



REPORT No.: SZ26050252E01

TEST REPORT

APPLICANT : 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) : 47 CFR Part 15 Subpart B

RECEIPT DATE : 2026-05-19

TEST DATE : 2026-05-23 to 2026-05-25

ISSUE DATE : 2026-06-04

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Xiao Xiong(Supervisor)

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DIRECTORY

1. Technical Information	3
1.1. Applicant and Manufacturer Information.....	3
1.2. Equipment Under Test (EUT) Description	3
2. Test Results.....	5
2.1. Applied Reference Documents	5
2.2. EUT Setup and Operating Conditions.....	6
3. 47 CFR Part 15B Requirements.....	7
3.1. Conducted Emission	7
3.2. Radiated Emission	11
Annex A Photographs of Test Setup	18
Annex B Test Uncertainty.....	20
Annex C Testing Laboratory Information	21
Notes	24

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 applicant.

1.1. Applicant and Manufacturer Information

Applicant:	Orbbec Inc.
Applicant Address:	Orbbec Technology Building, No.88 High-tech North 1st Road, Nanshan District, Shenzhen, China
Manufacturer:	Orbbec Inc.
Manufacturer Address:	Orbbec Technology Building, No.88 High-tech North 1st Road, Nanshan District, Shenzhen, China

1.2. Equipment Under Test (EUT) Description

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

Note:

1. This test report is variant from the original report (Report No.: SZ26030340E01, model name: G40351-291/G45351-291), manufacturer information and MB2502-G305G GX motherboard modification with changes. This test has been tested Conducted Emission and Radiated Emission. For Conducted Emission and Radiated Emission, only the worst case 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, only the



REPORT No.: SZ26050252E01

worst case (model: G45351-291) is recorded in this report. For the Radiated Emission, only the worst case (model: G40351-291) is recorded in this report.

3. The declarations of EUT presented in the report are provided by applicant, 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 applicant.



2. Test Results

2.1. Applied Reference Documents

The objective of the report is to perform testing according to 47 CFR Part 15 Subpart B:

No.	Identity	Document Title
1	47 CFR Part 15	Radio Frequency Devices

Test detailed items/section required by FCC rules and results are as below:

No.	Section	Description	Test Date	Test Engineer	Result	Remark
1	15.107	Conducted Emission	2026.05.23	Wang Yapeng	PASS	/
2	15.109	Radiated Emission	2026.05.25	Wang Deyong	PASS	/

Note 1: The tests were performed according to the method of measurements prescribed in ANSI C63.4-2014.

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
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

3. 47 CFR Part 15B Requirements

3.1. Conducted Emission

3.1.1. Requirement

According to FCC section 15.107, the radio frequency voltage that is conducted back onto the AC power line on any frequency within the band 150kHz to 30MHz shall not exceed the limits in the following table, as measured using a 50 μ H/50 Ω line impedance stabilization network (LISN).

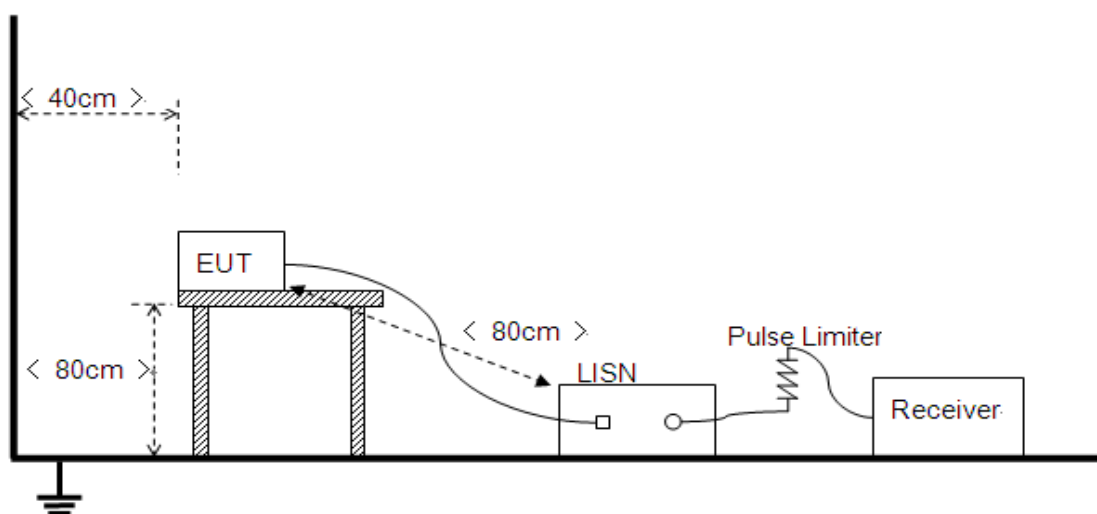
Frequency Range (MHz)	Conducted Limit (dB μ V)	
	Quasi-peak	Average
0.15 - 0.50	66 to 56	56 to 46
0.50 - 5	56	46
5 - 30	60	50

Note:

- The limit subjects to the Class B digital device.
- The lower limit shall apply at the band edges.
- The limit decreases linearly with the logarithm of the frequency in the range 0.15 - 0.50MHz.

