TEST REPORT

MANUFACTURER	:	NiceRF Wireless Technology LTD.
PRODUCT NAME	:	Wireless voice intercom module
MODEL NAME	:	SA618F22-C1
BRAND NAME	:	G-NiceRF
STANDARD(S)	:	ETSI EN 301 489-1 V2.2.3 (2019-11) ETSI EN 301 489-9 V2.1.1 (2019-04)
RECEIPT DATE	:	2024-10-10
TEST DATE	:	2024-10-30 to 2025-01-03
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Change History		
Version	Date	Reason for change
1.0	2025-02-12	First edition

1. Technical Information

Note: Provide by manufacturer.

1.1. Manufacturer and Factory Information

Manufacturer:	NiceRF Wireless Technology LTD.
Manufacturer Address:	309-314, Bldg A,Hongdu business building, Xin'an street, Zone 43, Baoan Dist, Shenzhen 518101, China
Factory:	NiceRF Wireless Technology LTD.
Factory Address:	309-314, Bldg A,Hongdu business building, Xin'an street, Zone 43, Baoan Dist, Shenzhen 518101, China

1.2. Equipment Under Test (EUT) Description

Product Name:	Wireless voice intercom module
EUT No:	1#, 3#, 23#
Hardware Version:	V1.0
Software Version:	V1.0
Frequency Range:	826 MHz ~ 832 MHz

Note:

1. For a more detailed description, please refer to specification or user'smanual 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 301 489-9 V2.1.1 (2019-04)	ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 9: Specific conditions for wireless microphones, similar Radio Frequency (RF) audio link equipment, cordless audio and in-ear monitoring devices; Harmonised Standard covering the essential requirements of article 3.1(b) of Directive 2014/53/EU
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	Wang Deyong	PASS	No deviation
2	EN 55032	Conducted Emission-AC Port	N/A	N/A[Note 1]	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	Fan Shengquan	PASS	No deviation
8	EN 61000-4-3	Radiated Immunity	N/A	N/A[Note 4]	No deviation
9	EN 61000-4-4	Electrical Fast Transient/Burst Immunity	N/A	N/A[Note 1]	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	N/A	N/A[Note 1]	No deviation
12	EN 61000-4-6	Conducted Immunity	N/A	N/A[Note 4]	No deviation
13	EN 61000-4-11	Voltage Dips and Interruptions Immunity	N/A	N/A[Note 1]	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 are provided by Guangdong Dongdian Testing Service Co., Ltd, item No. is DDT-Q24101414-2E.

2.2. EUT Setup and Operating Conditions

Test Item	
Radiated Emission	
Mode 1 :	**EUT + PC + USB Cable + Antenna + Power on Mode**
RS Test	
Mode 2 :	EUT + PC + PC Adapter + USB Cable + Tx Mode
Mode 3 :	EUT + PC + PC Adapter + USB Cable + Rx Mode
ESD Test	
Mode 2 :	EUT + PC + PC Adapter + USB Cable + Tx Mode
Mode 3 :	EUT + PC + PC Adapter + USB Cable + Rx Mode
CS Test	
Mode 2 :	EUT + PC + PC Adapter + USB Cable + Tx Mode
Mode 3 :	EUT + PC + PC Adapter + USB Cable + Rx Mode
Remark: The above test mode in boldface (Mode 1) was the worst case of radiated emission test, only the test data of this mode was reported.	

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):	21
Relative Humidity (%):	48
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.

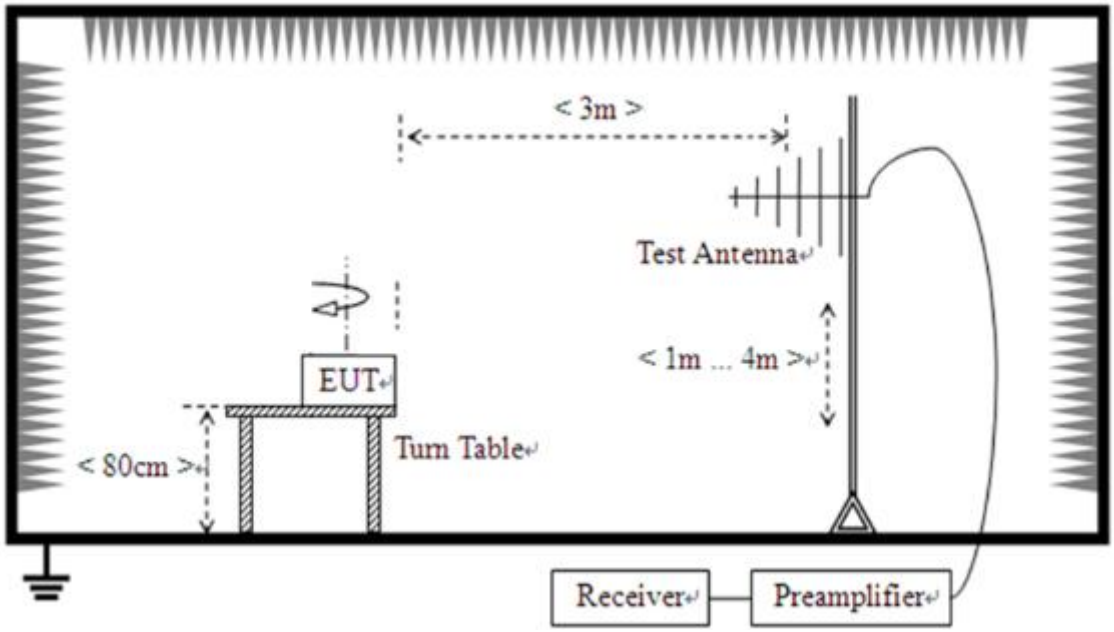
3.1.2. Test Procedure

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.

