PRODUCT DATASHEET

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1. PRODUCT DESCRIPTION

1.1 OVERVIEW

Introduction

Confidex License Plate tag is a passive UHF tag suitable for electronic license plates. The product adds RFID functionality to a license plate to enable effortless and precise vehicle identification. Innovative and novel services, monitoring or surveillance applications can be established as vehicle identification becomes reliable and cost efficient.

The ISO 18000-6C protocol enables very fast identification even in dense and high-speed traffic flow. Electronic data on the tag can be password protected and encrypted so that only authorized parties can read the information.

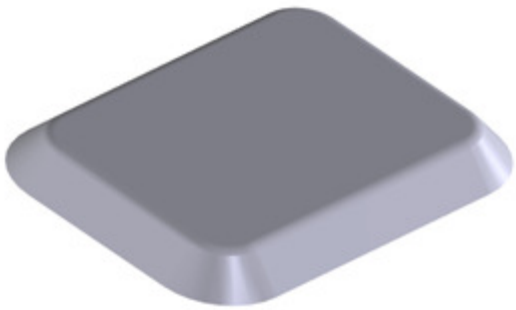
The rugged structure is designed to operate in harsh outdoor conditions and comes with practical mounting possibilities. Confidex License Plate Tags are customizable with surface printing, security markings or special programming. They can be delivered with special production data and delivery forms to integrate in customer issuing procedures and workflows.

Target applications

- Electronic License plate, License plate protection, Vehicle registration
- Taxation, Road toll
- Border control, Access control
- Traffic management, Insurance verification

1.2 PRODUCT STRUCTURE

Confidex License Plate Tag is encapsulated with durable plastic which gives the tag a very rugged structure. 3D-antenna structure is fitted in to low-profile casing and total thickness of the tag is only 5mm.

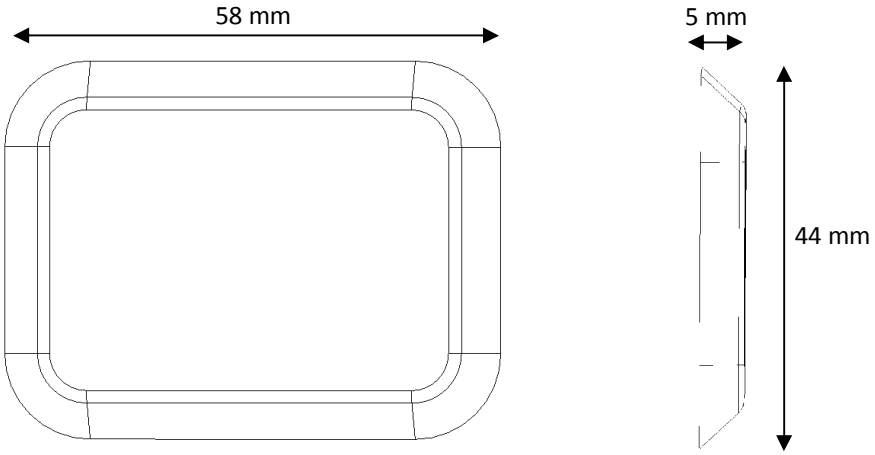


1.3 SPECIFICATION DATA

Application	Electronic License Plate for vehicles
Encapsulation material	PC/ASA
Delivery format	Single
Amount in box	960 pcs
Device type	Class 1 Generation 2 passive UHF RFID transponder
Air interface protocol	EPCglobal Class1 Gen2 (ISO 18000-6C)
Operational frequency	865 – 869 MHz 902 – 928 MHz
IC	Impinj Monza 4E™
EPC memory	469-bit
EPC memory content	Unique number encoded as a default
Extended memory	TID: unique 96-bit (factory programmed) USER MEMORY: 128-bit
Read range	up to 7-8 m reader power 2W ERP, ETSI 302-208 (dependent on application)

