

Prüfbericht-Nr.: 50068668 001 Auftrags-Nr.: 114058182 Seite 1 von 31 Order No : Test Report No.: Page 1 of 31 Kunden-Referenz-Nr.: N/A Auftragsdatum: 14-Nov-2016 Client Reference No .: Order date: Auftraggeber: General Life Biotechnology Co., Ltd. Client: 5F, No. 240, Shinshu Rd., Shin Juang Dist., New Taipei City 242 Prüfgegenstand: Multi-Monitoring System Test item: Bezeichnung / Typ-Nr.: Refer to section 1.2 Identification / Type No.: Auftrags-Inhalt: FCC Part15C Test report (BLE) Order content: Prüfgrundlage: Test specification: FCC 47CFR Part 15: Subpart C Section 15.247 Wareneingangsdatum: 12-Dec-2016 Date of receipt: Prüfmuster-Nr.: A000459432-002 Test sample No.: A000459432-001 Prüfzeitraum: 20-Dec-2016 - 20-Dec-2016 Testing period: Ort der Prüfung: EMC/RF Laboratory Taipei Place of testing: Prüflaboratorium: TUV Rheinland Taiwan Ltd. Testing laboratory: Prüfergebnis*: **Pass** Test result*: Report Date I tested by: kontrolliert von I reviewed by: 2017-01-25 Amy S.R.Hsu /Engineer 2017-01-25 Rene Charton/Senior Project Manager Datum Name / Stellung Unterschrift Datum Name / Stellung Unterschrift Name / Position Date Signature Date Name / Position Signature Sonstiges I Other. Zustand des Prüfgegenstandes bei Anlieferung: Prüfmuster vollständig und unbeschädigt Condition of the test item at delivery: Test item complete and undamaged 1 = sehr gut 2 = gut 3 = befriedigend 4 = ausreichend 5 = mangelhaft P(ass) = entspricht o.g. Prüfgrundlage(n) F(ail) = entspricht nicht o.g. Prüfgrundlage(n) N/A = nicht anwendbar N/T = nicht getestet 3 = satisfactory 4 = sufficient Leaend: 1 = very good 2 = good5 = poor P(ass) = passed a.m. test specification(s) F(ail) = failed a.m. test specification(s) N/A = not applicable N/T = not tested Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht

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This test report only relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.



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TEST SUMMARY

5.1.1 ANTENNA REQUIREMENT

RESULT: Passed

5.1.2 PEAK OUTPUT POWER

RESULT: Passed

5.1.3 6dB Bandwidth and 99% Bandwidth

RESULT: Passed

5.1.4 POWER DENSITY

RESULT: Passed

5.1.5 CONDUCTED SPURIOUS EMISSIONS AND FREQUENCY BAND EDGE MEASURED IN 100kHz BANDWIDTH

RESULT: Passed

5.1.6 Spurious Emission

RESULT: Passed

6.1.1 ELECTROMAGNETIC FIELDS

RESULT: Passed

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1. General Remarks

1.1 Complementary Materials

The following attachments are integral parts of this test report:

Appendix P: Photo Documentation internal view

(File Name: 50068668APPENDIX P)

Appendix D: Test Result of Radiated Emissions

(File Name: 50068668APPENDIX D)

Test Specifications

The following standards were applied.

Table 1: Applied Standard and Test Levels

_	_		_
_	~	~	_

FCC CFR47 Part 15: Subpart C Section 15.247

ANSI C63.10:2013

KDB558074 D01 DTS Meas Guidance v03r05

1.2 Model name

Model:	Model:
BK6-12M-D	BK3-12M-D
BK6-12M-D1	BK3-12M-D1
BK6-12M-D2	BK3-12M-D2
BK6-12M-D3	BK3-12M-D3
BK4-10M-D	BK1-10M-D
BK4-10M-D1	BK1-10M-D1
BK4-10M-D2	BK1-10M-D2
BK4-10M-D3	BK1-10M-D3

Major model: BK3-12M-D

BK3: meaning blood glucose test strips "one code" with Glucose Oxidase enzyme.

