

Specification	AXDO9000	Rev.: 1	Date: 2016-07-04
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Oscillator type: Very High Stability Ultra-Low Noise Reference (D)OCXO with integrated distribution amplifier with 4 to 16 outputs

Features:

- Very High Frequency Stability
- Ultra-Low Phase Noise
- Very Low Aging
- 4 to 16 isolated outputs for frequency distribution
- Slim 19" rack with 1 HU
- 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
Model	AXIOM9000	AXDO9000	AXGPS9000	AXRB9000
Features	DOCXO option Ultra-low noise Very high stability Can be combined with AXDA9000 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
Performance	See separate data sheet	See specification	Consult factory	

Parameter	min.	typ.	max.	Unit	Condition
Nominal output frequency	10.000			MHz	
Frequency stability					
Stability options (Note 2)	OCXO	DOCXO			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 st year	< ±50	< ±20		ppb	after 30 days operation
Frequency adjustment range					
Mechanical Frequency Control	> ±0.8	> ±0.4		ppm	By trimmer access (Note 3)
RF output	min.	typ.	max.		
RF output ports	4, 8, 16				Option 2
Signal waveform	Sine wave				
Load R _L	50			Ω	±5%
Output level per port	+14	+16		dBm	
Isolation between channels	100			dB	
Harmonics			-50	dBc	
Spurious			-90	dBc	
Phase noise (Note 2)	See table 1				Option 3
Short-term stability (ADEV) (Note 2)		2·10 ⁻¹²	5·10 ⁻¹²		@ τ = 1 sec
Warm-up time (Note 4)			5	min	Δf _{final} /f ₀ < ±0.1 ppm
AC Supply voltage V_s	100	230	240	V	IEC 60320-1 / C14
AC Supply input frequency	50		60	Hz	
Power consumption			20	W	
Operating temperature range	-10		+60	°C	
Enclosure (see drawing) (WxDxH)	483x250x44			mm	
RF Connectors	BNC female				@ Rear plate
Weight		4		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 _s	90	260	V	
AC Supply input frequency	47	63	Hz	
AC Supply input current		1	A	Fuse accessible at rear plate
Load R _L	0	∞	Ω	No damage
Storage Temperature	-20	+70	°C	

Ordering Code

Model	Option 1 [Stability]	Option 2 [Output ports]	Option 3 [Phase noise]	Revision	Frequency [MHz]
AXDO9000	"SO" – OCXO "DO" – DOCXO	4, 8, 16	Table 1	Rev.1	10.000

Example: AXDO9000-SO-16-LN_Rev.1 – 10.000 MHz

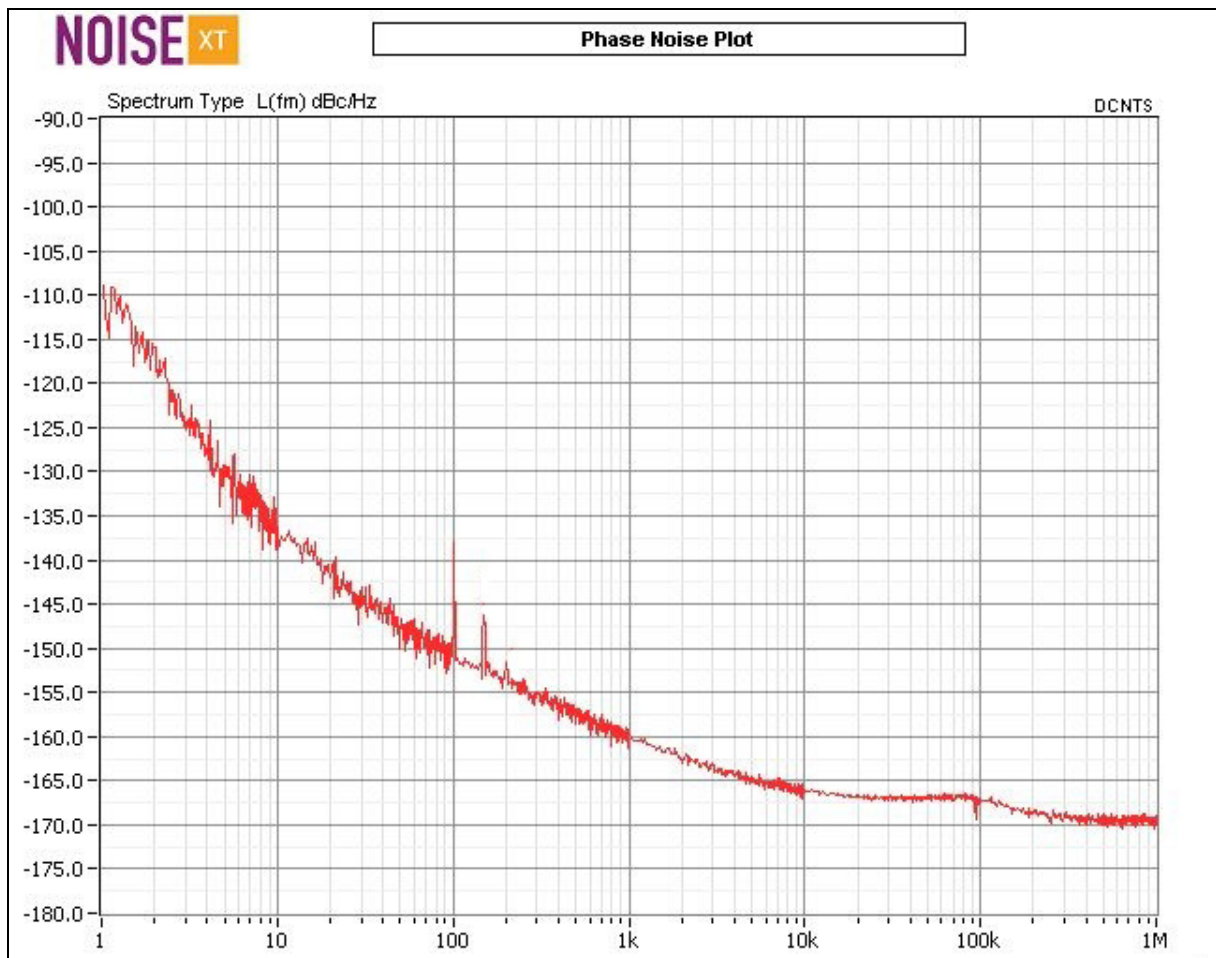
Phase Noise – Option 3:

