



# AT-PDRO-9.4GHz-IR

Phased Locked Dielectric Resonator Oscillator

## PRDO, 9.4GHz, Low Phase Noise 100MHz Internal Referenced

2023-11-3



### Product Overview

AT Microwave provides Phased Locked Dielectric Resonator Oscillator (PLDRO) with state of art performance with high stable, reliable and efficient from 1GHz to 44GHz.

The PLDRO is with external or internal referenced option. The standard internal OCXO is with 100MHz, -157dBc/Hz 1kHz and +/-0.1ppm. The internal reference can also be locked to a 10MHz external reference according to the application.

More information, please visit [www.atmicrowave.com](http://www.atmicrowave.com)

### Advantages

- ✓ Low Phase Noise
- ✓ Low Harmonics
- ✓ Low Spurs
- ✓ Internal or external Referenced

### Application

- ✓ 5G Communication
- ✓ Test Equipment
- ✓ ROF (RF Over Fiber)
- ✓ Radar System

### Key Features

Parameter	Min	Typical	Max
RF OUT Frequency		9.4GHz	
Output Power	+10	+13dBm	
Internal Referenced	100MHz, -157dBc/Hz @1kHz, +/-0.1ppm		
Harmonics		-20dBc	
Spurs		-70dBc	
Phase Noise	See table		
Power Supply		+12V/0.45A	
Phase Lock Indicator		Lock, TTL High	
External Reference (Option)		10MHz	
External Reference Power	0dBm	+3dBm	+5dBm
Spec Temp		25C	





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## Mechanical Information

Item	Description
RF Output Port	SMA Female
Reference Input	SMA Female
Vdd Power Supply	PIN
Phase Locked Indicator	PIN
Case Material	Aluminum
Finish	Nickel Plated
Weight	150g
Size:	See outline

## Absolute Maximum Ratings Table

Parameter	Value
Drain Supply	+15V
10MHz External Reference Power	+10dBm
Operating Temperature	-40 to + 70C
Storage Temperature	-55 to +85C

### Caution:

Please pay attention to the case temperature. If case temperature exceed higher than +50C, heat sink and fan are required, or the amplifier may be damaged.

### Notes:

1. Datasheet may be changed according to update of MMIC, Raw materials , process, and so on.
2. This data is only for reference, not for guaranteed specifications.
3. Please contact AT Microwave team to make sure you have the most current data.





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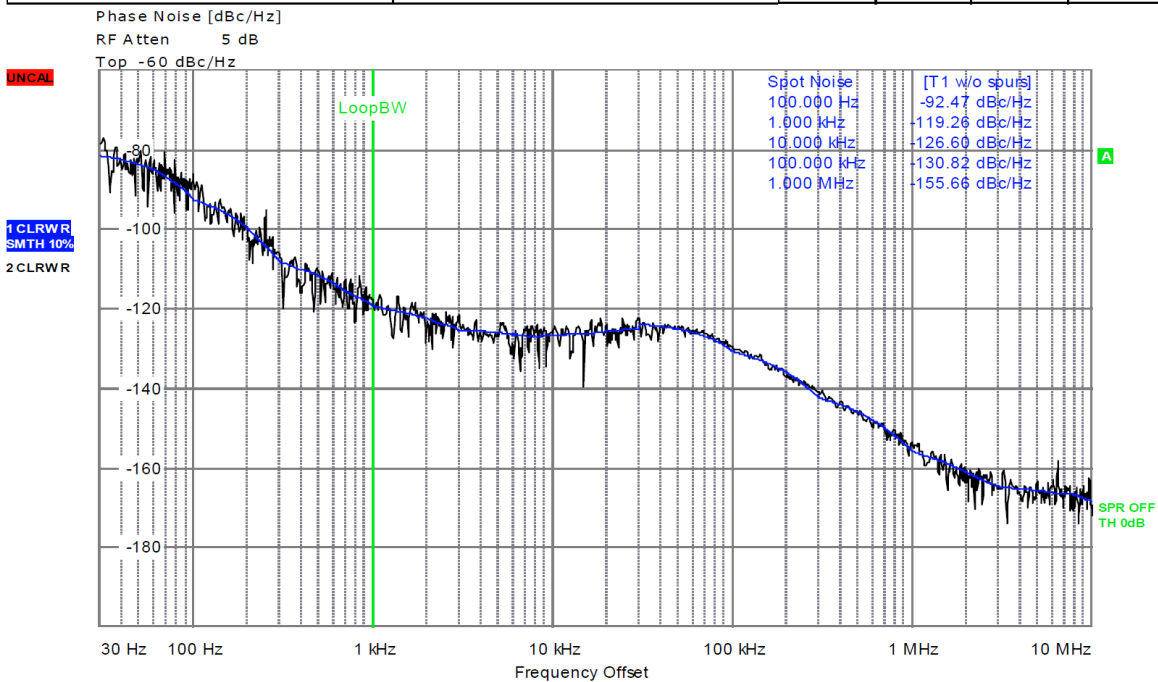
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## Typical Phase Noise vs Frequency

Frequency	1	2	4	6	8	10	12	14	16
dBc/Hz@100Hz	108	102	-96	-92	-92	-88	-88	-86	-83
dBc/Hz@1KHz	-133	-126	-120	-116	-115	-113	-110	-108	-102
dBc/Hz@10KHz	-135	-131	-126	-120	-120	-120	-118	-118	-105
dBc/Hz@100KHz	-135	-131	-126	-120	-120	-120	-120	-118	-110
dBc/Hz@1MHz	-140	-140	-140	-140	-140	-140	-140	-140	-140
Frequency	18	20	24	26	28	32	36	40	44
dBc/Hz@100Hz	-83	-80	-80	-80	-78	-78	-76	-73	-72
dBc/Hz@1KHz	-108	-104	-104	-102	-102	-96	-95	-94	-93
dBc/Hz@10KHz	-114	-113	-112	-110	-110	-99	-97	-94	-93
dBc/Hz@100KHz	-114	-113	-112	-110	-110	-104	-103	-102	-102
dBc/Hz@1MHz	-136	-134	-133	-131	-131	-130	-130	-130	-130

★ Note: Frequency 16-44GHz, Sub-harmonics: -60dBc

R&S FSUP Signal Source Analyzer		LOCKED			
Settings		Residual Noise [T1 w/o spurs]		Phase Detector +40 dB	
Signal Frequency:	9.400000 GHz	Int PHN (30.0 .. 10.0 M)	-65.5 dBc		
Signal Level:	11.83 dBm	Residual PM	42.794 m°		
Cross Corr Mode	Harmonic 1	Residual FM	120.192 Hz		
Internal Ref Tuned	Internal Phase Det	RMS Jitter	0.0126 ps		



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**Dimension:** (unit in mm)

