

# 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

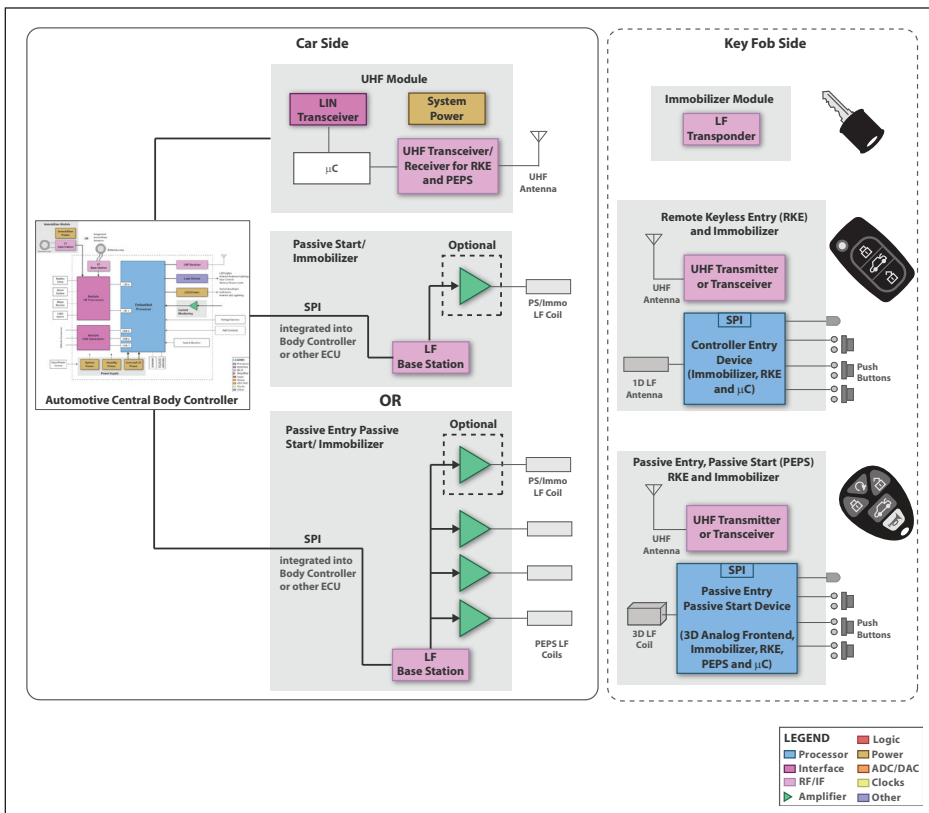
ultra-low-energy polling to reduce overall power consumption. Designs will also benefit from digital RSSI, transport keys, anti-collision functionality and ciphered modes. For more information, see [www.ti.com/solution/car\\_access\\_system](http://www.ti.com/solution/car_access_system).

### 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 <sup>2</sup>	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, BAST<sup>2</sup>: 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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