Prüfbericht-Nr.: *Test Report No.*:	**50144976 001**	**Auftrags-Nr.:** *Order No.*:	114074673	Seite 1 von 23 *Page 1 of 23*
Kunden-Referenz-Nr.: *Client Reference No.*:	N/A	**Auftragsdatum:** *Order date*:	April 16, 2018	
Auftraggeber: *Client*:	Miézo Inc. 16F., No.663, Bannan Rd., Zhonghe Dist., New Taipei City., Taiwan (R.O.C)			
Prüfgegenstand: *Test item*:	Qi Wireless Charging TX Module			
Bezeichnung / Typ-Nr.: *Identification / Type No.*:	QI-00E			
Auftrags-Inhalt: *Order content*:	FCC Part 15C			
Prüfgrundlage: *Test specification*:	FCC 47CFR Part 15: Subpart C Section 15.209			

Wareneingangsdatum: *Date of receipt*:	April 23,2018
Prüfmuster-Nr.: *Test sample No.*:	A00729996-001
Prüfzeitraum: *Testing period*:	26-Apr-2018 - 10-May-2018
Ort der Prüfung: *Place of testing*:	EMC Laboratory Taipei
Prüflaboratorium: *Testing laboratory*:	TUV Rheinland Taiwan Ltd.
Prüfergebnis*: *Test result**:	Pass

geprüft von / *tested by*:

Datum *Date*	**Name / Stellung** *Name / Position*	**Unterschrift** *Signature*
2018-05-21	Mars Y.J. Lin / Project Engineer	

kontrolliert von / *reviewed by*:

Datum *Date*	**Name / Stellung** *Name / Position*	**Unterschrift** *Signature*
2018-05-21	Arvin Hou / Vice General Manager	

Sonstiges / *Other*:

Zustand des Prüfgegenstandes bei Anlieferung: Prüfmuster vollständig und unbeschädigt
Condition of the test item at delivery: *Test item complete and undamaged*

* Legende:	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
Legend:	*1 = very good*	*2 = good*	*3 = satisfactory*	*4 = sufficient*	*5 = 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*

TEST SUMMARY

5.1.1 ANTENNA REQUIREMENT
RESULT: Passed

5.1.2 FIELD STRENGTH OF FUNDAMENTAL
RESULT: Passed

5.1.3 SPURIOUS EMISSION
RESULT: Passed

5.1.4 20DB BANDWIDTH
RESULT: Passed

5.2.1 CONDUCTED EMISSIONS LINE AND NEUTRAL
RESULT: Passed

Contents

1. General Remarks

1.1 Complementary Materials

All attachments are integral parts of this test report. This applies especially to the following appendix:

Appendix 1: Photo Documentation
(File Name: 50144976APPENDIX P)
Appendix D: Test Result of Radiated Emissions
(File Name: 50144976APPENDIX D)

Test Specifications
The following standards were applied (in bold: product standards, otherwise: basic standards).

Table 1: Applied Standard and Test Levels

Radio
FCC CFR47 Part 15: Subpart C Section 15. 209 ANSI C63.10:2013LP0002(2011)(100 年 6 月 28 日)

2. Test Sites

2.1 Test Facilities

TUV Rheinland Taiwan Ltd.

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 periods: 2013-Jul-1st to 2016-Jun-30th

Testing Laboratory
0759

2.2 List of Test and Measurement Instruments

Table 2: List of Test and Measurement Equipment

Kind of Equipment	Manu-facturer	Type	S/N	Last Calibration	Next Calibration
Test Software	Farad	EZ_EMC	Ver. TUV3A1	N/A	N/A
EMI Test Receiver	R&S	ESR 7	101549	2017/11/10	2018/11/10
Spectrum Analyzer	R&S	FSV 40	100921	2018/05/02	2019/05/01
Spectrum Analyzer	Agilent	N9010A	MY53470241	2018/05/23	2019/05/22
Preamplifier (30MHz -1GHz)	HP	8447F	2805A03335	2017/08/14	2018/08/14
Bilog Antenna	TESEQ	CBL6111D	29804	2017/08/18	2018/08/18
Loop Antenna	Schwarzbeck	FMZB 1513	1513-076	2017/06/14	2018/06/14
EMI Test Receiver	R&S	ESR 7	101549	2017/11/10	2018/11/10
Spectrum Analyzer	R&S	FSL3	101943	2015/09/07	2018/09/07
Temp. & Humid. Chamber	Giant Force	GCT-099-40-S	MAF0103-007	2017/03/09	2019/03/09
LISN (1 phase)	R&S	ENV216	101243	2017/06/18	2018/06/18
LISN	R&S	ENV216	101262	2017/06/22	2018/06/21

2.3 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.

