## REP037: The MAX2383 W-CDMA TX Upconverter Driver Linearity Measurements

Rapid engineering prototypes are real circuits that Maxim application engineers have built and measured in our labs. They can provide a starting point for new RF designs. They are not available as evaluation kits.

Additional Information: Wireless Product Line Page
Quick View Data Sheet for the MAX2383
Applications Technical Support
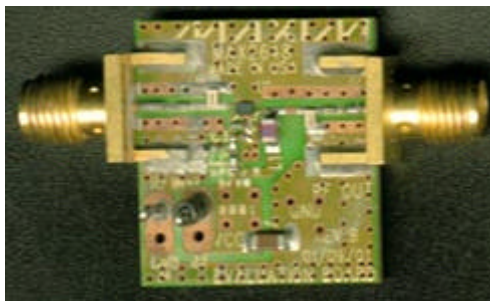
The MAX2383 upconverter and PA driver is designed for W-CDMA applications. A series of linearity measurements were taken at various IF Pin and VGE levels, with IF at 380MHz and RF at 1950MHz.

The MAX2383 is targeted for the 2270MHz to 2580MHz LO frequency range. It is fabricated using an advanced high-frequency bipolar process and includes an upconversion mixer with variable gain control, an LO buffer and a variable-gain PA driver for output power control. The mixer and PA driver linearity have been optimized to provide excellent RF performance in the 1920MHz to 1980MHz band, while drawing minimal current. The mixer's performance is optimized for a -10dBm ±3dB LO drive at the LO buffer input port.

The MAX2383 achieves excellent noise and image suppression without the use of an interstage TX SAW bandpass filter, saving valuable board space, cost, and supply current. It is specified for +2.7V to +3.0V single supply and is available in an ultra-miniature 3x4 UCSP package for optimum cost- and space-reduction and for best RF performance.

Measured Results

VGC (V)	Pin (dBm) 380MHz	Pout (dBm) 1950MHz	ACP1 (dBc)	ACP2 (dBc)	3.5MHz ACP (dB)	Gain (dB)	Icc (mA)
2.0	-13.8	5.3	-50.1	-56.5	-63.4	19.1	37
2.0	-14.8	4.2	-51.2	-57	-64	19	37
2.0	-15.8	3.2	-52.1	-57	-64	19	37
2.0	-16.8	2.2	-53.2	-57	-63	19	37
1.6	-13.0	4.1	41.5	-56	-63.1	17.1	23
1.6	-16.0	1.2	-47.5	-56.8	62.5	17.2	22

Bench Test Equipment List

Network Analyzer: HP8753E
Spectrum Analyzer: HP8561E
Spectrum Analyzer: Rohde&Schwarz FSEA30
NF Meter: HP8970B
RF Power Meter: HP437B

MORE INFORMATION

MAX2383: QuickView -- Full (PDF) Data Sheet (184k) -- Free Sample