

EMC TEST REPORT

For

WIFI Storage

Test Model: UD-4267

Prepared for :
Address :

Prepared by : Shenzhen LCS Compliance Testing Laboratory Ltd.
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Date of receipt of test sample : February 02, 2018
Number of tested samples : 1
Serial number : Prototype
Date of Test : February 02, 2018~March 19, 2018
Date of Report : March 19, 2018



EMC TEST REPORT
ETSI EN 301 489-17 V3.1.1(2017-02)

Electromagnetic compatibility and Radio spectrum Matters (ERM); Electromagnetic Compatibility (EMC) standard for radio equipment and services

Report Reference No. : LCS180131018AEB

Date Of Issue : March 19, 2018

Testing Laboratory Name..... : Shenzhen LCS Compliance Testing Laboratory Ltd.

Address..... : 1/F., Xingyuan Industrial Park, Tongda Road, Bao'an Avenue, Bao'an District, Shenzhen, Guangdong, China

Testing Location/ Procedure..... : Full application of Harmonised standards
Partial application of Harmonised standards
Other standard testing method

Applicant's Name..... :

Address..... :

Test Specification

Standard..... : ETSI EN 301 489-1 V2.1.1 (2017-02)
ETSI EN 301 489-17 V3.1.1(2017-02)

Test Report Form No. : LCSEMC-1.0

TRF Originator : Shenzhen LCS Compliance Testing Laboratory Ltd.

Master TRF : Dated 2011-03

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Test Item Description. : WIFI Storage

Trade Mark : N/A

Test Model..... : UD-4267

Ratings..... : Input : DC 5V/500mA

Result : Positive

Compiled by:

Dick Su

Dick Su/ Administrators

Supervised by:

Calvin Weng

Calvin Weng / Technique principal

Approved by:

Gavin Liang/ Manager

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EMC -- TEST REPORT

Test Report No. : LCS180131018AEB	<u>March 19, 2018</u> Date of issue
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Test Model.....	: UD-4267
EUT.....	: WIFI Storage
Applicant.....	:
Address.....	:
Telephone.....	: /
Fax.....	: /
Manufacturer.....	:
Address.....	:
Telephone.....	: /
Fax.....	: /
Factory.....	:
Address.....	:
Telephone.....	:
Fax.....	: /

Test Result	Positive
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The test report merely corresponds to the test sample.
It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

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Revision History

Revision	Issue Date	Revisions	Revised By
00	March 19, 2018	Initial Issue	Gavin Liang

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1. GENERAL INFORMATION

1.1. Product Description for Equipment Under Test (EUT)

EUT	: WIFI Storage
Test Model	: UD-4267
Power Supply	: Input : DC 5V/500mA
Hardware Version	: /
Software Version	: 1.1.36.16-A178(V.01)
WIFI(2.4G Band)	:
Frequency Range	: 2412-2472MHz
Channel Spacing	: 5MHz
Channel Number	: 13 Channel for 20MHz bandwidth(2412~2472MHz) 9 channels for 40MHz bandwidth(2422~2462MHz)
Modulation Type	: 802.11b: DSSS; 802.11g/n: OFDM
Antenna Description	: Internal Antenna, 1.0 dBi(Max.)

1.2. Objective

ETSI EN 301 489-1	Electromagnetic compatibility and Radio spectrum Matters (ERM); Electro Magnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements
ETSI EN 301 489-17	Electromagnetic compatibility and Radio spectrum Matters (ERM); Electromagnetic Compatibility (EMC) standard for radio equipment Part 17: Specific conditions for Broadband Data Transmission Systems

The objective is to determine compliance with ETSI EN 301 489-1 V2.1.1 (2017-02), ETSI EN 301 489-17 V3.1.1(2017-02) .

1.3. Related Submittal(s)/Grant(s)

No Related Submittals.

1.4. Test Methodology

All measurements contained in this report were conducted with ETSI EN 301 489-1 V2.1.1 (2017-02), ETSI EN 301 489-17 V3.1.1(2017-02).

1.5. Description of Test Facility

FCC Registration Number. is 254912.
 Industry Canada Registration Number. is 9642A-1.
 ESMD Registration Number. is ARCB0108.
 UL Registration Number. is 100571-492.
 TUV SUD Registration Number. is SCN1081.
 TUV RH Registration Number. is UA 50296516-001
 NVLAP Registration Code is 600167-0

1.6. Support equipment List

Manufacturer	Description	Model	Serial Number	Certificate
--	Adapter	--	--	--

1.7. External I/O

I/O Port Description	Quantity	Cable
USB Port	1	N/A

1.8. Measurement Uncertainty

Item	MU	Remark
Uncertainty for Power point Conducted Emissions Test	$\pm 2.42\text{dB}$	
Uncertainty for Radiation Emission test in 3m chamber (30MHz to 1GHz)	$\pm 3.54\text{dB}$	Polarize: V
	$\pm 4.1\text{dB}$	Polarize: H
Uncertainty for Radiation Emission test in 3m chamber (1GHz to 25GHz)	$\pm 2.08\text{dB}$	Polarize: H
	$\pm 2.56\text{dB}$	Polarize: V
Uncertainty for radio frequency	$\pm 3 \times 10^{-7}\text{MHz}$	
Uncertainty for conducted RF Power	$\pm 0.65\text{dB}$	
Uncertainty for temperature	$\pm 0.2^\circ\text{C}$	
Uncertainty for humidity	$\pm 1\%$	
Uncertainty for DC and low frequency voltages	$\pm 0.05\text{V}$	

1.9. Description Of Test Modes

There was 4 test Modes. TM1 to TM4 were shown below:

TM1: Operate in Wifi mode.
 TM2: USB mode.
 TM3: Exchange data with PC
 TM4: Idle mode

