



**SGS-CSTC Standards Technical Services Co., Ltd.
Shenzhen Branch**

No. 1 Workshop, M-10, Middle section, Science & Technology Park,
Shenzhen, Guangdong, China 518057

Telephone: +86 (0) 755 2601 2053
Fax: +86 (0) 755 2671 0594
Email: ee.shenzhen@sgs.com

Report No.: SZEM171201264901
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TEST REPORT

Application No.: SZEM1712012649IT
Applicant: Delux Technology Company Limited
Address of Applicant: 16th Floor, 1# Building, Delux Industrial Park, No.5 Guanyi street, Guanlan High-tech Park, Longhua District, 518110, Shenzhen, China
Manufacturer: WUHU DELUX MOBILE INTERNET DEVICE CO., LTD.
Address of Manufacturer: WUHU MACHINERY INDUSTRIAL PARK, ANHUI, CHINA
Factory: WUHU DELUX MOBILE INTERNET DEVICE CO., LTD.
Address of Factory: WUHU MACHINERY INDUSTRIAL PARK, ANHUI, CHINA
Equipment Under Test (EUT):
EUT Name: Designer
Model No.: T11
Trade mark: DELUX
Standard(s) : EN 55032:2015
EN 55024:2010 +A1:2015
Date of Receipt: 2017-12-20
Date of Test: 2017-12-20 to 2018-02-06
Date of Issue: 2018-02-07

Test Result:	Pass*
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* In the configuration tested, the EUT complied with the standards specified above.

The CE mark as shown below can be used, under the responsibility of the manufacturer, after completion of an EU Declaration of Conformity and compliance with all relevant EU Directives.



Keny Xu



EMC Laboratory Manager



The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of SGS International Electrical Approvals or testing done by SGS International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by SGS International Electrical Approvals in writing.

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<i>Revision Record</i>				
<i>Version</i>	<i>Chapter</i>	<i>Date</i>	<i>Modifier</i>	<i>Remark</i>
01		2018-02-07		Original

Authorized for issue by:			
			
		<hr/> Foray Chen /Project Engineer	
			
		<hr/> Eric Fu /Reviewer	

2 Test Summary

Emission Part				
Item	Standard	Method	Requirement	Result
Radiated Emissions (30MHz-1GHz)	EN 55032:2015	EN 55032:2015	Class B	Pass

Immunity Part				
Item	Standard	Method	Requirement	Result
Electrostatic Discharge	EN 55024:2010 +A1:2015	EN 61000-4-2:2009	4kV Contact Discharge 8kV Air Discharge	Pass
Radiated Immunity (80MHz-1GHz)	EN 55024:2010 +A1:2015	EN 61000-4-3:2006 +A1:2008+A2:2010	3V/m, 80%, 1kHz Amp. Mod.	Pass

Internal Source	Upper Frequency
Below 108MHz	1GHz
108MHz to 500MHz	2GHz
500MHz to 1GHz	5GHz
Above 1GHz	5 times the highest frequency or 6 GHz, whichever is less

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4 General Information

4.1 Details of E.U.T.

Power supply:	DC5V 400mA
Cable:	USB cable: 150cm shielded with one ferrite core

4.2 Description of Support Units

Description	Manufacturer	Model No.	Serial No.
Laptop	Lenovo	T430u	REF. No.SEA1800
Mouse	Lenovo	M-U0025-O	REF. No.:SEA2400
Router	NETGEAR	DGN2200	REF. No.SEA2200
TF Card	Kingston	SDC8GB	REF. No.SEA0400

4.3 Measurement Uncertainty

No.	Item	Measurement Uncertainty
1	Radiated emission	4.5dB (30MHz-1GHz)
2	Radiated Immunity	1.64dB
3	ESD	6 %
4	Temperature test	1 °C
5	Humidity test	3%

4.4 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen Branch

No. 1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, Guangdong, China.
518057.

Tel: +86 755 2601 2053 Fax: +86 755 2671 0594

No tests were sub-contracted.

4.5 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **CNAS (No. CNAS L2929)**

CNAS has accredited SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

- **A2LA (Certificate No. 3816.01)**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 3816.01.

- **VCCI**

The 3m Fully-anechoic chamber for above 1GHz, 10m Semi-anechoic chamber for below 1GHz, Shielded Room for Mains Port Conducted Interference Measurement and Telecommunication Port Conducted Interference Measurement of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-20026, R-14188, C-12383 and T-11153 respectively.

- **FCC –Designation Number: CN1178**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized as an accredited testing laboratory.

Designation Number: CN1178. Test Firm Registration Number: 406779.

- **Industry Canada (IC)**

Two 3m Semi-anechoic chambers and the 10m Semi-anechoic chamber of SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab have been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 4620C-1, 4620C-2, 4620C-3.

4.6 Deviation from Standards

None

4.7 Abnormalities from Standard Conditions

None

4.8 Monitoring of EUT for All Immunity Test

Visual: Monitored the light and communication status of the EUT

Audio: None

5 Equipment List

Radiated Emissions (30MHz-1GHz)					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
3m Semi-Anechoic Chamber	ETS-LINDGREN	N/A	SEM001-01	2017-08-05	2020-08-04
Measurement Software	AUDIX	e3 V8.2014-6-27	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM025-01	2017-07-13	2018-07-12
EMI Test Receiver	Agilent Technologies	N9038A	SEM004-05	2017-09-27	2018-09-26
BiConiLog Antenna (26-3000MHz)	ETS-LINDGREN	3142C	SEM003-01	2017-06-27	2020-06-26
Pre-amplifier (0.1-1300MHz)	Agilent Technologies	8447D	SEM005-01	2017-04-14	2018-04-13

