Prüfbericht-Nr.: *Test Report No.*:	**50238183 001**	**Auftrags-Nr.:** *Order No.*:	238101198	Seite 1 von 25 *Page 1 of 25*
Kunden-Referenz-Nr.: *Client Reference No.*:	N/A	**Auftragsdatum:** *Order date*:	23-Jan-2019	
Auftraggeber: *Client*:	HiTi Digital, Inc., 9F., No. 225, Sec. 3, Beixin Rd.TW-23143 Xindian Dist., New Taipei City Taiwan,			
Prüfgegenstand: *Test item*:	PHOTO PRINTER			
Bezeichnung / Typ-Nr.: *Identification / Type No.*:	P52XXX(X:A~Z;a~z;0~9 or blank for marketing purpose)			
Auftrags-Inhalt: *Order content*:	FCC Part 15C Test report			
Prüfgrundlage: *Test specification*:	FCC 47CFR Part 15: Subpart C Section 15.225			

Wareneingangsdatum: *Date of receipt*:	25-Feb-2019
Prüfmuster-Nr.: *Test sample No.*:	A000879089-001
Prüfzeitraum: *Testing period*:	12-Mar-2019 - 22-Mar-2019
Ort der Prüfung: *Place of testing*:	EMC/RF Laboratory Taipei
Prüflaboratorium: *Testing laboratory*:	TUV Rheinland Taiwan Ltd.
Prüfergebnis*: *Test result**:	Pass

geprüft von / *tested by*:

17-Apr-2019 Mars Y.J. Lin/Project Engineer

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

kontrolliert von / *reviewed by*:

17-Apr-2019 Arvin Ho/Vice General Manager

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

Sonstiges / *Other*:
There are two different lengths of the connection cable between the RFID module and the Coil Antenna has been evaluated in this report and recorded the worst case.

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 FREQUENCY STABILITY
RESULT: Passed

5.1.4 99% BANDWIDTH AND 20DB BANDWIDTH
RESULT: Passed

5.1.5 SPURIOUS EMISSION
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 P: Photo Documentation
(File Name: 50238183APPENDIX P)
Appendix D: Test Result of Radiated Emissions
(File Name: 50238183APPENDIX 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 15.225 ANSI C63.10:2013

1.2 Decision Rule of conformity

The decision rule of conformity of this test report is following the requirements of the requested standard in the quotation, and agreed among testing laboratory and manufacturer (applicant) to exclude the consideration of Measurement Uncertainty, unless it is required by the specific standard

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.: 340738
IC Canada Registration No.: 9465A-1
TAF Accredited NCC Test Lab. No.:0759
TAF ISO17025 Certification effective periods: 2016-Jul-1st to 2019-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	2018/11/12	2019/11/10
Spectrum Analyzer	R&S	FSV 40	100921	2018/05/02	2019/05/02
Preamplifier (30MHz -1GHz)	Hewlett Packard	8447D	2944A06641	2018/08/31	2019/08/31
Preamplifier (18 GHz -40 GHz)	EMC Instruments	EMC184045SE	980408	2018/06/08	2019/06/08
Pre-Amplifier (1GHz~18GHz)	EM Electronics	EM01G18G	60649	2018/08/24	2019/08/24
Bilog Antenna	TESEQ	CBL6111D	29804	2018/07/02	2019/07/02
Horn Antenna	ETS-Lindgren	3117	138160	2018/06/01	2019/06/01
Horn Antenna (18GHz~40GHz)	COM-POWER	AH-840	101029	2018/12/22	2019/12/22
Loop Antenna	Schwarzbeck	FMZB 1513	1513-076	2018/06/14	2019/06/13
EMI Test Receiver	R&S	ESR 7	101549	2018/11/12	2019/11/10
LISN (1 phase)	R&S	ENV216	101243	2018/06/18	2019/06/17
LISN	R&S	ENV216	101262	2018/06/22	2019/06/21
Spectrum Analyzer	Agilent	N9010A	MY53470241	2018/06/04	2019/06/03

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
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 Photo printer system, operating on 13.56 MHz. The scope of this test report is the 13.56 MHz inductive reader interfaces.
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/Test Item	PHOTO PRINTER
Type Identification	P52XXX(X:A~Z;a~z;0~9 or blank for marketing purpose)
Brand Name	HiTi
FCC ID	W5388D2935000T

Table 5: Technical Specification of EUT

Technical Specification	Value
Operating Frequency	13.56 MHz
Operation Voltage	110-240VAC tested at 110V
Modulation	ASK
Antenna Type	Printed PCB Coil

3.3 Independent Operation Modes

Basic operation modes are:
A. Transmitting

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: The EUT has a modified FW which makes it possible to read data from the RFID reader. The RFID reader is permanently on.

