



ST19RF08

DUAL CONTACTLESS SMARTCARD MCU HARDWARE DES ACCELERATOR WITH 8KBytes EEPROM

DATA BRIEFING

ST19RF08 GENERAL FEATURES:

- Enhanced 8 BIT CPU with extended addressing modes
- USER ROM WITH PARTITIONING
- SYSTEM ROM
- USER RAM WITH PARTITIONING
- USER EEPROM WITH PARTITIONING
 - Highly reliable CMOS EEPROM submicron technology
 - 10 years data retention
 - 100,000 Erase/Write cycles endurance
 - Separate Write and Erase cycles for fast "1" programming
 - 1 to 64 bytes Erase or Program in 1 mS
- SECURITY FIREWALLS FOR MEMORIES
- VERY HIGH SECURITY FEATURES INCLUDING EEPROM FLASH PROGRAM, AND CLOCK MANAGEMENT
- 8 BIT TIMER WITH INTERRUPT CAPABILITY
- HARDWARE DES ACCELERATOR WITH SOFTWARE SUPPORT
 - DES, triple DES, DESX computation
 - CBC chaining mode
 - DES function 190 cycles
 - Triple DES function 310 cycles
- UNIQUE SERIAL NUMBER ON EACH DIE

- CRC CALCULATION HARDWARE
- ESD PROTECTION GREATER THAN 5000V

Device	Memory(Bytes)		
	ROM	RAM	EEPROM
ST19RF08	32 K	960	8K

ST19RF08 CONTACTLESS FEATURES:

- ISO14443 TYPE B COMPLIANT
- 13.56 MHz CARRIER FREQUENCY
- DESIGNED TO SUPPORT HIGH SPEED DATA TRANSFER UP TO 424 Kbps
- 10% AMPLITUDE MODULATION RECEPTION (READER TO CARD)
- BPSK-NRZ-L LOAD MODULATION (CARD TO READER)
- 3V OPERATION

ST19RF08 CONTACT FEATURES:

- 2 SERIAL ACCESS, ISO 7816-3 COMPATIBLE
- 3V \pm 10% or 5V \pm 10% SUPPLY VOLTAGE
- POWER SAVING STANDBY MODE
- CONTACT ASSIGNMENT COMPATIBLE ISO 7816-2

HARDWARE DESCRIPTION

The ST19RF08, a member of the ST19 device family, is a serial access microcontroller especially designed for very large volume and cost effective secure portable object applications. The ST19RF08 is based on a STMicroelectronics 8 bit CPU and includes on chip memories: User ROM, User RAM and User EEPROM with state of the art security features.

ROM, RAM and EEPROM memories can be configured into partitions with customized access rules. Access from any memory area to another are protected by hardware FIREWALLS. Access rules are User defined and can be selected by mask options or during the life of the product.

The DES hardware accelerator is accessible via a cryptographic system ROM software library.

The ST19RF08 has a dedicated RF interface which allows contactless operations.

It is manufactured using the highly reliable ST CMOS EEPROM submicron technology.

As with all the other ST19 family members, it is fully compatible with the ISO07816 standards for Smartcard applications.

SOFTWARE DEVELOPMENT

Software development and firmware (ROM code/options) generation are done with the ST16-19 HDSE development system.

A cryptographic software library and a RF communications software library is available for this product.

Figure 1 Block Diagram

