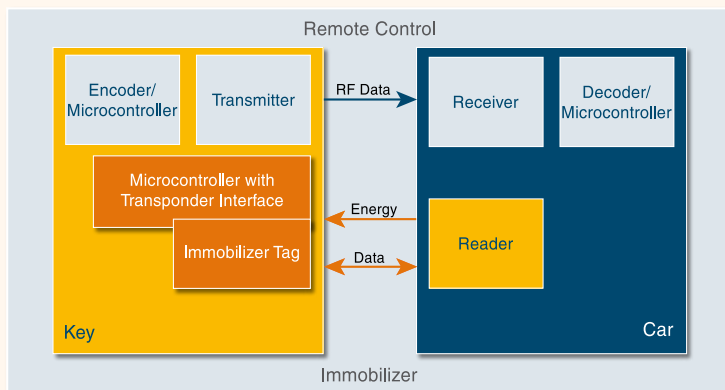


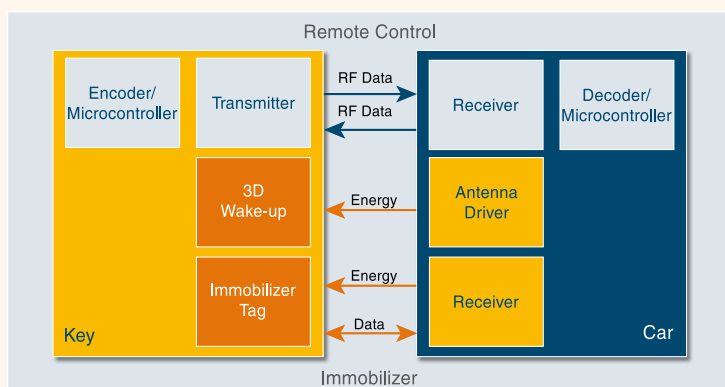


➔ ICs for Car Access Applications

Atmel® has more than 25 years of design expertise in automotive products. The company launched the first dedicated transmitter for remote keyless entry (RKE) applications, the Atmel PLL U2741B, in 1997. For car access applications, Atmel provides a wide range of innovative ICs. Customers can create their own designs using the Atmel low-power T575x/ATA575x radio transmitter IC family, a dedicated ATA581x/2x transceiver family, a ATA572x/ATA574x receiver IC family, and the Atmel AVR® microcontroller-based ATA577x RF transmitter family. The Atmel car access portfolio includes all devices needed to design a complete solution.



Uni-directional RF link for the keyless entry function to open or lock car doors. The immobilizer system is built with a bi-directional LF link operating with the AUT64 crypto algorithm.



Bi-directional RF link for RKE functions as well as for the extremely secure duplex RF link in a Passive Entry Go (PEG) system. The LF link is used for the wake-up channel in a PEG system as well as for the immobilizer function to start the RF communication.



Transmitter ICs

Part Number	Description	Frequency Range [MHz]	System Suitability
ATA5771	AVR Microcontroller-based RF Transmitter Family	868 to 928	RKE
ATA5773	<ul style="list-style-type: none"> System-in-Package (SiP) Solutions Including AVR Microcontroller ATtiny44V and the RF Transmitter Family T5750/53/54 	315	
ATA5774	<ul style="list-style-type: none"> Ideal for High-volume, Uni-directional RF RKE Keys Fobs Small-outline, Tiny QFN24 Packages 5 mm x 5 mm Enable Design of Extremely Small, Cost-efficient Key Fobs 	433	
ATA5749	Low-power RF Transmitter IC	315	RKE, PEG, Remote Start
	<ul style="list-style-type: none"> Fully Integrated Fractional-N PLL -0.5 dBm to 12.5 dBm Scalable Using Output Power Programming Active Current Consumption 7.3 mA at 5.5 dBm Polling Mode and Bit Check Carried Out by External Firmware 	433	



Transceiver ICs

Part Number	Description	Frequency Range [MHz]	System Suitability
ATA5811	<ul style="list-style-type: none"> Industry's Lowest Current Consumption and Smallest Size 	433.868	RKE, PEG, Remote Start
ATA5812	<ul style="list-style-type: none"> High Sensitivity and High Data Rate for Quick Reaction Time 	315	
ATA5823	<ul style="list-style-type: none"> Adjustable Output Power up to +10 dBm for Long-distance Operation 	312.5-317.5	
ATA5824	<ul style="list-style-type: none"> High Selectivity, High Blocking, and Low Intermodulation Due to the Low-IF Architecture 	312.5-317.5	



Receiver ICs

Part Number	Description	Frequency Range [MHz]	System Suitability
ATA5723	UHF Receiver ICs	315	RKE, PEG, Remote Start
ATA5724	<ul style="list-style-type: none"> Shortest Bill of Material Due to Highest Integration Level 	433	
ATA5728	<ul style="list-style-type: none"> 3 Pin-compatible Frequency Versions RSSI Output Low-cost 13-MHz Crystal Usage Possible for all 3 Versions Lowest Current Consumption Due to Polling Feature ASK/FSK Modulation 	686	
ATA5745	UHF Receiver ICs for Car Access and TPMS	433	RKE, PEG, Remote Start
ATA5746	<ul style="list-style-type: none"> Extremely Fast Switching Rate Between RKE and TPMS Signals Typically <1 ms Complete Functionality to Design a TPMS System (e.g., RSSI) High System Sensitivity and Selectivity Achievable with a Low Number of External Components Polling Mode and Bit Check Carried Out by External Firmware 	315	





