

TagMaster

Product Catalog 2009



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About TagMaster Company

TagMaster designs, manufactures and markets advanced long-range radio frequency identification (RFID) systems and information services associated with automatic vehicle identification, rail bound transportation and people access, in order to increase efficiency, security, convenience and to decrease environmental impact. TagMaster exports via a global network of partners, systems integrators and distributors.

Automatic Vehicle Identification (AVI) is the key for secure and convenient hands-free identification and access control. The TagMaster RFID system provides this with a read-range up to 14 meters, semi-passive ID-tags and high-security transmission protocol. The operating frequency and low output power allows for installations worldwide without site license. In Transportation TagMaster is supplying RFID solutions to a number of applications primarily within the railway industry. All the applications have one basic function, to automatically identify a moving vehicle or object, and differ in the way this identification process is utilized by the system which is receiving this information. TagMaster manufactures two product lines. The LR-series and the HD-series. All readers are built around a standard Linux operating system and has an open development platform. This enables integrators to develop and implement new applications for the Reader using the TagMaster Software Development Kit. (SDK).

- **The LR-series** consist of Readers and ID-tags developed for high performance RFID solutions. The products are used in vehicle access and security installations all over the world.

- **The HD-series** consist of Readers and ID-tags developed for demanding environments. The products are used in transportation systems all over the world.

Why TagMaster?

TagMaster are the world leader in our field, with the most highly developed technology available for long-range vehicle access applications. Our Generation 4 platform incorporates the very latest innovations in RFID technology, ensuring best of breed performance, with low total cost of ownership. With a range of connectivity options, TagMaster is designed to easily plug into your existing

infrastructure, and is simple to set up. Furthermore, servicing requirements are negligible and reliability is second to none.

2,45GHz Technology

Our technology works in the ISM frequency band 2.45GHz, which has inherent benefits for access applications:

Highly directional and clearly defined reading lobe:

- Dense reading area eliminates 'dead spots'
- Tags are read at high speed, ensuring fail-safe reliability
- Extremely low output power:
 - o no need to apply for a site license
 - o safe from harmful radiation
 - o unbeatable reliability

Semi-passive ID-tags

TagMaster's RFID technology is built around the benefits of semi-passive ID-tags, which use the principles of 'backscattering' to reflect back the reader's output signal together with identification data from the tag. Each semi-passive tag is equipped with a small battery which is used to power the electronic processing components inside; it is not used to transmit its own signal. This means that no power is induced from the reader's output signal - hence our technology's extremely low RF power output. The battery also keeps a semi-passive tag permanently 'awake', which gives an instantaneous response, unlike passive tags which require a start-up time. This makes it possible to predict the battery lifetime for the tags used under normal conditions. The use of semi-passive ID-tags, coupled with our cutting edge high-frequency technology, helps to create a very clearly defined reading lobe, with a long reading, and unprecedented performance and reliability.

TagMaster LR-series readers

Introduction

The LR-series reader is a family of readers suitable for all identification solutions using the 2.45 GHz frequency and a very low output power. The LR readers are equipped with a broad set of functionality for all types of access installations. Depending on the reader system application installed in the reader different sets of functionality is made available in the reader.

The readers supports several standard interfaces including Ethernet (TCP/IP), RS232, RS485 and Wiegand/ Mag-stripe. The reader can be configured and controlled via the Ethernet interface or serial interface, either locally or remotely via an Internet connection. The reader features several functions, such as frequency hopping (FHSS). The FHSS** mode enables the reader to “hop” between frequencies within the specified band, ensuring smooth and stable operation in multi-reader environments and other RF intensive areas. It is also possible to adjust the read range of the reader thus being able to trim the detection area to optimum.

LR-series reader software applications

There is a set of system software applications available as standard options. One of these applications should be ordered unless you have your own application developed for the reader.

- **WiseMan Software** – advanced communication and stand-alone capability with built in database
- **PassMan Software** – host controller reader with options such as loop-trigger
- **WatchMan Software** – networked reader controlled by hosed using polling procedures

PassMan

The software makes it possible to incorporate the reader in an existing access control system using Wiegand or Mag-stripe communication protocols. The software also makes it possible to connect the reader to a host computer using different communication protocols. The reader sends out any tag-reads immediately to the host computer without prior alert or poll. One ore more readers can be connected in the solution. A loop detector can be connected to enable the reader only when a vehicle is present.

