

2k bit Read/Write High Secure ISO15693 Standard Compliant Device

General Description

The EM4233 is a long range passive CMOS integrated circuit intended for use in applications requiring a contactless read/write memory offering a high and tailored level of security.

The configurable 2k bit EEPROM memory included in the chip is organized in 64 words of 32 bits. The high level of flexibility in the memory management, permits that a memory word can be read/write protected and/or locked separately.

This latest generation of EEPROM memory offers data retention of 60 years enabling solutions for long-term asset management applications.

The customer data privacy and security is guaranteed by a powerful and fast crypto engine implemented in the chip associated with a true random generator and a 96 bit secret key.

The enhanced on-chip security feature permits a flexible administration of the memory access rights which makes it the right solution for advanced theft protection.

Depending on the application requirements, in terms of security, the user can tailor and adjust the security level by selecting either a true mutual authentication process, a login procedure with a 32 bit password or use the chip as a plain text memory.

The IC supports all the ISO/IEC 15693 Mandatory commands and many of the optional commands. Its command set is completed by unique custom commands which give to the EM4233 customers a higher degree of differentiation in terms of security, flexibility and data protection.

Each EM4233 contains in its memory a 64 bit unique serial number which cannot be altered and guarantees the uniqueness of each device.

Block Diagram

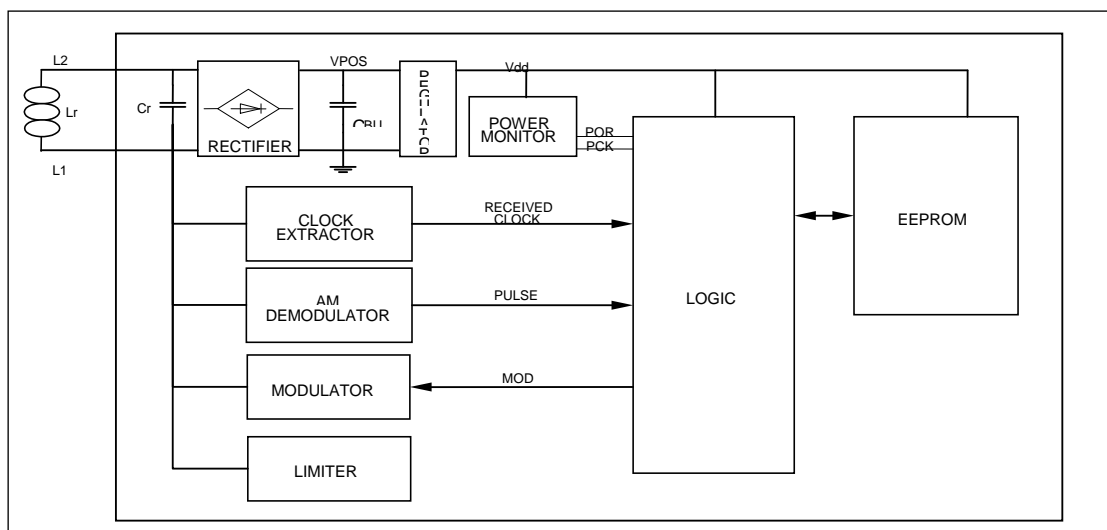


Figure 1

Features

- ISO/IEC 15693 + ISO/IEC18000-3 standard compliant
- Long range, low power vicinity transponder IC
- 60 years data retention
- 64-bit ISO/IEC 15693 Unique Identifier (UID)
- 2k bit EEPROM organized in 64 blocks of 32 bits
- 1.625k bit user's data memory (52 blocks of 32 bits)
- Secure privacy mode controlled by a 96 bit secret key and a high secure crypto engine
- Alternatively possibility to select a lower level of the security mode based on login command and a 32 bit password or as a plain text memory.
- Password protected Destroy function to deactivate forever the label
- Quiet Storage feature to speed up inventory processes
- Data Storage Format Identifier (DSFID)
- Application Field Identifier (AFI) supported
- EEPROM blocks/pages Locking mechanisms
- Support all mandatory and most of optional ISO/IEC 15693 commands and a complete set of custom commands
- On-chip resonant capacitor options: 23.5pF and 97pF
- 40 to +85°C temperature range
- Bonding pads optimized for flip-chip assembly

Applications

- Access Control
- Long term asset tagging
- Supply Chain Management