

PLO Series

3496-3504MHz Phase Locked Oscillator

Features

- Output Frequency : 3496 to 3504MHz
- Output Power: +18dBm
- Reference Input: 9.99 to 10.01MHz
- Internal Fixed Divider Ratio: 350
- Internal Reference TCXO: 10MHz
- Default Output: 3500MHz
- DC Power: 12V
- SMA Connector

Picture



Description

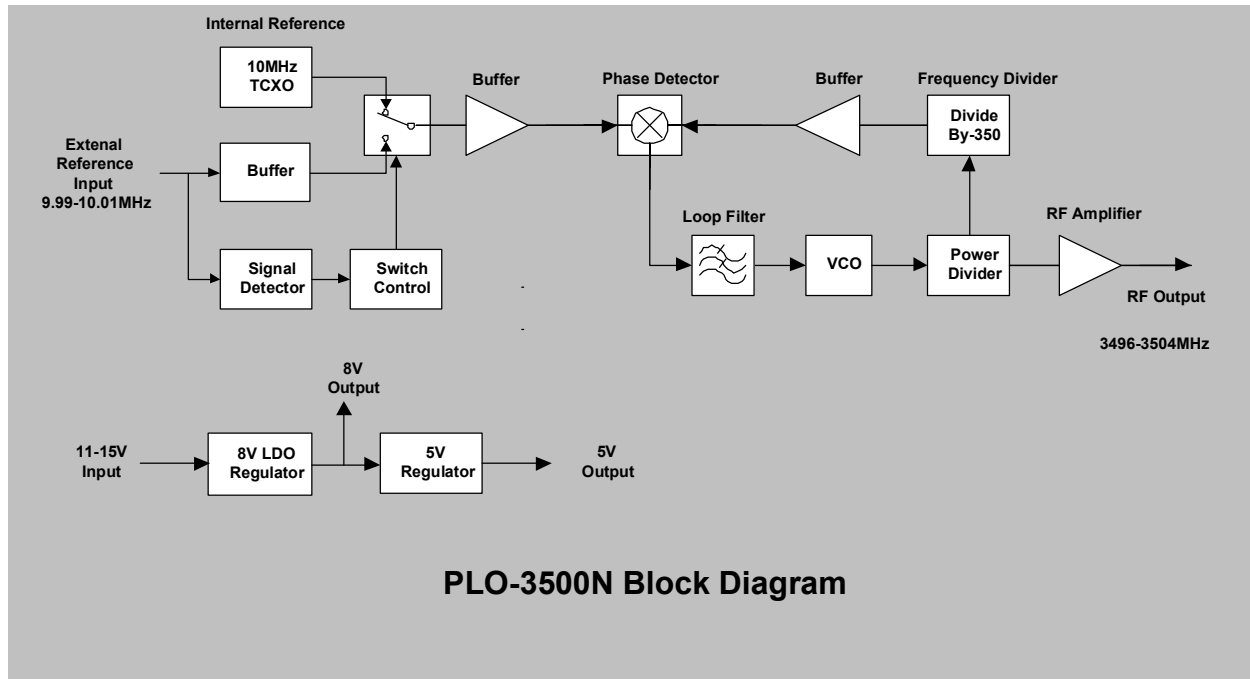
PLO-3500N is a Phase Locked Oscillator with internal fixed frequency divider of 350 and internal 10MHz TCXO. With external reference applied, the unit will auto switch and phase locked to generate output frequency 350 times of input reference frequency.