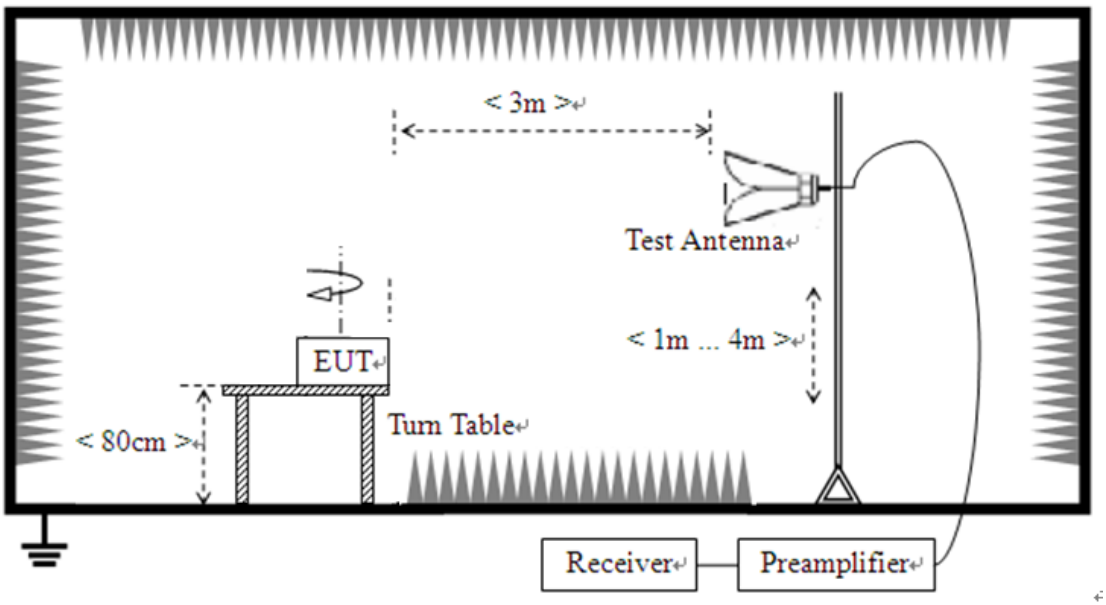
3.1.3. Test Setup

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



The measurement results are obtained as below:

$E\ [dB\mu V/m] = U_R\ [dB\mu V] + A_T[dB] + A_{Factor}\ [dB]$; $A_T = L_{Cable\ loss}\ [dB] - G_{preamp}\ [dB]$

A_T: Total correction Factor except Antenna

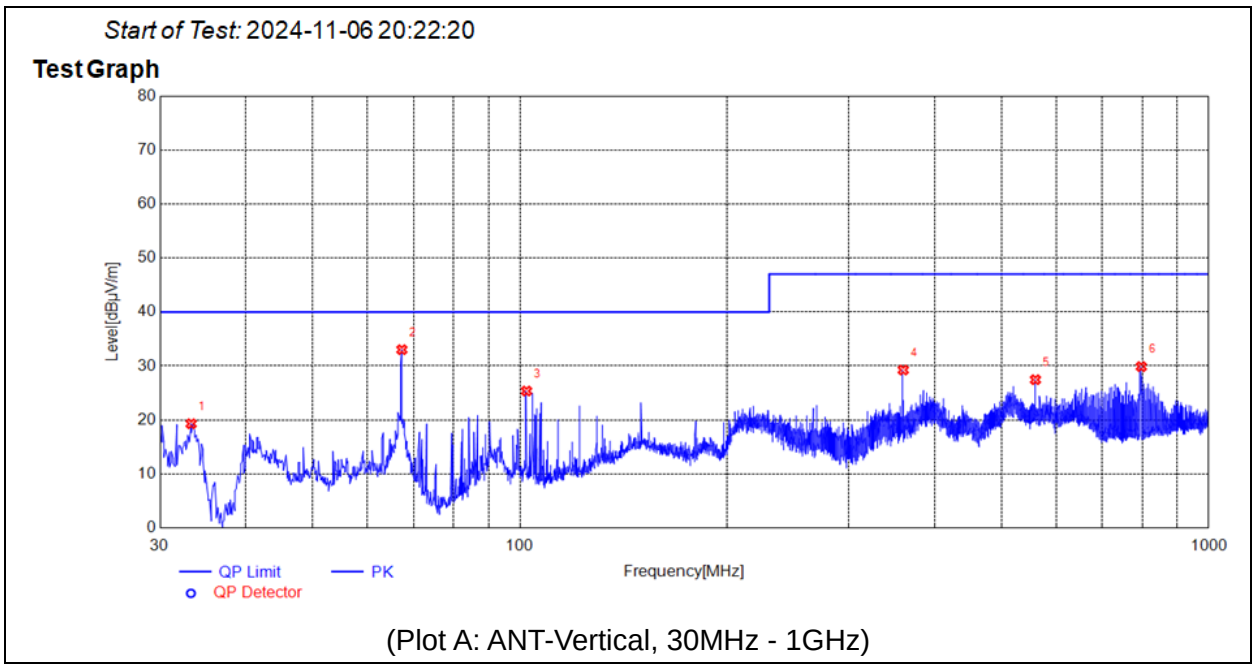
U_R: Receiver Reading

G_{preamp}: Preamplifier Gain

A_{Factor}: Antenna Factor at 3m

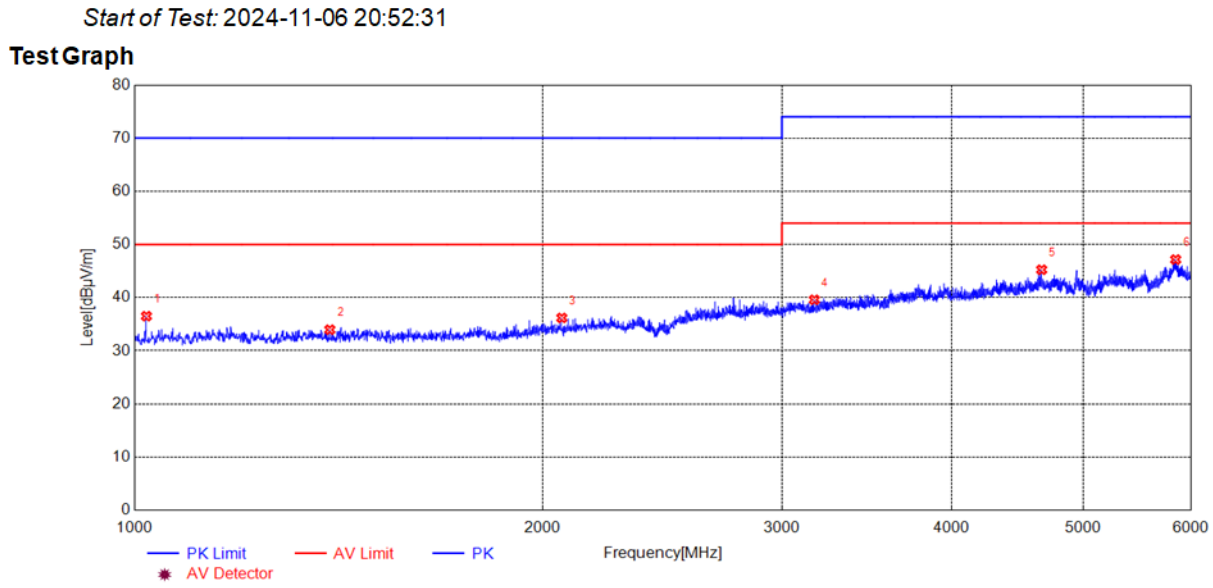
During the test, the total correction Factor A_T and A_{Factor} were built in test software.

