

PLO Series

2300-2450MHz Phase Locked Oscillator

Features

- Output Frequency : 2300 to 2450MHz
- Output Power: +17dBm
- Reference Input: 9.58 to 10.21MHz
- Internal Fixed Divider Ratio: 240
- Internal Reference TCXO: 10MHz
- Default Output: 2400MHz
- DC Power: 12V
- SMA Connector

Picture



Description

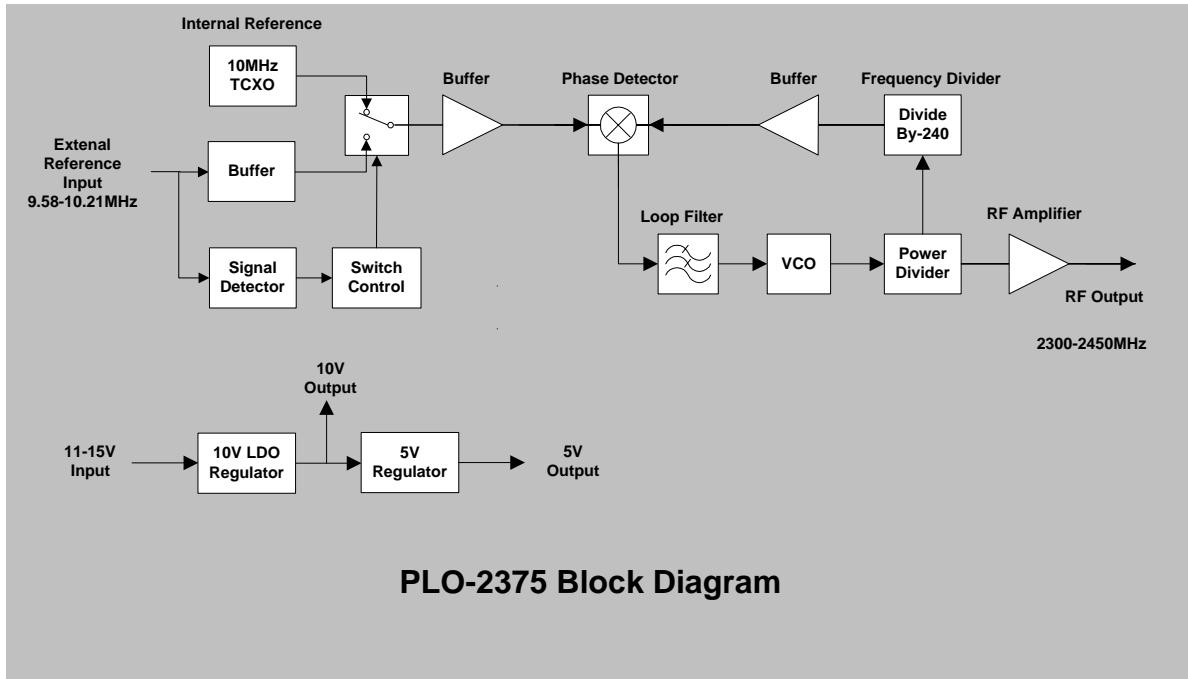
PLO-2375 is a Phase Locked Oscillator with internal fixed frequency divider of 240 and internal 10MHz TCXO. With external reference applied, the unit will auto switch and phase locked to generate output frequency 240 times of input reference.

Electrical Specifications @ +25 °C, $Z_S = Z_L = 50$ Ohms

Parameter	Unit	Minimum	Typical	Maximum
Output Frequency Range	MHz	2300		2450
Output Power Level	dBm		+17	
Input Reference Frequency Range	MHz	9.58		10.21
Input Reference Power Level	dBm	+3		+17
Fixed Frequency Divider Ratio			240	
Internal Reference TCXO	MHz		10	
Default Output without Ext. Ref	MHz		2400	
Phase Noise @ 1KHz Offset*	dBc/Hz		-92	
Harmonics Output at $2f_0/3f_0/4f_0$	dBc		58/45/63	
Reference Input VSWR			1:1.2	
RF Output VSWR			1:2.0	
DC Power Supply	V	11	12	15
Supply Current	mA		300	