Electrical Specifications @ +25 °C, $Z_{IN} = Z_{OUT} = 50 \Omega$, DC Power = +12V

Parameter	Unit	Minimum	Typical	Maximum
Output Frequency Range	MHz	3496		3504
Output Power Level	dBm	+17	+18	
Input Reference Frequency Range	MHz	9.99		10.01
Input Reference Power Level	dBm	-7		+17
Fixed Frequency Divider Ratio			350	
Internal Reference TCXO	MHz		10	
Default Output without Ext. Ref	MHz		3500	
Phase Noise @ 1KHz Offset*	dBc/Hz		-81	
@ 10KHz Offset*	dBc/Hz		-96	
Harmonics Output at $2f_0/3f_0/4f_0$	dBc		57/67/71	
Reference Input VSWR			1:1.2	
RF Output VSWR			1:1.6	
DC Power Supply	V	11	12	15
Supply Current	mA		370	

* Phase Noise is measured using internal 10MHz TCXO

Block Diagram



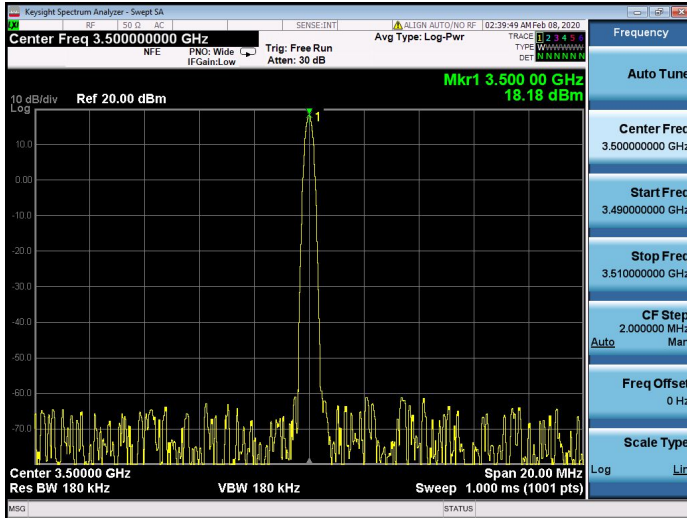
PLO-3500N Block Diagram

Operation Theory

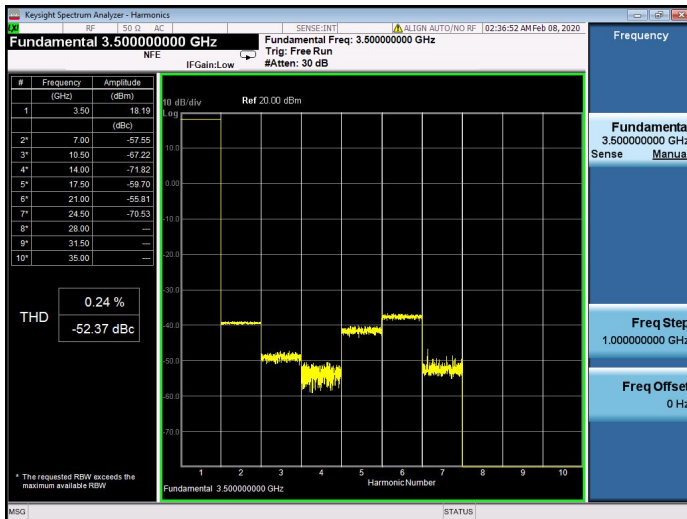
PLO-3500N Phase Locked Oscillator is phase locked to its internal 10MHz Temperature Compensated Crystal Oscillator (TCXO) when external reference signal is not applied. With its internal fixed frequency divider ratio set to 350, the output frequency is default at $(10\text{MHz}) \times (350) = 3500\text{MHz}$. When external reference signal of 9.99MHz to 10.01MHz with signal level above -7dBm applied to External Reference Input Port, the reference signal will be detected and reference selection switch will be automatically switched to its external reference source. The RF output frequency then will be 350 times of external reference frequency which results in 3496MHz to 3504MHz range. Internal linear voltage regulator allows unit to operate from 11V to 15V.

