Read-only Dual Frequency Identification Device

Description

The chip is used in passive read-only 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 pre-programmed code is transmitted back to the reader at a different frequency (typically 6.78 MHz). It implements a robust and fast anti-collision protocol.
The chip can be used for inductively coupled applications where reading ranges of 1.5 m to 2 m and reading rates up to 120 tags per second at 256 kbit/s can be attained depending upon the system configuration.
The Tag Talk First (TTF) protocol enables very simple reader implementation.

Typical Applications

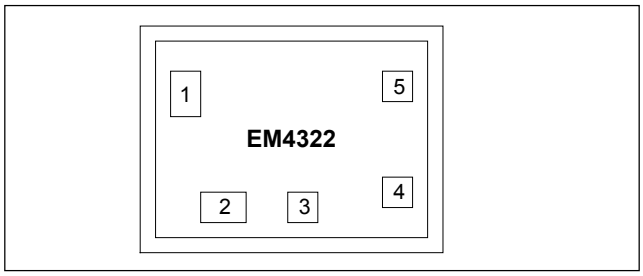
The chip is ideal for applications where long range, high-speed item and person identification is required:

- Supply chain management (SCM)
- Free flow people tracking
- Paper industry
- Tracking and tracing
- Smart labeling
- Access control
- Asset control
- Licensing
- Animal tagging
- Sports event timing

Features

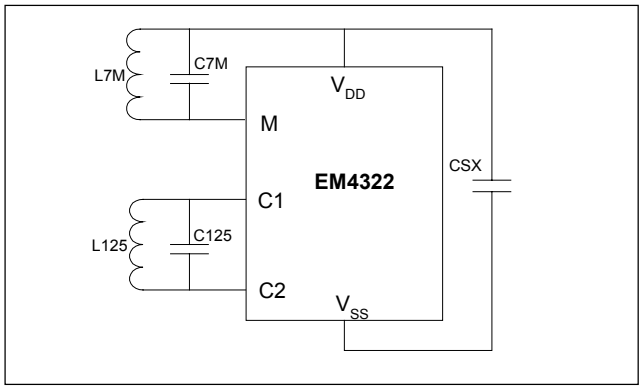
- Factory programmed 64 bit unique ID number
- High data rate: Up to 256 kbit/s
- On-chip oscillator
- On-chip rectifier
- Low voltage operation - down to 1.0 V
- Low power consumption
- -40 to +85 °C operating temperature range

Pin Assignment



Pad no	Name	Function
1	V_{SS}	Negative supply
2	M	Connection to 6.78 MHz coil
3	V_{DD}	Positive supply
4	C1	Connection to 125 kHz coil
5	C2	Connection to 125 kHz coil

Typical Operating Configuration



Ordering Information for samples

For other versions or other delivery form, please contact EM Microelectronic-Marin S.A. Please make sure to give complete part number when ordering (without spaces between letters).

Part Number	Data rate	Max interval	Die Form & Thickness	Bumping
EM4322V1	64k	4k	Sawn wafer, 11 mils	no bumps
EM4322V2	64k	16k	Sawn wafer, 11 mils	no bumps
EM4322V3	256k	4k	Sawn wafer, 11 mils	no bumps
EM4322V4	256k	16k	Sawn wafer, 11 mils	no bumps
EM4322V5	256k	64k	Sawn wafer, 11 mils	no bumps

For specific applications to be used in mass production, the customer could define its options with the control ROM bit definition. Using this information, EM Microelectronic-Marin S.A. will define a complete new Part Number for ordering.

Product Support

Check our Web Site under Products/RF Identification section.
Questions can be sent to cid@emmicroelectronic.com

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