3.1.4. Test Result



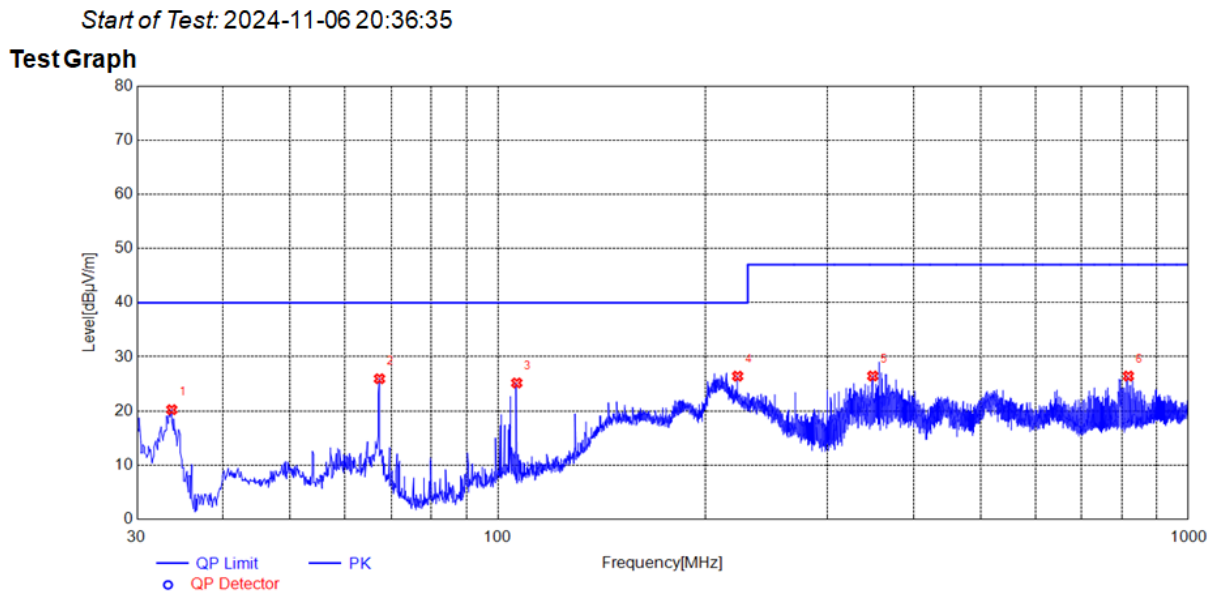
(Plot A: ANT-Vertical, 30MHz - 1GHz)

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	33.2983	19.30	N.A.	N.A.	N.A.	40.00	N.A.	V	PASS
2	67.3487	33.02	N.A.	N.A.	N.A.	40.00	N.A.	V	PASS
3	102.1752	25.36	N.A.	N.A.	N.A.	40.00	N.A.	V	PASS
4	360.0270	29.25	N.A.	N.A.	N.A.	47.00	N.A.	V	PASS
5	560.0610	27.46	N.A.	N.A.	N.A.	47.00	N.A.	V	PASS
6	797.9288	29.88	N.A.	N.A.	N.A.	47.00	N.A.	V	PASS



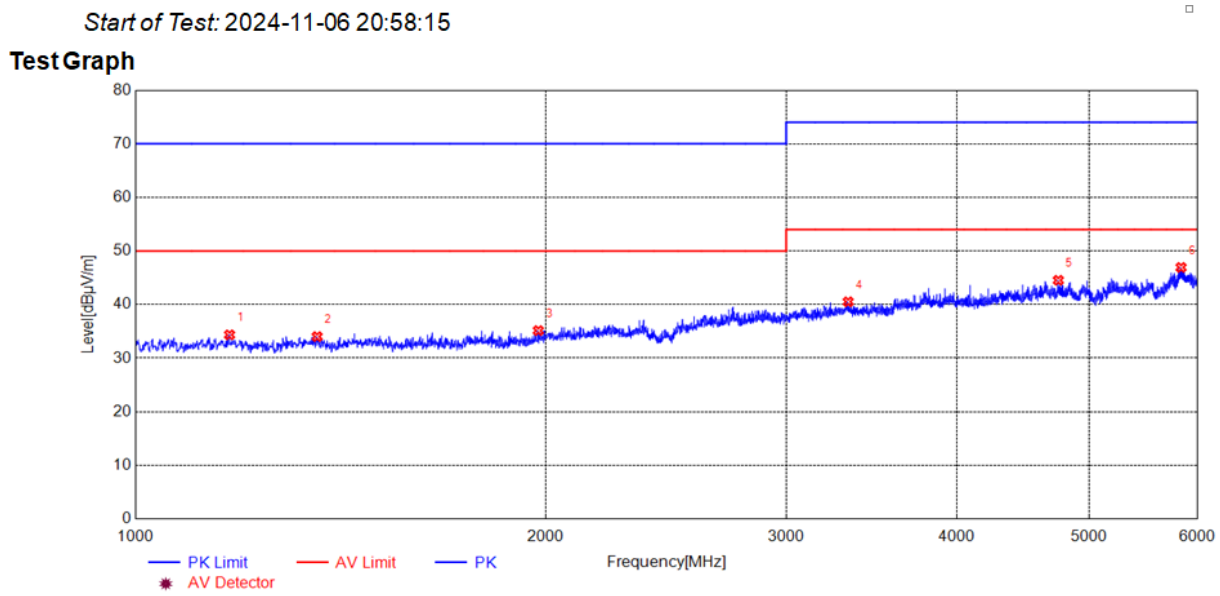
(Plot B: ANT-Vertical, 1GHz - 6GHz)

