Read-only UHF Identification Device

Description

The EM4222 is used in passive UHF read-only 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 code is transmitted to the reader by varying the amount of energy that is reflected back to the reader. It implements a robust and fast anti-collision protocol. The chip is frequency independent and is to be used for RF coupled applications. A reading range from 2m to 20m and reading rates up to 120 tags/second can be achieved, depending upon the system configuration. The Tag Talk First (TTF) protocol enables very simple reader implementation.

Typical Applications

The EM4222 is ideal for applications where long range, high-speed item identification is required:

❑ Supply chain management (SCM)
❑ Tracking and tracing
❑ Access control
❑ Asset control
❑ Licensing
❑ Auto-tolling
❑ Animal tagging
❑ Sports event timing

Features

❑ Factory programmed 64 bit unique ID number
❑ High data rate: Up to 256 kbit/s
❑ Frequency independent: Typically used at 869 MHz, 902 - 928 MHz, 2.45 GHz
❑ On-chip oscillator
❑ On-chip rectifier
❑ Low voltage operation - down to 1.0 V
❑ Low power consumption
❑ Cost effective
❑ -40 to +85°C operating temperature range
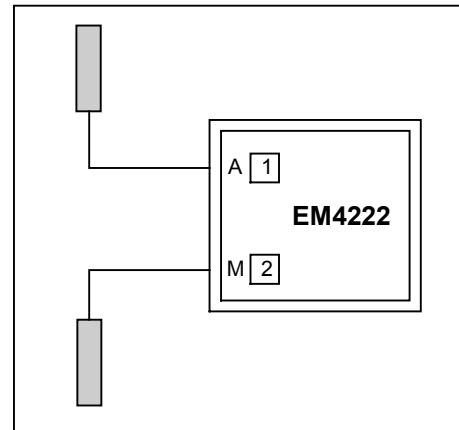❑ Available in die form

Operating Configuration

UHF transponders can be implemented using an EM4222 chip and an antenna.

Pad No	Name	Function
1	A	Negative connection to antenna
2	M	Positive connection to antenna

Ordering information for samples

Please make sure to give complete part number when ordering (without spaces between letters).

Part Number	Data rate	Max interval	Die Form & Thickness	Bumping
EM4222V1	64k	4k	Sawn wafer, 11 mils	no bumps
EM4222V2	64k	16k	Sawn wafer, 11 mils	no bumps
EM4222V3	256k	4k	Sawn wafer, 11 mils	no bumps
EM4222V4	256k	16k	Sawn wafer, 11 mils	no bumps
EM4222V5	256k	64k	Sawn wafer, 11 mils	no bumps

For ICs to be used in mass production, the customer must 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