advant

LEGIC®
advant innovation in ID technology

advanced contactless smart card system

Fully scalable – fully flexible

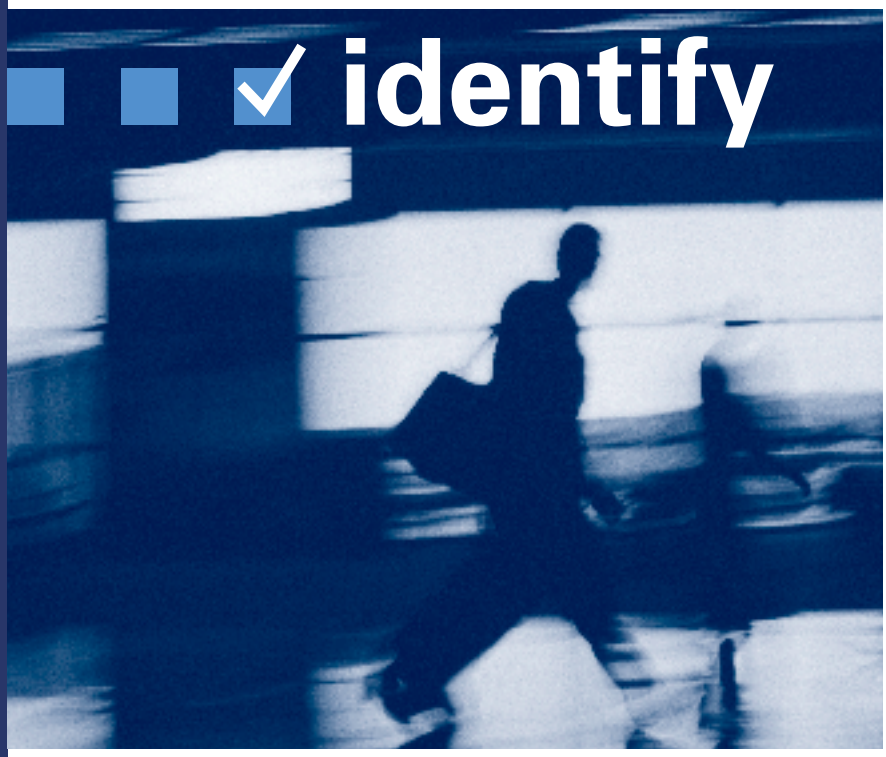
Key applications & standards

access
ticketing
payment
ISO
LEGIC RF standard
13.56 MHz contactless technology

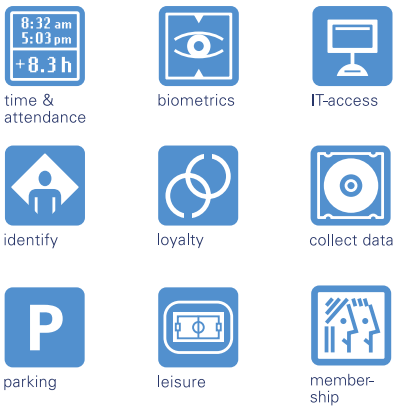
The LEGIC advant™ line has been developed to ideally support the design and realisation of access control and other person related service applications providing a maximum of security, scalability and cost-effective investment protection.

Due to its advanced security features and ISO compliance with ISO 15693, 14443 and the LEGIC RF standard, the product line is suitable for smart card projects, such as ticketing or government ID solutions, general access control and related high security applications including IT access, biometrics, as well as single- and multifunctional company and leisure cards.

Benefits that matter



Additional target applications – single or multiapplications



1 Efficient and convenient application and reader design – convenient integration and network connectivity

The LEGIC advant product line supports simple and fast integration into applications as well as upgrades from existing technologies such as barcode, magnetic stripe or 125 kHz proximity systems through its integrated application protocols.

Convenient hardware integration and network connectivity is supported through the integrated common host interfaces.

Application protocols:

- **Omron**
- **Wiegand formats**
- **BPA9 subset**

Host interfaces:

- **SPI**
- **RS232**
- **RS485**

2 Your choice of industry standards and reading ranges

The LEGIC advant product line supports multiple industry standards giving you the choice between the following standards and respective reading ranges:

- **ISO 15693:**
  Read/write for vicinity standard applications with reading distance from proximity up to hands-free (70 cm and above*). Reads unique serial number of all ISO 15693-3 type transponders.
- **ISO 14443A**
  Read/write for proximity standard applications with reading distance of up to 10 cm. Reads unique number of all ISO 14443A type transponders.
- **LEGIC RF standard**
  Read/write of all LEGIC prime products and application standard formats on LEGIC smart from proximity up to hands-free distance of approximately 70 cm*.

* Max. reading range depends on requirements of national spectrum management authorities, antenna, transponder and surroundings.

Mixed standard operation

LEGIC advant modules can operate with mixed standards at the same time and allow to run systems with cards of different standards. This offers seamless merging and migration possibilities of your card population.

Benefits that matter

Secure access

Secure payment

Highly secure IT-access

3 Advanced high security – tailor-made for each application

LEGIC advant provides powerful security covering the data and application in your contactless system all the way from the host to the storage of data on the transponder, providing the right degree of protection in an open standard world.

