Test Site File-No.
IC 3009

Registration No. DAT-P-207/05

EMI -- T E S T R E P O R T

Test Report No. : **T32537-00-03KG**	13. May 2008 Date of issue

Type / Model Name : TMLF8-2

Product Description : Smart LF Oscillator

Applicant : Toyota Motor Corporation

Address : 1, Toyota-Cho
Toyota, Aichi, 471-8572 Japan

Manufacturer : Toyota Motor Corporation

Address : 1, Toyota-Cho
Toyota, Aichi, 471-8572 Japan

Licence holder : Toyota Motor Corporation

Address : 1, Toyota-Cho
Toyota, Aichi, 471-8572 Japan

Test Result according to the standards listed in clause 1 test standards:	**POSITIVE**

Deutscher Akkreditierungs Rat
DAR
DAT-P-207/05-00

Contents

1 TEST STANDARDS

The tests were performed according to following standards:

RSS-210 Issue7, June 2007	Low Power Licence – Exempt Radicommunication Devices (All Frequency Bands): Category I Equipment
RSS-Gen Issue2, June 2007	General Requirements and Information for the Certification of Radiocommunication Equipment

2 SUMMARY

GENERAL REMARKS:

None

FINAL ASSESSMENT:

The equipment under test **fulfills** the EMI requirements cited in clause 1 test standards.

Date of receipt of test sample : acc. to storage records

Testing commenced on : 10. April 2008

Testing concluded on : 16. April 2008

Checked by:

Thomas Weise
Ich bestätige die Richtigkeit und Integrität dieses Dokuments
2008.05.21 13:57:18 +02'00'

Thomas Weise
Dipl.-Ing.(FH)
Laboratory Manager

Tested by:

Klaus Gegenfurtner
Ich bin der Verfasser dieses Dokuments
2008.05.21 11:40:34 +02'00'

Gegenfurtner Klaus
Dipl.-Ing.(FH)

3 EQUIPMENT UNDER TEST

3.1 Power supply system utilised

Power supply voltage : 12 V / DC

3.2 Short description of the Equipment under Test (EuT)

The Smart LF Oscillator TMLF8-2 is a transmitter installed in a motor vehicle and is used as part of the Smart System. In the system, the Smart LF Oscillator has mainly following functions:

- Smart Door Unlocking
  Door antennas transmit a low frequency at 134.2 kHz intermittently. An electronic key, carried out by the driver, will transmit a high radio wave when recognized the signal.
- Smart Trunk Unlocking
  The trunk antenna provides the signal for the electronic key to open the trunk.
- Detection of Electronic Key inside trunk
  If the driver tries to close the trunk, the inside trunk antenna transmit a radio wave of 134.2 kHz. The electronic key left inside the trunk will recognize the signal and transmits a high radio frequency back to alarm the driver.
- Smart Engine Start
  When the driver is inside the car the inside room antenna transmits a radio wave of 134.2 kHz. If the electronic key recognize the signal it transmits a high radio frequency back to trigger the engine start mechanism.

The tests were performed on three antenna types in conjunction with Computer assy (ECU):

1. Door antenna
2. Room antenna / Luggage antenna
3. Trunk antenna

Number of tested samples: 1

EuT operation mode:

The equipment under test was operated during the measurement under the following conditions:

- Transmit mode CW (unmodulated)

- Transmit mode modulated

EuT configuration:

(The CDF filled by the applicant can be viewed at the test laboratory.)

The following peripheral devices and interface cables were connected during the measurements:

- Test box Model : Supplied by the manufacturer
- Door antenna Model :
- Room antenna Model :
- Trunk antenna Model :

4 TEST ENVIRONMENT

4.1 Address of the test laboratory

mikes-testingpartners gmbh
Ohmstrasse 2-4
94342 Strasskirchen
Germany

4.2 Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature:	15-35 ° C
Humidity:	30-60 %
Atmospheric pressure:	86-106 kPa

4.3 Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to CISPR 16-4-2 /11.2003 „Uncertainties, statistics and limit modelling – Uncertainty in EMC measurements“ and is documented in the mikes-testingpartners gmbh quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

4.4 Measurement Protocol for FCC, IC, VCCI and AUSTEL

4.4.1 GENERAL INFORMATION

4.4.1.1 Test Methodology

Conducted and radiated disturbance testing is performed according to the procedures in International Special Committee on Radio Interference (CISPR) Publication 22, European Standard EN 55022 as shown under section 1 of this report.

