



## Attachment B (RF Exposure evaluation)

**Type / Model Name** : WC18CV

**Product Description** : Inductive battery charger system

**Applicant** : Robert Bosch GmbH

Address : Postfach 10 01 56

70745 Leinfelden-Echterdingen; GERMANY

**Manufacturer** : Robert Bosch GmbH

Address : Postfach 10 01 56

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**Licence holder** : Robert Bosch GmbH

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according to

<b>Test Report No. :</b>	<b>T39706-00-02KJ</b>
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10. May 2016
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Date of issue
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Deutsche  
Akkreditierungsstelle  
D-PL-12030-01-01  
D-PL-12030-01-02

The test report merely corresponds to the test sample.  
It is not permitted to copy extracts of these test results  
without the written permission of the test laboratory.

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## 1 TEST STANDARDS

The tests were performed according to following standards:

KDB 680106 D01 v02: 2013

RF Exposure considerations for low power consumer wireless  
power transfer applications

### **3 TEST CONDITIONS AND RESULTS**

#### **3.1 RF exposure requirements (H-Field)**

For test instruments and accessories used see section 6 Part CPR 1.

##### **3.1.1 Description of the test location**

Test location: A1  
Test distance: 10 cm

##### **3.1.2 Photo documentation of the test set-up**



(Scale: 10 cm per square)

##### **3.1.3 Used field probe**

Manufacture:  
Narda Safety Test Solutions

Type:  
ELT-400 with  
100 cm<sup>2</sup> B field probe

Frequency range:  
1 Hz to 400 kHz

### 3.1.4 Applicable standard

According to KDB 680106 D01 v02, Section 3, 3):

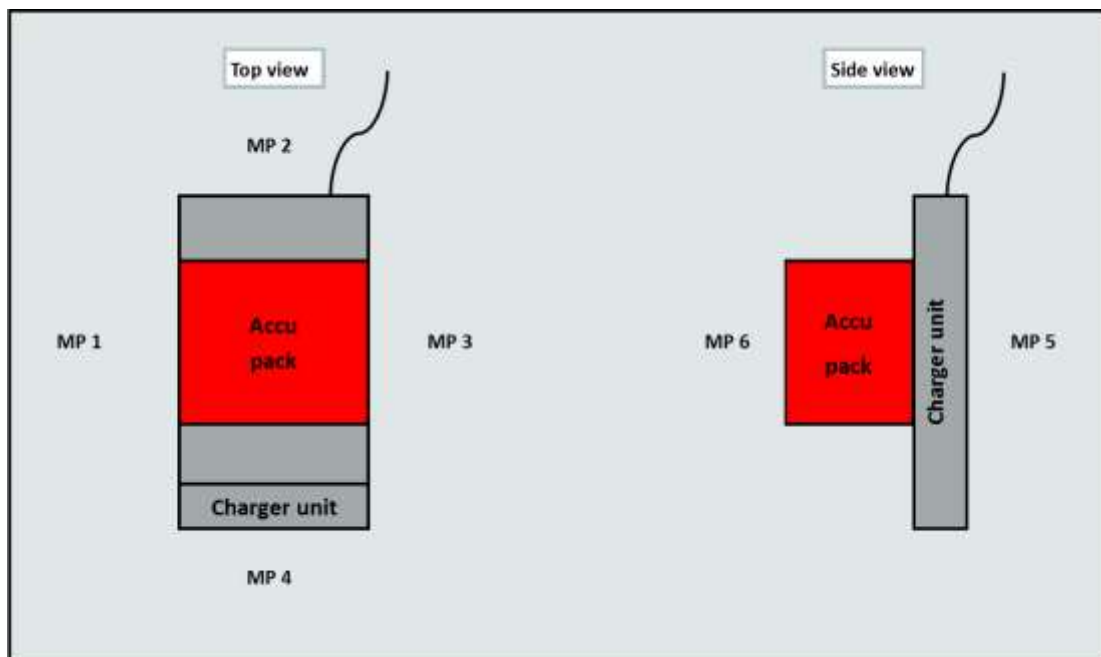
For devices designed for typical desktop applications, such as wireless charging pads, RF exposure evaluation should be conducted assuming a user separation distance of 10 cm. E and H field strength measurements or numerical modeling may be used to demonstrate compliance. Measurements should be made from all sides and the top of the primary/client pair, with the 10 cm measured from the center of the probe(s) to the edge of the device. Emissions between 100 kHz to 300 kHz should be assessed versus the limits at 300 kHz in Table 1 of Section 1.1310: 614 V/m and 1.63 A/m. A KDB inquiry is required to determine the applicable exposure limits below 100 kHz.

### 3.1.5 Description of Measurement

The maximum magnetic field strength was measured radiated, 10cm surrounding the device. The EUT is measured in TX continuous mode, modulated, under normal conditions. The exposure level tester was set in RMS detection mode with max. hold function. Each measurement point (MP) was tested over 6 minutes.

Tested operation mode:	charging mode
Operation frequencies:	- TX at 141.6 kHz and 145.5 kHz - charging / transmitting frequency
	- TX at 124.3 kHz - resonant frequency detection (with battery present)
	- TX at 210.5 kHz - sync pulse transmission

### 3.1.6 Test result



## FCC ID: TXTWC18CV

Measurement Point (MP)	Magnetignetic field ( $\mu$ T RMS)	Conversion in to (A/m RMS)	Limit (A/m RMS)	Delta (dB)
1	0.901	0.721	1.63	-7.1
2	0.517	0.414	1.63	-11.9
3	0.730	0.584	1.63	-8.9
4	0.648	0.518	1.63	-10.0
5	1.508	1.206	1.63	-2.6
6	1.355	1.084	1.63	-3.5

The requirements are **FULFILLED**.

