

PLO Series

5150-5400MHz Phase Locked Oscillator

Features

- Output Frequency : 5150 to 5400MHz
- Output Power: +13dBm
- Reference Input: 9.9 to 10.4MHz
- Internal Fixed Divider Ratio: 520
- Internal Reference TCXO: 10MHz
- Default Output: 5200MHz
- DC Power: 12V
- SMA Connector

Picture



Description

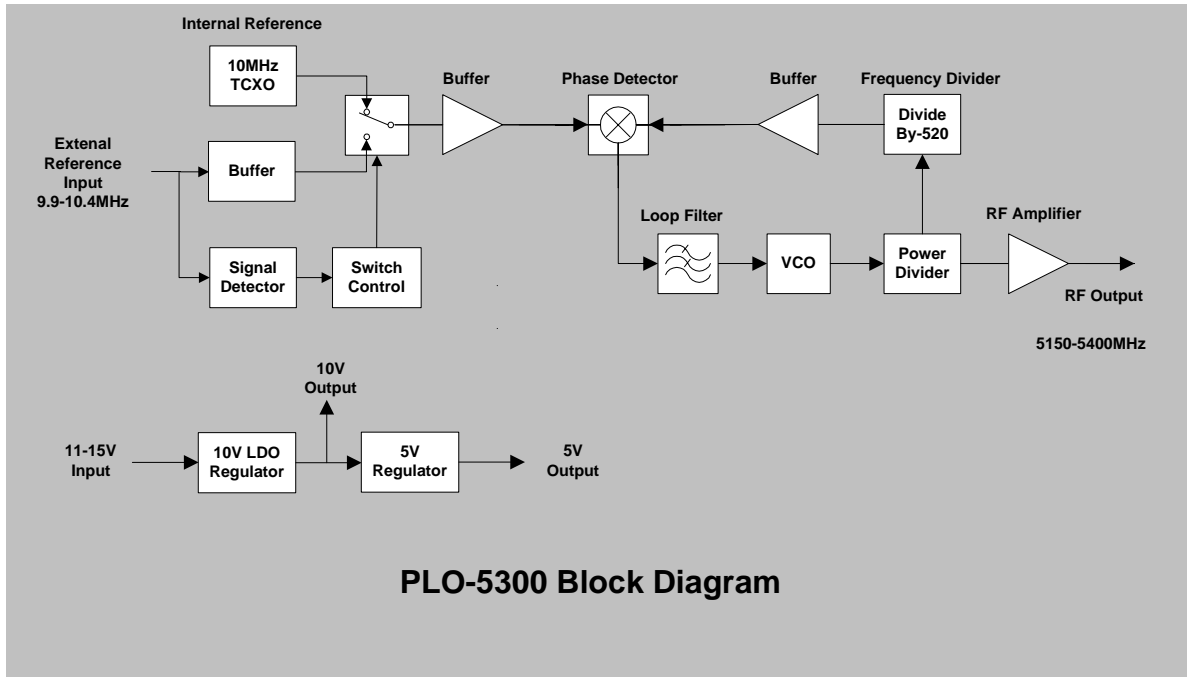
PLO-5300 is a Phase Locked Oscillator with internal fixed frequency divider of 520 and internal 10MHz TCXO. With external reference applied, the unit will auto switch and phase locked to generate output frequency 520 times of input reference.

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

Parameter	Unit	Minimum	Typical	Maximum
Output Frequency Range	MHz	5150		5400
Output Power Level	dBm		+13	
Input Reference Frequency Range	MHz	9.90		10.4
Input Reference Power Level	dBm	+3		+17
Fixed Frequency Divider Ratio			520	
Internal Reference TCXO	MHz		10	
Default Output without Ext. Ref.	MHz		5200	
Phase Noise @ 1KHz Offset*	dBc/Hz		-78	
Harmonics Output at $2f_0$	dBc		45	
Reference Input VSWR			1:1.2	
RF Output VSWR			1:2.5	
DC Power Supply	V	11	12	15
Supply Current	mA		315	