BK1: meaning blood glucose test strips "one code" with Glucose Dehydrogenase enzyme.

BK6: meaning blood glucose test strips "need code" with Glucose Oxidase enzyme.

BK4: meaning blood glucose test strips "need code" with Glucose Dehydrogenase enzyme.

10M & 12M: meaning series number D: meaning with Bluetooth function

1,2 and 3: meaning difference of product appearance



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2. Test Sites

2.1 Test Laboratory

TUV Rheinland Taiwan Ltd. Taichung Branch Office

No.9, Lane 36, Minsheng Rd., Sec. 3, Daya District, Taichung City 428
Taiwan (R.O.C.)

2.2 Test Facility

TUV Rheinland Taiwan Ltd. Taipei Office

11F. No.758, Sec. 4, Bade Rd., Songshan Dist. Taipei City 105
Taiwan (R.O.C.)

FCC Registration No.: 799772

IC Canada Registration No.: 9465A-1 TAF Accredited NCC Test Lab. No.:0759

TAF ISO17025 Certification effective period: 2016-Jul-1st to 2019-Jun-30th



Testing Laboratory 0759

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2.3 List of Test and Measurement Instruments

Table 2: List of Test and Measurement Equipment

Kind of Equipment	Manu-facturer	Туре	S/N	Last Calibration	Next Calibration
Test Software	Farad	EZ_EMC	Ver. TUV3A1	N/A	N/A
EMI Test Receiver	R&S	ESR7	101062	2016/09/12	2017/09/12
Spectrum Analyzer	R&S	FSV 40	100921	2016/04/21	2017/04/21
Spectrum Analyzer	Agilent	N9010A	MY53470241	2016/04/25	2017/04/24
Preamplifier (30MHz -1GHz)	HP	8447F	2805A03335	2016/07/29	2017/07/29
Preamplifier (18 GHz -40 GHz)	COM- POWER	PAM-840	461257	2016/12/01	2017/12/01
Pre-Amplifier (1GHz~18GHz)	EM Electronics	EM01G18G	060558	2016/11/17	2017/11/17
Bilog Antenna	TESEQ	CBL6111D	29804	2016/06/23	2017/06/23
Horn Antenna	ETS- Lindgren	3117	138160	2016/05/03	2017/05/03
Horn Antenna (18GHz~40GHz)	COM- POWER	AH840	101029	2016/10/11	2017/10/11
Loop Antenna	Schwarzbeck	FMZB 1513	1513-076	2016/05/11	2017/05/11
Spectrum Analyzer	R&S	FSL3	101943	2015/09/07	2017/09/07
Temp. & Humid. Chamber	Giant Force	GCT-099-40-S	MAF0103- 007	2015/07/13	2017/07/12
LISN (1 phase)	R&S	ENV216	101243	2016/06/02	2017/06/02
LISN	R&S	ENV216	101262	2016/06/16	2017/06/16
Test Software	Audix	e3	Ver. 9	N/A	N/A
Test Software	Agilent	300328 testsystem	V1.9.1	N/A	N/A
Power sensor	Agilent	U2021XA	MY53480013	2016/03/11	2017/03/10

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2.4 Traceability

All measurement equipment calibrations are traceable to NML(Taiwan)/NIST(USA) or where calibration is performed outside Taiwan, to equivalent nationally recognized standards organizations.

2.5 Calibration

Equipment requiring calibration is calibrated periodically in a suitably accredited Calibration Lab. Additionally all equipment is verified for proper performance on a regular schedule using in house standards or comparisons.

2.6 Measurement Uncertainty

The estimated combined standard uncertainty for radiated emissions and conducted emissions measurements .