***Note:

1. All test modes were tested, but we only recorded the worst case in this report.

2. SUMMARY OF TEST RESULTS

Rule	Description of Test Items	Result
§7.1	Reference to clauses EN 301 489-1 §8.4 AC mains power input/output ports	Compliant
§7.1	Reference to clauses EN 301 489-1 §8.3 DC power input/output ports	N/A
§7.1	Reference to clauses EN 301 489-1 §8.2 Enclosure of ancillary equipment measured on a stand alone basis	Compliant
§7.1	Reference to clauses EN 301 489-1 §8.5 Harmonic current emissions (AC mains input port)	Compliant
§7.1	Reference to clauses EN 301 489-1 §8.6 Voltage fluctuations and flicker (AC mains input port)	Compliant
§7.1	Reference to clauses EN 301 489-1 §8.7 Telecommunication ports	N/A
§7.2	Reference to clauses EN 301 489-1 §9.3 Electrostatic discharge (EN 61000-4-2)	Compliant
§7.2	Reference to clauses EN 301 489-1 §9.2 Radio frequency electromagnetic field (80 MHz to 1 000 MHz and 1 400 MHz to 2 700 MHz)(EN 61000-4-3)	Compliant
§7.2	Reference to clauses EN 301 489-1 §9.4 Fast transients, common mode (EN 61000-4-4)	Compliant
§7.2	Reference to clauses EN 301 489-1 §9.8 Surges (EN 61000-4-5)	Compliant
§7.2	Reference to clauses EN 301 489-1 §9.5 Radio frequency, common mode (EN 61000-4-6)	Compliant
§7.2	Reference to clauses EN 301 489-1 §9.6 Transients and surges in the vehicular environment (ISO 7637-2)	N/A
§7.2	Reference to clauses EN 301 489-1 §9.7 Voltage dips and interruptions (EN 61000-4-11)	Compliant

Note: N/A means not applicable.

3. LINE CONDUCTED EMISSION

3.1. Conducted Emission Limit

ETSI EN 301 489-1 V2.1.1 (2017-02)/EN 55032

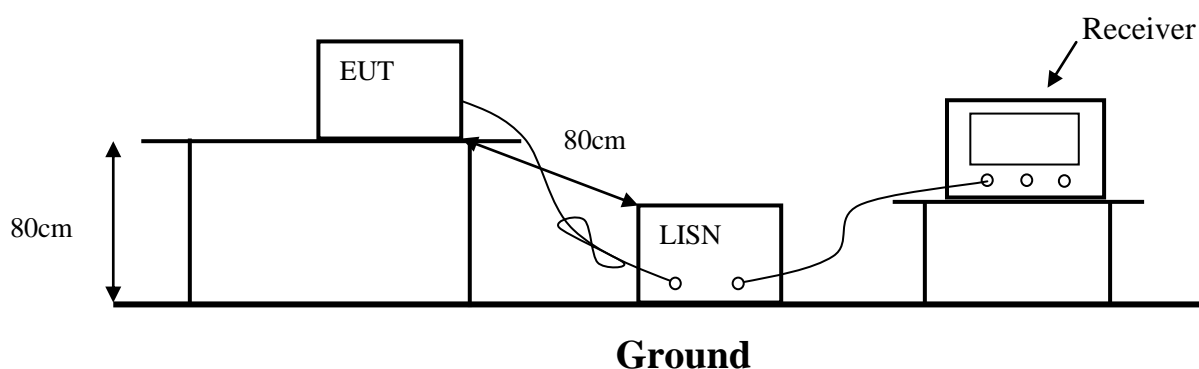
Limits for Line Conducted Emission

Frequency (MHz)	Limit (dB μ V)	
	Quasi-peak Level	Average Level
0.15~0.50	66.0 ~ 56.0 *	56.0 ~ 46.0 *
0.50~5.00	56.0	46.0
5.00~30.00	60.0	50.0

NOTE1-The lower limit shall apply at the transition frequencies.

NOTE2-The limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to 0.50MHz.

3.2. Test Configuration



The setup of EUT is according with per ETSI EN 301 489-1 measurement procedure. The specification used was with the ETSI EN 301 489-1 limits.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle. The spacing between the peripherals was 10 cm.

The EUT received DC 5V charging power from the Adapter which received power through a LISN supplying power of AC 230V/50Hz.

During the conducted emission test, the EMI test receiver was set with the following configurations:

Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	30MHz~1000MHz
(IF)RB	9kHz

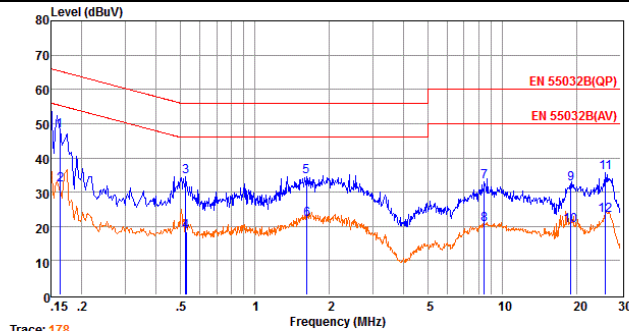
All data was recorded in the Quasi-peak and average detection mode.

Marked on both the 6 highest Quasi-Peak & 6 highest Average emissions points of the EUT.

3.3. Test Data

For pre-scan, the worst test case is TM1, and the test data was show as follow:

Model No.	UD-4267	Test Mode	TM1
Environmental Conditions	24°C, 56% RH	Test Engineer	WC Wang
Pol	Line	Test date	March 05, 2018

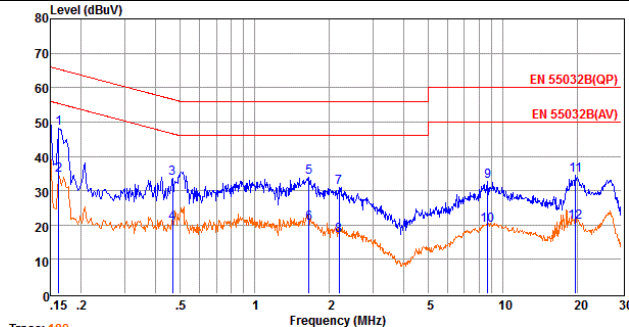


Trace: 178
Env. Ins: 24*/56%
Pol: LINE

Freq	Reading	LISNFac	CabLos	Aux2Fac	Measured	Limit	Over	Remark
MHz	dBuV	dB	dB	dB	dBuV	dBuV	dB	
1	0.16	28.37	9.59	0.02	10.00	47.98	65.30	-17.32 QP
2	0.16	12.41	9.59	0.02	10.00	32.02	55.29	-23.27 Average
3	0.53	14.73	9.62	0.04	10.00	34.39	56.00	-21.61 QP
4	0.53	-1.26	9.62	0.04	10.00	18.40	46.00	-27.60 Average
5	1.62	14.76	9.64	0.05	10.00	34.45	56.00	-21.55 QP
6	1.62	2.25	9.64	0.05	10.00	21.94	46.00	-24.06 Average
7	8.46	13.26	9.69	0.08	10.00	33.03	60.00	-26.97 QP
8	8.46	0.81	9.69	0.08	10.00	20.58	50.00	-29.42 Average
9	18.92	12.51	9.75	0.11	10.00	32.37	60.00	-27.63 QP
10	18.92	0.27	9.75	0.11	10.00	20.13	50.00	-29.87 Average
11	26.14	15.85	9.71	0.13	10.00	35.69	60.00	-24.31 QP
12	26.14	3.22	9.71	0.13	10.00	23.06	50.00	-26.94 Average

