



**THE DATASHEET OF
NCF29A1MHN/0500IJ**



**NCF29A1MHN:
Tiny Single Chip
Passive Keyless
Entry/Go
Solution**

Overview

The NCF29A1 is an extremely compact single chip solution, ideally suited for automotive applications with combined vehicle immobilization and keyless entry/start functions. The device incorporates a Security Transponder, PKE LF interface, UHF Transmitter and RISC Controller on the same chip and requires only a few external components.

The device transponder operation is compatible with the Security Transponder family PCF7937/38/39. The Transponder circuitry does not require any battery supply and full operation is granted in case of a battery low condition. The device comes in a tiny 32 pin QFN Package demanding little board space (5 mm x 5 mm). The RISC Controller is powered by NXP's low power 16-Bit MICRO RISC KERNEL (MRK III). The device features 8 I/O ports allowing for up to eight command button inputs.

Features

- Single-chip Security Transponder and Keyless Entry solution with on-chip multi-channel UHF Transmitter (310-447 MHz, 868/915 MHz upon request)
- PCF7938/39 Family compatible transponder operation
- 16 Bit RISC Architecture (MRK III)
- Up to eighth command buttons
- Low-power RISC programmable device operation
- Programmable ASK/FSK modulation characteristics
- EEPROM for extended data storage
- High sensitive three axis (3D) LF front-end
- Low power LF wake-up and data processing
- Low power consumption for longlasting battery
- Single Lithium cell operation, 1.8 V to 3.6 V
- Highly integrated for minimum board space and low bill of materials
- Extreme compact tiny HVQFN package
- 70% size reduction due to monolithic one-chip solution
- Allows maximum design flexibility for car keys and any other wearables and portables
- Superior sensitivity of the LF frontend with best-in-class stable low quiescent current
- Longer Immobilizer range for more user friendly Immobilizer backup function and different placement of Immobilizer backup reader antenna
- Ultra low power IC is also extending battery life by up to 40%
- Usage of AES effectively hampers key cloning vehicle theft
- Key Localization (within 5 cm) with the 3D LF interface using RSSI (receive signal strength indicator) over wide dynamic range

Target Applications

- Passive Keyless Entry Go
- Remote car management
- Immobilizer

Less ^

Outline 3d SOT617-3



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