

## PLO Series

## 4395-4405MHz Phase Locked Oscillator

### Features

- Output Frequency : 4395 to 4405MHz
- Output Power: +16dBm
- Reference Input: 9.99 to 10.01MHz
- Internal Fixed Divider Ratio: 440
- Internal Reference TCXO: 10MHz
- Default Output: 4400MHz
- DC Power: 12V
- SMA Connector

### Picture



### Description

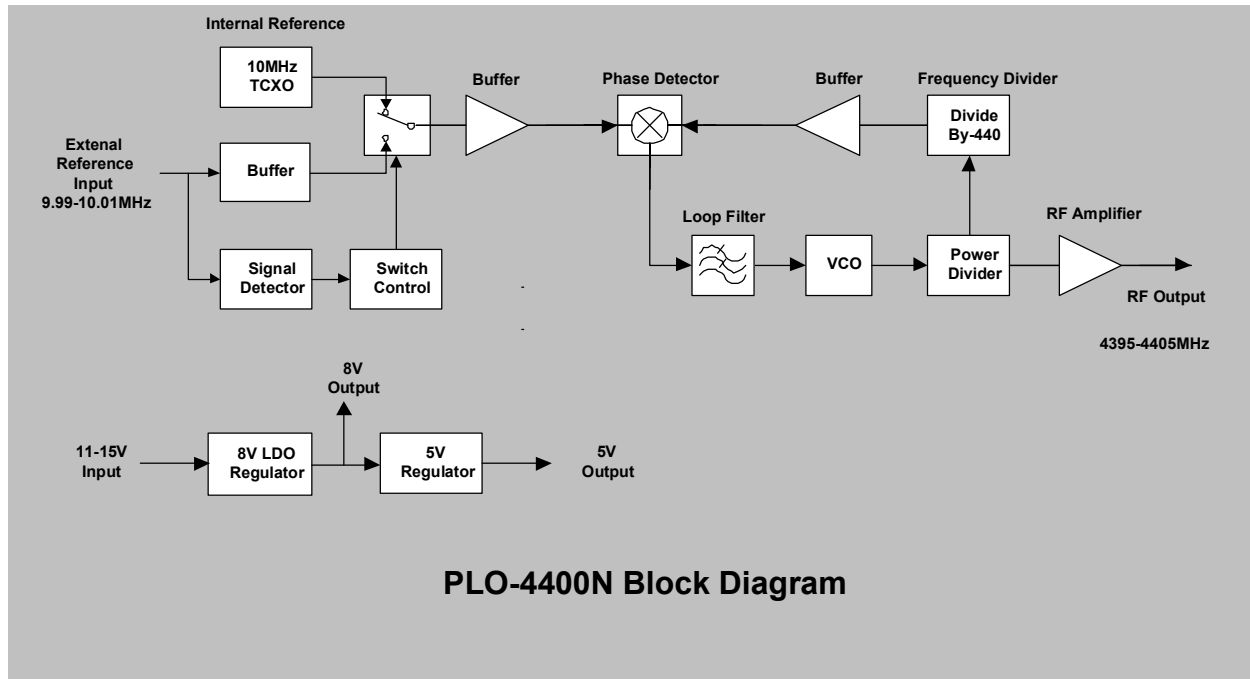
PLO-4400N is a Phase Locked Oscillator with internal fixed frequency divider of 440 and internal 10MHz TCXO. With external reference applied, the unit will auto switch and phase locked to generate output frequency 440 times of input reference frequency.

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

Parameter	Unit	Minimum	Typical	Maximum
Output Frequency Range	MHz	4395		4405
Output Power Level	dBm	+15	+16	
Input Reference Frequency Range	MHz	9.99		10.01
Input Reference Power Level	dBm	-7		+17
Fixed Frequency Divider Ratio			440	
Internal Reference TCXO	MHz		10	
Default Output without Ext. Ref	MHz		4400	
Phase Noise @ 1KHz Offset*	dBc/Hz		-67	
@ 10KHz Offset*	dBc/Hz		-87	
Harmonics Output at $2f_0/3f_0/4f_0$	dBc		69/49/55	
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**