Remarks: 1. Measured = Reading + LISNFac + Cable Loss + Aux2 Fac.
2. The emission levels that are 20dB below the official limit are not reported.

Model No.	UD-4267	Test Mode	TM1
Environmental Conditions	24°C, 56% RH	Test Engineer	WC Wang
Pol	Neutral	Test date	March 05, 2018



Trace: 180
Env. Ins: 24*/56%
Pol: NEUTRAL

Freq	Reading	LISNFac	CabLos	Aux2Fac	Measured	Limit	Over	Remark
MHz	dBuV	dB	dB	dB	dBuV	dBuV	dB	
1	0.16	28.48	9.67	0.02	10.00	48.17	65.34	-17.17 QP
2	0.16	14.91	9.67	0.02	10.00	34.60	55.33	-20.73 Average
3	0.47	14.07	9.62	0.04	10.00	33.73	56.58	-22.85 QP
4	0.47	0.81	9.62	0.04	10.00	20.47	46.58	-26.11 Average
5	1.65	14.33	9.63	0.05	10.00	34.01	56.00	-21.99 QP
6	1.65	0.71	9.63	0.05	10.00	20.39	46.00	-25.61 Average
7	2.19	11.34	9.63	0.05	10.00	31.02	56.00	-24.98 QP
8	2.19	-2.59	9.63	0.05	10.00	17.09	46.00	-28.91 Average
9	8.68	12.94	9.71	0.08	10.00	32.73	60.00	-27.27 QP
10	8.68	0.19	9.71	0.08	10.00	19.98	50.00	-30.02 Average
11	19.64	14.36	9.88	0.12	10.00	34.36	60.00	-25.64 QP
12	19.64	0.72	9.88	0.12	10.00	20.72	50.00	-29.28 Average

Remarks: 1. Measured = Reading + LISNFac + Cable Loss + Aux2 Fac.
2. The emission levels that are 20dB below the official limit are not reported.

Note: For conducted emission and radiated emission test, a power supply of 230VAC and 120VAC was used for testing respectively, and only recorded the worst case of 230VAC.

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4. RADIATED DISTURBANCE

4.1. Radiated Emission Limit

ETSI EN 301 489-1 V2.1.1 (2017-02)/EN 55032 Class B

Limits for radiated disturbance Below 1GHz

Frequency (MHz)	Distance (Meters)	Field Strengths Limit (dB μ V/m)
30 ~ 230	3	40
230 ~ 1000	3	47

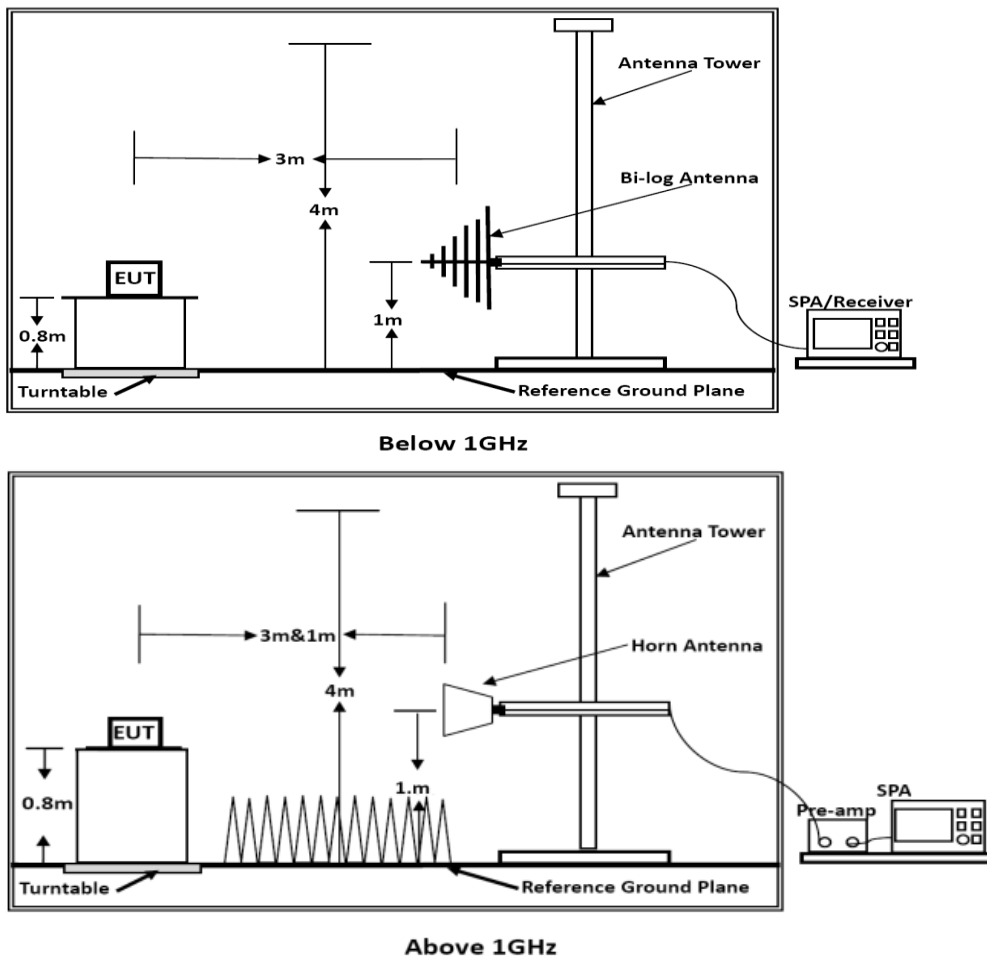
Note: (1) The smaller limit shall apply at the combination point between two frequency bands. (2) Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the EUT.