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	1020.8368	36.51	N.A.	N.A.	70.00	N.A.	50.00	V	PASS
2	1393.3989	33.96	N.A.	N.A.	70.00	N.A.	50.00	V	PASS
3	2065.1775	36.18	N.A.	N.A.	70.00	N.A.	50.00	V	PASS
4	3169.5283	39.59	N.A.	N.A.	74.00	N.A.	54.00	V	PASS
5	4660.6101	45.24	N.A.	N.A.	74.00	N.A.	54.00	V	PASS
6	5849.9750	47.16	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	33.6864	20.24	N.A.	N.A.	N.A.	40.00	N.A.	H	PASS
2	67.3487	25.95	N.A.	N.A.	N.A.	40.00	N.A.	H	PASS
3	106.4436	25.17	N.A.	N.A.	N.A.	40.00	N.A.	H	PASS
4	222.3702	26.43	N.A.	N.A.	N.A.	40.00	N.A.	H	PASS
5	348.9679	26.46	N.A.	N.A.	N.A.	47.00	N.A.	H	PASS
6	818.3978	26.44	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	1172.5288	34.35	N.A.	N.A.	70.00	N.A.	50.00	H	PASS
2	1359.2265	34.02	N.A.	N.A.	70.00	N.A.	50.00	H	PASS
3	1974.3291	35.14	N.A.	N.A.	70.00	N.A.	50.00	H	PASS
4	3330.3884	40.52	N.A.	N.A.	74.00	N.A.	54.00	H	PASS
5	4748.1247	44.53	N.A.	N.A.	74.00	N.A.	54.00	H	PASS
6	5840.8068	46.93	N.A.	N.A.	74.00	N.A.	54.00	H	PASS

4. Immunity Tests

4.1. EUT Operation and Performance Criteria

4.1.1. Performance Criteria

A. General performance criteria

The equipment shall meet the performance criteria specified in table 1, as detailed in the special performance criteria in clauses 6.2, 6.3 or 6.4, as appropriate.

Table 1: General performance criteria

During test	After test	Criteria
Operate as intended; Degradation of performance (see note 1); No loss of function	Operate as intended; No degradation of performance (see note 2); No loss of function.	A
Loss of function (one or more).	Operate as intended; No degradation of performance (see note 2); Functions self-recoverable.	B
Loss of function (one or more).	Operate as intended; No degradation of performance (see note 2); Functions recoverable by the operator.	C

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 permissible degradation of performance is not specified by the manufacturer, then this 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 degradation of performance 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.

4.1.2. Performance Requirements

A. Performance criteria for equipment which provides a continuous communication link

a) General

The establishment of the communications link at the start of the test, the maintenance of the communications link and the assessment of the recovered signal information, e.g. an audio signal, shall be used as the performance criteria to ensure that the essential functions of the transmitter and/or receiver are evaluated during and after the test.

The equipment shall meet the minimum performance criteria as specified for the appropriate category of equipment in clauses 6.1.1 and 6.1.2.

b) Performance criteria for Continuous phenomena applied to Transmitters (CT) and Receivers (CR)

The following performance criteria for continuous phenomena apply for transmitters (CT) and receivers or receiver parts of simplex or duplex transceivers (CR) permitting the establishment of a continuous communications link:

• before the test it shall be verified that the EUT, when coupled through the test equipment and not subjected to EMC stress is capable of producing a SINAD figure of at least 3 dB above the category limit specified in table 2;

• during each individual exposure in the test sequence it shall be verified, by appropriate means supplied by the manufacturer, that the communications link is maintained;

• at the conclusion of the test the EUT shall operate as intended with no loss of user control functions or stored data, as declared by the manufacturer, and the communications link shall have been maintained during the test.

During and after the tests the audio output shall be monitored and assessed. During the test, the SINAD of the audio output shall not result in levels below the relevant category limit specified in table 2. After the test, the SINAD shall recover to that level recorded before the test or at least to levels not below the relevant category limit specified in table 2.

Table 2: Continuous phenomena, minimum performance criteria

Equipment category	Minimum performance criterion	Intended use
Category 1	30 dB SINAD	Professional applications
Category 2	20 dB SINAD	Domestic entertainment
Category 3	6 dB SINAD	General consumer

Where the EUT is a transmitter only, and a stand-by mode of operation is provided, the tests shall

be repeated with the EUT in stand-by mode of operation to ensure that unintentional transmission does not occur.

Where the EUT is a transceiver, under no circumstances shall the transmitter operate unintentionally during the test.

c) Performance criteria for Transient phenomena applied to Transmitters (TT) and Receivers (TR)

The following performance criteria for transient phenomena apply for transmitters (TT) and receivers or receiver parts of simplex or duplex transceivers (TR) permitting the establishment of a continuous communications link:

• before the test it shall be verified that the EUT, when coupled through the test equipment and not subjected to EMC stress is capable of producing a SINAD figure of at least 3 dB above the category limit specified in table 2;

• at the conclusion of each exposure in the test sequence the EUT shall operate with no user noticeable loss of the communications link;

• at the conclusion of the total test comprising of a series of individual exposures the EUT shall operate as intended with no loss of user control functions or stored data, as declared by the manufacturer, and the communications link shall have been maintained during the test.

After the tests the audio output shall be monitored and assessed. After the test the SINAD shall recover to that level recorded before the test or at least to levels not below the relevant category limit specified in table 2.

Where the EUT is a transmitter only, and a stand-by mode of operation is provided, the tests shall be repeated with the EUT in stand-by mode of operation to ensure that unintentional transmission does not occur.

Where the EUT is a transceiver, under no circumstances shall the transmitter operate unintentionally during the test.

B. Performance criteria for equipment which does not provide a continuous communication link

The provisions of ETSI EN 301 489-1 [1], clause 6.3 shall apply with the following modifications.

For immunity tests with continuous phenomena, equipment not permitting the establishment of a continuous communications link and ancillary equipment intended to be tested on a stand alone basis shall meet the following performance criteria:

• performance criteria A for category 1 equipment;

- performance criteria C for categories 2 and 3 equipment;

as specified in table 1.

For immunity tests with transient phenomena, equipment not permitting the establishment of a continuous communications link and ancillary equipment intended to be tested on a stand alone basis shall meet the performance criteria B as given in table 1, except for immunity tests with voltage dips and interruptions (see ETSI EN 301 489-1 [1], clause 9.7), where it is explicitly stated that the communications link need not be maintained in which case performance criteria C from table 1 shall apply.

C. Performance criteria for ancillary equipment tested on a stand alone basis

The provision of ETSI EN 301 489-1 [1], clause 6.4 shall apply.

