REPORT No.: SZ23070022E01

TEST REPORT

MANUFACTURER	:	Winners'Sun Plastic & Electronic (Shenzhen) Co., Ltd.
PRODUCT NAME	:	TravelPod Selfie
MODEL NAME	:	WS-21005
BRAND NAME	:	ShiftCam
STANDARD(S)	:	ETSI EN 301 489-1 V2.2.3 (2019-11) ETSI EN 301 489-17 V3.2.4 (2020-09)
RECEIPT DATE	:	2021-05-24
TEST DATE	:	2021-05-26 to 2021-05-28
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Change History		
Version	Date	Reason for change
1.0	2023-07-17	First edition

1. Technical Information

Note: Provide by manufacturer.

1.1. Manufacturer and Factory Information

Manufacturer:	Winners'Sun Plastic & Electronic (Shenzhen) Co., Ltd.
Manufacturer Address:	Detai Industrial Park, 496 Huarong Road, Langkou Community, Dalang Sub-district, Longhua District, Shenzhen, Guangdong, China
Factory:	Winners'Sun Plastic & Electronic (Shenzhen) Co., Ltd.
Factory Address:	Detai Industrial Park, 496 Huarong Road, Langkou Community, Dalang Sub-district, Longhua District, Shenzhen, Guangdong, China

1.2. Equipment Under Test (EUT) Description

Product Name:	TravelPod Selfie	
EUT No.:	1#, 5#	
Hardware Version:	V1.1	
Software Version:	V1.0	
Frequency Range:	Bluetooth 4.2: 2402 MHz ~ 2480 MHz	
Accessory:	**Battery**	
	Brand Name:	YX
	Model No.:	401515
	Serial No.:	(N/A, marked #1 by test site)
	Capacity:	65mAh
	Rated Voltage:	3.7V
	Charge Limit:	4.2V
	Manufacturer:	Shenzhen Chaorong Battery Tech Co.,ltd

Note:

1. This test report is variant from the original report (Report No.: SZ21050259E01, Model Name: WS-21005) based on the similarity between before, only change product name and brand name, the others are the same as before. We evaluated the above changes, which had no

impact on the test results. The test results in this report still refer to the test results of the original test report.

2. For a more detailed description, please refer to specification or user's manual supplied by the applicant and/or manufacturer.

2. Test Results

2.1. Applied Reference Documents

The objective of the report is to perform testing according to following standards for CE marking:

No.	Identity	Document Title
1	ETSI EN 301 489-1 V2.2.3 (2019-11)	ElectroMagnetic Compatibility (EMC)standard for radio equipment and services;Part 1: Common technical requirements;Harmonised Standard for ElectroMagnetic Compatibility
2	ETSI EN 301 489-17 V3.2.4 (2020-09)	ElectroMagnetic Compatibility (EMC)standard for radio equipment and services;Part 17: Specific conditions forBroadband Data Transmission Systems;Harmonised Standard for ElectroMagnetic Compatibility
3	EN 61000-3-3:2013	Electromagnetic compatibility (EMC) -- Part 3-3: Limits - Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current <= 16 A per phase and not subject to conditional connection
4	EN 61000-3-2:2014	Electromagnetic compatibility (EMC) - Part 3-2: Limits - Limits for harmonic current emissions (equipment input current ≤ 16 A per phase)

Test detailed items required and results are listed as below (the latest versions of basic standards are applied):

No.	Base Standard	Test Type	Test Engineer	Result	Method Determination Remark
Emission (EN 301 489-1 Clause 7.1)					
1	EN 55032	Radiated Emission	Yang Jie	PASS[Note 4]	No deviation
2	EN 55032	Conducted Emission-AC Port	Wu Runfeng	PASS[Note 4]	No deviation
3	EN 55032	Conducted Emission-DC Port	N/A	N/A[Note 1]	No deviation
4	EN 55032	Conducted Emission - Wired Network Port	N/A	N/A[Note 1]	No deviation
5	EN 61000-3-2	Harmonic Current Emissions	N/A	N/A[Note 1]	No deviation
6	EN 61000-3-3	Voltage Fluctuations and Flicker	N/A	N/A[Note 1]	No deviation

Immunity (EN 301 489-1 Clause 7.2)					
7	EN 61000-4-2	Electrostatic Discharge Immunity	Liang Jialou	PASS[Note 4]	No deviation
8	EN 61000-4-3	Radiated Immunity	Li Jingang	PASS[Note 4]	No deviation
9	EN 61000-4-4	Electrical Fast Transient/Burst Immunity	Xia Zhihao	PASS[Note 4]	No deviation
10	ISO 7637-1, -2	Transients and Surges, DC Ports	N/A	N/A[Note 1]	No deviation
11	EN 61000-4-5	Surge Immunity	Xia Zhihao	PASS[Note 4]	No deviation
12	EN 61000-4-6	Conducted Immunity	Li Jingang	PASS[Note 4]	No deviation
13	EN 61000-4-11	Voltage Dips and Interruptions Immunity	Xia Zhihao	PASS[Note 4]	No deviation

Note 1: The test item is not applicable.

Note 2: Additions to, deviation, or exclusions from the method shall be judged in the “method determination" column of add, deviate or exclude from the specific method shall be explained in the "Remark" of the above table.

Note 3: When the test result is a critical value, we will use the measurement uncertainty give the judgment result based on the 95% confidence intervals.

Note 4: The test results of these test items in this report refer to the test report (Report No.: SZ21050259E01).

2.2. EUT Setup and Operating Conditions

Test Item	
Radiated Emission	
Mode 1 :	EUT+ Adapter + Mobile Phone + Working+ Bluetooth Link
Conducted Emission	
Mode 1 :	EUT+ Adapter + Mobile Phone + Working+ Bluetooth Link
RS Test	
Mode 1 :	EUT+ Adapter + Mobile Phone + Working+ Bluetooth Link
ESD Test	
Mode 1 :	EUT+ Adapter + Mobile Phone + Working+ Bluetooth Link
CS Test	
Mode 1 :	EUT+ Adapter + Mobile Phone + Working+ Bluetooth Link
EMS Test (EFT, Surge, Dip)	
Mode 1 :	EUT+ Adapter + Mobile Phone + Working+ Bluetooth Link

During the measurement, the environmental conditions were within the listed ranges:

Temperature (°C):	15 - 35
Relative Humidity (%):	30 - 60
Atmospheric Pressure (kPa):	86 - 106

During the Electrostatic Discharge Immunity measurement, the environmental conditions were within the listed ranges:

Temperature (°C):	22
Relative Humidity (%):	46
Atmospheric Pressure (kPa):	101

3. Emission Tests

3.1. Radiated Emission

3.1.1. Limits of Radiated Emission

Frequency Range (MHz)	Quasi-Peak Limit (dBμV/m)	--
30 – 230	40	--
230 – 1000	47	--
Frequency Range (MHz)	**Peak Limit (dBμV/m)**	**Average Limit (dBμV/m)**
1000-3000	70	50
3000-6000	74	54

Note:

1. The limit is applicable to 3m measurement distance.
2. The lower limit shall apply at the transition frequency.
3. Additional provisions may be required for cases where interference occurs.

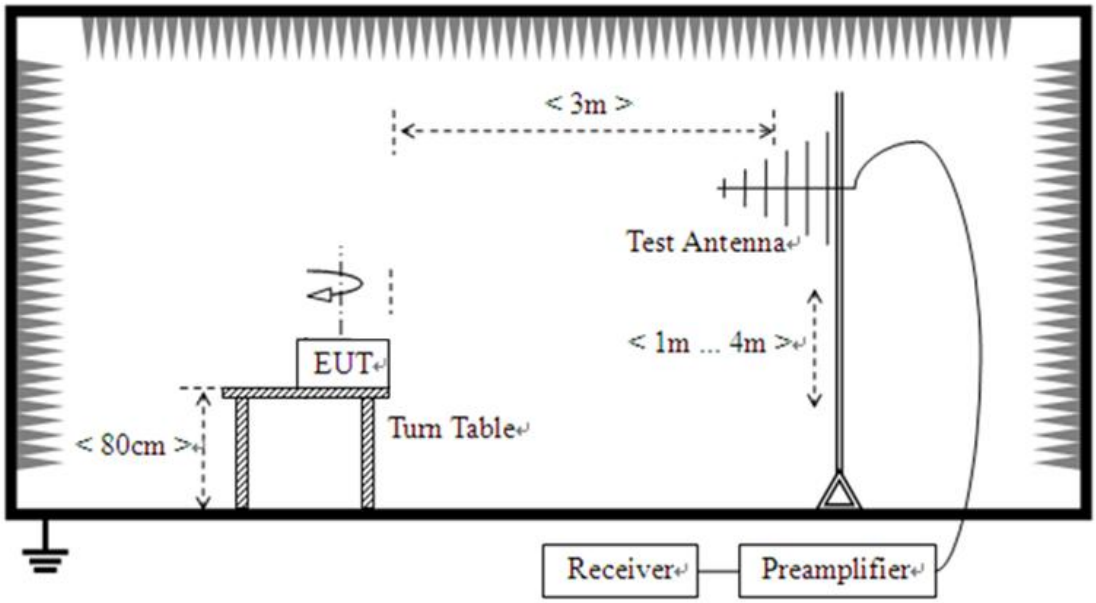
3.1.2. Test Procedure

1. The test is performed in a 3m Semi-Anechoic Chamber; the antenna factor. The EUT is placed on a 0.8m high insulating Turn Table, and keeps 3m away from the Test Antenna, which is mounted on a variable-height antenna master tower.
2. For each suspected emission, the EUT is arranged to its worst case and then the Test Antenna is tuned to the heights from 1 to 4m and the Turn Table is tuned from 0 to 360 degrees to find the maximum reading.
3. The Test Antenna height is varied from 1 to 4m above the ground to determine the maximum value of the field strength. Both the vertical and the horizontal polarizations of the Test Antenna are considered to perform the tests.
4. The maximum radiated emission is searched using PK, QP and AV detectors; the emission levels more than the limits, and that have narrow margins from the limits will be re-measured with QP and AV detectors.