PassMan eas

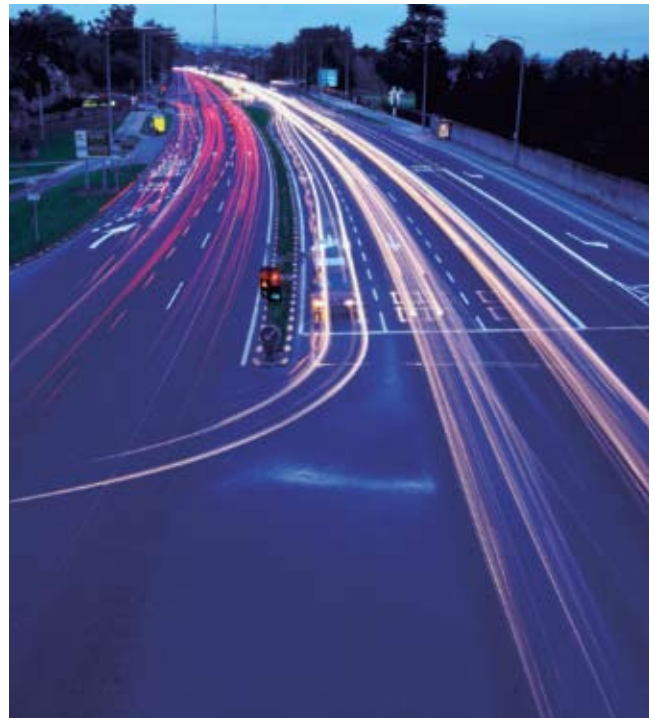
This software application has a predefined set of functionality that is linked to an **eas** reader. The functionality is streamlined to facilitate start-up and configuration and is targeting access installations in a focused manner. It is not possible to upgrade a reader that has been ordered with PassMan eas to any other application as the application is locked to the individual reader unit.

WiseMan

The software is used in identification systems that require a reader with both information storage and decision-making capabilities. The reader can in a stand-alone configuration also control other access equipment such as barriers. There is a number of communication protocols available. The WiseMan application makes it possible to use the reader in a stand-alone mode or to control the reader from a host computer.

WatchMan

The software is used in identification systems that include one or several readers. The software is suited for identification systems where the reader is controlled from a host computer that handles customised functionality. The tag-reads made by the reader is collected by the host computer using a polling procedure.



TagMaster AVI ID-tags

Introduction

TagMaster long range tags are all designed for the 2.45 GHz band taking advantage of the specific possibilities such as license free operation, long read range and dense read lobe. The ID-tag is battery powered, keeping the ID-tag alert, for instantaneous reflection of the reader signal. The lifetime of the tag is therefore fully predictable when used under normal conditions. Each ID-tag has a pre-programmed 8-digit unique identity code from factory and a 32 bit checksum for automatic verification. In combination with a random reflection of the reader signal, this eliminates substitution errors even with several ID-tags identified simultaneously.

The ID-tags can be categorised into three families:

- MarkTag – read only tags
- ScriptTag – read & write tags
- CombiTag – tags that combine long range capability with proximity standards

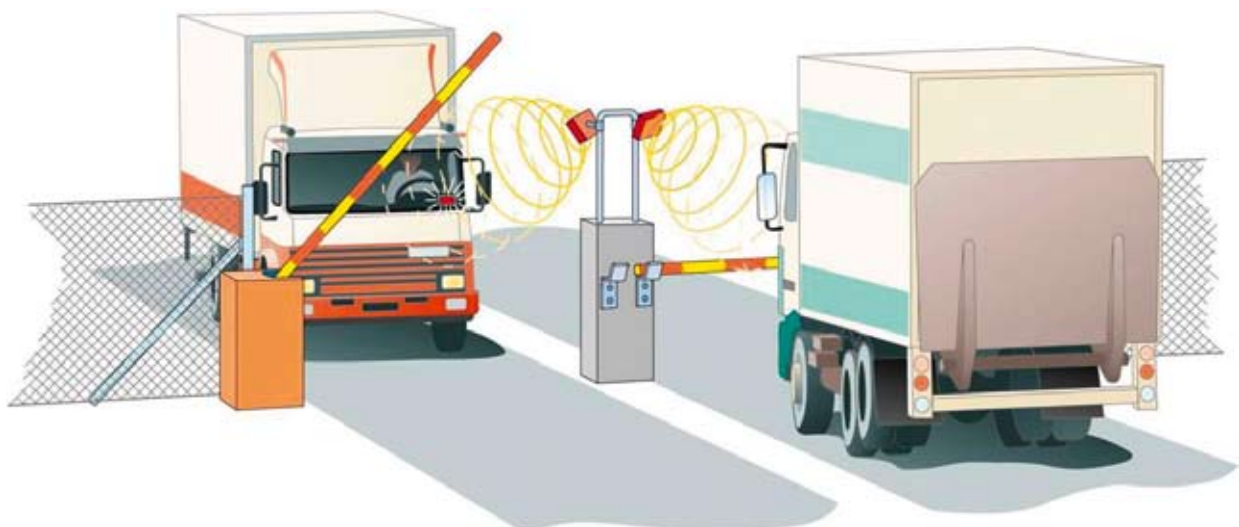
ID-tag categories

Category	Tag characteristics	Dimensions
Creditcard sized	General purpose tags	86*54*3 mm
Oyster-shaped	With a wider and longer read range for all types of applications	41*41*13 mm
ODU	Rugged version of the general purpose tag	91*59*8 mm

Choice of reader and ID-tag for best performance

Read range

It is possible to combine tags and readers to achieve a suitable characteristic of the access installation. The read range is measured as the distance between the reader and the tag. Optimal read range is achieved when positioned in front of each other and in a parallel position. The read range is a key factor in the dimensioning of an access installation as this is the safe distance that a tag can be read at. The table below presents the results of various combinations of readers and tags. Best read range is achieved when the ID-tags antenna plane's normal vector is parallel and in line with the reader's corresponding normal vector. The path should be free from any disturbances for optimal performance.



