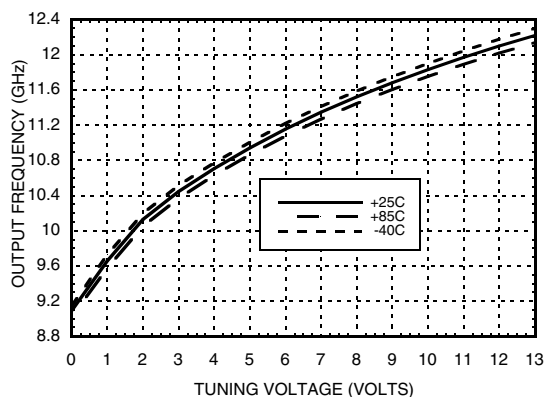
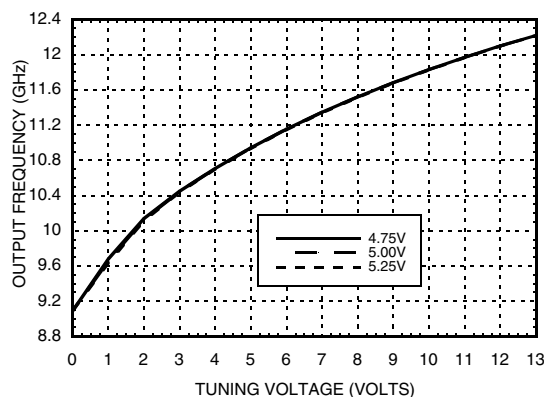
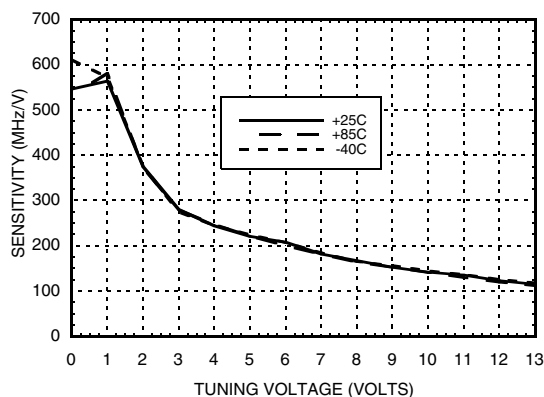
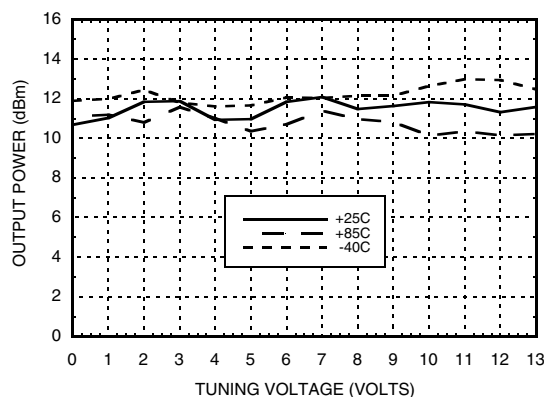
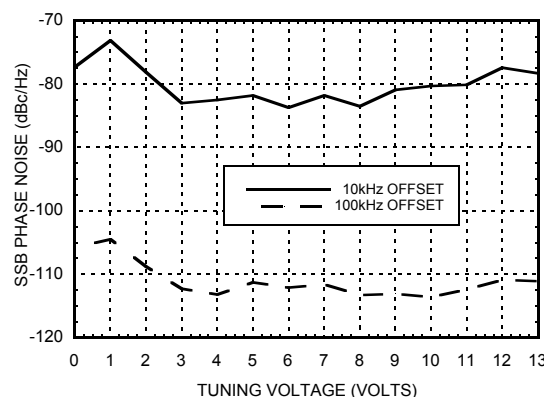