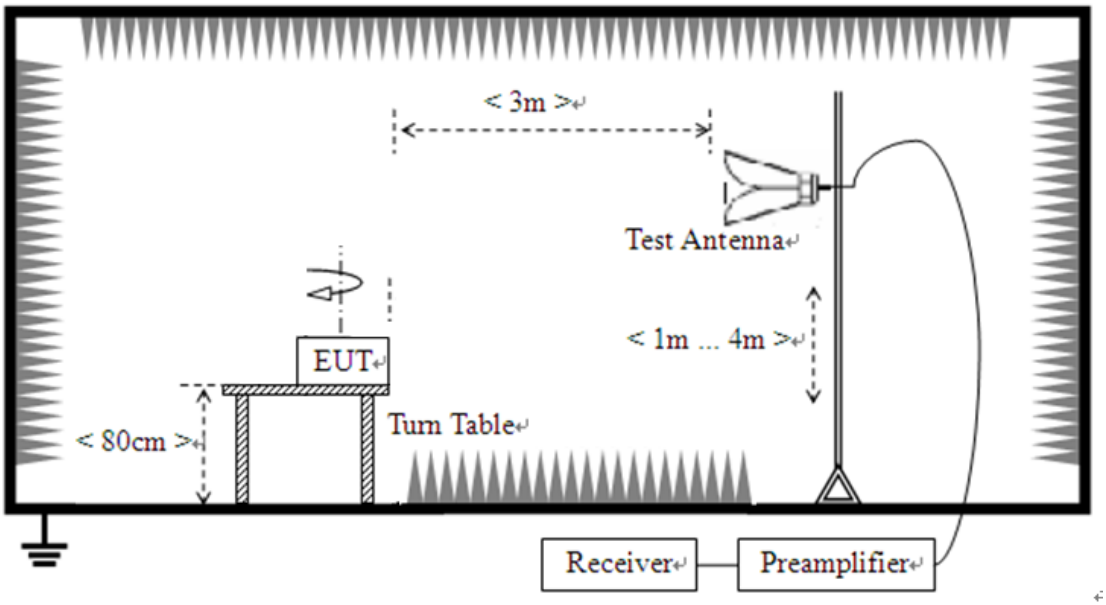
3.1.3. Test Setup

Please refer to Annex A for the photographs of the Test Configuration.

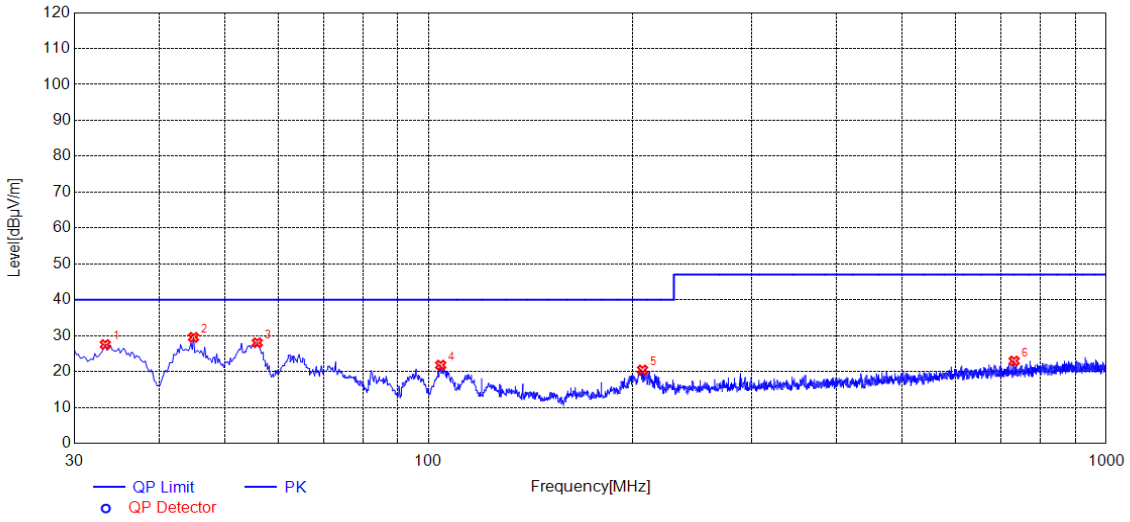
1) For radiated emissions from 30MHz to 1GHz



2) For radiated emissions above 1GHz

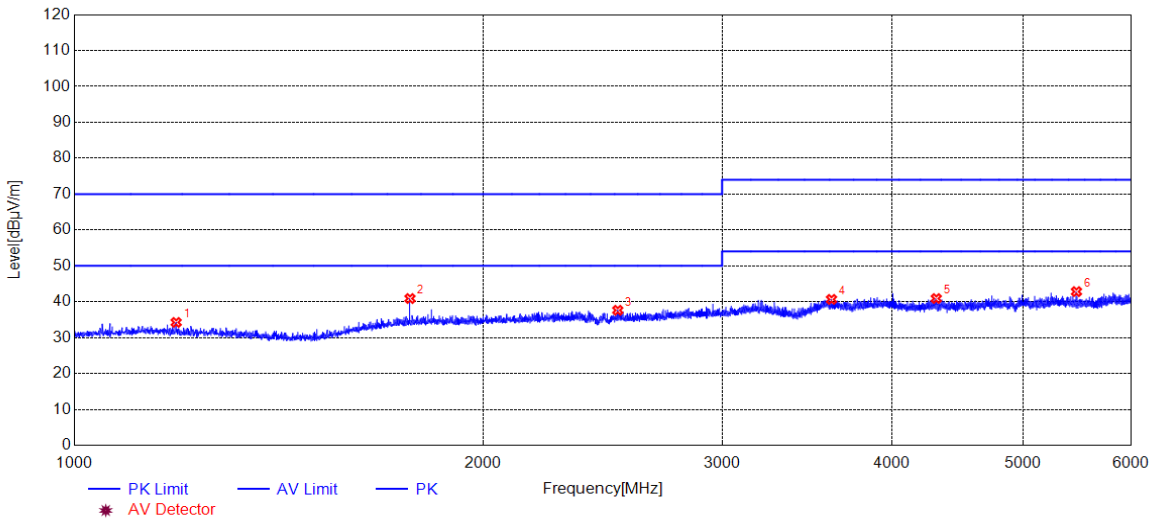


3.1.4. Test Result



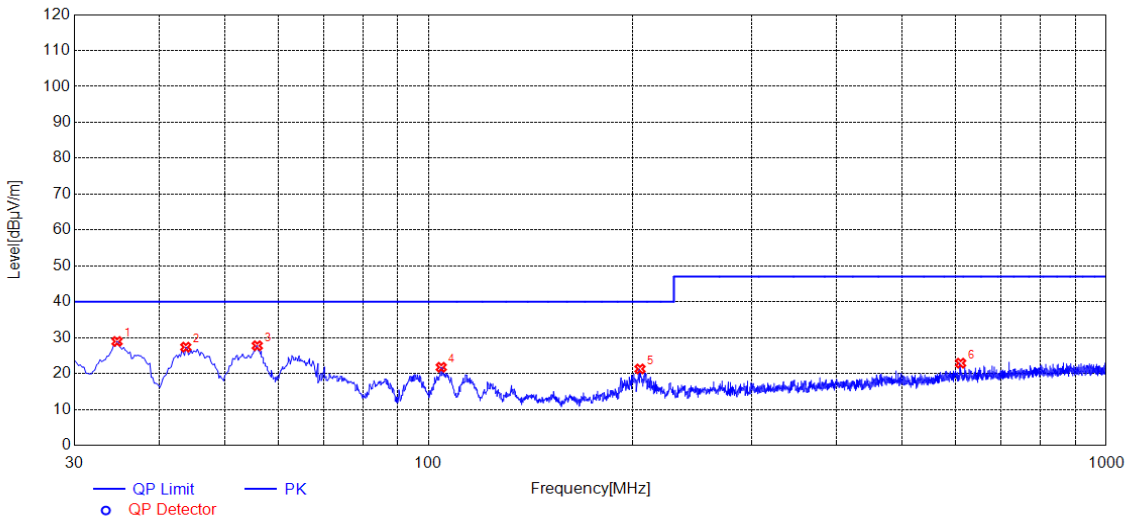
(Plot A: ANT-Vertical,30MHz - 1GHz)

No.	Fre. MHz	PK dBµV/m	QP dBµV/m	AV dBµV/m	Limit-PK dBµV/m	Limit-QP dBµV/m	Limit-AV dBµV/m	ANT	Verdict
1	33.2987	27.53	N.A.	N.A.	N.A.	40.00	N.A.	V	PASS
2	44.9410	29.53	N.A.	N.A.	N.A.	40.00	N.A.	V	PASS
3	55.8072	28.02	N.A.	N.A.	N.A.	40.00	N.A.	V	PASS
4	104.1228	21.79	N.A.	N.A.	N.A.	40.00	N.A.	V	PASS
5	206.7694	20.45	N.A.	N.A.	N.A.	40.00	N.A.	V	PASS
6	731.2563	22.94	N.A.	N.A.	N.A.	47.00	N.A.	V	PASS



