

OBU-4021-01K

HGV On-Board Unit.



The OBU-4021-01K Heavy Goods Vehicle OBU is part of the Kapsch range of transponders and on-board units that provides the driver with the possibility to change vehicle class or number of axles through a simple user interface to fit any configuration of truck and trailer in current CEN compliant DSRC-based charging systems.

The OBU-4021-01K is a smart in-vehicle communication device designed for applications which call for a standardized Dedicated Short Range Communication (DSRC) microwave link, operating at 5.8 GHz. It is an integral component in Automatic Vehicle Identification (AVI), Electronic Access Control (EAC) and Electronic Toll Collection (ETC) systems. It is fully compliant with European CEN DSRC/EFC standards.

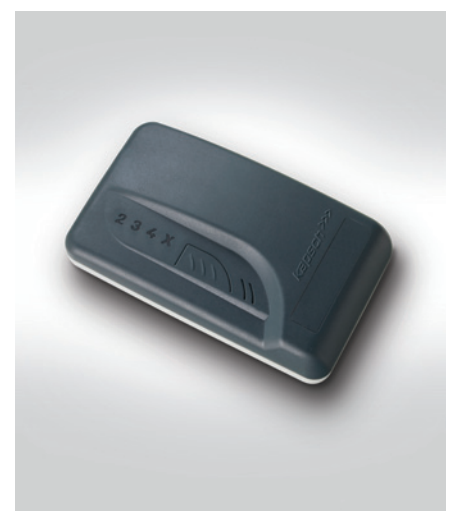
The combination of an attractive design and functionality makes the OBU a natural choice for every issuer that wishes to increase user acceptance of its DSRC-based charging system whether based on high speed interurban multi-lane free-flow, urban congestion charging applications or plaza-based operations.

The functionality of the transponder enables interoperability according to the most common harmonised specifications, including A1, IAP, CESARE/PISTA and

CARDME. The user memory can be structured in several elements and this flexibility makes the OBU-4021-01K an ideal choice for Electronic Fee Collection as well as for other applications. Data security and integration is ensured by a high degree of integration in combination with efficient integral cryptographic functions based on the DES and triple-DES algorithms.

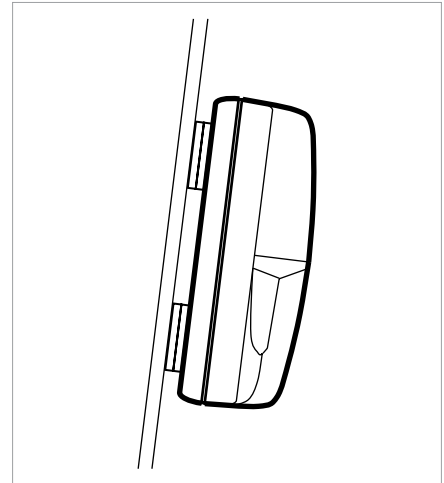
A push button enables the user to change the axle class or other parameters specifically related to the EFC scheme, as well as check the OBU status. The current axle class as well the status of the OBU are shown by LEDs. In addition an acoustic signal (buzzer) is implemented which is controlled by appropriate the roadside equipment (RSE). Thus the user is acoustically advised if a DSRC transaction was performed successfully or if a failure occurred.

The OBU-4021-01K is designed for in-vehicle windscreen mounting and is self-installable within a few minutes, promoting user acceptability.



Features

- Fully proven in single-lane and in high speed multi-lane free-flow applications
- Compliant with GEN DSRC/EFC Standards
- Compliant with most interoperability specifications such as GSS/A1/CARDME/CESARE/PISTA/EN15509 IAP
- High security based on mutual authentication and ultra-fast DES and 3-DES calculation
- 4 Kbytes of access protected memory enables multiple applications and several key generations
- Battery lifetime in excess of 5 years
- Equipped with push button and LEDs for declaration of e.g. vehicle parameters
- Configurable buzzer tunes
- Can be customised with label and pad print



Installation of OBU-4021-01K to windscreen.
Depth of transponder from windscreen: 31 mm.