3.1.2. Test Setup

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



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 $50\Omega/50\mu\text{H}$ of coupling impedance for the measuring instrument. A Pulse Limiter is used to protect the measuring instrument. The factors of the whole test system are calibrated to correct the reading.

The power strip or extension cord has been investigated to make sure that the LISN integrity is maintained with respect to the impedance characteristics as prescribed in ANSI C63.4-2014 at Clause 4.3.

3.1.3. Test Result

Set RBW=9 kHz, VBW=30 kHz. The maximum conducted interference is searched using Peak (PK), Quasi-peak (QP) and Average (AV) detectors; the emission levels 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. Tests for both L phase and N phase lines of the power mains connected to the EUT are performed. All test modes are considered, refer to recorded points and plots below.

The measurement results are obtained as below:

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

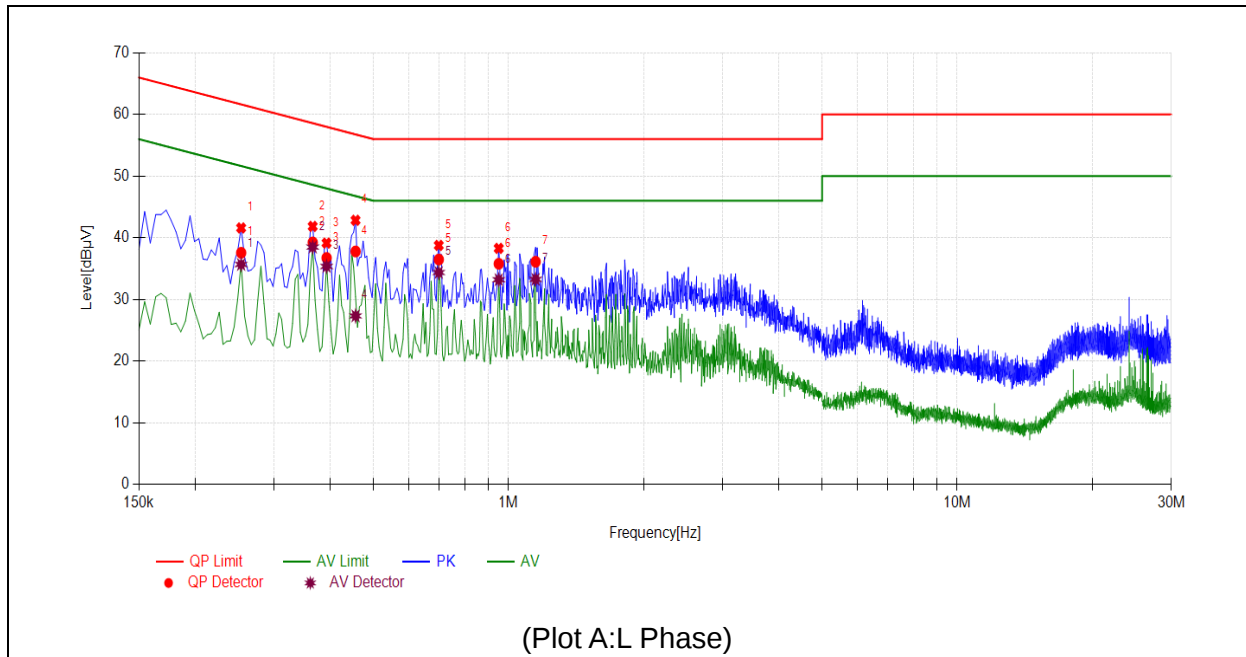
U_R : Receiver Reading

A_{Factor} : Voltage Division Factor of LISN

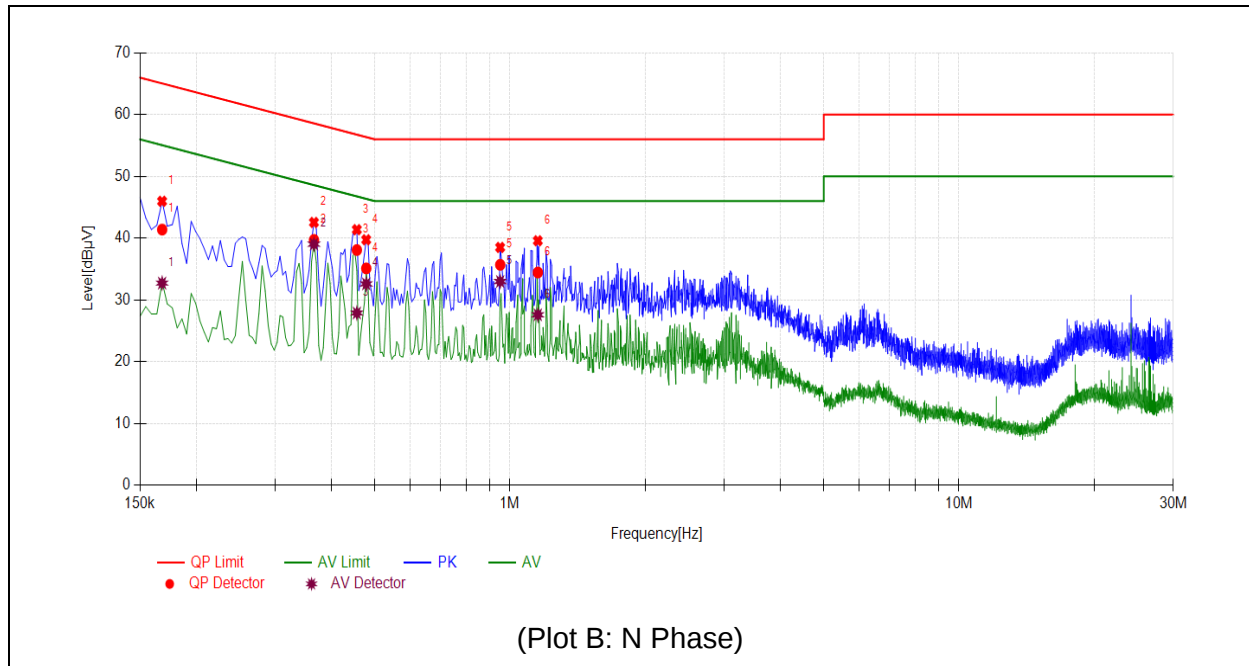
$L_{\text{Cable loss}}$: Correction Factor Contains Pulse Limiter and Cable

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

A. Test Plot and Suspicious Points:



No.	Fre. (MHz)	Emission Level (dBμV)		Limit (dBμV)		Power-line	Verdict
		Quasi-peak	Average	Quasi-peak	Average		
1	0.2535	37.56	35.67	61.64	51.64	Line	PASS
