



Manual

Carsharing Modul

A1779010901

Version 2.0

car2go group GmbH
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Document history

Author	Date	Version	Relevant Chapters	Changes
Sebastian Köhler	24.10.2017	1.0	All	Initial Version
Sebastian Köhler	31.10.2018	1.9	3, 5	Add Chapter 5, Update Wired Interfaces in Chapter 3
Sebastian Köhler	15.11.2018	2.0	All	Addition of FCC/IC/RED statements; Minor corrections

1 Purpose of the Carsharing Modul

Enabling carsharing features for carsharing customers, remotely and within the vehicle. This includes i.e. monitoring of carsharing inventory via near field wireless communication and carsharing operations via Bluetooth technology.

2 Mechanical Interfaces

2.1 Front side

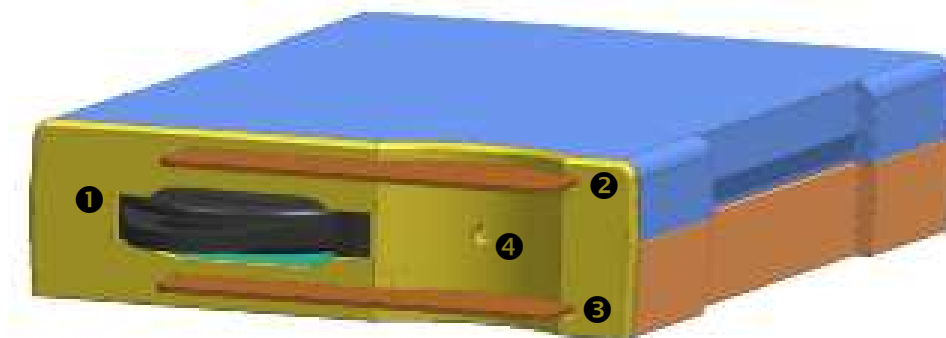


Figure 1 - schematic front view

- ❶ Keyfob slot (for vehicle key, mounted with RFID keyfob)
- ❷ Card slot for RFID cards (i.e. storage of parking / charging / fuel card)
- ❸ Card slot for RFID cards (i.e. storage of parking / charging / fuel card)
- ❹ Status LED (indication of operation states)

2.2 Rear side

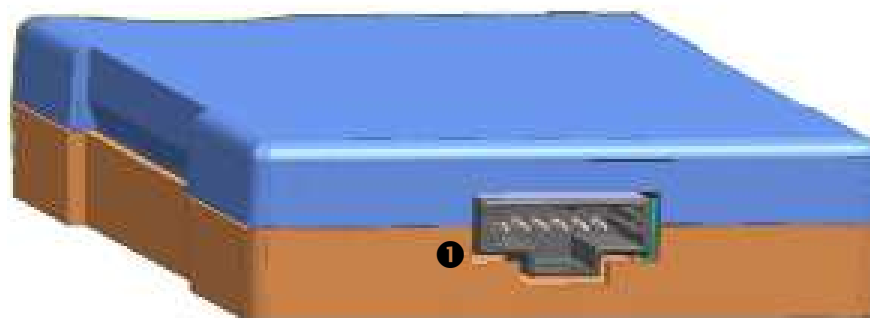


Figure 2 - schematic rear view

- ❶ MQS-type vehicle harness connector

3 Wired Interfaces

3.1 Power

Nominal Voltage:	13,6 Volt
Min/Max Voltage Range:	6 V / 18 V
Nominal Active Current:	~56 mA
Standby Current:	~5 mA
Deep Sleep Current:	0,024mA

3.2 Controller Area Network

CAN Bus Type:	High Speed CAN 2.0 (up to 1 MBit/s)
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4 Wireless Interfaces

4.1 Bluetooth Low Energy

In case of missing or interrupted mobile phone network connection, i.e. carsharing user is in remote roaming network or carsharing user has missing mobile reception at vehicle's parking location, the carsharing user is being enabled to perform carsharing operations via his mobile phone's Bluetooth Low Energy (BLE) interface.

4.1.1 Technical data

- BLE frequency range: 2,402 GHz - 2,480 GHz
- Supported BLE versions: 4.0, 4.1, 4.2

4.2 Near Field Communication

For surveillance of carsharing inventory, like various radio frequency identification (RFID) and near field communication (NFC) based cards as well as RFID and NFC based key fobs, the Carsharing Modul implements an NFC interface.

4.2.1 Technical data

- NFC frequency range: 13.56 mhz
- NFC variants/tags/cards: ISO 14443 / ISO 15693 / DesFire / Mifare 1k and 4k / JCOP