In compliance with FCC Docket 92-152, "Harmonization of Rules for Digital Devices Incorporate International Standards", testing for FCC compliance may be done following the ANSI C63.4-2003 procedures and using the CISPR 22 Limits.

4.4.1.2 Measurement Error

The data and results referenced in this document are true and accurate. The reader is cautioned that there is some measurement variability due to the tolerances of the test equipment that can contribute to a nominal product measurement uncertainty. The measurement uncertainty was calculated for all measurements listed in this test report according to NIS 81/5.1994 “The treatment of uncertainty in EMC measurements” and is documented in the mikes-testingpartners gmbh quality system according to DIN EN ISO/IEC 17025. Furthermore, component differences and manufacturing process variability of production units similar to that tested may result in additional product uncertainty. If necessary, refer to the test lab for the actual measurement uncertainty for specific tests. The manufacturer has the sole responsibility of continued compliance of the device.

4.4.1.3 Justification

The Equipment Under Test (EUT) is configured in a typical user arrangement in accordance with the manufacturer's instructions. A cable is connected to each available port and either terminated with a peripheral into it’s characteristic impedance or left unterminated. When appropriate, the cables are manually manipulated with respect to each other to obtain maximum disturbances from the unit.

4.4.2 DETAILS OF TEST PROCEDURES

General Standard Information

The test methods used comply with CISPR Publication 22, EN 55022 - " Information technology equipment - Radio disturbance characteristics - Limits and methods of measurement", with ANSI C63.4-2003 - "Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz." and with RSS-Gen "General Requirements and Information for the Certification of Radiocommunication Equipment”.The Open Area test site is a listed Open Site under the Canadian Test-Sites File-No:

IC 3009

5 TEST CONDITIONS AND RESULTS

5.1 Conducted emissions

For test instruments and accessories used see section 6 Part **A 4**.

5.1.1 Description of the test location

Test location: None

5.1.2 Photo documentation of the test set-up

5.1.3 Description of Measurement

The final level, expressed in dBμV, is arrived at by taking the reading directly from the EMI receiver. This level is compared directly to the FCC Limit or to the CISPR limit, which is equivalent to the Australian AS 3548 limit.

To convert between dBμV and μV, the following conversions apply:

dBμV = 20(log μV)

μV = Inverse log(dBμV/20)

Conducted emissions on the 50 Hz and/or 60 Hz power interface of the EuT are measured in the frequency range of 150 kHz to 30 MHz. The measurements are performed using a receiver, which has CISPR characteristic bandwidth and quasi-peak detection, and a Line Impedance Stabilization Network (LISN), with 50Ω/50 μH (CISPR 16) characteristics. Table top equipment is placed on a non-conducting table 80 centimeter's above the floor and is positioned 40 centimeter's from the vertical ground plane (wall) of the screen room. If the minimum passing margin appears to be less than 20 dB with a peak mode measurement, the emissions are remeasured using a tuned receiver with quasi-peak and average detection and recorded on the data sheets.

5.1.4 Test result

Frequency range:

Min. limit margin

Remarks: The test is not applicable because the EuT is battery powered.

5.2 Field strength of the fundamental wave

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

5.2.1 Description of the test location

Test location: OATS1
Test distance: 3 metres

5.2.2 Photo documentation of the test set-up

5.2.3 Description of Measurement

The final level, expressed in dBµV/m, is arrived at by taking the reading from the EMI receiver (Level dBµV) and adding the antenna correction factor and cable loss factor (Factor dB) to it. This result then has to be compared with the relevant RSS-210 limit.
The resolution bandwidth during the measurement was 300 kHz.

