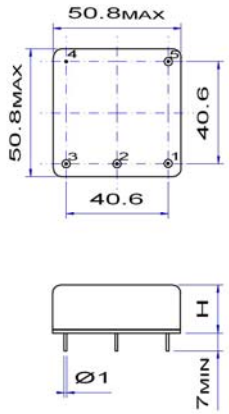
OCO-M50BS12-05

Low Noise OCXO
Sine wave

Application: Base station

Nominal frequency	**10.0000 MHz**	
Frequency stability		
vs. operating temperature range	≤ ±5 x 10^{-10}	over -40 ~ +85 °C
vs. supply change	≤ ±5 x 10^{-10}	±5 %
vs. load change	≤ ±5 x 10^{-10}	±5 %
vs. aging after 30 days of operation	≤ ±2 x 10^{-8}	1st year
Short term stability (Allan deviation)	< 5 x 10^{-13}	per second
Frequency tolerance ex. factory	≤ ±1 x 10^{-7}	@ +25 °C
Supply voltage	+12.0 V	±5 %
Output signal	Sine	> 3 dBm
Load	50 Ω	±5 %
Peak current consumption	< 550 mA	after switch on
Steady-state current consumption	< 250 mA	@ +25 °C
Warm up time @ +25 °C	< 3 min	< ±2 x 10^{-8}
Frequency pulling range (Vin)	> ±4 x 10^{-7}	positive slope
Vcontrol (Vc) via external voltage	0 ~ +5.0 V	
Reference voltage output (Vref)	+4.5 V	
Harmonics	> 30 dBc	
Phase noise @ 10 MHz	< -95 dBc/Hz < -125 dBc/Hz < -145 dBc/Hz <-150 dBc/Hz <-155 dBc/Hz	@ 10 Hz @ 10 Hz @ 100 Hz @ 1 kHz @ 10 kHz
Operating temperature range	-40 ~ +85 °C	
Storage temperature range	-55 ~ +85 °C	

Environmental test	
vibration	acceleration: 5 g; 10 Hz up to 200 Hz and down to 10 Hz; all 3 axes
shock	75 g, half-sine, 3 ms

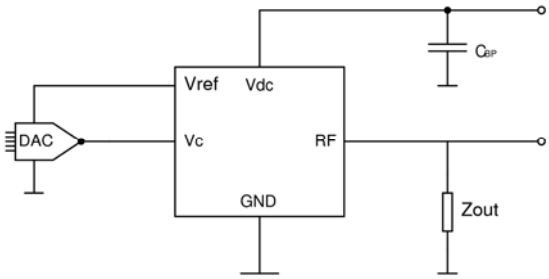


Pin function

1 #	Vc	Supply voltage
2 #	Vref	Reference output
3 #	RF	Output signal
4 #	GND	Case Ground
5 #	Vdc	+5 V supply

Case height H = 12.7 mm

Connection Circuit



Zout = 50 Ω

2002/95/EC RoHS compliant

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Application: Base station

Test data of OCO-M50BS12-05 10.0000 MHz

1. Electrical parameters including frequency deviation vs. temperature over -40 up to +85 °C

Frequency: 10 MHz. Supply voltage 12V±5%							
Specification	Units	Limits	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5
Frequency stability:							
vs. temperature range -40° C….+85° C	$\pm10^{-10}$	<5	3,0	4,0	4,0	2,0	2,0
vs. change of supply voltage ±5%	$\pm10^{-10}$	<5	<0,5	<0,5	<0,5	<0,5	<0,5
vs. change of load 50 Ohm ±5%	$\pm10^{-10}$	<5	<0,5	0,5	<0,5	<0,5	0,5
Frequency adjustment:							
control voltage 0 V	10^{-7}	<-4	-4,9	-4,9	-4,8	-4,8	-4,8
control voltage 5 V	10^{-7}	> 4	4,8	4,7	4,6	4,5	4,6
Phase noise:							
1 Hz	dBc	≤-95	-104	-103	-104	-106	-105
10 Hz	dBc	≤-125	-132	-131	-134	-136	-135
100 Hz	dBc	≤-145	-156	-149	-155	-153	-150
1000 Hz	dBc	≤-150	-161	-160	-160	-160	-156
10 kHz	dBc	≤-155	-162	-162	-163	-162	-162
Power supply:							
current @25°C still air	mA	<250	240	240	215	220	215
current @turn on	mA	<550	460	460	460	460	470
RF output level @50 Ohm	dBm	> 3	8,1	8,8	8,2	8,5	8,5
Harmonics	dBc		-39	-39	-39	-39	-39

