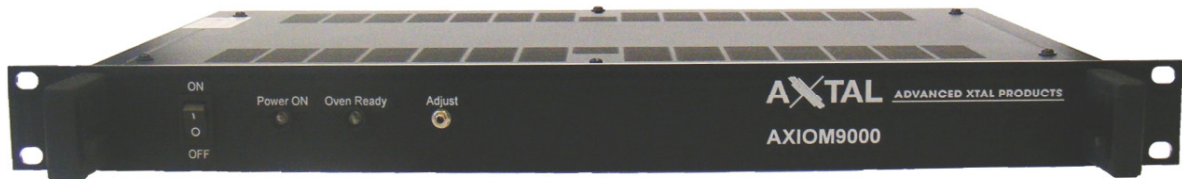


<b>Specification</b>	<b>AXIOM9000</b>	Rev.: 1	Date: 2016-07-01
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**Oscillator type: Very High Stability Ultra-Low Noise Reference (D)OCXO in 19" rack (1 HU) with up to 3 outputs**

**Features:**

- Very High Frequency Stability
- Ultra-Low Phase Noise
- Very Low Aging
- Up to 3 isolated outputs for frequency distribution
- Slim 19" rack with 1 HU
- Cascadable with Frequency Distribution Units AXDA9000
- For ultimate frequency stability see our GPS-disciplined OCXO AXGPS9000 and our Rubidium Reference AXRB9000



**Models:**

Item	(D)OCXO	(D)OCXO with integrated Distribution amplifiers	GPS-disciplined OCXO	Rubidium
<b>Model</b>	<b>AXIOM9000</b>	AXDO9000	AXGPS9000	AXRB9000
<b>Features</b>	DOCXO option Ultra-low noise Very high stability Can be combined with <b>AXDA9000</b> up to 48 outputs	Stability as AXIOM9000 plus low noise high isolation frequency distribution amplifier with 4 to 16 outputs	Low noise Stability $10^{-11}$ Distribution option	Excellent long-term stability Distribution option
<b>Performance</b>	See specification	See separate data sheet	Consult factory	

Parameter	min.	typ.	max.	Unit	Condition
<b>Nominal output frequency</b>	10.000			MHz	
<b>Frequency stability</b>					
Stability options (Note 2)	<b>OCXO</b>	<b>DOCXO</b>			Option 1
Initial tolerance at delivery	< ±10	< ±10		ppb	@ +25°C
vs. operating temperature range	< ±2	< ±0.1		ppb	steady state
Long term (aging) per day	< ±0.5	< ±0.1		ppb	after 30 days operation
Long term (aging) 1 <sup>st</sup> year	< ±50	< ±20		ppb	after 30 days operation
<b>Frequency adjustment range</b>					
Mechanical Frequency Control	> ±0.8	> ±0.4		ppm	By trimmer access (Note 3)
<b>RF output</b>	min.	typ.	max.		
RF output ports	1 OCXO direct output 3 splitted outputs				See block diagram and enclosure drawing
Signal waveform	Sine wave				
Load R <sub>L</sub>	50			Ω	±5%
Output level per port	+12 +7	+14 +9		dBm dBm	OCXO direct output Splitted outputs
Isolation between splitted ports	30	40		dB	
Harmonics			-60	dBc	
Spurious			-90	dBc	
Phase noise (Note 2)	See table 1				Option 2
Short-tem stability (ADEV) (Note 2)		2·10 <sup>-12</sup>	5·10 <sup>-12</sup>		@ τ = 1 sec
Warm-up time (Note 4)			5	min	Δf <sub>final</sub> /f <sub>0</sub> < ±0.1 ppm
<b>AC Supply voltage V<sub>s</sub></b>	100	230	240	V	IEC 60320-1 / C14
<b>AC Supply input frequency</b>	50		60	Hz	
<b>Power consumption</b>			10	W	
<b>Operating temperature range</b>	-10		+60	°C	
<b>Enclosure (see drawing) (WxDxH)</b>	483x250x44			mm	
<b>RF Connectors</b>	BNC female				@ Rear plate
<b>Weight</b>		3		kg	

**Notes:**

1. Terminology and test conditions are according to IEC60679-1 and MIL-PRF-55310, unless otherwise stated
2. Other stabilities and phase noise on request
3. Trimmer accessible at front plate. Adjustment range sufficient for 15 years operation.
4. Warm-up indicator at front plate. Indicator ON when accuracy within ±500 ppb.

