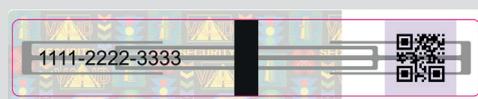




Windshield Labels and Headlamp Tags



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1 About This Guide

This document gives information on how you can use the windshield labels and headlamp tags. The target group of this manual is specialist personal who put the tags into operation.

This document is valid for all Kathrein and OEM-specific passive UHF RFID windschield labels and headlamp tags.

Tip This document applies to all Kathrein and OEM-specific passive UHF RFID windschield labels and headlamp tags. Even if it is referred to in the text as tags, it applies to both the windshield labels and headlamp tags.

Tip Keep these instructions for further reference, and if the device passes to another owner, pass them on to the new owner.

- ▶ For more information, visit our website www.kathrein-solutions.com.
- The datasheets are available for download at the internet product page.

2 Explanation of Symbols and Signal Words

2.1 Symbols

	Risk of material damage or malfunction
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2.2 Signal Words

Tip	This signal word indicates useful tips and recommendations.
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2.3 Other Symbols

Symbol	Meaning
☒	operating instruction
1, 2, 3...n	operating instructions in a fixed order
☒	result of an operating instruction
☒	condition for the execution of an operating instruction
●	list/list entry
www.kathrein-solutions.com	hyperlinks

3 Windshield Labels and Headlamp Tags

The passive UHF RFID windshield labels and headlamp tags serve for the automatic, contactless identification of vehicles (Automatic Vehicle Identification, AVI).

The UCODE DNA authentication uses an AES co-processor and a 128-bit AES group crypto key. The privacy protection is realised via an untraceable command and a 128-bit AES group crypto key.

Key Applications:

- Automated Vehicle Identification (AVI)
- Electronic Toll Collection (ETC)
- Electronic Vehicle Identification (EVI)
- Electronic Vehicle Registration (EVR)
- Intelligent Parking Interface (IPI)
- Intelligent Transportation Systems (ITS)
- Smart City Applications

3.1 Windshield Labels

The windshield label is adhered to the inside of the windshield. The development of the RFID windshield label has been focused on a very high read range due to the special antenna behind the glass and a passive function without a battery. There are two types of windshield labels, monolabel and Z-folded, the latter consisting of two layers. The label material is a combination of a PP and PET layer. Special cuts and other features can improve security against removal and re-use.

The protection class of the windshield label is IP65.

3.2 Headlamp Tags

The headlamp tag is adhered to the outside of the headlamp. The development of the RFID headlamp tag has been focused on a very high read range due to the special antenna on the headlamp and a passive function without a battery.

There are two types of windshield labels, monolabel and Z-folded, the latter consisting of two layers. The label material is a combination of a PP and PET layer. Special cuts and other features can improve security against removal and re-use.

The protection class of the headlamp tag is IP65.

4 Warranty



The warranty is only provided if the storage and mounting conditions, steps and requirements described in Chapter 5 *Storage*, p. 6 and in Chapter 6 *Mounting the Tag*, p. 7 have been met and carried out as described.

The compliance with the above must be documented and proven.

The warranty is provided as follows:

- The warranty is provided for 24 months since the date of delivery. The warranty period includes up to 12 months of storage maximum.
- For the 24 months of warranty to be guaranteed, it is necessary to put the tags into operation no later than after 12 months of storage since the date of delivery.



NOTICE

Risk of malfunction!

If the tags are not stored at the recommended storage temperature, the tag characteristics might be impaired.

- ▶ Make sure to store the tags at the recommended storage temperature.
- ▶ The warranty is guaranteed only if the tags are stored at the recommended storage temperature of $+25 \pm 5 \text{ °C}$ at $50 \pm 10\%$ relative non-condensing humidity.

5 Storage

- ▶ Make sure to store the tags in the temperature range -25 to $+50 \text{ °C}$ and relative non-condensing humidity of 20–90 %. The recommended Kathrein storage temperature is $+25 \pm 5 \text{ °C}$ at $50 \pm 10\%$ relative non-condensing humidity.



NOTICE

Risk of malfunction!

If the tags are not stored at the recommended storage temperature, the tag characteristics might be impaired.

- ▶ Make sure to store the tags at the recommended storage temperature.
- ▶ The warranty is guaranteed only if the tags are stored at the recommended storage temperature of $+25 \pm 5 \text{ °C}$ at $50 \pm 10\%$ relative non-condensing humidity.

6 Mounting the Tag

Kathrein passive and OEM-specific UHF RFID tags are optimised to get a maximum read performance on a glass surface.

