128 bit Read Only Low Frequency Contactless Identification Device

Description

EM4200 is a CMOS integrated circuit intended for use in electronic Read Only RF transponders. It is designed to replace seamlessly the EM Microelectronic-Marin Read Only ICs EM4100/4102 and EM4005/4105.

The circuit is powered by an external coil placed in an electromagnetic field and gets its master clock from the same field. By turning on and off the modulation current, the chip sends back the unique code contained in a factory pre-programmed laser ROM.

The 128 bit unique code is stored in laser programmed ROM. Several options are available to use 64, 96 or 128 bits of ROM.

The IC offers also different resonant capacitor versions, selectable by mask option (0pF, 75pF and 250pF) providing the same reading performances to ensure seamless replacement.

Features

- Full compatible with EM4100/4102 and EM4005/4105 communication protocols.
- 128 bit laser programmed ROM (64 and 96 bit option available)
- Several options of data rate and data encoding:
  - Manchester 32 and 64 RF clocks per bit
  - Biphase 32 and 64 RF clocks per bit
  - PSK 16 RF clocks per bit (subcarrier RF/2)
  - FSK2 50RF clocks per bit
- Several resonant capacitor integrated on chip (0pF, 75pF or 250pF mask option)
- 100 to 150 kHz frequency range
- On-chip rectifier and voltage limiter
- No external supply buffer capacitor needed
- -40°C to +85°C temperature range
- Very low power consumption and High performances

Typical Applications

- Animal Identification according to ISO11785 (FDX-B)
- Waste management standard (BDE)
- Access Control
- Logistics automation
- Anti-counterfeiting
- Industrial transponder

Typical Configuration

![Typical Configuration Diagram]

Ordering Information

The versions below are considered standards and should be readily available. For other versions or other delivery form, please contact EM Microelectronic-Marin S.A.

<table>
<thead>
<tr>
<th>Part Number</th>
<th>IC Data Encoding</th>
<th>Data Length</th>
<th>IC Cres</th>
<th>Package</th>
<th>Delivery Form</th>
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<td>EM4200A6WS7-001</td>
<td>Manchester – 64RF</td>
<td>64 bits</td>
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<td>Sawn wafer</td>
<td>Wafer on frame</td>
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<td>Blister Tape</td>
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