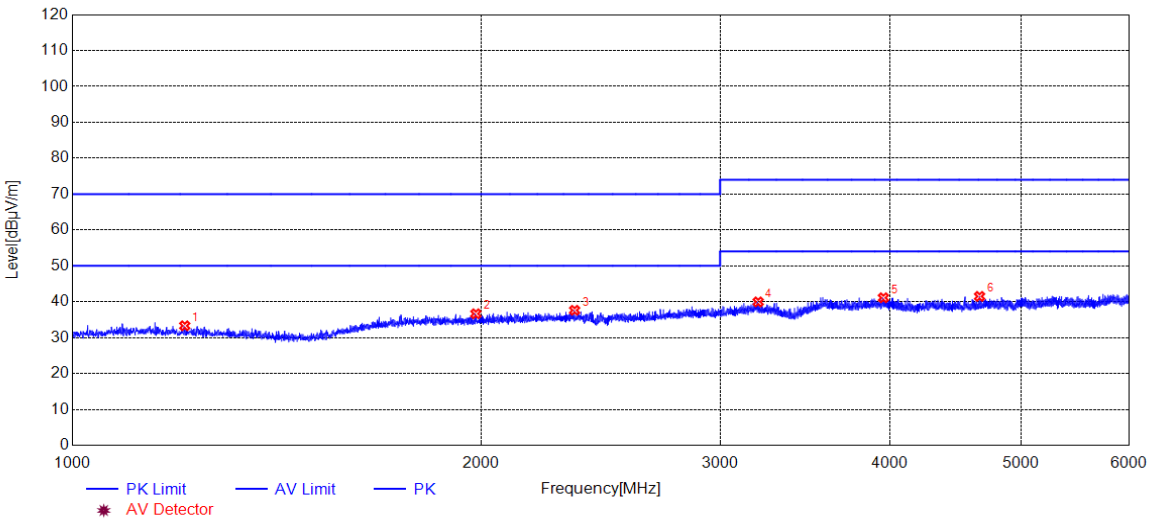
(Plot B: ANT-Vertical,1GHz - 6GHz)

No.	Fre. MHz	PK dBµV/m	QP dBµV/m	AV dBµV/m	Limit-PK dBµV/m	Limit-QP dBµV/m	Limit-AV dBµV/m	ANT	Verdict
1	1188.0188	34.25	N.A.	N.A.	70.00	N.A.	50.00	V	PASS
2	1766.5767	40.90	N.A.	N.A.	70.00	N.A.	50.00	V	PASS
3	2513.1513	37.63	N.A.	N.A.	70.00	N.A.	50.00	V	PASS
4	3611.7612	40.66	N.A.	N.A.	74.00	N.A.	54.00	V	PASS
5	4314.3314	40.90	N.A.	N.A.	74.00	N.A.	54.00	V	PASS
6	5472.9473	42.83	N.A.	N.A.	74.00	N.A.	54.00	V	PASS



(Plot C:ANT- Horizontal, 30MHz - 1GHz)

No.	Fre. MHz	PK dBµV/m	QP dBµV/m	AV dBµV/m	Limit-PK dBµV/m	Limit-QP dBµV/m	Limit-AV dBµV/m	ANT	Verdict
1	34.6569	28.94	N.A.	N.A.	N.A.	40.00	N.A.	H	PASS
2	43.7768	27.36	N.A.	N.A.	N.A.	40.00	N.A.	H	PASS
3	55.8072	27.75	N.A.	N.A.	N.A.	40.00	N.A.	H	PASS
4	104.3169	21.75	N.A.	N.A.	N.A.	40.00	N.A.	H	PASS
5	205.0230	21.28	N.A.	N.A.	N.A.	40.00	N.A.	H	PASS
6	609.5939	22.89	N.A.	N.A.	N.A.	47.00	N.A.	H	PASS



(Plot D:ANT- Horizontal, 1GHz - 6GHz)

No.	Fre. MHz	PK dBµV/m	QP dBµV/m	AV dBµV/m	Limit-PK dBµV/m	Limit-QP dBµV/m	Limit-AV dBµV/m	ANT	Verdict
1	1209.5210	33.31	N.A.	N.A.	70.00	N.A.	50.00	H	PASS
2	1982.0982	36.66	N.A.	N.A.	70.00	N.A.	50.00	H	PASS
3	2343.6344	37.63	N.A.	N.A.	70.00	N.A.	50.00	H	PASS
4	3200.2200	39.96	N.A.	N.A.	74.00	N.A.	54.00	H	PASS
5	3957.7958	41.11	N.A.	N.A.	74.00	N.A.	54.00	H	PASS
6	4659.3659	41.50	N.A.	N.A.	74.00	N.A.	54.00	H	PASS

3.2. Conducted Emission- AC Port

3.2.1. Limits of Conducted Emission-AC Port

Frequency Range (MHz)	Conducted Limit (dBμV)	
	Quasi-peak	Average
0.15 – 0.50	66 to 56	56 to 46
0.50 – 5	56	46
5 – 30	60	50

Note:

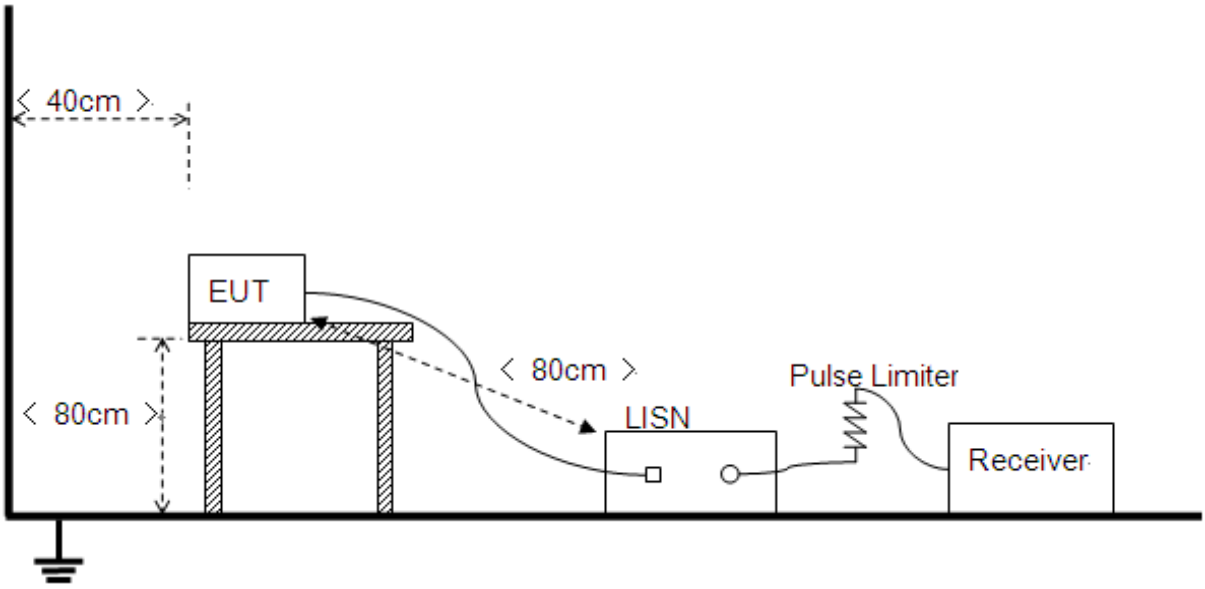
1. The lower limit shall apply at the band edges.
2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 – 0.50MHz.

3.2.2. Test Procedure

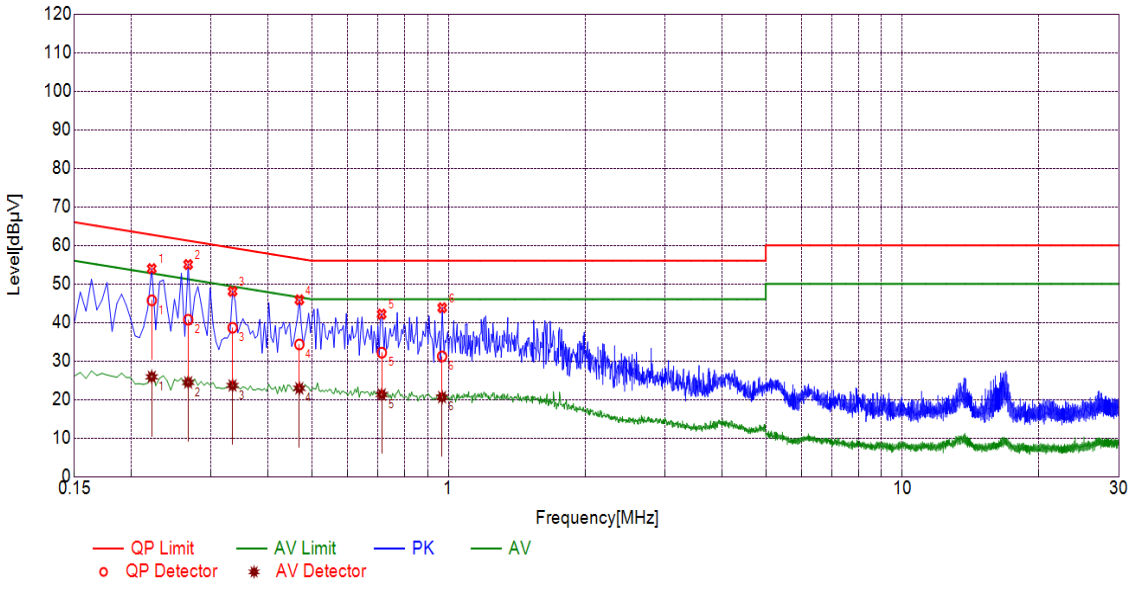
1. The EUT is placed on a 0.8m high insulating table, which stands on the grounded conducting floor, and keeps 0.4m away from the grounded conducting wall. The EUT is connected to the power mains through a LISN which provides 50Ω/50μH of coupling impedance for the measuring instrument.
2. The test frequency range is from 150kHz to 30MHz. The maximum conducted interference is searched using Peak (PK), Quasi-peak (QP) and Average (AV) detectors; the emission levels that are more than the AV and QP limits, and that have narrow margins from the AV and QP limits will be re-measured with AV and QP detectors.
3. Tests for both Line and Neutral lines of the power mains connected to the EUT are performed.

3.2.3. Test Setup

Please refer to Annex A for the photographs of the Test Configuration.

