

Dual Phase Lock Loop

Product Information

PLL IC: LMX2433

Package: PLL-V12D

Absolute Maximum Rating

Vcc: -0.5V to +3.25V

Digital Inputs: -0.3V to Vcc+0.3V

Operating Temperature Range: -40 to 85°C

Storage Temperature Range: -65 to 125°C

Performance Specifications

	Min	Typ	Max	Units
RF Output				
Frequency	1420		1460	MHz
Power Output	1	3	5	dBm
Phase Noise @ 1 kHz offset (1 Hz BW)		-90	-85	dBc/Hz
Phase Noise @ 10 kHz offset (1 Hz BW)		-92	-88	dBc/Hz
Phase Noise @ 100 kHz offset (1 Hz BW)		-119	-116	dBc/Hz
Loop Bandwidth		20		kHz
Step Size		2		MHz
VCO Pushing ($\pm 0.05V$)			3	MHz/V
VCO Pulling (12dB RL)			6	MHz
2nd Harmonic (2880 MHz)			-15	dBc
PDF Spurs (± 2 MHz)		-95	-80	dBc
Reference Spurs (± 10 MHz)		-95	-75	dBc
Non-Harmonic RF Spurs (0 MHz < Fout < 1440 MHz)		-90	-70	dBc
IF Frequency Isolation (1000 MHz)		-51	-48	dBc
Load Impedance		50		Ω
IF Output				
Frequency	990		1030	MHz
Power Output	-12	-10	-8	dBm
Phase Noise @ 1 kHz offset (1 Hz BW)		-93	-85	dBc/Hz
Phase Noise @ 10 kHz offset (1 Hz BW)		-91	-88	dBc/Hz
Phase Noise @ 100 kHz offset (1 Hz BW)		-119	-116	dBc/Hz
Loop Bandwidth		20		kHz
Step Size		2		MHz
VCO Pushing ($\pm 0.05V$)			3	MHz/V
VCO Pulling (12dB RL)			6	MHz
2nd Harmonic (2000 MHz)			-15	dBc
PDF Spurs (± 2 MHz)		-85	-80	dBc
Reference Spurs (± 10 MHz)		-90	-75	dBc
Non-Harmonic RF Spurs (0 MHz < Fout < 1000 MHz)		-90	-70	dBc
IF Frequency Isolation (1440 MHz)		-28	-25	dBc
Load Impedance		50		Ω
Power Supply Requirements				
Vcc VCO (Vcc_RF:pin 9, Vcc_IF:pin 4)	2.95	3.0	3.05	Vdc
Vcc PLL (Vcc_RF_IF:pin 3)	2.25	2.5	2.75	Vdc
Supply Current (VCO & PLL Enabled)		24	27	mA
Supply Current (RF VCO Disabled)			17	mA
Supply Current (IF VCO Disabled)			17	mA
Supply Current (RF & IF VCO Disabled)			7	mA

LFSuffix = RoHS Compliant. All specifications are subject to change without notice.

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Operating Conditions	Min	Typ	Max	Units
Reference Frequency		10		MHz
Reference Input Sensitivity	0.5		1.5	Vdc
Reference Phase Noise @ 1 kHz offset		-145		dBc/Hz
Input Logic Level				
High	1.6			V
Low			0.4	V
Digital Lock Detect				
Locked	1.95			V
Unlocked			0.4	V

Programming Conditions

Prescaler: 16/17

Charge Pump Current: 1mA

REGISTER MAP @ RF & IF FREQUENCY

R0 Register: (MSB) 000001000000000000101000
 R1 Register: (MSB) 01000000001011010000001
 R2 Register: (MSB) 0000000000000000000010
 R3 Register: (MSB) 110001000000000000101011
 R4 Register: (MSB) 01000000000111110100100
 R5 Register: (MSB) 00000000000000000000101

Mechanical Specs & Additional Notes

Substrate Material: Rogers 4003C

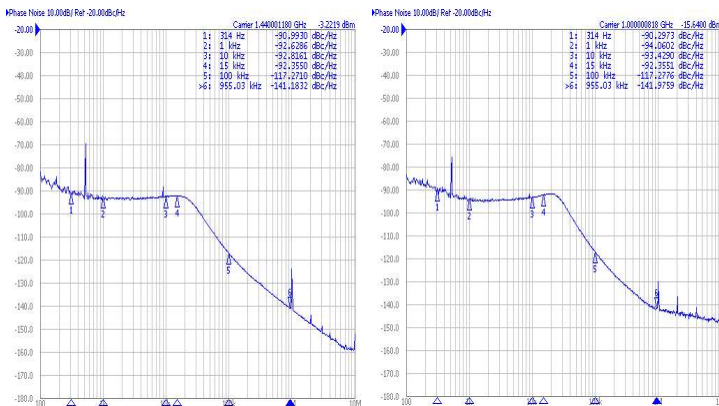
Termination Finish: ENIG Plating

ESD Rating: 1000V - HBM

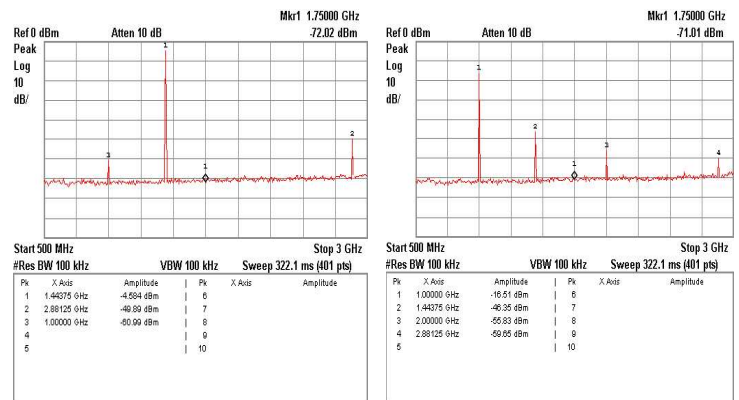
Moisture Sensitivity Level: MSL 1

ROHS Compliant: Yes

Phase Noise



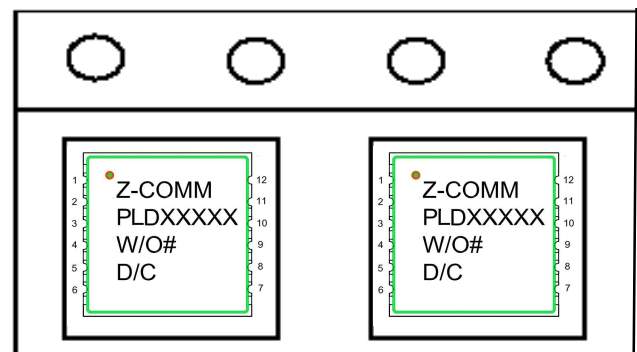
Spectrum



Pin Configurations

Pin	Function	Pin	Function
1	IF OUT	7	RF OUT
2	GROUND	8	GROUND
3	(PLL) VCC_RF_IF	9	(VCO) VCC_RF
4	(VCO) VCC_IF	10	CLOCK
5	REF IN	11	DATA
6	LOCK DETECT	12	LATCH ENABLE

Marking & Placement



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