Prüfbericht-Nr.: *Test Report No.*:	**10052224 001**	**Auftrags-Nr.:** *Order No.*:	114037412	Seite 1 von 21 *Page 1 of 21*
Kunden-Referenz-Nr.: *Client Reference No.*:	N/A	**Auftragsdatum:** *Order date*:	23-Jun-2015	
Auftraggeber: *Client*:	Wacom Taiwan Information Co., Ltd., 9F-1, No.237 Songjiang Rd.,Zhongshan Dist. Taipei 104, Taiwan			
Prüfgegenstand: *Test item*:	Dell Active Pen			
Bezeichnung / Typ-Nr.: *Identification / Type No.*:	PN556W			
Auftrags-Inhalt: *Order content*:	FCC Part 15C / IC RSS-210 Test report			
Prüfgrundlage: *Test specification*:	FCC 47CFR Part 15: Subpart C Section 15.209 RSS-210 (12-2010) 2.5.1			

Wareneingangsdatum: *Date of receipt*:	17-Jul-2015
Prüfmuster-Nr.: *Test sample No.*:	A000236633-002 A000236633-001
Prüfzeitraum: *Testing period*:	8-Jul-2015 - 29-Jul-2015
Ort der Prüfung: *Place of testing*:	EMC Laboratory Taipei
Prüflaboratorium: *Testing laboratory*:	TUV Rheinland Taiwan Ltd.
Prüfergebnis*: *Test result**:	Pass

geprüft von / *tested by*:

2015-08-12 Ryan W. T. Chen / Project Engineer

Datum *Date*	**Name / Stellung** *Name / Position*	**Unterschrift** *Signature*

kontrolliert von / *reviewed by*:

2015-08-12 Arvin Ho/Department Manager

Datum *Date*	**Name / Stellung** *Name / Position*	**Unterschrift** *Signature*

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 99% BANDWIDTH
RESULT: Passed

5.1.4 SPURIOUS EMISSION
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: 10052224APPENDIX P)
Appendix D: Test Result of Radiated Emissions
(File Name: 10052224APPENDIX 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 RSS-210 Issue 8, December 2010 RSS-Gen, Issue 4, November 2014 ANSI C63.10:2013 LP0002(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.: 365730
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	Manufacturer	Type	S/N	Last Calibration	Next Calibration
EMI Test Receiver	R&S	ESR7	101062	31-Aug-14	30-Aug-15
Bilog Antenna	TESEQ	CBL6111D	29802	4-Jul-14	3-Jul-16
Spectrum Analyzer	R&S	FSV 40	100921	17-Dec-14	16-Dec-15
Spectrum Analyzer	Agilent	N9010A	MY53470241	1-Apr-15	30-Mar-16
Horn Antenna	ETS-Lindgren	3117	138160	12-Jan-15	11-Jan-17
Horn Antenna (18GHz~40GHz)	COM-POWER	AH840	101031	30-Oct-13	29-Oct-15
Preamplifier (30MHz -1GHz)	HP	8447F	2805A03335	23-Aug-14	22-Aug-15
Preamplifier (18 GHz -40 GHz)	COM-POWER	PAM-840	461257	26-Aug-14	25-Aug-15
Pre-Amplifier (1GHz~18GHz)	EM Electronics	EM30180	60558	4-Nov-14	3-Nov-15
Loop Antenna	Schwarzbeck	FMZB 1513	1513-076	22-Oct-14	21-Oct-15
EMI Test Receiver	R&S	ESCI7	100797	28-Dec-14	27-Dec-15
Spectrum Analyzer	R&S	FSL3	101943	14-Sep-14	13-Sep-15

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 a Touch pen. It contains a 1.8MHz and Bluetooth Low Energy RF source enabling the user to control a Writing Pad.
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	Touch Pen
Type Designation	PN556W
Brand Name	DELL
FCC ID	HV4PN556W
Canada ID	6888A-PN556W
Canada HVIN	PN556W

Table 5: Technical Specification of EUT

Item	Value
Operating Frequencies	1.8MHz
Channel number	1
Operation Voltage	3V
Modulation	ASK

3.3 Independent Operation Modes

Basic operation modes are:

A. Transmitting
   1. Low channel
   2. Middle channel
   3. High channel

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

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 Modified firmware which makes it possible to tramsmission continuity when power on the device.