Limits for radiated disturbance Above 1GHz

Frequency (MHz)	Distance (Meters)	Average Limit (dB μ V/m)	Peak Limit (dB μ V/m)
1000-3000	3	50	70
3000-6000	3	54	74

Note: The lower limit applies at the transition frequency.

4.2. Test Configuration



4.3. Test Procedure

1) Sequence of testing 30 MHz to 1 GHz

Setup:

- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.
- If the EUT is a tabletop system, a table with 0.8 m height is used, which is placed on the ground plane.
- If the EUT is a floor standing device, it is placed on the ground plane with insulation between both.
- Auxiliary equipment and cables were positioned to simulate normal operation conditions
- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.
- The measurement distance is 3 meter.
- The EUT was set into operation.

Premeasurement:

- The turntable rotates from 0 ° to 315 ° using 45 ° steps.
- The antenna is polarized vertical and horizontal.
- The antenna height changes from 1 to 4 meter.
- At each turntable position, antenna polarization and height the analyzer sweeps three times in peak to find the maximum of all emissions.

Final measurement:

- The final measurement will be performed with minimum the six highest peaks.
- According to the maximum antenna and turntable positions of premeasurement the software maximize the peaks by changing turntable position ($\pm 45^\circ$) and antenna movement between 1 and 4 meter.
- The final measurement will be done with QP detector with an EMI receiver.
- The final levels, frequency, measuring time, bandwidth, antenna height, antenna polarization, turntable angle, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the premeasurement with marked maximum final measurements and the limit will be stored.

2) Sequence of testing 1 GHz to 6 GHz

Setup:

- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.
- If the EUT is a tabletop system, a rotatable table with 0.8 m height is used.
- If the EUT is a floor standing device, it is placed on the ground plane with insulation between both.
- Auxiliary equipment and cables were positioned to simulate normal operation conditions
- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.
- The measurement distance is 3 meter.
- The EUT was set into operation.

Premeasurement:

- The turntable rotates from 0 ° to 315 ° using 45 ° steps.
- The antenna is polarized vertical and horizontal.
- The antenna height scan range is 1 meter to 4 meter.
- At each turntable position and antenna polarization the analyzer sweeps with peak detection to find the maximum of all emissions.

Final measurement:

- The final measurement will be performed with minimum the six highest peaks.
- According to the maximum antenna and turntable positions of premeasurement the software maximize the peaks by changing turntable position ($\pm 45^\circ$) and antenna movement between 1 and 4 meter. This procedure is repeated for both antenna polarizations.
- The final measurement will be done in the position (turntable, EUT-table and antenna polarization) causing the highest emissions with Peak and Average detector.
- The final levels, frequency, measuring time, bandwidth, turntable position, EUT-table position, antenna polarization, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the premeasurement with marked maximum final measurements and the limit will be stored.

Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	30MHz~1000MHz / RB 100kHz for QP

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	6000 MHz
RB / VB	1MHz / 1MHz for Peak, 1 MHz / 10Hz for Average

4.4. Test Data

The worst test mode of the EUT was TM1, and its test data was showed as the follow:

Model No.	UD-4267	Test Mode	TM1
Environmental Conditions	24°C, 56% RH	Detector Function	Quasi-peak
Pol	Vertical	Distance	3m
Test Engineer	WC Wang	Test date:	March 05, 2018

Env./Ins: 24°C/56%
pol: VERTICAL

	Freq	Reading	CabLos	Antfac	Measured	Limit	Over	Remark
	MHz	dBuV	dB	dB/m	dBuV/m	dBuV/m	dB	
1	129.92	13.79	0.76	8.94	23.49	40.00	-16.51	QP
2	169.60	9.47	0.80	8.96	19.23	40.00	-20.77	QP
3	365.54	4.20	1.14	14.47	19.81	47.00	-27.19	QP
4	473.83	2.84	1.38	15.92	20.14	47.00	-26.86	QP
5	614.21	1.19	1.48	18.50	21.17	47.00	-25.83	QP
6	897.00	13.19	1.97	21.06	36.22	47.00	-10.78	QP

Note: 1. All readings are Quasi-peak values.
2. Measured= Reading + Antenna Factor + Cable Loss
3. The emission that ate 20db blow the official limit are not reported

Model No.	UD-4267	Test Mode	TM1
Environmental Conditions	24°C, 56% RH	Detector Function	Quasi-peak
Pol	Horizontal	Distance	3m
Test Engineer	WC Wang	Test date:	March 05, 2018

Env./Ins: 24°C/56%
pol: HORIZONTAL

	Freq	Reading	CabLos	Antfac	Measured	Limit	Over	Remark
	MHz	dBuV	dB	dB/m	dBuV/m	dBuV/m	dB	
1	107.89	9.49	0.68	12.44	22.61	40.00	-17.39	QP
2	170.79	6.92	0.80	9.03	16.75	40.00	-23.25	QP
3	365.54	2.92	1.14	14.47	18.53	47.00	-28.47	QP
4	595.13	0.90	1.51	18.36	20.77	47.00	-26.23	QP
5	890.73	8.37	1.86	20.99	31.22	47.00	-15.78	QP
6	955.44	4.98	1.89	21.45	28.32	47.00	-18.68	QP

Note: 1. All readings are Quasi-peak values.
2. Measured= Reading + Antenna Factor + Cable Loss
3. The emission that ate 20db blow the official limit are not reported

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Model No.	UD-4267	Test Mode	TM1
Environmental Conditions	24°C, 56% RH	Distance	3m
Test Engineer	WC Wang	Test date:	March 05, 2018