Example:

Frequency (MHz)	Level (dBµV)	+	Factor (dB)	=	Level (dBµV/m)	Limit (dBµV/m)	=	Delta (dB)
1.705	5	+	20	=	25	30	=	5

5.2.4 Test result

a) Door antenna

Measurement distance: 3m

Frequency [kHz]	L: PK [dBµV]	L: AV [dBµV]	L: QP [dBµV]	Correct. [dB]	L: PK [dBµV/m]	L: AV [dBµV/m]	L: QP [dBµV/m]	Limit [dBµV/m]	Delta [dB]
134.2	75.7	75.5	75.7	20.0	95.7	95.5	95.7	105.0	-9.5

Calculated value at distance: 30m

Frequency [kHz]	L: PK [dBµV]	L: AV [dBµV]	L: QP [dBµV]	Correct. [dB]	L: PK [dBµV/m]	L: AV [dBµV/m]	L: QP [dBµV/m]	Limit [dBµV/m]	Delta [dB]
134.2	35.7	35.5	35.7	20.0	55.7	55.5	55.7	65.0	-9.5

Calculated value at distance: 300m

Frequency [kHz]	L: PK [dBµV]	L: AV [dBµV]	L: QP [dBµV]	Correct. [dB]	L: PK [dBµV/m]	L: AV [dBµV/m]	L: QP [dBµV/m]	Limit [dBµV/m]	Delta [dB]
134.2	-4.3	-4.5	-4.3	20.0	15.7	15.5	15.7	25.0	-9.5

b) Room antenna

Measurement distance: 3m

Frequency [kHz]	L: PK [dBµV]	L: AV [dBµV]	L: QP [dBµV]	Correct. [dB]	L: PK [dBµV/m]	L: AV [dBµV/m]	L: QP [dBµV/m]	Limit [dBµV/m]	Delta [dB]
134.2	76.0	75.8	76.0	20.0	96.0	95.8	96.0	105.0	-9.2

Calculated value at distance: 30m

Frequency [kHz]	L: PK [dBµV]	L: AV [dBµV]	L: QP [dBµV]	Correct. [dB]	L: PK [dBµV/m]	L: AV [dBµV/m]	L: QP [dBµV/m]	Limit [dBµV/m]	Delta [dB]
134.2	36.0	35.8	36.0	20.0	56.0	55.8	56.0	65.0	-9.2

Calculated value at distance: 300m

Frequency [kHz]	L: PK [dBµV]	L: AV [dBµV]	L: QP [dBµV]	Correct. [dB]	L: PK [dBµV/m]	L: AV [dBµV/m]	L: QP [dBµV/m]	Limit [dBµV/m]	Delta [dB]
134.2	-4.0	-4.2	-4.0	20.0	16.0	15.8	16.0	25.0	-9.2

c) Trunk antenna

Measurement distance: 3m

Frequency [kHz]	L: PK [dBµV]	L: AV [dBµV]	L: QP [dBµV]	Correct. [dB]	L: PK [dBµV/m]	L: AV [dBµV/m]	L: QP [dBµV/m]	Limit [dBµV/m]	Delta [dB]
134.2	76.3	76.1	76.3	20.0	96.3	96.1	96.3	105.0	-8.9

Calculated value at distance: 30m

Frequency [kHz]	L: PK [dBµV]	L: AV [dBµV]	L: QP [dBµV]	Correct. [dB]	L: PK [dBµV/m]	L: AV [dBµV/m]	L: QP [dBµV/m]	Limit [dBµV/m]	Delta [dB]
134.2	36.3	36.1	36.3	20.0	56.3	56.1	56.3	65.0	-8.9

Calculated value at distance: 300m

Frequency [kHz]	L: PK [dBµV]	L: AV [dBµV]	L: QP [dBµV]	Correct. [dB]	L: PK [dBµV/m]	L: AV [dBµV/m]	L: QP [dBµV/m]	Limit [dBµV/m]	Delta [dB]
134.2	-3.7	-3.9	-3.7	20.0	16.3	16.1	16.3	25.0	-8.9