Electrostatic Discharge					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
ESD Ground Plane	SGS(3m*3m)	N/A	SEN006-01	N/A	N/A
ESD Generator	TESEQ AG	NSG 437	SEM019-02	2017-06-08	2018-06-07

Radiated Immunity (80MHz-1GHz)					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Fully-Anechoic Chamber 2	Chang Zhou Zhong Shuo	854	SEM001-05	2015-05-13	2018-05-12
Measurement Software	Rohde & Schwarz	EMC32 V9.25.00	N/A	N/A	N/A
Signal Generator	Rohde & Schwarz	SMB100A	SEM006-11	2017-04-14	2018-04-13
Broadband Amplifier(80MHz-1GHz)	Rohde & Schwarz	BBA150-BC250	SEM005-12	2017-09-27	2018-09-26
Broadband Amplifier (800MHz-3GHz)	Rohde & Schwarz	BBA150	EMC2092	2018-01-08	2019-01-07
Broadband Amplifier(2.5GHz-6GHz)	Rohde & Schwarz	BBA150-E60	SEM005-16	2017-07-17	2018-07-16
Power Sensor	Rohde & Schwarz	NRP-Z91	SEM009-09	2017-04-14	2018-04-13
Power Sensor	Rohde & Schwarz	NRP-Z91	SEM009-08	2017-04-14	2018-04-13
Stacked Log.-Per.-Broadband Antenna(70MHz-10GHz)	Schwarzbeck	STLP 9129	SEM003-25	N/A	N/A

General used equipment					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Humidity/ Temperature Indicator	Shanghai Meteorological Industry Factory	ZJ1-2B	SEM002-03	2017-09-29	2018-09-28
Humidity/ Temperature Indicator	Shanghai Meteorological Industry Factory	ZJ1-2B	SEM002-04	2017-09-29	2018-09-28
Humidity/ Temperature Indicator	Mingle	N/A	SEM002-08	2017-09-29	2018-09-28
Barometer	Changchun Meteorological Industry Factory	DYM3	SEM002-01	2017-04-18	2018-04-17

6 Emission Test Results

6.1 Radiated Emissions (30MHz-1GHz)

Test Requirement:	EN 55032:2015
Test Method:	EN 55032:2015
Frequency Range:	30MHz to 1GHz
Measurement Distance:	3m
Limit:	
30MHz-230MHz	40 dB(μ V/m) quasi-peak
230MHz-1GHz	47 dB(μ V/m) quasi-peak
Detector:	Peak for pre-scan (120kHz resolution bandwidth) 30M to 1000MHz

6.1.1 E.U.T. Operation

Operating Environment:

Temperature: 15.8 °C Humidity: 25.7 % RH Atmospheric Pressure: 1025 mbar

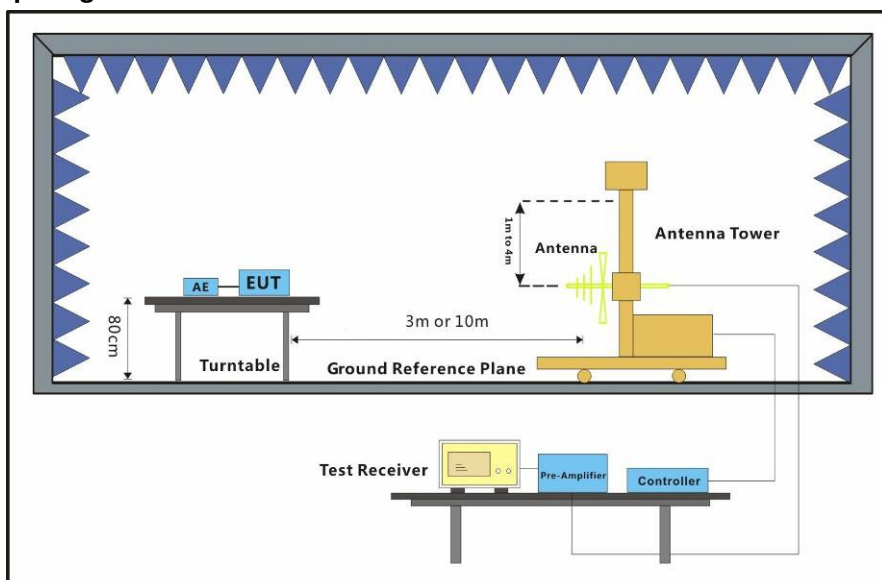
Pretest these modes to find the worst case:

- a: PC mode, build the connection between EUT and PC, keep EUT working normally and data exchanging
- b: Idle mode.

The worst case for final test:

- a: PC mode, build the connection between EUT and PC, keep EUT working normally and data exchanging

