



REPORT No.: SZ26050253E01

TEST REPORT

MANUFACTURER : Orbbec Inc.

PRODUCT NAME : Orbbec Gemini 305g/Orbbec Gemini 301g/
Orbbec Gemini 309g

MODEL NAME : G40351-291/G45351-291/G40351-293

BRAND NAME : ORBBEC

STANDARD(S) : EN 55032:2015+A1:2020
EN 55032:2015+A11:2020
EN 55035:2017+A11:2020

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Change History		
Version	Date	Reason For Change
1.0	2026-06-04	First edition

Note: the latest revision of the report supersedes all previous version.



1. Technical Information

Note: Provide by manufacturer.

1.1. Manufacturer and Factory Information

Manufacturer:	Orbbec Inc.
Manufacturer Address:	Orbbec Technology Building, No.88 High-tech North 1st Road, Nanshan District, Shenzhen, China
Factory:	Orbbec (Shunde, Guangdong) Technology Co., Ltd.
Factory Address:	No. 1, Keguang Road, Longchongkou Village, Ronggui Street, Shunde District, Foshan City, Guangdong Province

1.2. Equipment Under Test (EUT) Description

Product Name:	Orbbec Gemini 305g/Orbbec Gemini 301g/Orbbec Gemini 309g
EUT No.:	1#, 2#, 4#, 6#
Hardware Version:	N/A
Software Version:	N/A

Note:

1. This test report is variant from the original report (Report No.: SZ26030339E01, model name: G40351-291/G45351-291), only MB2502-G305G GX motherboard modification with changes, add a new model. This test has been tested Conducted Emission, Radiated Emission, Electrostatic Discharge Immunity, Radiated Immunity, Conducted Immunity, Electrical Fast Transient/Burst Immunity, Surge Immunity and Voltage Dips and Interruptions Immunity. For Conducted Emission, Radiated Emission, Electrostatic Discharge Immunity, Radiated Immunity, Conducted Immunity, Electrical Fast Transient/Burst Immunity, Surge Immunity and Voltage Dips and Interruptions Immunity, only the latest data is recorded in this report. The others are the same as before.
2. According to the certificate holder, they declared that the product name: Orbbec Gemini 305g/Orbbec Gemini 301g/Orbbec Gemini 309g, with model name: G40351-291/G45351-291/



G40351-293. The difference between the G40351-291/G45351-291 is that G45351-291 has no casing, no data cable, and no Fakra terminal. G40351-293: Based on G40351-291, remove the middle shell used for heat dissipation. The main test model name is G40351-291.

G40351-291/G45351-291 models have been tested. For the Conducted Emission and Radiated Emission, only the worst case (model: G40351-291) is recorded in this report. For the others, only the result for G40351-291 was recorded in this report.

3. The declarations of EUT presented in the report are provided by manufacturer, and the test laboratory is not responsible for the accuracy of the information. For a more detailed description, please refer to specification or user's manual supplied by the 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	EN 55032:2015+A1:2020	Electromagnetic compatibility of multimedia equipment - Emission requirements
2	EN 55032:2015+A11:2020	Electromagnetic compatibility of multimedia equipment - Emission requirements
3	EN 55035:2017+A11:2020	Electromagnetic compatibility of multimedia equipment - Immunity requirements

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	Remark
Emission					
1	CISPR16-2-3	Radiated Emission	Wang Deyong	PASS	/
2	CISPR16-2-1	Conducted Emission-AC Port	Wang Yapeng	PASS	/
Immunity					
3	IEC 61000-4-2	Electrostatic Discharge Immunity	Wang Yapeng	PASS	/
4	IEC 61000-4-3	Radiated Immunity	Li Bingxue	PASS	/
5	IEC 61000-4-4	Electrical Fast Transient/Burst Immunity	Lin Zifeng	PASS	/
6	IEC 61000-4-5	Surge Immunity	Lin Zifeng	PASS	/
7	IEC 61000-4-6	Conducted Immunity	Li Bingxue	PASS	/
8	IEC61000-4-11	Voltage Dips and Interruptions Immunity	Lin Zifeng	PASS	/



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9	IEC 61000-4-8	Power Frequency Magnetic Field Immunity	N/A	N/A ^{Note 1}	/
Note 1: The test item is not applicable.					
Note 2: Any additions, deviation, or exclusions from the method shall be noted in the "Remark".					



2.2. EUT Setup and Operating Conditions

Test Item	
Radiated Emission	
Mode 1	: EUT + Host + 1# Adapter + 2# Adapter + Video Cable + DP to HDMI Adapter + HDMI Cable + Display + Wired Mouse + Wired Keyboard + Working Mode
Conducted Emission	
Mode 2	: EUT + Host + 3# Adapter + 4# Adapter + Video Cable + DP to HDMI Adapter + HDMI Cable + Display + Wired Mouse + Wired Keyboard + Working Mode
Radiated Immunity	
Mode 2	: EUT + Host + 3# Adapter + 4# Adapter + Video Cable + DP to HDMI Adapter + HDMI Cable + Display + Wired Mouse + Wired Keyboard + Working Mode
Electrostatic Discharge Immunity	
Mode 2	: EUT + Host + 3# Adapter + 4# Adapter + Video Cable + DP to HDMI Adapter + HDMI Cable + Display + Wired Mouse + Wired Keyboard + Working Mode
Conducted Immunity	
Mode 2	: EUT + Host + 3# Adapter + 4# Adapter + Video Cable + DP to HDMI Adapter + HDMI Cable + Display + Wired Mouse + Wired Keyboard + Working Mode
EMS Test (Electrical Fast Transient/Burst Immunity, Surge Immunity, Voltage Dips and Interruptions Immunity)	
Mode 2	: EUT + Host + 3# Adapter + 4# Adapter + Video Cable + DP to HDMI Adapter + HDMI Cable + Display + Wired Mouse + Wired Keyboard + Working Mode
Remark: for Radiated Emission, All the ancillary equipments are placed in the shielding box.	

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):	20.8
Relative Humidity (%):	54
Atmospheric Pressure (kPa):	101

3. Emission Tests

3.1. Radiated Emission

3.1.1. Limits of Radiated Emission

Frequency Range (MHz)	Quasi-Peak Limit (dB μ V/m)	--
30 – 230	40	--
230 – 1000	47	--
Frequency Range (MHz)	Peak Limit (dB μ V/m)	Average Limit (dB μ V/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.

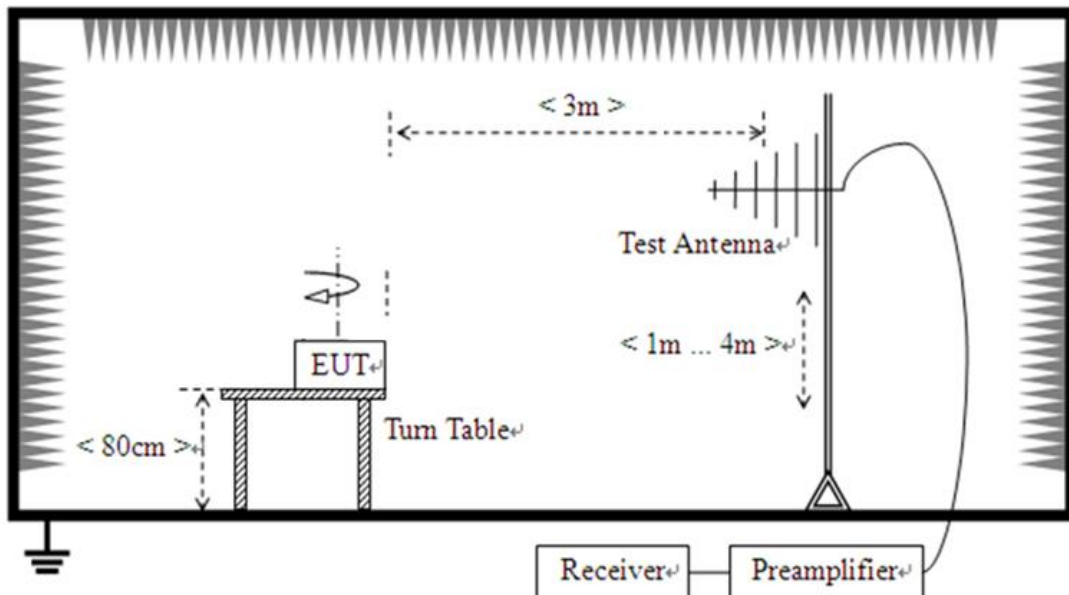
3.1.2. Test Procedure

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.