2.4 Calibration

Equipment requiring calibration is calibrated periodically by the manufacturer or according to manufacturer's specifications. Additionally all equipment is verified for proper performance on a regular basics using in house standards or comparisons.

2.5 Measurement Uncertainty

The estimated combined standard uncertainty for radiated emissions and conducted emissions measurements are ±3dB.

Table 3: Emission Measurement Uncertainty

Parameter	Uncertainty
Radio Frequency	± 1 x 10^{-7}
RF power, conducted	± 1.5 dB
Adjacent channel power	± 3 dB
Radiated emission of transmitter, valid up to 26 GHz	± 6 dB
Radiated emission of receiver, valid up to 26 GHz	± 6 dB
Temperature	± 2 ºC
Humidity	± 10 %

3. General Product Information

3.1 Product Function and Intended Use

The EUT is an Electronic Article Surveillance System working in the 8 MHz Band. Additionally there is a metal detector that works at 125 kHz. In the Basic Configuration there is one TX Antenna with the TX module, and one RX Antenna with a DC feed module. This report relates to the 125 kHz portion of the device
For details refer to the User Guide, Data Sheet and Circuit Diagram.

3.2 Ratings and System Details

Table 4: Basic Information of EUT

Item	**EUT information**
Kind of Equipment	Qi Wireless Charging TX Module
Type Designation	QI-00E
Brand Name	Miézo
FCC ID	2APSG-QI-00E-1801

Table 5: Technical Specification of EUT

Item	Value
Operating Frequencies	112 ~ 205 kHz
Operation Voltage	5Vdc
Modulation	AM

3.3 Independent Operation Modes

Basic operation modes are:

A. Transmitting
   1. Fundamental Frequency near Middle of Band

3.4 Noise Generating and Noise Suppressing Parts

Refer to the Circuit Diagram.

3.5 Submitted Documents

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

4. Test Set-up and Operation Modes

4.1 Principle of Configuration Selection

The equipment under test (EUT) was configured to measure its maximum emission 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 are provided with a Data interface which makes it possible to control them through a test software installed on a notebook computer.

4.3 Special Accessories and Auxiliary Equipment

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

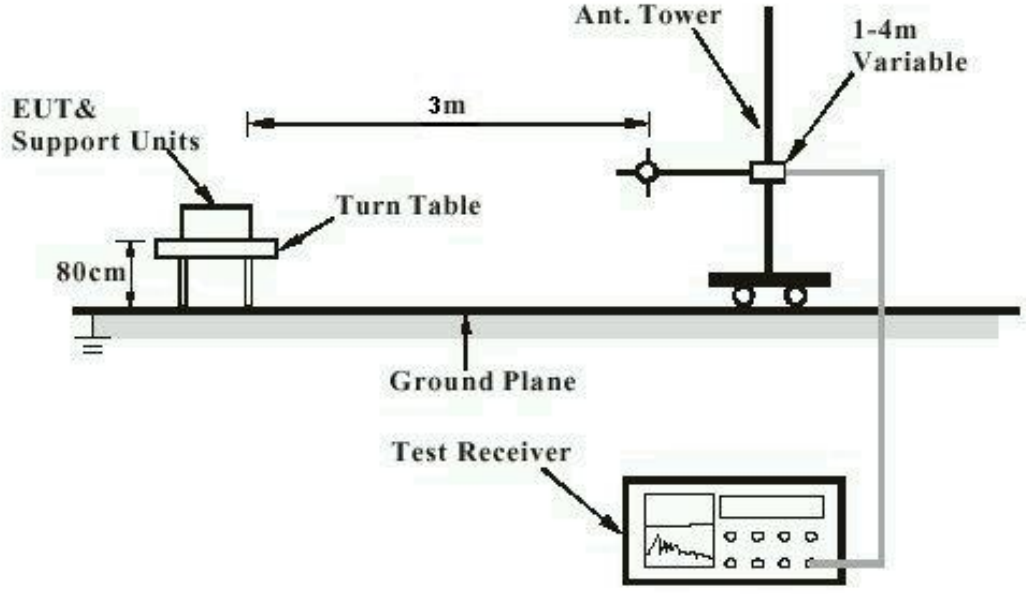
Kind of Equipment	Manufacturer	Model Name	S/N
Adapter	W&T	W&T-AD12J050200U	N/A

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.

