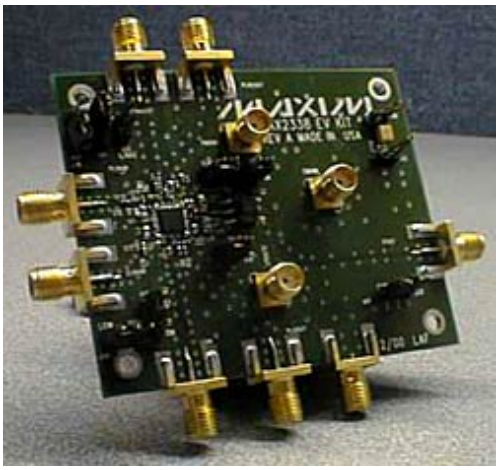
DALLAS SEMICONDUCTOR MAXIM

Application Note

REP017: Dual−Band Triple−Mode IC Uses 183MHz for Both CDMA and AMPS IFs

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 MAX2338
Applications Technical Support



Objective: To apply the dual−band triple−mode CDMA front−end IC to a receiver whose frequency plan requires both digital and AMPS analog IFs to be at 183.6MHz.

The MAX2338 was made to readily facilitate a single digital IF for the dual band. Both digital mixers' IP2 performance and other related parameters offer a sufficient margin for meeting 1/2 IF and other interferers in a CDMA handset. In addition, the analog FM mixer can be operated readily at 183.6IF, so (by using the internal LO divider) only one RF VCO is required for the transceiver design. In this application, the MAX2338 was tested for and successfully applied to a CDMA plus AMPS handset front−end design that used a 183.6MHz IF filter for CDMA and a narrower−bandwidth 183.6MHz IF filter for AMPS. The data sheet performance objectives were met completely.

The MAX2338 low−noise amplifier (LNA) plus mixer is designed for dual−band CDMA cellular−phone handsets, but it can also be used in dual−band TDMA, GSM, EDGE, or WCDMA applications. The MAX2338 furnishes a divide−by−2 function in the PCS−band LO input path, providing for a single VCO at the PCS band. The buffered LO outputs permit driving the transmit−path upconverter directly without use of an external LO buffer. The MAX2338 differs from its predecessors (the MAX2320 and the MAX2323) in its lower noise figure and its higher IIP3 for both LNAs and mixers. Also, it comes in a small package (28−QFN).

Block Diagram of a Receiver−Path Application
Schematic of the MAX2338 Evaluation Kit (PDF, 60K)
Bill of Materials, Part 1
Bill of Materials, Part 2