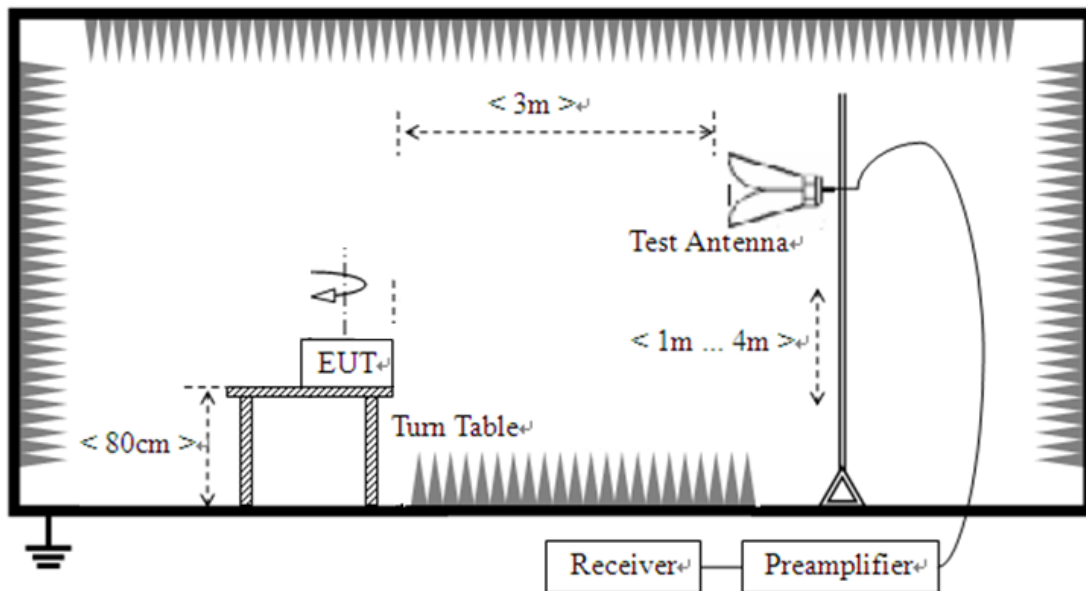
3.1.3. Test Setup

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





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The measurement results are obtained as below:

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

A_T : Total correction Factor except Antenna

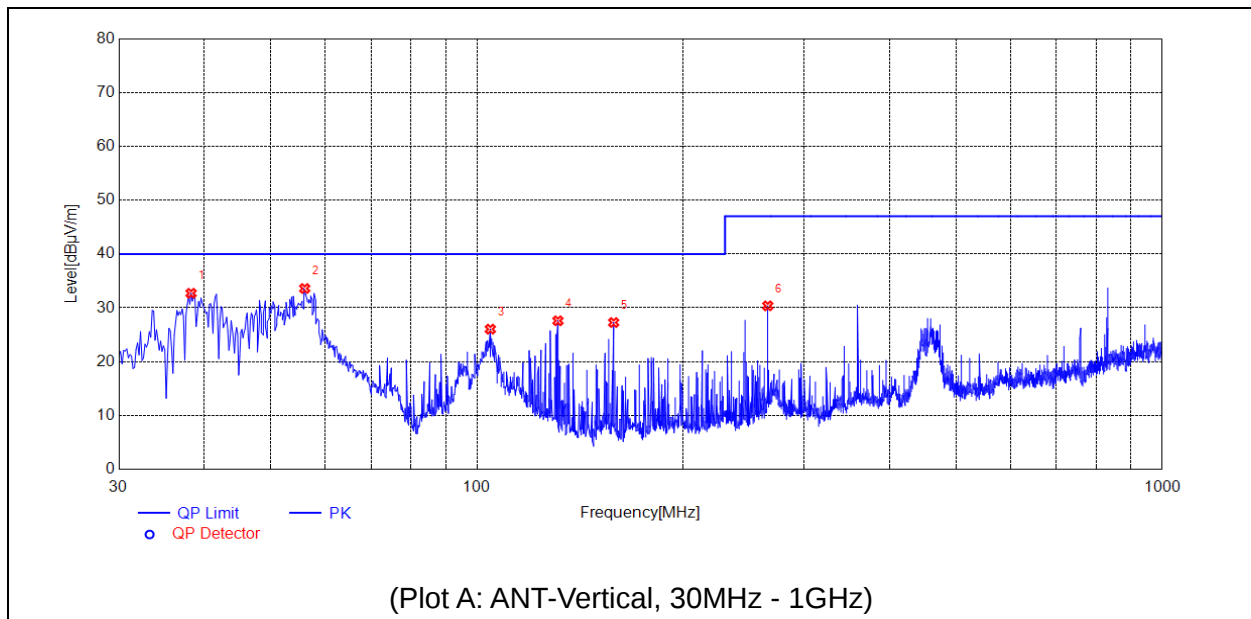
U_R : Receiver Reading

G_{preamp} : Preamplifier Gain

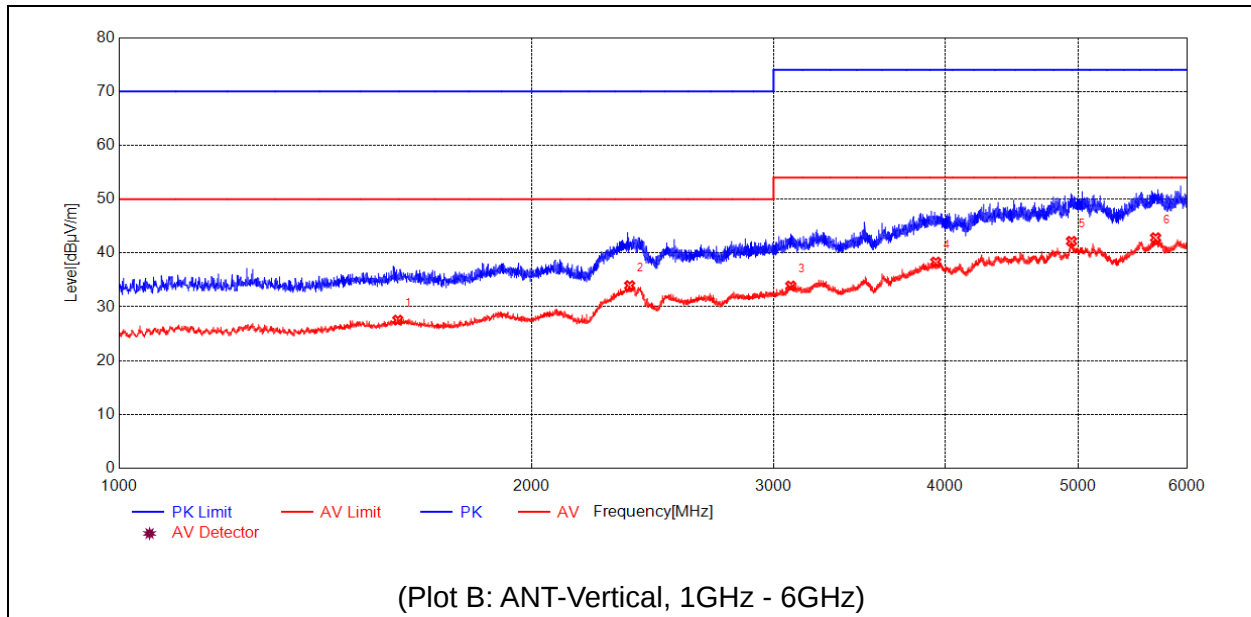
A_{Factor} : Antenna Factor at 3m

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

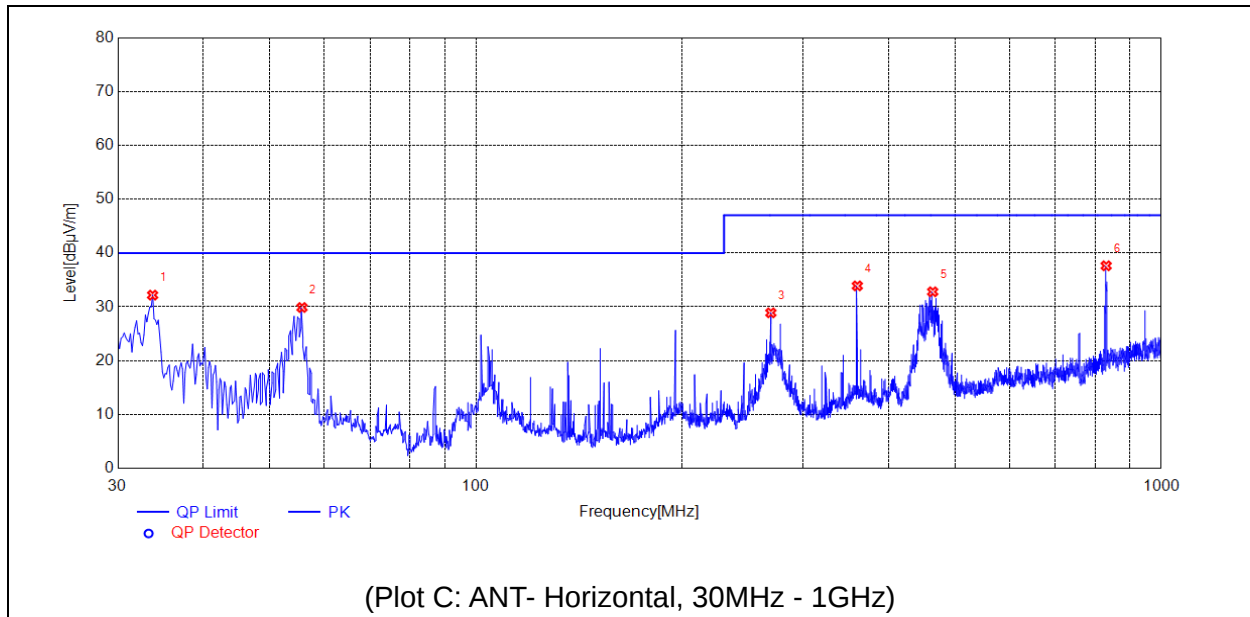
3.1.4. Test Result



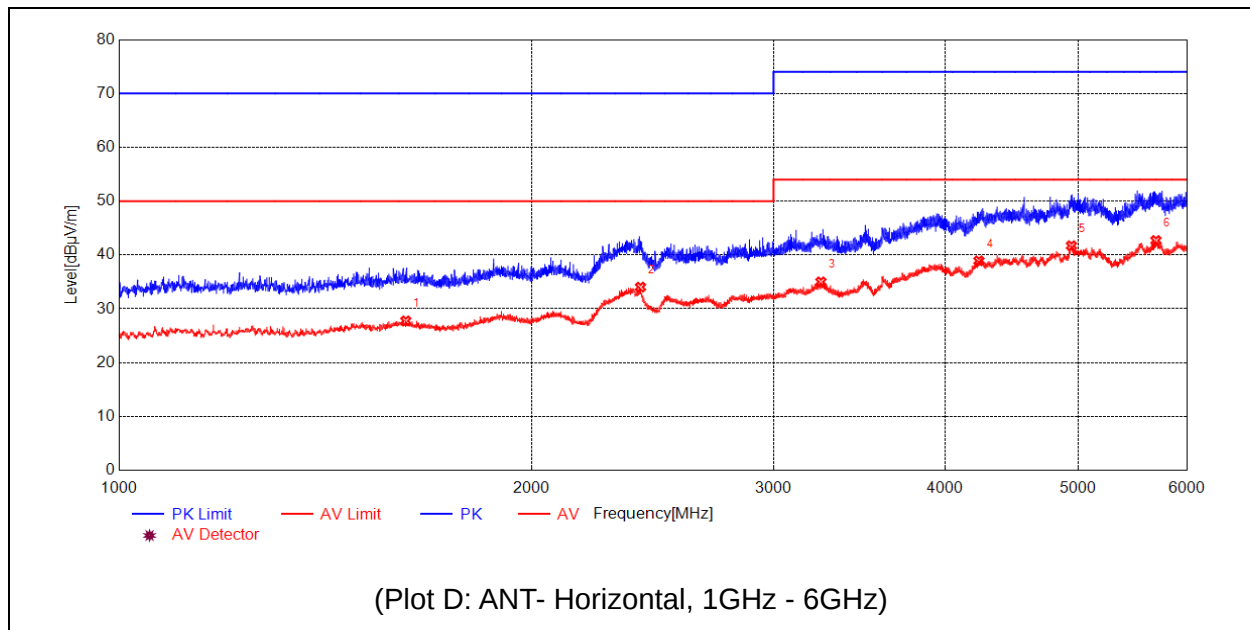
No.	Fre. MHz	PK dBμV/m	QP dBμV/m	AV dBμV/m	Limit-PK dBμV/m	Limit-QP dBμV/m	Limit-AV dBμV/m	ANT	Verdict
1	38.2464	32.70	N.A.	N.A.	N.A.	40.00	N.A.	V	PASS
2	56.0327	33.59	N.A.	N.A.	N.A.	40.00	N.A.	V	PASS
3	104.5408	26.04	N.A.	N.A.	N.A.	40.00	N.A.	V	PASS
4	131.2202	27.59	N.A.	N.A.	N.A.	40.00	N.A.	V	PASS
5	158.2230	27.27	N.A.	N.A.	N.A.	40.00	N.A.	V	PASS
6	265.5876	30.37	N.A.	N.A.	N.A.	47.00	N.A.	V	PASS



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	1597.0000	N.A.	N.A.	27.53	70.00	N.A.	50.00	V	PASS
2	2356.5000	N.A.	N.A.	33.95	70.00	N.A.	50.00	V	PASS
3	3088.0000	N.A.	N.A.	33.88	74.00	N.A.	54.00	V	PASS
4	3938.5000	N.A.	N.A.	38.33	74.00	N.A.	54.00	V	PASS
5	4945.5000	N.A.	N.A.	42.18	74.00	N.A.	54.00	V	PASS
6	5695.5000	N.A.	N.A.	42.84	74.00	N.A.	54.00	V	PASS



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	33.7190	32.17	N.A.	N.A.	N.A.	40.00	N.A.	H	PASS
2	55.7093	29.87	N.A.	N.A.	N.A.	40.00	N.A.	H	PASS
3	269.3066	28.88	N.A.	N.A.	N.A.	47.00	N.A.	H	PASS
4	360.0167	33.89	N.A.	N.A.	N.A.	47.00	N.A.	H	PASS
5	463.8240	32.79	N.A.	N.A.	N.A.	47.00	N.A.	H	PASS
6	830.8685	37.62	N.A.	N.A.	N.A.	47.00	N.A.	H	PASS



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	1618.5000	N.A.	N.A.	27.77	70.00	N.A.	50.00	H	PASS
2	2399.5000	N.A.	N.A.	34.04	70.00	N.A.	50.00	H	PASS
3	3248.0000	N.A.	N.A.	35.01	74.00	N.A.	54.00	H	PASS
4	4234.0000	N.A.	N.A.	38.92	74.00	N.A.	54.00	H	PASS
5	4945.0000	N.A.	N.A.	41.72	74.00	N.A.	54.00	H	PASS
6	5698.5000	N.A.	N.A.	42.70	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 (dB μ V)	
	Quasi-peak	Average
0.15 – 0.50	66 to 56	56 to 46
0.50 – 5	56	46
5 – 30	60	50

Note:

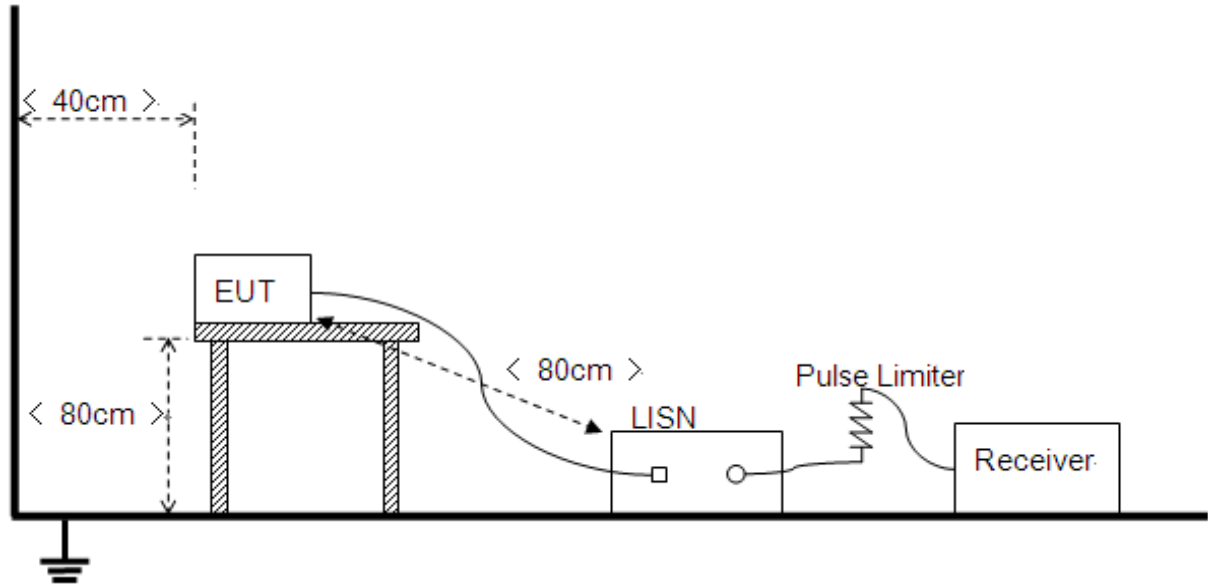
1. The lower limit shall apply at the band edges.
2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 – 0.50MHz.

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 50 Ω /50 μ H 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.



The measurement results are obtained as below:

$$E \text{ [dB}\mu\text{V]} = U_R \text{ [dB}\mu\text{V]} + L_{\text{Cable loss}} \text{ [dB]} + A_{\text{Factor}} \text{ [dB]}$$