4.3 Special Accessories and Auxiliary Equipment

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

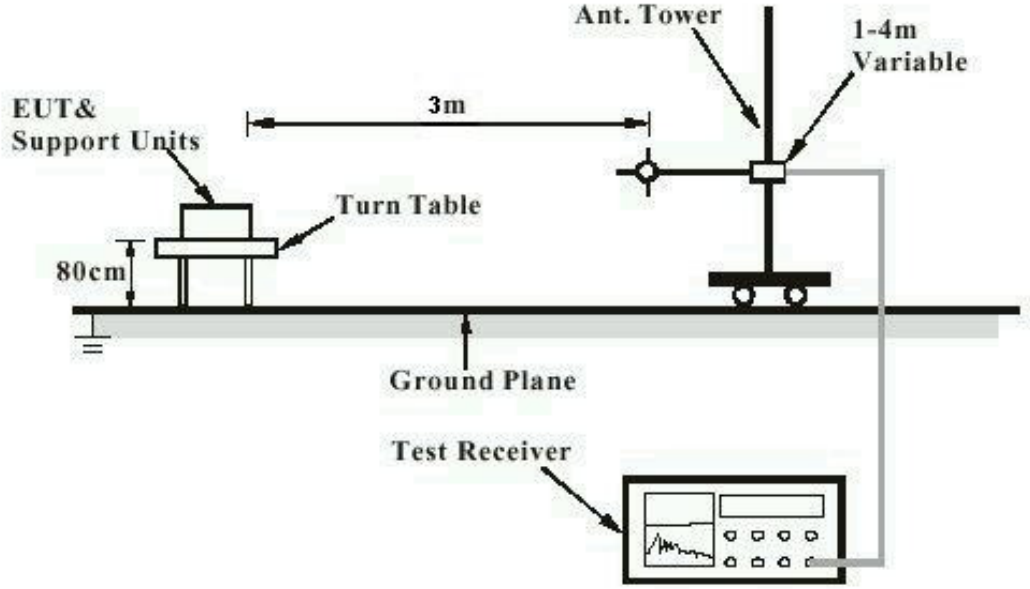
Kind of Equipment	Manufacturer	S/N
Laptop	HP	CNF0339QBM

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.

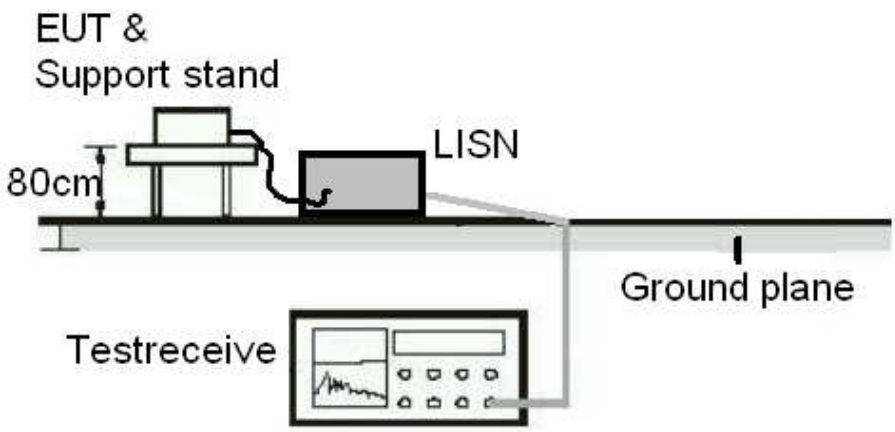
4.5 Test Setup Diagram

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	:	LP0002(2011): 2.2 Part 15.203 and RSS-Gen 7.1.4
Requirement	:	Manufacturer must

The antenna is is connected through a proprietary connector 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 RSS-210 (12-2010) 2.5.1 LP0002(2011) 3.3.1
Basic standard	:	ANSI C63.10:2013

Test setup

Test Channel		Middle
Operation Mode	:	A
Atmospheric pressure	:	100-103 kPa

The Field Strength generated by this device is extremely low. At a measurement distance of 3m the measured signal is below the noise floor of the test equipment.

Thus the device was measure positioned in the center of the loop antenna.

For detailed test results please refer to Appendix D.