* Phase Noise is measured using internal 10MHz TCXO

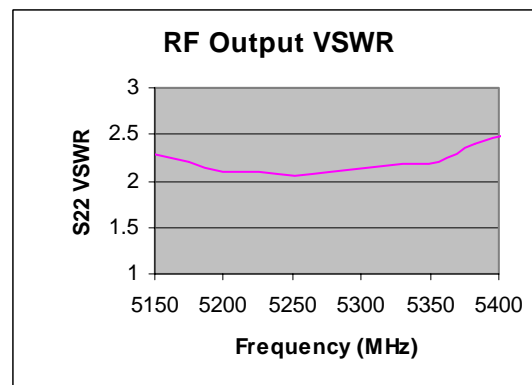
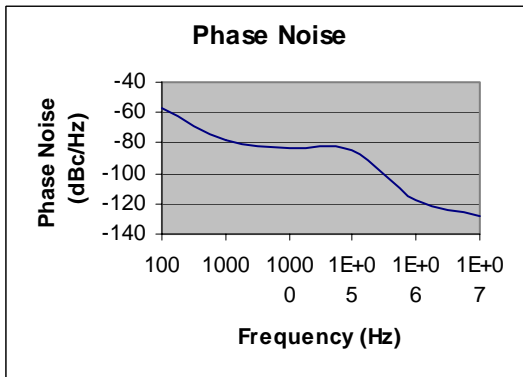
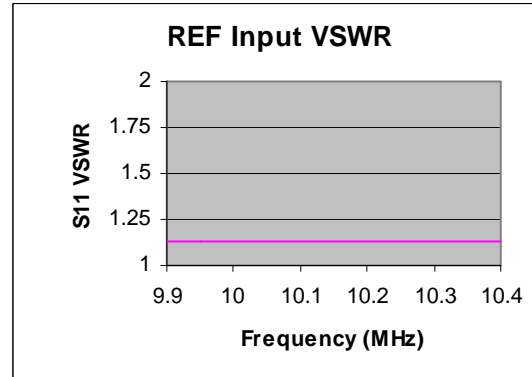
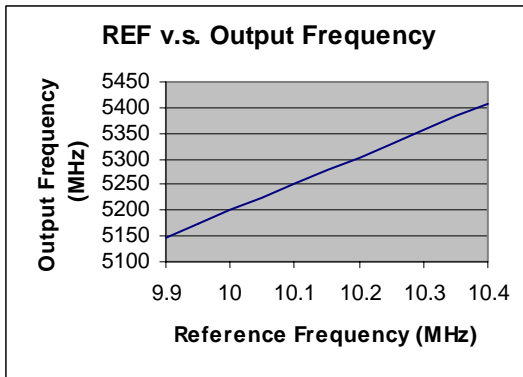
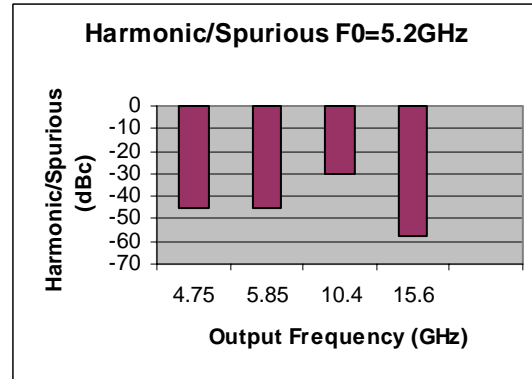
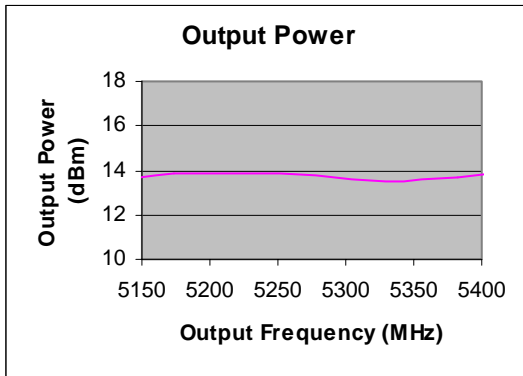
Block Diagram



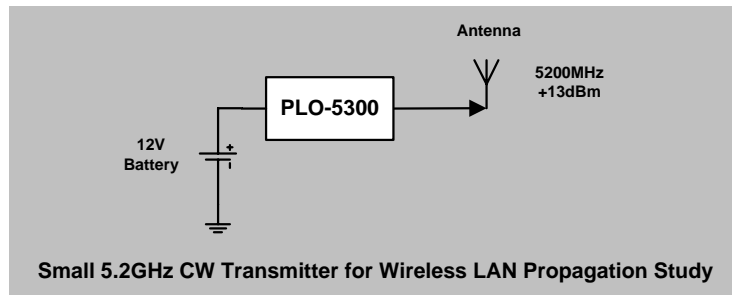
Operation Theory

PLO-5300 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 520, the output frequency is default at $10\text{MHz} \times 520 = 5200\text{MHz}$. When external reference signal of 9.90MHz to 10.4MHz 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 520 times of external reference frequency which results in 5150MHz to 5400MHz range. Internal Low Drop Out (LDO) linear voltage regulator allows unit to operate from 11V to 15V.