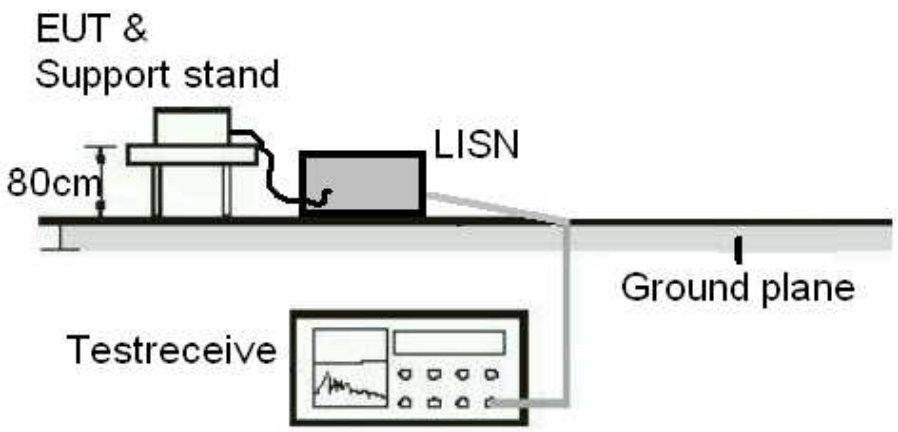
4.5 Test Setup Diagram

Diagram of Measurement Configuration for Radiation Test



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

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



5. Test Results

5.1 Transmitter Requirement & Test Suites

5.1.1 Antenna Requirement

RESULT: **Passed**

Standard	:	Part 15.203
Requirement	:	Manufacturer must

The antenna is a Chip Antenna soldered to the PCB 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.

5.1.2 Field strength of fundamental

RESULT: **Passed**

Test standard	:	FCC Part 15.209
Basic standard	:	ANSI C63.10:2013

Test setup

Test Channel		Fundamental Frequency near Middle of Band
Operation Mode	:	A
Atmospheric pressure	:	100-103 kPa

For details refer to Appendix D.

5.1.3 Spurious Emission

RESULT: **Passed**

Test standard	:	FCC part 15. 209
Basic standard	:	ANSI C63.10: 2013
Limits	:	Radiated emissions must comply with the radiated emission limits specified in FCC 15.209(a) AND 2.8
Kind of test site	:	3m Semi-Anechoic Chamber

Test setup

Test Channel	:	Fundamental Frequency near Middle of Band
Operation mode	:	A

Remark: 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.