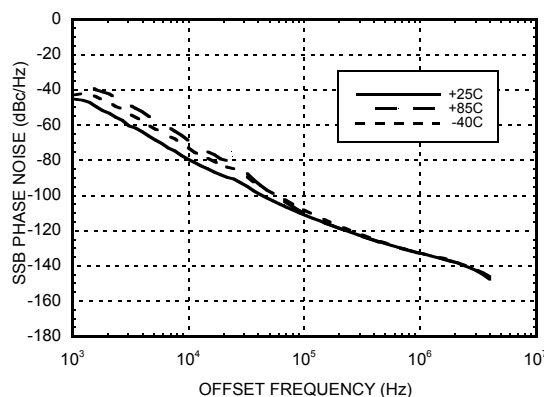
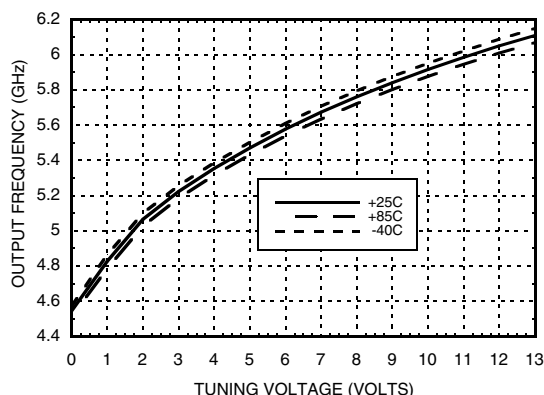
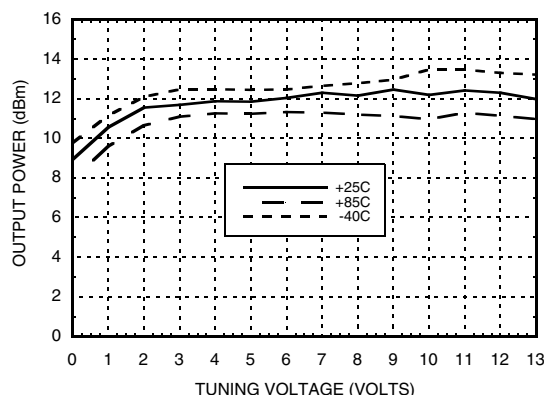
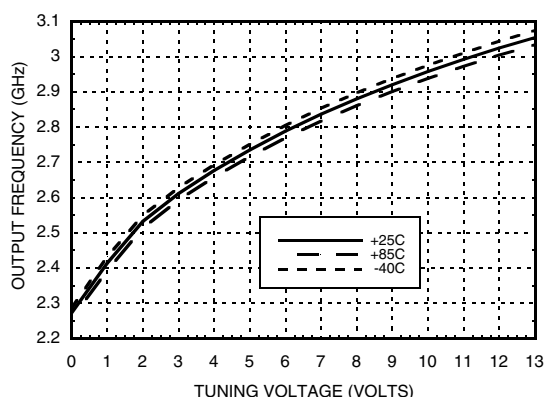
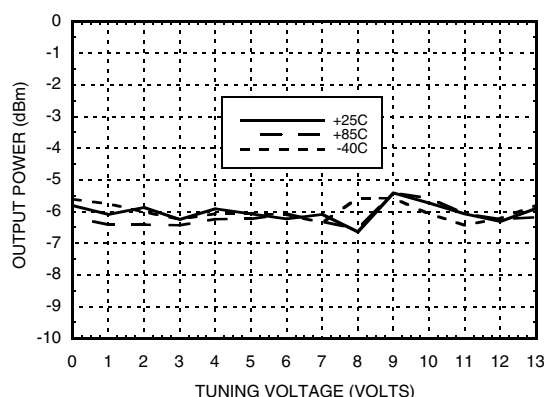