Typical Performance @ +25 °C

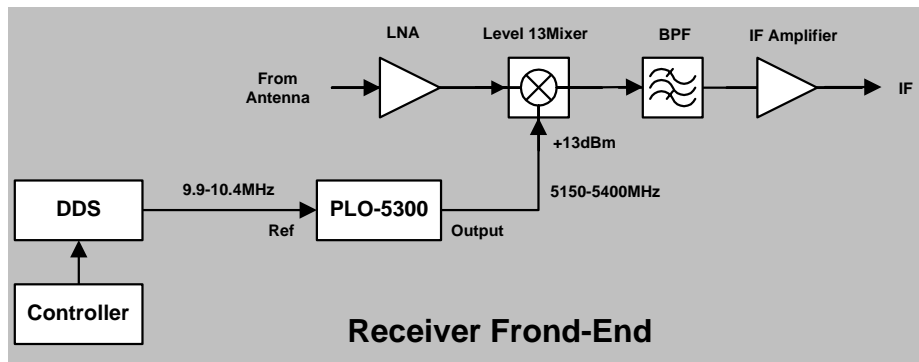


Application Example 1



With 12V battery and 5.2GHz antenna, PLO-5300 can be a simple CW transmitter with +13dBm output for WLAN or 5.2GHz ISM band propagation study (does not require any external reference input). With other external reference input between 9.9MHz to 10.4MHz, the output frequency can be tuned from 5150MHz to 5400MHz.

Application Example 2

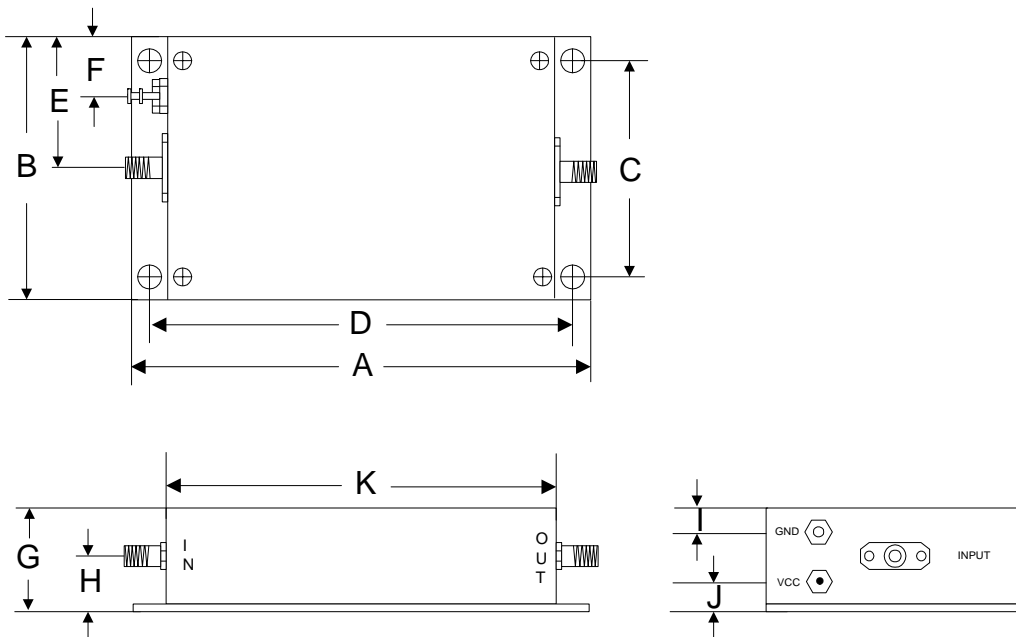


PLO-5300 can be used as tunable local oscillator in receiver front-end design. Its easy to use and low cost helps system designer and integrator quick setup their bench test. With +13dBm output power across the band, PLO-5300 is ideal for a Level 13 mixer local oscillator source.

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