2	0.3660	39.24	38.49	58.59	48.59		PASS
3	0.3930	36.73	35.35	58.00	48.00		PASS
4	0.4560	37.78	27.32	56.76	46.76		PASS
5	0.6990	36.47	34.36	56.00	46.00		PASS
6	0.9509	35.78	33.19	56.00	46.00		PASS
7	1.1489	36.11	33.25	56.00	46.00		PASS



No.	Fre. (MHz)	Emission Level (dBμV)		Limit (dBμV)		Power-line	Verdict
		Quasi-peak	Average	Quasi-peak	Average		
1	0.1680	41.39	32.72	65.06	55.06	Neutral	PASS
2	0.3660	39.71	39.02	58.59	48.59		PASS
3	0.4560	38.07	27.87	56.76	46.76		PASS
4	0.4785	35.10	32.59	56.36	46.36		PASS
5	0.9511	35.68	32.98	56.00	46.00		PASS
6	1.1536	34.44	27.58	56.00	46.00		PASS



3.2. Radiated Emission

3.2.1. Requirement

According to FCC section 15.109 (a), the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:

Frequency Range (MHz)	Field Strength Limitation at 3m Measurement Dist	
	($\mu\text{V/m}$)	(dB $\mu\text{V/m}$)
30.0 - 88.0	100	20log 100
88.0 - 216.0	150	20log 150
216.0 - 960.0	200	20log 200
Above 960.0	500	20log 500

As shown in FCC section 15.35(b), for frequencies above 1000MHz, the field strength limits are based on average detector. When average radiated emission measurements are specified in this part, including emission measurements below 1000MHz, there also is a limit on the radio frequency emissions, as measured using instrumentation with a peak detector function, corresponding to 20dB above the maximum permitted average limit for the frequency being investigated unless a different peak emission limit is otherwise specified in the rules.

