

Electronic Vehicle Identification

The solution for more security in vehicle license plates, identification, and authentication



UTSCH

Worldwide ...

... the number of vehicles on the streets is increasing constantly. Vehicle theft is growing rapidly, too.

Cases of arbitrary registration, and therefore tax offences, are accumulating. Recognition and reliable identification of both vehicles and drivers are required. Not only for state supervisory departments and administrative services, but also for daily traffic incidents, for example in case of accidents and insurance-related matters.

The main advantage: RFID enhances security of vehicle identification on top of high-security license plates.

As the international specialist of innovative vehicle registration systems, UTSCHE is developing unique concepts that address the increasing needs of higher security. To confront these issues, UTSCHE has designed a variety of RFID-based solutions: the RFID windshield label (**@label**) and the RFID license plate (**@plate**).

Radio-Frequency Identification (RFID).

Radio-frequency identification (RFID) is the use of an object (typically referred to as an RFID tag) that is applied to or incorporated into a product for the purpose of identification and tracking using radio waves.

Some tags can be read from several meters. Radio-frequency identification comprises interrogators (also known as readers) and tags (also known as labels).

Most RFID tags contain at least two parts. One is an integrated circuit for storing and processing information, modulating and demodulating a radio-frequency (RF) signal, and other specialized functions. The second is an antenna for receiving and transmitting the signal.

Technical Features

@label and **@plate**

The state-of-the-art design of the UTSCHE **@label** and the **@plate** offers the opportunity to use different types of passive RFID technologies or even a combination of them. The RFID transponder unit is an integrated part of the **@plate** and the **@label**.

Different RFID technologies can be used:

| | <i>HF</i> | <i>UHF</i> |
|----------------------|--|--|
| Standard | ISO 15693 ISO 14443 | EPC Class1 Gen2/ ISO 18000-6c |
| Frequency | 13.56 MHz | 860-960 MHz |
| Main characteristics | <ul style="list-style-type: none">· highest level of encryption and authentication for data security | <ul style="list-style-type: none">· long-range readability· vehicle identification also in moving traffic |

@label – the intelligent windshield label

The @label is a RFID windshield label and offers the possibility to store data electronically and print vehicle-related information on it. It serves as a third license plate.

Its core benefit is the additional optical authenticity confirmation of the outer number plate.

A use of counterfeit or stolen license plates is useless without the corresponding intelligent windshield label. For all applications which require a reliable vehicle identification, the @label on top of high-security license plates is the best solution.

Security Features

Security features against counterfeiting:

A variety of visible and hidden printed security features gives the windshield label a very high security standard.

Guilloche print



Microtext



UV color



Hologram foil

Security feature against manipulation:

The transfer to another vehicle of a label that has already been fixed will be avoided. The printed image, the holographic structure, and the antenna will be partially destroyed.

The RFID functionality will be seriously disrupted.



@plate – the intelligent license plate

The RFID license plate is an aluminium license plate with an additional transponder.

Such an “intelligent” license plate supports automated working processes and offers many applications.

For example, it allows back tracing of a manufacturing and distribution process or the possibility to store data to identify a vehicle in traffic.

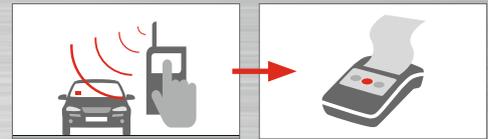
Security Features

- The RFID license plate is equipped with a hot-stamped chrome-based OVD stripe.
- The UID of the tag will be laser buried into the reflective foil to avoid the change of the RFID inlay.

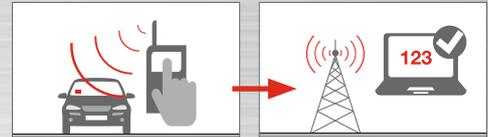
Applications

Electronic ticket generation and vehicle identification

The vehicle data will be read and compared with the actual vehicle. In case of a traffic violation, a ticket can be printed directly.



For more information (vehicle or owner), the officer sends the code number to the trust center and receives the respective data, according to their level of authorization.



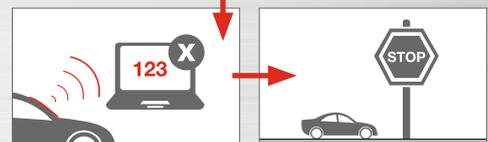
Automated vehicle identification

On passing a checkpoint the code number will be transferred to the trust center or computer.



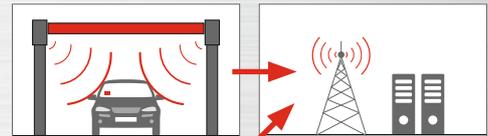
The code number will be checked.

Marked vehicles can be stopped and checked in detail.



Border control

The code number will be checked and the corresponding data set transferred to the border office. The operation will be recorded.

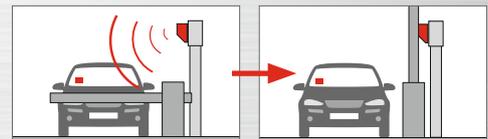


The vehicle will be checked and the result transferred to the trust center.



Access control

The authorization will be checked and a signal with the code number sent to the barrier.



Traffic management

Measuring points with traffic information panels transfer the code number to the traffic management office.

Data can be used for active traffic management, e.g. speed regulation subject to the traffic density.



Technical inspection

The code number will be transferred to the trust center.

The respective data set displayed on the screen will be updated after the inspection and be available to all authorities concerned.