**MMIC VCO w/ HALF FREQUENCY OUTPUT
& DIVIDE-BY-4, 10.6 - 11.8 GHz**
Frequency vs. Tuning Voltage, $V_{CC} = +5V$

Frequency vs. Tuning Voltage, $T = 25^{\circ}C$

Sensitivity vs. Tuning Voltage, $V_{CC} = +5V$

**Output Power
vs. Tuning Voltage, $V_{CC} = +5V$**

SSB Phase Noise vs. Tuning Voltage

SSB Phase Noise @ $V_{tune} = +5V$



**MMIC VCO w/ HALF FREQUENCY OUTPUT
& DIVIDE-BY-4, 10.6 - 11.8 GHz**
**RFOUT/2 Frequency
vs. Tuning Voltage, Vcc = +5V**

**RFOUT/2 Output Power
vs. Tuning Voltage, Vcc = +5V**

**Divide-by-4 Frequency
vs. Tuning Voltage, Vcc = +5V**

**Divide-by-4 Output Power
vs. Tuning Voltage, Vcc = +5V**

Absolute Maximum Ratings

Vcc(Dig), Vcc(Amp), Vcc(RF)	+5.5 Vdc
Vtune	0 to +15V
Junction Temperature	135 °C
Continuous P _{diss} (T=85 °C) (derate 43.5 mW/C above 85 °C)	2.17 W
Thermal Resistance (junction to ground paddle)	23 °C/W
Storage Temperature	-65 to +150 °C
Operating Temperature	-40 to +85 °C
ESD Sensitivity (HBM)	Class 1A

Typical Supply Current vs. Vcc

Vcc (V)	I _{cc} (mA)
4.75	320
5.00	350
5.25	380

Note: VCO will operate over full voltage range shown above.



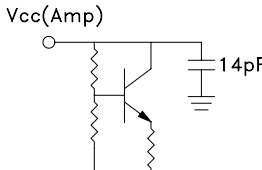
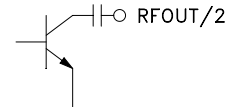
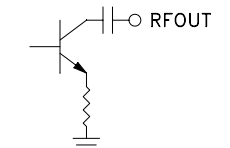
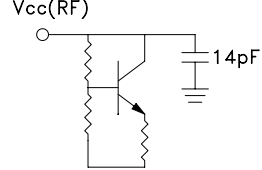
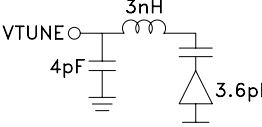

**ELECTROSTATIC SENSITIVE DEVICE
OBSERVE HANDLING PRECAUTIONS**



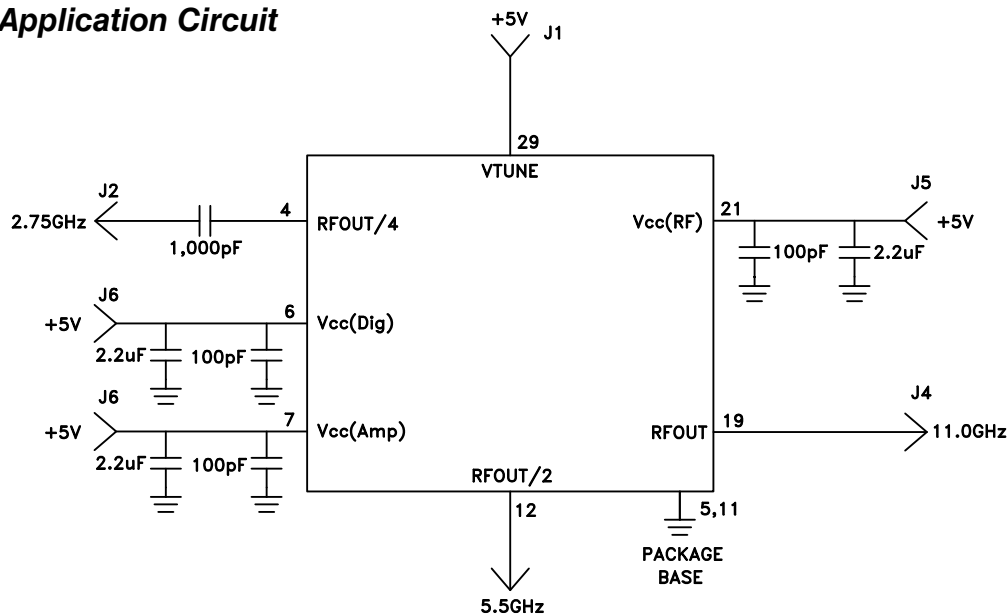


MMIC VCO w/ HALF FREQUENCY OUTPUT & DIVIDE-BY-4, 10.6 - 11.8 GHz

Pin Descriptions

Pin Number	Function	Description	Interface Schematic
7	Vcc (Amp)	Supply voltage, for RFOUT/2 output. If RFOUT/2 is not required. This pin may be left open to conserve approximately 30 mA of current.	
12	RFOUT/2	Half frequency output (AC coupled).	
19	RF OUT	RF output (AC coupled).	
21	Vcc (RF)	Supply Voltage, +5V	
29	VTUNE	Control voltage and modulation input. Modulation bandwidth dependent on drive source impedance. See "Determining the FM Bandwidth of a Wideband Varactor Tuned VCO" application note.	
5, 11, Paddle	GND	Package bottom has an exposed metal paddle that must be connected to RF/DC ground.	

