



# 1 kbit Read/Write, ISO 18000-6C / EPC C-3 G-2 Passive / Battery-assisted Passive Contactless IC

## Description

EM4324 is a Class-3 Generation-2 (Gen2) long range passive / battery-assisted UHF RFID tag IC compliant with the ISO 18000-6C / EPCglobal Class-1 Generation-2 protocol. The chip offers an advanced feature set (EPC+) leading to a performance beyond that of standard Gen2 chips. Battery-assisted, EM4324 offers superior reading range and reliability compared to purely passive RFID solutions. The battery-assisted mode is tailored to harsh environment applications where other passive UHF solutions fail e.g. in the presence of water or metal.

The EM4324 current consumption has been optimized to maximize battery lifetime. Even if the battery is flat, the chip continues to operate and communicate with the reader in passive mode.

The memory size is 1024 bits enabling support of ISO or EPC data structures. Each chip is delivered with a 64-bit Unique Identifier to ensure full traceability.

The EM4324 includes a tamper detection circuit to support E-seal applications. Tamper detection can be implemented using a simple continuity loop, with heat sensitive fuse wire, with sensors having both high and low impedance states, or with external devices controlling an electronic switch such as a MOSFET.

## Features

- ISO 18000-6C compliant
- EPC Class-1 Gen-2 compliant
- 1024-bit non-volatile memory
- 720-bit user's free memory
- 96-bit EPC numbers supported
- 64-bit manufacturer-programmed Unique Identifier (TID / UID)
- Forward link data rates: 40 to 160 kbit/s
- Return link data rates: 40 to 640 kbit/s
- Tamper detection
- Battery assistance mode for unsurpassed reading range and reading reliability
- Rectifier that allows passive operation in case the battery is flat or not present
- Support of near-field mode enabling reading e.g. through water
- Support of parallel-inductance matching for improved matching
- 32-bit password-protected Kill command
- 32-bit password-protected Access command
- Anti-tearing feature to prevent malicious unlocking
- Extended temperature range (-20°C to +85°C)
- Available also in TSSOP-8 package

## Typical Applications

- Supply chain management
- Tracking and tracing
- Containers identification
- Access control
- Asset control
- E-seals

## Typical Configuration

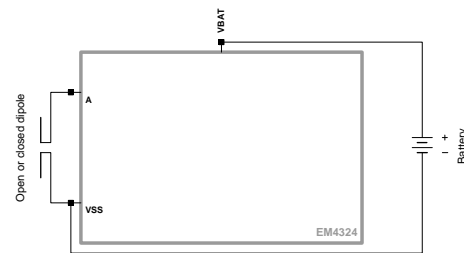


Fig. 1

## IC Block Diagram

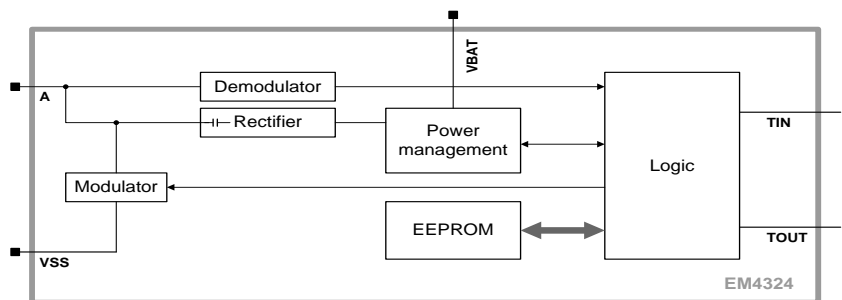


Fig. 2