Limit according to RSS 210, Table 3

Frequency (MHz)	Field strength of fundamental wave		Measurement distance (meters)
	(µV/m)	dB (µV/m)	
0.009-0.490	**2400/F(kHz)**	**--**	**300**
0.490-1.705	24000/F (kHz)	--	30
1.705-30.0	30	29.5	30

The requirements are **FULFILLED.**

Remarks: _____

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_____

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5.3 Spurious emissions (Magnectic field) 9 kHz – 30 MHz

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

5.3.1 Description of the test location

Test location: OATS1
Test distance: 3 metres

5.3.2 Photo documentation of the test set-up

5.3.3 Description of Measurement

Spurious emissions from the EuT are measured in the frequency range of 9 kHz to 30 MHz using a tuned receiver and a shielded loop antenna. The antenna was positioned 3, 10 or 30 meters horizontally from the EuT. Measurements have been made in all three orthogonal axes and the shielded loop antenna was rotated to locate the maximum of the emissions.

The final level, expressed in dBµV/m, is arrived at by taking the reading from the EMI receiver (Level dBµV) and adding the antenna correction factor and cable loss factor (Factor dB) to it. This result then has to be compared with the relevant FCC limit.
The resolution bandwidth during the measurement is as follows:
9 kHz – 150 kHz: ResBW: 200 Hz
150 kHz – 30 MHz: ResBW: 300 kHz

Example:

Frequency (MHz)	Level (dBµV)	+	Factor (dB)	=	Level (dBµV/m)	Limit (dBµV/m)	=	Delta (dB)
1.705	5	+	20	=	25	30	=	5

5.3.4 Test result

a) Door antenna

Measurement distance: 3m

Frequency [kHz]	L: PK [dBµV]	L: AV [dBµV]	L: QP [dBµV]	Correct. [dB]	L: PK [dBµV/m]	L: AV [dBµV/m]	L: QP [dBµV/m]	Limit [dBµV/m]	Delta [dB]
402.6	51.1	50.3	50.1	20.0	71.1	70.3	70.1	95.5	-25.2
671.0	43.2	40.9	40.9	20.0	63.2	60.9	60.9	71.1	-10.2
939.4	36.5	34.2	34.2	20.0	56.5	54.2	54.2	68.1	-13.9
1207.8	31.5	29.0	29.5	20.0	51.5	49.0	49.5	66.0	-16.5

Calculated value at distance: 30m

Frequency [kHz]	L: PK [dBµV]	L: AV [dBµV]	L: QP [dBµV]	Correct. [dB]	L: PK [dBµV/m]	L: AV [dBµV/m]	L: QP [dBµV/m]	Limit [dBµV/m]	Delta [dB]
671.0	3.2	0.9	0.9	20.0	23.2	20.9	20.9	31.1	-10.2
939.4	-3.5	-5.8	-5.8	20.0	16.5	14.2	14.2	28.1	-13.9
1207.8	-8.5	-11.0	-10.5	20.0	11.5	9.0	9.5	26.0	-16.5

Calculated value at distance: 300m

Frequency [kHz]	L: PK [dBµV]	L: AV [dBµV]	L: QP [dBµV]	Correct. [dB]	L: PK [dBµV/m]	L: AV [dBµV/m]	L: QP [dBµV/m]	Limit [dBµV/m]	Delta [dB]
402.6	-28.9	-29.7	-29.9	20.0	-8.9	-9.7	-9.9	15.5	-25.2

b) Room antenna

Measurement distance: 3m

Frequency [kHz]	L: PK [dBµV]	L: AV [dBµV]	L: QP [dBµV]	Correct. [dB]	L: PK [dBµV/m]	L: AV [dBµV/m]	L: QP [dBµV/m]	Limit [dBµV/m]	Delta [dB]
402.6	47.3	45.9	45.9	20.0	67.3	65.9	65.9	95.5	-29.6
671.0	39.7	35.5	36.3	20.0	59.7	55.5	56.3	71.1	-14.8
939.4	31.2	28.6	28.5	20.0	51.2	48.6	48.5	68.1	-19.6
1207.8	28.2	24.1	24.2	20.0	48.2	44.1	44.2	66.0	-21.8