4.3 Special Accessories and Auxiliary Equipment

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

Description	Manufacturer	Model No.	Serial No.
Notebook(EMC-06)	Lenovo	TP00048A	PB-0F8B2

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

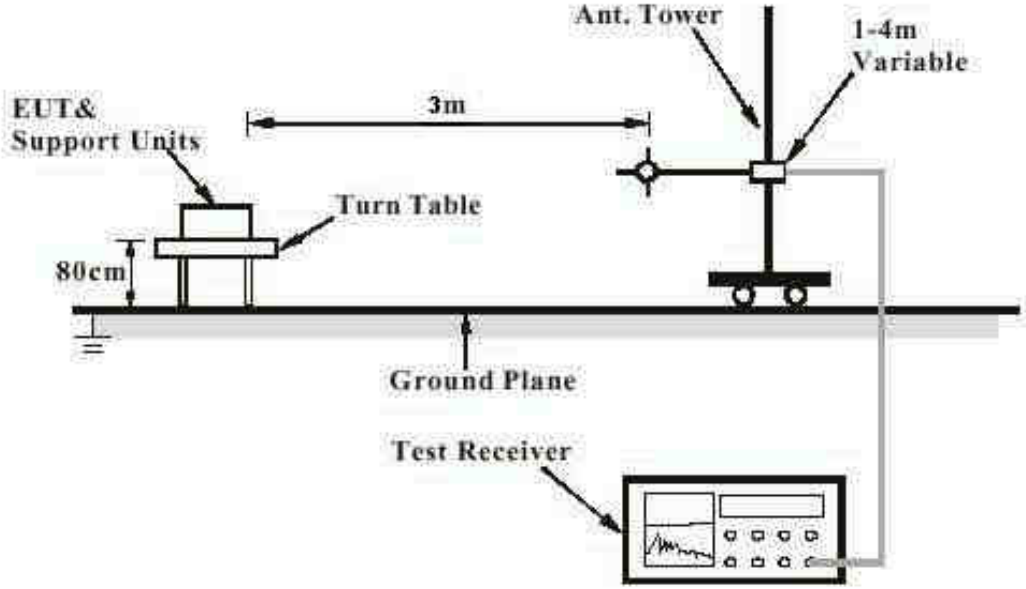
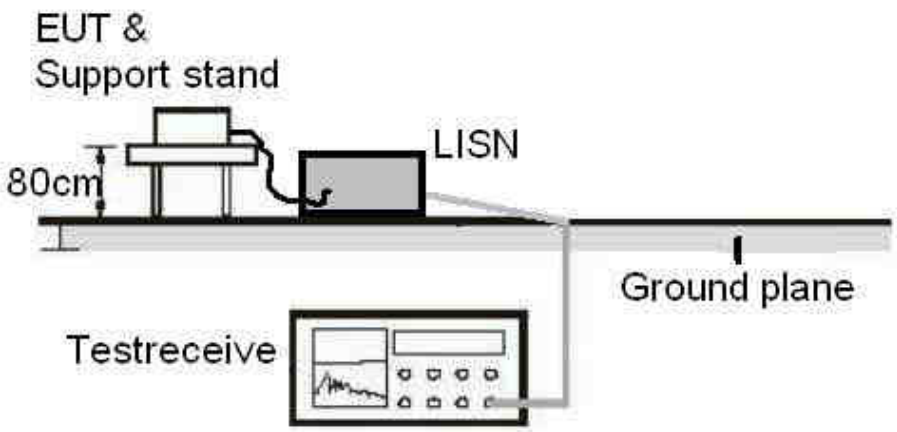


Diagram of Measurement Equipment Configuration for Mains Conduction Measurement (if applicable)



5. Test Results

5.1 Transmitter Requirement & Test Suites

5.1.1 Antenna Requirement

RESULT: **Passed**

Standard	:	Part 15.203
Requirement	:	use of approved antennas only

The antenna is connected with a proprietory 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. 225

Basic standard : ANSI C63.10:2013

Test setup

Test Frequency : 13.56 MHz
Operation Mode : A

Ambient temperature : see Appendix D
Relative humidity : see Appendix D
Atmospheric pressure : see Appendix D

The Emission Mask for NCC LP0002 is more strict than the emission mask for FCC Part 15.225 and RSS-210 B.6. The device can fulfil the NCC LP0002 requirements, therefore only the emission mask for NCC LP0002 is shown in the table below.