4.2. Electrostatic Discharge Immunity

4.2.1. Test Specification

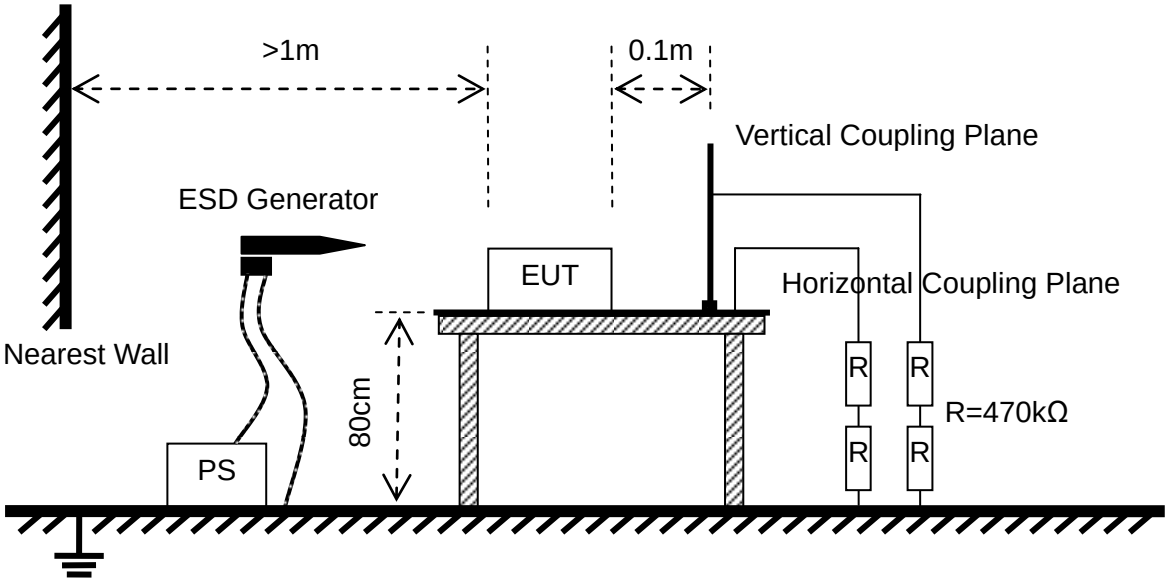
Specification	Value
Basic Standard	EN 61000-4-2:2009
Discharge Impedance	330Ohm / 150pF
Discharge Voltage	Air Discharge: 8kV; Contact Discharge: 4kV
Polarity	Positive / Negative
Number of Discharge	Minimum 10 times at each test point
Discharge Mode	Single discharge
Discharge Period	1 second minimum

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 TT/TR or Criterion B. All test modes have the same test results, 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

4.3. Radiated Immunity

4.3.1. Test Specification

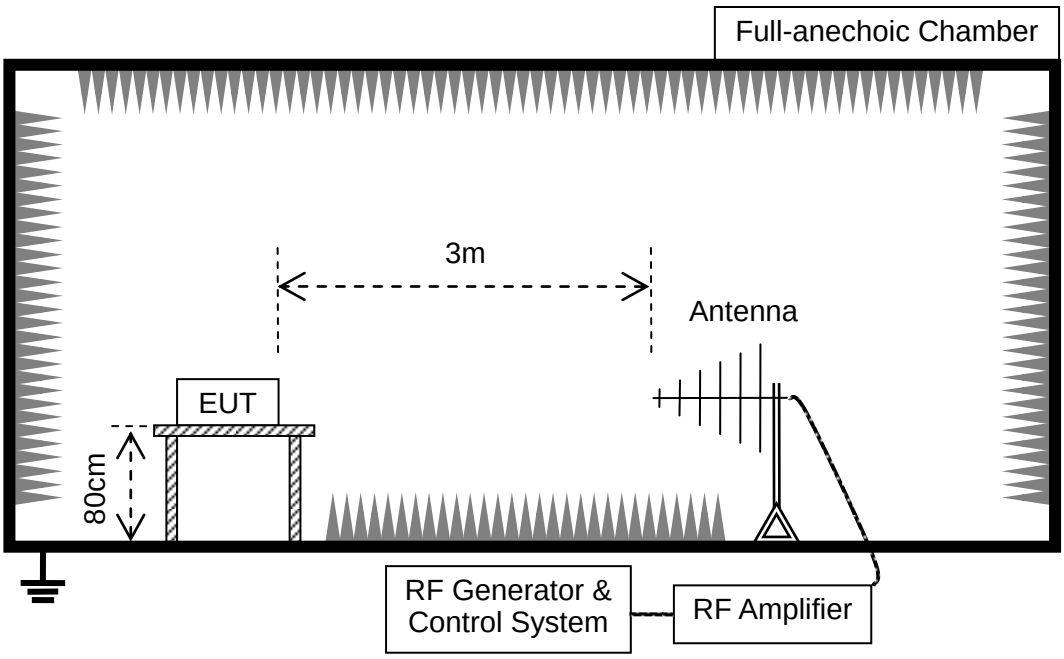
Basic Standard:	EN 61000-4-3:2006+A1:2008+A2:2010
Frequency Range:	80 MHz – 6000MHz
Field Strength:	3V/m
Modulation:	1 kHz sine wave, 80%, AM modulation
Frequency Step:	1% of fundamental
Polarity of Antenna	Horizontal and Vertical
Test Distance:	3m
Antenna Height:	1.5m
Dwell Time:	3 seconds

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, 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

4.4. Conducted Immunity

4.4.1. Test Specification

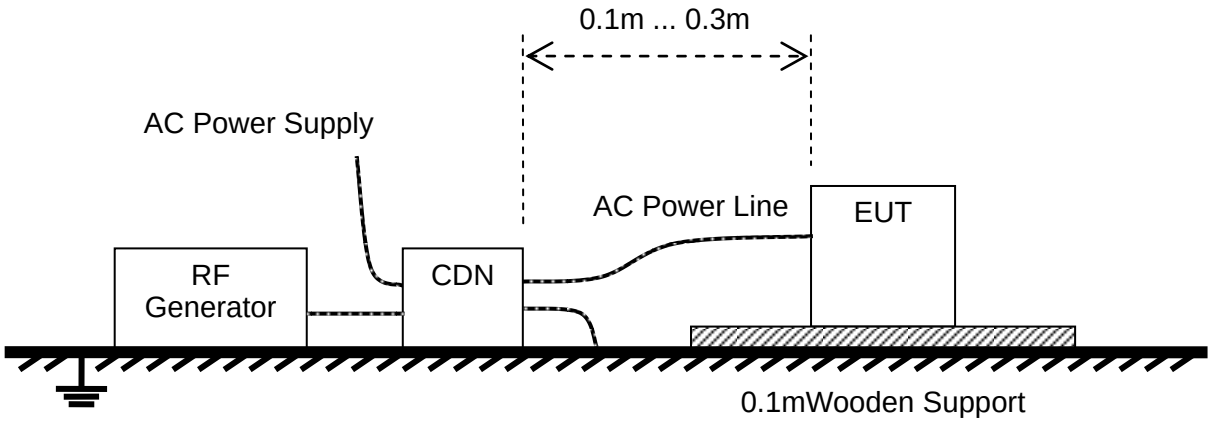
Specification	Value
Basic Standard	EN 61000-4-6:2009
Frequency Range	0.15MHz - 80MHz
Field Strength	3Vrms
Modulation	1kHz sine wave, 80% AM
Frequency Step	1% of fundamental
Coupled Cable	AC Power Line
Coupling Device	CDN-M2

4.4.2. 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.

