PRODUCT SUMMARY

CX74070: Rx ASIC for PCS and GPS Mobile Handset Applications

APPLICATIONS

- PCS and GPS phones
- GPS receivers

FEATURES

- GPS LNA provided
- External resistor to adjust LNA bias current
- Independent PCS and GPS mixers
- 90 dB dynamic range VGA
- I/Q demodulator
- 100 to 600 MHz VHF oscillator
- Battery cell operation (2.7 V < Vcc < 3.3 V)
- 6 x 6 mm, 40-pin RFLGA™ package with down-set paddle

DESCRIPTION

The CX74070 Application-Specific Integrated Circuit (ASIC) is a single Intermediate Frequency (IF), dual-mode, dual-band receiver intended for use in Code Division Multiple Access (CDMA) phones in Personal Communications System (PCS) and Global Positioning System (GPS) bands.

The CX74070 is a highly integrated super-heterodyne receiver. Except for the Surface Acoustic Wave (SAW) filters and matching components, the device incorporates all the components required to implement the receiver chain, from the Low-Noise Amplifier (LNA) to the In-Phase and Quadrature (I/Q) demodulator stages. A PCS LNA and a GPS LNA are in the front-end receiver.

After RF LNA signal amplification and filtering, the signal is mixed down to an IF. The PCS mixer has balanced outputs for the IF SAW filter and the GPS mixer has a differential output for an external L-C bandpass IF filter. The IF signal is amplified by a Variable Gain Amplifier (VGA) and fed to an I/Q demodulator, resulting in baseband I/Q signals that interface with a baseband analog processor.

The VGA has a minimum dynamic range of 90 dB with a control voltage range of 0.3 to 2.5 V, which is common to all modes. A VHF oscillator operates with external tank circuits to provide Local Oscillator (LO) frequencies for the I/Q demodulator in the PCS and GPS bands.

The noise figure, gain, and third order Input Intercept Point (IIP3) of each stage have been optimized to meet the system requirements for PCS mode according to TIA/EIA-98-C and for GPS mode according to TIA/EIA-916. The ASIC design employs BiCMOS technology for low cost, high performance, and a high level of integration.

A block diagram of the CX74070 is shown in Figure 1.

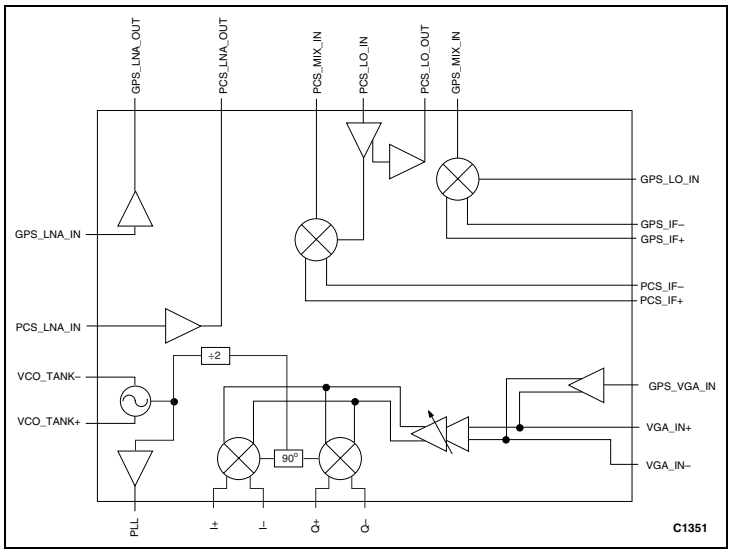

Figure 1. CX74070 Receiver ASIC Block Diagram

Ordering Information

Model Name	Manufacturing Part Number	Product Revision
PCS and GPS Receiver	CX74070-11	

General Information
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