Frequency MHz	Emission Level dB μ V/m		Limits dB μ V/m		Margin dB μ V/m		Polarization
	Peak	AV	Peak	AV	Peak	AV	
1390.00	48.59	31.08	70.00	50.00	-21.41	-18.92	H
1849.88	51.68	30.86	70.00	50.00	-18.32	-19.14	H
2168.71	48.66	37.85	70.00	50.00	-25.34	-16.15	H
3242.53	57.02	33.99	74.00	54.00	-16.98	-20.01	H
4325.52	57.90	35.71	74.00	54.00	-16.10	-18.29	H
5888.08	53.69	33.64	74.00	54.00	-20.31	-20.36	H
1386.84	47.98	31.77	70.00	50.00	-22.02	-18.23	V
1848.66	51.89	31.38	70.00	50.00	-18.11	-18.62	V
2170.52	47.30	36.68	70.00	50.00	-26.70	-17.32	V
3240.54	56.15	34.10	74.00	54.00	-17.85	-19.90	V
4325.55	56.77	36.31	74.00	54.00	-17.23	-17.69	V
5888.99	53.93	33.67	74.00	54.00	-20.07	-20.33	V

5. GENERAL PERFORMANCE CRITERIA FOR IMMUNITY TEST

5.1. Performance criteria for Continuous phenomena applied to Transmitter (CT)

For equipment of type II or type III that requires a communication link that is maintained during the test, it shall be verified by appropriate means supplied by the manufacturer that the communication link is maintained during each individual exposure in the test sequence.

Where the EUT is a transmitter, tests shall be repeated with the EUT in standby mode to ensure that any unintentional transmission does not occur.

5.2. Performance criteria for Transient phenomena applied to Transmitter (TT)

For equipment of type II or type III that requires a communication link that is maintained during the test, this shall be verified by appropriate means supplied by the manufacturer during each individual exposure in the test sequence. Where the EUT is a transmitter, tests shall be repeated with the EUT in standby mode to ensure that any unintentional transmission does not occur.

5.3. Performance criteria for Continuous phenomena applied to Receiver (CR)

For equipment of type II or III that requires a communication link that is maintained during the test, it shall be verified by appropriate means supplied by the manufacturer that the communication link is maintained during each individual exposure in the test sequence. Where the EUT is a transceiver, under no circumstances shall the transmitter operate unintentionally during the test.

5.4. Performance criteria for Transient phenomena applied to Receiver (TR)

For equipment of type II or type III that requires a communication link that is maintained during the test, this shall be verified by appropriate means supplied by the manufacturer during each individual exposure in the test sequence. Where the EUT is a transceiver, under no circumstances shall the transmitter operate unintentionally during the test.

Performance criteria for ETSI EN 301 489-17 V3.1.1(2017-02)

Criteria	During test	After test
A	Shall operate as intended. May show degradation of performance(see note 1). Shall be no loss of function. Shall be no unintentional transmissions.	Shall operate as intended. Shall be no degradation of performance (see note 2). Shall be no loss of function. Shall be no loss of stored data or user programmable functions.
B	May show loss of function (one or more). May show degradation of performance(see note 1). No unintentional transmissions.	Functions shall be self-recoverable. Shall operate as intended after recovering. Shall be no degradation of performance (see note 2). Shall be no loss of stored data or user programmable functions.
C	May be loss of function (one or more).	Functions shall be recoverable by the operator. Shall operate as intended after recovering. Shall be no degradation of performance (see note 2).

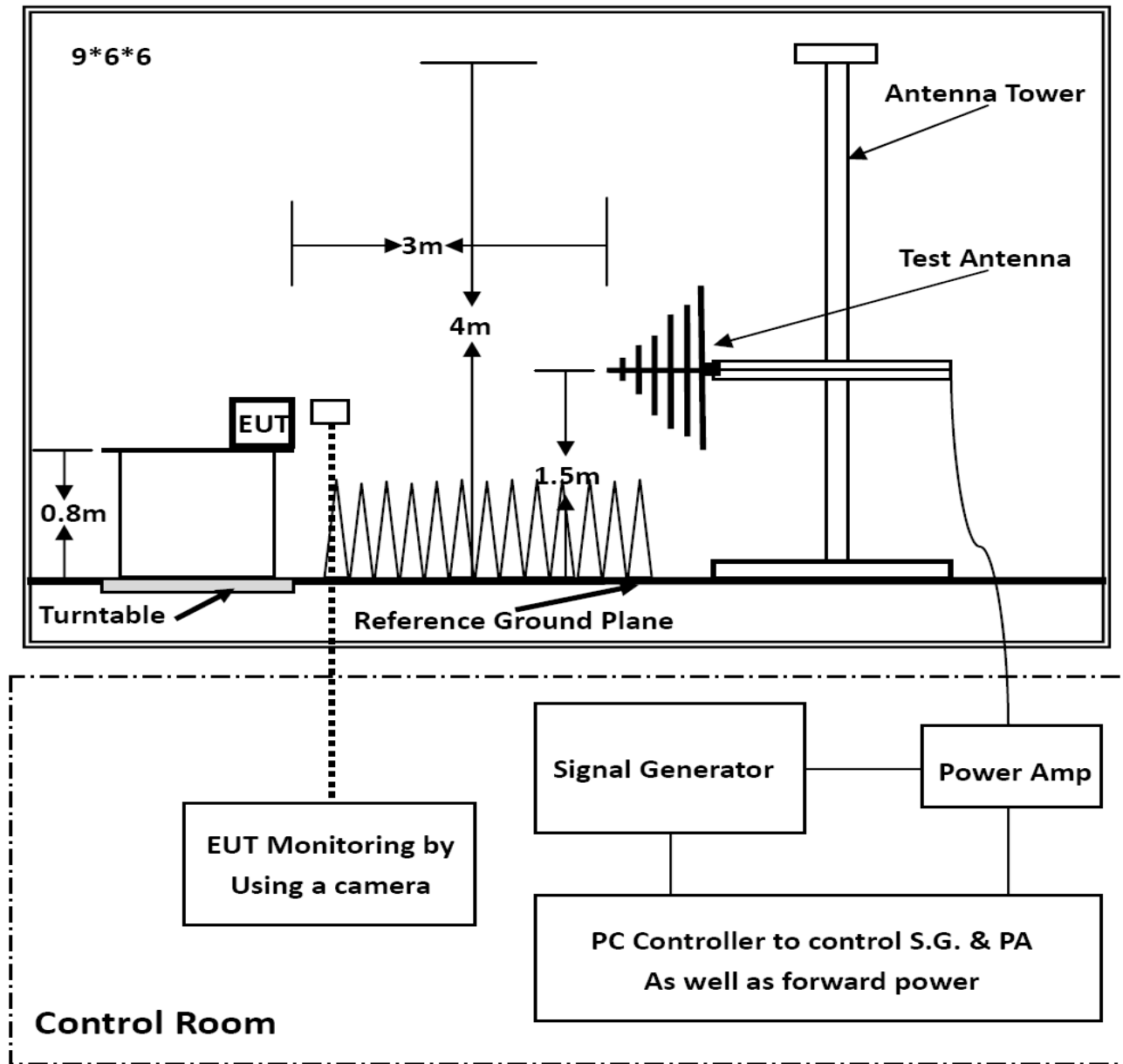
NOTE 1: Degradation of performance during the test is understood as a degradation to a level not below a minimum performance level specified by the manufacturer for the use of the apparatus as intended. In some cases the specified minimum performance level may be replaced by a permissible degradation of performance. If the minimum performance level or the permissible performance degradation is not specified by the manufacturer then either of these may be derived from the product description and documentation (including leaflets and advertising) and what the user may reasonably expect from the apparatus if used as intended.