4.4.3. Test Setup

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



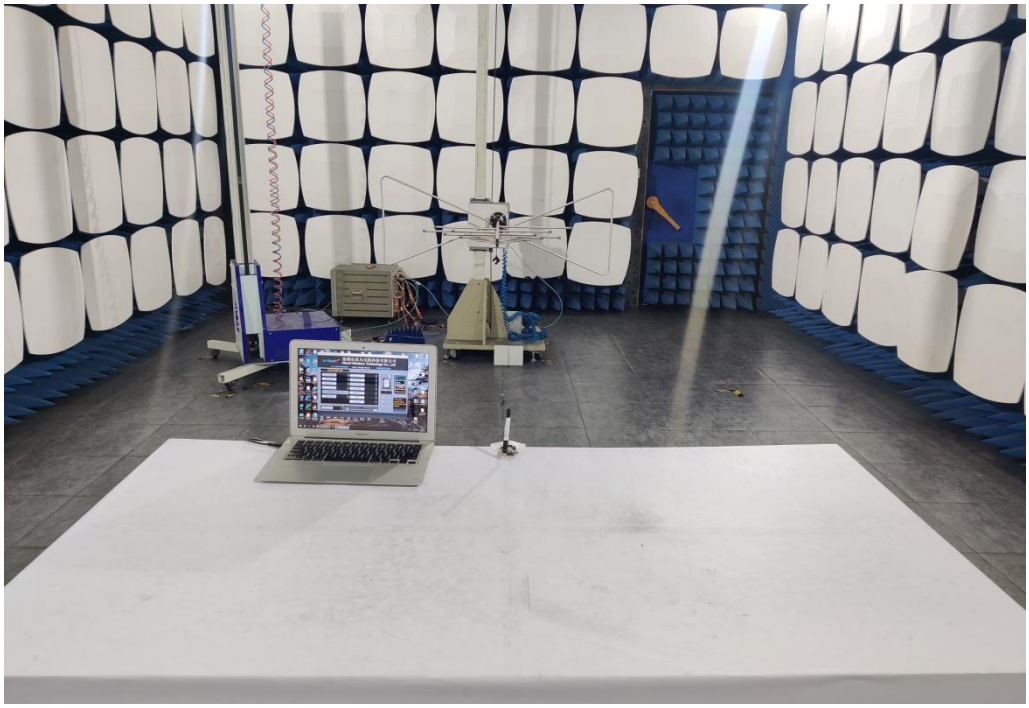
4.4.4. Test Result

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

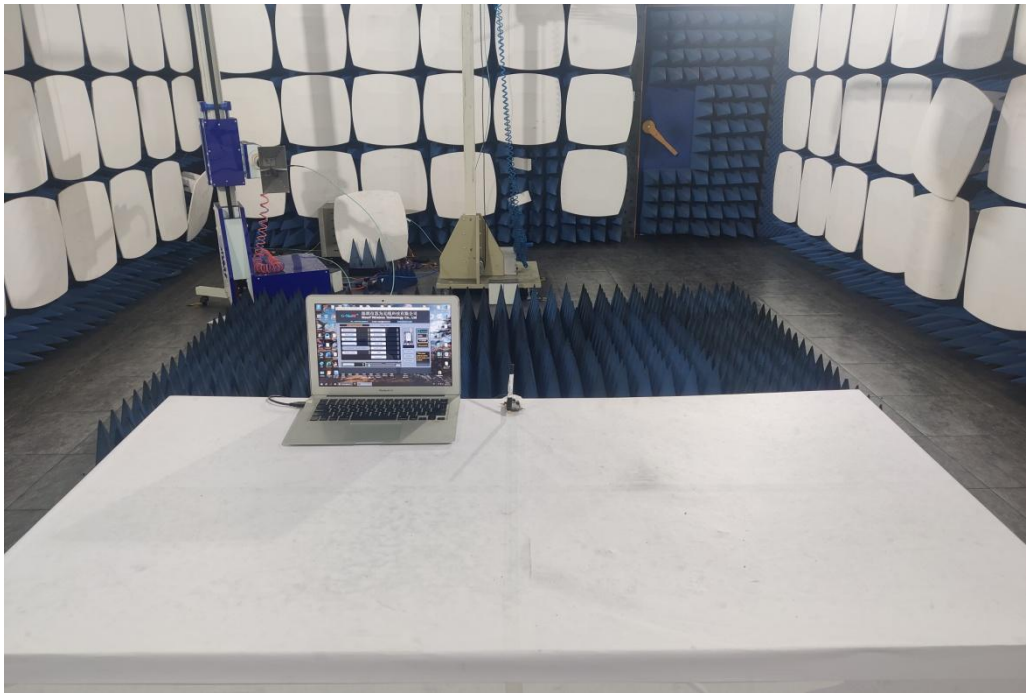
EUT Operating Mode	Test Point	Frequency (MHz)	Voltage level (V)	Observation	Verdict
See section 2.2	AC Port	0.15 - 80	3	A	PASS

Annex A Photographs of Test Setup

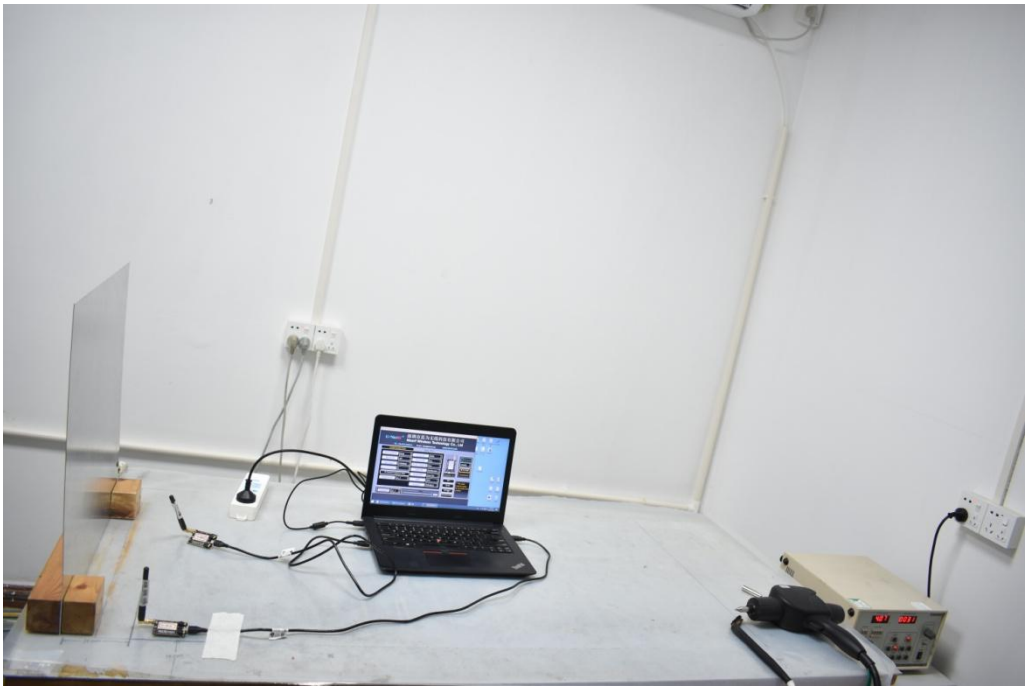
1. Radiated Emission (30MHz-1GHz)



