



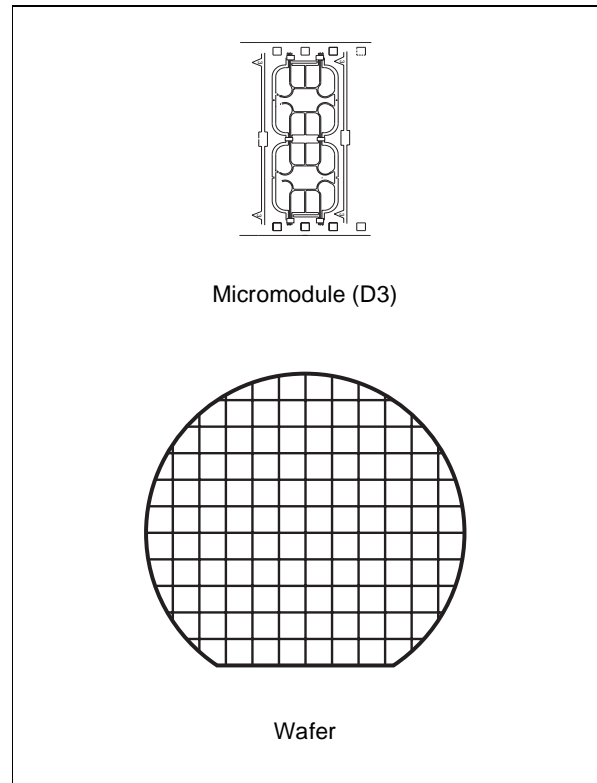
# ST16ST2G

## Smartcard MCU

### With up to 16352 Bytes EEPROM & T2G<sup>+</sup> Authentication Library

DATA BRIEFING

- 8 BIT ARCHITECTURE CPU
- 15 K Bytes of USER ROM
- 1 K Byte of T2G<sup>+</sup> AUTHENTICATION LIBRARY
- 1.5 K Byte of SYSTEM ROM
- 384 Bytes of RAM
- Up to 16352 Bytes of EEPROM, SECTOR COMBINATIVE
  - Highly reliable CMOS EEPROM technology
  - 10 year data retention
  - 100,000 Erase/Write cycle endurance
  - Protected One Time Programmable block (32 or 64 bytes)
  - 1 to 32 Byte block Erase or Write in single cycle programming
- SERIAL ACCESS, ISO 7816-3 COMPATIBLE
- EXTENDED VOLTAGE OPERATION
  - V<sub>CC</sub> Range: 2.7 V to 5.5 V
  - I<sub>CC</sub> Operating: 4 mA at 5 V (typical)  
1.6 mA at 3 V (typical)
- POWER SAVING STANDBY MODE
  - I<sub>CC</sub> Stand-by: 20 μA at 5 V (typical)  
4 μA at 3 V (typical)
- UP TO 5 MHz INTERNAL OPERATING FREQUENCY
- VERY HIGH SECURITY FEATURES INCLUDING EEPROM FLASH ERASE
- CONTACT ASSIGNMENT COMPATIBLE ISO 7816-2
- ESD PROTECTION GREATER THAN 5000V
- 2 OPERATING CONFIGURATIONS
  - ISSUER
  - USER
- MEETS GSM 11.11 AND 11.12 SPECIFICATIONS Contact Name



#### T2G<sup>+</sup> SPECIFIC FEATURES

- AntiClone Function\* by France Telecom
- FRANCE TELECOM LICENCE
- T2G<sup>+</sup> AUTHENTICATION LIBRARY WITH CBC\*\* (to build Security Module for ST133x and ST135x ICs)
- DEDICATED SOFTWARE TOOLS
- T2G<sup>+</sup> Authentication Library
  - Emulator with pseudo-ACF\*
  - Manager with full ACF\*
  - System ROM Library

\* *AntiClone Function = ACF*

\*\* *Cipher Block Chaining Mechanism = CBC*

## ST16ST2G

### DESCRIPTION

The ST16ST2G, a member of the standard ST16SF4x device family, is a serial access micro-controller especially designed for high volume and cost competitive Smartcard applications where firmware security algorithm must be implemented.

The ST16ST2G is based on 8 bit CPU core and includes on chip memories: 384 Bytes of RAM, 15 K Bytes of USER ROM, 1.5 K Byte of SYSTEM ROM, and up to 16352 Bytes of EEPROM. The ST16ST2G also includes 1 KByte of T2G+ Authentication Library.

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 ST16ST2G product manufactured using STMicroelectronics advanced CMOS EEPROM technology confirm data retention up to 10 years and endurance up to 100,000 Erase/Write cycles.

As with all other ST16 family members, the ST16ST2G is fully compatible with the ISO standards for Smartcard applications.

Software development (ROM code, options) can be completed by the ST16-19HDSE development system.

The ST16ST2G can be delivered either in unsawn or sawn wafers, 180 or 275 micron thickness as well as in micromodule package.

For ordering information and request for quotation (RTQ) please contact your nearest ST sales office.

Figure 1. Block Diagram

