

On Board Unit TS3209/00A.



Description.

The Kapsch premid On Board Unit TS3209/00A is the in-vehicle part of the Kapsch Area system that is designed to facilitate distance based road charging schemes.

The latest GPS and GSM technology is combined into one compact unit that also contains a DSRC-interface according to the CEN DSRC/EFC standards. This enables migration from, and interoperability with, existing DSRC based charging systems. The DSRC interface can also be used to communicate with the vehicle from mobile or fixed compliance checking facilities.

The distance based charging application is based on the concept where GPS-positions are collected and transferred to a host system via a GPRS communication link and where the actual charging transaction is performed in the central system. This concept allows for very flexible tariff and road segment schemes since no large amount of map data or algorithms needs to be downloaded to the On Board Unit.

Data security and integrity is ensured by built-in cryptographic functions based on DES 3DES and AES.

The integral key button, four LEDs and a buzzer enables the user to declare the vehicle class and to receive status and error messages. The unit is mounted on the inside of the vehicle windscreen by the User.

Features.

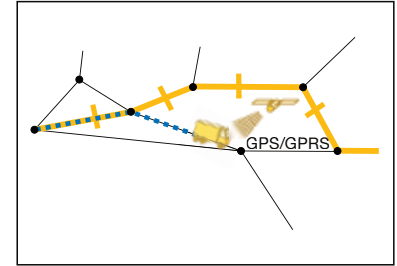
- GPS receiver
- GSM/GPRS interface
- CEN DSRC/EFC interface
- IAP EN 15509 compliant
- A1/CARDME/CESARE/PISTA/TIS- PL-CIP compliant
- Secure data access and storage
- DES, 3-DES and AES encryption
- Supports additional DSRC applications
- Supports add-on telematic applications
- Key button
- Four LEDs
- Buzzer
- Quick and easy installation



Technical Specification:

<p>GPS Receiver</p> <p>In accordance with</p> <ul style="list-style-type: none"> Global Positioning System Standard Positioning Service Signal Specification
<p>GSM/GPRS Communication</p> <p>In accordance with</p> <ul style="list-style-type: none"> EN 301511 Harmonised Standard for Mobile stations in the GSM 900 and DCS 1800 bands 3GPP 51.010-1 Mobile station conformance specification – part 1
<p>DSRC Communication</p> <p>In accordance with</p> <ul style="list-style-type: none"> EN 12253 Physical Layer EN 12795 Data Link Layer EN 12834 Application Layer EN 13372 DSRC Profiles (Set B) EN ISO 14906 EFC Application Interface Definition EN 15509 IAP GSS (Global Specification for Short Range Communication)
<p>Power Supply</p> <ul style="list-style-type: none"> External power 8- 48 V DC Internal 3,6V Lithium back-up battery
<p>Memory Configuration</p> <ul style="list-style-type: none"> Core charging application and data: 272 Kbyte (flash) and 64 Kbyte RAM Position data: 7.5 Kbyte (flash) Operational log: 256 kbyte (flash) DSRC data: 1600 byte RAM (battery backed-up)
<p>Man-Machine Interface</p> <ul style="list-style-type: none"> Key button for change of vehicle class and start of self-test Three green LEDs for indication of current vehicle class One green/red LED for status/error indication Buzzer
<p>Enclosure</p> <ul style="list-style-type: none"> IP40 ref: IEC 60529
<p>Casing</p> <ul style="list-style-type: none"> Polycarbonate/ABS

<p>Weight</p> <ul style="list-style-type: none"> 127 g (excluding windscreen mounting bracket)
<p>Dimensions</p> <ul style="list-style-type: none"> 128 mm x 68 mm x 32 mm (excluding windscreen mounting bracket)
<p>Colour</p> <ul style="list-style-type: none"> Light grey (side towards windscreen) Dark grey (side towards vehicle cabin)
<p>Installation</p> <ul style="list-style-type: none"> With bracket TS3220/20A (car) or TS3220/21A (lorry/bus) that is fixed to the windscreen with adhesive Connection to power supply (cigarette lighter plug) via a 3m cable
<p>Temperature Range, storage</p> <ul style="list-style-type: none"> +5 °C to +40 °C ref: IEC 60721-2-1
<p>Temperature Range, operating</p> <ul style="list-style-type: none"> -25 °C to +85 °C ref: IEC 60721-2-1, (including heating effect due to solar radiation)
<p>Humidity</p> <ul style="list-style-type: none"> Max 95% relative humidity, non condensing ref: IEC 60721-3-5, Class 5K2
<p>Vibration</p> <ul style="list-style-type: none"> Random 1 m²/s³ 10-200 Hz 0,3 m²/s³ 200-500 Hz ref: IEC 60721-3-5, Class 5M2
<p>Shock</p> <ul style="list-style-type: none"> 300 m/s², half sine, 6 ms ref: IEC 60721-3-5, Class 5M2
<p>Bump</p> <ul style="list-style-type: none"> 100 m/s², half sine, 11 ms ref: IEC 60721-3-5, Class 5M2
<p>Free fall</p> <ul style="list-style-type: none"> 1000 mm, Each face
<p>MTBF</p> <ul style="list-style-type: none"> 370 000 h according to Telcordia (Bellcore) SR-332
<p>Radio Compliance</p> <ul style="list-style-type: none"> According to EN 300 674
<p>Electromagnetic Compliance</p> <ul style="list-style-type: none"> According to EN 301 489-1, -3, -7



<p>Type approval</p> <p>The On Board Unit is compliant with the European directives:</p> <ul style="list-style-type: none"> R&TTE 1999/5/EC EMC 89/336/EC LVD 73/23/EC RoHS 2002/95/EC WEEE 2002/96/EC
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