Offset	10 MHz		Unit
	LN	ULN*	
1 Hz	-100	-108	dBc/Hz
10 Hz	-130	-138	dBc/Hz
100 Hz	-145	-148	dBc/Hz
1 kHz	-150	-158	dBc/Hz
10 kHz	-155	-163	dBc/Hz
≥100 kHz	-155	-165	dBc/Hz

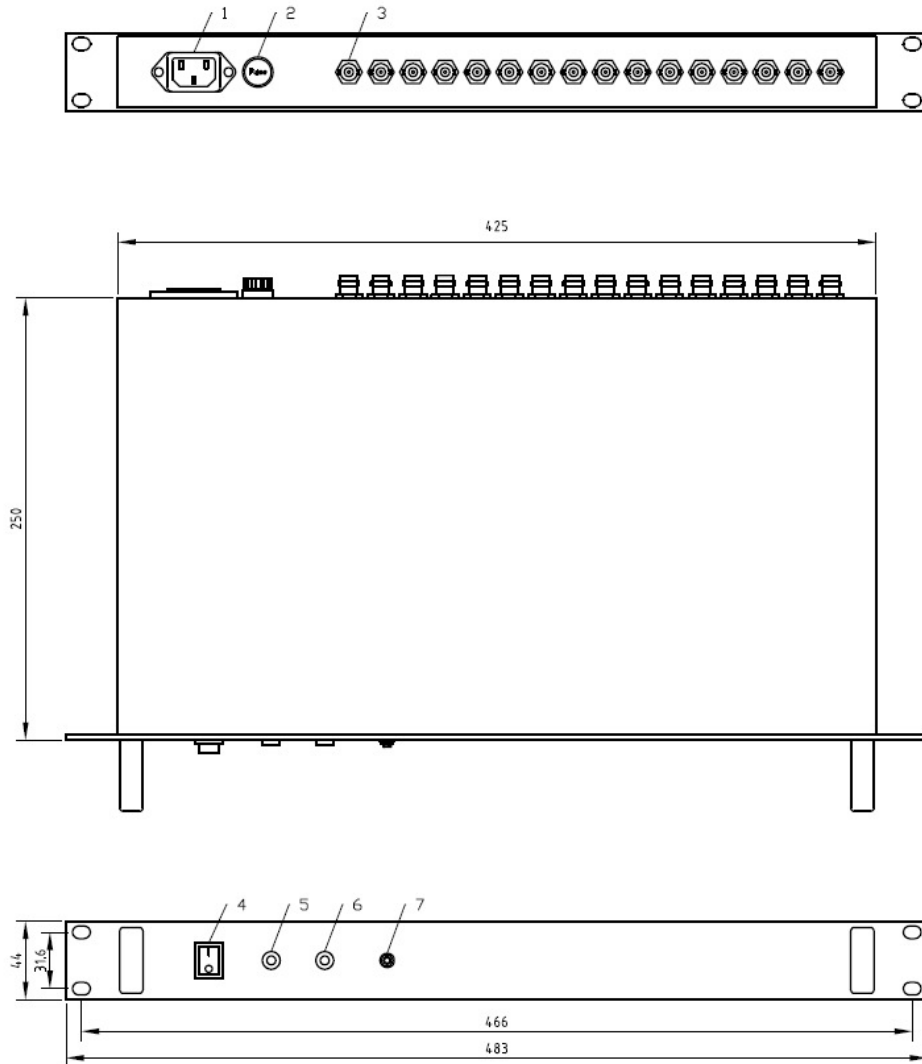
Table 1

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

Typical Phase Noise Performance “ULN” Option 3



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		OUT	RF outputs 4...16*
4	Front	POWER SWITCH	Power Switch ON/OFF
5		POWER ON	LED – Power On Indicator
6		OVEN READY	LED – Oven Ready Indicator
7		ADJUST	Frequency adjustment potentiometer

*Unused outputs must be terminated with 50 Ω loads. Number of outputs depending on Option 2.

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 ² /Hz, 10~2000 Hz
Mechanical shock	max. 10 g, 11 ms half sine
Handling and Testing	Careful handling. Avoid air flow, fan vibration and shock during operation.
DGUV Requirement 3 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	04.07.2016	First issue	HH	BN