Abstract: This reference design (RD) shows how a dual-band, dual-mode CDMA front-end IC can drive an IFR3100 IF demodulator. The RD features the MAX2323 CDMA low-noise amplifier which is also useful for TDMA, GSM, EDGE, and WCDMA applications. Schematics, the bill of materials (BOM), and performance results are shown.

Objective: To develop a suitable IF match between this dual-band triple-mode front-end IC and the IFR3100 IF demodulator IC, and to measure the front-end performance.

The MAX2323 offers very attractive Icc versus noise figure and linearity, so this front-end IC is found in applications replacing poorer-performing ICs from other non-Maxim chipsets. This application was developed to match the IF port to the MSM-based IFT3100 IF demodulator. Note that the MAX2323 PCS LNA was measured at a 1.9dB noise figure, which could likely be improved further given the time.

The MAX2323 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. It differs from its predecessor (the MAX2320) by adding a third "mid-gain" state for the cellular-band LNA that improves switchover hysteresis margin. It also comes in a smaller package (28-QFN) and offers increased third-order
input intercept.

Block diagram of the receive-path application
Schematic of the MAX2323 evaluation kit (PDF, 55kB)
Bill of materials, part 1
Bill of materials, part 2
Performance results of the MAX2323

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<th>Related Parts</th>
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