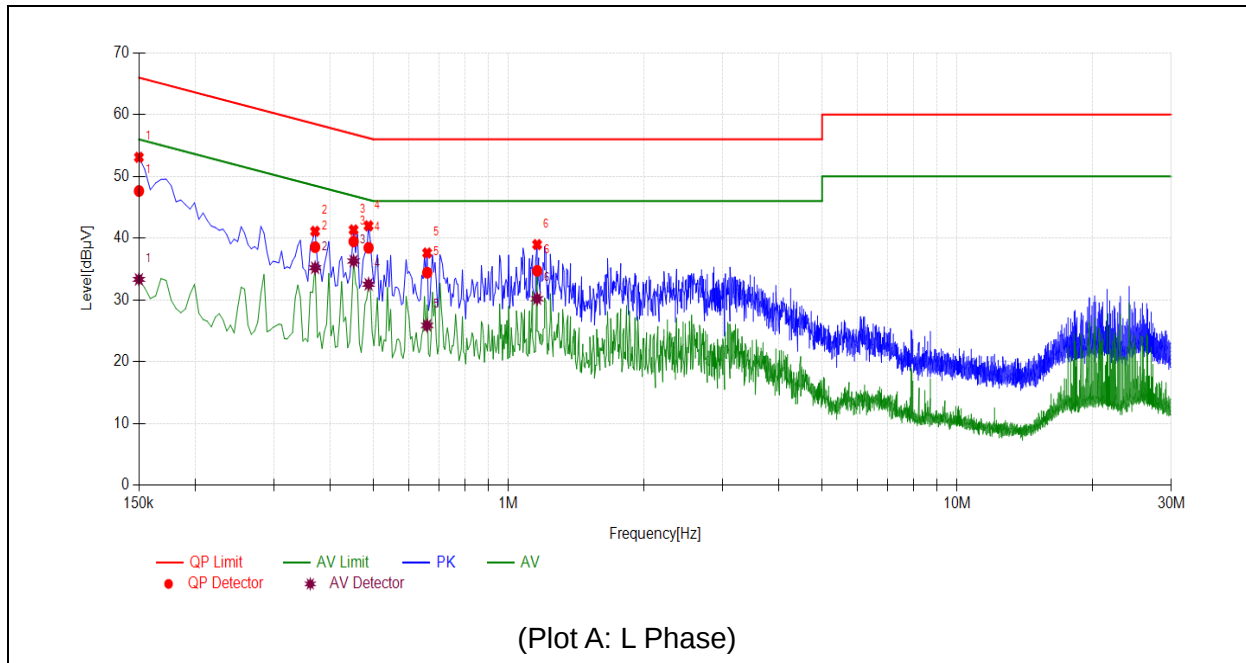
U_R : Receiver Reading

A_{Factor} : Voltage Division Factor of LISN

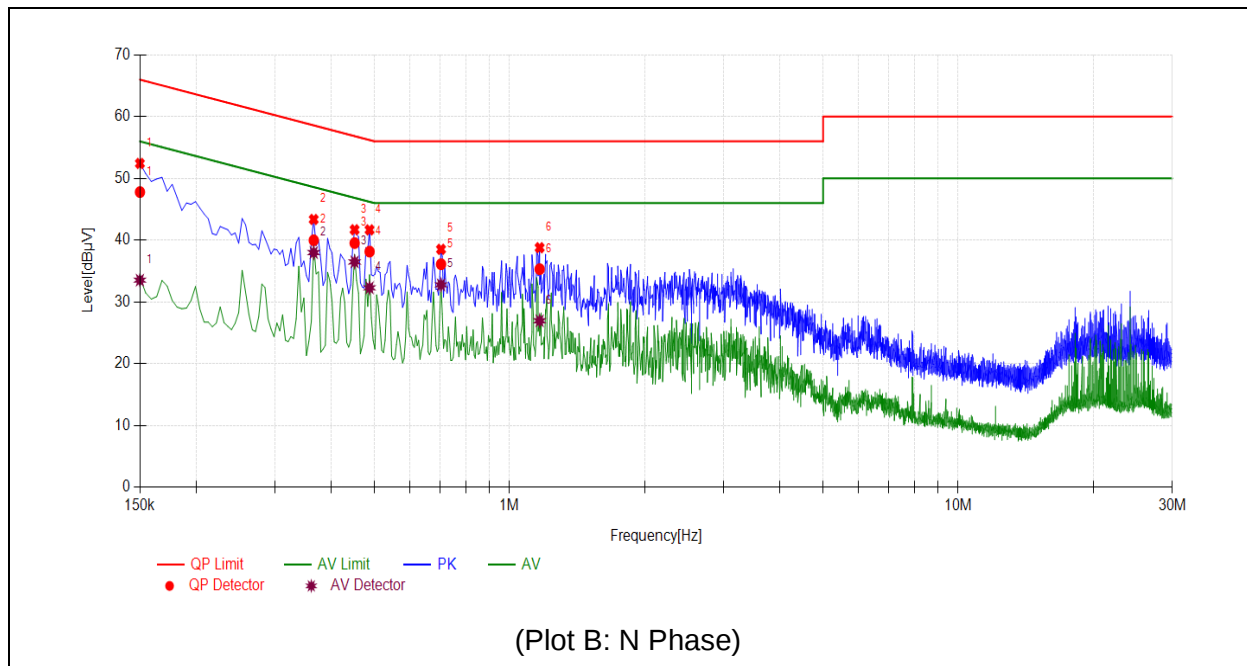
$L_{\text{Cable loss}}$: Correction Factor Contains Pulse Limiter and Cable

During the test, the total correction Factor $L_{\text{Cable loss}}$ and A_{Factor} were built in test software.

3.2.4. Test Result



No.	Fre. (MHz)	Emission Level (dBμV)		Limit (dBμV)		Power-line	Verdict
		Quasi-peak	Average	Quasi-peak	Average		
1	0.1500	47.64	33.32	66.00	56.00	Line	PASS
2	0.3705	38.54	35.20	58.49	48.49		PASS
3	0.4515	39.46	36.29	56.85	46.85		PASS
4	0.4875	38.43	32.53	56.21	46.21		PASS
5	0.6585	34.40	25.86	56.00	46.00		PASS
6	1.1581	34.71	30.19	56.00	46.00		PASS



No.	Fre. (MHz)	Emission Level (dBμV)		Limit (dBμV)		Power-line	Verdict
		Quasi-peak	Average	Quasi-peak	Average		
1	0.1500	47.79	33.52	66.00	56.00	Neutral	PASS
2	0.3660	39.97	37.98	58.59	48.59		PASS
3	0.4515	39.52	36.47	56.85	46.85		PASS
4	0.4875	38.14	32.28	56.21	46.21		PASS
5	0.7035	36.10	32.76	56.00	46.00		PASS
6	1.1669	35.30	26.93	56.00	46.00		PASS

4. Immunity Tests

4.1. EUT Operation and Performance Criteria

4.1.1. Performance Criteria

Type	Description
Criterion A	The equipment shall continue to operate as intended without operator intervention. No degradation of performance, loss of function or change of operating state is allowed below a performance level specified by the manufacturer when the equipment is used as intended. The performance level may be replaced by a permissible loss of performance. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and by what the user may reasonably expect from the equipment if used as intended.
Criterion B	During the application of the disturbance, degradation of performance is allowed. However, no unintended change of actual operating state or stored data is allowed to persist after the test. After the test, the equipment shall continue to operate as intended without operator intervention; no degradation of performance or loss of function is allowed, below a performance level specified by the manufacturer, when the equipment is used as intended. The performance level may be replaced by a permissible loss of performance. If the minimum performance level (or the permissible performance loss), or recovery time, is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and by what the user may reasonably expect from the equipment if used as intended.
Criterion C	Loss of function is allowed, provided the function is self-recoverable, or can be restored by the operation of the controls by the user in accordance with the manufacturer's instructions. A reboot or re-start operation is allowed. Information stored in non-volatile memory, or protected by a battery backup, shall not be lost.

4.2. Electrostatic Discharge Immunity

4.2.1. Test Specification

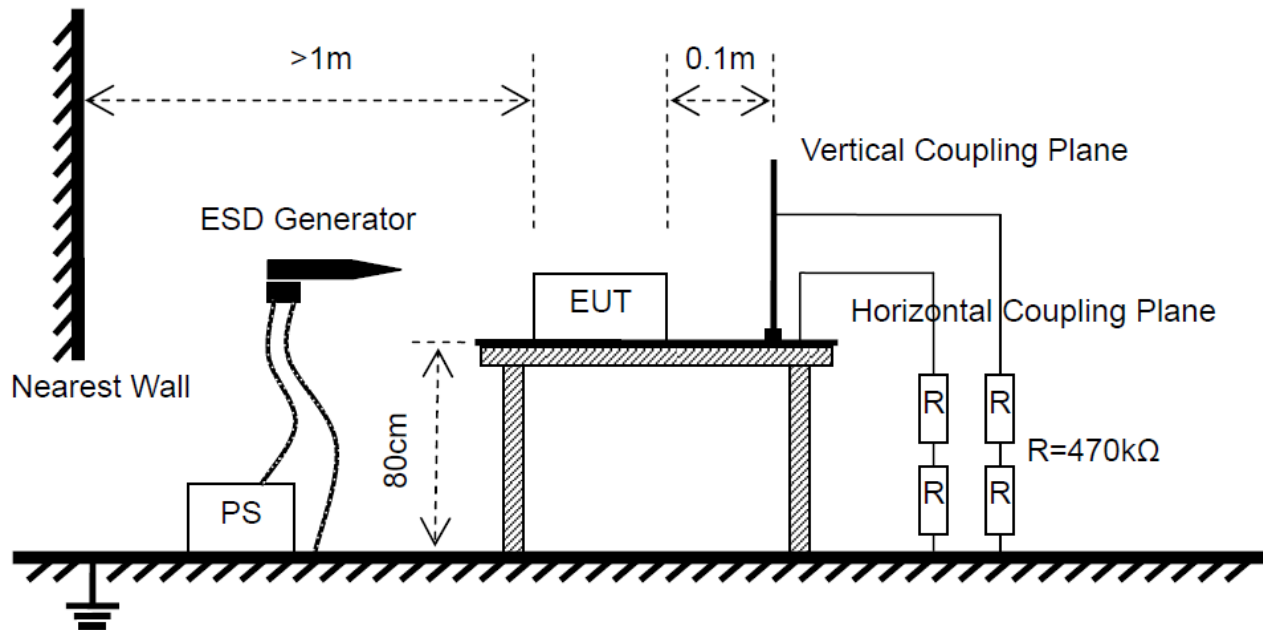
Specification	Value
Basic Standard	IEC 61000-4-2:2008
Discharge Impedance	330Ohm / 150pF
Discharge Voltage	Air Discharge: 15kV; Contact Discharge: 8kV
Polarity	Positive / Negative
Number of Discharge	Minimum 10 times at each test point
Discharge Mode	Single discharge
Discharge Period	1 second minimum

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	$\pm 4, \pm 8$	Indirect	10	See section 2.2	A	PASS
VCP	$\pm 4, \pm 8$	Indirect	10		A	PASS
Please refer to the blue arrow	$\pm 4, \pm 8$	Contact	10		A	PASS
Please refer to the red arrow	$\pm 2, \pm 4, \pm 8, \pm 15$	Air	10		A	PASS