5.1.3 99% Bandwidth

RESULT: **Passed**

Test standard : RSS Gen
Basic standard :

Test setup

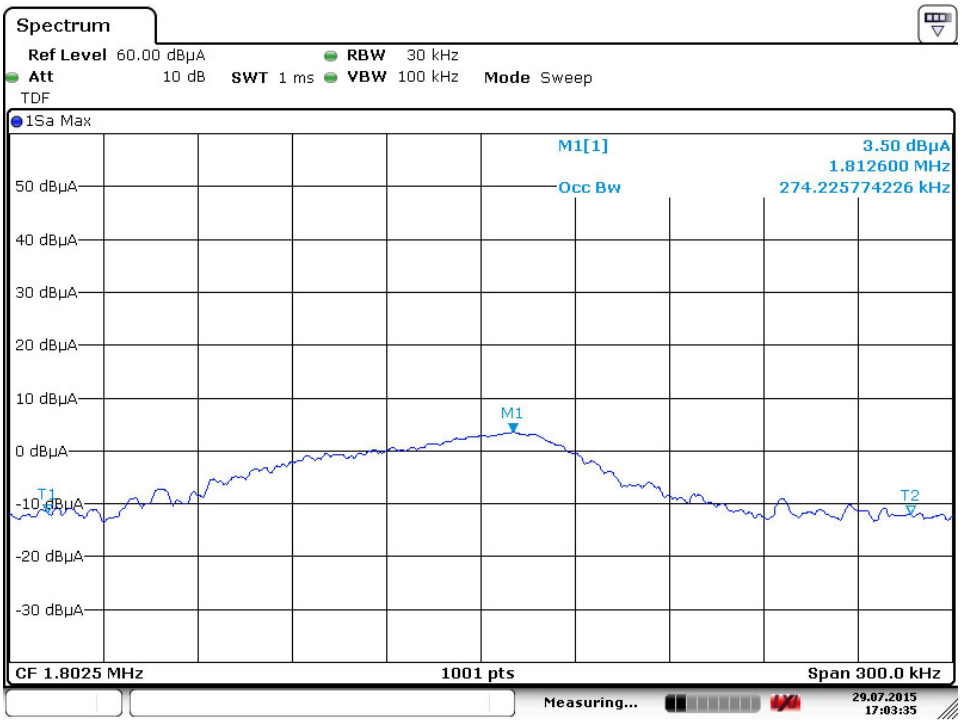
Test Channel : Middle(99% OBW)
Operation Mode : A

Atmospheric pressure : 100-103 kPa

Table 6: Test result of 99% Bandwidth

Frequency	99% Bandwidth
1.8 MHz	274 kHz

Test Plot of 99% BW



Date: 29.JUL.2015 17:03:35

5.1.4 Spurious Emission

RESULT: **Passed**

Test standard	:	FCC part 15. 209 RSS-Gen LP0002(2011) 2.8
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	:	Middle
Operation mode	:	A

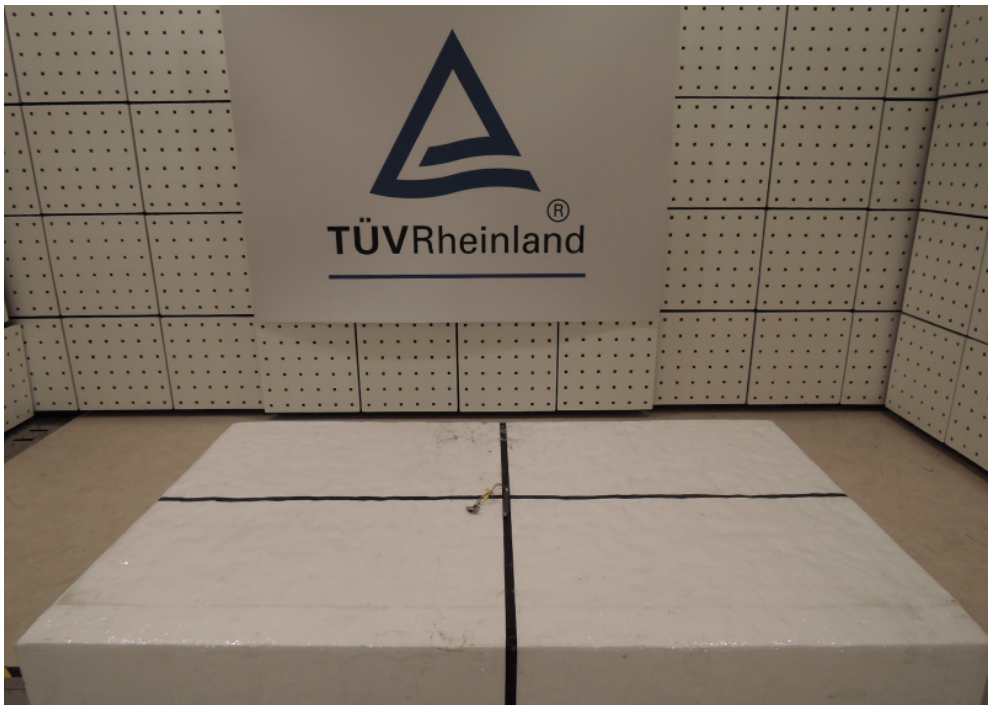
Remark: Testing was carried out within frequency range 30MHz to the tenth harmonic.