Calculated value at distance: 30m

Frequency [kHz]	L: PK [dBµV]	L: AV [dBµV]	L: QP [dBµV]	Correct. [dB]	L: PK [dBµV/m]	L: AV [dBµV/m]	L: QP [dBµV/m]	Limit [dBµV/m]	Delta [dB]
671.0	-0.3	-4.5	-3.7	20.0	19.7	15.5	16.3	31.1	-18.8
939.4	-8.8	-11.5	-11.5	20.0	11.2	8.6	8.5	28.1	-19.6
1207.8	-11.8	-15.9	-15.8	20.0	8.2	4.1	4.2	26.0	-21.8

Calculated value at distance: 300m

Frequency [kHz]	L: PK [dBµV]	L: AV [dBµV]	L: QP [dBµV]	Correct. [dB]	L: PK [dBµV/m]	L: AV [dBµV/m]	L: QP [dBµV/m]	Limit [dBµV/m]	Delta [dB]
402.6	-32.7	-34.1	-34.1	20.0	-12.7	-14.1	-14.1	15.5	-29.6

c) Trunk antenna

Measurement distance: 3m

Frequency [kHz]	L: PK [dBµV]	L: AV [dBµV]	L: QP [dBµV]	Correct. [dB]	L: PK [dBµV/m]	L: AV [dBµV/m]	L: QP [dBµV/m]	Limit [dBµV/m]	Delta [dB]
402.6	53.4	52.6	52.8	20.0	73.4	72.6	72.8	95.5	-22.9
671.0	44.7	42.6	42.7	20.0	64.7	62.6	62.7	71.1	-8.4
939.4	37.6	35.6	35.4	20.0	57.6	55.6	55.4	68.1	-11.7
1207.8	33.5	31.0	31.1	20.0	53.5	51.0	51.1	66.0	-14.9

Calculated value at distance: 30m

Frequency [kHz]	L: PK [dBµV]	L: AV [dBµV]	L: QP [dBµV]	Correct. [dB]	L: PK [dBµV/m]	L: AV [dBµV/m]	L: QP [dBµV/m]	Limit [dBµV/m]	Delta [dB]
671.0	4.7	2.6	2.7	20.0	24.7	22.6	22.7	31.1	-8.4
939.4	-2.4	-4.4	-4.6	20.0	17.6	15.6	15.4	28.1	-11.7
1207.8	-6.5	-9.0	-8.9	20.0	13.5	11.0	11.1	26.0	-14.9

Calculated value at distance: 300m

Frequency [kHz]	L: PK [dBµV]	L: AV [dBµV]	L: QP [dBµV]	Correct. [dB]	L: PK [dBµV/m]	L: AV [dBµV/m]	L: QP [dBµV/m]	Limit [dBµV/m]	Delta [dB]
402.6	-26.6	-27.4	-27.2	20.0	-6.6	-7.4	-7.2	15.5	-22.9

Limit according to RSS 210, Table 3

Frequency (MHz)	Field strength of spurious emissions		Measurement distance (meters)
	(µV/m)	dB (µV/m)	
0.009-0.490	2400/F(kHz)	--	300
0.490-1.705	24000/F (kHz)	--	30
1.705-30.0	30	29.5	30

The requirements are **FULFILLED.**

Remarks: All other unwanted emissions are below 10 dBµV/m (at 30 m).

5.4 Radiated emissions (electric field) 30 MHz – 1 GHz

For test instruments and accessories used see section 6 Part **SER 2**.

5.4.1 Description of the test location

Test location: OATS1

Test distance: 3 metres

5.4.2 Photo documentation of the test set-up

5.4.3 Description of Measurement

Spurious emissions from the EuT are measured in the frequency range of 30 MHz to 10 times the highest used frequency using a tuned receiver and appropriate broadband linearly polarized antennas. Measurements between 30 MHz and 1000 MHz are made with 120 kHz/6 dB bandwidth and quasi-peak detection. Table top equipment is placed on a 1.0 X 1.5 meter non-conducting table 80 centimetres above the ground plane. Floor standing equipment is placed directly on the turntable/ground plane. Interface cables that are closer than 40 centimetres to the ground plane are bundled in the center in a serpentine fashion so they are at least 40 centimetres from the ground plane. Cables to simulators/testers (if used in this test) are routed through the center of the table and to a screen room located outside the test area. The antenna was positioned 3, 10 or 30 meters horizontally from the EuT. To locate maximum emissions from the test sample the antenna is varied in height from 1 to 4 meters, measurement scans are made with both horizontal and vertical antenna polarization`s and the EuT are rotated 360 degrees.