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Technical features

<p>DSRC communication</p> <ul style="list-style-type: none"> ▪ In accordance with <ul style="list-style-type: none"> ▪ EN 12253 Physical Layer ▪ EN 12975 Data Link Layer ▪ EN 12834 Application Layer ▪ EN 13372 DSRC Profiles (set L1-B) ▪ EN ISO 14906 EFC Application Interface Definition ▪ EN 15509 (IAP) ▪ GSS (Global Specification for Short Range Communication) 	<p>Casing</p> <ul style="list-style-type: none"> ▪ Polycarbonate/ABS <p>Weight</p> <ul style="list-style-type: none"> ▪ 76 g <p>Dimensions</p> <ul style="list-style-type: none"> ▪ 114 mm x 67 mm x 28 mm <p>Colour</p> <ul style="list-style-type: none"> ▪ Light grey section towards windscreen (RAL 7035) ▪ Dark grey section towards vehicle cabin (RAL 7016) 	<p>Temperature range, storage</p> <ul style="list-style-type: none"> ▪ +5 °C to +40 °C ▪ Ref: IEC 60721-3-3, Class 1K2 <p>Temperature range, operating</p> <ul style="list-style-type: none"> ▪ -25 °C to +85 °C ▪ Ref: IEC 60721-3-3, Class 5K2 <p>Humidity</p> <ul style="list-style-type: none"> ▪ Max 95% relative humidity, non-condensing ▪ Ref: IEC 60721-3-3, Class 5K2
<p>Power Supply</p> <ul style="list-style-type: none"> ▪ Built-in 3.0 V Lithium/Maganese battery ▪ Typical battery lifetime more than 5 years ▪ @ 20 000 transactions/year 	<p>Installation</p> <ul style="list-style-type: none"> ▪ With Velcro® hook and loop fastener fixed with adhesive to windscreen. ▪ Mounted at the centre in the lower part of the windscreen. 	<p>Vibration Random</p> <ul style="list-style-type: none"> ▪ 5 m²/s³ 5-200 Hz 1 m²/s³ 200-500 Hz ▪ Ref: IEC 60721-3-3, Class 5M3
<p>Man-Machine Interface</p> <ul style="list-style-type: none"> ▪ Buzzer (Sound level: 55 dBA @ 1 m) ▪ Configurable buzzer tunes ▪ Push button ▪ 4 green LEDs “2” “3” “4” ▪ 1 green/red LED “X” ▪ Push button and LEDs may be used to declare vehicle class/no of axles 	<p>Accessories</p> <ul style="list-style-type: none"> ▪ Velcro® hook and loop fastener for mounting OBU to windscreen ▪ Cleaning tissue 	<p>Shock</p> <ul style="list-style-type: none"> ▪ Half-sine 300 m/s² Duration 6 ms ▪ Ref: IEC 60721-3-3, Class 5M3
<p>User Memory</p> <ul style="list-style-type: none"> ▪ Type: RAM / Flash Memory ▪ Capacity: 4 Kbyte ▪ Access only via the DSRC interface 	<p>Optional marking</p> <ul style="list-style-type: none"> ▪ Label ▪ Pad-print ▪ Ink-jet or Laser printed serial number in text and in bar code (CODE 128) 	<p>Free fall</p> <ul style="list-style-type: none"> ▪ 1000 mm ▪ Ref: IEC 60721-3-3, Class 2M1
<p>Enclosure</p> <ul style="list-style-type: none"> ▪ IP40, Ref: IEC 60529 	<p>Mean Time Between Failure (MTBF)</p> <ul style="list-style-type: none"> ▪ 800 000 hours ▪ Ref: Bellcore Issue 6, method I, Case 3 	<p>Conformance</p> <ul style="list-style-type: none"> ▪ Compliant with the following EU directives: <ul style="list-style-type: none"> ▪ R&TTE 1995/5/EC ▪ EMC 2004/108/EC ▪ LVD 2006/95/EC ▪ RoHS 2002/95/EC ▪ WEEE 2002/96/EC

Kapsch Group

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