For details refer to Appendix D.

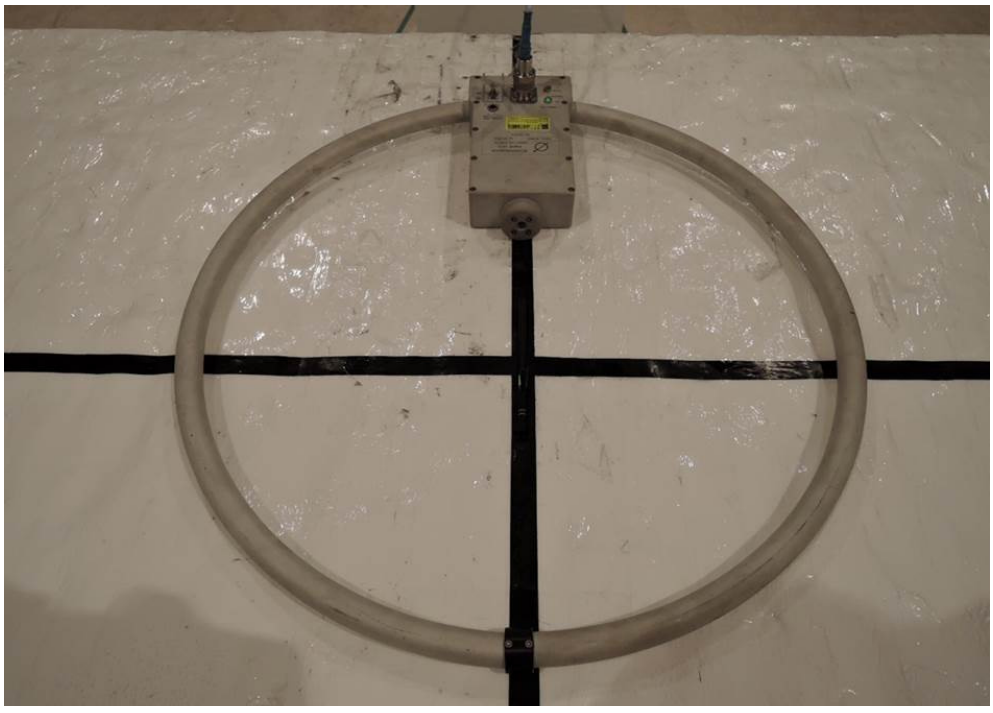
The Radiated Emissions testing was performed in the X, Y and Z axis orientation. The worst-case Axis orientation is recorded in this test report.

