



ST16R820

Smartcard MCU

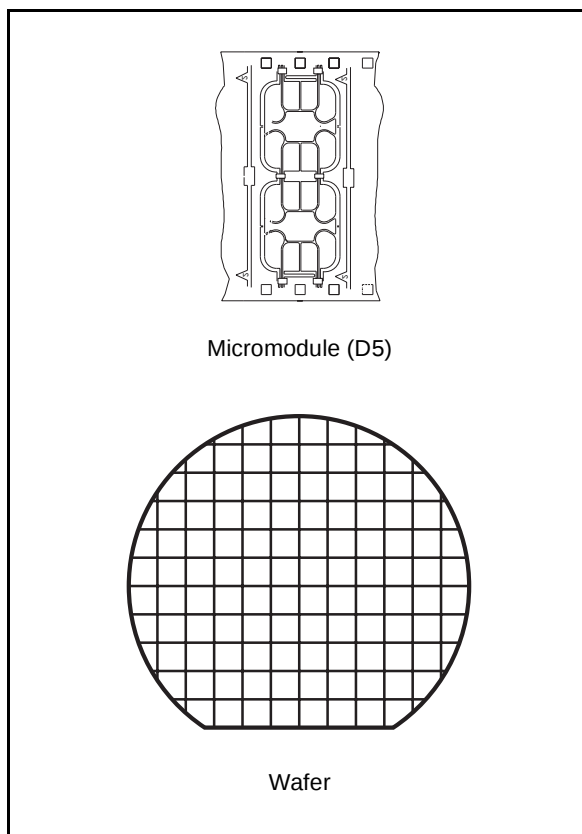
With 544 Bytes EEPROM for Contactless/Contact Applications

DATA BRIEFING

- 8 BIT ARCHITECTURE CPU
- 8 KBytes of USER ROM, SECTOR COMBINATIVE
- 4.5 KBytes of SYSTEM ROM
- 192 Bytes of RAM
- 544 Bytes of EEPROM, SECTOR COMBINATIVE
 - Highly reliable CMOS EEPROM technology
 - 10 year data retention
 - 300,000 Erase/Write cycle endurance
 - Protected One Time Programmable block (32 or 64 bytes)
 - 1 to 32 bytes block either Erase or Write in single cycle programming
- POWER SAVING STANDBY MODE
- VERY HIGH SECURITY FEATURES INCLUDING EEPROM FLASH ERASE
- ESD PROTECTION GREATER THAN 5000V
- 2 OPERATING CONFIGURATIONS
 - ISSUER
 - USER

CONTACTLESS SPECIFIC FEATURES

- 13.56 MHZ OPERATION
- 106 KBIT/S DATA TRANSFER
- AMPLITUDE MODULATION READER TO CARD
- LOAD MODULATION CARD TO READER
- 3V OPERATION



CONTACT SPECIFIC FEATURES

- EXTENDED VOLTAGE OPERATION, V_{cc} Range: 2.7V to 5.5V
- SERIAL ACCESS, ISO 7816-3 COMPATIBLE
- UP TO 5 MHz INTERNAL OPERATING FREQUENCY
- CONTACT ASSIGNMENT COMPATIBLE ISO 7816-2

DESCRIPTION

The ST16R820, a member of the standard ST16 device family, is a serial access microcontroller especially designed for large volume contactless/contact Smartcard applications.

The ST16R820 is based on 8 bit CPU core and includes on chip memories: 192 Bytes of RAM, 8 KBytes of USER ROM, 4.5 KBytes of SYSTEM ROM, and 544 Bytes of EEPROM.

Both ROM and EEPROM memories can be configured into two sectors. Access rules from any

memory section or sector to any other are set-up by the User's defined Memory Access Control Matrix (MACM).

Reliability data related to the ST16R820 product, manufactured using STMicroelectronics' advanced CMOS EEPROM technology, confirm data retention of up to 10 years and endurance up to 300,000 Erase/Write cycles.

Contact operation is fully compatible with the ISO standards for Smartcard applications.

Figure 1 Block Diagram

