

Access and Remote Control

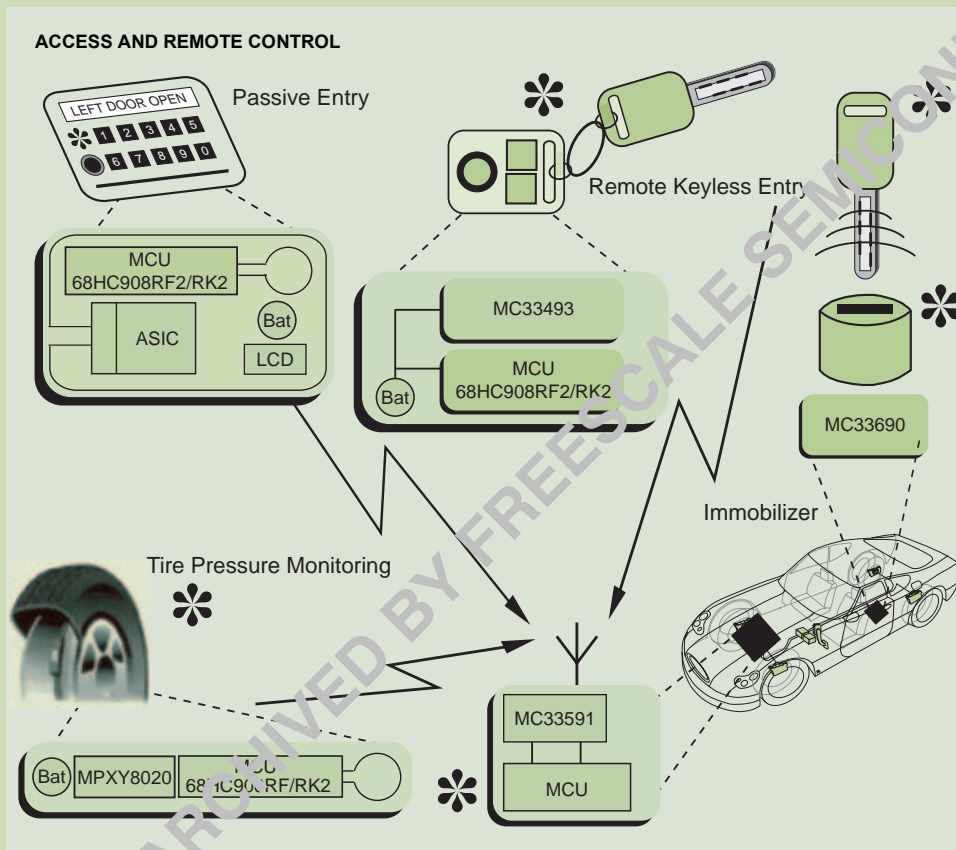
Overview

Freescale Semiconductor's system-level approach to vehicle access and remote control is the key to new levels of driver convenience and security. Freescale Semiconductor solutions bring together all of the components needed for automotive

access and remote control applications with optimal system partitioning. Our unique product portfolio includes industry-leading microcontrollers, analog and RF products, application-enabling software, and tire pressure monitoring sensors.

Key Benefits

- > Offers added security benefits such as anti-theft alarms, panic buttons, and theft immobilization systems
- > Provides a flexible portfolio that supports various standards, frequency bands, and modulation requirements
- > Offers an integrated low-voltage microcontroller and RF transmitter
- > Supports the industry trend toward requiring immobilization systems to comply with vehicle insurance regulations



Freescale Ordering Information

Part Number	Product Highlights	Additional Information
MC33493	RF transmitter	www.freescale.com ^{Note}
MC33591	RF receiver	
MC33690	Tag reader circuit	
MC68HC908RF2 MC68HC908RK2	8-bit MCU plus RF transmitter in a single package	
RD68HC908RKE	Radio Frequency Reference Design for Remote Keyless Entry	

Note: Search on the listed part number.

Design Challenges

As the leading automotive semiconductor manufacturer, Freescale Semiconductor understands the importance of regional standards

differences and the challenges they can bring. Our broad portfolio offers the flexibility to meet the needs of engineers designing access and remote control applications worldwide, and specifically,

our chip sets and system solutions can handle both the frequency band and modulation differences between the US, Europe, and Asia/Pacific as outlined below:

Region	Frequency Band	Modulation
US	434 MHz	Mostly amplitude shift keying (ASK) for RKE, mostly frequency shift keying (FSK) for TPM
Europe	434 MHz	Mostly ASK; frequency shift keying (FSK) for high-end applications
Asia/Pacific	315 MHz	ASK; FSK in Japan

Freescale Semiconductor Solution

Remote Keyless Entry (RKE) Systems

RKE systems that make it possible to unlock doors and release trunk latches remotely, using a key fob or other similar device, are among the most popular vehicle access applications today. Most RKE systems also combine anti-theft alarms and panic buttons, features that enhance the system by adding the benefit of security. Freescale Semiconductor was one of the early pioneers in RKE system development, and is now the first to offer an integrated low-voltage microcontroller with embedded RF for development of RKE applications.

Vehicle Immobilization Systems

More and more automotive manufacturers worldwide are incorporating anti-theft vehicle immobilization technology into their designs, with the goal of increasing security and decreasing theft. In fact, European automakers have been mandated to include immobilization systems in all new vehicles because European insurance companies now require immobilization systems as a condition of acquiring insurance. This trend, which began in Germany, is expected to become the defacto standard for the entire auto industry in just a few short years. Freescale

Semiconductor's vehicle access control solutions, which include the microcontrollers, tag readers, transmitters and receivers, combine RKE and vehicle immobilization in one system, offer a quick design-in solution to meet this growing market.

Passive Entry Systems

In a passive entry system, no specific user action—such as inserting a key in a lock—is necessary to achieve secure vehicle entry. Freescale Semiconductor is paving the way for new applications in hands-free passive entry, by developing complete system-level solutions with optimized hardware and software partitioning.

Developer Tools

Tool Type	Product Name	Vendor	Description
Reference Design	RD68HC908RKE	Freescale Semiconductor	Radio Frequency Reference Design for Remote Keyless Entry

Related Documentation

Document Number	Description
AN2262	Wireless HC08 Modem
BR1792	Access and Remote Control Systems

Notes

ARCHIVED BY FREESCALE SEMICONDUCTOR INC.

ARCHIVED BY FREESCALE SEMICONDUCTOR INC.

Learn More: Contact the Technical Information Center at +1-800-521-6247 or +1-480-768-2130.
For more information about Freescale products, please visit www.freescale.com.

Freescale™ and the Freescale logo are trademarks of Freescale Semiconductor, Inc.
All other product or service names are the property of their respective owners.
© Freescale Semiconductor, Inc. 2004. All rights reserved.

SG2001
REV 1
12/2004

December2004