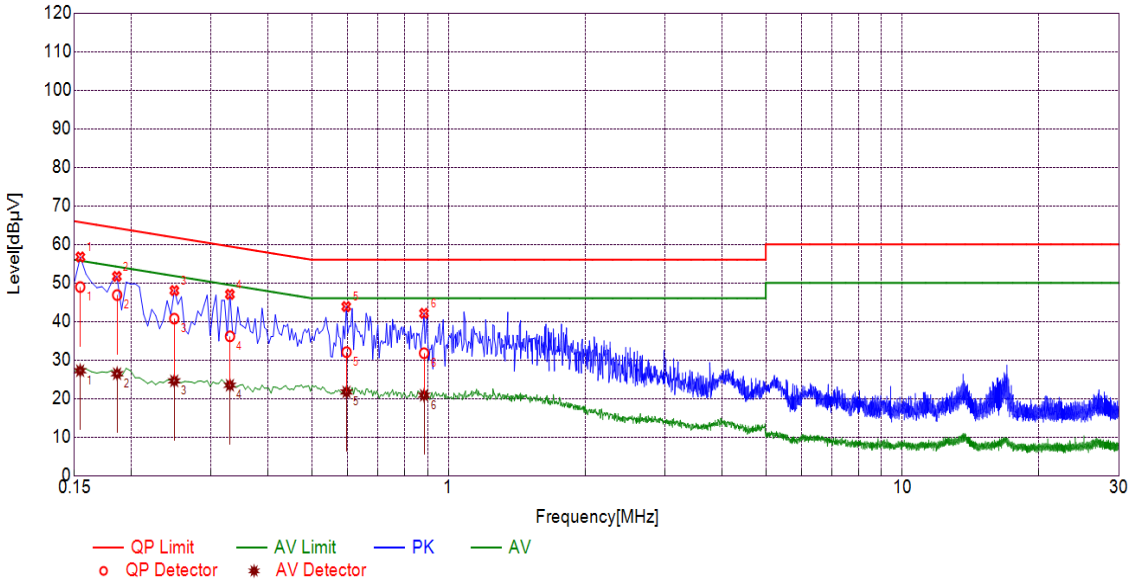


3.2.4. Test Result



(Plot A:L Phase)

NO.	Fre. (MHz)	Emission Level (dBµV)		Limit (dBµV)		Power-line	Verdict
		Quasi-peak	Average	Quasi-peak	Average		
1	0.2220	45.73	25.88	62.74	52.74	Line	PASS
2	0.2671	40.71	24.45	61.21	51.21		PASS
3	0.3344	38.62	23.65	59.34	49.34		PASS
4	0.4693	34.29	22.93	56.53	46.53		PASS
5	0.7130	32.17	21.30	56.00	46.00		PASS
6	0.9681	31.20	20.62	56.00	46.00		PASS



(Plot B: N Phase)

NO.	Fre. (MHz)	Emission Level (dBµV)		Limit (dBµV)		Power-line	Verdict
		Quasi-peak	Average	Quasi-peak	Average		
1	0.1544	48.93	27.22	65.76	55.76	Neutral	PASS
2	0.1862	46.85	26.43	64.21	54.21		PASS
3	0.2488	40.72	24.58	61.80	51.80		PASS
4	0.3300	36.14	23.45	59.45	49.45		PASS
5	0.5961	32.04	21.71	56.00	46.00		PASS
6	0.8835	31.77	20.85	56.00	46.00		PASS

4. Immunity Tests

4.1. EUT Operation and Performance Criteria

4.1.1. Performance Criteria

A. General Performance Criteria:

- Performance criteria A for immunity tests with phenomena of a continuous nature.
- Performance criteria B for immunity tests with phenomena of a transient nature.
- Performance criteria C for immunity tests with power interruptions exceeding a certain time.

The equipment shall meet the minimum performance criteria as specified in the following clauses.

Criteria	During test	After test
A	Shall operate as intended. (see note). Shall be no loss of function. Shall be no unintentional transmissions.	Shall operate as intended. Shall be no degradation of performance. Shall be no loss of function. Shall be no loss of critical stored data.
B	May be loss of function.	Functions shall be self-recoverable. Shall operate as intended after recovering. Shall be no loss of critical stored data.
C	May be loss of function.	Functions shall be recoverable by the operator. Shall operate as intended after recovering. Shall be no loss of critical stored data.
Note: Operate as intended during the test allows a level of degradation in accordance with the follow: Minimum performance level. For equipment that supports a PER or FER, the minimum performance level shall be a PER or FER less than or equal to 10 %. For equipment that does not support a PER or a FER, the minimum performance level shall be no loss of the wireless transmission function needed for the intended use of the equipment.		

B. Performance criteria for Continuous phenomena

The performance criteria A shall apply.
Where the EUT is a transmitter in standby mode, unintentional transmission shall not occur during the test.

Where the EUT is a transceiver in receive mode, unintentional transmission shall not occur during the test.

C. Performance criteria for Transient phenomena

The performance criteria B shall apply, except for voltage dips greater than or equal to 100 ms and voltage interruptions of 5 000 ms duration, for which performance criteria C shall apply.
Where the EUT is a transmitter in standby mode, unintentional transmission shall not occur as a result of the application of the test.
Where the EUT is a transceiver in receive mode, unintentional transmission shall not occur as a result of the application of the test.

4.2. Electrostatic Discharge Immunity

4.2.1. Test Specification

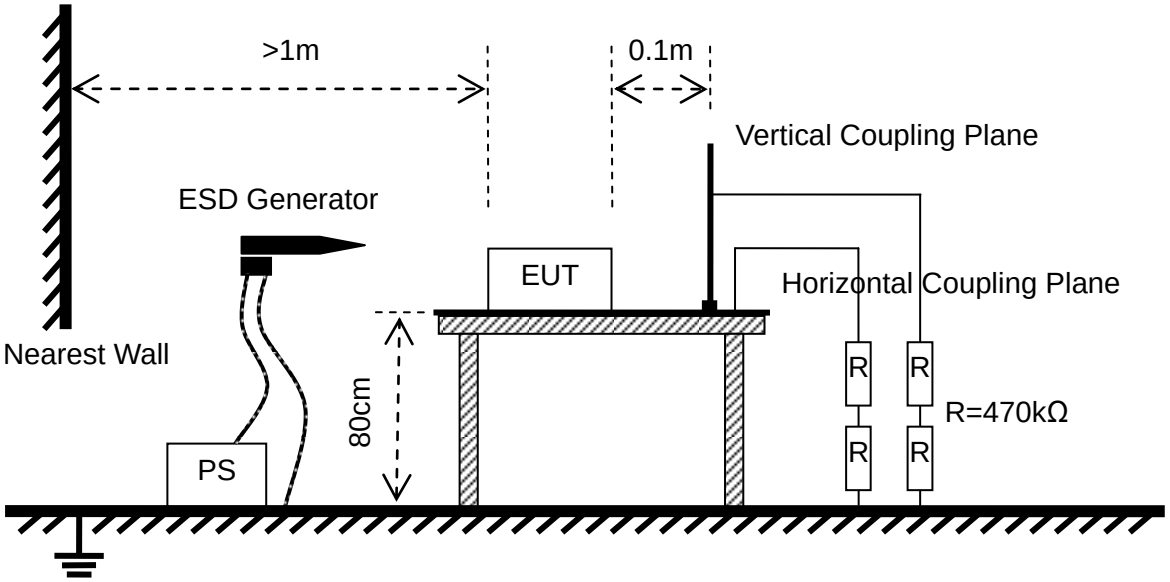
Specification	Value
Basic Standard	EN 61000-4-2:2009
Discharge Impedance	330Ohm / 150pF
Discharge Voltage	Air Discharge: 8kV; Contact Discharge: 4kV
Polarity	Positive / Negative
Number of Discharge	Minimum 10 times at each test point
Discharge Mode	Single discharge
Discharge Period	1 second minimum

4.2.2. Test Procedure

1. Electrostatic discharges are applied only to those points and surfaces of the EUT that are accessible to users during normal operation.
2. The test is performed with at least ten single discharges on the pre-selected points in the most sensitive polarity.
3. The time interval between two successive single discharges is at least 1 second.
4. The ESD generator is held perpendicularly to the surface to which the discharge is applied and the return cable is at least 0.2 meters from the EUT.
5. Contact discharges are applied to the non-insulating coating, with the pointed tip of the generator penetrating the coating and contacting the conducting substrate.
6. Air discharges are applied with the round discharge tip of the discharge electrode approaching the EUT as fast as possible (without causing mechanical damage) to touch the EUT. After each discharge, the ESD generator is removed from the EUT and re-triggered for a new single discharge. The test is repeated until all discharges were completed.
7. At least ten single discharges (in the most sensitive polarity) are applied to the Horizontal Coupling Plane at points on each side of the EUT. The ESD generator is positioned vertically at a distance of 0.1 meters from the EUT with the discharge electrode touching the HCP.
8. At least ten single discharges (in the most sensitive polarity) are applied to the center of one vertical edge of the Vertical Coupling Plane in sufficiently different positions that the four faces of the EUT were completely illuminated. The VCP (dimensions 0.5m*0.5m) is placed vertically to and 0.1 meters from the EUT.

4.2.3. Test Setup

Please refer to Annex A for the photographs of the Test Configuration.



4.2.4. Test Result

Performances of all test modes of the EUT should comply with the performance criteria for Criterion B.All test modes have the same test results, and only one result is recorded in this report.

