

Launch of world's smallest combo chip for automotive keyless entry systems

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NXP Semiconductors today announced the NCF2960 – the world's smallest combo chip solution for automotive keyless entry with immobilizer functions. The compact solution uniquely integrates a security transponder, micro RISC kernel, and multi-channel radio transmitter in a single package.

The NCF2960 addresses the strong demand from car OEMs for fashionable and distinctive [car key](#) designs. The chip's package size has been reduced by 44% compared to the previous generation. Available in a tiny 24-pin QFN package, it requires only 4-mm x 4-mm of board space, providing key fob manufacturers with maximum design freedom in selecting form factors and in placement of command buttons.

One of the chip's key features is its RF multi-channel capability. Rather than transmitting its signal on one frequency only, the integrated transmitter enables the signal to be transmitted on multiple frequency channels. Frequency hopping maximizes the reliability of car keys in environments suffering from RF jamming. Contrary to conventional devices, NXP's new NCF2960 also features stabilized output power in order to minimize the impact of varying battery voltage and temperatures.

The NCF2960 also enables cost savings due to a small PCB footprint, as well as optical inspection of solder connections rather than using complex x-ray processes. Optical inspection is made possible by the 24-pin QFN package with wettable flanks.

Key Features

- Single-chip security transponder and keyless entry solution with on-chip multi-channel UHF transmitter (310 to 447 MHz, up to 950 MHz optionally)
- Transponder emulation based on HT3, HT-AES or HT-Pro2
- RISC programmable device operation
- Calculation unit supporting HT3 (96-bit) and AES (128-bit)
- 16 KB flash for user application
- 2 KB ultra-low-power EEPROM for extended data storage
- 1 KB RAM

- Accommodates up to eight command button
- Current source option for direct LED drive
- Stabilized RF output power
- Single lithium cell operations, 2.1V to 3.6V
- C-compiler supported software development
- 24-pin tiny footprint HVQFN package (4 x 4mm)

More information: Engineering samples of NCF2960 are available.

Provided by NXP

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