Note:

- 1) The tighter limit shall apply at the boundary between two frequency range.
- 2) Limitation expressed in dB $\mu\text{V/m}$ is calculated by $20\log$ Emission Level($\mu\text{V/m}$).

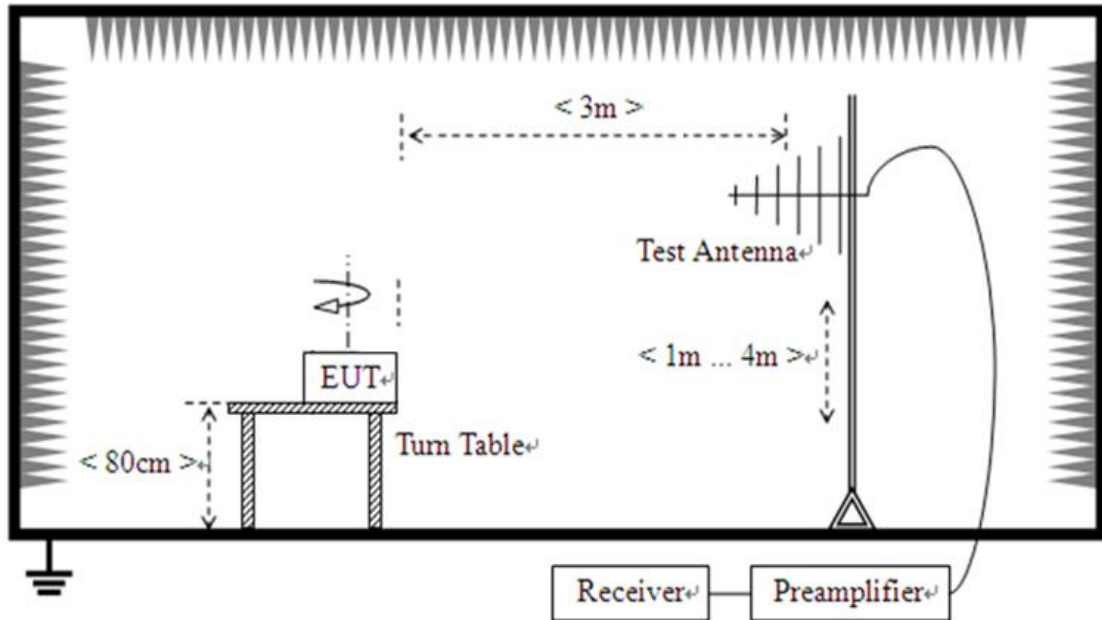
3.2.2. Frequency Range of Measurement

According to 15.33(b)(1), the frequency range of radiated measurement for the EUT is listed in the following table:

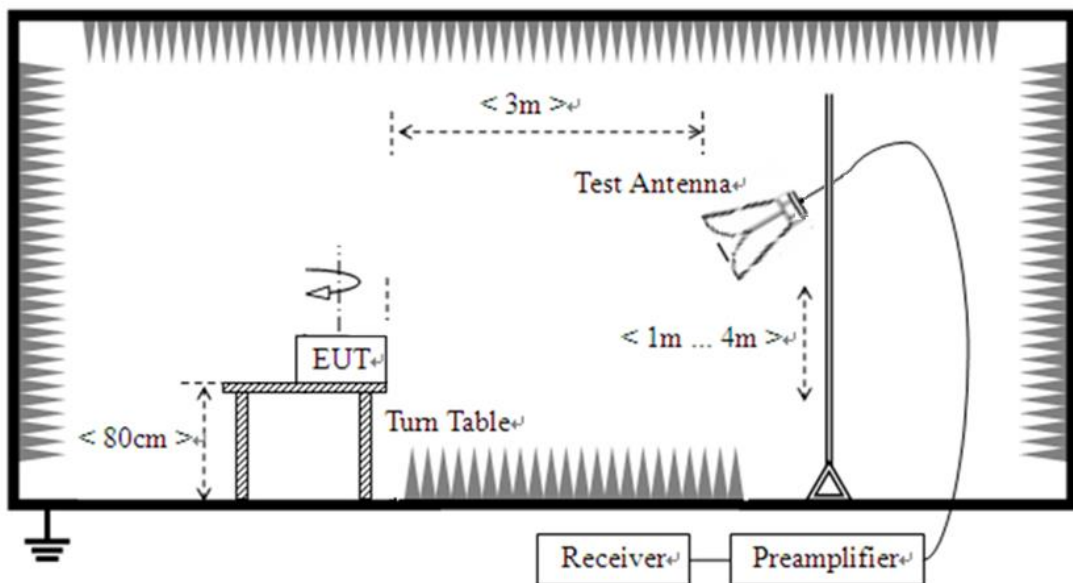
Highest frequency generated or used in the device or on which the device operates or tunes (MHz)	Upper frequency of measurement range (MHz)
Below 1.705	30.
1.705–108	1000.
108–500	2000.
500–1000	5000.
Above 1000	5th harmonic of the highest frequency or 40 GHz, whichever is lower.

