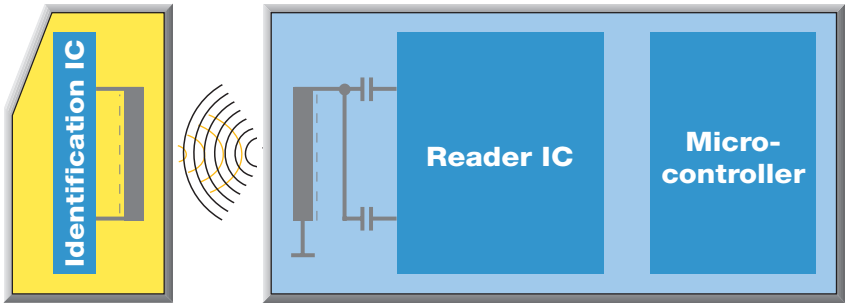
# Read/Write Transponder Device Family

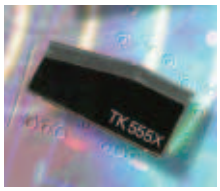
For 125-kHz contactless read-write RF identification systems, Atmel offers a broad range of RFID devices, delivered as die-on-wafer, die-in-tray, die-on-tape, micromodule or complete transponder in plastic package. Our low-frequency RFID products (100 to 150 kHz) with different security levels are flexible to all kinds of applications, easy to design-in and well matched.




## Applications

- Access Control (Proximity Cards, Key Fobs, ISO Cards/Coins)
- Asset Management
- Animal Identification
- Waste Management
- Inventory/Logistics (Tire Tagging, Medical, Gas Cylinder, Working Tools, Installations, Fire Extinguisher)
- Embedded Industrial Sensors
- Car Applications (Key Fobs, Immobilizer Systems, Seat Detection)
- Alarm Systems
- Other Identification Systems

**TK5551/T5554** The industry's most flexible device regarding modulation mode and data rate flexibility. It provides eight different data rates (Rf/16 to Rf/128) to optimize the application according to distance and data transfer requirements as well as read- and write protection against misuse. It is available as an SO8, plastic stick package transponder and micromodule. For special assembly requirements, the T5554 additionally provides on-chip capacitor and bumped pads (25 µm Au).




**T/TK5552** The read/write transponder for AM low-frequency (125 kHz) is the first such product for applications such as manufacturing systems where increased memory is required. The 1024-bit memory provides outstanding flexibilty. Due to the IC's low power consumption, the read/write distance is extended compared to conventional solutions. It is also available as micromodule.

**T5557** Extra-small, multifunctional RFID device for access control applications (ISO cards) as well as for animal, waste or laundry identification. Provides extended read/write operating distance and increased programming speed. A 75-pF capacitor is on chip. The T5557 is backward compatible to the T5554 with add-on features like unique tag-ID and binary bit rate configuration. The outstandingly small chip size (less than 1 $mm^2$) enables a broad range of assembly options.

**T5558** Highly sophisticated RFID device with anti-collision function (up to 50 tags per second), which is based on the tag-ID number (length up to 96 bits). The arbitration concept enables to create low-cost base station solutions. The T5558 is the industry's first low-frequency transponder supporting AFI (application field identifier, length up to 64 bits). Flexible security settings are possible. Well-suited for manufacturing and logistic applications as it operates properly even in harsh environments or close to metal objects. The read range is up to 1 meter. Supports ISO-11784/85.

## 125-kHz Read/Write Transponders/Transponder ICs

| Part Number | Description/Features |
|---|---|
| TK5551 | 224-bit read/write transponder/transponder IC, multi-tag access by AOR |
| TK5552 | 1k-bit read/write transponder, Manchester or PSK coding, data bit rates Rf/16, Rf/32, POR delay |
| T5552-PAE | 1k-bit read/write micromodule, function equal to TK5552, 425-pF capacitor |
| T5554 | 224-bit read/write transponder IC with on-chip 70 or 200 pF capacitor and megapads, compatible to 5551 |
| T5557 | 330-bit read/write transponder IC with on-chip 75-pF capacitor, data bit rates Rf/2 to Rf/128, 64-bit unique tag-ID number |
| T5558 | 1k-bit read/write transponder IC, up to 96-bit tag-ID, fast anti-collision, Manchester, Bi-phase and direct (NRZ) coding, supports AFI (Preliminary) |

## Support

- Application Kit TMEB8704 for Reader and Transponder ICs
- Data Sheets
- QualPacks

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