2. Phase noise @ 10.0 MHz carrier frequency

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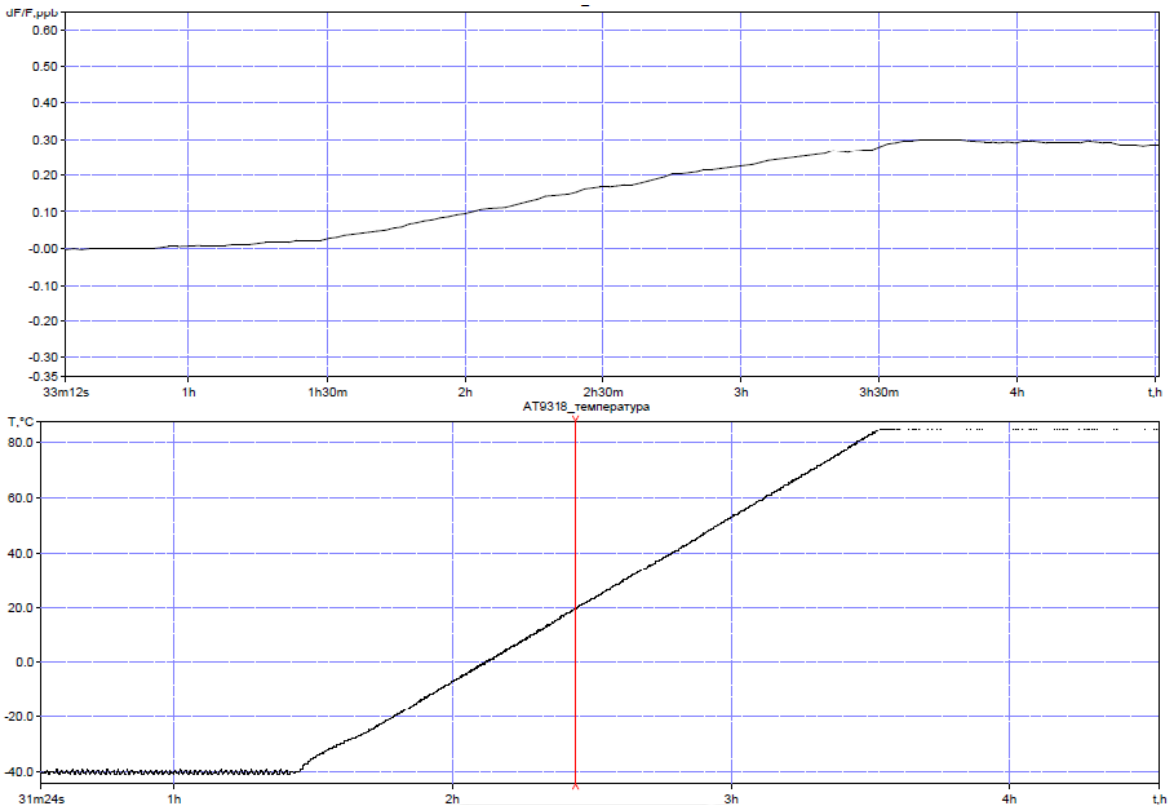