6. Photographs of the Test Set-Up

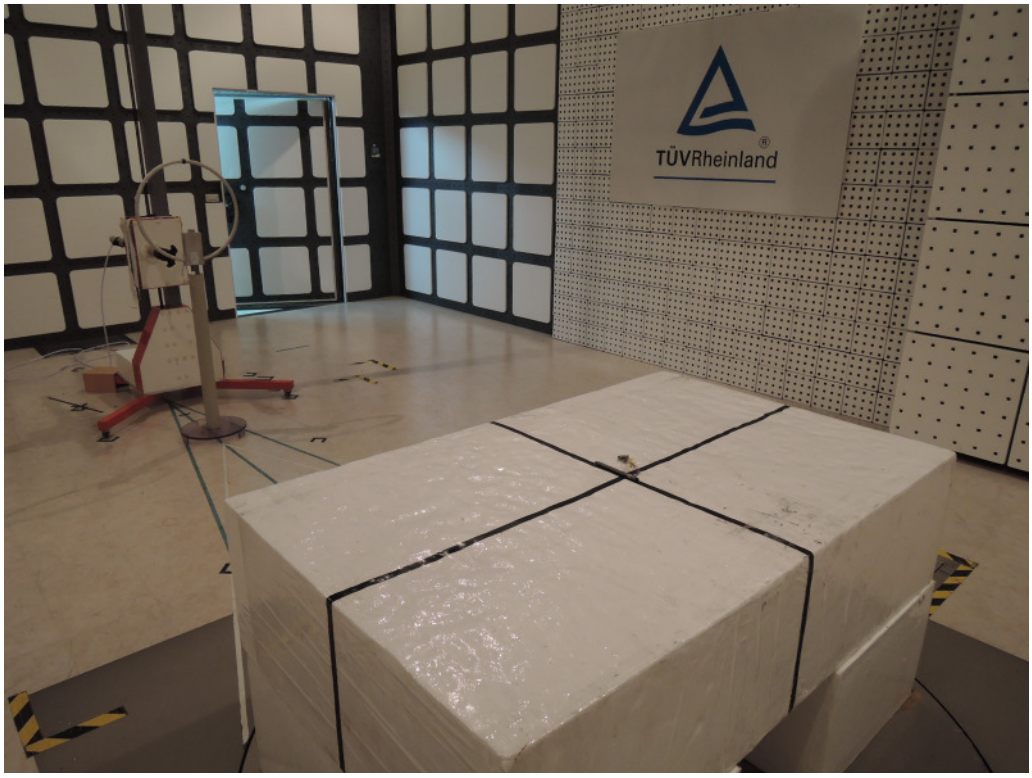
Photograph 1: Set-up for Spurious Emissions TX (Front View)



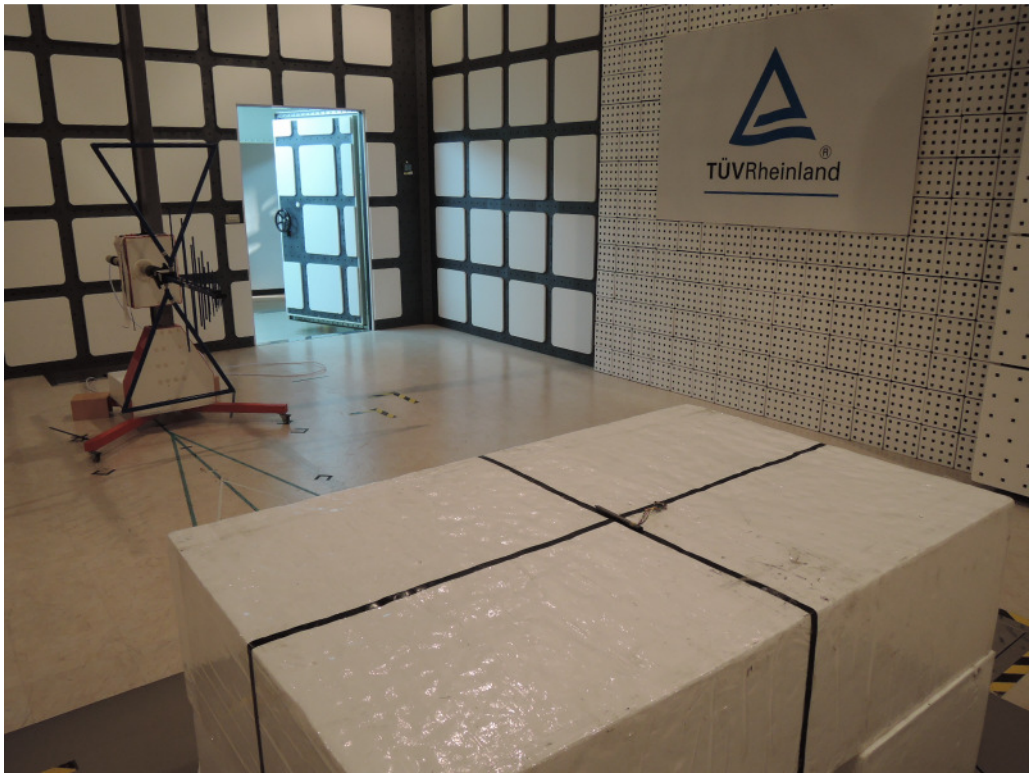
Photograph 2: Set-up for Fundamental Emissions TX (Front View)



Photograph 3: Set-up for Spurious Emissions (Back View 1)



Photograph 4: Set-up for Spurious Emissions (Back View 2)



7. List of Tables

8. List of Photographs