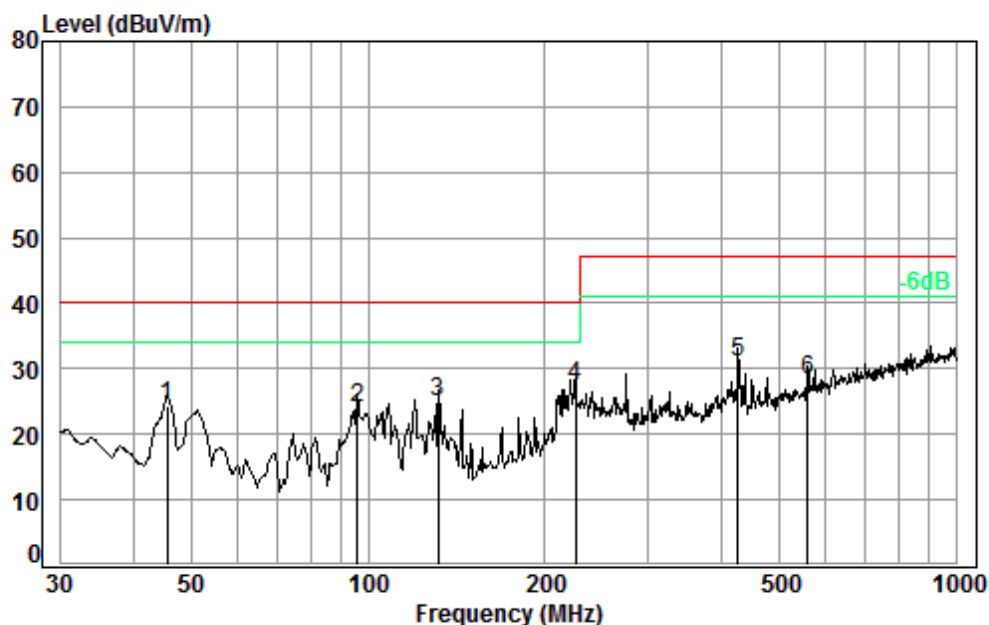
6.1.2 Test Setup Diagram



6.1.3 Measurement Data

An initial pre-scan was performed in the chamber using the spectrum analyser in peak detection mode. Quasi-peak measurements were conducted based on the peak sweep graph. The EUT was measured by BiConiLog antenna with 2 orthogonal polarities.

Mode:a; Polarization:Horizontal



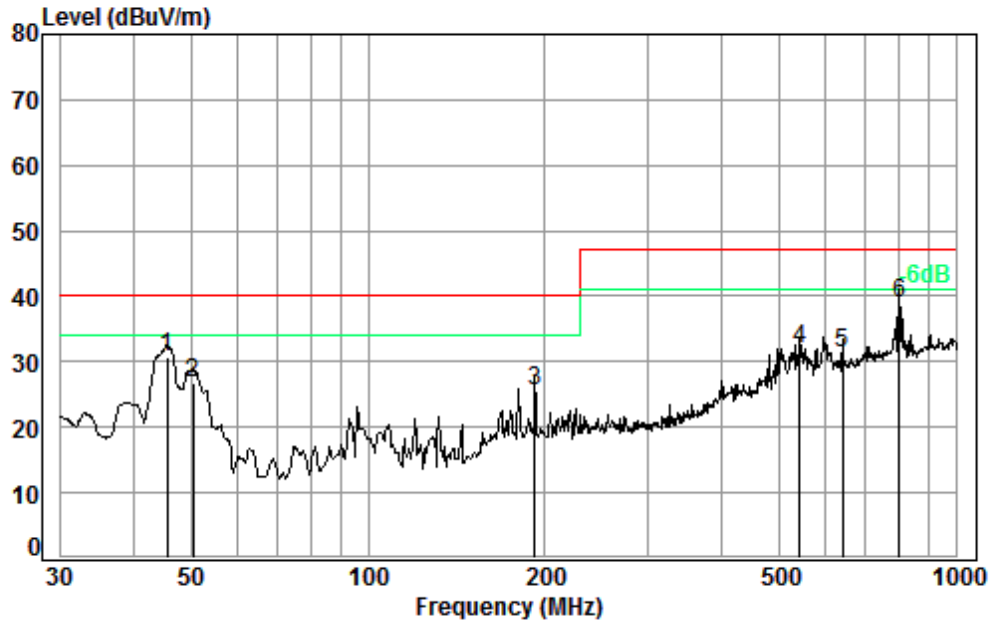
Condition: 3m HORIZONTAL

Job No. : 12649IT

Test mode: a

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	45.53	0.72	15.58	27.61	35.55	24.24	40.00	-15.76
2	96.10	1.16	13.66	27.51	36.73	24.04	40.00	-15.96
3	131.76	1.28	13.46	27.52	37.59	24.81	40.00	-15.19
4 pp	225.31	1.55	17.64	27.53	35.57	27.23	40.00	-12.77
5	425.03	2.31	23.00	27.77	33.61	31.15	47.00	-15.85
6	558.73	2.66	25.82	27.77	27.57	28.28	47.00	-18.72

Mode:a; Polarization:Vertical



Condition: 3m VERTICAL

Job No. : 12649IT

Test mode: a

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit	Over
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	45.53	0.72	15.58	27.61	41.98	30.67	40.00	-9.33
2	50.41	0.80	14.16	27.60	39.40	26.76	40.00	-13.24
3	191.75	1.39	16.26	27.53	35.53	25.65	40.00	-14.35
4	541.37	2.64	25.47	27.80	31.56	31.87	47.00	-15.13
5	640.61	2.79	27.15	27.64	29.02	31.32	47.00	-15.68
6 pp	798.98	3.20	28.49	27.42	34.79	39.06	47.00	-7.94

7 Immunity Test Results

7.1 Performance Criteria Description in EN 55024:2010 +A1:2015

Criterion A

The equipment shall continue to operate as intended without operator intervention. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer when the equipment is used as intended. The performance level may be replaced by a permissible loss of performance. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and by what the user may reasonably expect from the equipment if used as intended.

Criterion B

After the test, the equipment shall continue to operate as intended without operator intervention. No degradation of performance or loss of function is allowed, after the application of the phenomena below a performance level specified by the manufacturer, when the equipment is used as intended. The performance level may be replaced by a permissible loss of performance.

During the test, degradation of performance is allowed. However, no change of operating state or stored data is allowed to persist after the test.

If the minimum performance level (or the permissible performance loss) is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and by what the user may reasonably expect from the equipment if used as intended.