4.2.5. The ESD test points





Represent air discharge



Represents contact discharge



4.3. Radiated Immunity

4.3.1. Test Specification

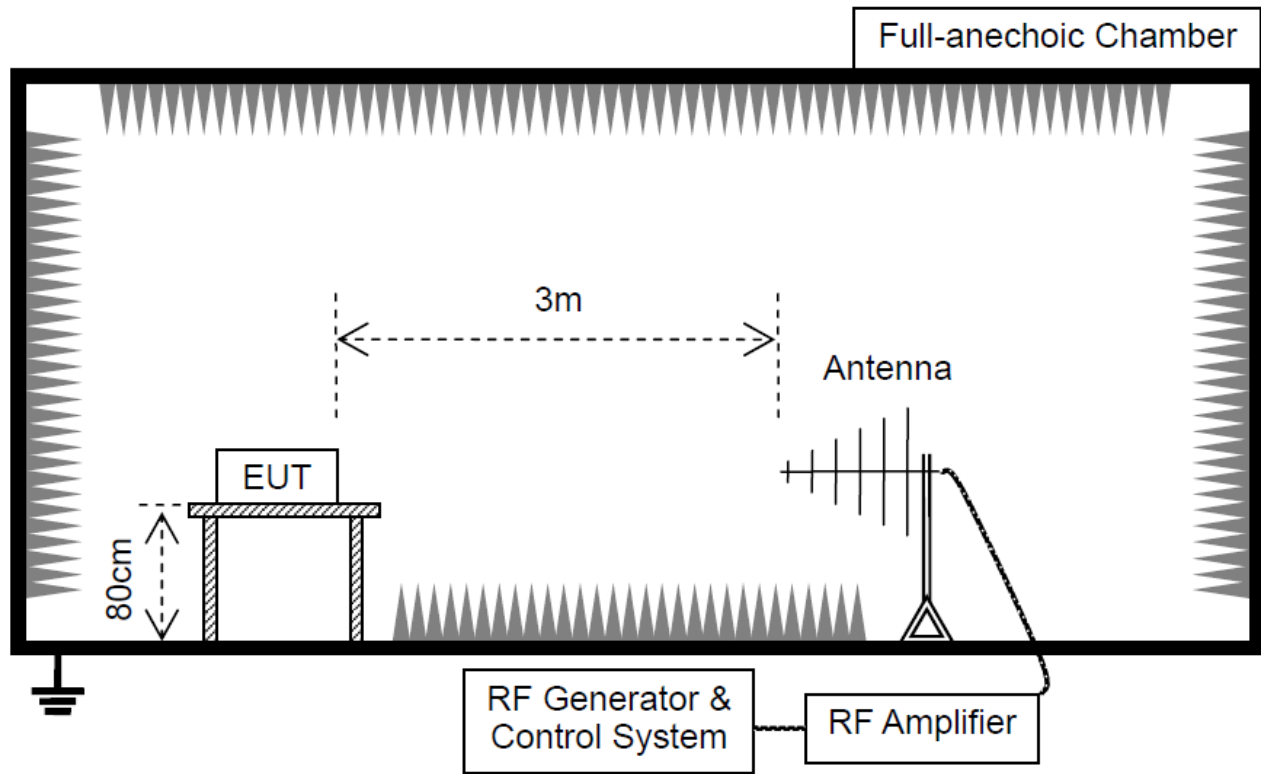
Specification	Value
Basic Standard	IEC 61000-4-3:2006+AMD1:2007+AMD2:2010
Frequency Range	80 MHz –1000MHz,1800MHz, 2600MHz, 3500MHz, 5000MHz
Field Strength	3V/m
Modulation	1 kHz sine wave, 80%, AM modulation
Frequency Step	1% of fundamental
Polarity of Antenna	Horizontal and Vertical
Test Distance	3m
Antenna Height	1.5m
Dwell Time	3 seconds

4.3.2. Test Procedure

The test procedure was in accordance with IEC 61000-4-3:2006+AMD1:2007+AMD2:2010.

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 1000MHz and 1800MHz, 2600MHz, 3500MHz, 5000MHz. 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 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	80-1000, 1800, 2600, 3500, 5000	1kHz, 80% Amp. Mod, 1% increment	Front	A	PASS
				Rear	A	PASS
				Left	A	PASS
				Right	A	PASS
				Top	A	PASS
				Bottom	A	PASS



4.4. Electrical Fast Transient / Burst Immunity

4.4.1. Test Specification

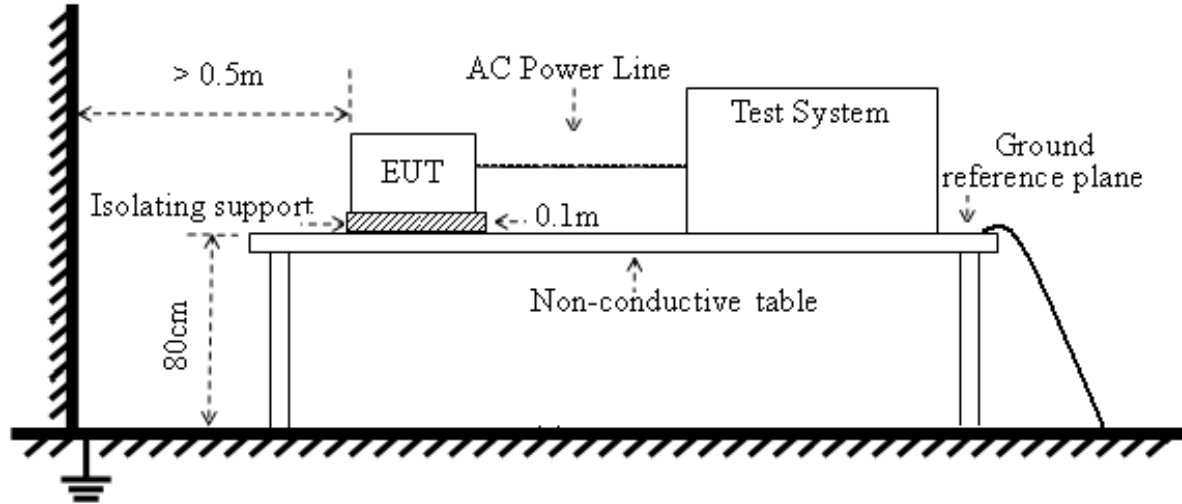
Specification	Value
Basic Standard	IEC 61000-4-4:2012
Test Voltage	AC Power Port: 1kV
Polarity	Positive / Negative
Impulse Frequency	5kHz
Impulse Wave Shape	5/50ns
Burst Duration	15ms
Burst Period	300ms
Test Duration	≥ 2min

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 IEC 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 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, PE	+ / -	1	A	PASS

4.5. Surge Immunity

4.5.1. Test Specification

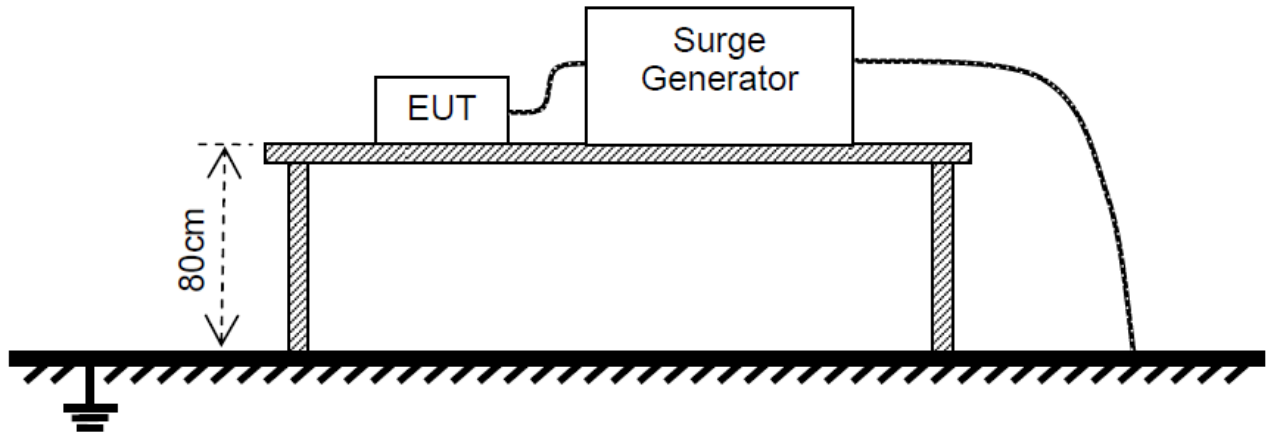
Specification	Value
Basic Standard	IEC 61000-4-5:2005
Waveform	Voltage: 1.2/50 μ s; Current: 8/20 μ s
Test Voltage	AC Power Port: line to ground 2kV, line to line 1kV
Polarity	Positive / Negative
Phase Angle	90°, 270°
Repetition Rate	60 seconds
Times	5 times per condition

4.5.2. Test Procedure

1. Verification shall be performed on the generators and coupling/decoupling network prior to the test. This performance check can usually be limited to the existence of the surge pulse and its voltage and/or current.
2. 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).
3. 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).
4. 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 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
	AC Port, L-PE	+ / -	0.5	A	PASS
			1	A	PASS
			2	A	PASS
	AC Port, N-PE	+ / -	0.5	A	PASS
			1	A	PASS
			2	A	PASS



4.6. Conducted Immunity

4.6.1. Test Specification

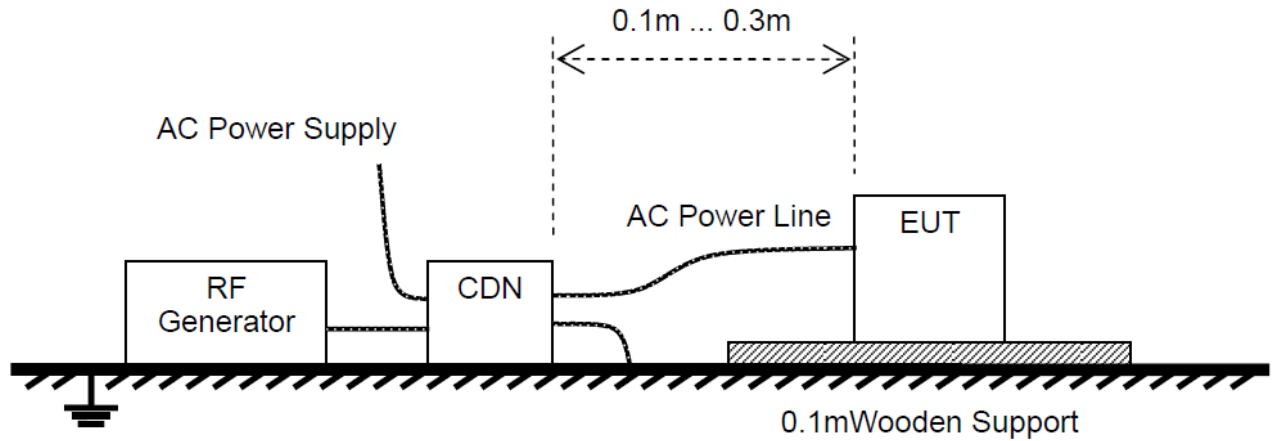
Specification	Value
Basic Standard	IEC 61000-4-6:2008
Frequency Range	0.15MHz - 80MHz
Field Strength	3V(0.15MHz - 10MHz), 3V to 1V(10MHz - 30MHz), 1V(30MHz - 80MHz)
Modulation	1kHz sine wave, 80% AM
Frequency Step	1% of fundamental
Coupled Cable	AC Power Line
Coupling Device	CDN-M2/M3