Table 6: Test result of Field strength of fundamental and modulation sidebands

Frequency (MHz)	Test Result	Detector	Limits (QP)		Pass/Fail
	dBµV/m @3m		dBµV/m@3m	dBµV/m@30m	
< 13.553	31.8	QP	69.54	29.54	Pass
13.56	43.75	PK	124	84	Pass
> 13.567	31.74	QP	69.54	29.54	Pass

For details refer to Appendix D.

5.1.3 Frequency Stability

RESULT: **Passed**

Test standard	:	FCC Part 15. 225(e)
Basic standard	:	ANSI C63.10:2013
Kind of test site	:	Shielded room

Test setup

Test Frequency	:	13.56 MHz
Operation Mode	:	A
Ambient temperature	:	N/A
Relative humidity	:	50-65 %
Atmospheric pressure	:	100-103 kPa

Table 7: Test result of Frequency Stability

Fundamental frequency (MHz)	Temperature (°C)	Voltage	Measurement frequency (MHz)	Frequency Error (ppm)	Limit ±0.01%
13.56	-20	Normal	13.559840	-11.80	±100ppm
	-10	Normal	13.559830	-12.54	
	0	Normal	13.559810	-14.01	
	10	Normal	13.559790	-15.49	
	20	85%	13.559781	-16.15	
	20	Normal	13.559780	-16.22	
	20	115%	13.559780	-16.22	
	30	Normal	13.559810	-14.01	
	40	Normal	13.559790	-15.49	
	50	Normal	13.559780	-16.22	

5.1.4 99% Bandwidth and 20dB Bandwidth

RESULT: **Passed**

Test standard	:	For reference only
Basic standard	:	ANSI C63.10:2013, KDB558074
Kind of test site	:	Shielded room

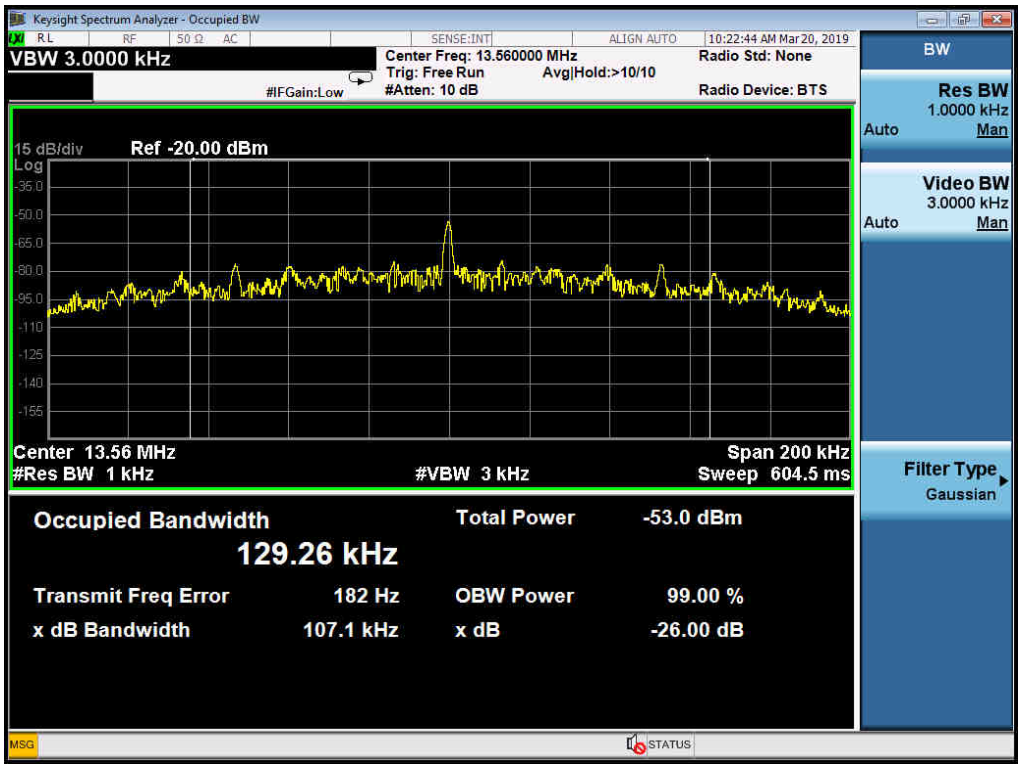
Test setup

Operation Mode	:	A
Ambient temperature	:	22-26 °C
Relative humidity	:	50-65 %
Atmospheric pressure	:	100-103 kPa