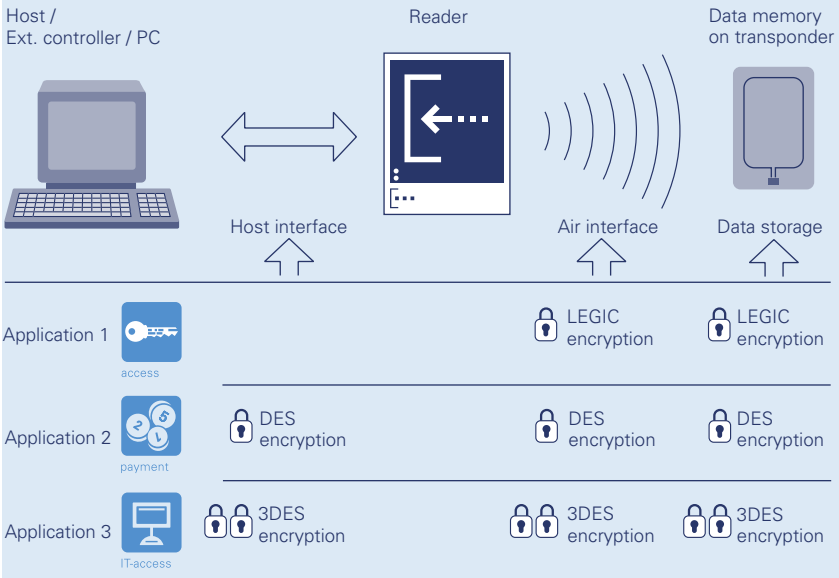
Security features include:

- **unique serial numbers for transponders and modules**
- **mutual authentication**
- **advanced cryptographic data transmission and storage along complete data path from host to transponder**
- **user-definable read and write access protection**
- **secure reading and writing of data**

Configurable bi-level encryption

Either LEGIC's encryption standard or advanced high security encryption, based on the open industry standard algorithms DES / 3DES, can be enabled for each application and data path, providing strong protection for data and applications. This makes the product suitable for use in IT-access, high-value payment, biometrics or governmental solutions such as ID cards.

Example: three applications using different levels of encryption.



Benefits that matter

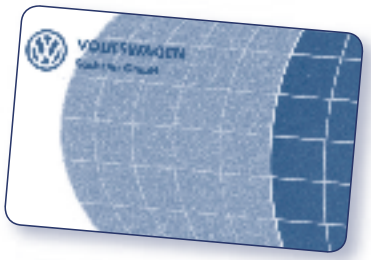
4 Powerful control and management of your system and installation

The LEGIC authorisation tokens provide you with powerful, impassable control over your card population, applications and the overall installation.

LEGIC's highly proven Master-Token System Control (MTSC) authorisation system lets you design your security and control concept on a high level based on your own unique Master-Token. Its inheritance-based Automatic Key Manager (AKM) organises the handling of the data access rights of each card, their individual applications and its readers according to your defined system structure.

5 Plug & play multiapplications

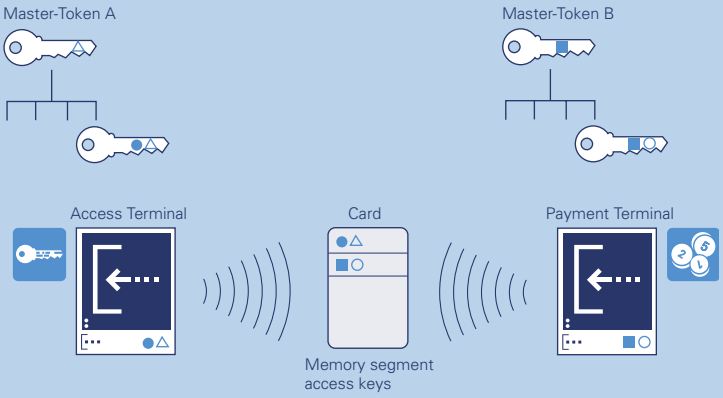
With LEGIC advant you can realise multifunctional cards with up to 127 independent applications of various memory size on a single transponder. Thanks to the variable memory allocation and the dynamic segment search functions, LEGIC allows to easily realise multiapplication schemes with a high degree of flexibility. The powerful dynamic multiapplication handling makes it simple to combine various applications of different type, memory size, supplier and ownership on a single transponder. This is particularly beneficial if additional applications have to be added to a transponder that is already in use.



Business example: staff badges

Leading multinational corporations use the proven multi-functionality of LEGIC for one-for-all cards: access control, time & attendance, payment, parking. LEGIC's powerful control system makes its management easy to handle. One card is able to carry exactly the functionalities its bearer needs and you always keep control.

Master Token System Control based authorisation



6 User-programmable universal reader module

The highly integrated universal Security Module offers a maximum of development convenience and integration possibilities. With its integrated programmable controller and its versatile peripherals support, the Security Module allows easy-to-realise, cost-effective and highly compact solutions without the need for external processor components.