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 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 – 10	3	A	PASS
		10 – 30	3 – 1		
		30 - 80	1		



4.7. Voltage Dips and Interruptions Immunity

4.7.1. Test Specification

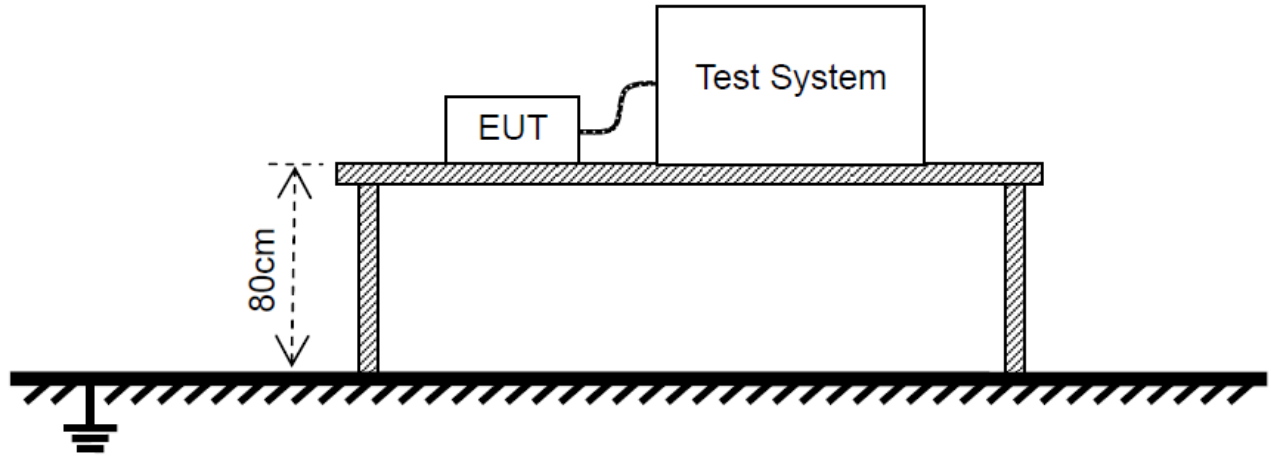
Specification	Value
Basic Standard	IEC 61000-4-11:2004
Voltage Dips	100% reduction: 0.5 cycle; 30% reduction: 25 cycles
Voltage Interruptions	100% reduction: 250 cycles
Voltage Phase Angle	0°&180°

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) 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.



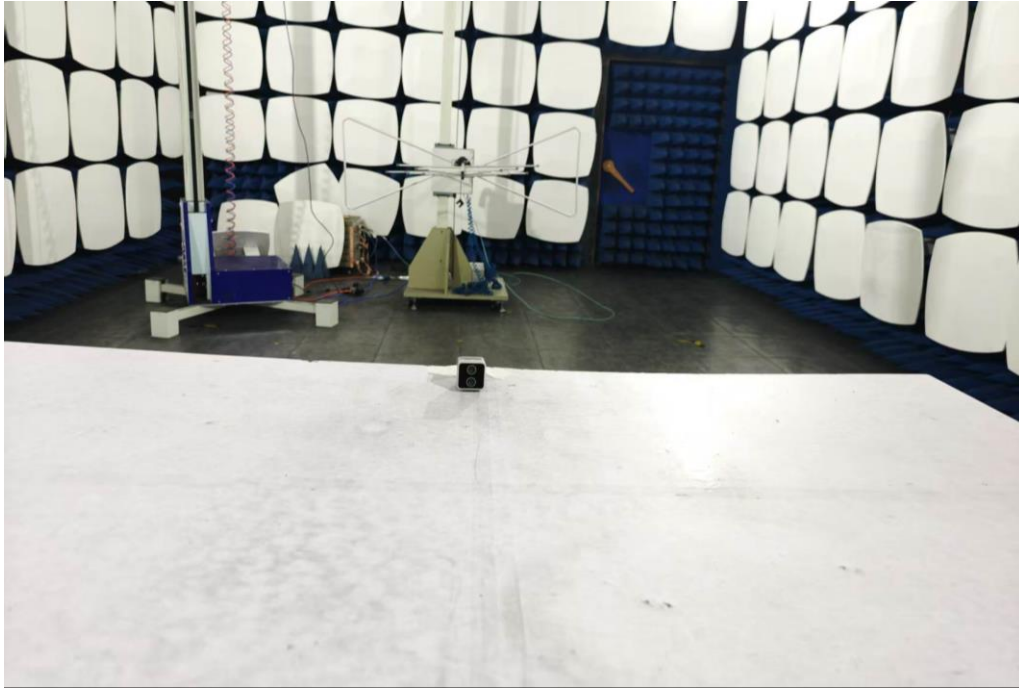
4.7.4. Test Result

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.

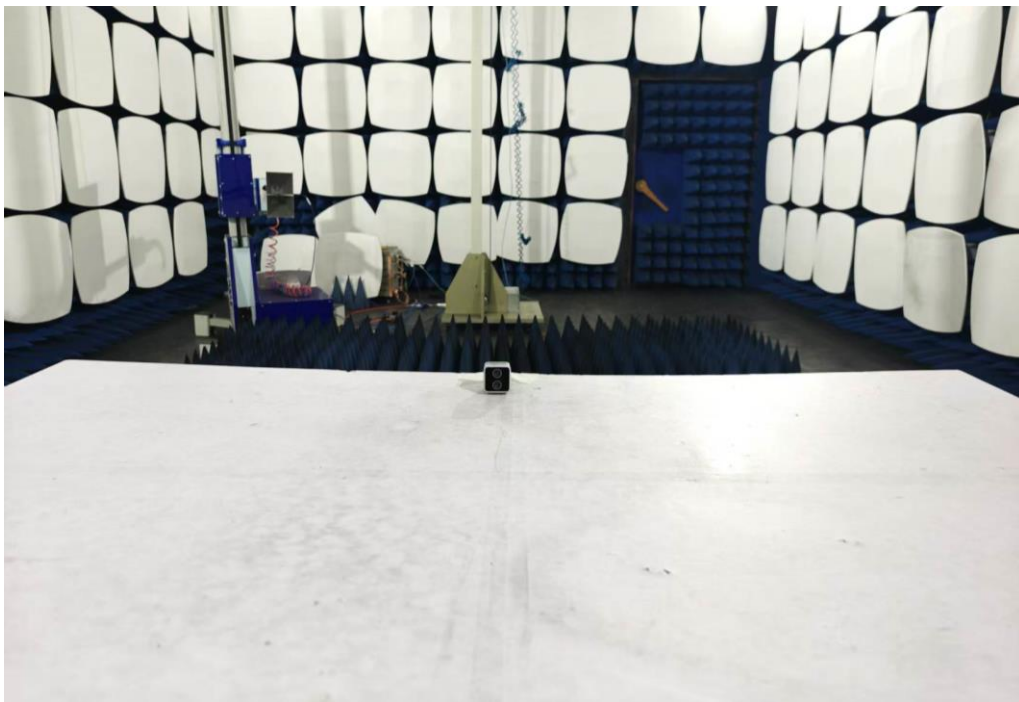
EUT Operating Mode	Test Mode	Voltage Reduction	Cycle(s)	Times	Interval (sec)	Observation	Verdict
See section 2.2	Voltage Dips	30%	25	3	10	A	PASS
		100%	0.5	3	10	A	PASS
	Voltage Interruptions	100%	250	3	10	A	PASS

Annex A Photographs of Test Setup

1. Radiated Emission (30MHz-1GHz)



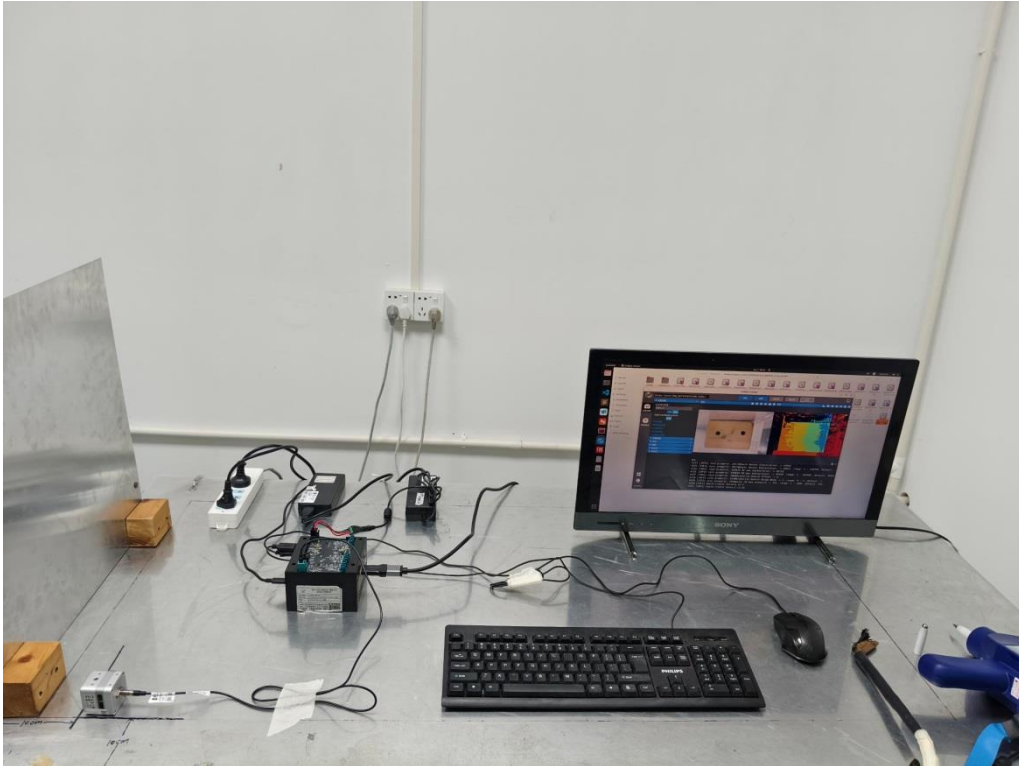
2. Radiated Emission (above 1GHz)



