SKYWORKS

PRODUCT SUMMARY

CX20505-14 Integrated Analog Device for GSM and GPRS Applications

APPLICATIONS

- Global System for Mobile communications™ (GSM™) and General Packet Radio Service (GPRS) Multiband Handsets
- GSM and GPRS Data Modules

FEATURES

- Supports Multi-slot GPRS up to Class 10
- ΣΔ Analog-to-Digital Converters (ADCs) for digitization of baseband receive signal
- Receive path Programmable Gain Amplifier (PGA) for Automatic Gain Control (AGC) of received signal
- Burst Store Random Access Memory (RAM) for storage of transmit data bursts
- Gaussian Minimum-Shift Keying (GMSK) Digital Modulator for modulation of Burst Store contents
- Digital-to-Analog Converters (DACs) for analog conversion of the GMSK modulator output
- Transmit power ramping and power level control
- Low noise, voice-band ADC for interface to handset microphone
- Low noise voice-band DAC for interface to handset speaker
- Auxiliary 8-bit ADC for monitoring system signals such as battery voltage
- High speed serial ports for interface to a Baseband Processor device
- Internal power supply regulation from a single input voltage
- Temperature Sensor for system thermal monitoring
- 104-pin 10 mm x 10 mm FPBGA package

Introduction

The CX20505-14 Integrated Analog (IA) is a highly integrated device designed for use in multi-band GSM and GPRS handsets. This device implements all the voice-band, mixed signal, and radio control functions in a GSM/GPRS handset.

In the receive path, the CX20505-14 digitizes the baseband In-Phase/Quadrature (I/Q) input, and outputs the digital samples on the device receive port. The receive path features a PGA for AGC of the receive signal.

In the transmit path, bursts of digital data are input to the device over the control port. The GMSK modulator generates modulated I and Q waveforms from the input data. The I and Q waveforms are converted into analog waveforms and output from the device.

The CX20505-14 generates an analog signal to control the handset Power Amplifier (PA) output level. The signal is then input to the Power Amplifier Control (PAC) circuit.

The voice-band Codec section provides an interface to a 32 Ω handset speaker and microphone. Line In/Out signals are also available for interfacing to audio accessories such as a headset or car kit.

The device operates directly from a single cell, 3.6 V Li Ion battery with no external regulation required. The device features Low Drop Out (LDO) voltage regulators that generate the required device power supplies from the battery input.

A typical CX20505-14 application in a handset design is shown in Figure 1. The device is packaged in a compact, 104-pin (10mm x 10mm) Fine Pitch Ball Grid Array (FPBGA) see **Error! Reference source not found.**..

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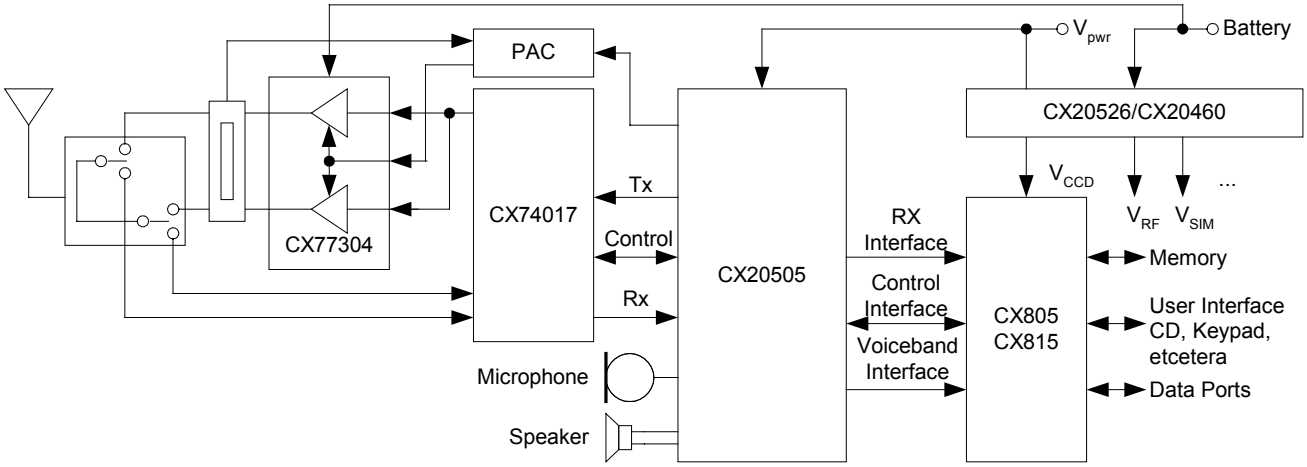