The final level, expressed in dBµV/m, is arrived by taking the reading from the EMI receiver (Level dBµV) and adding the correction factors and cable loss factor (Factor dB) to it. This is done automatically in the EMI receiver, where the correction factors are stored. This result then has the FCC or CISPR limit subtracted from it to provide the Delta which gives the tabular data as shown in the data sheets at page.

Example:

Frequency (MHz)	Level (dBµV)	+	Factor (dB)	=	Level (dBµV/m)	Limit (dBµV/m)	=	Delta (dB)
719	75	+	32.6	=	107.6	110	=	-2.4

5.4.4 Test result

Door antenna, Room antenna, Trunk antenna

Frequency [MHz]	L: PK [dBµV]	L: AV [dBµV]	L: QP [dBµV]	Correct. [dB]	L: PK [dBµV/m]	L: AV [dBµV/m]	L: QP [dBµV/m]	Limit [dBµV/m]	Delta [dB]
30-1000	No unwanted emissions detected								

Limit according to RSS 210, Table 2

Frequency (MHz)	Field strength of spurious emissions		Measurement distance (meters)
	(µV/m)	dB (µV/m)	
30-88	100	40	3
88-216	150	43.5	3
216-960	200	46	3
960-1000	500	54	3

The requirements are **FULFILLED.**

Remarks: _____

_____

_____

_____

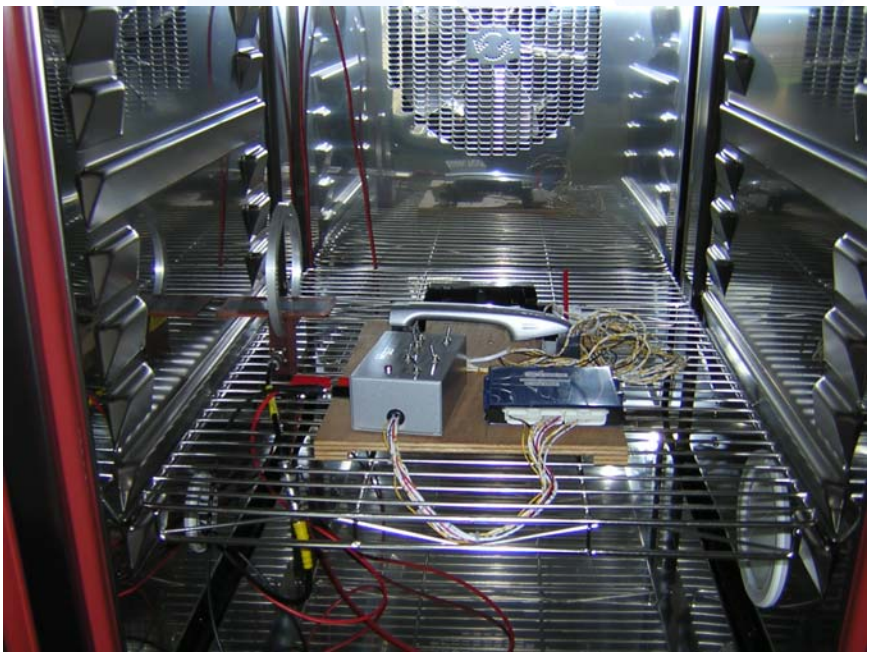
5.5 Emission Bandwidth

For test instruments and accessories used see section 6 Part **MB**.

