港芯科技有限公司
Microtech Innovation Limited

Product Preview

mT83SCA1XYS

High Speed SmartCard MCU with 100-160KB FLASH

The µT83SCA1XYS is a contact mode smart card MCU, which complies with ISO7816 standard. It is targetting for high end GSM SIM Card applications and smart card applications require a large NVM. µT83SCA1XYS is a member of the A-series family, which is using advance NVM technology to meet customers' need. It has an internal NVM that can be user configurable into program and data storage areas. The NVM area configured for user program can be protected from accidental changes, making it similar to a typical mask ROM. The buit-in Memory Management Unit (MMU) together with firewall feature makes µT83SCA1XYS suitable for multi-application environment.

mT83SCA1XYS ***is code compatible with earlier uT83SCA1XY series. The uT83SCA1XY object code can be used on*** mT83SCA1XYS ***with minor modification.***

Built-in memory size of each device are listed in table below:

	Part No.	Flash Size	RAM Size
XY=60	uT83SCA160S	160KB	4KB
XY=20	uT83SCA120S	120KB	3KB
XY=00	uT83SCA100S	100KB	3KB

FEATURES

- High speed (average 3X to standard 8051) 8051 compatible CPU core
- Non-Volatile Memory (NVM)
  - 100 to 160k-bytes user NVM (with 2K bytes per SECTOR and 256 byte per BLOCK) can be partitioned into data and code area
- 256 plus 3072-bytes user RAM (4096-bytes for uT83SCA160S)
- Operating voltages: 3V ±10% or 5V ±10%
- 33MHz maximum internal bus frequency at 3V and 5V
- One bi-directional I/O with ISO 7816-3 compatibility, internal pull-up and external interrupt capability
- High speed serial communication interface (SCI) with T=0 error detection
- 16-bit programmable timer with selectable clock source
- Watchdog function
- Built-in Internal Oscillator for high speed operation
- Special instruction support data block move
- Hardware CRC per ISO 13239 standard
- CPU clock divider (divide by 2) and clock source selection
- External Clock Frequency up to 12MHz
- Maximum standby current during stop: 100µA (no external clock)
- Support GSM mode with max. current:
  - 10mA @ 5.5V and 6mA @3.3V
- ESD protection at least 4KV (HBM)
- Operation temperature range: -25C to +85C

SECURITY FEATURES

- Low Voltage Reset
- High Voltage Protect
- High Frequency Filter
- Low Frequency Reset
- Protection Features Against Security Attacks
- True Random number generator
- Bus Scramble
- MMU with firewall for multi-application
- Unique identification code

GENERAL OVERVIEW

The µT83SCA1XYS is a contact mode smart card MCU for high-end GSM SIM Card applications and smart card applications require large memory NVM. The block diagram of the µT83SCA1XYS is shown in Figure 1.

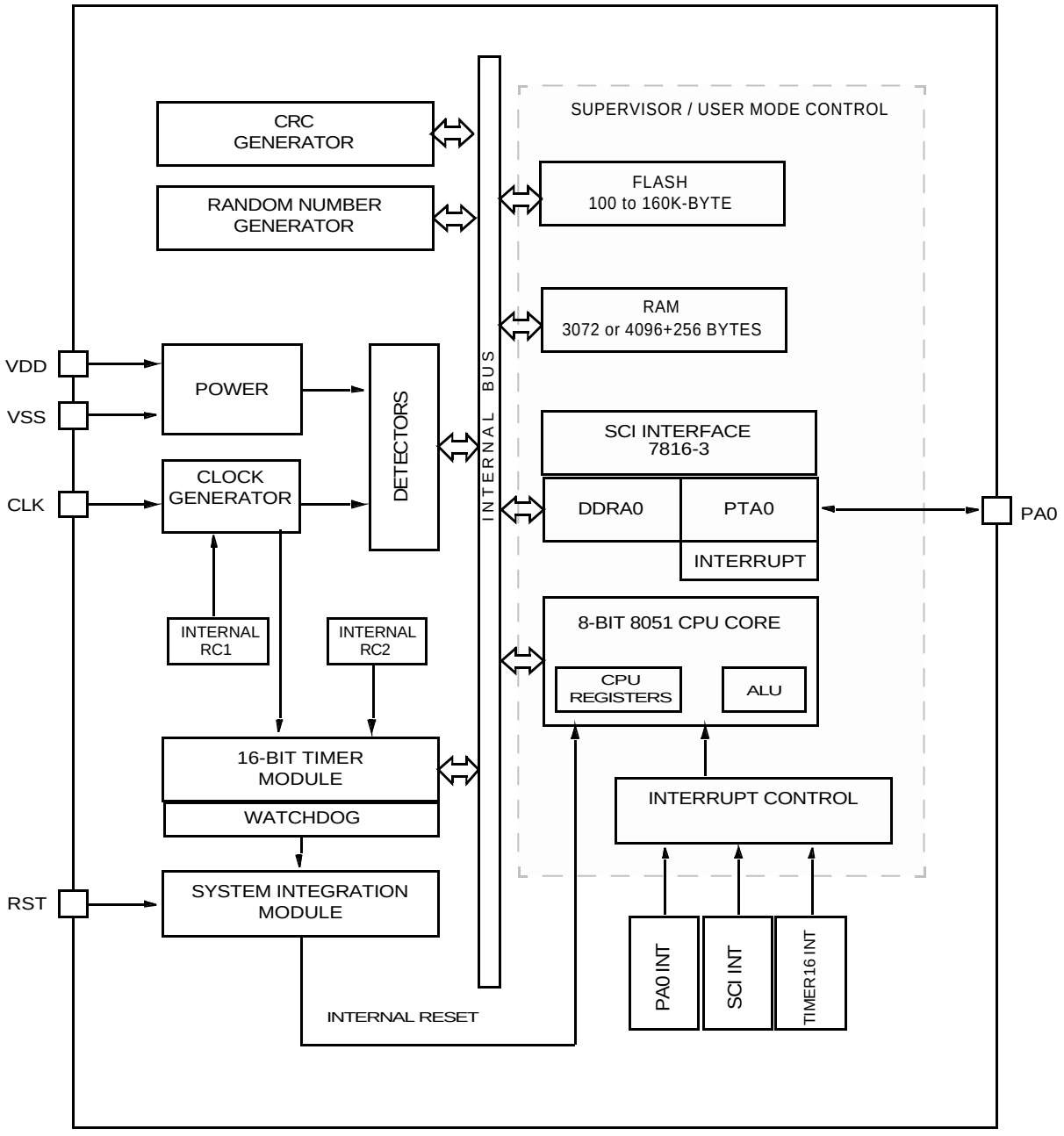

Figure 1. mT83SCA1XYS MCU Block Diagram