The height of convenience for vehicle access

NXP Semiconductors' leading portfolio of vehicle security solutions now includes a true 'single-chip' remote keyless entry family. Ideal for today's advanced vehicle access applications, the PCF7x61 security transponder, microcontroller and radio transmitter ICs fit compact key designs and offer cost-effective answers to all your remote access and immobilization needs.

Features

▸ Single-chip security transponder and keyless entry solution with on-chip UHF transmitter
▸ PCF7936 family compatible transponder operation
▸ Low power RISC programmable device operation
▸ On-chip PLL based UHF transmitter (315/434 MHz)
▸ Programmable ASK/FSK modulation characteristics
▸ Up to seven command button inputs
▸ Programmable 'battery low' detection
▸ Full suite of on-chip memory
  - 4/8 Kbytes E-ROM, 4 Kbytes ROM, 512 bytes EEPROM, 192 bytes RAM
▸ Factory programmed serial number (32-bit)
▸ Single lithium cell operation (2.1 to 3.6 V)
▸ 20-pin TSSOP package (SOT360-1)

Benefits

▸ Low power consumption
▸ Highly integrated – minimum board space required
▸ Cost-efficient solution with low Bill of Materials
▸ Fully aligned with NXP's product family
▸ Easy application

The development of remote keyless entry systems significantly improved passenger and driver convenience in today's cars. NXP continues to drive forward the introduction of keyless entry and immobilization systems with the highly integrated PCF7x61 family.

Combining security transponder, RISC controller and UHF transmitter, this family delivers a true single-chip solution for a range of functions and models.

Based on NXP's low power 8-bit MICRO RISC KERNAL (MRK II), the family performs command button scanning and data framing according to application requirements. RISC timing is derived from an on-chip low tolerance RC oscillator with a programmable system clock as fast as 2 MHz. 'Keyless Entry Code hopping' generation can employ the hard-wired transponder Calculation Unit or any software based algorithm, while synchronization can be achieved via the contactless transponder interface.

NXP founded by Philips

Except for reference crystal and loop antenna matching circuitry, the on-chip UHF transmitter requires no other external components. The RISC controller directly controls the UHF transmitter and supports ASK and FSK modulation with data rates up to 20 kbit/s (Manchester).

Powered by an external single-cell lithium battery, the device features a power down mode, minimizing quiescent current.

The programmable power amplifier stabilizes the output power to minimize carrier, over temperature and battery voltage variations. Security transponder operation is compatible with the PCF7936 family simplifying system upgrade, and does not require any battery supply so full transponder operation is guaranteed in the event of a 'battery low' condition. A complete suite of on-chip memory is available providing sufficient storage for all application software

and firmware. Extended data storage is provided by 512 bytes of on-chip EEPROM, with access control defined by the application. The 4 Kbytes of ROM is intended for device firmware and library, while the 4 or 8 Kbytes of E-ROM (or ROM) supports user application code. The PCF7961 features FLASH-like programming of the application code for easy system upgrade and a dedicated ROM code version, PCF7361, for high volume purposes is also available.

Note
1. Button inputs or generic I/O, however external p'up resp. p'down required