5.5.1 Description of the test location

Test location: AREA4

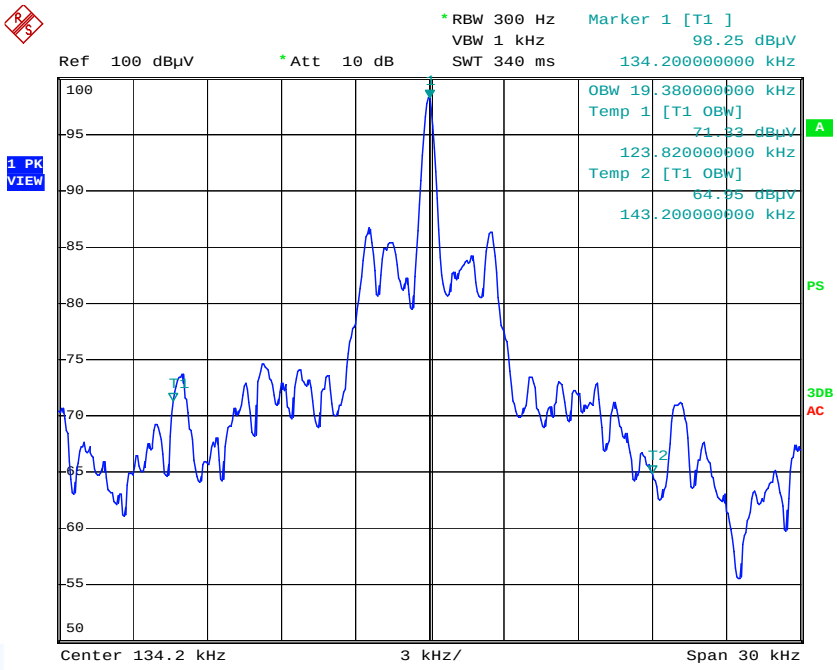
5.5.2 Photo documentation of the test set-up