* Phase Noise is measured using internal 10MHz TCXO

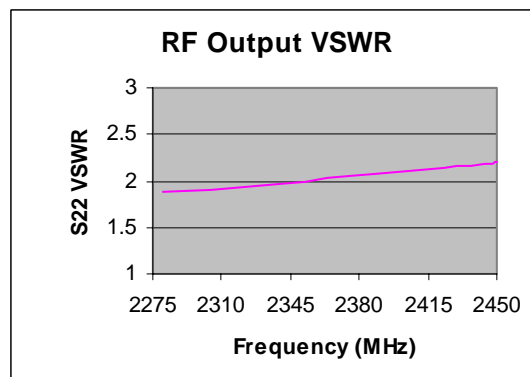
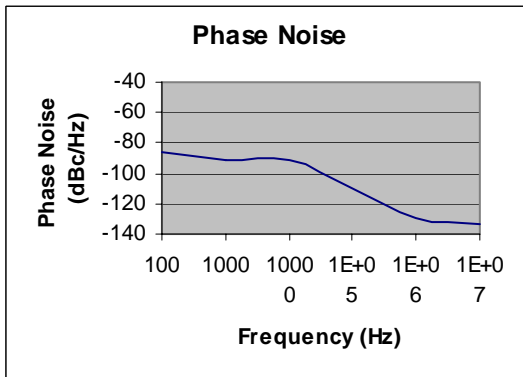
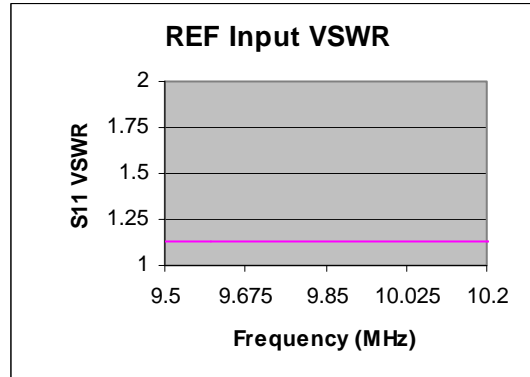
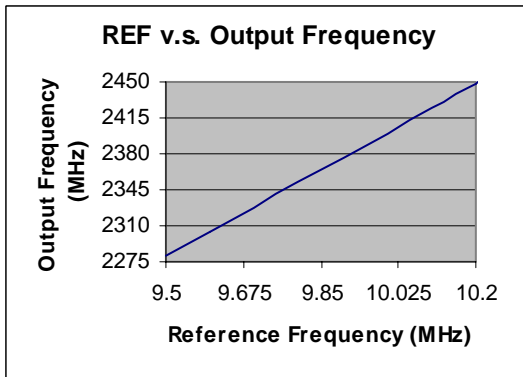
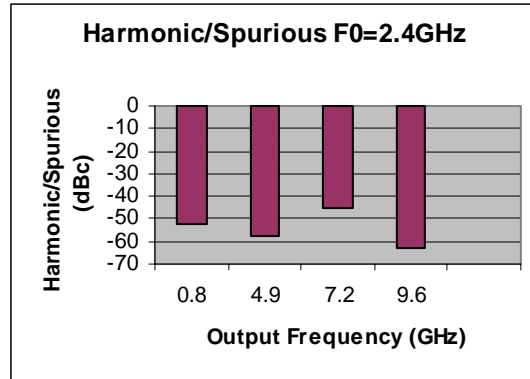
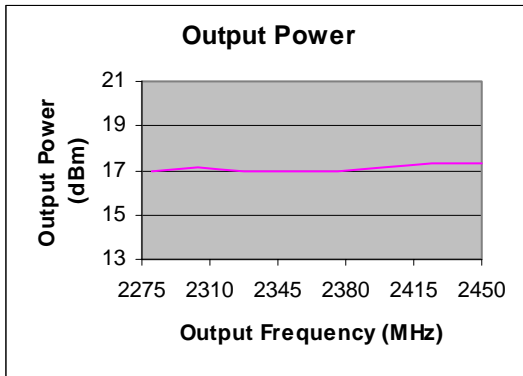
Block Diagram



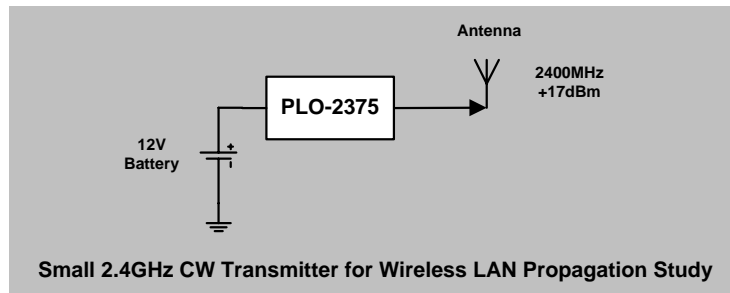
Operation Theory

PLO-2375 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 240, the output frequency is default at $10\text{MHz} \times 240 = 2400\text{MHz}$. When external reference signal of 9.58MHz to 10.21MHz with signal level above +3dBm 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 240 times of external reference frequency which results in 2300MHz to 2450MHz range. Internal Low Drop Out (LDO) linear voltage regulator allows unit to operate from 11V to 15V.