Table 8: Test result of 99% Bandwidth/20dB Bandwidth

Channel	Frequency (MHz)	99% Bandwidth (kHz)	20dB Bandwidth (kHz)
1	13.56	129.26	122

Test Plot of 99% Bandwidth



Test Plot of 20B Bandwidth

5.1.5 Spurious Emission

RESULT: **Passed**

Test standard	:	FCC part 15.209 FCC part 15.225
Basic standard	:	ANSI C63.10:2013
Limits	:	The field strength of any emissions appearing outside of the 13.110–14.010 MHz band shall not exceed the general radiated emission limits in § 15.209.
Kind of test site	:	3m Semi-Anechoic Chamber

Test setup

Operation mode	:	A
Ambient temperature	:	see Appendix D
Relative humidity	:	see Appendix D
Atmospheric pressure	:	see Appendix D

Remark: Testing was carried out within frequency range 9kHz 30MHz to the tenth harmonic.

For details refer to Appendix D.

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 above test standards must comply with the mains conducted emission limits specified
Kind of test site	:	Shielded Room

Test setup

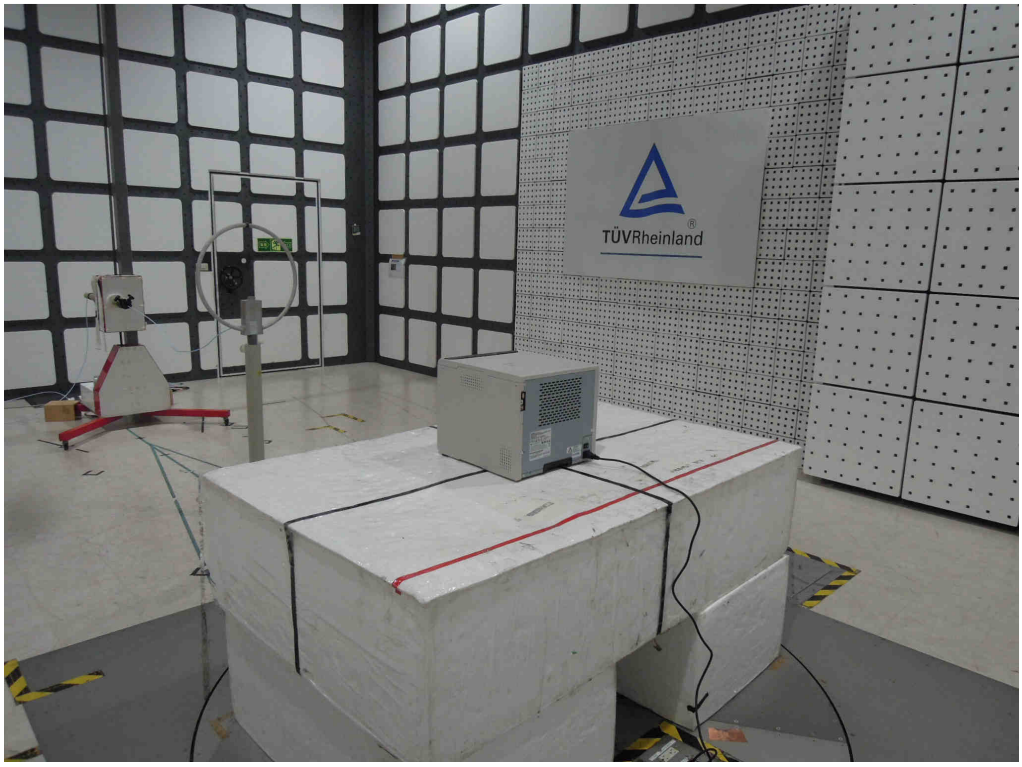
Operation mode	:	A

Remark: For details refer to Appendix D.

