

CMOS BASED SMARTCARD IC WITH 8176 Bytes EEPROM FOR CONTACTLESS/CONTACT APPLICATIONS

PRODUCT PREVIEW

- 8 BIT ARCHITECTURE CPU
- 16 KBytes of USER ROM, SECTOR COMBINATIVE
- 1.5 KBytes of SYSTEM ROM
- 384 Bytes of RAM
- 8176 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 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

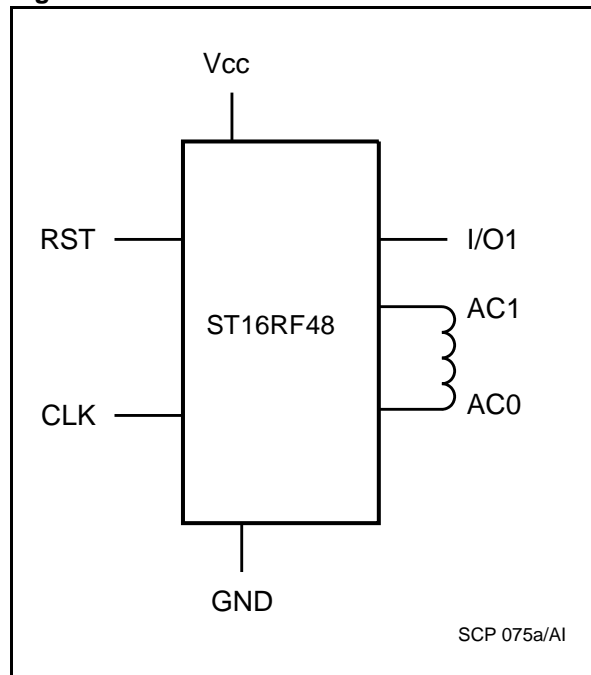
CONTACT SPECIFIC FEATURES

- 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

Table 1 Contact name

CLK	Clock
RST	Reset
I/O1	Data Input/Output
VCC	Supply Voltage
GND	Ground
AC1	Connection
AC0	Antenna control

Figure 1 Pin Connection



DESCRIPTION

The ST16RF48, a member of the standard ST16xyz device family, is a serial access micro-controller especially designed for high volume contactless/contact Smartcard applications.

The ST16RF48 is based on 8 bit CPU core and includes on chip memories: 384 Bytes of RAM, 16 KBytes of USER ROM, 1.5 KBytes of SYSTEM ROM, and 8176 Bytes of EEPROM.

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

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

Reliability data related to the ST16RF48 product, manufactured using SGS THOMSON Microelectronics' advanced CMOS EEPROM technology, confirm data retention of up to 10 years and endurance up to 100,000 Erase/Write cycles.

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

Figure 2 Block Diagram