**Absolute Maximum Ratings**

Parameter	min.	max.	Unit	Condition
AC Supply Voltage V <sub>s</sub>	90	260	V	
AC Supply input frequency	47	63	Hz	
AC Supply input current		1	A	Fuse accessible at rear plate
Splitter input level (SPLIT IN)		+20	dBm	
Storage Temperature	-20	+70	°C	

**Ordering Code**

Model	Option 1 [Stability]	Option 2 [Phase noise]	Revision	Frequency [MHz]
AXIOM9000	"SO" – OCXO "DO" – DOCXO	Table 1	Rev.1	10.000

Example: AXIOM9000-SO-LN\_Rev.1 – 10.000 MHz

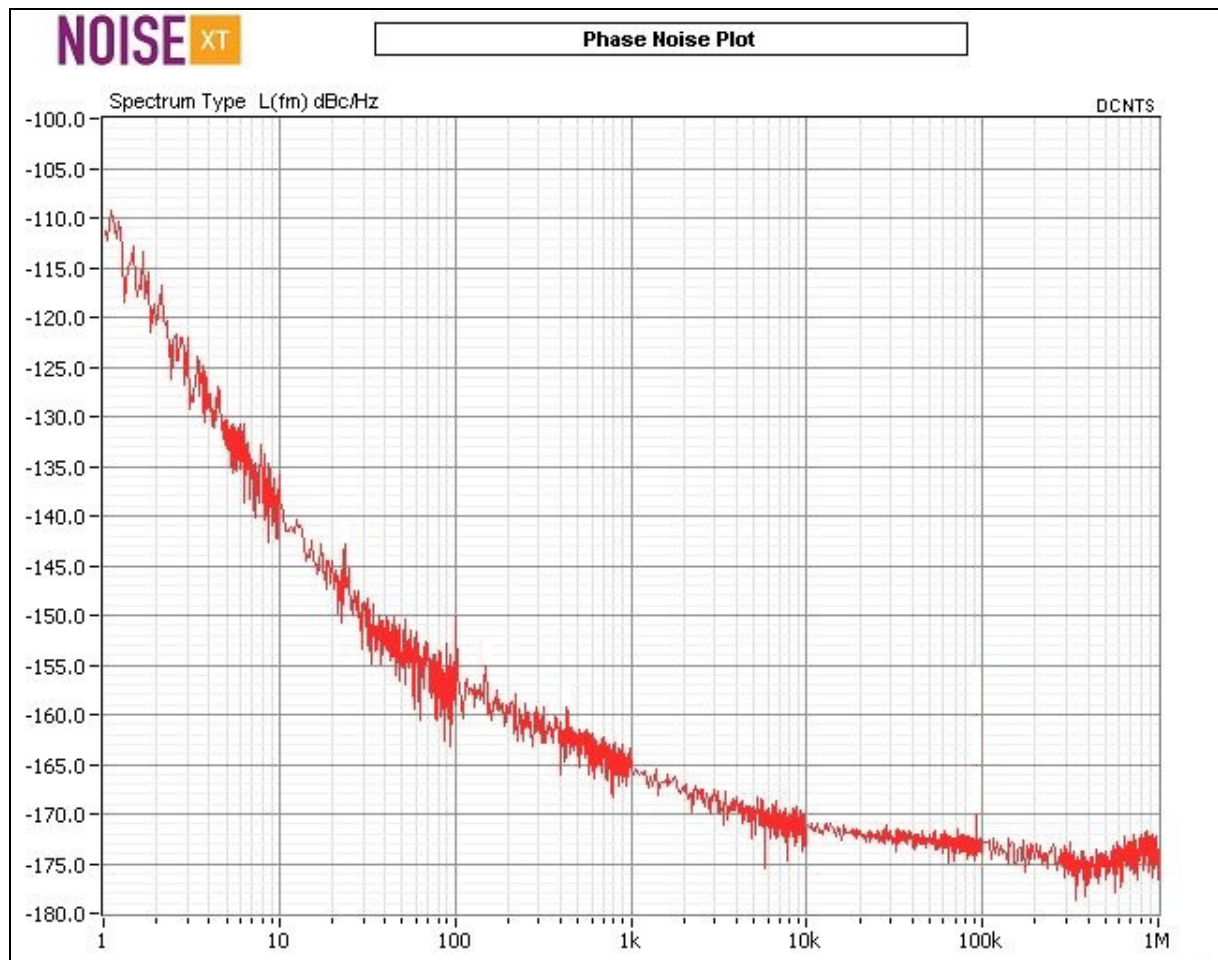
**Phase Noise – Option 2:**

Offset	10 MHz		Unit
	LN	ULN*	
1 Hz	-100	-108	dBc/Hz
10 Hz	-130	-138	dBc/Hz
100 Hz	-145	-155	dBc/Hz
1 kHz	-150	-163	dBc/Hz
10 kHz	-160	-170	dBc/Hz
≥100 kHz	-160	-170	dBc/Hz