5 RED / FCC / IC REGULATORY NOTICES

5.1 IDENTIFICATIONS

- HVIN / PMN: CARSHARING MODUL
- CE: E1 10R-058372
- FCC ID: WRB015262577-1
- ISED ID: 22965-015262577

5.2 EUROPEAN STANDARDS

 <small>paragon AG - Artingen 1 73129 Delbrück / Germany</small>	 <small>paragon AG - Artingen 1 73129 Delbrück / Germany</small>														
Europäische Norm / European Standard:															
<table border="1"><tr><td>ETSI EN 301 489-1 V2.2.0 (Draft)</td><td>ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements;</td></tr><tr><td>ETSI EN 301 489-3 V2.1.1 (Final draft)</td><td>ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 3: Specific conditions for Short-Range Devices (SRD) operating on frequencies between 9 kHz and 246 GHz;</td></tr><tr><td>ETSI EN 301 489-17 V3.2.0 (Draft)</td><td>ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 17: Specific conditions for Broadband Data Transmission Systems;</td></tr><tr><td>IEC 62368-1 2014 (2.Edition) and Cor. 1: 2015</td><td>Audio/video, information and communication technology equipment - Part 1: Safety requirements</td></tr><tr><td>EN 62368-1 2014/AC: 2015/A11: 2017</td><td>Einrichtungen für Audio/Video-, Informations- und Kommunikationstechnik - Teil 1: Sicherheitsanforderungen</td></tr><tr><td>ETSI EN 300 328 V2.1.1</td><td>Wideband transmission systems; Data transmission equipment operating in the 2.4 GHz ISM band and using wide band modulation techniques;</td></tr><tr><td>ETSI EN 300 330 V2.1.1</td><td>Short Range Devices (SRD); Radio equipment in the frequency range 9 kHz to 25 MHz and inductive loop systems in the frequency range 9 kHz to 30 MHz;</td></tr></table>		ETSI EN 301 489-1 V2.2.0 (Draft)	ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements;	ETSI EN 301 489-3 V2.1.1 (Final draft)	ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 3: Specific conditions for Short-Range Devices (SRD) operating on frequencies between 9 kHz and 246 GHz;	ETSI EN 301 489-17 V3.2.0 (Draft)	ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 17: Specific conditions for Broadband Data Transmission Systems;	IEC 62368-1 2014 (2.Edition) and Cor. 1: 2015	Audio/video, information and communication technology equipment - Part 1: Safety requirements	EN 62368-1 2014/AC: 2015/A11: 2017	Einrichtungen für Audio/Video-, Informations- und Kommunikationstechnik - Teil 1: Sicherheitsanforderungen	ETSI EN 300 328 V2.1.1	Wideband transmission systems; Data transmission equipment operating in the 2.4 GHz ISM band and using wide band modulation techniques;	ETSI EN 300 330 V2.1.1	Short Range Devices (SRD); Radio equipment in the frequency range 9 kHz to 25 MHz and inductive loop systems in the frequency range 9 kHz to 30 MHz;
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Dokument Nr. / Document No.: DoC - CARSHARINGMODUL - 02/2018															
Datum / Date: 06.02.2018															
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Ausführung / Version: 93-01962-SXXX (ff) 93-01963-SXXX (ff) 93-01964-SXXX (ff)															
Hersteller / manufacturer: paragon AG															
Anschrift / address: Artegastr. 1 D-33129 Delbrück															
Das bezeichnete Produkt stimmt mit der folgenden Europäischen Richtlinie überein: We hereby confirm that the above-mentioned product meets the requirements of the following EU-Directive: „RICHTLINIE 2014/53/EU DES EUROPÄISCHEN PARLAMENTES UND DES RATES vom 16. April 2014 über die Harmonisierung der Rechtsvorschriften der Mitgliedstaaten über die Bereitstellung von Funkanlagen auf dem Markt und zur Aufhebung der Richtlinie 1999/5/EG“ Die Übereinstimmung des bezeichneten Produktes mit den Vorschriften der Richtlinie wird nachgewiesen durch die vollständige Einhaltung folgender Normen: The correspondence of the above-mentioned product with these requirements is proved by the fact that these product meet with the following single standards:															
Yours faithfully paragon AG  Lutz Kleinschmidt -Leiter Geschäftsbereich Cockpit- Attachments - no															
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5.3 FCC / IC MODIFICATIONS

Changes or modifications made to this equipment not expressly approved by paragon GmbH & Co. KGaA may void the FCC authorization to operate this equipment.

5.4 FCC / IC INTERFERENCE

This device complies with Part 15 of the FCC Rules and with Industry Canada licence-exempt RSS standard(s).

Operation is subject to the following two conditions:

- (1) this device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:

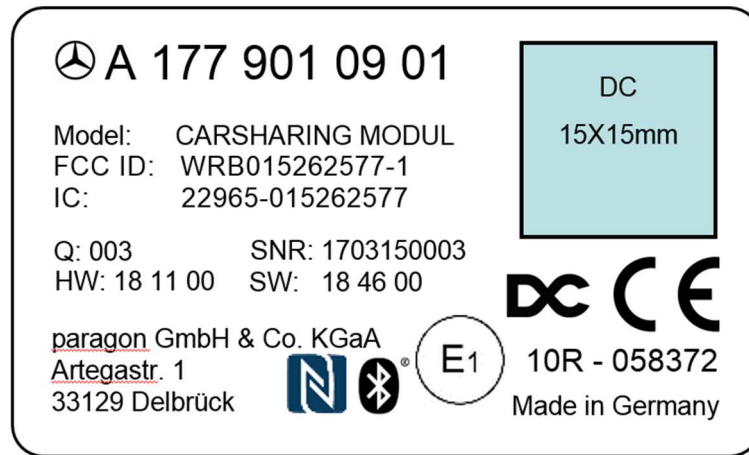
- (1) l'appareil ne doit pas produire de brouillage, et
- (2) l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

5.5 FCC CLASS B DIGITAL DEVICE

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

5.6 LABELING



5.7 FURTHER NOTES

This device is intended to be used only in vehicles.

This device will be installed in the vehicles during factory production, when the vehicle will be manufactured by professional workers.

This device is not intended for resale or for 3rd parties.