Test Points	Discharge Level (kV)	Discharge Mode	Number of Discharge	Test Mode	Observation	Verdict
HCP	±4	Indirect	10	See section 2.2	A	PASS
VCP	±4	Indirect	10		A	PASS
Please refer to the red arrow	±2,±4,±8	Air	10		A	PASS

4.2.5. The ESD test points

 Represent air discharge

4.3. Radiated Immunity

4.3.1. Test Specification

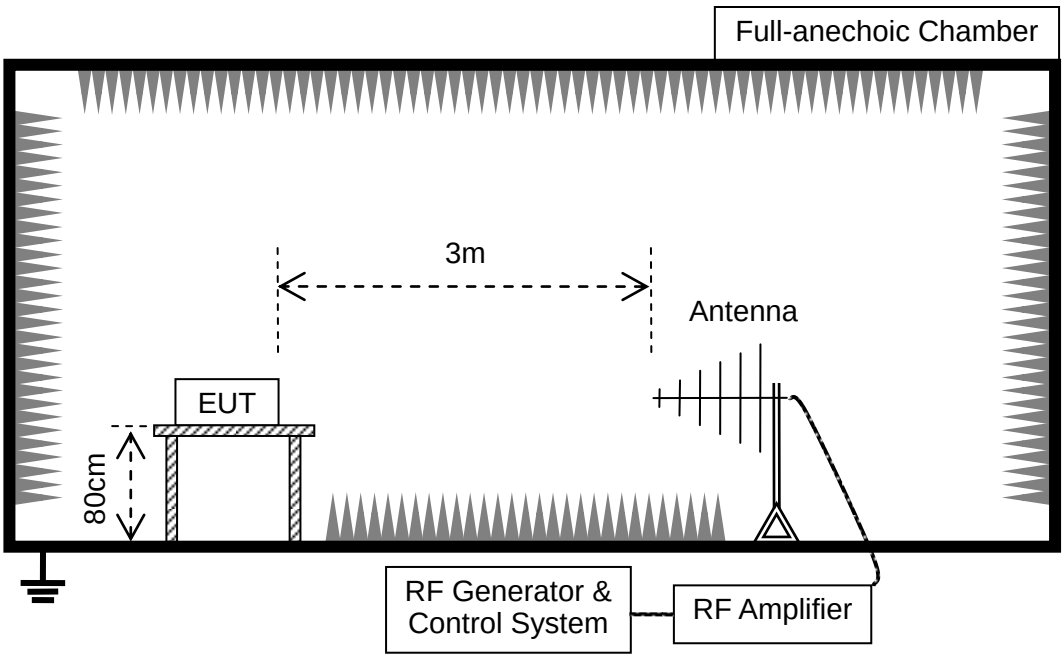
Basic Standard	EN 61000-4-3:2006+A1:2008+A2:2010
Frequency Range	80 MHz – 6000MHz
Field Strength	3V/m
Modulation	1 kHz sine wave, 80%, AM modulation
Frequency Step	1% of fundamental
Polarity of Antenna	Horizontal and Vertical
Test Distance	3m
Antenna Height	1.5m
Dwell Time	3 seconds

4.3.2. Test Procedure

The test procedure was in accordance with EN 61000-4-3:2006+A1:2008+A2:2010.

1. The testing was performed in a fully anechoic chamber. The transmit antenna was located at a distance of 3 meters from the EUT.
2. The test signal was 80% amplitude modulated with a 1 kHz sine wave.
3. The frequency range was swept from 80 MHz to 6000MHz with the exception of the exclusion band for transmitters, receivers and duplex transceivers. The rate of sweep did not exceed 1.5×10^{-3} decade/s. Where the frequency range is swept incrementally, the step size was 1% of fundamental.
4. The dwell time at each frequency shall be not less than the time necessary for the EUT to be able to respond.
5. The field strength level was 3V/m.
6. The test was performed with the EUT exposed to both vertically and horizontally polarized fields on each of the four sides.

4.3.3. Test Setup



For the actual test configuration refer to Annex A for the photographs of the Test Configuration.

4.3.4. Test Result

Performances of all test modes of the EUT should comply with the performance criteria for CT/CR or Criterion A.All test modes have the same test results, and only one result is recorded in this report.

Operating Mode	Field Strength	Frequency (MHz)	Modulation	EUT Face	Observation	Verdict
See Section 2.2	3 V/m	80-6000	1KHz, 80% Amp. Mod, 1% increment	Front	A	PASS
				Rear	A	PASS
				Left	A	PASS
				Right	A	PASS

Note 1: For BLE, EUT enters receiver mode via EMI_Test_Tool.exe software and then uses R&S CMW500 to send packets to EUT, read the number of packets received by EUT, and calculate the ratio between the received packet and the transmitted packet, the PER values were less than 10% in the entire test sequence.

4.4. Electrical Fast Transient / Burst Immunity

4.4.1. Test Specification

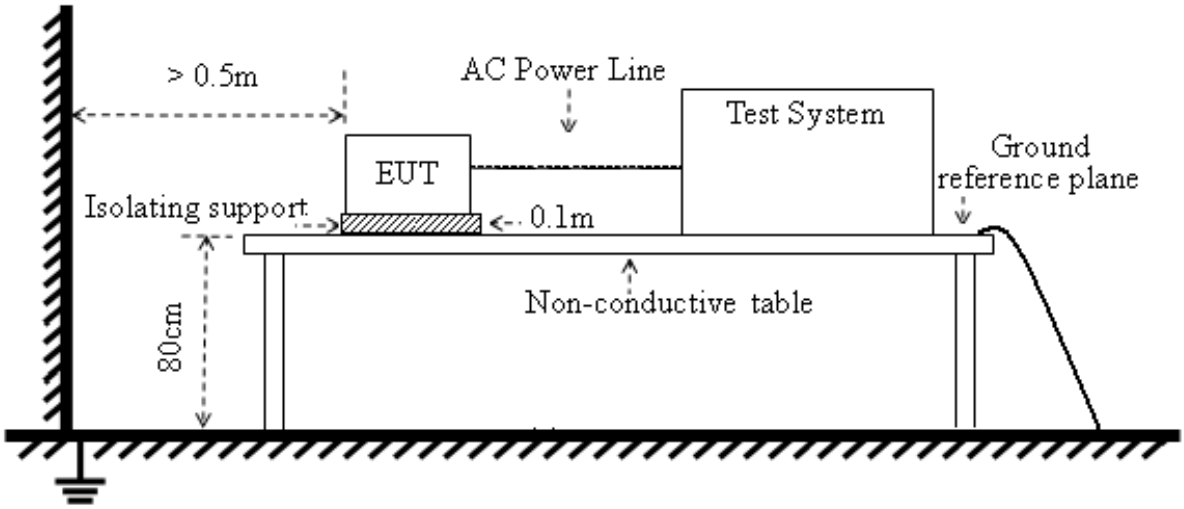
Specification	Value
Basic Standard	EN 61000-4-4:2012
Test Voltage	AC Power Port: 1kV
Polarity	Positive / Negative
Impulse Frequency	5kHz
Impulse Wave Shape	5/50ns
Burst Duration	15ms
Burst Period	300ms
Test Duration	≥ 2min

4.4.2. Test Procedure

1. The EUT is tested with 1000V discharges to the AC power input leads.
2. Both positive and negative polarity discharges are applied.
3. The length of the "hot wire" from the coaxial output of the EFT generator to the terminals on the EUT should not exceed 1m.
4. The duration time of each test sequential is 2min.
5. The transient / burst waveform is in accordance with EN 61000-4-4:2012, 5/50ns.

4.4.3. Test Setup

Please refer to Annex A for the photographs of the Test Configuration.



4.4.4. Test Result

Performances of all test modes of the EUT should comply with the performance criteria for TT/TR or Criterion B.All test modes have the same test results, and only one result is recorded in this report.

EUT Operating Mode	Test Point	Polarity	Test Level (kV)	Observation	Verdict
See section 2.2	AC Port, L	+ / -	1	A	PASS
	AC Port, N	+ / -	1	A	PASS
	AC Port, L-N	+ / -	1	A	PASS

4.5. Surge Immunity

4.5.1. Test Specification

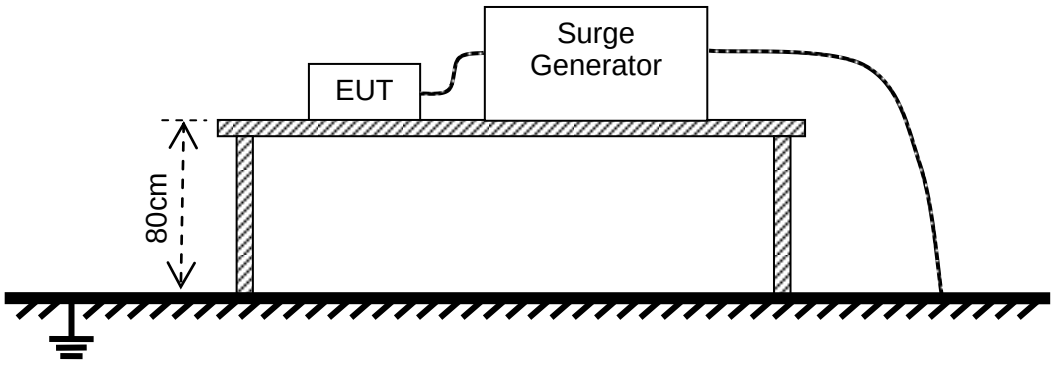
Specification	Value
Basic Standard	EN 61000-4-5:2014+A1:2017
Waveform	Voltage: 1.2/50μs; Current: 8/20μs
Test Voltage	AC Power Port: line to ground 2kV, line to line 1kV
Polarity	Positive / Negative
Phase Angle	0°, 90°, 180°, 270°
Repetition Rate	60 seconds
Times	5 times per condition

4.5.2. Test Procedure

1. The EUT and the auxiliary equipment are placed on a table of 0.8m heights above a metal ground reference plane. The size of ground plane is greater than 1m*1m and project beyond the EUT by at least 0.1m on all sides. The ground plane is connected to the protective earth. The length of power cord between the coupling device and the EUT is less than 2 meters (provided by the manufacturer).
2. The EUT is connected to the power mains through a coupling device that directly couples the surge interference signal. The surge noise is applied synchronized to the voltage phase at the zero crossing and the peak value of the AC voltage wave (positive and negative).
3. The surges are applied line to line and line(s) to earth. When testing line to earth the test voltage is applied successively between each of the lines and earth. Steps up to the test level specified increased the test voltage. All lower levels including the selected test level are tested. The polarity of each surge level included positive and negative test pulses.

4.5.3. Test Setup

Please refer to Annex A for the photographs of the Test Configuration.



4.5.4. Test Result

Performances of all test modes of the EUT should comply with the performance criteria for TT/TR or Criterion B. All test modes have the same test results, and only one result is recorded in this report.