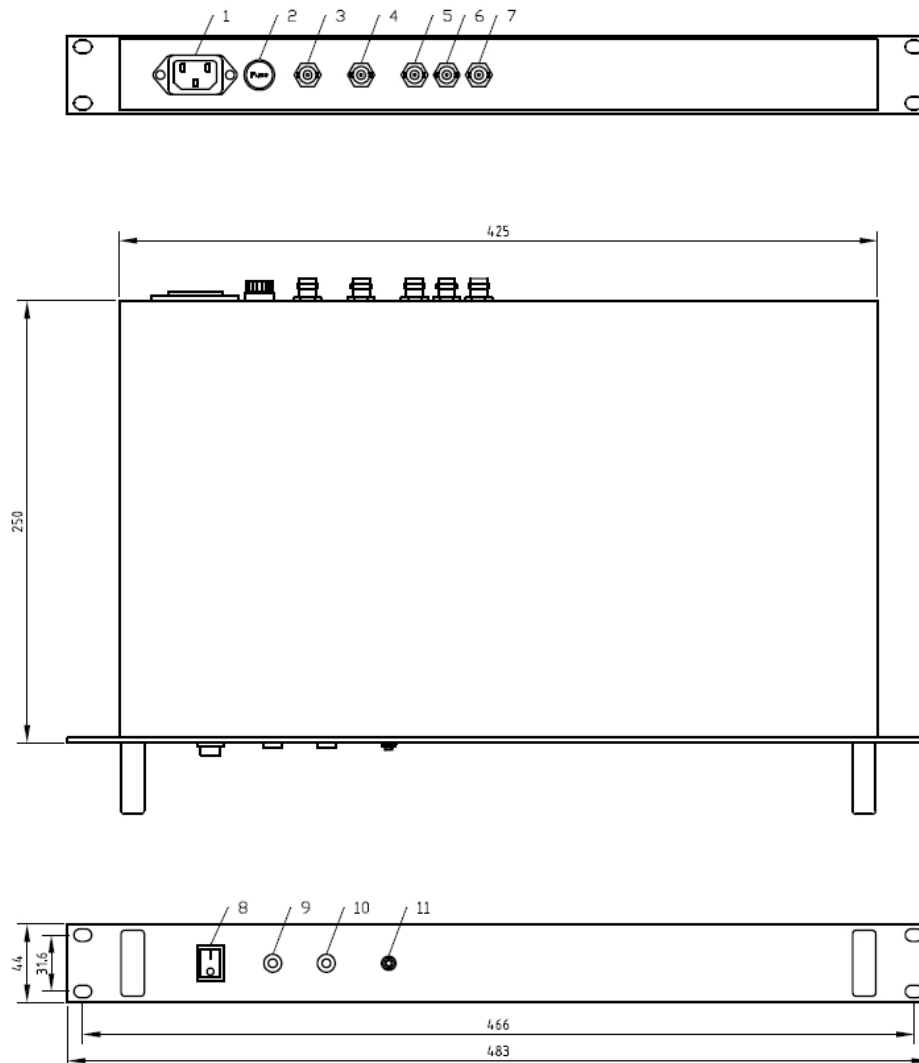
**Table 1**

\*ULN Ultra-Low Noise option only for Option 1 “SO”

**Typical Phase Noise Performance “ULN” Option 2**



## Enclosure drawing

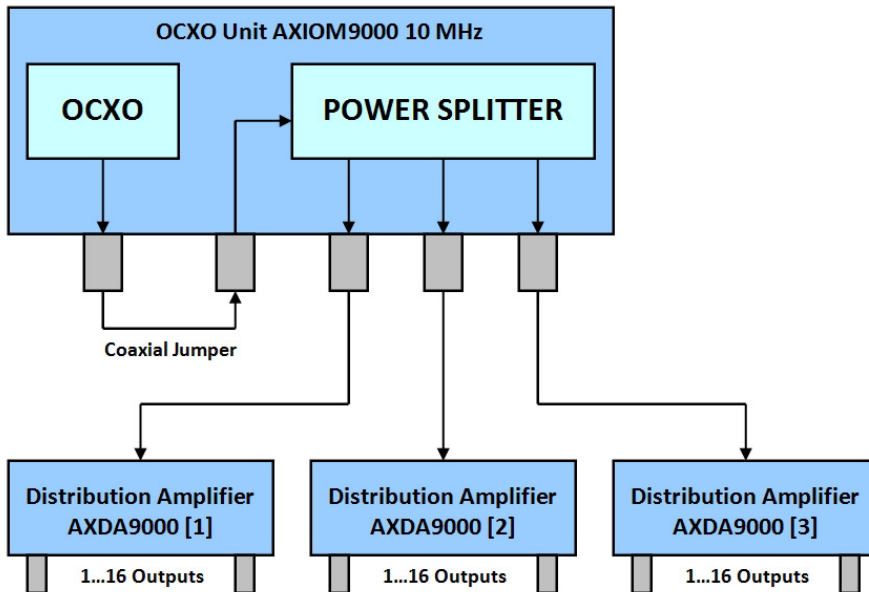


## Connections and operation

#	Panel	Symbol	Function
1	Rear	POWER IN	AC Supply Input (IEC 60320-1 / C14)
2		FUSE	1 A Slow 5x20 mm Fuse
3		OXC OUT	Direct OXC output
4		SPLIT IN	Power splitter input
5		OUT 1	Splitted output 1*
6		OUT 2	Splitted output 2*
7		OUT 3	Splitted output 3*
8	Front	POWER SWITCH	Power Switch ON/OFF
9		POWER ON	LED – Power On Indicator
10		OVEN READY	LED – Oven Ready Indicator
11		ADJUST	Frequency adjustment potentiometer

\*Unused outputs must be terminated with 50 Ω loads

**Extension of AXIOM9000 with optional distribution amplifier AXDA9000**



**Handling & Testing**

Parameter	Procedure / Test condition
Sinusoidal vibration	max. 0.15 mm <10 Hz, 1 g at 10~2000 Hz
Random vibration	max. 0.001 g <sup>2</sup> /Hz, 10~2000 Hz
Mechanical shock	max. 10 g, 6 ms half sine
Handling and Testing	Careful handling. Avoid excessive air flow, vibration and shock during operation.
VDE 0701-0702 Tested	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
RoHS-Compliant	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

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	01.07.2016	First issue	HH	BN