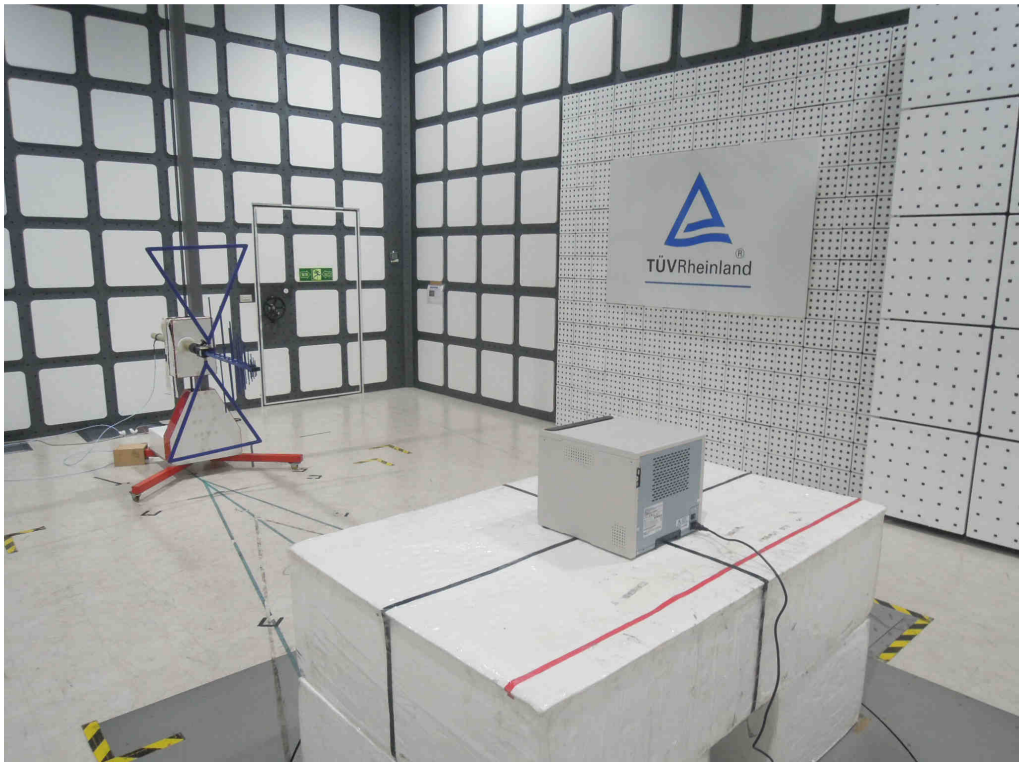
6. Photographs of the Test Set-Up

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

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

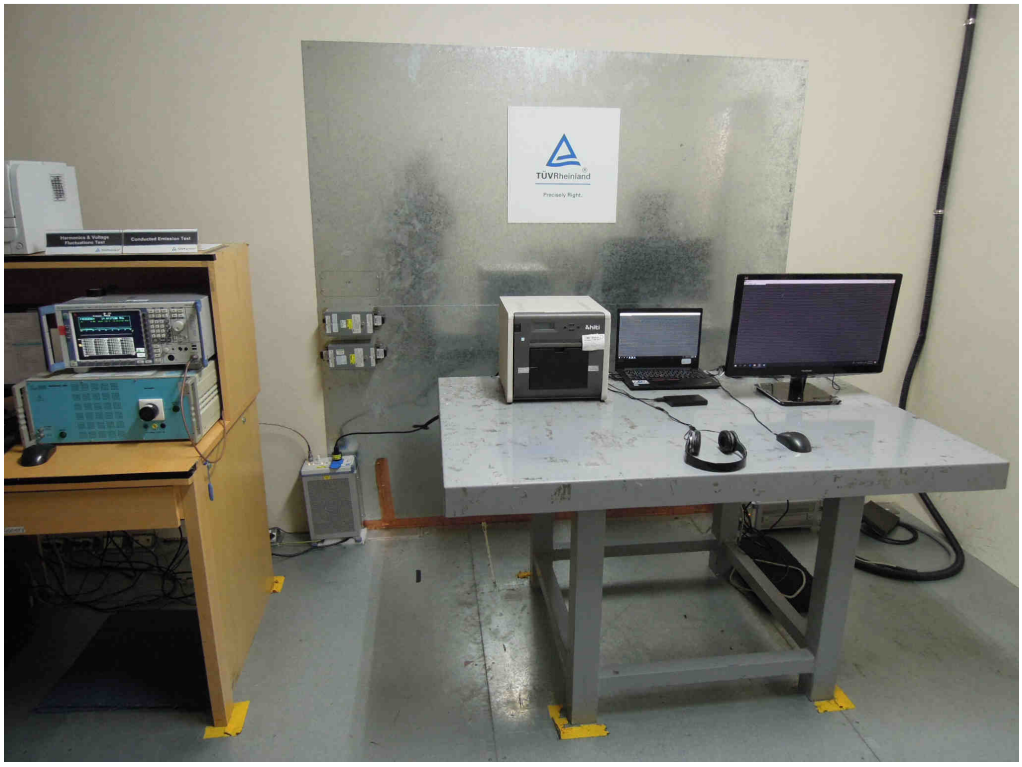


Photograph 3: Set-up for Radiated Emissions (Back View)



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