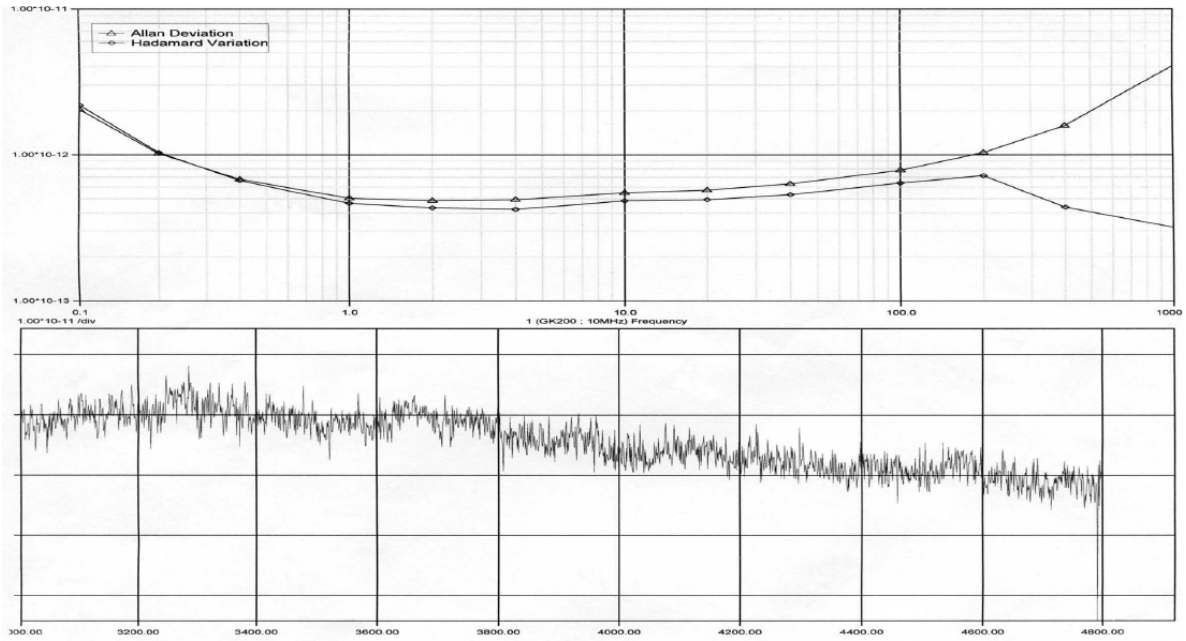
3. Frequency deviation vs. temperature, measured over -40 up to +85 °C