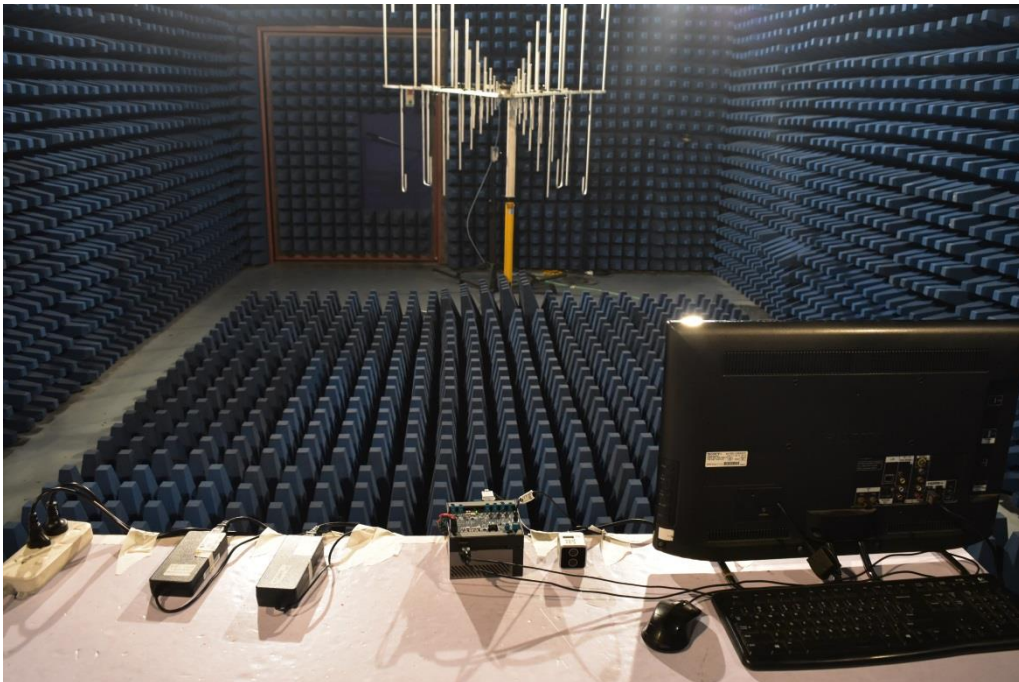
3. Conducted Emission - AC Port

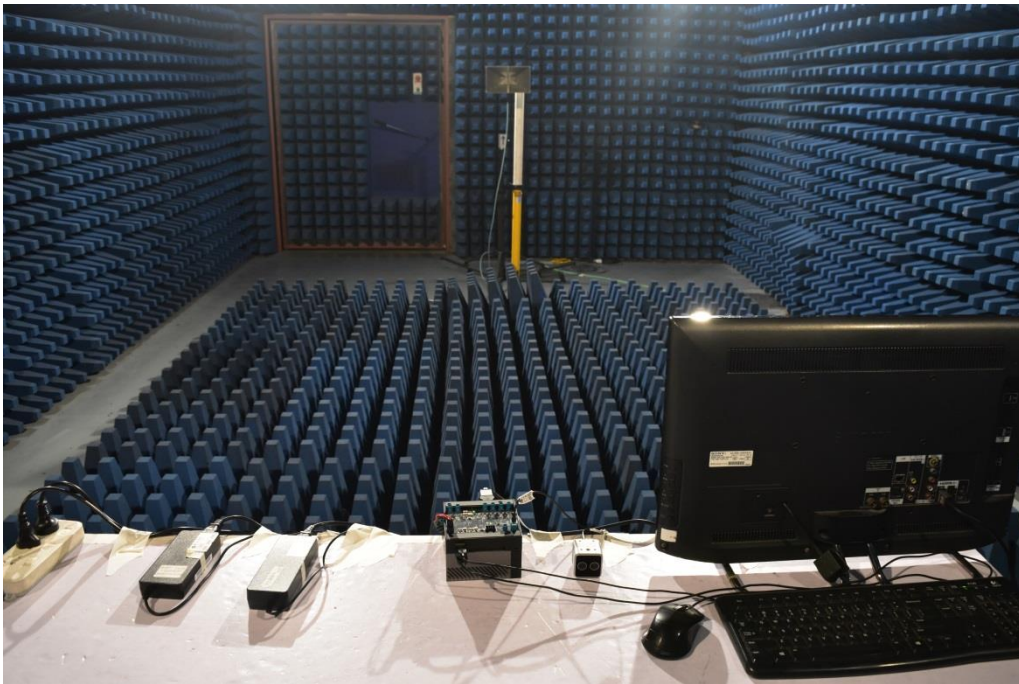


4. Electrostatic Discharge Immunity

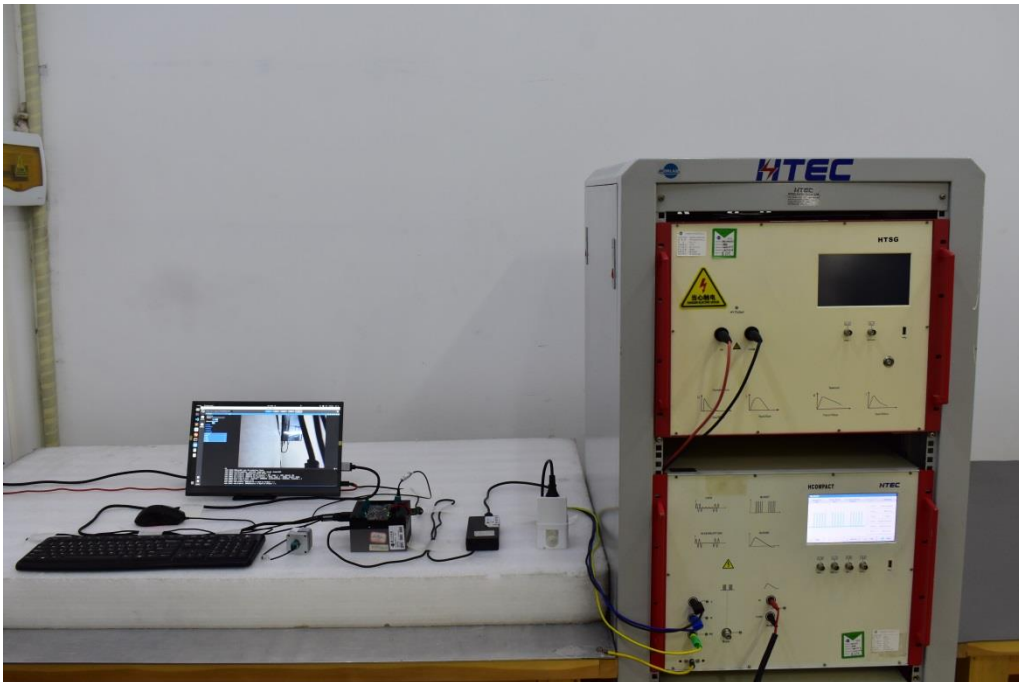


5. Radiated Immunity

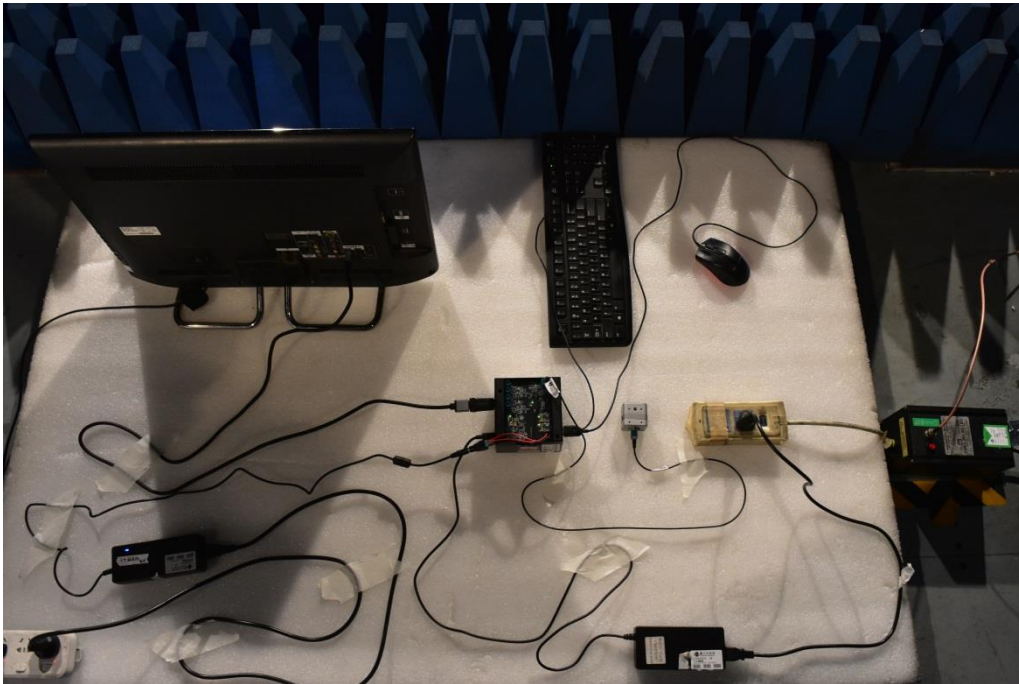




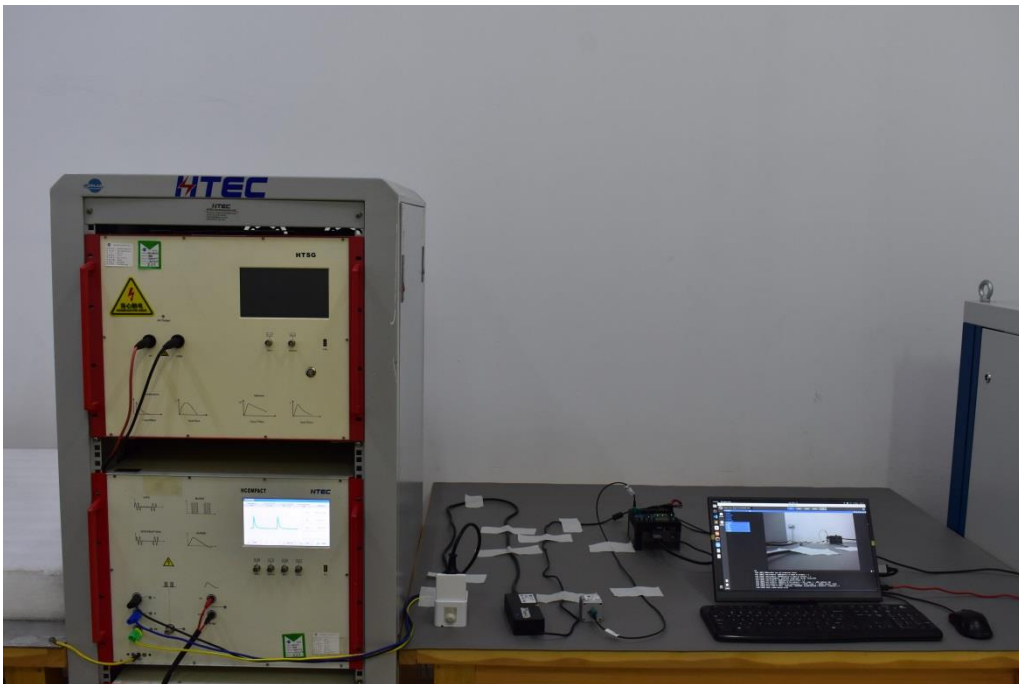
6. Electrical Fast Transient/Burst Immunity Test



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	2.1dB
	150kHz-30MHz	2.8dB

Uncertainty of Radiated Emission Measurement

Measuring Uncertainty for a Level of Confidence of 95%(U=2Uc(y))	30MHz-200MHz	4.3dB
	200MHz-1000MHz	4.4dB
	1GHz-6GHz	4.7dB
	6GHz-18GHz	5.2dB
	18GHz-40GHz	5.3dB



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
TS+ -[JS32-RE]	Version 2.5.0.6	Tonscend
TS+ -[JS32-CE]	Version 2.5.0.0	Tonscend
TS+ -[JS35-CS]	Version 4.0.0.0	Tonscend
TS+ -[JS35-RS]	Version 4.0.0.0	Tonscend

**4. Test Equipments Utilized**

Description	Model	Serial No.	Manufacturer	Cal. Date	Due. Date
Bi-Log Antenna	VULB 9163	9163-519	SCHWARZBECK	2025/8/18	2026/8/17
Horn Antenna	BBHA 9120D	01774	SCHWARZBECK	2025/6/20	2026/6/19
Receiver	N9038A	MY5413001 6	Agilent	2025/12/26	2026/12/25
Preamplifier	S020180L320 3	61171/6117 2	LUCIX CORP.	2026/5/7	2027/5/6
Preamplifier	S10M100L380 2	46732	LUCIX CORP.	2026/5/7	2027/5/6
Preamplifier	DCLNA0118-4 0C-S	DS77209	Decentest	2026/5/7	2027/5/6
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
RF Coaxial Cable	N/A	EMC-CE-00 514	N/A	N/A	N/A
Receiver	ESPI	101052	R&S	2026/5/7	2027/5/6
LISN	ENV 216	103131	R&S	2026/3/18	2027/3/17
ESD Simulator	SESD 230	309182	Schlöder	2025/12/30	2026/12/29
EFT/Surge/DIP Testing System	HCOMPACT7	160701	HTEC	2026/5/21	2027/5/20
Signal Generator	N5181A	MY5014191 1	Agilent	2025/12/25	2026/12/24
Power Amplifier	NTWPAS-008 10200	17033067	rflight communication	2025/12/24	2026/12/23
Power Amplifier	NTWPAS-102 5100	17033064	rflight communication	2025/12/24	2026/12/23
Power Amplifier	NTWPAS-256 0100	17043104	rflight communication	2025/12/24	2026/12/23
Power Amplifier	AP32 DR180	908-961	Prana	2025/12/26	2026/12/25
Stacked double Log.-Per. Antenna	STLP 9128D	0125	SCHWARZBECK	2023/6/4	2026/6/3



Horn Antenna	BBHA 9120D	2123	SCHWARZBECK	2025/6/29	2026/6/28
Power Meter	E4419B	MY4510449 6	Agilent	2025/9/3	2026/9/3
CDN	CDNL-801 M2/M3	2575	Luthi	2025/12/24	2026/12/23

5. Ancillary Equipment Utilized

Description	Model	Serial No.	Manufacturer
Radiated Emission			
Host	N/A	100201300569	NVIDIA
Wired Mouse	S10-005640	20261HS0 217C8	logitech
Wired Keyboard	CEM 2017-03-03	24450	LENOVO
Display	KDL-24EX520	6007712	Sony Corporation
DP to HDMI adapter	N/A	N/A	N/A
Video cable	N/A	N/A	N/A
HDMI cable	N/A	N/A	N/A
1# Adapter	FSP090-A1BR3	H2091009701	FSP
2# Adapter	ADP-90DDB	8SA10J46689D1SG 19S005G	Lenovo
Conducted Emission			
Host	N/A	100201300569	NVIDIA