Table 3: Emission Measurement Uncertainty

Parameter	Uncertainty
Radio Frequency	± 1 x 10 ⁻⁷
RF power, conducted	± 1.5 dB
RF power density, conducted	± 3 dB
spurious emissions, conducted	± 3 dB
all emissions, radiated	± 6 dB
Temperature	± 1 °C
Humidity	±5%
DC and low frequency voltages	±3 %

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3. General Product Information

3.1 Product Function and Intended Use

The EUT is a Blood glucose monitoring system. It contains a Bluetooth BLE compatible module enabling the user to communicate data through a Wireless interface. For details refer to the User Guide, Data Sheet and Circuit Diagram.

3.2 System Details and Ratings

Table 4: Basic Information of EUT

Item	EUT information
Kind of Equipment/Test Item	Multi-Monitoring System
Type Identification	Refer to section 1.2
FCC ID	2AKJC-15RN014

Table 5: Technical Specification of EUT

Technical Specification	Value
Operating Frequencies	2402~2480 MHz
Channel Spacing	2 MHz
Channel number	40
Operation Voltage	3Vdc
Modulation	GFSK
Antenna gain	-6.2853 dBi



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3.3 Independent Operation Modes

Basic operation modes are:

- A. Transmitting
 - 1. Low channel
 - 2. Middle channel
 - 3. High channel
- B. Receiving
- C. Standby
- D. Off

3.4 Noise Generating and Noise Suppressing Parts

Refer to the Circuit Diagram.

3.5 Submitted Documents

- Circuit Diagram
- Instruction Manual
- Rating Label
- Technical Description



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4. Test Set-up and Operation Modes

4.1 Principle of Configuration Selection

The equipment under test (EUT) was configured to measure its maximum power level. The test modes were adapted accordingly in reference to the instructions for use.

4.2 Test Operation and Test Software

Setup for testing: Test samples contain a button which makes it possible to control the EUT through the button to set it to transmitting on set frequencies

This software was running on the laptop computer connected to the EUT. It was used to enable the operation modes listed in section 3.3 as appropriate.

The samples were used as follows:

Conducted: A000459432-001 Radiation: A000459432-002

Full test was applied on all test modes, but only worst case was shown

4.3 Special Accessories and Auxiliary Equipment

The product has been tested together with the following additional accessories:

N/A

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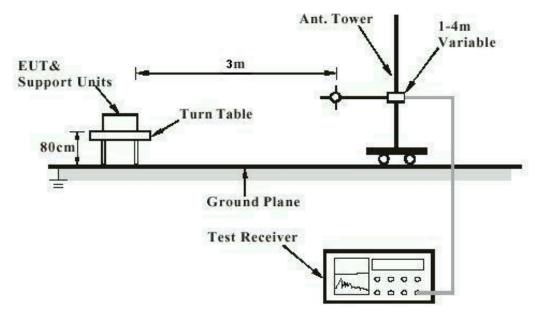
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4.4 Countermeasures to achieve EMC Compliance

The test sample which has been tested contained the noise suppression parts as described in the Constructional Data Form or the Technical Construction File. No additional measures were employed to achieve compliance.

4.5 Test Setup Diagram

Diagram of Measurement Configuration for Radiation Test



Note: Measurements above 1 GHz are done with a table height of 1.5m



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Diagram of Measurement Equipment Configuration for Mains Conduction Measurement (if applicable)

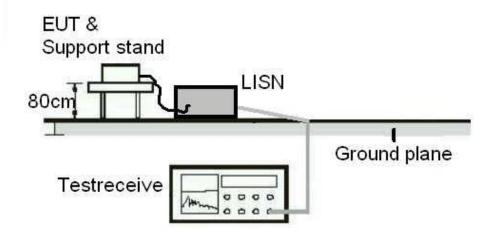
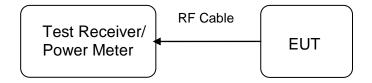


Diagram of Measurement Equipment Configuration for Conducted Transmitter Measurement





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5. Test Results

5.1 Transmitter Requirement & Test Suites

5.1.1 Antenna Requirement

RESULT: Passed

Test standard : LP0002(2016): 2.2, 3.10.1, (3)

FCC Part 15.247(b)(4), Part 15.203 and RSS-

Gen 8.3

Requirement : use of approved antennas only with directional gains that

do not exceed 6 dBi

According to the manufacturer declaration, the EUT has an antenna with a directional gain of -6.2853 dBi. The antenna is a printed PCB trace with no possibility of replacement with a non-approved antenna by the end-user. Therefore, the EUT is considered to comply with this provision.

