Keywords: CDMA, cellular band 10MHz, 110MHZ IF, RF, RF matching, low-noise amplifier, LNA, TDMA, GSM, EDGE, cell phones

Nov 01, 2000

REFERENCE DESIGN 447 INCLUDES: √Tested circuit √Schematic √BOM √Board available

REP016: Dual-Band Front End for Japanese Cellular CDMA at 110MHz IF

Abstract: This reference design (RD) is for a dual-band, dual-mode CDMA front-end for Japanese cellular CDMA at 110MHz IF. The RD uses a low-noise amplifier (LNA) with mixer, the MAX2325, that is also useful for TDMA, GSM, and EDGE applications. Schematics and bill of materials are shown.

More Information
- Wireless Home
- Application Notes and Tutorials
- EV Kit Software
- Technical Support

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.

Click here for an overview of the wireless components used in a typical radio transceiver.

Objective: To band-shift the RF matching from the U.S. to the Japanese cellular band, and to measure the performance of this CDMA dual-mode front-end IC.

The MAX2325 application circuit was changed from its standard BOM for the U.S. cellular-band LNA and mixer RF matching, to meet the Japanese cellular band with 110MHz IF. In addition, measurements were made to ensure compatibility with the end-customer's requirements. The MAX2325's performance was found to be fully compliant to the data sheet specifications at U.S. cellular frequencies.

A MAX2323 evaluation kit was used to evaluate the performance of the MAX2325, as it provides a superset of MAX2325 features.

The MAX2325 low-noise amplifier (LNA) plus mixer is designed for single-band CDMA cellular-phone handsets, but it can also be used in 800-900MHz-band TDMA, GSM, or EDGE applications. It differs from its predecessor (the MAX2324) by adding a third "mid-gain" state for the LNA that improves switchover hysteresis margin. The MAX2325 also comes in a smaller package (28-QFN) and offers increased third-order input intercept.

Block diagram of a receive-path application
Bill of materials, part 1
Bill of materials, part 2
Schematic of the MAX2323 evaluation kit with the MAX2325 IC installed (PDF, 58kB)

Related Parts

MAX2325	Triple/Dual-Mode CDMA LNA/Mixers

Automatic Updates

Would you like to be automatically notified when new application notes are published in your areas of interest? Sign up for EE-Mail™.

More Information

For technical support: http://www.maxim-ic.com/support
For samples: http://www.maxim-ic.com/samples
Other questions and comments: http://www.maxim-ic.com/contact