5.1.4 20dB Bandwidth

RESULT: **Passed**

Test standard : FCC Part 15.209

Basic standard : ANSI C63.10:2013

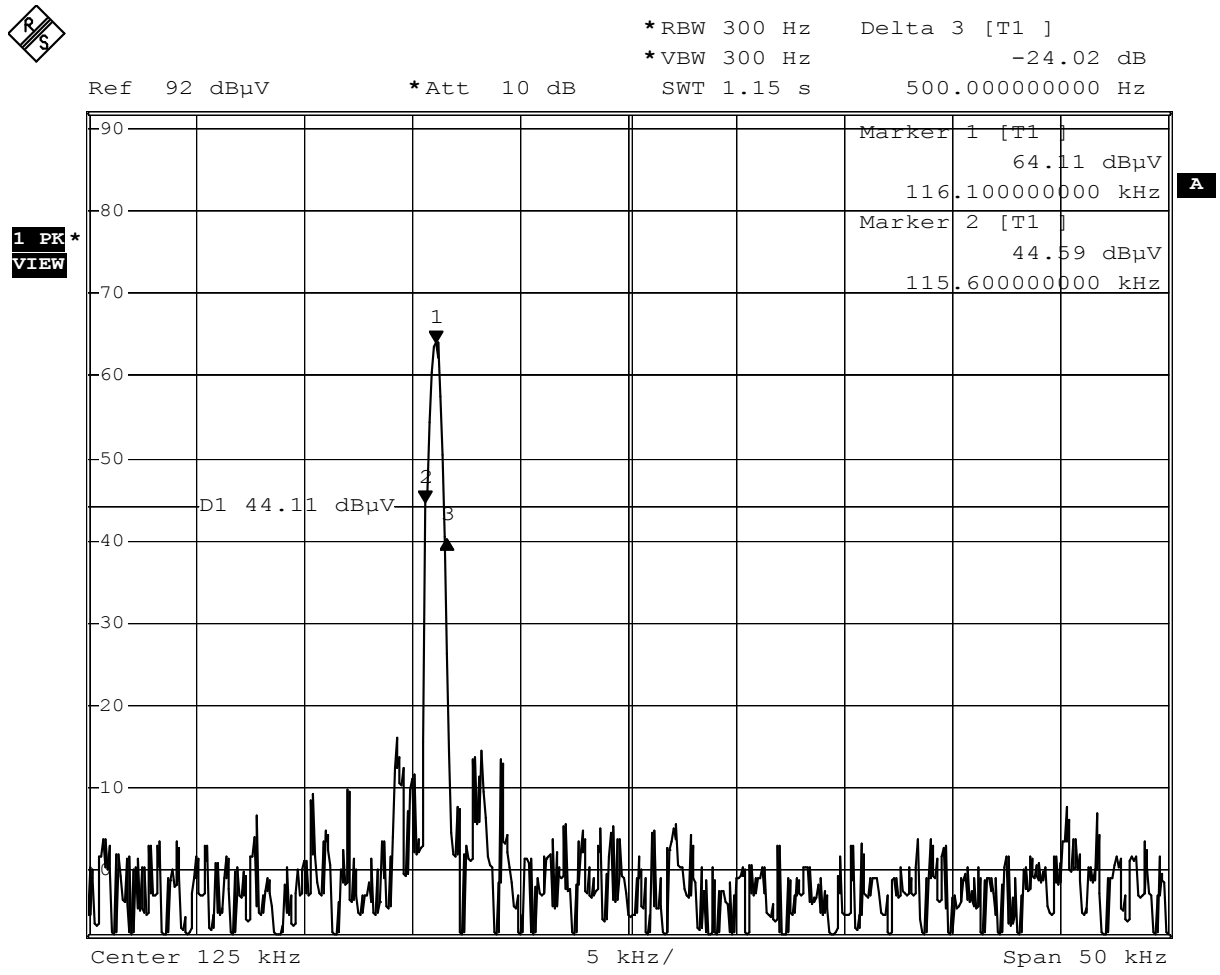
Test setup

Test Channel : Fundamental Frequency near Middle of Band
Operation Mode : A

Table 6: Test result of 20dB Bandwidth

Frequency (KHz)	20dB Bandwidth (Hz)
116	500

Test Plot of 20dB Bandwidth



Date: 23.MAY.2018 20:12:18

5.2 Mains Conducted Emissions

5.2.1 Conducted Emissions Line and Neutral

RESULT: **Passed**

Test standard	:	FCC Part 15.207 FCC Part 15.107
Limits	:	Mains Conducted emissions as defined in Part 15.107(a), must comply with the mains conducted emission.
Kind of test site	:	Shielded Room