NOTE 2: No degradation of performance after the test is understood as no degradation below a minimum performance level specified by the manufacturer for the use of the apparatus as intended. In some cases the specified minimum performance level may be replaced by a permissible degradation of performance. After the test no change of actual operating data or user retrievable data is allowed.

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

6. RF ELECTROMAGNETIC FIELD (80 MHZ –6000 MHZ)

6.1. Test Configuration



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6.2. Test Standard

ETSI 301 489-1, EN 301 489-17
/(EN 61000-4-3: 2006+A2: 2010)

Test level 2 at 3V / m.

6.3. Severity Level

Level	Field Strength V/m
1.	1
2.	3
3.	10
X	Special

Performance criterion: A

6.4. Test Procedure

The EUT and its simulators are placed on a turn table which is 0.8 meter above ground. EUT is set 3 meter away from the transmitting antenna which is mounted on an antenna tower. Both horizontal and vertical polarization of the antenna are set on test. Each of the four sides of EUT must be faced this transmitting antenna and measured individually. In order to judge the EUT performance, a CCD camera is used to monitor EUT screen. All the scanning conditions are as follows:

Condition of Test	Remarks
1. Fielded Strength	3 V/m (Severity Level 2)
2. Radiated Signal	Unmodulated
3. Scanning Frequency	80 -6000 MHz
4. Dwell time of radiated	0.0015 decade/s
5. Waiting Time	3 Sec.

6.5. Test Result

RF ELECTROMAGNETIC FIELD			
Standard	<input type="checkbox"/> IEC 61000-4-3 <input checked="" type="checkbox"/> EN 61000-4-3		
Applicant			
EUT	WIFI Storage	Temperature	24°C
M/N	UD-4267	Humidity	53%
Test Mode	TM1-TM4	Criterion	B
Test Engineer	WC Wang	Test Date	March 05, 2018

WIFI Test Result:

EUT Working Mode	Antenna Polarity	Frequency (MHz)	Field Strength (V/m)	Observation	Position	Conclusion
Operating Mode	Vertical	80-6000	3	CT,CR	Front, Right, Left, Back	Pass
	Horizontal	80-6000	3	CT,CR	Front, Right, Left, Back	Pass
Idle	Vertical	80-6000	3	See Note	Front, Right, Left, Back	Pass
	Horizontal	80-6000	3	See Note	Front, Right, Left, Back	Pass

TM2-TM4 Test Result:

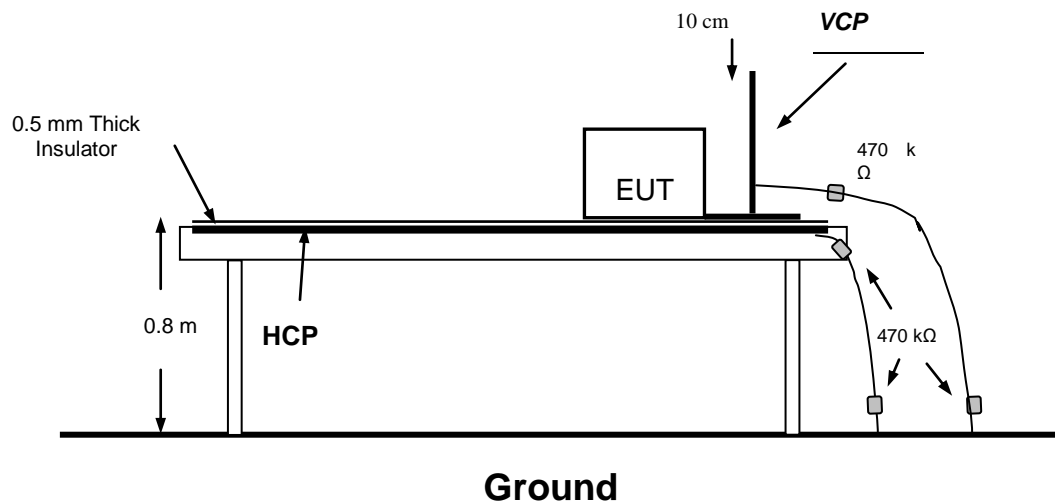
EUT Working Mode	Antenna Polarity	Frequency (MHz)	Field Strength (V/m)	Observation	Position	Conclusion
Operating Mode	Vertical	80-6000	3	See Note	Front, Right, Left, Back	Pass
	Horizontal	80-6000	3	See Note	Front, Right, Left, Back	Pass
Idle	Vertical	80-6000	3	See Note	Front, Right, Left, Back	Pass
	Horizontal	80-6000	3	See Note	Front, Right, Left, Back	Pass

***Note: Unintentional transmission is not founded from the EUT.

7. ELECTROSTATIC DISCHARGE

Please refer to ETSI EN 301 489-1 and EN 61000-4-2.

7.1. Test Configuration



EN 61000-4-2 specifies that a tabletop EUT shall be placed on a non-conducting table which is 80 centimeters above a ground reference plane and that floor mounted equipment shall be placed on a insulating support approximately 10 centimeters above a ground plane. During the tests, the EUT is positioned over a ground reference plane in conformance with this requirement.