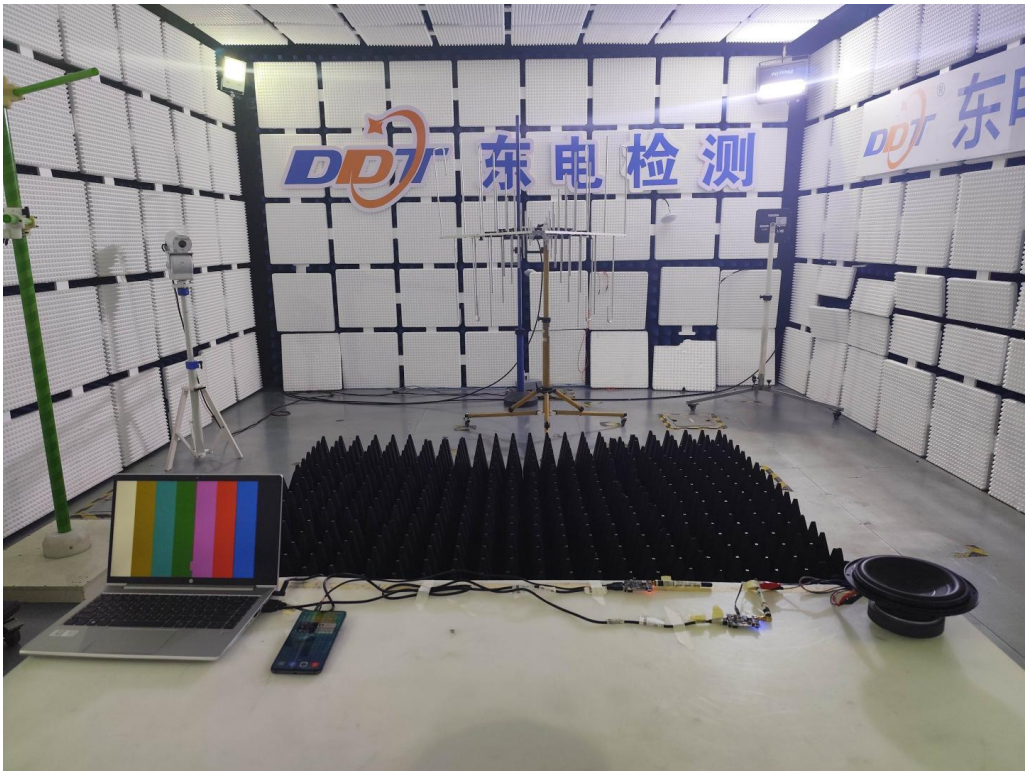
2. Radiated Emission (above 1GHz)

