

# SC14441A/B/C, SC14442A

## 1.8V Single Chips for DECT with RFPA and QSPI

### General Description

The SC14441A/B/C, SC14442A are a family of digital CMOS ICs with fully integrated radio transceivers including RF Power Amplifier and baseband processors for DECT & DECT 6.0 CAT-iQ and Korean DECT handsets and basestations. The program memory and data storage resided in the a low cost, low pin count Quad SPI (QSPI) Serial FLASH. The dual row LGA approach provides a backward compatible pinning to the SC14481 devices.

Refer to "SC14441, SC14442 Family overview." on page 22.

### Features

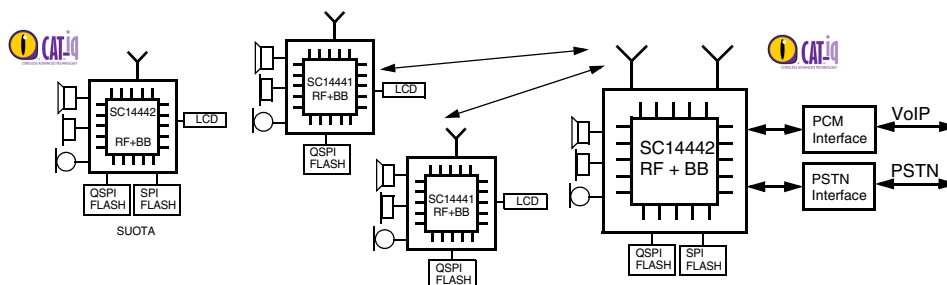
- Complies with DECT ETS 300 175-2,3 & 8 and DECT 6.0 and Korean DECT (1.7 GHz)
- 10.368/20.736 xtal digital controlled oscillator.
- Processing power
  - 82.944 MHz 16 bit CompactRISCTM CR16Cplus with 16kByte instruction and data cache.
  - Four channel DMA controller with (non-)blocking mode
  - 82.944 MHz Programmable Gen2DSP with Micro Code ROM and 2k Micro Code RAM
  - Dedicated Instruction Processor (DiP) supporting CAT-iQ slot formats (1.25kbyte DIP RAM)
- Development/Debug support
  - Serial Debug interface, Nexus Class-1 compliant.
  - Performance Timer for Gen2DSP and CR16C
  - Instruction/Data/Event Trace unit
  - Gen2DSP debugger with 2 ch MCROM patching
- Memories
  - 16kbyte +4k non-shared/cache RAM
  - 32kByte shared RAM (0/1 wait cycles)
  - 48/2kByte Gen2DSP ROM/RAM
- Power management
  - 1.9 - 3.45V Operation range
  - 1.8 Volt operating voltage with 1.8-3.45V I/O
  - Charge control for 2xNiMH batteries and Li-Ion
  - Dual output Voltage tripler
  - DCDC converter with boost, buck, boost-buck

- operation.
  - Three matched current sources for white LEDs
  - Ultra low power mode (ULP) 32kHz time base and low power CR16 Mode in off mode
  - Enhanced new battery detection
  - Battery voltage comparator with interrupt
- Analog and Audio Interfaces
  - Dual 8, 16, 32 kHz 16-bit linear audio CODEC.
  - Analog Front End to differential and single ended microphones and 28 Ohm loudspeaker.
  - CLASSD amplifier 0.5 W 2.5 V (4 Ohm)
  - 10bit ADC for line interface, Battery voltage, temperature sensor, headset detection
  - Opamps for caller-id, ringing, parallel set detection
- Digital interfaces
  - 82.944MHz.1.8-3.3V Quad SPI interface for serial FLASH with erase suspend/resume support for EEPROM function and CAT-iQ SUOTA.
  - 4+2 general purpose I/O 8 bit ports.
  - Keyboard interface with debounce counter
  - Dual UART Full duplex 9600-230.4 kbaud.
  - Dual SPI+™ interface 20.736 MHz (Master/Slave).
  - Dual ACCESS bus 100 kHz, 400 kHz, 1.152 MHz
  - 6 channel PCM+ Interface M/S (I2S compatible)
- Three general purpose timers and watch dog timer.
- Radio transceiver
  - Integrated 1.9GHz/1,7GHz CMOS transceiver
  - <70 μs RF PLL lock time
  - Four digital output ports (including two for fast antenna diversity switching)
  - -96 dBm receiver sensitivity
- Integrated 1.9 GHz PA for DECT and Korean DECT
 

■ High Power Mode EU (HPM):	25.5 dBm
■ High Power Mode USA (HPM):	23.5 dBm
■ Low Power Mode (LPM)	12 dBm
■ 'Green' Mode (GPM):	4 dBm
■ Low Radiation Mode (LRM) :	-35 dBm

  - Output power ramp and flatness control
- LLGA96, LLGA132, LGA96, LGA132, QFN88 packages

### System Diagram



SC14441A/B/C, SC14442A

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