An Automotive Security System for Anti-Theft

Description

In automotive theft, a big challenge comes from professional theft activities, such as, removing security system, bypassing/replacing/re-programming security electronic control units (ECUs), and re-selling key auto systems. To prevent automotive theft, we have designed and developed a security system for anti-theft. Through remote control, our solution not only prevents a stolen car from re-starting, but also disables the key auto systems of car so that they cannot function well. Hence, with our solution, a car and its key auto systems can be disabled, and the thief will be deterred from stealing it in the first place.

The technical approaches include distributed control with non-stationary code obfuscation applied to controller area network (CAN) and ECUs, adding tamper resistance of software in ECUs, and securing remote control.

Features

- Distributed control with code obfuscation
- Tamper resistance of software in ECU
- Secure remote control
- Compromised device detection

Applications

- Automotives
- Interconnected Electronic Devices

Applications with Secure Remote Control

References


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