Antenna Driver ICs

Part Number	Description	Frequency Range [MHz]	System Suitability
ATA5278	Single Antenna Driver IC <ul style="list-style-type: none"> Stand-alone, Programmable Antenna Driver for 1A Peak Current (Regulated) (SPI) LF Baud Rates up to 8 kBaud Diagnosis Function and Overtemperature Protection 	125 kHz	PEG
ATA5279	Six-fold Antenna Driver IC <ul style="list-style-type: none"> Enables Smaller and Less Expensive Designs Increased Reliability Superior EMC Behavior Diagnostic Features, IC Protects Itself and System from Damage 	125 kHz	PEG



Immobilizer ICs

Part Number	Description	Frequency Range [MHz]	System Suitability
TK5561	Read/Write Transponder With Encryption Algorithm <ul style="list-style-type: none"> Read/Write Transponder for Highly Sophisticated Security Applications 9 x 32-bit EEPROM Low-power/Low-voltage CMOS 	125 kHz	Immobilizer
U2270B	Read/Write Base Station IC <ul style="list-style-type: none"> Read/Write Base Station IC 100 to 150 kHz Carrier Frequency, Amplitude Modulation Typically up to 5 kBaud Manchester/Biphase RF/32, RF/64, RF/128 	100-150 kHz	Immobilizer
ATA5580	<ul style="list-style-type: none"> AES-128 Immobilizer Transponder Read/Write Transponder for High Security Applications AES-128 Hardware Encryption 2 Kbyte EEPROM Atmel Open Immobilizer Protocol 	125 kHz	Immobilizer



Car Access Key System Devices

Part Number	Description	System Suitability
ATA5790	AVR-based Passive Entry Go System Device with 3D Wake-up and Immobilizer Functionality. Open Standard Immobilizer Protocol Based on High-security AES-128. (Available Q2/2010)	PEG, Immobilizer
ATA5795	AVR-based Transmitter IC with Immobilizer Functionality. Open Standard Immobilizer Protocol Based on High-security AES-128.	RKE, Immobilizer





Car Access Components – Overview

Part Number	Frequency Range [MHz]	Modulation	Description	Package
ATA5278	100–150 kHz	ASK/PSK	Stand-alone Antenna Driver/Transmitter IC	QFN28
ATA5279	105–155 kHz	ASK/FSK	Six-fold LF Antenna Driver IC	QFN48
ATA5580	125 kHz	Manchester/ Bi-Phase	Read/Write Transponder with AES-128 Algorithm	Plastic Package (PP)
ATA5723	315	ASK/FSK	UHF Remote Control Receiver, 300 kHz Bandwidth, RSSI Pin Compatible to ATA5724, ATA5728	SSO20
ATA5724	433	ASK/FSK	UHF Remote Control Receiver, 300 kHz Bandwidth, RSSI Pin Compatible to ATA5723, ATA5728	SSO20
ATA5728	868	ASK/FSK	UHF Remote Control Receiver, 600 kHz Bandwidth, RSSI Pin Compatible to ATA5723, ATA5724	SSO20
ATA5743	300–450	ASK/FSK	UHF Remote Control Receiver IC with High FSK Sensitivity and Automotive-compatible Data Interface, Self-polling Mode	SO20
ATA5744	300–450	ASK	Easy-to-use Transparent UHF Receiver IC	SO20 SSO20
ATA5745 ATA5746	433 315	ASK/FSK	Transparent UHF Receiver IC with Fast RKE/TPMS Switching Rate, Suited to 1 to 20 Kbits/s Manchester FSK with 4 Programmable Bit-rate Ranges, High FSK Sensitivity (–114 dBm at 2.4 Kbits/s), High Blocking Capability	QFN24
ATA5749	315–433	ASK/FSK	Low-current, Fully Integrated Fractional-N PLL Transmitter with Scalable Output Power (–0.5–12.5 dBm)	TSSOP10
ATA5756 ATA5757	315 433	ASK/FSK	UHF Transmitter ICs with Low Settling Time and Active Current Consumption	TSSOP10
ATA5760	868–870	ASK/FSK	UHF Receiver IC, Functionally Compatible to ATA5743	SO20
ATA5771 ATA5773 ATA5774	868–928 315 433	ASK/FSK	AVR Microcontroller-based RF Transmitter Family	QFN24
ATA5790	125 kHz	–	AVR-based Passive Entry Go System Device with 3D Wake-up and Immobilizer Functionality. Open Standard Immobilizer Protocol Based on High-security AES-128. (Available Q2/2010)	QFN48
ATA5795	125 kHz Immobilizer, 315 MHz & 433 MHz RF Transmitter	ASK/FSK	AVR-based Transmitter IC with Immobilizer Functionality. Open Standard Immobilizer Protocol Based on High-security AES-128.	QFN32
ATA5811 ATA5812	433.868 315	ASK/FSK	UHF Transceiver IC with Extremely Low Current Consumption and Small Size	QFN48
ATA5823 ATA5824	312.5–317.5 433–868	ASK/FSK	UHF Multi-channel Half/Full-duplex Transceiver with Low Power Consumption	QFN48
T5750 T5753 T5754	868–928 310–330 429–439	ASK/FSK	UHF Transmitter IC with High Output Power and Wide Temperature Range (–40°C/F to +85°C/185°F, +125°C/257°F)	TSSOP8
TK5561	125 kHz	Manchester/ Bi-phase	Read/Write Transponder with Encryption Algorithm	Plastic Package (PP)
U2270B	100–150 kHz	Manchester/ Bi-phase	Read/Write Base Station IC	SO16

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