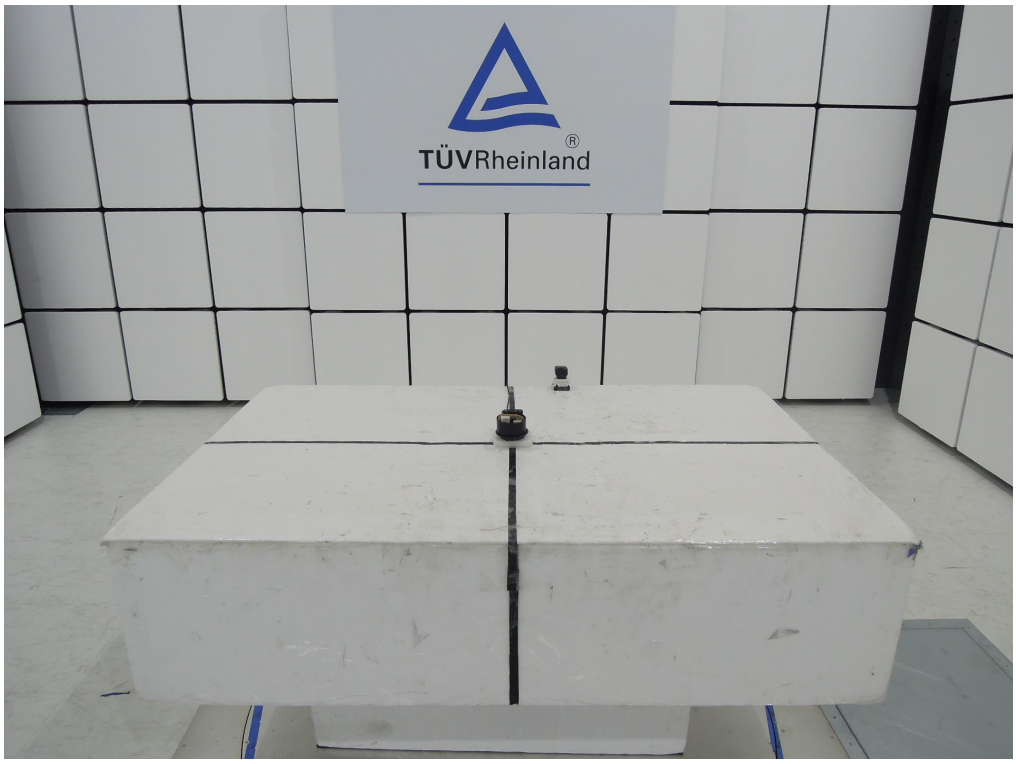
Test setup

Test Channel	:	Fundamental Frequency near Middle of Band
Operation mode	:	A

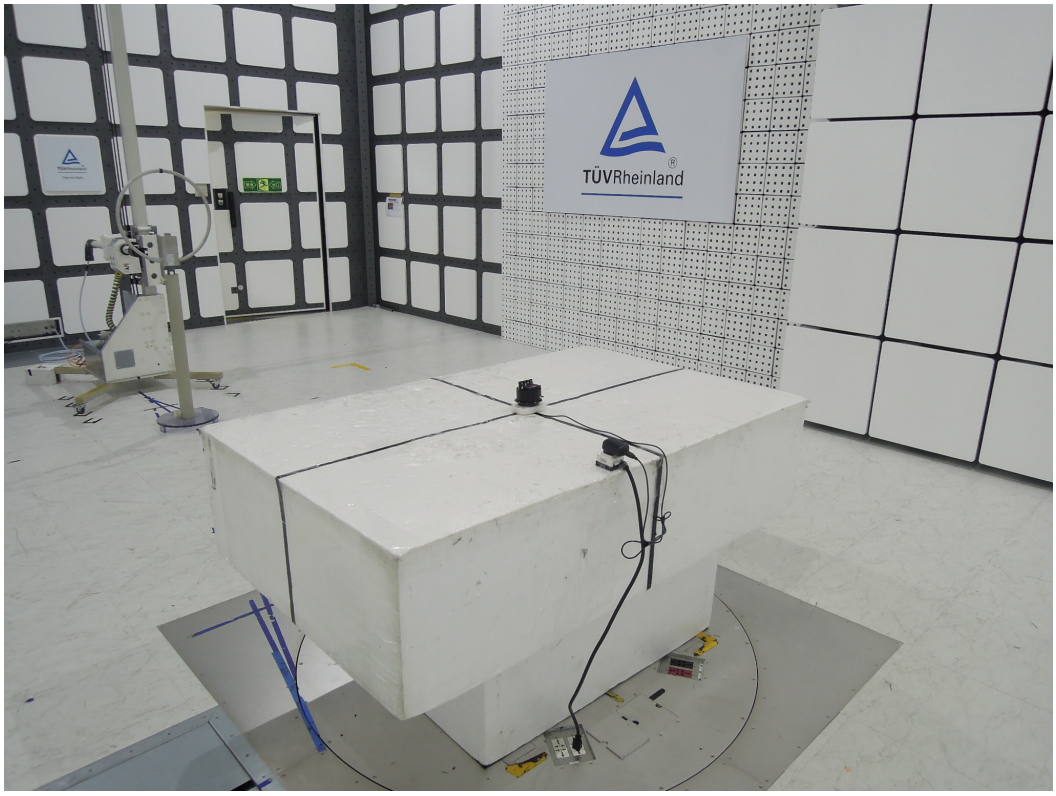
Remark: For details refer to Appendix D.

