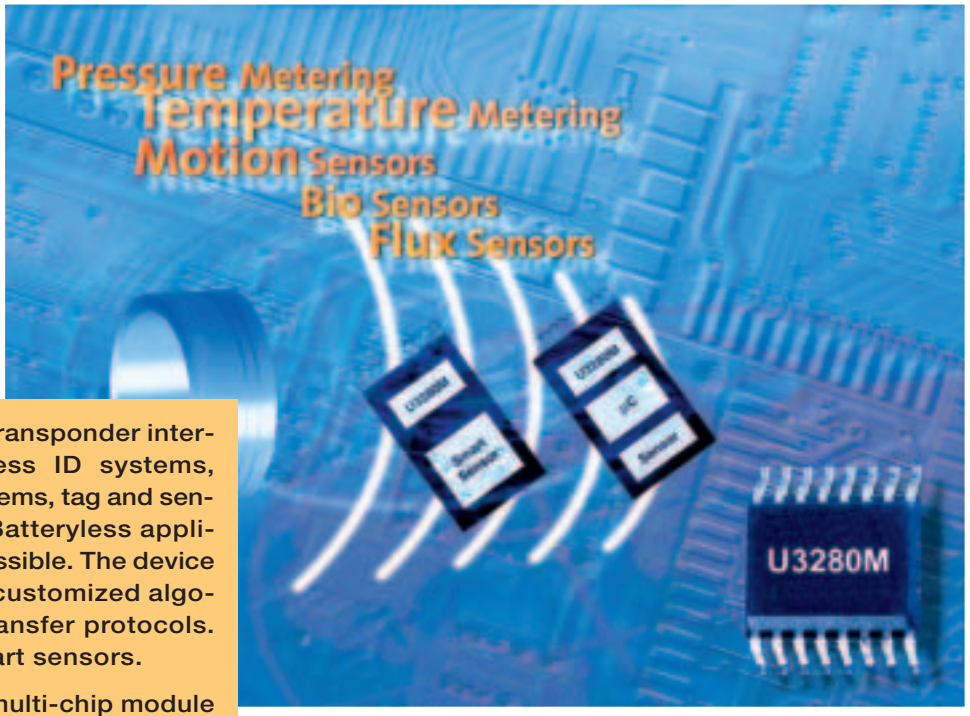
U3280M Transponder Front-End IC

U9280M Microcontroller with Transponder Front End



The U3280M is a transponder interface for contactless ID systems, remote control systems, tag and sensor applications. Batteryless applications are also possible. The device enables to create customized algorithms and data transfer protocols. Compatible to smart sensors.

The U9280M is a multi-chip module for remote control and contactless ID systems consisting of the microcontroller M44C092 and the U3280M transponder interface circuit with EEPROM.

U3280M

Adjustable analog front end IC U3280M for 120-134-kHz transponder applications with microcontroller. It supplies the microcontroller with power from an RF field via the LC-resonant circuit and enables contactless bidirectional data communication via this RF field. The intelligent power management handles the switching between magnetic field and battery power supply. To store permanent data like identifier code and configuration data, the U3280M includes a 512-bit EEPROM with serial interface.

Features U3280M

- Contactless power supply and communication interface
- Up to 10 kbaud data rate (R/O)
- Power management for contactless- and battery power supply
- Frequency range 100 to 150 kHz
- 32 x 16-bit EEPROM
- Two wire serial interface
- Shift register supported Biphase and Manchester modulator stage
- Reset I/O line
- Field clock extractor
- Field and gap detection output for wake up and data reception
- Field modulator with energy-saving damping stage

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U9280M

The U9280M is a fully programmable multi-chip module for remote control and contactless ID systems when the implementation of both transponder algorithms and IR/RF protocols are required. It consists of the 4-bit microcontroller M44C092 and U3280M transponder interface circuit with EEPROM. A wide range of customer-specific solutions (e.g., combination with bi-directional interfaces) can be realized. The µC supports with its built-in timers many kinds of IR- and RF-transmission modes such as burst-modulation modes, PWM-, NRZ-, Manchester- and Biphase coding.

Features U9280M

- 4-bit HARVARD architecture
- 4 k x 8-bit application ROM, 256 x 4-bit RAM
- 32 x 16-bit EEPROM
- 10 bidirectional I/Os
- 4 external interrupt inputs (SSO20), 8 interrupt levels
- 2 x 8-bit multifunction timer/counter
- Interval timer with watchdog
- Two-wire serial interface
- On-chip RC oscillator
- On-chip crystal oscillator
- Contactless power supply and communication interface
- Power management for contactless- and battery-power supply
- Shift-register-supported modulator and demodulator stages
- Low power consumption
- Active mode < 300 µA @ 2 V and 1 MHz system clock frequency (2 µs instruction cycle)
- Power-down mode < 1 µA
- Supply voltage 2.0 V to 6.5 V
- High-level language programming in qFORTH
- Operating speed: 1 – 10 µs instruction cycle (2 µs @ V_{DD} = 2 V)

- Application kit TMEB8704 for reader and transponder ICs
- Data sheets
- QualPacks

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