EUT Operating Mode	Coupling Line	Polarity	Voltage (kV)	Observation	Verdict
See section 2.2	AC Port, L-N	+ / -	0.5	A	PASS
			1	A	PASS

4.6. Conducted Immunity

4.6.1. Test Specification

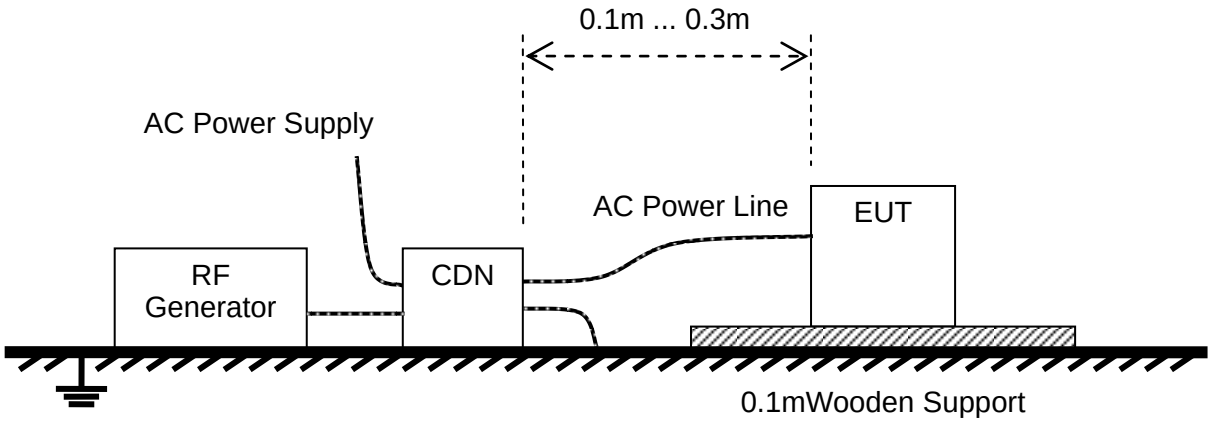
Specification	Value
Basic Standard	EN 61000-4-6:2014
Frequency Range	0.15MHz - 80MHz
Field Strength	3Vrms
Modulation	1kHz sine wave, 80% AM
Frequency Step	1% of fundamental
Coupled Cable	AC Power Line
Coupling Device	CDN-M2

4.6.2. Test Procedure

1. The EUT shall be tested within its intended operating and climatic conditions.
2. The test shall be performed with the test generator connected to each of the coupling and decoupling devices in turn, while the other non-excited RF input ports of the coupling devices are terminated by a 50Ohm load resistor.
3. The test signal is 80% amplitude modulated with a 1kHz sine wave.
4. The frequency range is swept from 150kHz to 80MHz, using the signal level established during the setting process and with a disturbance signal of 80% amplitude. The sweep rate shall not exceed 1.5*10-3 decades/s. The step size shall not exceed 1% of the start and thereafter 1% of the preceding frequency value where the frequency is swept incrementally.
5. The dwell time at each frequency shall not be less than the time necessary for the EUT to be exercised, and able to respond. Sensitive frequencies such as clock frequencies and harmonics or frequencies of dominant interest, shall be analyzed separately.
6. Attempts should be made to fully exercise the EUT during test, and to fully interrogate all exercise modes selected for susceptibility.

4.6.3. Test Setup

Please refer to Annex A for the photographs of the Test Configuration.



4.6.4. Test Result

Performances of all test modes of the EUT should comply with the performance criteria for CT/CR or Criterion A.All test modes have the same test results, and only one result is recorded in this report.

EUT Operating Mode	Test Point	Frequency (MHz)	Voltage level (V)	Observation	Verdict
See section 2.2	AC Port	0.15 - 80	3	A	PASS

Note 1: For BLE, EUT enters receiver mode via EMI_Test_Tool.exe software and then uses R&S CMW500 to send packets to EUT, read the number of packets received by EUT, and calculate the ratio between the received packet and the transmitted packet, the PER values were less than 10% in the entire test sequence.

4.7. Voltage Dips and Interruptions Immunity

4.7.1. Test Specification

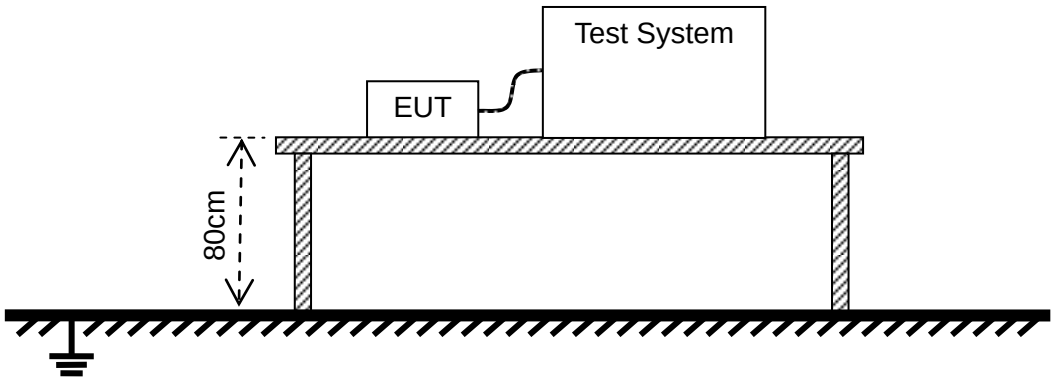
Specification	Value
Basic Standard	EN 61000-4-11:2004
Voltage Dips	100% reduction: 0.5 cycle; 100% reduction: 1 cycle; 30% reduction: 25 cycles
Voltage Interruptions	100% reduction: 250 cycles
Voltage Phase Angle	0°&180°

4.7.2. Test Procedure

1. The power cord is used as supplied by the manufacturer. The EUT was connected to the line output of the Voltage Dips and Interruption Generator.
2. The EUT is tested for a) 100% voltage dip of supplied voltage with duration of 0.5 cycle; b) 100% voltage dip of supplied voltage with duration of 1 cycle;c) 30% voltage dip of supplied voltage and duration 25 cycles. Both of the dip tests are carried out for a sequence of three voltage dips with intervals of 10 seconds.
3. 100% voltage interruption of supplied voltage with duration of 250 cycles is followed, which is a sequence of three voltage interruptions with intervals of 10 seconds.
4. Voltage reductions occur at 0 degrees crossover point of the voltage waveform. The performance of the EUT is checked after the voltage dip or interruption.

4.7.3. Test Setup

Please refer to Annex A for the photographs of the Test Configuration.



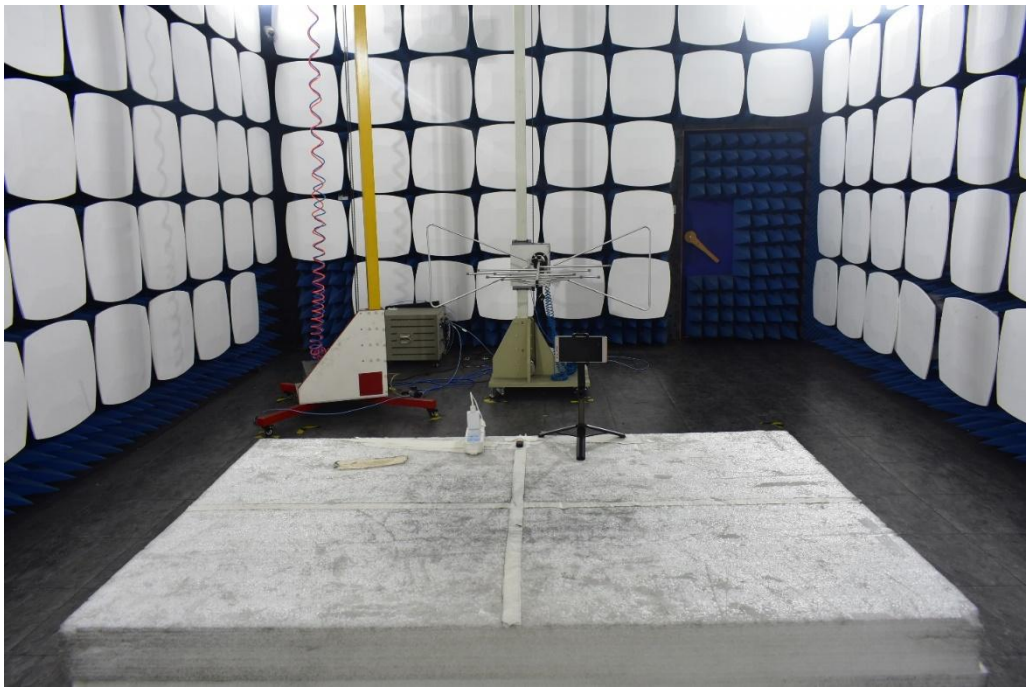
4.7.4. Test Result

The performance criteria B shall apply except 30% voltage dips and voltage interruption tests. All test modes have the same test results, only one result is recorded in this report.

