ST19SF02, SF04, SF08, SF16

CMOS MCU Based Safeguarded Smartcard with 2, 4, 8, or 16KBytes EEPROM

DATA BRIEFING

ST19SF02-ST19SF04-ST19SF08-ST19SF16 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
  - ST19SF02/04: 1 to 32 bytes Erase or Program in 1 mS
  - ST19SF08/16: 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
- 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
- ESD PROTECTION GREATER THAN 5000V
- UNIQUE SERIAL NUMBER ON EACH DIE

Figure 1 Delivery Form

Micromodule (D4)

Wafer

Device	Memory (Bytes)			
	ROM	RAM	EEPROM	E²PAGE
ST19SF02	32 K	960	2 K	32
ST19SF04	32 K	960	4 K	32
ST19SF08	32 K	960	8 K	64
ST19SF16	32 K	960	16 K	64
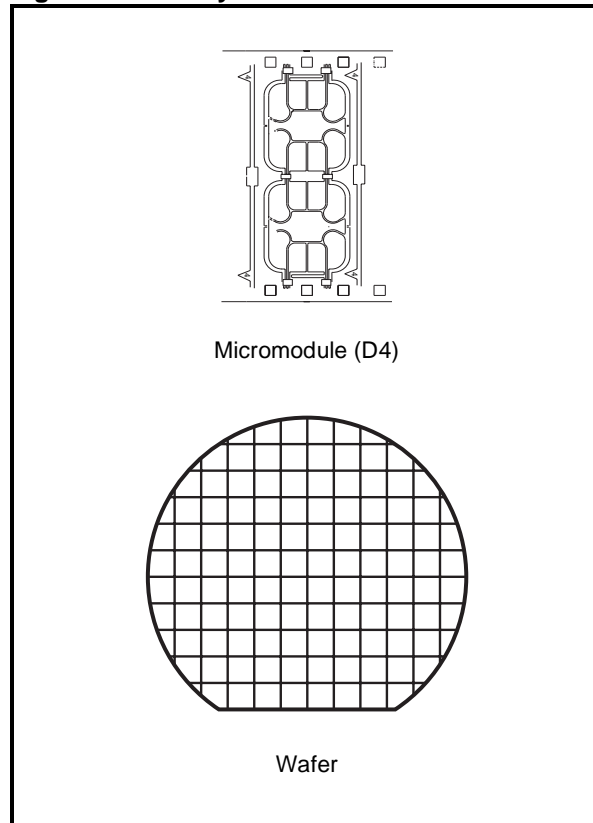
HARDWARE DESCRIPTION

The ST19SFXX, 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 ST19SFXX is based on a STMicrolectronics 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 is protected by hardware FIREWALLS.

Access rules are User defined and can be selected by mask options or during the life of the product.

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 ISO7816 standards for Smartcard applications.

SOFTWARE DEVELOPMENT

Software development and firmware (ROM code/options) generation are done with the ST19-HDSXE development system.

Figure 2 Block Diagram