Read/Write Dual Frequency Identification Device

Description

The chip is used in passive read/write transponder applications. It is powered up by inductive coupling at 125 kHz, which is received and rectified to generate a supply voltage for the chip. A factory programmed ID code or memory data is transmitted back to the reader at a different frequency (typically 6.8 MHz). 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 contiguously 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. It implements the robust and fast iP-X anti-collision protocol.

The chip can be used for inductively coupled applications where reading ranges in excess of 2 m and reading rates of 100 tags per second can be attained.

The chip is compatible with the EM4322 (iP-X3) read-only chips and readers. It can be used in mixed populations of read/write and read/only RFID tags.

Typical Applications

The chip is ideal for applications where long range, high-speed item, person and animal identification is required:

- Supply chain management (especially fresh produce)
- Free flow people tracking
- Paper industry
- Tracking and tracing
- Access control
- Asset control
- Licensing
- Animal tagging
- Sports event timing
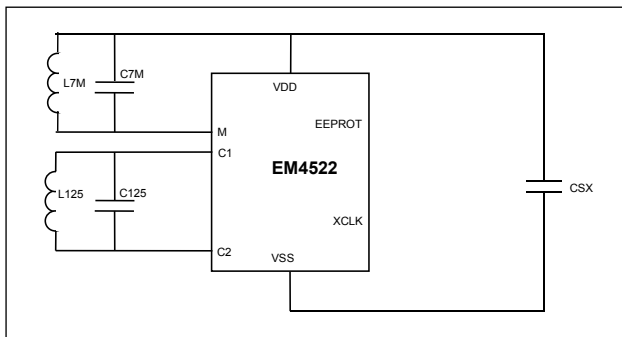
Features

- Compatible with EM4322 dual frequency read only tags
- Compatible with iPico dual frequency readers.
- Factory programmed 64 bit ID
- Field programmed 128 bit EPC
- 7 pages of user programmable and lockable memory (64-bit pages).
- Can be used as OTP device.
- High reading data rate: 128 kbit/s.
- On-chip oscillator.
- Low power consumption.
- Low cost.
- -40 to +85 $^{\circ}$C temperature range.

Typical Tag Configuration

Figure 1

Typical components	Value
C7M	180 pF - 1 nF
L7M	3.04 µH - 0.548 µH
C125	300 pF - 1 nF
L125	5.4 mH - 1.62 mH
CSX	300 nF - 1 µF

Table 1

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