1.4 DIMENSIONS

General dimensions (Width x Height x Thickness)	**58 x 44 x 5 mm / 2.28 x 1.73 x 0.20 inch**

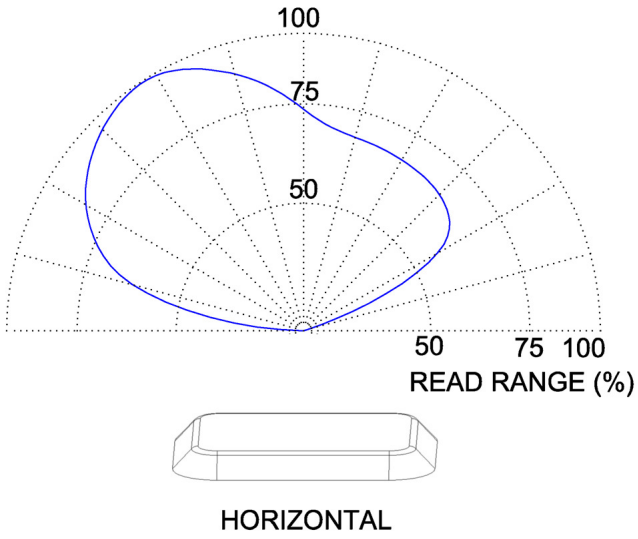


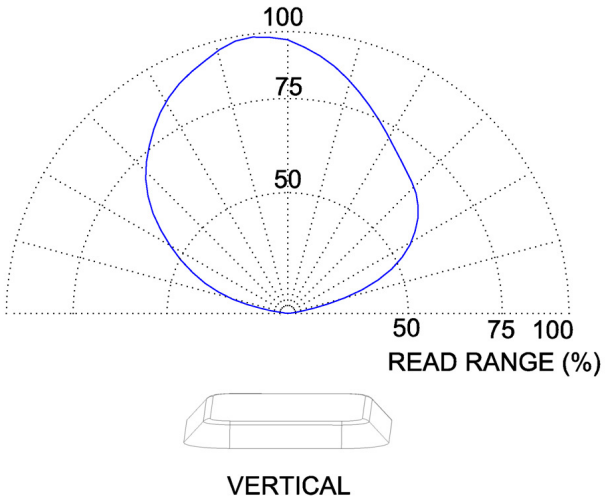
1.5 ELECTRICAL PERFORMANCE

Read range on metal (2W ERP, anechoic environment)	
ETSI (865-869 MHz)	**Up to 8m / 26 ft**
FCC (902-928 MHz)	**Up to 7m / 23ft**

*2W ERP, anechoic environment. Read ranges may vary depending on the used frequency, reader power and environment.

Radiation pattern (normalized):
*Radiation pattern may vary depending on tag placement on license plate.





1.6 RESISTANCE AGAINST ENVIRONMENTAL CONDITIONS*

Typically values are valid for all tag versions. If not, applicable IC versions are marked

Operating temperature	-30°C to +60°C (-22 °F to + 140°F)
Ambient temperature	-30°C to +60°C (-22 °F to + 140°F)
IP classification	IP65 Complete protection against dust. Protection against water jets from any direction.
Weather ability	Suitable for outdoor use.
Impact resistance	Very good protection against physical impacts.
Chemical resistance	Tolerates vehicle washing process with typical solvents.
Expected lifetime	Years in normal operating conditions.

** Values in the table are the best recommendations; resistance against environmental conditions depends on the combination of all influencing factors, exposure duration and chemical concentrations. Thus, product's final suitability for certain environmental conditions is recommended to be tested. Contact Confidex for more specific information.*

1.7 VISUAL APPEARANCE

Product color is RAL9002 (natural white).

