

SC14480A5M, SC14480A2M6

1.8V Single Chip for DECT

General Description

The SC14480A5M, SC14480A2M6 are family members of digital CMOS ICs with fully integrated radio transceivers and baseband processors for DECT & DECT 6.0 CAT-iQ handsets and basestations.

The SC14480A5M has a FLASH version with CR16 trace unit for development of all family members.

For the family overview refer to SiTel Portal SC1448x_product_overview.xls

The radio transceiver, when combined with a power amplifier and a Tx/Rx switch, implements a complete DECT radio transceiver compliant with the ETSI CTR6 standard.

The audio path comprises a 16 bit CODEC, analog frontend, including a high efficiency 4 Ohm audio amplifier (Class-D) and user programmable Gen2DSP.

The CompactRISCTM CR16Cplus microprocessor with a one wire debug port running from ROM controls the protocol stack and the I/O peripherals, keyboard, UART, ACCESS bus, SPI, LED drivers, RF switches.

Features

- Complies with DECT ETS 300 175-2,3 & 8 and DECT 6.0.
- 10.368/20.736 MHz xtal digital controlled oscillator.
- Processing power
 - 41.472 MHz 16 bit CompactRISC™ CR16Cplus with a four channel DMA controller.
 - Eight/two debug channels for ROM patching.
 - Programmable Gen2DSP supporting various algorithms for telecom applications in ROM. Development version has 2k Micro Code RAM
 - Dedicated Instruction Processor (DiP) with a new 32 bits CRC and a support for a new 640 bits slot format with a minimum delay.
- Device Memories configuration
 - A2M6: 2.6Mbit ROM + 16k shared RAM,

- A5M 5.0 Mbit ROM/FLASH +16k shared + 8k non shared RAM.
- ROM/FLASH access maximum 20.736 MHz
- Instruction/Data/Event Trace unit in FLASH version for fast program development.
- Power management
 - 1.8 Volt operating voltage with 1.8V I/O pads, P0 and P2 port groups are 3.45V tolerant.
 - Charge control for 2xNiMH batteries and Li-Ion
 - Voltage trippler for white LEDs and supply of external 2.5/3V devices
- 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 0.5 W 2.5 V (4 ohm) switching amplifier.
 - 10bit ADC with 8/16kHz sample rate.
 - Integrated opamp for caller-id
- Digital interfaces
 - Three general purpose I/O ports
 - Keyboard interface with debounce counter
 - Serial Debug interface, Nexus Class-1 compliant.
 - UART Full duplex 9600-230.4 kbaud.
 - SPI™ interface 20.736 MHz (Master/Slave).
 - Dual ACCESS bus 100 kHz, 400 kHz, 1.152 MHz
 - PCM Interface master/slave (I2S compatible)
- Three general purpose timers and watch dog timer.
- Radio transceiver
 - Fully integrated 1.9GHz CMOS transceiver
 - <70 μs RF PLL lock time
 - Six digital output ports (including two for fast antenna diversity switching)
 - 2 dBm PA driver RF output (A +25 dBm PA is under investigation)
 - -96 dBm receiver sensitivity
- e-TQFP-80, LLGA80, eLQFP100 with exposed pad and KGD

Note 1: CompactRISC™ is a trademark of National Semiconductor
SPI™ is trademark of Motorola.

System Diagram

