# 512 bit, Read/Write UHF Identification Device

## Description

The EM4444 is used in passive UHF Read/Write transponder applications. It is powered up by an RF beam transmitted by the reader, which is received and rectified to generate a supply voltage for the chip.

A pre-programmed ID code or other data is transmitted back to the reader by varying the amount of energy that is reflected back to the reader.

It implements the robust and fast anti-collision protocol full compliant with the EM Microelectronic UHF read-only and read/write tags. Data is written to the tag in 64 bit blocks by commanding the chip after its presence had been detected.

ID only or ID and one or more EEPROM data pages is transmitted continuously in a Tag-Talks-Only (TTO) mode. Alternatively data can be read from the tag in 64 bit blocks by commanding the chip after its presence had been detected.

The reading range depends on the reader power allowed by local spectrum regulations, but in excess of 6 m can be achieved in the USA (license free) and 20 m (site licensed). More than 2 m can be attained in Europe. ID reading rates of 120 tags per second can be attained.

The chip is compatible with the EM4222/EM4122 read-only chips and readers. It can be used in mixed populations of read/write and read only RFID tags.

## Features

- Compatible with UHF read-only and read/write tags (EM4222, EM4122, EM4442)
- Factory programmed 64 bit serial ID number
- 7 pages of user programmable and lockable memory (64-bit pages)
- EEPROM data pages can be transmitted with ID in Tag-Talks-only (TTO) mode.
- Can be used as OTP device
- High reading data rate up to 256 kbit/s
- Frequency independent: typically used at 315 MHz, 433 MHz, 869 MHz, 902 - 928 MHz and 2.45 GHz
- On-chip oscillator
- Low voltage operation down to 1.3V
- -40 to +85°C temperature range

## Applications

The EM4444 is ideal for applications where long range, high-speed item identification is required:

- Supply chain management
- Tracking and tracing
- Smart labelling
- Airline baggage

## Typical Operating Configuration

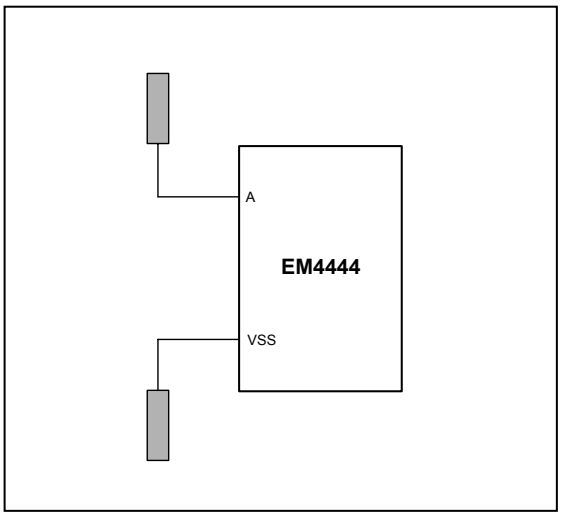



**Fig. 1**

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