6. Photographs of the Test Set-Up

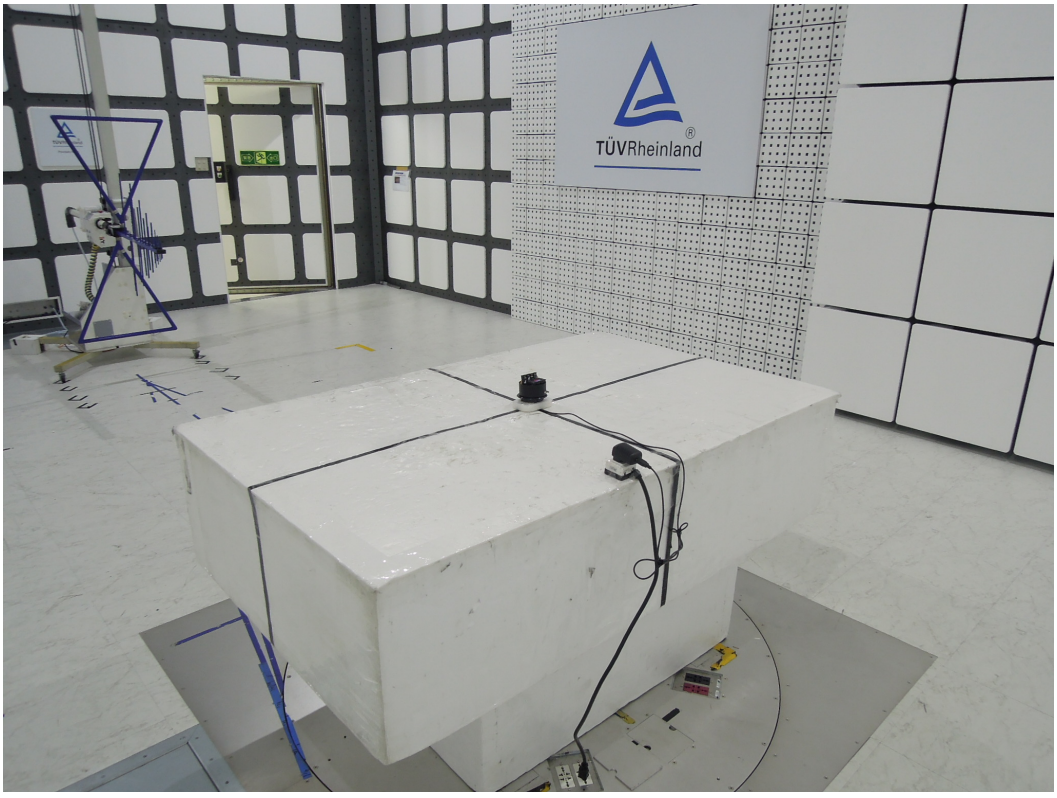
Photograph 1: Set-up for Spurious Emissions TX (Front View)



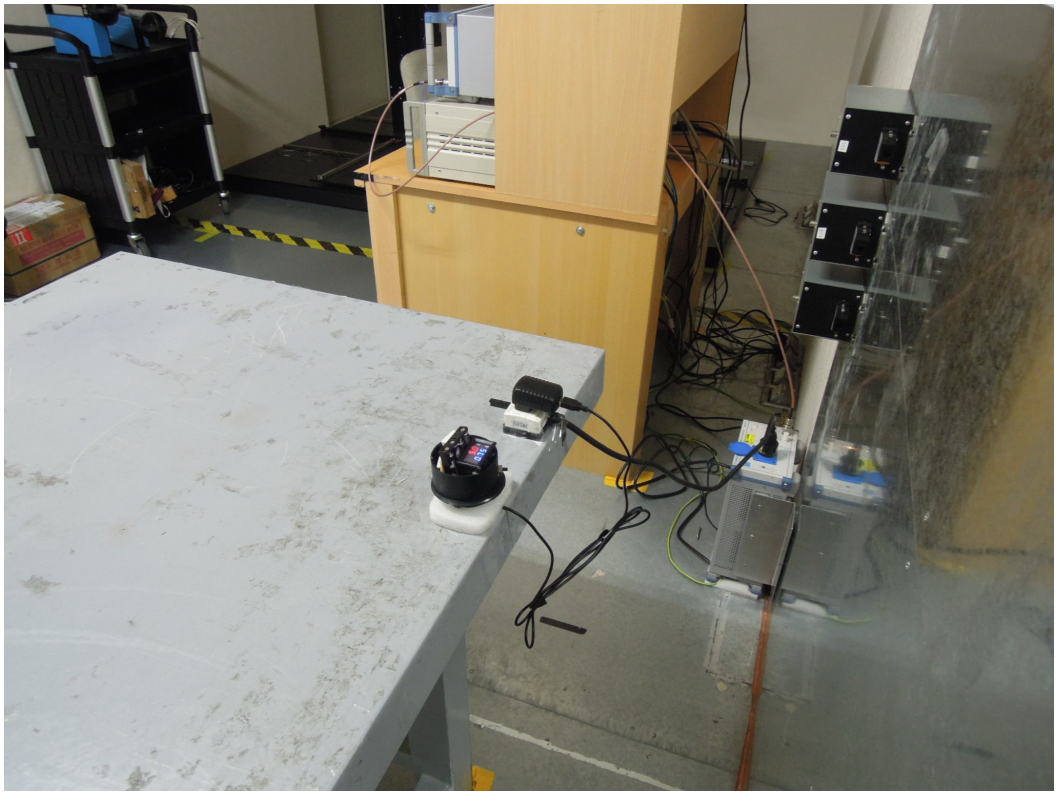
Photograph 2: Set-up for Spurious Emissions (Back View 1)