For tabletop equipment, a 1.5 by 1.0-meter metal sheet (HCP) is placed on the table and connected to the ground plane via a metal strap with two 470 k Ohms resistors in series. The EUT and attached cables are isolated from this metal sheet by 0.5-millimeter thick insulating material. A Vertical Coupling Plane (VCP) grounded on the ground plane through the same configuration as in the HCP is used.

7.2. Test Procedure

ETSI EN 301 489-1 V2.1.1 (2017-02)/ EN 61000-4-2: 2009

Test level 3 for Air Discharge at ± 8 kV

Test level 2 for Contact Discharge at ± 4 kV

7.2.1. Air Discharge

This test is done on a non-conductive surface. The round discharge tip of the discharge electrode shall be approached as fast as possible to touch the EUT. After each discharge, the discharge electrode shall be removed from the EUT. The generator is then re-triggered for a new single discharge and repeated 10 times for each pre-selected test point. This procedure shall be repeated until all the air discharge completed.

7.2.2. Contact Discharge

All the procedure shall be same as Section 9.2.1. except that the tip of the discharge electrode shall touch the EUT before the discharge switch is operated.

7.2.3. Indirect Discharge For Horizontal Coupling Plane

At least 10 single discharges (in the most sensitive polarity) shall be applied at the front edge of each HCP opposite the center point of each unit (if applicable) of the EUT and 0.1m from the front of the EUT. The long axis of the discharge electrode shall be in the plane of the HCP and perpendicular to its front edge during the discharge.

7.2.4. Indirect Discharge For Vertical Coupling Plane

At least 10 single discharges (in the most sensitive polarity) shall be applied to the center of one vertical edge of the coupling plane. The coupling plane, of dimensions 0.5m X 0.5m, is placed parallel to, and positioned at a distance of 0.1m from the EUT. Discharges shall be applied to the coupling plane, with this plane in sufficient different positions that the four faces of the EUT are completely illuminated.

7.3. Test Data

PASS.

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Electrostatic Discharge Test Results

Standard	<input type="checkbox"/> IEC 61000-4-2 <input checked="" type="checkbox"/> EN 61000-4-2		
Applicant			
EUT	WIFI Storage	Temperature	24°C
M/N	UD-4267	Humidity	53%
Criterion	B	Pressure	1021mbar
Test Mode	TM1-TM4	Test Date	March 05, 2018
Test Engineer	WC Wang		

TEST RESULT OF WIFI

Test Voltage	Coupling	Observation	Result (Pass/Fail)
±2KV, ±4kV	Contact Discharge	TT, TR	Pass
±2KV, ±4kV, ±8kV	Air Discharge	TT, TR	Pass
±2KV, ±4kV	Indirect Discharge HCP	TT, TR	Pass
±2KV, ±4kV	Indirect Discharge VCP	TT, TR	Pass

TEST RESULT OF TM2-TM4

Test Voltage	Coupling	Result (Pass/Fail)
±2KV, ±4kV	Contact Discharge	Pass
±2KV, ±4kV, ±8kV	Air Discharge	Pass
±2KV, ±4kV	Indirect Discharge HCP	Pass
±2KV, ±4kV	Indirect Discharge VCP	Pass

Note: The EUT performance complied with performance criteria for CT&CR to MS Function and there is no any degradation of performance and function.

8. LIST OF MEASURING EQUIPMENT

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1	X-series USB Peak and Average Power Sensor Agilent	Agilent	U2021XA	MY54080022	2016-10-27	2017-10-26
2	4 CH. Simultaneous Sampling 14 Bits 2MS/s	Agilent	U2531A	MY54080016	2016-10-27	2017-10-26
3	Test Software	Ascentest	AT890-SW	20160630	N/A	N/A
4	RF Control Unit	Ascentest	AT890-RFB	N/A	2017-06-17	2018-06-16
5	ESA-E SERIES SPECTRUM ANALYZER	Agilent	E4407B	MY41440754	2016-11-18	2017-11-17
6	MXA Signal Analyzer	Agilent	N9020A	MY49100040	2017-06-17	2018-06-16
7	SPECTRUM ANALYZER	R&S	FSP	100503	2017-06-17	2018-06-16
8	MXG Vector Signal Generator	Agilent	N5182A	MY47071151	2016-11-18	2017-11-17
9	ESG VECTOR SIGNAL GENERATOR	Agilent	E4438C	MY42081396	2016-11-18	2017-11-17
10	PSG Analog Signal Generator	Agilent	E8257D	MY4520521	2016-11-18	2017-11-17
11	Universal Radio Communication Tester	R&S	CMU 200	105788	2017-06-17	2018-06-16
12	WIDEBAND RADIO COMMUNICATION TESTER	R&S	CMW 500	103818	2017-06-17	2018-06-16
13	RF Control Unit	Tonscend	JS0806-1	N/A	2017-06-17	2018-06-16
14	DC Power Supply	Agilent	E3642A	N/A	2016-11-18	2017-11-17
15	LTE Test Software	Tonscend	JS1120-1	N/A	N/A	N/A
16	Temperature & Humidity Chamber	GUANGZHOU GOGNWEN	GDS-100	70932	2017-10-11	2018-10-10
17	DC Source	CHROMA	62012P-80-60	34782951	2017-10-11	2018-10-10
18	RF Filter	Micro-Tronics	BRC50718	S/N-017	2017-06-17	2018-06-16
19	RF Filter	Micro-Tronics	BRC50719	S/N-011	2017-06-17	2018-06-16
20	RF Filter	Micro-Tronics	BRC50720	S/N-011	2017-06-17	2018-06-16
21	RF Filter	Micro-Tronics	BRC50721	S/N-013	2017-06-17	2018-06-16
22	RF Filter	Micro-Tronics	BRM50702	S/N-195	2017-06-17	2018-06-16
23	Splitter/Combiner	Micro-Tronics	PS2-15	CB11-20	2017-06-17	2018-06-16
24	Splitter/Combiner	Micro-Tronics	CB11-20	N/A	2017-06-17	2018-06-16
25	Attenuator	Micro-Tronics	PAS-8-10	S/N23466	2017-06-17	2018-06-16
26	3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	2017-06-17	2018-06-16
27	Positioning Controller	MF	MF-7082	/	2017-06-17	2018-06-16
28	EMI Test Software	AUDIX	E3	N/A	2017-06-17	2018-06-16
29	EMI Test Receiver	R&S	ESR 7	101181	2017-06-17	2018-06-16
30	AMPLIFIER	QuieTek	QTK-A2525G	CHM10809065	2016-11-18	2017-11-17
31	Active Loop Antenna	SCHWARZBECK	FMZB 1519B	00005	2017-06-23	2018-06-22
32	By-log Antenna	SCHWARZBECK	VULB9163	9163-470	2017-05-02	2018-05-01
33	Horn Antenna	EMCO	3115	6741	2017-06-23	2018-06-22
34	RF Cable-R03m	Jye Bao	RG142	CB021	2017-06-17	2018-06-16
35	RF Cable-HIGH	SUHNER	SUCOFLEX 106	03CH03-HY	2017-06-17	2018-06-16

