

SC14450B/C, SC14440C High End Baseband Processor with/without USB

General Description

The SC14450, SC14440 digital CMOS ICs are optimized to handle all the baseband processing within the DECT & DECT 6.0 (1.9 GHz) ISM band (2.4 GHz, 5.8 GHz) high end handset and VoIP applications.

The design combines lower power and high performance 82.944 MHz CR16C™ and 82.944 MHz Gen2DSPs capable of executing user defined DSP programs. Static and dynamic memories are supported including Pseudo Static RAM (PSRAM). Programmable Pin Assignment allows flexible PCB layout. The advanced power management supports 1, 2 and 3 cells batteries types Li-Ion, Li-Poly and NiMH.

Refer to Family overview SC14440, SC14450 Baseband processors (table 4, page 21)

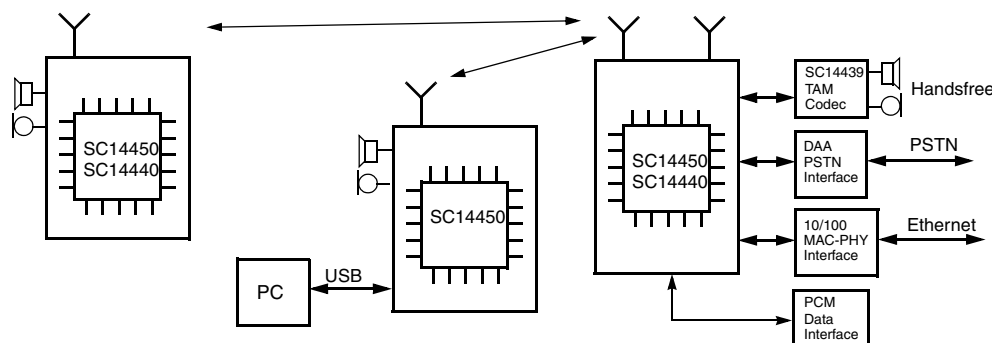
Features

- Complies with DECT ETS 300 175-2,3 & 8 and DECT 6.0.
- 10.368 MHz or 12.288 MHz xtal with digital controlled oscillator with on-chip 165.888 MHz and 48/50 MHz PLLs.
- Processing power
 - 82.944 MHz 16 bit CompactRISC™ CR16C with instruction Cache and 4-ch DMA controller.
 - Dual 82.944 MHz Gen2DSPs for Acoustic echo cancelling, voice recognition, caller-id, Midi, G.711, G.726, G.722, G.729, iLBC and user programmable algorithms like G723.1, MP3.
 - Dedicated Instruction Processor (DiP) with new 32 bits CRC and double slot prot.B-field for G722.
- Memories
 - Shared RAM1+2/ROM1+2: 12k+16k/ 2k+16k byte
 - Non shared RAM/iCache 24k+8k byte.
 - Gen2DSP uCode RAM1+2: 16k+16k uCode ROM1+2 :32k+96k
 - External memory controller for SDRAM, SRAM,

- FLASH and Async/page PSRAM.
- Power management
 - 1.8Volt operating voltage with 1.8-3.45V I/O pads and separate 1.8-3.45V toward RF transceiver.
 - Charge control and DC-DC buck/boost converter for 1,2,3 cells Li-Ion, Li-Poly, NiMH batteries.
 - Integrated charge-pump for white LEDs.
 - On chip temperature sensor.
 - State of charge circuit.
- Analog and Audio Interfaces
 - 8, 16, 32 kHz 16-bit linear audio CODEC.
 - Analog Front End to differential and single ended. microphones and 28 ohm loudspeaker.
 - High efficiency 0.5W@2.5V, 1.152W@3.6V Li-Ion (4 ohm) switching amplifier.
 - 10bit ADC with 8/16 kHz sample rate.
 - Ringer input and external opamp for caller-id.
- Digital interfaces
 - General purpose I/O ports with Programmable Peripheral Assignment.
 - Microwire™ interface to RF transceiver.
 - Serial Debug interface, Nexus Class-1 compliant.
 - UART Full duplex 9600-230.4 kbaud.
 - Dual SPI™ interface 20.736 MHz (Master/Slave).
 - Dual ACCESS bus 100k, 400 kHz, 1.152 Mhz
 - PCM Interface 4.608, 2.304, 1.152 MHz master, 2048 kHz slave (I2S compatible)
 - USB 2.0 Full+Low speed MAC + PHY.
- Three general purpose timers and watch dog timer.
- eLQFP128 package with exposed pad.

Note 1: Microwire™, CompactRISC™ are trademarks of National Semiconductor
SPI™ is trademark of Motorola.
Note 2: End products using G.729 require license from Licensing Service Provider Sipro Lab Telecom (www.sipro.com)

System Diagram



SC14450B/C, SC14440C

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