

# 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 tripler 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

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

### System Diagram