**Remarks:** All measurements where performed in charging mode in the frequency range from 124.3 kHz to 210.5 kHz because this are the worst case conditions.

### 3.2 RF exposure requirements (E-Field)

For test instruments and accessories used see section 6 Part CPR 1.

#### 3.2.1 Description of the test location

Test location: A1  
Test distance: 10 cm

#### 3.2.2 Photo documentation of the test set-up



(Scale: 10 cm per square)

### 3.2.3 Used field probe

Manufacture:  
Narda Safety Test Solutions

Type:  
PMM EP-602

Frequency range:  
5 kHz to 9.25 GHz

### 3.2.4 Applicable standard

According to KDB 680106 D01 v02, Section 3, 3):

For devices designed for typical desktop applications, such a wireless charging pads, RF exposure evaluation should be conducted assuming a user separation distance of 10 cm. E and H field strength measurements or numerical modeling may be used to demonstrate compliance. Measurements should be made from all sides and the top of the primary/client pair, with the 10 cm measured from the center of the probe(s) to the edge of the device. Emissions between 100 kHz to 300 kHz should be assessed versus the limits at 300 kHz in Table 1 of Section 1.1310: 614 V/m and 1.63 A/m. A KDB inquiry is required to determine the applicable exposure limits below 100 kHz.

### 3.2.5 Description of Measurement

The maximum electric field strength was measured radiated, 10cm surrounding the device. The EUT is measured in TX continuous mode, modulated, under normal conditions. The exposure level tester was set in peak detection mode with max. hold function. Each measurement point (MP) was tested over 6 minutes.

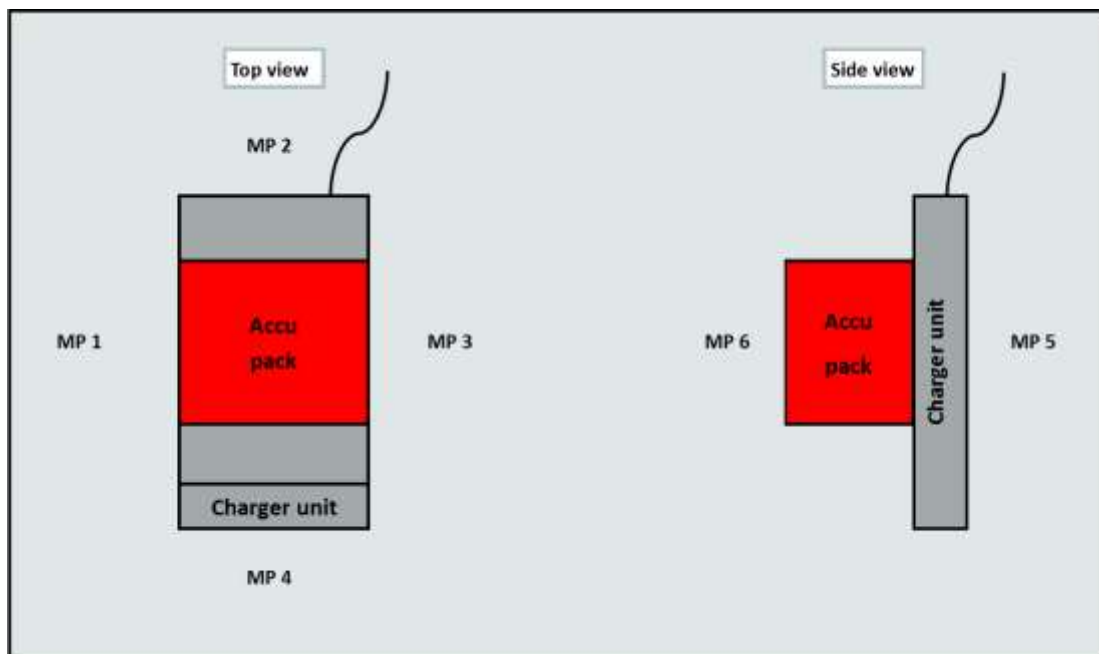
Tested operation mode:

charging mode

Operation frequencies:

- TX at 141.6 kHz and 145.5 kHz - charging / transmitting frequency
- TX at 124.3 kHz - resonant frequency detection (with battery present)
- TX at 210.5 kHz - sync pulse transmission

### 3.2.6 Test result





**FCC ID: TXTWC18CV**

Measurement Point (MP)	Electric field (V/m)	Limit (V/m PKI)	Delta (dB)
1	14.7	614	-32.4
2	10.5	614	-35.3
3	12.8	614	-33.6
4	9.6	614	-36.1
5	19.2	614	-30.1
6	15.5	614	-32.0

The requirements are **FULFILLED**.

**Remarks:** All measurements were performed in charging mode in the frequency range from 124.3 kHz to 210.5 kHz because these are the worst case conditions.

## 4 USED TEST EQUIPMENT AND ACCESSORIES

All test instruments used are calibrated and verified regularly. The calibration history is available on request.

Test ID	Model Type	Equipment No.	Next Calib.	Last Calib.	Next Verif.	Last Verif.
CPR 1	Exposure Level Tester ELT-400	01-02/40-13-001	11/02/2016	11/02/2015		
	B-Field Probe 100 cm <sup>2</sup>	01-02/40-13-002	09/02/2016	09/02/2015		
	Isotrope Electric Field EP-602	02-02/50-15-069	22/07/2016	22/07/2015		