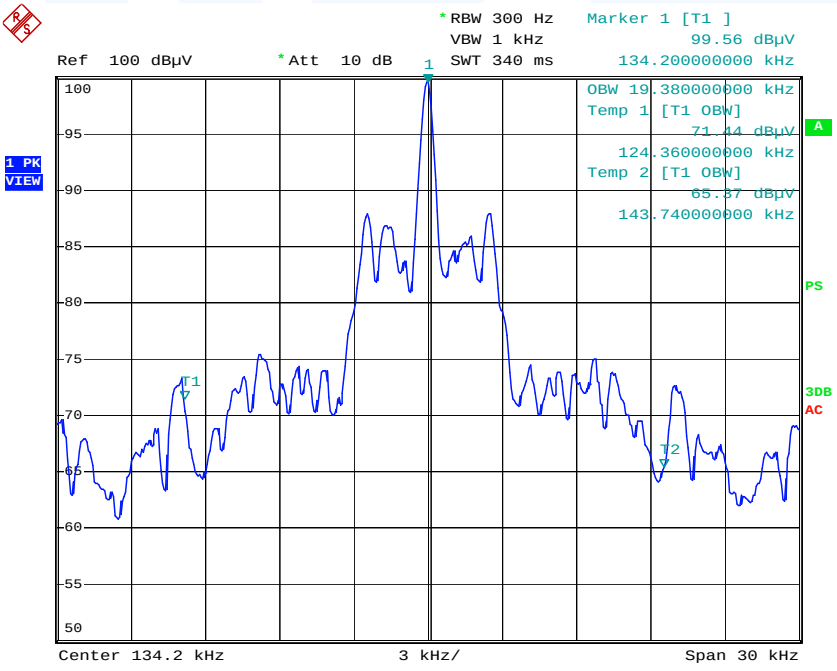
5.5.3 Test protocol

Emission Bandwidth

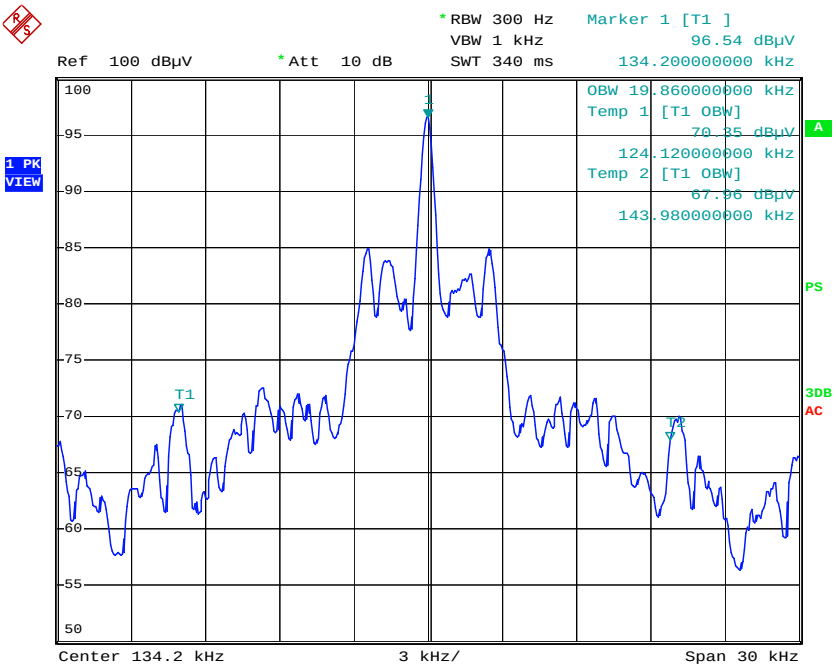
Door antenna



Room antenna



Emission Bandwidth
Trunk antenna



6 USED TEST EQUIPMENT AND ACCESSORIES

All test instruments used, in addition to the test accessories, are calibrated and verified regularly.

The calibration intervals and the calibration history will be given out on request.

Test ID	Model / Type	Kind of Equipment	Manufacturer	Equipment No.
CPR 1	FMZB 1516	Magnetic Field Antenna	Schwarzbeck Mess-Elektron	01-02/24-01-018
	ESCI	EMI Test Receiver	Rohde & Schwarz München	02-02/03-05-005
MB	FSP 7	Spectrum Analyzer	Rohde & Schwarz München	01-02/11-05-002
	THS730A	Handheld Scope	Tektronix GmbH	02-02/13-05-001
	HZ-10	Magnetic Field Antenna	Rohde & Schwarz München	02-02/24-05-012
	WK-340/40	Climatic Chamber	Weiss Umwelttechnik GmbH	02-02/45-05-001
	6543A	Power Supply	HP Hewelett-Packard	02-02/50-05-157
SER 1	FMZB 1516	Magnetic Field Antenna	Schwarzbeck Mess-Elektron	01-02/24-01-018
	ESCI	EMI Test Receiver	Rohde & Schwarz München	02-02/03-05-005
SER 2	ESVS 30	EMI Test Receiver	Rohde & Schwarz München	02-02/03-05-006
	VULB 9168	Trilog-Broadband Anten	Schwarzbeck Mess-Elektron	02-02/24-05-005
	S10162-B	RF Cable 33m	Huber + Suhner	02-02/50-05-031
	KK-EF393-21N-16	RF Cable 20m	Huber + Suhner	02-02/50-05-033
	NW-2000-NB	RF Cable	Huber + Suhner	02-02/50-05-113

Equipment No.	Next Calib.	Last Calib.	Next Verif.	Last Verif.
01-02/24-01-018			02/20/2009	02/20/2008
02-02/03-05-005	01/24/2009	01/24/2008		
01-02/11-05-002	08/27/2008	08/27/2007		
02-02/13-05-001	09/03/2008	09/03/2007		
02-02/24-05-012				
02-02/45-05-001	09/01/2008	09/01/2005	06/07/2008	12/07/2007
02-02/50-05-157				
01-02/24-01-018			02/20/2009	02/20/2008
02-02/03-05-005	01/24/2009	01/24/2008		
02-02/03-05-006	07/24/2008	07/24/2007		
02-02/24-05-005	04/15/2008	04/15/2005	08/21/2008	02/21/2008
02-02/50-05-031				
02-02/50-05-033				
02-02/50-05-113				