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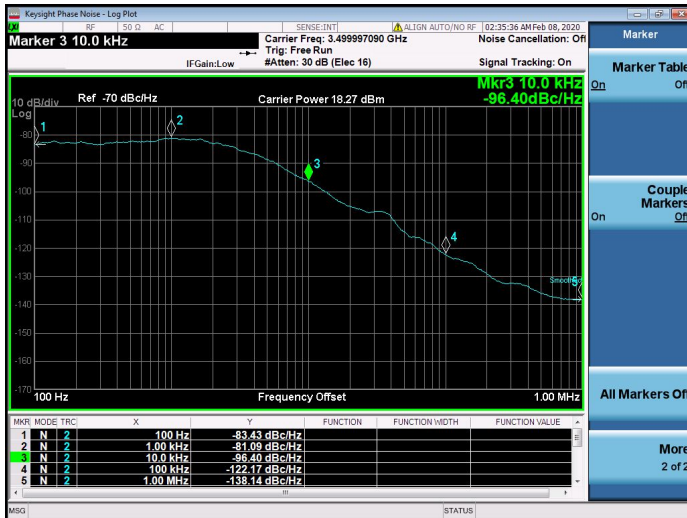
3496-3504MHz Phase Locked Oscillator



Output Power at 3500MHz



Output Harmonics from f_0 to $7f_0$



Phase Noise dBc/Hz

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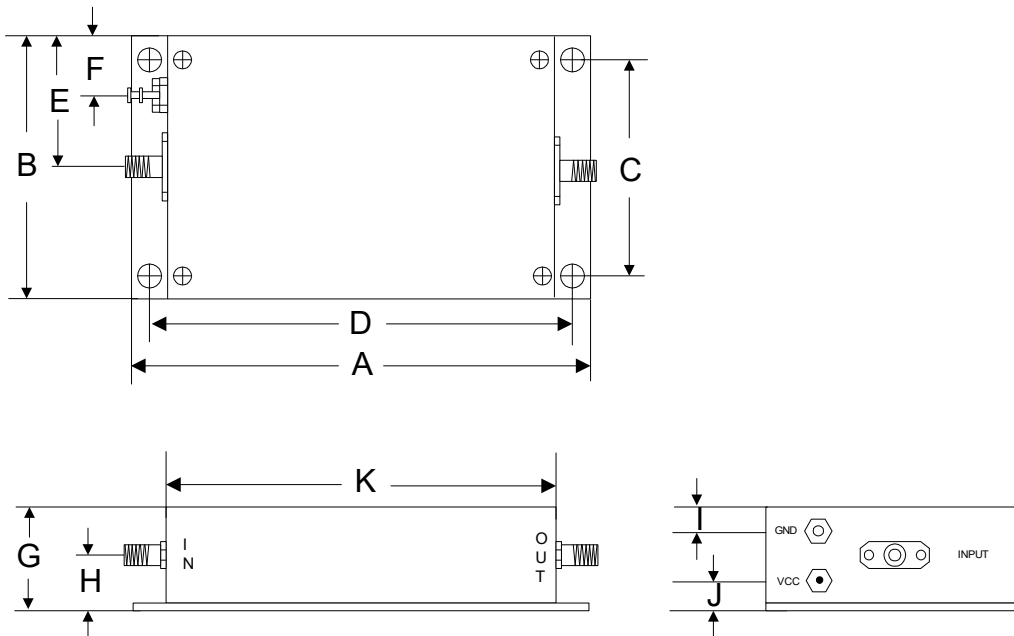
Absolute Maximum Ratings

Parameter	Absolute Maximum
Reference Input Power	+20dBm
DC Supply Voltage	+16V
Operating Temperature	-40 °C to +85 °C
Storage Temperature	-55 °C to +125 °C

ESD Sensitive Material



Outline



	A	B	C	D	E	F	G	H	I	J	K
Inch	3.750	2.000	1.750	3.400	1.000	0.400	0.813	0.375	0.300	0.238	3.000
mm	92.25	50.80	44.45	86.36	25.40	10.16	20.64	9.53	7.62	6.03	76.20