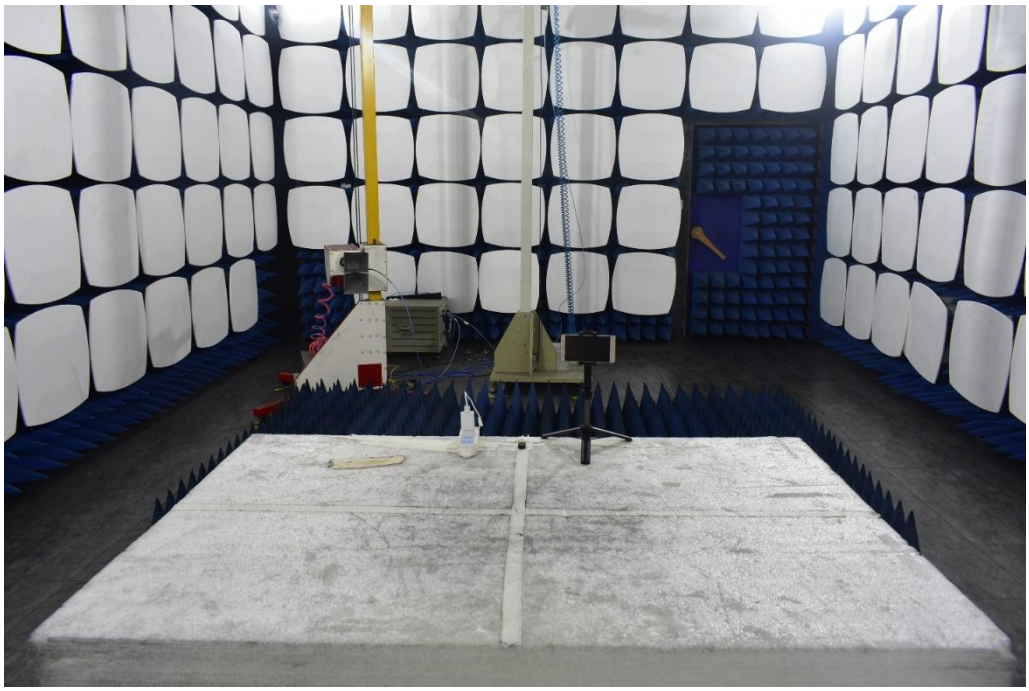
EUT Operating Mode	Test Mode	Voltage Reduction	Cycle(s)	Times	Interval (sec)	Observation	Verdict
See section 2.2	Voltage Dips	30%	25	3	10	A	PASS
		100%	1	3	10	A	PASS
		100%	0.5	3	10	A	PASS
	Voltage Interruptions	100%	250	3	10	A	PASS

Annex A Photographs of Test Setup

1. Radiated Emission (30MHz-1GHz)



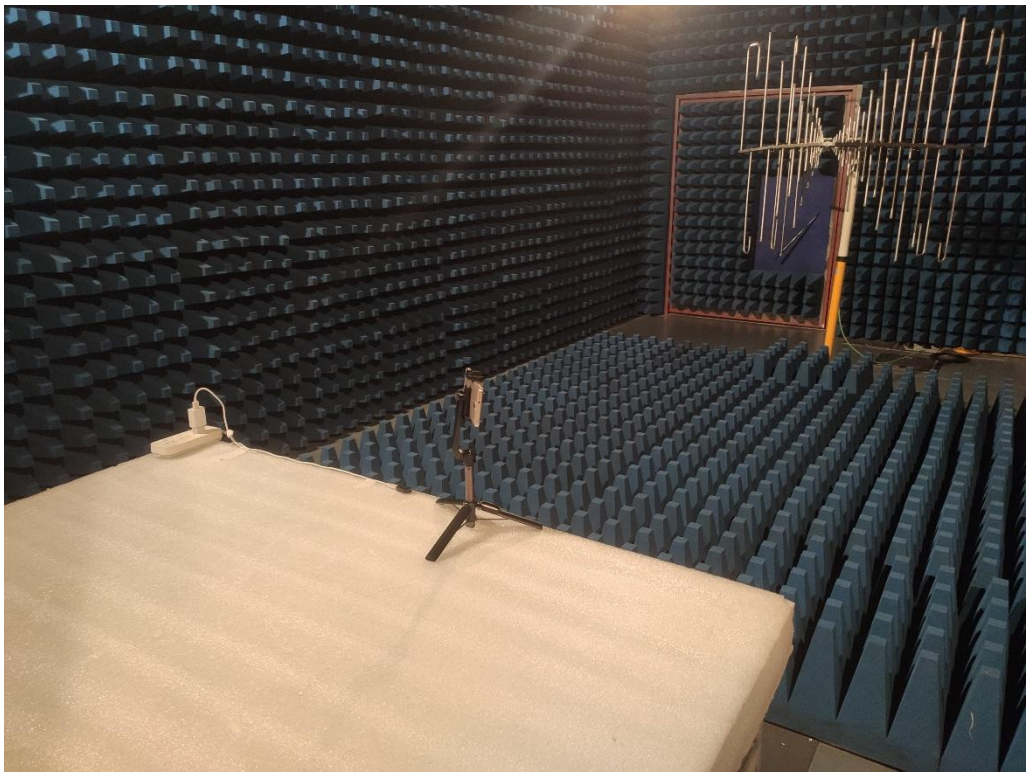
2. Radiated Emission (above 1GHz)