Criterion C

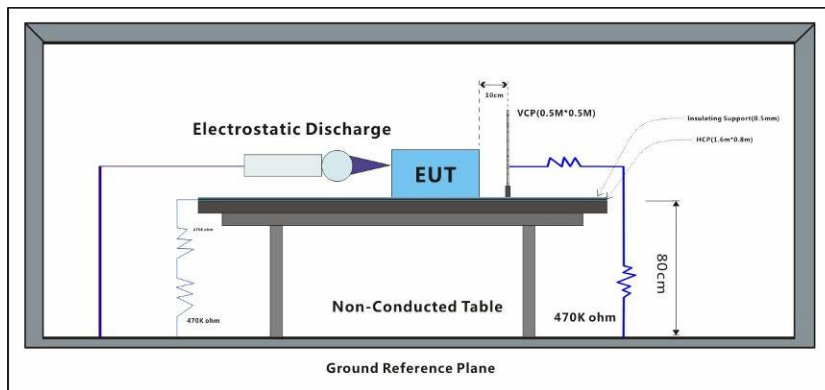
Loss of function is allowed, provided the function is self-recoverable, or can be restored by the operation of the controls by the user in accordance with the manufacturer's instructions.

Functions, and/or information stored in non-volatile memory, or protected by a battery backup, shall not be lost.

7.2 Electrostatic Discharge

Test Requirement: EN 55024:2010 +A1:2015
Test Method: EN 61000-4-2:2009
Performance Criterion: B
Discharge Impedance: 330Ω/150pF
Number of Discharge: Minimum of four test points (a minimum of 50 discharges at each point)
Discharge Mode: Single Discharge
Discharge Period: 1 second minimum

7.2.1 Test Setup Diagram



7.2.2 E.U.T. Operation

Operating Environment:

Temperature: 15.6 °C Humidity: 33.4 % RH Atmospheric Pressure: 1015 mbar

Test mode: a: PC mode, build the connection between EUT and PC, keep EUT working normally and data exchanging
b: Idle mode.

7.2.3 Test Results:

Observations: Test Point:

1. All insulated enclosure and seams.
2. All accessible metal parts of the enclosure.
3. All side

Discharge type	Level (kV)	Polarity	Test Point	Result / Observations
Air Discharge	2,4,8	+	1	A
Contact Discharge	2,4,8	-	1	A
Contact Discharge	4	+	2	B
Contact Discharge	4	-	2	B
Horizontal Coupling	4	+	3	A
Horizontal Coupling	4	-	3	A
Vertical Coupling	4	+	3	A
Vertical Coupling	4	-	3	A

Results:

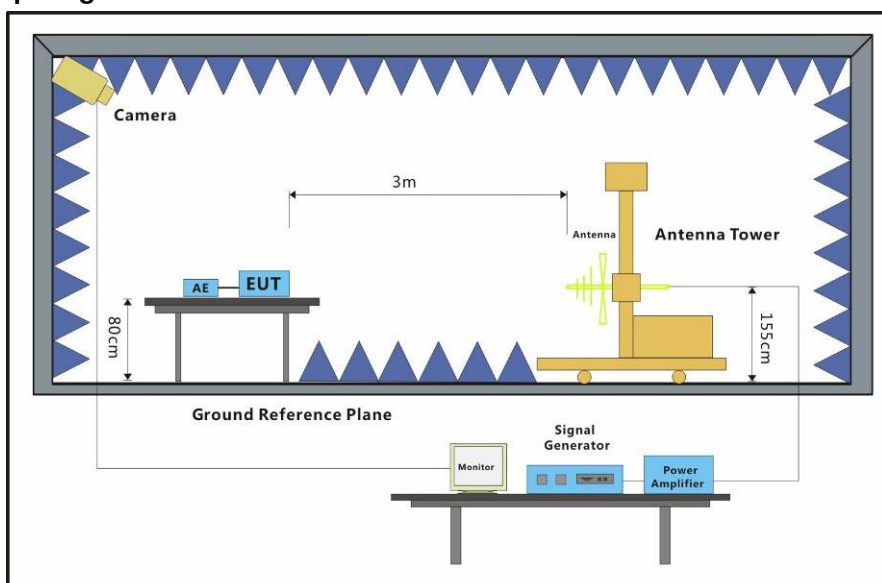
A: No degradation in the performance of the EUT was observed.

B: The background indicator light is flicker when testing on the metallic shell of EUT surface, but it can recover automatically.

7.3 Radiated Immunity (80MHz-1GHz)

Test Requirement: EN 55024:2010 +A1:2015
 Test Method: EN 61000-4-3:2006 +A1:2008+A2:2010
 Performance Criterion: A
 Frequency Range: 80MHz to 1GHz
 Antenna Polarisation: Vertical and Horizontal
 Modulation: 1kHz,80% Amp. Mod,1% increment

7.3.1 Test Setup Diagram



7.3.2 E.U.T. Operation

Operating Environment:

Temperature: 20 °C Humidity: 51 % RH Atmospheric Pressure: 1025 mbar

Test mode: a: PC mode, build the connection between EUT and PC, keep EUT working normally and data exchanging
 b: Idle mode.