Typical Performance @ +25 °C

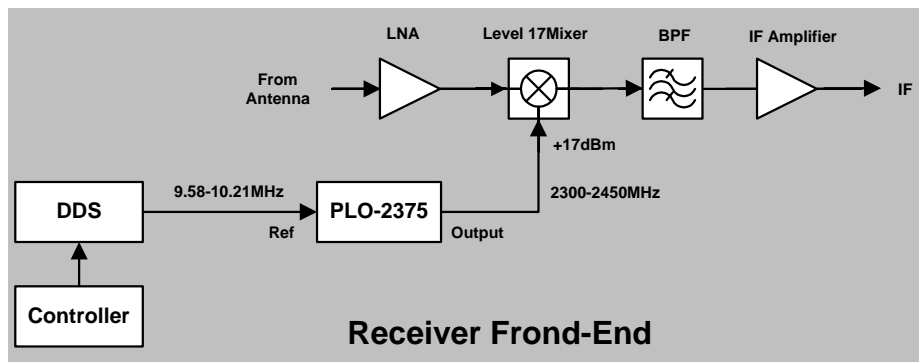


Application Example 1



With 12V battery and 2.4GHz antenna, PLO-2375 can be a simple CW transmitter with +17dBm output for WLAN or 2.4GHz ISM band propagation study (does not require any external reference input). With other fixed external reference input, the output frequency can be tuned from 2300MHz to 2450MHz.

Application Example 2

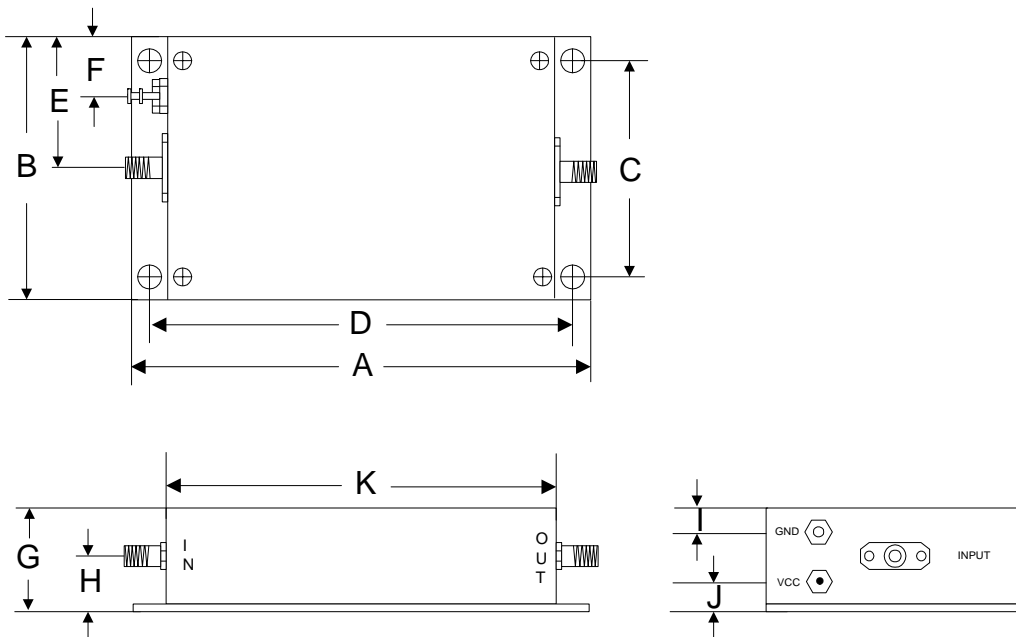


PLO-2375 can be used as tunable local oscillator in receiver front-end design. Its easy to use and low cost helps system designer and integrator quick setup their bench test. With +17dBm output power across the band, PLO-2375 is ideal for a Level 17 mixer local oscillator source.

Absolute Maximum Ratings

Parameter	Absolute Maximum
Reference Input Power	+20dBm
Supply Voltage	+16V
Operating Temperature	-40 °C to +85 °C
Storage Temperature	-55 °C to +100 °C

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