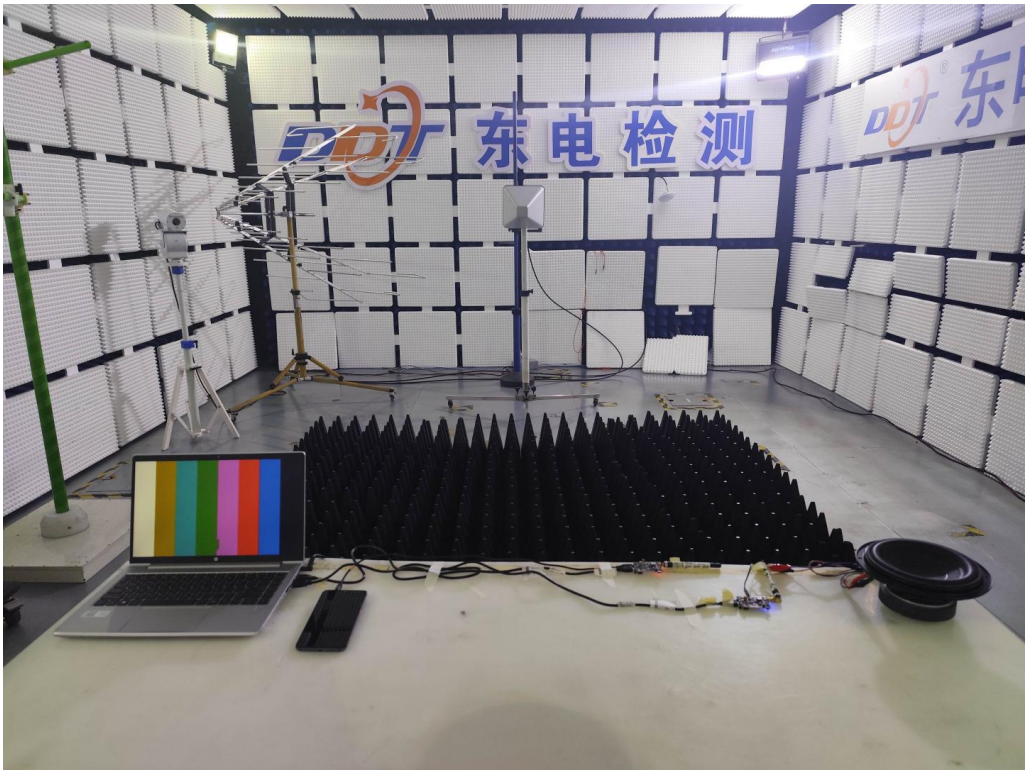


3. Electrostatic Discharge Immunity

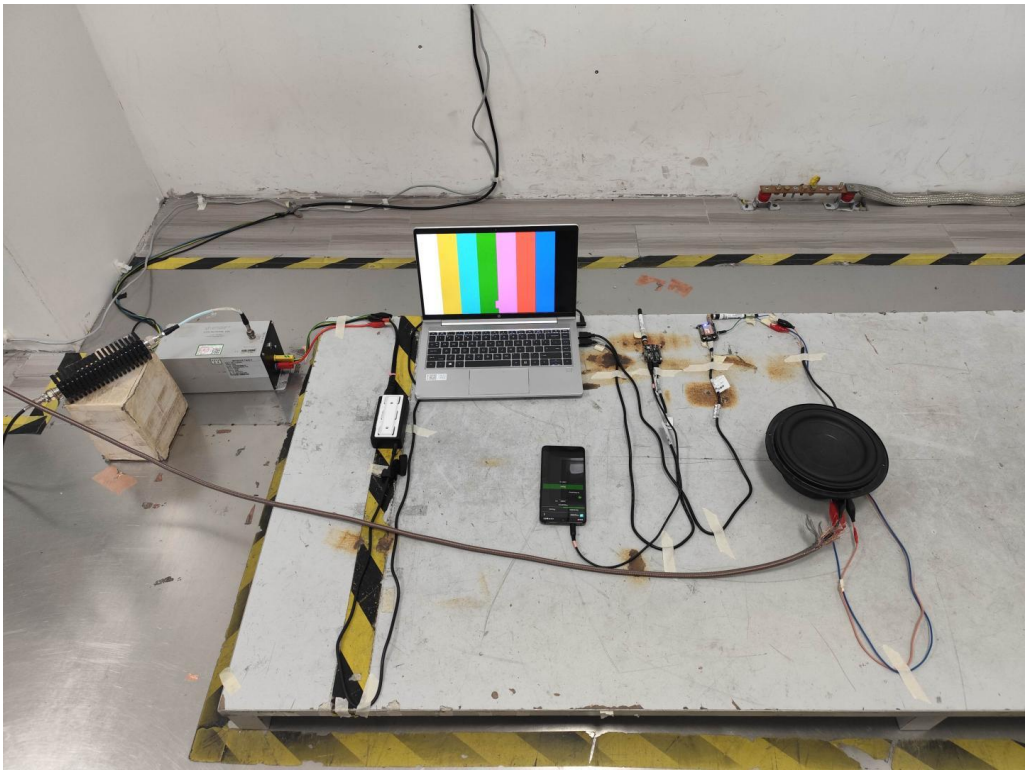


4. Radiated Immunity





5. Conducted Immunity



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 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 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%

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

Radiated Immunity and Conducted Immunity were carried out by the following outsourced laboratory	
Name:	Guangdong Dongdian Testing Service Co., Ltd.
Address:	Unit 2, Building 1, No. 17, Zongbu 2nd Road, Songshan Lake Park, Dongguan, Guangdong, China, 523808
A2LA accreditation certification number:	3870.01

3. Test Software Utilized

Model	Version Number	Producer
TS+ -[JS32-RE]	Version 2.5.0.6	Tonscend

4. Test Equipments Utilized

Description	Model	Serial No.	Manufacturer	Cal. Date	Due. Date
Bi-Log Antenna	VULB 9163	9163-519	SCHWARZBECK	2024/6/22	2025/6/21
Horn Antenna	BBHA 9120D	01774	SCHWARZBECK	2024/6/22	2025/6/21
Receiver	N9038A	MY56400093	KEYSIGHT	2024/1/25	2025/1/24
Preamplifier	S020180L3203	61171/61172	LUCIX CORP.	2024/5/30	2025/5/29

Preamplifier	S10M100L3802	46732	LUCIX CORP.	2024/5/30	2025/5/29
RF Coaxial Cable	PE330	MRE001	Pasternack	N/A	N/A
RF Coaxial Cable	CLU18	MRE002	Pasternack	N/A	N/A
RF Coaxial Cable	CLU18	MRE003	Pasternack	N/A	N/A
ESD Simulator	SKS-0220SE	020312009E 327	SANKI	2024/8/12	2025/8/11
System Simulator	CMW500	152038	R&S	2024/9/11	2025/9/10

5. Ancillary Equipment Utilized

Description	Model	Serial No.	Manufacturer	Cal. Date	Due. Date
Conducted Immunity Tester	CIT-10	DDT-ZC00551	FRANKONIA	2024/4/1	2025/3/31
CDN	CDN M2/M3PE 16A	DDT-ZC01558	SCHWARZBECK	2024/7/9	2025/7/8
Attenuation	DAM75W (6dB)	DDT-ZC00555	BIRD	2024/7/9	2025/7/8
Impedance Stablisation Network	T8-Cat6	DDT-ZC02057	TESEQ	2024/7/9	2025/7/8
EM Clamp	EMCL	DDT-ZC00556	FRANKONIA	2024/8/26	2025/8/25
CDN	CDN-M3-32	DDT-ZC01540	SHANGHAI LIONCEL	2024/7/9	2025/7/8
Test Software	IEC/EN61000-4-6	DDT-ZC00564	FRANKONIA	N/A	N/A
CS Test Software	EMC-S	DDT-ZC01429	SKET	N/A	N/A
CDN	CDNT8	DDT-ZC00553	FRANKONIA	2024/7/9	2025/7/8
Log-Periodic Antenna	STLP 9149	DDT-ZC00945	schwarzbeck	2024/7/13	2025/7/12

Electric Field Sensors	CTR1001S	DDT-ZC02865	DARE Instruments	2024/11/4	2025/11/3
Log-Periodic Antenna	STLP 9128D special	DDT-ZC00946	Schwarzbeck	2024/6/29	2025/6/28
Power amplifier	NTWPA0081020001000E	DDT-ZC04203	RFLIGHT	2024/8/9	2025/8/8
Power amplifier	NTWPA-1060400P	DDT-ZC04204	RFLIGHT	2024/8/9	2025/8/8
EXG signal generator	N5171B	DDT-ZC03761	Agilent	2024/1/26	2025/1/25
Power meter	E4417A	DDT-ZC04154	Agilent	2024/6/29	2025/6/28
power sensor	E9304A	DDT-ZC04225	Agilent	2024/6/29	2025/6/28
power sensor	E9304A	DDT-ZC04549	Agilent	2024/1/26	2025/1/25
RS Test software	EMC-S	DDT-ZC04009	KAILAITUO	N/A	N/A
Audio Analyzer	UPV	DDT-ZC01246	R&S	2024/7/10	2025/7/9

Note: This test equipments utilized by *Guangdong Dongdian Testing Service Co., Ltd.*

6. Ancillary Equipment Utilized

Description	Model	Serial No.	Manufacturer
PC	A1370	C2QJJ1XDRVD	APPLE
PC	P144G	20210357	DELL
PC Adapter	HA65NM190	N/A	DELL
USB Cable	N/A	N/A	N/A
Antenna	915M	N/A	N/A
Full duplex voice intercom module	SA618F22-C1	N/A	Shenzhen Xinguangxin Electronics Co., Ltd

END OF REPORT