7.3.3 Test Results:

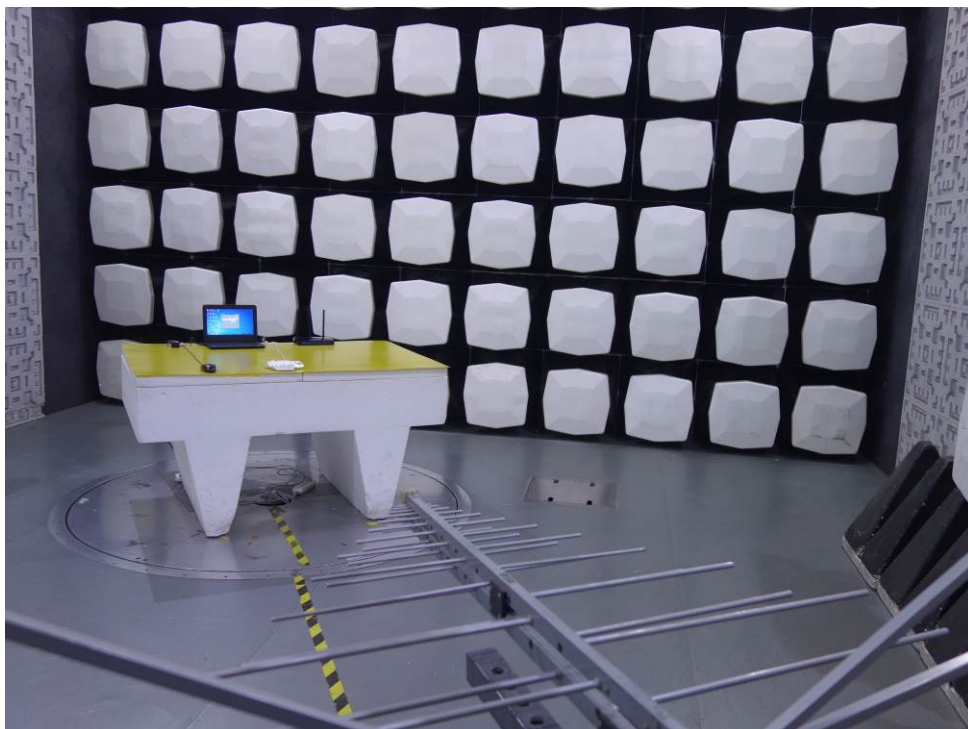
Frequency	Level (V/m)	EUT Face	Dwell time	Result / Observations
80MHz-1GHz	3	Front	2s	A
80MHz-1GHz	3	Back	2s	A
80MHz-1GHz	3	Left	2s	A
80MHz-1GHz	3	Right	2s	A
80MHz-1GHz	3	Top	2s	A
80MHz-1GHz	3	Underside	2s	A

Results:

A: No degradation in the performance of the EUT was observed.

8 Photographs

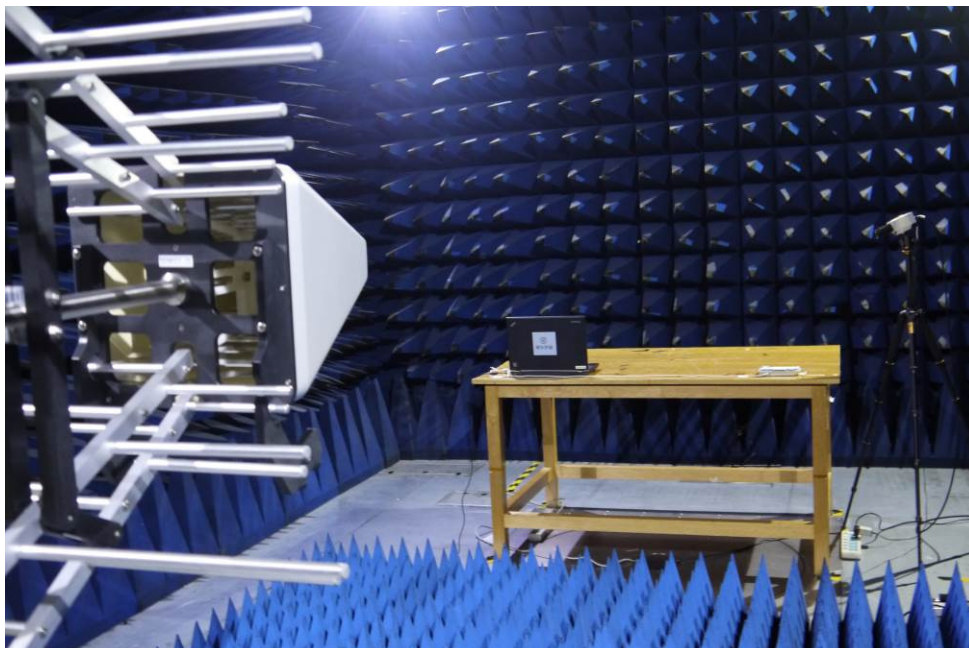
8.1 Radiated Emissions (30MHz-1GHz) Test Setup



