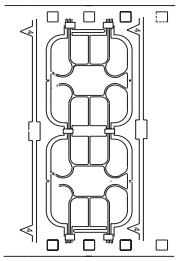
ST19RF08

Smartcard MCU

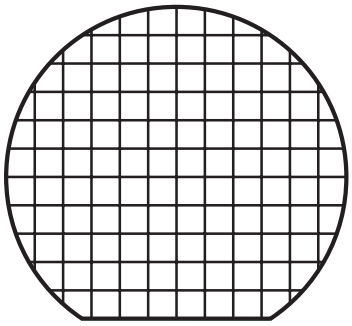
With 8176 Bytes EEPROM for Contactless/Contact Applications

DATA BRIEFING

- 8 BIT ARCHITECTURE CPU
- 32 K Bytes of USER ROM WITH PARTITIONING
- SYSTEM ROM FOR LIBRARIES
- 960 Bytes of RAM WITH PARTITIONING
- 8 K Bytes of EEPROM WITH PARTITIONING
  - Highly reliable CMOS EEPROM technology
  - 10 year data retention
  - 100,000 Erase/Write cycle 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
- 8 BIT TIMER
- HARDWARE DES ACCELERATOR
- SOFTWARE DES LIBRARY
  - DES, triple DES, DESX computations
  - CBC chaining mode



Micromodule (D7)



Wafer

CONTACT SPECIFIC FEATURES

- SERIAL ACCESS, ISO 7816-3 COMPATIBLE
- 3V ± 10% AND 5V ± 10% SUPPLY VOLTAGE
- POWER SAVING STANDBY MODE
- UP TO 10 MHz INTERNAL OPERATING FREQUENCY
- CONTACT ASSIGNMENT COMPATIBLE ISO 7816-2
- ESD PROTECTION GREATER THAN 5000V

CONTACTLESS SPECIFIC FEATURES

- ISO 14443 TYPE B
- 13.56 MHZ CARRIER FREQUENCY
- HARDWARE CRC CALCULATION
- 106, 212 and 424 KBIT/S DATA TRANSFER
- AMPLITUDE MODULATION READER TO CARD
- LOAD MODULATION CARD TO READER
- INTERFACE WITH RF READERS SUPPORTED THROUGH A LIBRARY OF EMBEDDED SOFTWARE FUNCTION COMPATIBLE WITH ISO 14443 STANDARD.

HARDWARE DESCRIPTION

The ST19RF08, a member of the ST19 device family, is a serial access microcontroller especially designed for very large volume and cost competitive secure portable objects.

The ST19RF08 is based on a STMicroelectronics 8 bit CPU core including on-chip memories: 960 Bytes of RAM, 32 K Bytes of USER ROM and 8 K Bytes of EEPROM.

RAM, ROM and EEPROM memories can be configured into partitions. Access rules from any memory partition to another partition are setup by the user defined Memory Access Control Logic.

It is manufactured using the highly reliable ST submicron technology.

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

– ISO7816 for contact operation,

– ISO14443 for contactless operation.

SOFTWARE DEVELOPMENT DESCRIPTION

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

Figure 1 Block Diagram