Wired Mouse	S10-005640	20261HS0 217C8	logitech
Wired Keyboard	CEM 2017-03-03	24450	LENOVO
Display	KDL-24EX520	6007712	Sony Corporation
DP to HDMI adapter	N/A	N/A	VENTION
Video cable	N/A	N/A	N/A
HDMI cable	N/A	N/A	N/A
3# Adapter	FSP090-A1BR3	H4181000070	FSP
4# Adapter	GST90A24	SC571D3408	MEAN WELL
Radiated Immunity			
Host	N/A	100201300569	NVIDIA
Wired Mouse	S10-005640	20261HS0 217C8	logitech



Wired Keyboard	CEM 2017-03-03	24450	LENOVO
Display	KDL-24EX520	6007712	Sony Corporation
DP to HDMI adapter	N/A	N/A	VENTION
Video cable	N/A	N/A	N/A
HDMI cable	N/A	N/A	N/A
3# Adapter	FSP090-A1BR3	H4181000070	FSP
4# Adapter	GST90A24	SC571D3408	MEAN WELL
Electrostatic Discharge Immunity			
Host	N/A	100201300569	NVIDIA
Wired Mouse	S10-005640	20261HS0 217C8	logitech
Wired Keyboard	CEM 2017-03-03	24450	LENOVO
Display	KDL-24EX520	6007712	Sony Corporation
DP to HDMI adapter	N/A	N/A	VENTION
Video cable	N/A	N/A	N/A
HDMI cable	N/A	N/A	N/A
3# Adapter	FSP090-A1BR3	H4181000070	FSP
4# Adapter	GST90A24	SC571D3408	MEAN WELL
Conducted Immunity			
Host	N/A	100201300569	NVIDIA
Wired Mouse	S10-005640	20261HS0 217C8	logitech
Wired Keyboard	CEM 2017-03-03	24450	LENOVO
Display	KDL-24EX520	6007712	Sony Corporation
DP to HDMI adapter	N/A	N/A	VENTION
Video cable	N/A	N/A	N/A
HDMI cable	N/A	N/A	N/A
3# Adapter	FSP090-A1BR3	H4181000070	FSP
4# Adapter	GST90A24	SC571D3408	MEAN WELL
EMS Test (Electrical Fast Transient/Burst Immunity, Surge Immunity, Voltage Dips and Interruptions Immunity)			
Host	N/A	100201300569	NVIDIA
Wired Mouse	S10-005640	20261HS0 217C8	logitech



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Wired Keyboard	CEM 2017-03-03	24450	LENOVO
Displayer	HC-L156A	HC-L15.6A	LANLIPU
DP to HDMI adapter	N/A	N/A	VENTION
Video cable	N/A	N/A	N/A
HDMI cable	N/A	N/A	N/A
3# Adapter	FSP090-A1BR3	H4181000070	FSP
4# Adapter	GST90A24	SC571D3408	MEAN WELL



Notes

1. The report shall have report stamp or our company stamp.
2. The report shall be invalid without all the signatures of the editor and approver.
3. The report shall not be changed.
4. Any objections must be raised to Morlab within 15 days since the date when the report is received. It will not be taken into consideration beyond this limit.
5. Conformity declaration:

☒ Morlab issues a statement of conformity based on the corresponding standards (default)

☐ Morlab issues a statement of conformity based on the applicant requirement

6. Use of uncertainty of measurement for decisions on conformity (decision rule):

No decision rule is specified by the testing standard, when comparing the measurement result with the applicable limit according to the specification in that standard. The decisions on conformity are made without applying the measurement uncertainty ("simple acceptance" decision rule).

—————END OF REPORT —————