8.2 Electrostatic Discharge Test Setup

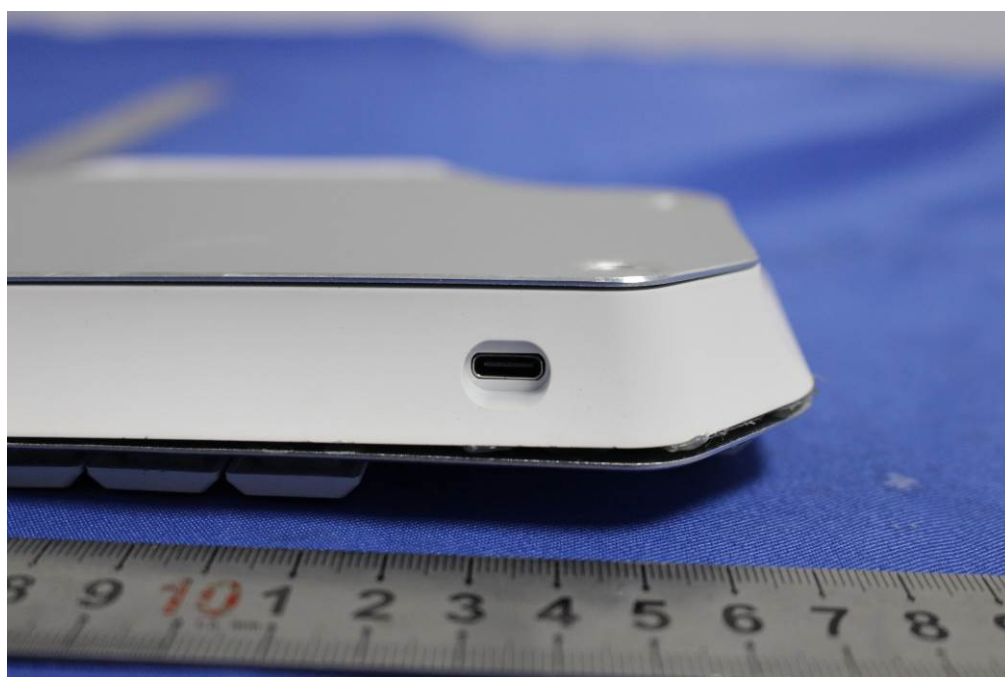
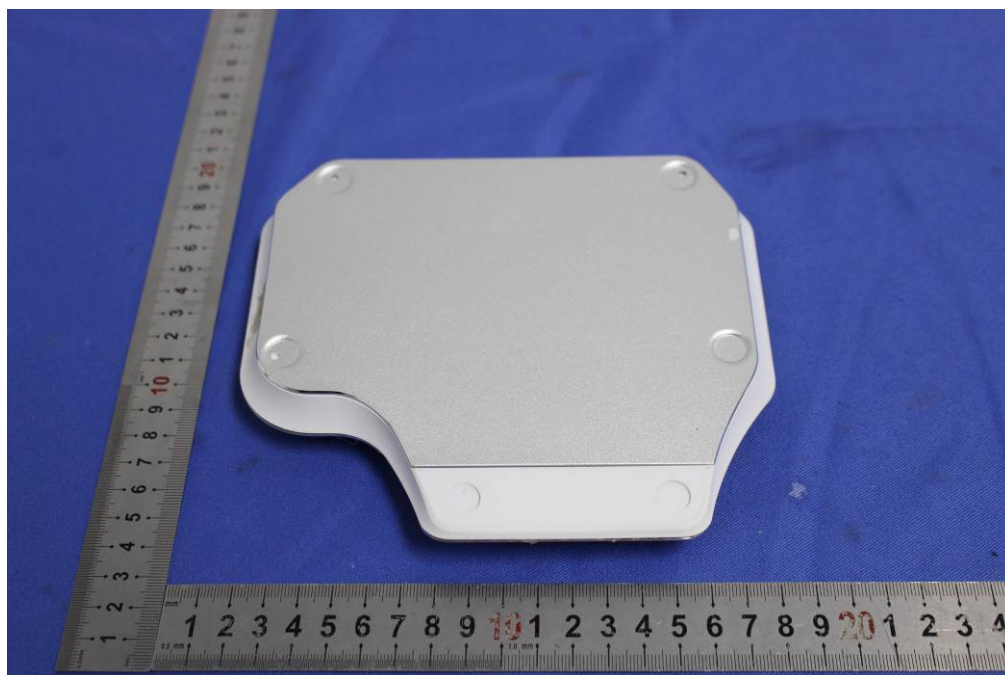


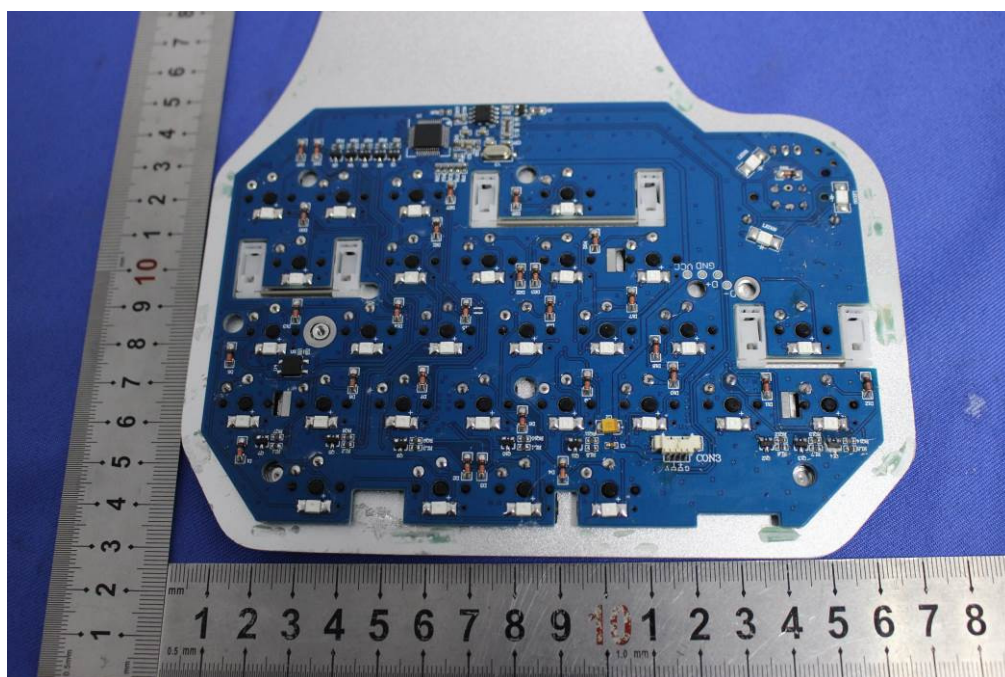
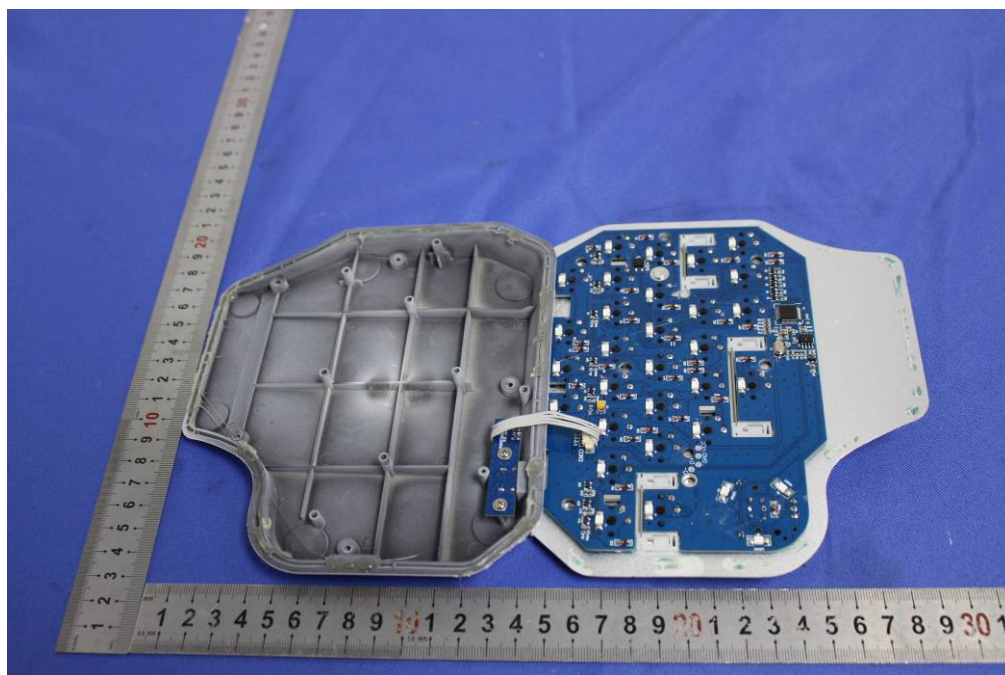
8.3 Radiated Immunity (80MHz-1GHz) Test Setup