Reader models

LR-3 eas

Part No. 154200



- Compact reader for access solutions
- Limited read range – up to 5 meters
- Predefined set of functionality

LR-3 pro

Part No. 154400



- Full functionality reader for all types of access installations
- Limited read range – up to 5 meters
- Runs all TagMaster reader applications

LR-6

Part No. 154600



- Full function reader for all types of access installations
- License free operation globally with 10 mW output power
- Output power option available
- Read range up to 10 meters
- Runs all TagMaster reader applications and interfaces

LR-6 XL

Part No. 154900






- Full function reader for all types of access installations
- Read range up to 14 meters
- Runs all TagMaster reader applications and interfaces




Reader application order table


Part no	Application	LR-3 eas	LR-3 pro	LR-6	LR-6XL
612740	PassMan		X	X	X
612863	PassMan eas	X			
612741	WatchMan		X	X	X
612742	WiseMan		X	X	X
612794	Power option 25mW			X	
612772	Frequency hopping disabled option	X	X	X	X

ID-tag models

MarkTags – read only tags

Classic	Part No. 125500	MeM	Part No. 124000	ODU	Part No. 135500
	<ul style="list-style-type: none"> • Access identification • Medium read range • 6 years nominal life time 		<ul style="list-style-type: none"> • Access identification • Long & wide read range • 6 years nominal life time 		<ul style="list-style-type: none"> • Out door installation • Medium read range • 6 years nominal life time

Classic S	Part No. 125600	MaX tpp	Part No. 128000	ODU S	Part No. 135600
	<ul style="list-style-type: none"> • High speed vehicle identification • Medium read range • 6 years nominal life time 		<ul style="list-style-type: none"> • Tamper proof vehicle identification • Long read range • 6 years nominal life time 		<ul style="list-style-type: none"> • Out door installation for high speed vehicle identification • Medium read range • 6 years nominal life time

ATEX	Part No. 165500	ATEX S	Part No. 165600
	<ul style="list-style-type: none"> • ATEX classified • Medium read range • 6 years nominal life time 		<ul style="list-style-type: none"> • ATEX classified • High speed applications • Medium read range • 6 years nominal life time

ScriptTags – read & write tags

Classic	Part No. 125100	ODU	Part No. 135100	ATEX	Part No. 165100
	<ul style="list-style-type: none"> • Access identification • Medium read range • 6 years nominal life time 		<ul style="list-style-type: none"> • Out door installation for high speed vehicle identification • Medium read range • 6 years nominal life time 		<ul style="list-style-type: none"> • ATEX classified • Medium read range • 6 years nominal life time

CombiTags – combine long range capacity with proximity standard

Classic	Part No. 126000	MeM duo	Part No. 124200	Proximity standard coils supported
	<ul style="list-style-type: none"> • A MarkTag Classic equipped with all integrated cavity for proximity standard coils 		<ul style="list-style-type: none"> • A MeM equipped with an external cavity for proximity standard coils 	 <ul style="list-style-type: none"> • eprox • i Class • MiFare • EM <p>See separate ordering guide for further info.</p>

Accessories

Reader accessories

Software Development Kit

Part No. 174000



- The SDK GEN4 is a Linux development environment that is used for developing customised Reader software applications for TagMaster RFID readers

Universal Mounting Kit

Part No. 193600



- The Universal Mounting Kit (UMK) includes brackets for both pole and wall (flat surface) mounting of the LR-series readers
- The UMK is suitable for indoor and outdoor use

Cable Kit 1 – Serial communication

Part No. 194410/194510



- Includes a Power cable (open end) and a Serial cable with a 9-pin D-sub connector
- High quality outdoor cables
- Complete with cable glands and integrated EMC protection
- Length: 2x10 metres

Cable Kit 2 – Ethernet communication

Part No. 194410/194610



- Includes a Power cable (open end) and an Ethernet cable with an RJ45 connector
- High quality outdoor cables
- Complete with cable glands and integrated EMC protection
- Length: 2x10 metres

ID-tag accessories

For Classic tags

Part No. 195100/195300/195400



- WinFix™Classic is a transparent holder used for mounting ID-tags to the inside of wind-screens
- CardKeep is a black slide-in ID-tag holder/clip, which can be used as a badge
- CardTape is a double-sided transparent adhesive tape for permanent attachment of Classic and ODU ID-tags

For MeM tags

Part No. 193800



- WinFix™MeM is a transparent holder used for mounting to the inside of wind-screens. The holder is fixed to the window with double sided tape and has a plastic spring that holds the ID-tag in position
- The holder can be placed on top of the dashboard when required