

Kapsch TrafficCom

OBU-4041, OBU-4042.

Two-part On-Board Unit for metallised windscreens.

The OBU-4041 / OBU-4042 is a two-part OBU solution, that enables DSRC deployment also for vehicles with metallised and heavy-duty windscreens that prevent DSRC communication. The OBU-4041 part is mounted inside of the windscreen and provides a user interface, while the OBU-4042 part is mounted externally and contains the DSRC link functionality.

The internal part, OBU-4041, provides a user interface with a push button, four LEDs, and a buzzer. This enables the unit to be used in tolling schemes that require declaration of the current vehicle axles configuration, and allows also checking of the functional status of the unit.

The external part, OBU-4042, contains the DSRC functionality, which is compliant with harmonized EFC specifications and standards such as A1, CESARE/PISTA, CARDME and EN 15509, and it also supports other ITS applications such as AVI, parking and access.

The user memory can be structured in several DSRC applications, and data security and integrity are ensured by the high degree of integration in combination with efficient crypto-graphic functions based on the DES and 3-DES algorithms.



The two devices are mounted to the windscreen opposite of each other by using adhesive. Communication between the units takes place through the windscreen by means of a proprietary light link.

Alternatively, the external device, OBU-4042, can be mounted in a slide-in

bracket to enable removal of the unit when not in use.

To avoid theft, the OBU-4042 contains functionality to detect whether it was removed from the windscreen or the bracket.



Features:

- > Product Range:
 - > OBU-4041-00A, Internal device
 - > OBU-4042-00A, External device
- > Enables DSRC functionality also with fully metallised and heavy-duty windscreens
- > Compliant with CEN DSRC standards
- > Compliant with EFC interoperability specifications and standards
- > User interface for status check and declaration of vehicle class / no of vehicle axles
- > Theft detection mechanism for the OBU-4041 external unit

Installation in vehicle:

- > Depth of OBU-4041 from windscreen: 19 mm.
- > Depth of OBU-4042 from windscreen: 16 mm.

Technical features.

OBU-4041, Internal device

Casing

- > Plastic material: PC/ABS
- > Colour windscreen side: Light grey
- > Colour cabin side: Dark grey

Weight

- > 25g

Size

- > 68 x 45 x 17 mm

Enclosure

- > IP40, Ref: IEC 60529

Power supply

- > 3V Lithium battery
- > Typical battery lifetime: more than 3 years

MMI

- > Push button
- > 3 green LEDs "2", "3", "4"
- > 1 green/red LED "X"
- > Buzzer (sound level 55 dBA @ 1 m)

Customisation of casing

- > Laser printed serial number in text and barcode

OBU-4042, External device

Casing

- > Plastic material: PC/ABS
- > Colour windscreen side: Light grey
- > Colour cabin side: Dark grey

Weight

- > 30g

Size

- > 68 x 45 x 14 mm (excluding bracket)

Enclosure

- > IP65, Ref: IEC 60529

Power supply

- > 3V Lithium battery
- > Typical battery lifetime: more than 3 years

User memory

- > RAM/Flash
- > Capacity: 4 Kbytes
- > Access only from the DSRC interface

Customisation of casing

- > Laser printed serial number in text and barcode

DSRC compliance

- In accordance with:
- > EN 12253, physical layer
 - > EN 12795, data link layer
 - > EN 12834, application layer
 - > EN 13372, DSRC profiles 0/1 L1-B
 - > ISO 14906, EFC Application Interface
 - > ISO 17264, AVI Application Interface
 - > EN 15509, EFC Interoperable Application Profile
 - > EN 16312, AVI Interoperable Application Profile
 - > GSS 3.2 global specification for short range communication

OBU-4041 and OBU-4042

Accessories

- > Mounting kit for permanent installation of both parts
- > Mounting kit for permanent installation of OBU-4041 and OBU-4042 removable by a slide-in bracket. Bracket colour: Dark grey

Environmental conditions

- > Temperature range storage: +5 °C to +40 °C
Ref: IEC 60721-3-1, class 1K21
- > Temperature range operation: -40 °C to +70 °C
Ref: IEC 60721-3-5, class 5K3
(Tested in +85 °C due to impact from solar radiation)
- > Humidity: Max 95% relative humidity, non condensing
Ref: IEC 60721-3-5, class 5K3

Vibration

- > Sinus: 40m/s² 5-500Hz
Ref: IEC 60721-3-5, class 5M3

Shock

- > Half-sine 300 m/s² duration 6 ms
Ref: IEC 60721-3-5, class 5M3

Free fall

- > 1,000mm, each face

Conformance

- Compliant with the following EU directives
- > RED 2014/53/EU
 - > RoHS 2011/65/EU
 - > WEEE 2012/19/EU