Ticketing – contactless leisure fun

Modular reader products

LEGIC advant's cost-effective modular family of reader chip sets (SC) and the reader module (SM) allows you to easily expand functionality.

	SC-2140/C	SC-2240/C	SC-2560/C	SM-2570/C	RXM-0020
Range*	up to 10 cm	up to 15 cm	up to 25 cm	up to 25 cm	70 cm-approx 1.2 m**
RF interface	LEGIC RF standard ISO 14443 A	LEGIC RF standard ISO 15693	LEGIC RF standard ISO 15693 ISO 14443 A	LEGIC RF standard ISO 15693 ISO 14443 A	LEGIC RF standard ISO 15693
Host interfaces and protocols	SPI RS232 Wiegand Omron	SPI RS232 Wiegand Omron	SPI RS232 RS485 Wiegand Omron BPA/9 (Subset)	SPI RS232 RS485 Wiegand Omron BPA/9 (Subset)	n.a.
Encryption	LEGIC encryption standard, DES, 3DES	LEGIC encryption standard, DES, 3DES	LEGIC encryption standard, DES, 3DES	LEGIC encryption standard, DES, 3DES	n.a.
Initialisation function	–	–	Yes	Yes	n.a.
Software download	–	–	Yes	Yes	n.a.
Interface for keyboard, displays, ect.	–	–	–	Yes	n.a.
User-programmable controller	–	–	–	Yes	n.a.
Compatible transponders	ATC...-MP... MIM256, MIM1024	ATC...-MV... MIM256, MIM1024	ATC...-MP, ATC...-MV MIM256, MIM1024	ATC...-MP, MV... MIM256, MIM1024	ATC...-MV... MIM256, MIM1024
High-Level command library for Cash/Value handling...	Yes	Yes	Yes	Yes	n.a.
Cash Standard	with SC-2140C	with SC-2240C	with SC-2560C	with SM-2570C	n.a.

* Max. reading range depends on used RF standard, the requirements of national spectrum management authorities, antenna, transponder and surroundings.
** Combined with CS-.../ SM-... modules. Depending on gate configuration and antenna.

Range Extension Module – RXM

To maximise user comfort and reading distance, the LEGIC advant Range Extension Module RXM extends the standard reading ranges of the LEGIC advant reader products up to hands-free distance for LEGIC RF and ISO 15693 standards. The Range Extension Module combines with all reader products of the LEGIC advant product line, saving you both time and cost to realise convenient hands-free solutions.

Development Kit

The LEGIC advant Development Kit supports the easy development of readers and application software. It is particularly useful to evaluate the technology and the rapid development of prototypes. It comes with a development board with a SC-2560/SM-2570, antenna, set of transponders and a CD ROM with Development Software and related documentation.

Choice of crypto transponder chips

The LEGIC advant product line offers you the choice between the ISO standard crypto transponder types:

	ATC1024-MP	ATC2048-MP	ATC256-MV	ATC1024-MV
Memory size	1024 Byte	2048 Byte	256 Byte	1024 Byte
ISO standard	ISO 14443 A	ISO 14443 A	ISO 15693	ISO 15693
Cryptographic authentication	64 Bit	64 Bit	64 Bit	64 Bit
Max. of applications	127	127	30	127
Memory segmentation	dynamic	dynamic	dynamic	dynamic
Application segment size	variable	variable	variable	variable

In addition to LEGIC RF standard transponder family MIM256, MIM1024.

advant

LEGIC®
advant innovation in ID technology

advanced contactless smart card system

Your official LEGIC partner

Your benefits:

- Multi-standard compliant with ISO 15693, 14443 and LEGIC RF standard
- Choice of standards and reading ranges from proximity to hands-free
- Advanced high security for fraud protection
- Easy and cost-effective application and reader design
- Scalable functionality for your card
- Unique control capabilities for cards, applications and installation
- Cost-effective through expandable functionality
- High investment protection
- Interoperability through high-level application standards

Key features:

- Multi-industry standard compliant (13.56 MHz read/write)
- Simultaneous mixed-standard operation
- Read/write range from proximity up to hands-free
- Advanced high security, DES / 3DES encryption
- Choice of state-of-the-art crypto transponders
- Versatile application protocol and peripherals interface
- User programmable intelligent controller on reader module
- Download function for extensions and upgrades
- Master-Token System Control and Automatic Key Management
- Plug & play multiapplications
- Cost-effective modular system

LEGIC advant – for single or multiapplications

access · parking · payment
ticketing · leisure · member-ship
time & attendance · biometrics · IT-access
identify · loyalty · collect data

RF standards

ISO · LEGIC RF standard · contactless technology (13.56 MHz)

Headquarter
LEGIC® Identsystems Ltd. Switzerland
Phone +41 1 933 64 64, Fax +41 1 933 64 65
info@legic.com

Asia
Phone +852 2406 2339
Fax +852 2406 2602
infoasia@legic.com

Germany
Phone +49 2303 870 829
Fax +49 2303 870 879
infode@legic.com

U.K.
Phone +44 7876 254 607
infouk@legic.com

www.legic.com