Figure 1. Typical CX20505-14 Application in a Handset Design

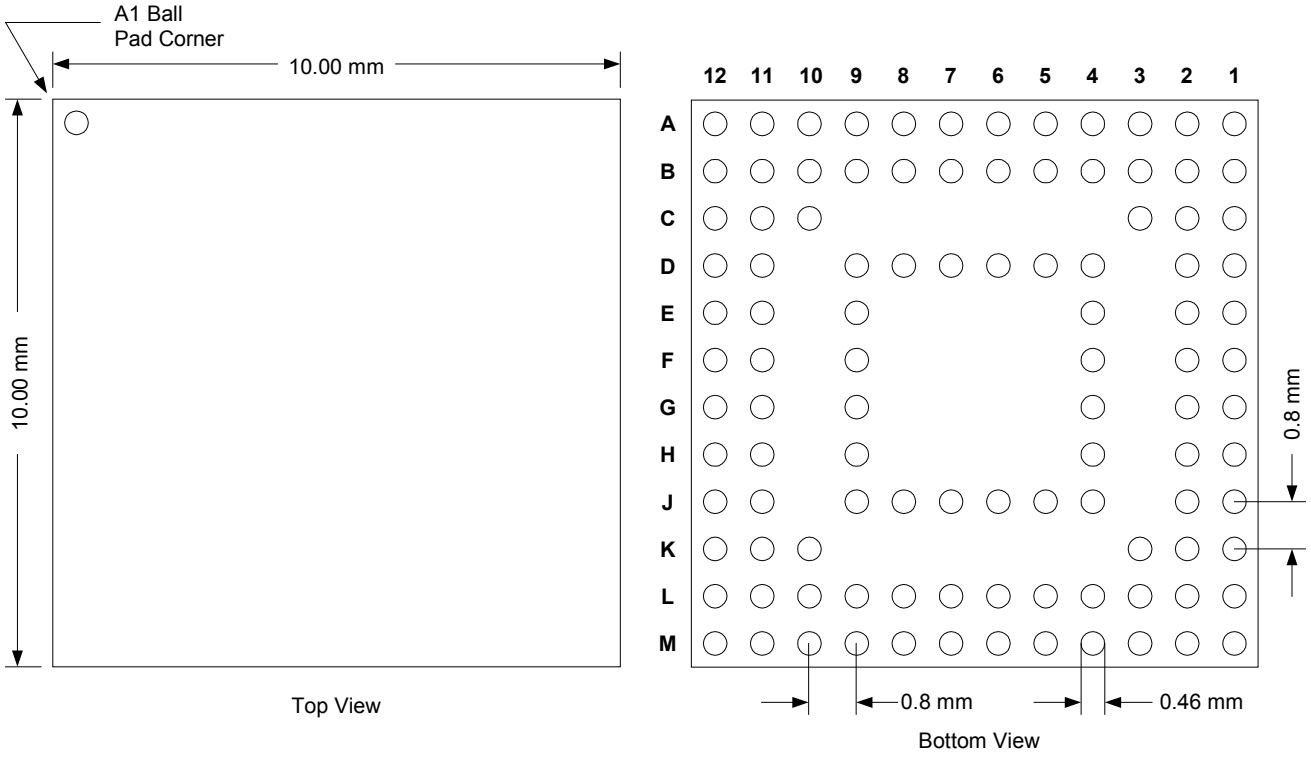

Figure 2. CX20505-14 Device Package Dimensions

Ordering Information

Model Name	Manufacturing Part Number
CX20505-14	

General Information:
Skyworks Solutions, Inc.
20 Sylvan Road.
Woburn, MA 01801
www.skyworksinc.com