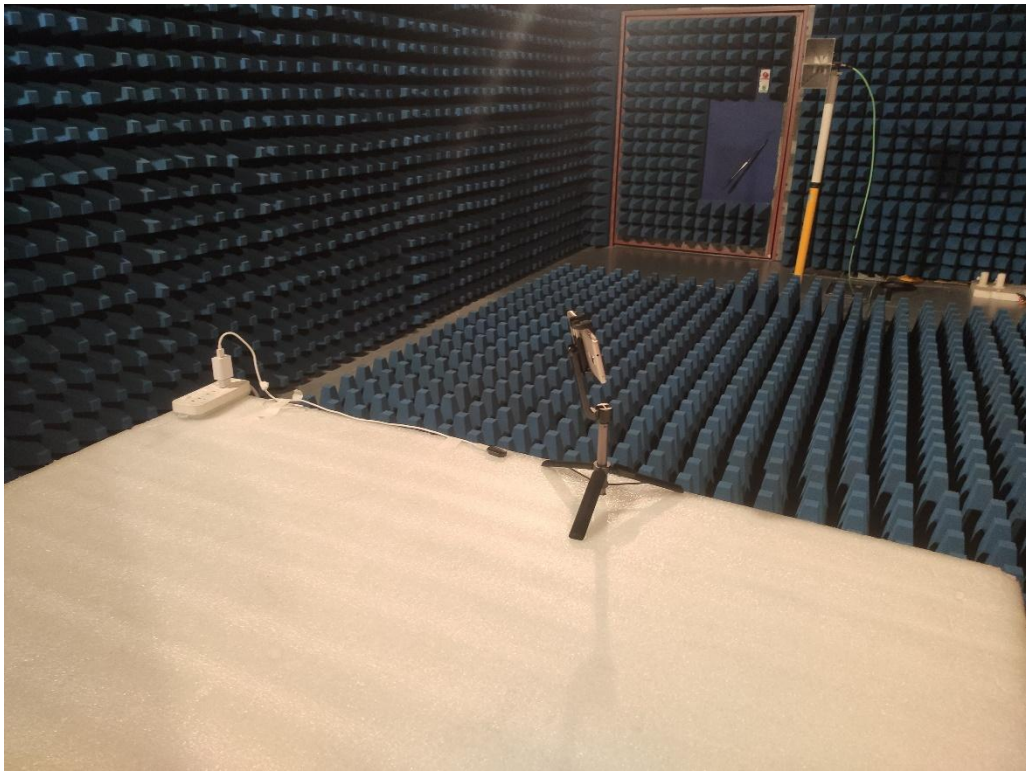


3. Conducted Emission - AC Port

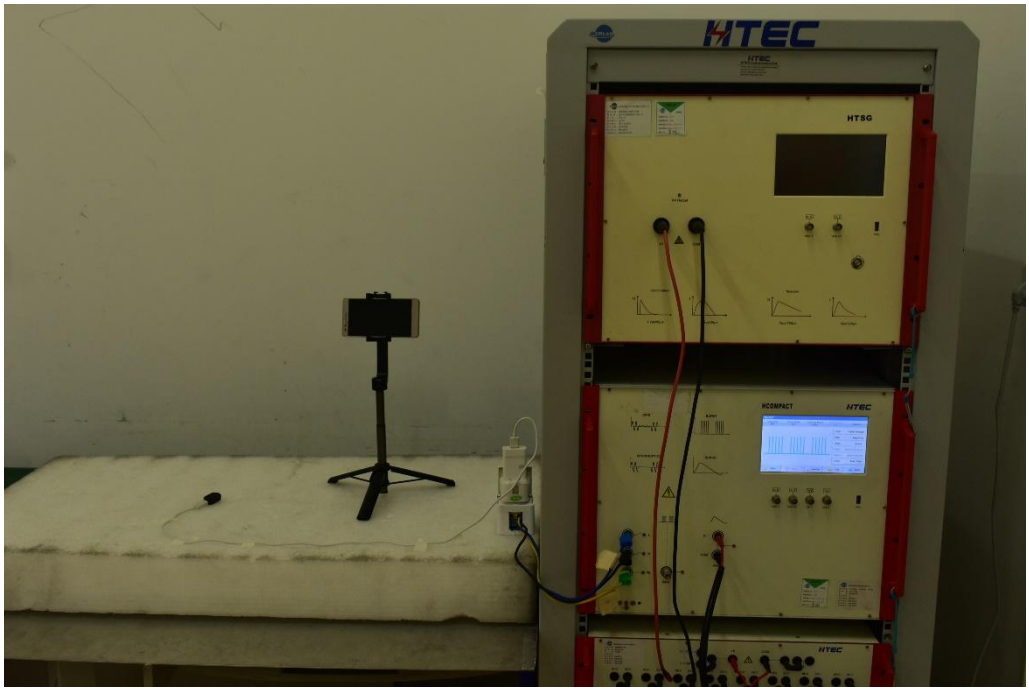
4. Electrostatic Discharge Immunity

5. Radiated Immunity

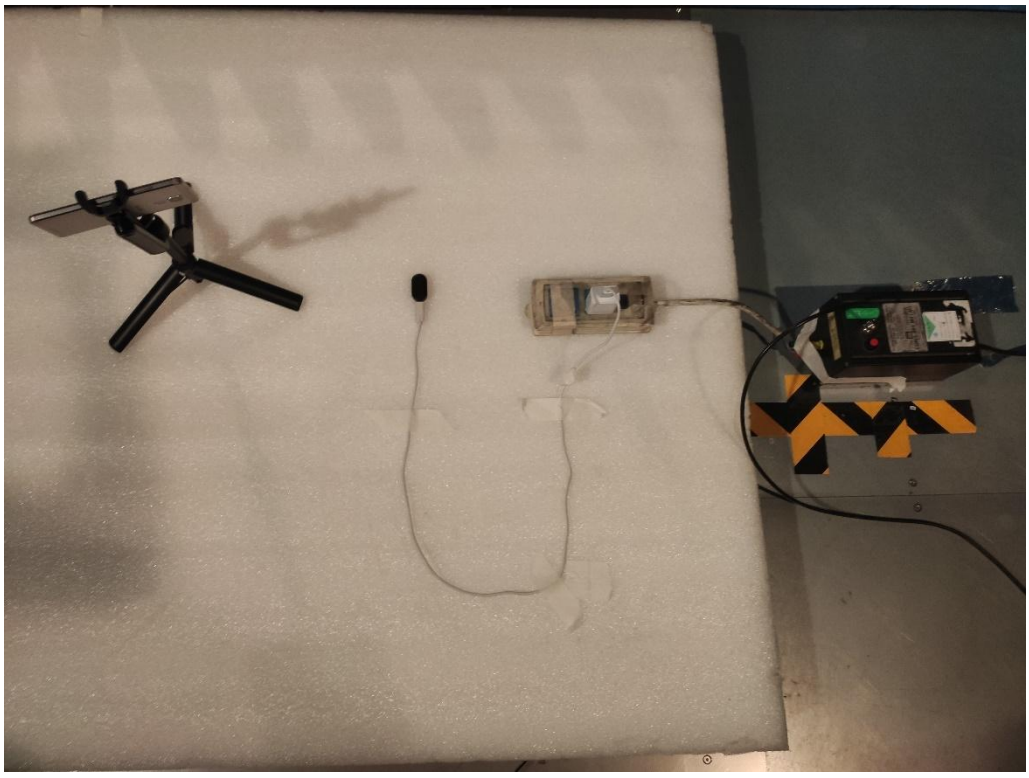




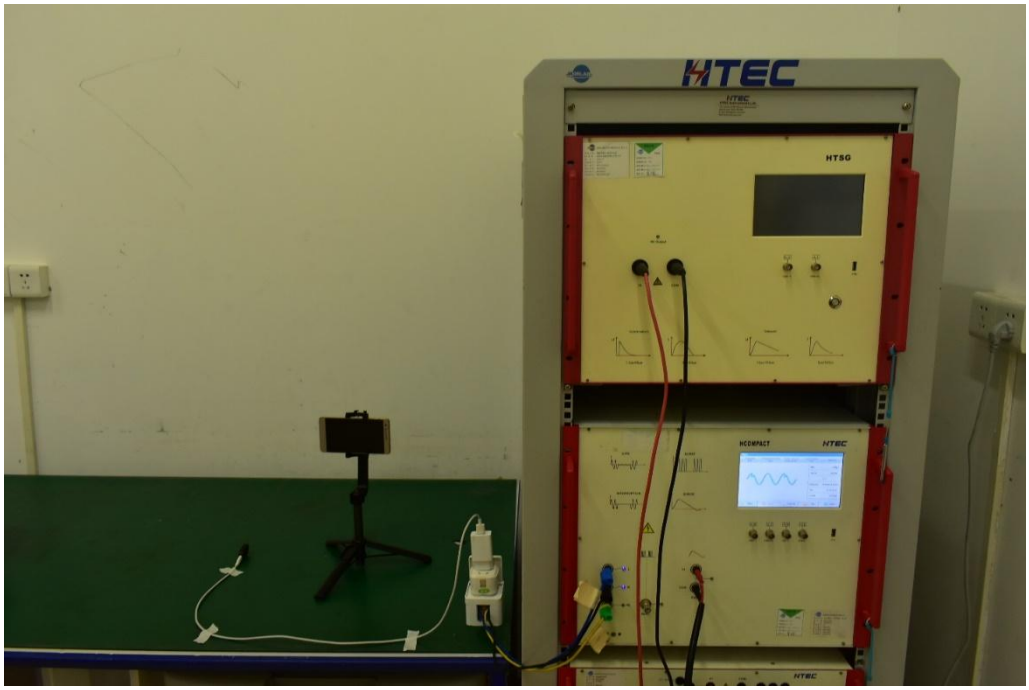
6. Electrical Fast Transient/Burst Immunity Test



7. Conducted Immunity



8. Voltage Dips and Short Interruptions Immunity, Surge Immunity Test



Annex B Test Uncertainty

The uncertainty is calculated using the methods suggested in the "Guide to the Expression of Uncertainty in Measurement" (GUM) published by ISO.

Uncertainty of Conducted Emission Measurement

Measuring Uncertainty for a Level of Confidence of 95%(U=2Uc(y))	9kHz-150kHz	±3.3dB
	150kHz-30MHz	±2.8dB

Uncertainty of Radiated Emission Measurement

Measuring Uncertainty for a Level of Confidence of 95%(U=2Uc(y))	30MHz-200MHz	±5.06dB
	200MHz-1000MHz	±5.04dB
	1GHz-6GHz	±5.18dB
	6GHz-18GHz	±5.48dB

Uncertainty of Radiated Susceptibility Measurement

Measuring Uncertainty for a Level of Confidence of 95%(U=2Uc(y))	80MHz-6GHz	±1.78dB

Uncertainty of Conducted Susceptibility Measurement

Measuring Uncertainty for a Level of Confidence of 95%(U=2Uc(y))	150kHz-80MHz	±1.96dB

Uncertainty of Electrostatic Discharge Measurement

	Measuring Uncertainty for a Level of Confidence of 95%(U=2Uc(y))
Electrostatic Discharge – Rise Time	11.0%
Electrostatic Discharge – Peak Current	8.0%
Electrostatic Discharge – 30ns Current	8.0%
Electrostatic Discharge – 60ns Current	8.0%

Uncertainty of SURGE Measurement

	Measuring Uncertainty for a Level of Confidence of 95%(U=2Uc(y))
Open-circuit Peak Voltage	10.0%

Short-circuit Peak Current	8.0%
Front Time	8.3%
Duration	4.0%

Uncertainty of EFT/B Measurement

	Measuring Uncertainty for a Level of Confidence of 95%(U=2Uc(y))
Peak Voltage	4.0%
Repetition frequency	0.0%
Burst Duration	2.6%
Burst period	0.0%
Rise Time	22%
Pulse Width	23%

Uncertainty of DIP Measurement

	Measuring Uncertainty for a Level of Confidence of 95%(U=2Uc(y))
Voltage Variations	0.9%
Voltage Rising/Fall Time	0.0%
Phase	5.7%

Annex C Testing Laboratory Information

1. Identification of the Responsible Testing Laboratory

Laboratory Name:	Shenzhen Morlab Communications Technology Co., Ltd.
Laboratory Address:	FL.1-3, Building A, FeiYang Science Park, No.8 LongChang Road, Block67, BaoAn District, ShenZhen , GuangDong Province, P. R. China
Telephone:	+86 755 36698555
Facsimile:	+86 755 36698525

2. Identification of the Responsible Testing Location

Name:	Shenzhen Morlab Communications Technology Co., Ltd.
Address:	FL.1-3, Building A, FeiYang Science Park, No.8 LongChang Road, Block67, BaoAn District, ShenZhen , GuangDong Province, P. R. China

3. Test Software Utilized

Model	Version Number	Producer
JS32-RE	Version 2.0.2.0	Tonscend
TS+ -[JS32-CE]	Version2.5.0.0	Tonscend
JS35-CS	Version 2.0.1.2	Tonscend
JS35-RS	Version 2.0.1.6	Tonscend

4. Test Equipments Utilized

Description	Model	Serial No.	Manufacturer	Cal. Date	Due. Date
Bi-Log Antenna	VULB 9163	9163-274	SCHWARZBECK	2019/11/23	2022/11/22
Horn Antenna	BBHA 9120D	9120D-963	SCHWARZBECK	2019/5/24	2022/5/23
Receiver	N9038A	MY56400093	KEYSIGHT	2021/3/9	2022/3/8
Receiver	ESPI	101052	R&S	2020/7/21	2021/7/20
LISN	NSLK 8127	8127449	Schwarzbeck	2021/3/9	2022/3/8
10dB Pulse Limiter	VTSD 9561-F	VTSD 9561 F-B #206	SCHWARZBECK	2020/7/24	2021/7/23
Horn Antenna	BBHA 9120D	02123	SCHWARZBECK	2019/8/23	2022/8/22
Preamplifier	S020180L3203	61171/61172	LUCIX CORP.	2020/7/21	2021/7/20
Preamplifier	S10M100L3802	46732	LUCIX CORP.	2020/7/21	2021/7/20
Stacked double Log.-Per. Antenna	STLP 9128D	9128DS02	SCHWARZBECK	2019/11/23	2022/11/22
Anechoic Chamber(3#)	8m*5m*4m	EMC 3#	CRT	2020/5/22	2023/5/21
ESD Simulator	SKS-0220SE	020312009E 327	SANKI	2020/7/27	2021/7/26
EFT/Surge/DIP TestingSystem	HCOMPACT 7	160701	HTEC	2020/7/21	2021/7/20
Signal Generator	N5181A	MY50141911	Agilent	2021/3/17	2022/3/16
Power Amplifier	NTWPAS-00810200	17033067	rflight communication	2021/3/17	2022/3/16
Power Amplifier	NTWPAS-1025100	17033064	rflight communication	2021/3/17	2022/3/16
Power Amplifier	NTWPAS-2560100	17043104	rflight communication	2021/3/17	2022/3/16
Power Amplifier	AP32 DR180	908-961	Prana	2021/3/17	2022/3/16
Power Meter	E4419B/E9304A	MY45104496/MZ55040004/MZ54410028	Agilent	2020/10/28	2021/10/27

CDN	CDNL-801 M2/M3	2575	Luthi	2021/3/9	2022/3/8

5. Ancillary Equipment Utilized

Description	Manufacturer	Model	Serial No.
Mobile Phone	Huawei Glory Co., Ltd.	PLK-AL10	PLK-AL10C00B389
Adapter	Shenzhen HangjiaChiyuan Electric Co., Ltd.	HW-050200C01	N/A

END OF REPORT