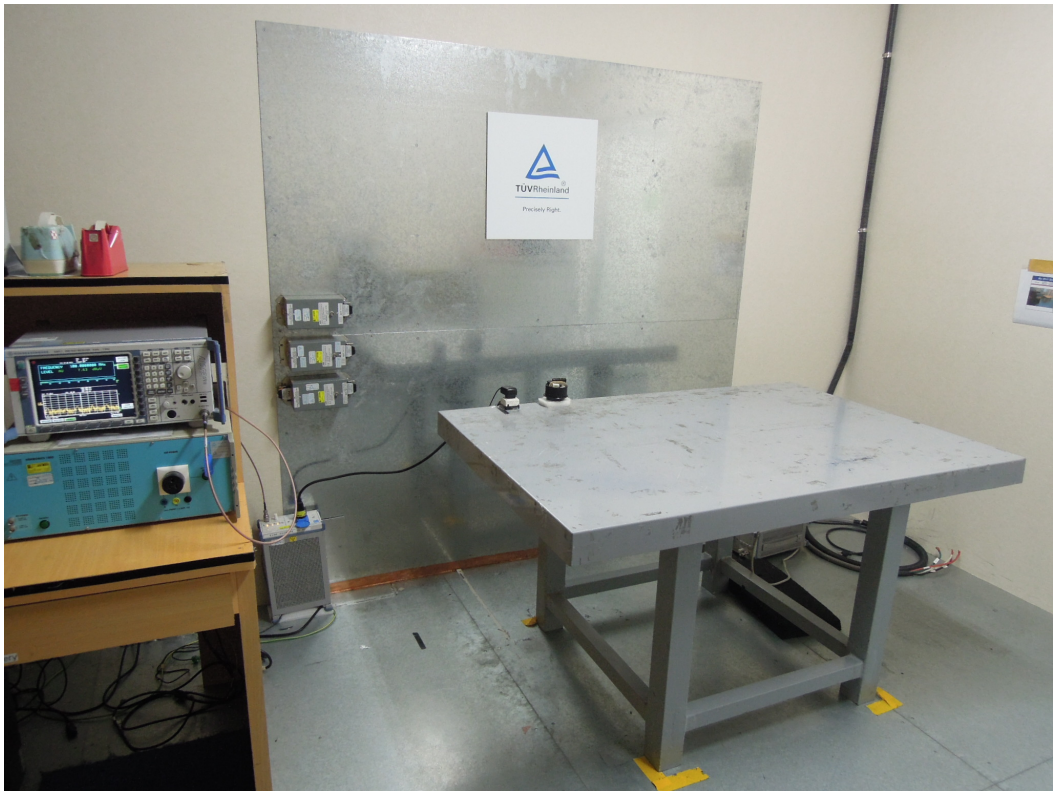
Photograph 3: Set-up for Spurious Emissions (Back View 2)



Photograph 4: Set-up for for Mains Conducted testing Back



Photograph 5: Set-up for for Mains Conducted testing Front



7. List of Tables

8. List of Photographs