4. Allan Deviation and Hadamard Variation



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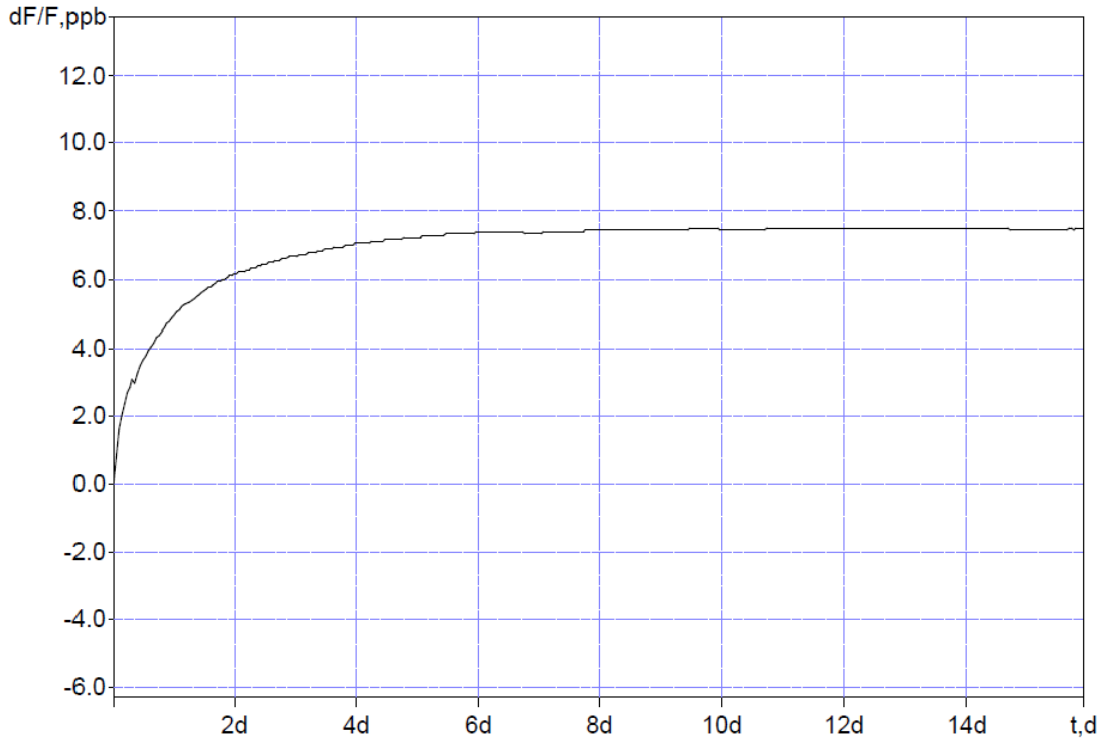
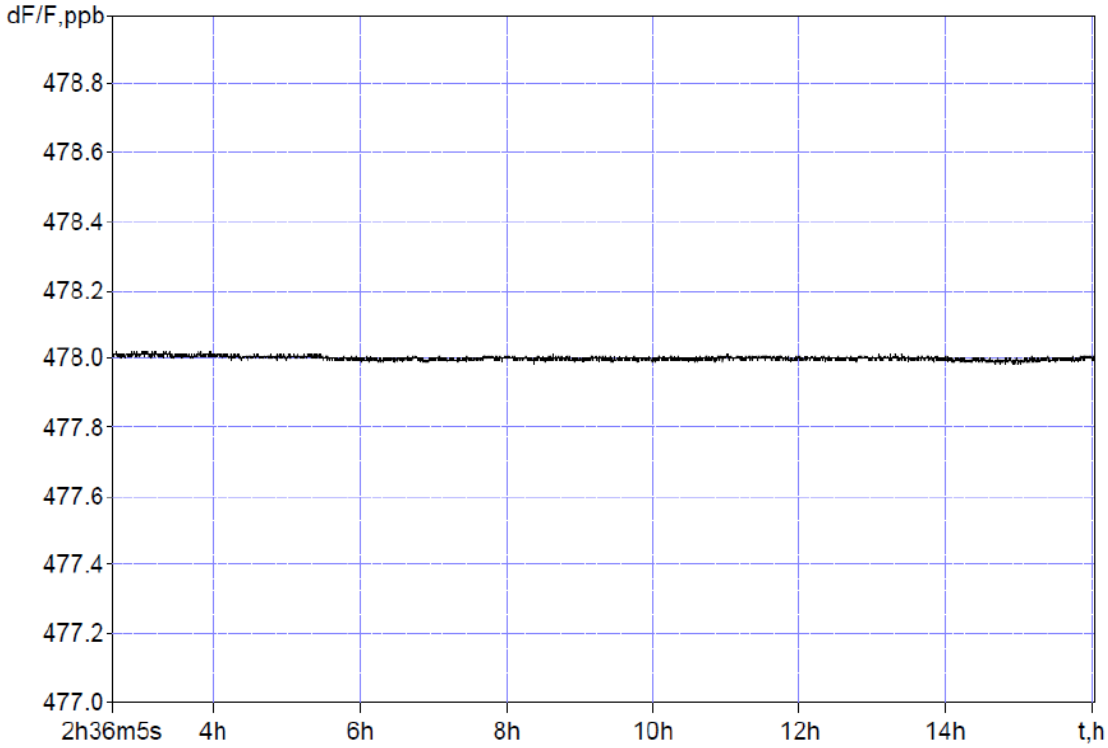
5. Aging measured during the first 15 days



6. Holdover during 16 hours



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