1.8 SUPPORTED SERVICES

There is several personalization options available for License Plate Tag in order to “fine tune” the tag to match with the application requirements:

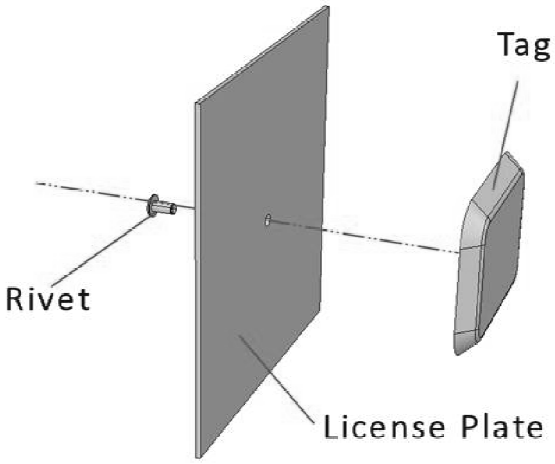
- Tampo-printing
- Laser engraving
- Pre-encoding
  - RFID tag memory is initialized according to customer requirements
- Production data delivery
  - Production and RFID-tag data is shared with customer according to customer requirements

For exact specifications, please contact Confidex Ltd.

1.6 TAG ATTACHMENT

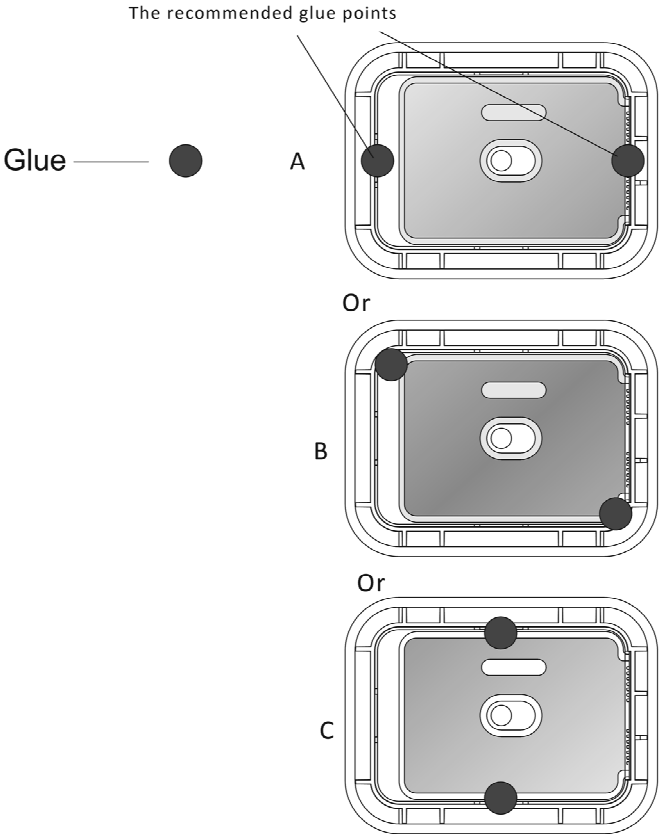
This RFID tag is designed to be attached on metallic license plate:

- Hole diameter for rivet in license plate shall be 3.3 – 3.4 mm.
- Use standard pop-rivet (3.2mm / 6mm).
- Choose rivet material according to license plate material to avoid rivet corrosion.



Before riveting, add thin layer of silicone sealant or adhesive on the tag backside and place the tag firmly on the correct location on the plate.

Sealant will both help the attachment process and it will prevent possible vibrations caused by resonances in vehicle. In long term, such vibrations can cause tag attachment to loose and eventually RFID-tag may fall off. Sealant or adhesive can be silicon, epoxy or any other type of sealant/adhesive- product. Sealant amount should be minimized (max. 0,5mm) to allow electrical coupling between RFID-tag and metallic register plate.



2. ORDER INFORMATION

Product number	Product name
3000517	Confidex License Plate Tag™ ETSI
3000518	Confidex License Plate Tag™ FCC

For additional information and technical support contact Confidex Ltd.

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