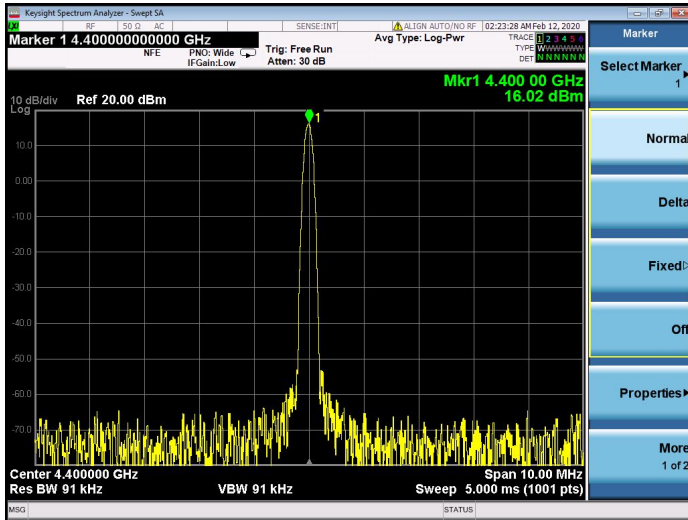
**PLO-4400N Block Diagram**

**Operation Theory**

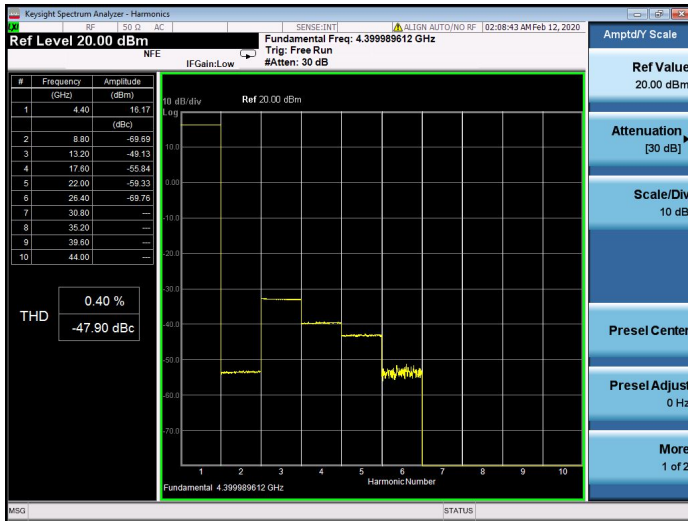
PLO-4400N Phase Locked Oscillator is phase locked to its internal 10MHz Temperature Compensated Crystal Oscillator (TCXO) when external reference signal is not applied. With its internal fixed frequency divider ratio set to 440, the output frequency is default at  $(10\text{MHz}) \times (440) = 4400\text{MHz}$ . 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 440 times of external reference frequency which results in 4395MHz to 4405MHz range. Internal linear voltage regulator allows unit to operate from 11V to 15V.

**PLO Series**

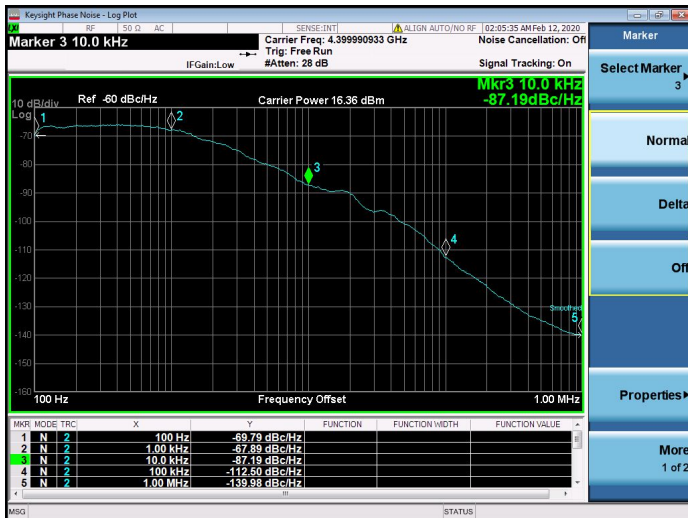
**4395-4405MHz Phase Locked Oscillator**



Output Power at 4400MHz



Output Harmonics from  $f_0$  to  $6f_0$



Phase Noise dBc/Hz

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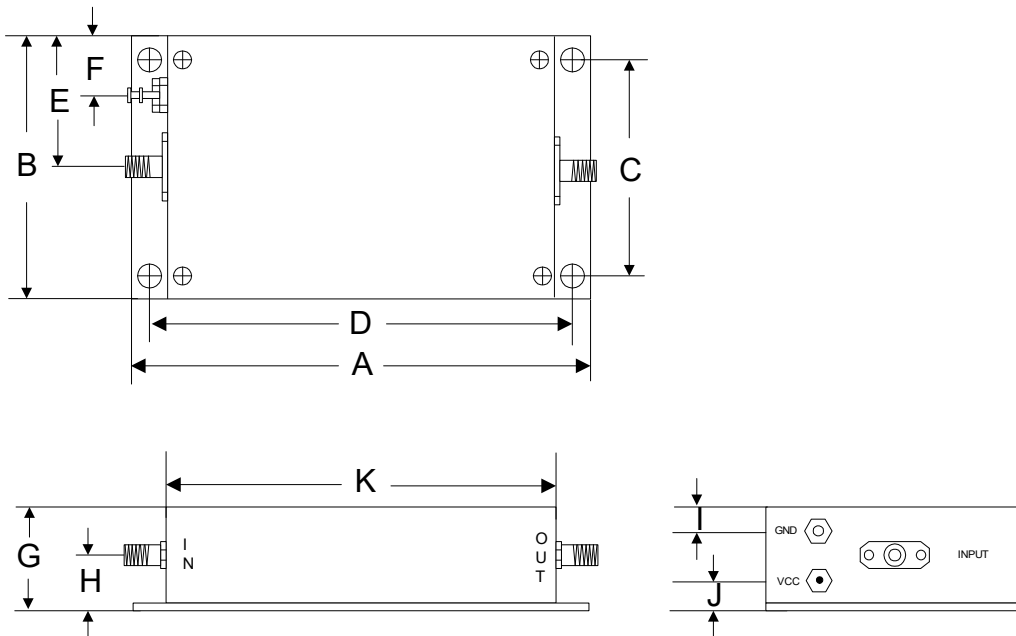
### Absolute Maximum Ratings

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
<b>Inch</b>	3.750	2.000	1.750	3.400	1.000	0.400	0.813	0.375	0.300	0.238	3.000
<b>mm</b>	92.25	50.80	44.45	86.36	25.40	10.16	20.64	9.53	7.62	6.03	76.20