Refer to EUT photo for details.



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5.1.2 Peak Output Power

RESULT: Passed

Test standard LP0002(2016): 3.10.1, (2)

FCC Part 15.247(b)(3), RSS-247 5.4(4)

Basic standard ANSI C63.10:2013, KDB558074

Limit 1 Watt

Kind of test site Shielded room

Test setup

Test Channel Low/ Middle/ High

Operation Mode

Ambient temperature : Relative humidity : Atmospheric pressure : 20-24 °C 50-65 % 100-103 kPa

Table 6: Test result of Peak Output Power

Channel	Channel Frequency	Output Power		Limit
	(MHz)	(dBm)	(W)	(W)
Low Channel	2402	5.607	0.0036	1
Middle Channel	2440	4.389	0.0027	1
High Channel	2480	4.317	0.0027	1

Pmax: 3.6 mW



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5.1.3 6dB Bandwidth and 99% Bandwidth

RESULT: Passed

Test standard : LP0002(2016): 3.10.1, (5)

FCC Part 15.247(a)(2), RSS-247 5.2(1)

RSS-Gen (Issue 4)

Basic standard : ANSI C63.10:2013, KDB558074

Kind of test site : Shielded room

Test setup

Test Channel : Low/ Middle/ High

Operation Mode : A

Ambient temperature : 20-24°C
Relative humidity : 50-65%
Atmospheric pressure : 100-103 kPa

Table 7: Test result of 6dB Bandwidth

Channel	Channel Frequency (MHz)	6dB Bandwidth (kHz)	Limit (kHz)	Result
Low Channel	2402	672.4	>500	Pass
Mid Channel	2440	671.2	>500	Pass
High Channel	2480	681.9	>500	Pass

Table 8: Test result of 99% Bandwidth,

Channel	Channel Frequency (MHz)	99% Bandwidth (kHz)
Mid Channel	2440	1054



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Test Plot of 6dB Bandwidth

Low Channel



Middle Channel





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High Channel





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5.1.4 Power Density

RESULT: Passed

Test standard LP0002(2016): 3.10.1, (6.2.2)

FCC Part 15.247(e), RSS-247 5.2(2)

Basic standard ANSI C63.10:2013, KDB558074

Kind of test site Shielded room

Test setup

Test Channel Low/ Middle/ High

Operation Mode

Ambient temperature 20-24°C Relative humidity 50-65% Atmospheric pressure 100-103 kPa

Table 9: Test result of Power Density

Channel	Channel Frequency	Power Density	Limit
	(MHz)	(dBm)	(dBm)
Low Channel	2402	-6.74	8
Middle Channel	2440	-7.84	8
High Channel	2480	-8.02	8



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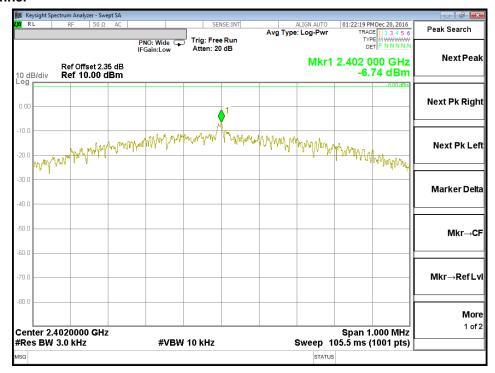
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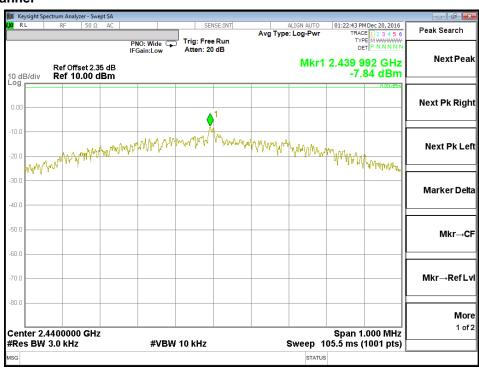
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Test Plot of Power Density