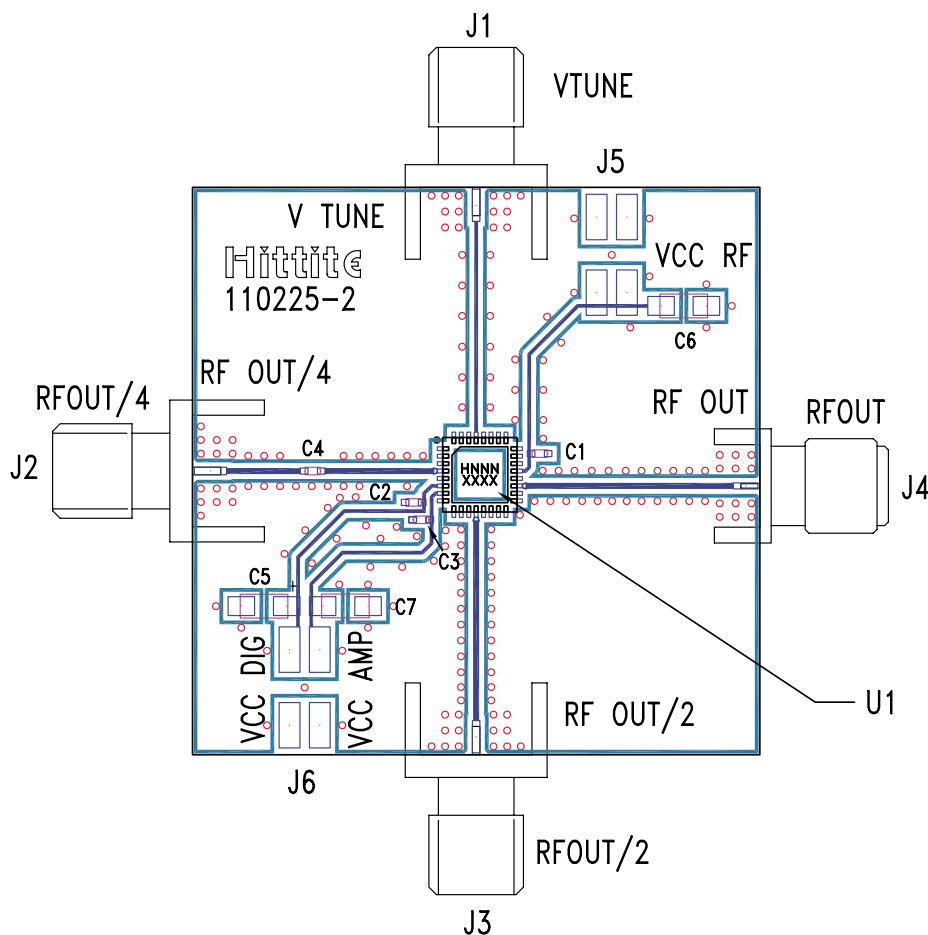
Typical Application Circuit



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Evaluation PCB



List of Materials for Evaluation PCB 110227 [1]

Item	Description
J1 - J4	PCB Mount SMA RF Connector
J5 - J6	2 mm DC Header
C1 - C3	100 pF Capacitor, 0402 Pkg.
C4	1,000 pF Capacitor, 0402 Pkg.
C5 - C7	2.2 μ F Tantalum Capacitor
U1	HMC534LP5 / HMC534LP5E VCO
PCB [2]	110225 Eval Board

[1] Reference this number when ordering complete evaluation PCB

[2] Circuit Board Material: Rogers 4350

The circuit board used in the final application should use RF circuit design techniques. Signal lines should have 50 Ohm impedance while the package ground leads and backside ground paddle should be connected directly to the ground plane similar to that shown. A sufficient number of via holes should be used to connect the top and bottom ground planes. The evaluation circuit board shown is available from Hittite upon request.