To mount the tag:

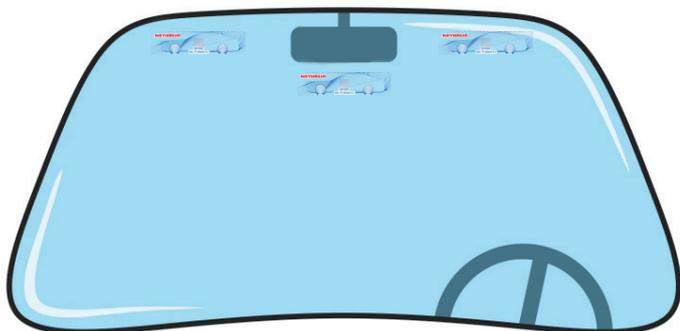
1. Make sure that the windscreen and headlamp surface is clean, dry and oil-free.
2. Make sure to put the tags into operation at a temperature over +10° C. The recommended temperature is 25° C.
3. For z-folded tags:
 - Make sure not to touch the rear side of the windscreen or headlamp-facing layer.
 - Put the driver-facing layer onto the rear side of the windscreen or headlamp-facing layer.
 - Peel off the tag from the liner.
 - Make sure not to touch the glued surface.
4. For all other tags:
 - Peel off the tag from the liner.
 - Make sure not to touch the glued surface.
5. Make sure to put the tag such that there is a distance of min. 3 cm around the tag on each side from the car body UV protection, heating system or any other kind of foil.
6. Put the tag onto the oil-free surface and press hard from the middle of the towards the outer edges to remove the air bubbles. When applying the tags onto the surface, make sure to only use objects without sharp edges not to damage the tag.
7. Press down with your finger and stroke from the centre of the transponder to the corners and outwards. Make sure, that you press the transponder quite hard to the surface. The adhesive gets activahigh pressure.
8. Allow to harden for 24 hours for optimal security protection.



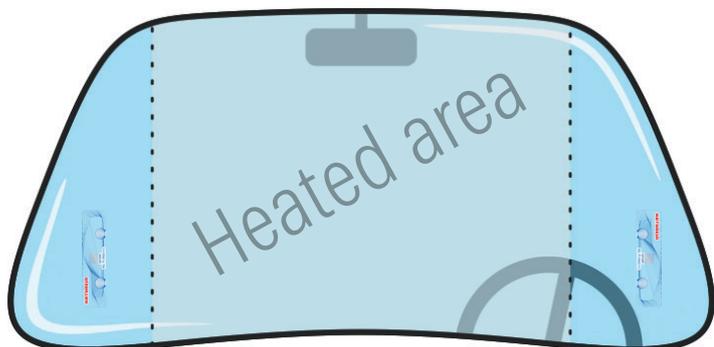
The warranty is only provided if all the above mentioned steps have been carried out and the requirements have been met.

Use the following areas to mount the tags:

Cars with standard glass windshields

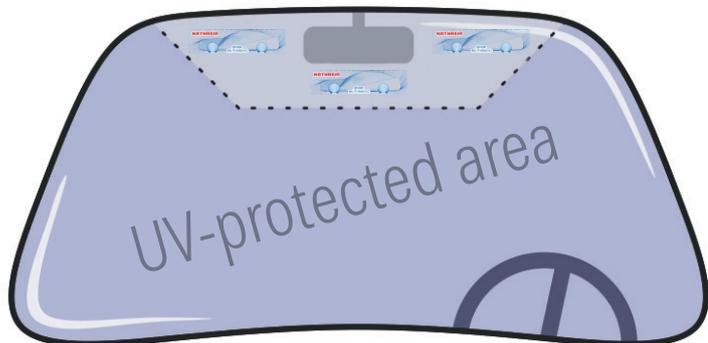


Cars with heated windshields



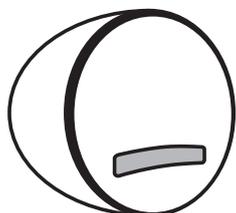
- ▶ See the vehicle manual to find the zones without the heating system.

Cars with UV-protected windshields



- ▶ See the vehicle manual to find the zones without UV protection.

Headlamps



- ▶ Position the headlamp tag horizontally, in the lower part, on the headlamp, see the picture on the left.

7 Contact Information

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Electronic equipment is not domestic waste – in accordance with directive 2002/96/EC OF THE EUROPEAN PARLIAMENT AND THE COUNCIL dated 27th January 2003 concerning used electrical and electronic appliances, it must be disposed of properly. At the end of its service life, take this unit for disposal at a designated public collection point.