Low Channel



Middle Channel





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5.1.5 Conducted spurious emissions and Frequency Band Edge measured in 100kHz Bandwidth

RESULT: Passed

Test standard LP0002(2016): 3.10.1, (5)

FCC part 15.247(d), RSS-247 5.5

Basic standard ANSI C63.10:2013, KDB558074

Limit 20dB (below that in the 100kHz bandwidth within the

band that contains the highest level of the desired power)

Kind of test site Shielded room

Test setup

Test Channel Low/ High

Operation mode

Ambient temperature 20-24°C Relative humidity 50-65% Atmospheric pressure 100-103 kPa

All emissions are more than 20dB below fundamental, details refer to following test plot, and compliance is achieved as well.

Due to the small size of the product and that there are no inductive components of significant size, 9kHz to 30MHz frequency range is not tested based on technical judgment.



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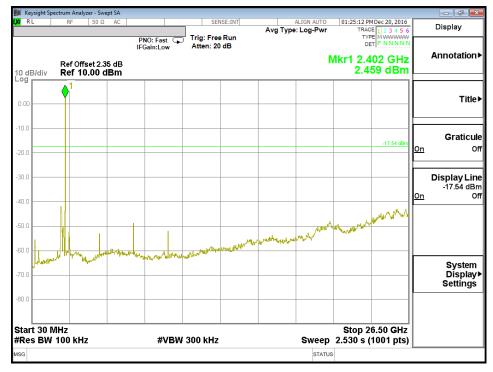
Prüfbericht - Nr.: 50068668 001

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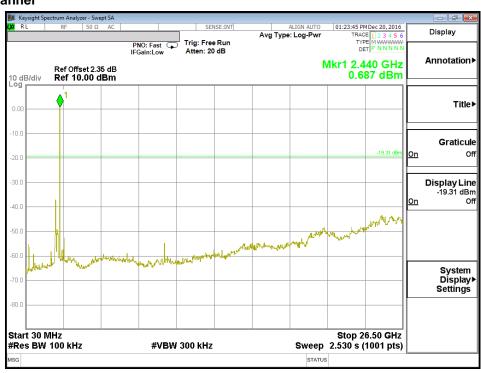
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Test Plot 100kHz Conducted Emissions

Low Channel



Middle Channel





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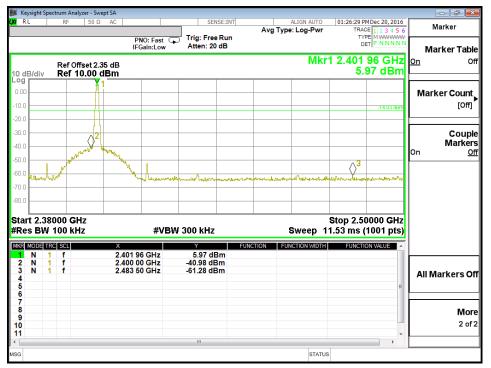
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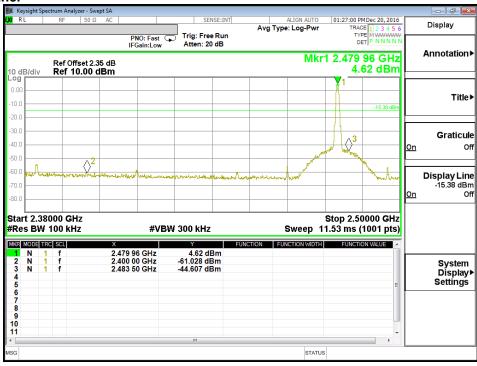
Test Plot 100kHz RBW of Band Edge