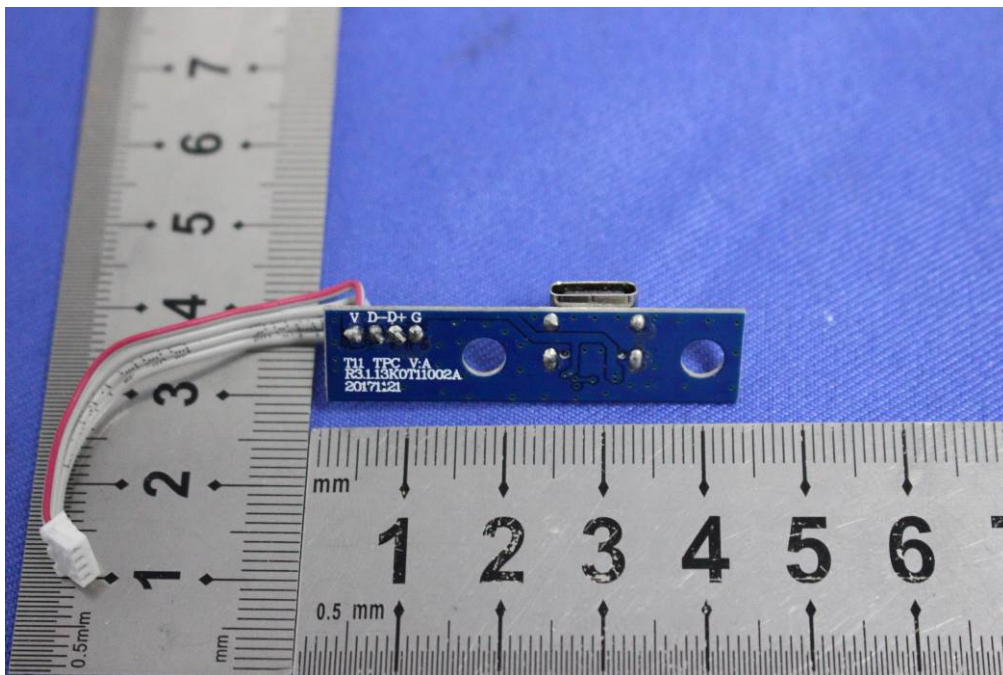
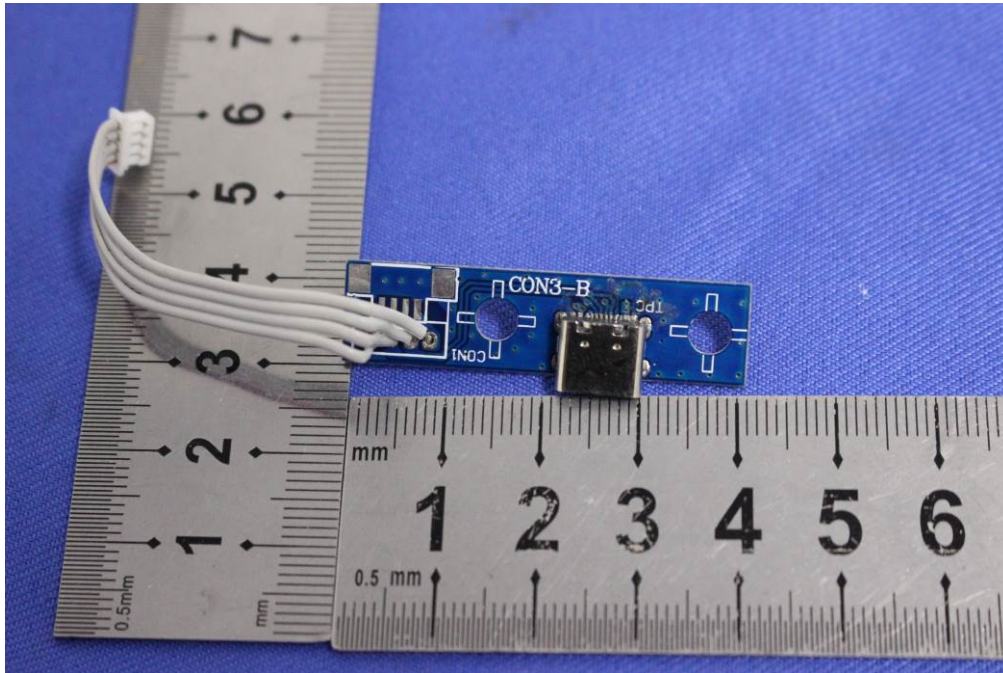