36	TEST RECEIVER	R&S	ESCI	101142	2017-06-17	2018-06-16
37	RF Cable-CON	UTIFLEX	3102-26886-4	CB049	2017-06-17	2018-06-16
38	10dB Attenuator	SCHWARZBECK	MTS-IMP136	261115-001-00 32	2017-06-17	2018-06-16
39	Artificial Mains	R&S	ENV216	101288	2017-06-17	2018-06-16
40	Power Analyzer Test System	Voltech	PM6000	20000670053	2017-06-17	2018-06-16
41	ESD Simulator	SCHLODER	SESD 230	604035	2017-06-17	2018-06-16
42	RF POWER AMPLIFIER	OPHIR	5225R	1052	2017-03-22	2018-03-21
43	RF POWER AMPLIFIER	OPHIR	5273F	1019	2017-03-24	2018-03-23
44	Stacked Broadband Log Periodic Antenna	SCHWARZBECK	STLP 9128	9128ES-145	2017-04-28	2018-04-27
45	Stacked Mikrowellen Log.-Per Antenna	SCHWARZBECK	STLP 9149	9149-482	2017-04-28	2018-04-27
46	Electric field probe	Narda S.TS./PMM	EP601	611WX70332	2017-02-05	2017-02-05
47	Power Meter	Agilent	E4419B	MY45104493	2017-06-17	2018-06-16
48	Power Sensor	Agilent	E9301H	MY41495234	2017-06-17	2018-06-16
49	Power Sensor	Agilent	E4412A	MY41500229	2017-06-17	2018-06-16
50	Immunity Simulative Generator	EM TEST	UCS500-M4	0101-34	2016-11-18	2017-11-17
51	Simulator	FRANKONIA	CIT-10	A126A1195	2017-06-17	2018-06-16
52	CDN	FRANKONIA	CDN-M2	5100100100	2017-06-17	2018-06-16
53	CDN	FRANKONIA	CDN-M3	0900-11	2017-06-17	2018-06-16
54	Attenuator	FRANKONIA	ATT6	0010222A	2017-06-17	2018-06-16
55	Infuse tongs	EM TEST	EM-Clamp	0513A031201	2017-06-17	2018-06-16
56	Voltage dips and up generator	3CTEST	VDG-1105G	EC0171014	2017-06-17	2018-06-16

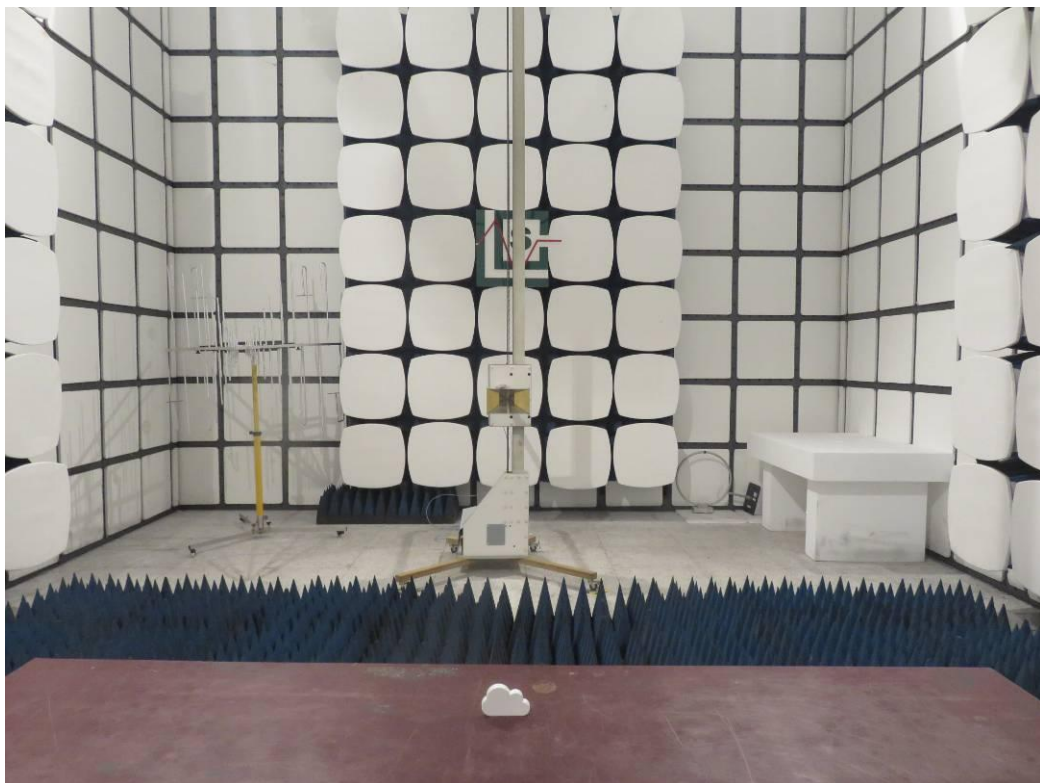
Note: All equipment is calibrated through GUANGZHOU LISAI CALIBRATION AND TEST CO.,LTD.

9. TEST SETUP PHOTOGRAPHS

9.1. Photo of Radiated Emissions Measurement



Below 1G



Above 1G

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9.2.Photo of Power Line Conducted Emissions Measurement



9.3.Photo of Electrostatic Discharge Test



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9.4.Photo of Radio-frequency, Continuous radiated disturbance



-----THE END OF REPORT-----

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