Low Channel

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High Channel





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5.1.6 Spurious Emission

RESULT: **Passed**

FCC part 15.247(d), FCC 15.205, FCC 15.209, RSS-210 Test standard

2.2, RSS-247 5.5 and RSS-Gen 8.9

LP0002(2016): 3.10.1, (5)

Basic standard ANSI C63.10: 2013

Limits Radiated emissions which fall in the restricted bands, as

defined in FCC 15.205(a) and RSS-Gen i4, 8.9 (Table 6), must comply with the radiated emission limits specified in FCC 15.209(a) and RSS-Gen i4, 8.9 (Table 4 and 5). Radiated emissions which fall in the restricted bands, as defined in LP0002(2016): 2.7, must comply with the radiated emission limits specified in LP0002(2016): 2.8 Emission radiated outside the specified frequency bands must comply with the radiated emission limits specified in FCC 15.209(a) and FCC 15.249(a), RSS-Gen i4, 8.9

(Table 4 and 5) and RSS-210 A2.9(a).

Emission radiated outside the specified frequency bands must comply with the radiated emission limits specified in

LP0002(2016): 2.8

3m Semi-Anechoic Chamber Kind of test site

Test setup

Low/ Middle/ High **Test Channel**

Operation mode A, B

Remark: Testing was carried out within frequency range 30MHz to the tenth harmonic.

For details refer to Appendix D.

Testing was carried out within frequency range 30MHz to the tenth harmonic. For details refer to Appendix D. The Radiated Emissions testing was performed in the X, Y and Z axis orientation. The worst-case Axis orientation is recorded in this test report. Due to the small size of the product and that there are no inductive components of significant size, 9kHz to 30MHz frequency range is not tested based on technical judgment.



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6. Safety Human exposure

6.1 Radio Frequency Exposure Compliance

6.1.1 Electromagnetic Fields

RESULT: Passed

Test standard : FCC KDB Publication 447498 D01 v06

RSS-102 issue 5, Table 1

FCC:

Since maximum peak output power of the transmitter is 3.6 mW < 10mW, hence the EUT is excluded from SAR evaluation according to FCC KDB publication 447498: Mobile Portable RF Exposure

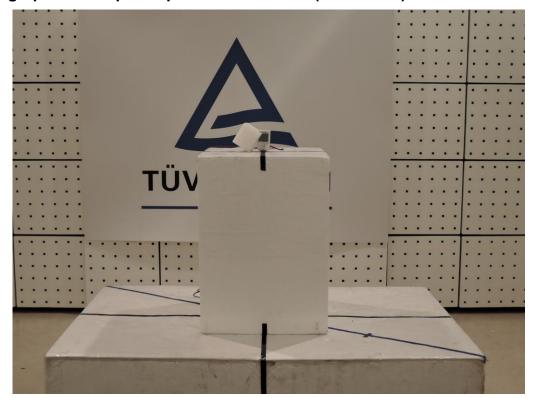


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7. Photographs of the Test Set-Up

Photograph 1: Set-up for Spurious Emissions (Front View)





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Photograph 2: Set-up for Spurious Emissions (Back View 1)

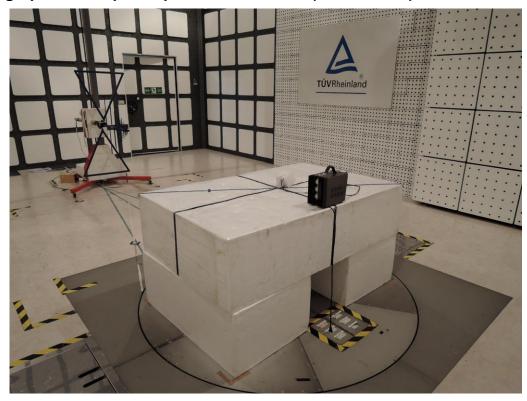


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Photograph 3: Set-up for Spurious Emissions (Back View 2)



Photograph 4: Set-up for Conducted testing





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