

Car access product family



Product bulletin

The new car access product family from Texas Instruments encompasses solutions for both vehicles and keys, such as transponders for mechanical keys and integrated MSP430™ ultra-low-power microcontroller-based devices. TI's solutions are Advanced Encryption Standard-128 embedded and include low-frequency, ultra-high-frequency and microcontroller functions.

Features include ultra-low current consumption in both active and standby mode, an extended communication range for active wakeup, passive immobilizer function, a 3D immobilizer and wireless charging. Optimized timing in receive mode allows for

ultra-low-energy polling to reduce overall power consumption. Designs will also benefit from digital RSSI, transport keys, anti-collision functionality and ciphered modes.

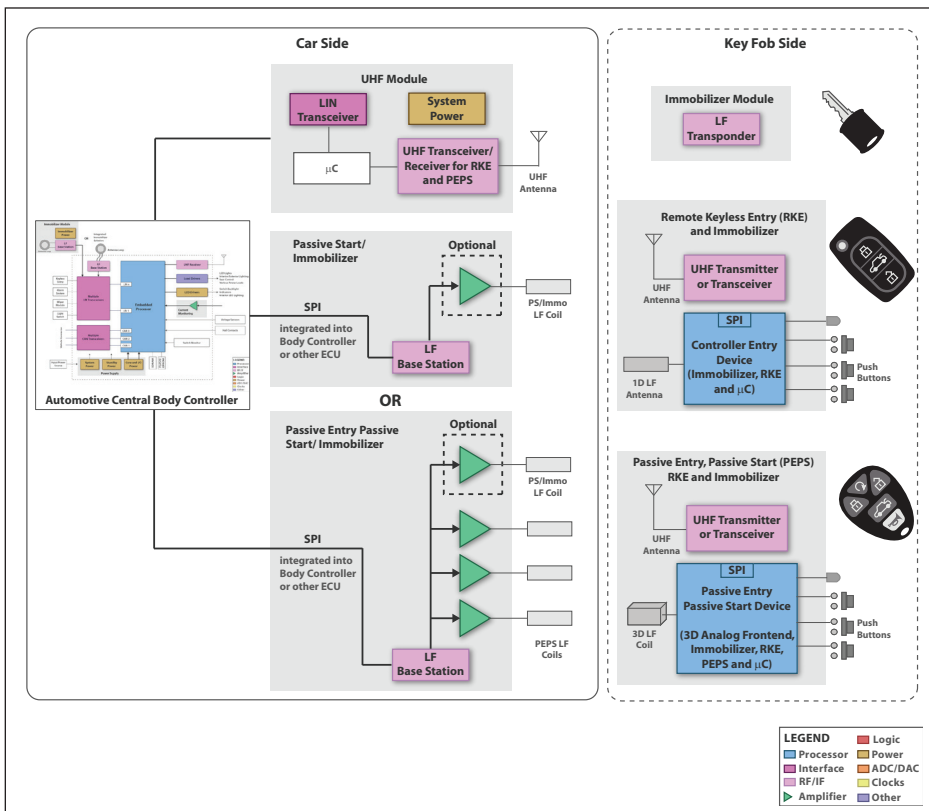
For more information, see www.ti.com/solution/car_access_system.

Vehicle Key Features

- Low-frequency (LF) transceiver device with four channels for passive entry/passive start, immobilizer and wireless charging
- LF transmitter device with eight half-bridge drivers for passive entry/passive start
- LF transceiver device for passive entry/passive start and immobilizer function

Key fob Key Features

- Integrated IC with 3D wake receiver, 3D immobilizer and MSP430 microcontroller
- Integrated IC with LF immobilizer function plus MSP430 microcontroller
- Plastic wedge transponder



Devices car (ECU)		Supply voltage	Channels	Tx	Frequencies	Modulation	Rx	Standby current	I/Os	Package	Temperature
TRF4140	BAST ²	3-20 V	4	1 Ap	0-500 kHz	FM/AM	0.5 mVpp	15 µA	6	48QFP	-40° to +125°C
TPIC84134		7-38 V	8	0.9 Ap	134 kHz	—	—	50 µA	—	28TSSOP	-40° to +105°C
TPIC84125		7-38 V	8	0.9 Ap	125 kHz	—	—	50 µA	—	28TSSOP	-40° to +105°C
TMS3705B	BAST	5 V	1	0.2 Ap	134 kHz	FM	1.5 mVpp	15 µA	—	S016	-40° to +85°C
CC1151-Q1		3 V	1	10 dBm	Sub-1 GHz	ASK, FSK, GFSK, MSK	—	0.7 µA	3	32QFN	-40° to +125°C
CC1131-Q1		3 V	1	-	Sub-1 GHz		-114 dBm	0.7 µA	3	32QFN	-40° to +125°C
CC1101-Q1		3 V	1	10 dBm	Sub-1 GHz		-114 dBm	0.7 µA	3	32QFN	-40° to +125°C

BAST: Basestation transceiver, BAST²: Basestation transceiver/transmitter

Devices key fob		Encryption	Flash	RAM	EEPROM	Immobilizer	Wake receiver	Standby current	I/Os	Package	Temperature range
RF430F5144	CRAID	AES	16 kB	1 kB	1024 B	3D	3D	4.9 µA	15+8	48QFN	-40° to +85°C
RF430F5155	CRAID	AES	16 kB	1 kB	2048 B	3D	3D	4.9 µA	15+8	48QFN	-40° to +85°C
RF430F5175	CRAID	AES	32 kB	2 kB	2048 B	3D	3D	4.9 µA	15+8	48QFN	-40° to +85°C
MRF2615	RAID	AES	—	—	256 B	1D	3D	4.7 µA	8	30TSSOP	-40° to +85°C
MRF2678	RAID	AES	—	—	2048 B	3D	3D	4.7 µA	8	30TSSOP	-40° to +85°C
RF430F1313	CED	AES	4 kB	256 B	256 B	1D	—	50 nA	11	30TSSOP	-40° to +85°C
RF430F1323	CED	AES	8 kB	256 B	256 B	1D	—	50 nA	11	30TSSOP	-40° to +85°C
TRPWS21	DST	AES	—	—	256 B	1D	—	—	—	Wedge	-40° to +85°C
TRPBS27	DST	AES	—	—	2048 B	1D	—	—	—	Block	-40° to +85°C

CRAID: controller remote access identification device, RAID: remote access identification device, CED: controller entry device, DST: digital signature transponder

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