

PRODUCT SUMMARY

CX74063: RF Transceiver With Power Ramping Controller and Integrated Crystal Oscillator With 13 MHz Output for Multi-Band GSM, GPRS, and EDGE Applications

Applications

- GSM850, EGSM900, DCS1800, and PCS1900 handsets
- GPRS handsets and modules
- EDGE downlink support

Features

- Direct down-conversion receiver eliminates the external image reject/IF filters
- Three separate LNAs with single-ended inputs
- RF gain range: GSM = 20 dB, DCS/PCS = 22 dB. Baseband gain range = 100 dB
- Gain selectable in 2 dB steps
- Integrated receive baseband filters with tunable bandwidth
- Integrated DCOC sequencer
- Reduced filtering requirements with translational loop transmit architecture
- Integrated transmit VCOs
- Wide RF range for quad-band operation
- Integrated PAC loop
- Single integrated, fully programmable fractional-N synthesizer suitable for multi-slot GPRS operation
- Fully integrated wideband UHF VCO
- Integrated crystal oscillator
- Separate enable lines for power management transmit, receive, and synthesizer modes
- Supply voltage down to 2.6 V
- Band select and front-end enable states may be exercised on output pins to control external circuitry
- Low external component count
- Optional bypass of baseband filtering for use with high dynamic range ADCs for current savings
- Interfaces to low dynamic range ADC
- Meets AM suppression requirements without baseband interaction
- Low power standby mode
- RFLGA™ (56-pin, 8 x 8 mm) package: circular ground pad, low temperature option, CX74063-34; four-quadrant ground pad, high temperature option, CX74063-36 (Pb-free, MSL3, 260 °C per JEDEC J-STD-020)

Description

The CX74063 transceiver is a highly integrated device for multi-band Global System for Mobile Communications (GSM) or General Packet Radio Service (GPRS) applications. The device requires a minimal number of external components to complete a GSM radio subsystem. The CX74063 supports GSM850, EGSM900, DCS1800, and PCS1900 applications. The receiver also supports Enhanced Data for GSM Evolution (EDGE) downlink applications.

The receive path implements a direct down-conversion architecture that eliminates the need for Intermediate Frequency (IF) components. The CX74063 receiver consists of three integrated Low Noise Amplifiers (LNAs), a quadrature demodulator, tunable receiver baseband filters, and a DC Offset Correction (DCOC) sequencer.

In the transmit path, the device consists of an In-phase and Quadrature (I/Q) modulator within a frequency translation loop designed to perform frequency up-conversion with high output spectral purity. This loop also contains a phase-frequency detector, charge pump, mixer, programmable dividers, and high power transmit Voltage Controlled Oscillators (VCOs) with no external tank required. With the integrated gain controller (and an integrator), the device realizes the Power Amplifier Control (PAC) functionality when combined with a coupler, a Radio Frequency (RF) detector, and a Power Amplifier (PA).

The CX74063 also features an integrated, fully programmable, sigma-delta fractional-N synthesizer suitable for GPRS multi-slot operation. Except for the loop filter, the frequency synthesizer function, including a wideband VCO, is completely on-chip. The reference frequency for the synthesizer is supplied by the integrated crystal oscillator circuitry.

The CX74063 is available as a 56-pin, RFLGA 8 x 8 mm package with either a circular ground pad or a four-quadrant ground pad. Package dimensions are shown in Figures 1 and 2.



Skyworks offers lead (Pb)-free “environmentally friendly” packaging that is RoHS compliant (European Parliament for the Restriction of Hazardous Substances).

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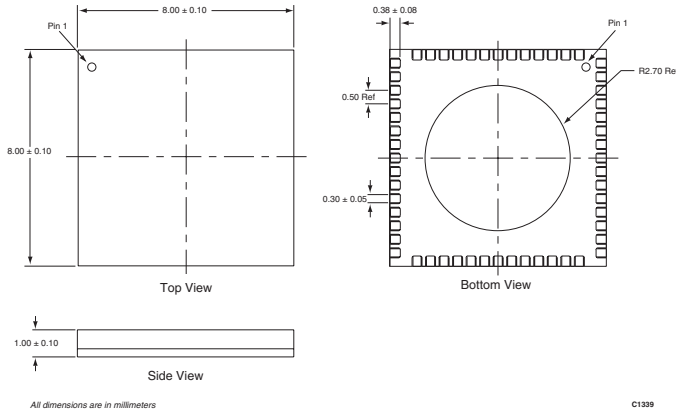


Figure 1. CX74063-34 RFLGA Package Dimensions (Circular Ground Pad)

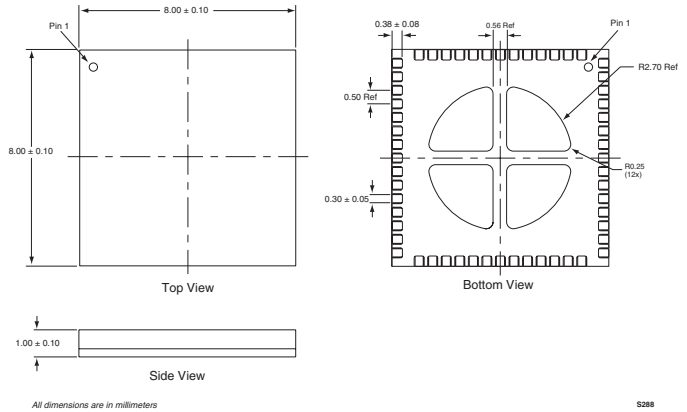


Figure 2. CX74063-36 RFLGA Package Dimensions (Four-Quad Ground Pad)

Ordering Information

Model Name	Manufacturing Part Number	Product Revision
CX74063 Multi-Band RF Transceiver with Power Ramping Controller and Integrated Crystal Oscillator with 13 MHz Output	CX74063-34: MSL3/240, circular ground pad	
	CX74063-36: Pb-free (MSL3/260), four-quadrant ground pad	

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