8.4 EUT Constructional Details (EUT Photos)

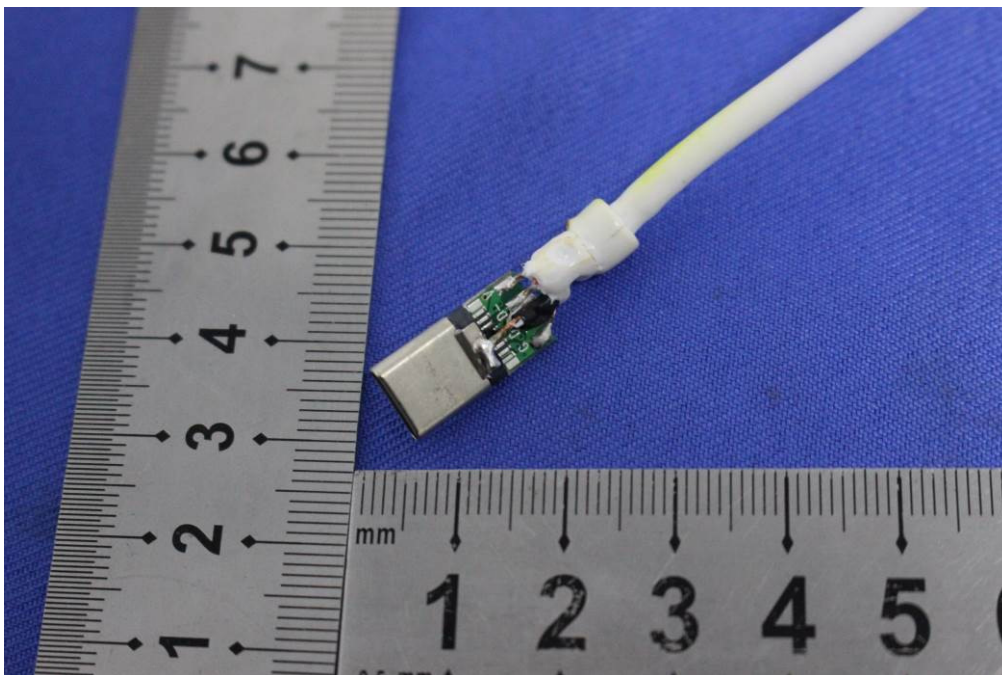
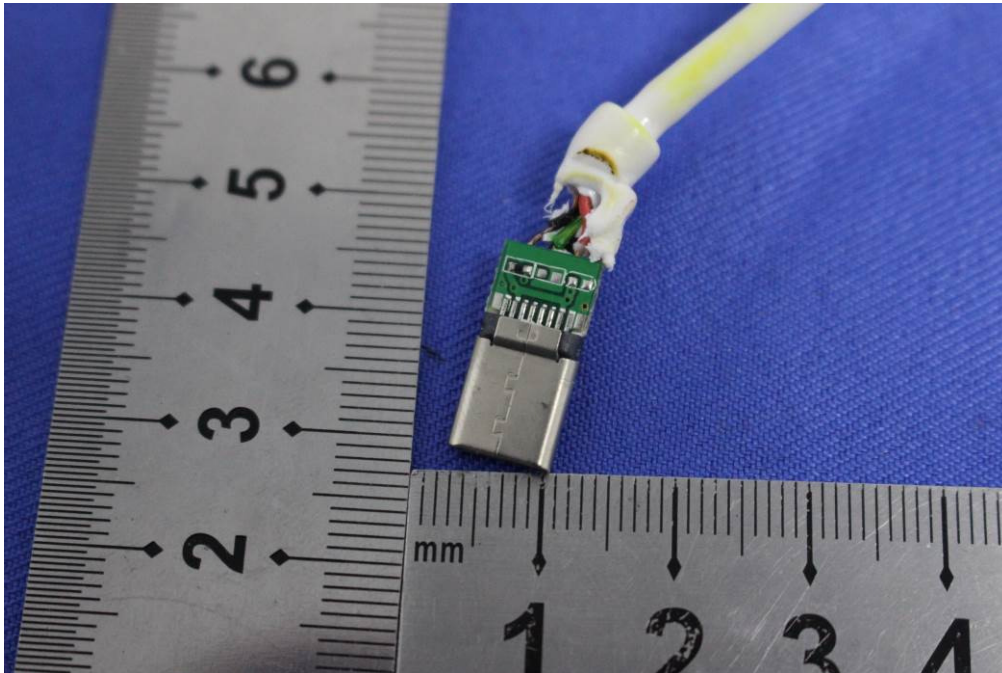












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