3.2.3. Test Setup

- 1) For radiated emissions from 30MHz to 1GHz



- 2) For radiated emissions above 1GHz





The test is performed in a 3m Semi-Anechoic Chamber; the antenna factor, cable loss and so on of the site (factors) is calculated to correct the reading. 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.

For the test Antenna:

In the frequency range above 30MHz, Bi-Log Test Antenna (30MHz to 1GHz) and Horn Test Antenna (above 1GHz) are used. Test Antenna is 3m away from the EUT. Test Antenna height is varied from 1m to 4m above the ground to determine the maximum value of the field strength. The emission levels at both horizontal and vertical polarizations should be tested. For measurements above 1 GHz, keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response.

For measurements below 1GHz the resolution bandwidth is set to 120 kHz for peak detection measurements or 120kHz for quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak.

For measurements above 1GHz the resolution bandwidth is set to 1MHz, the video bandwidth is set to 3MHz for peak measurements and as applicable for average measurements.

3.2.4. Test Result

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 AV and QP detectors. Both the vertical and the horizontal polarizations of the Test Antenna are considered to perform the tests. All test modes are considered, refer to recorded points and plots below.

The amplitude of emissions which are attenuated more than 20 dB below the permissible value need not be reported.

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

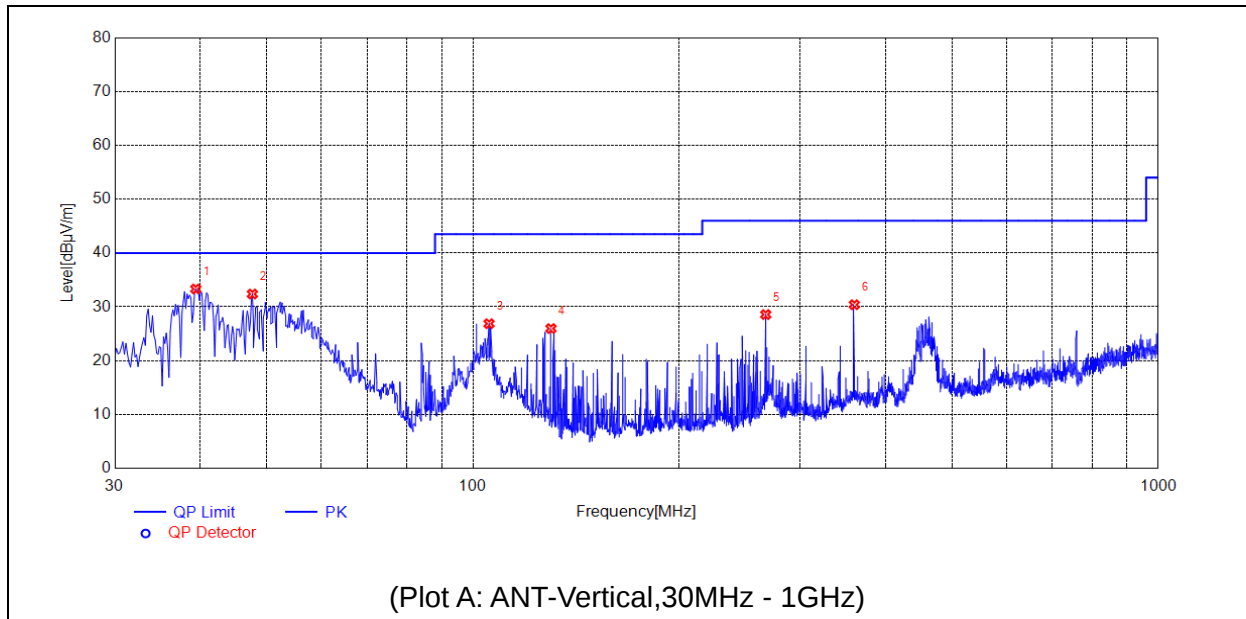
U_R : Receiver Reading

G_{preamp} : Preamplifier Gain

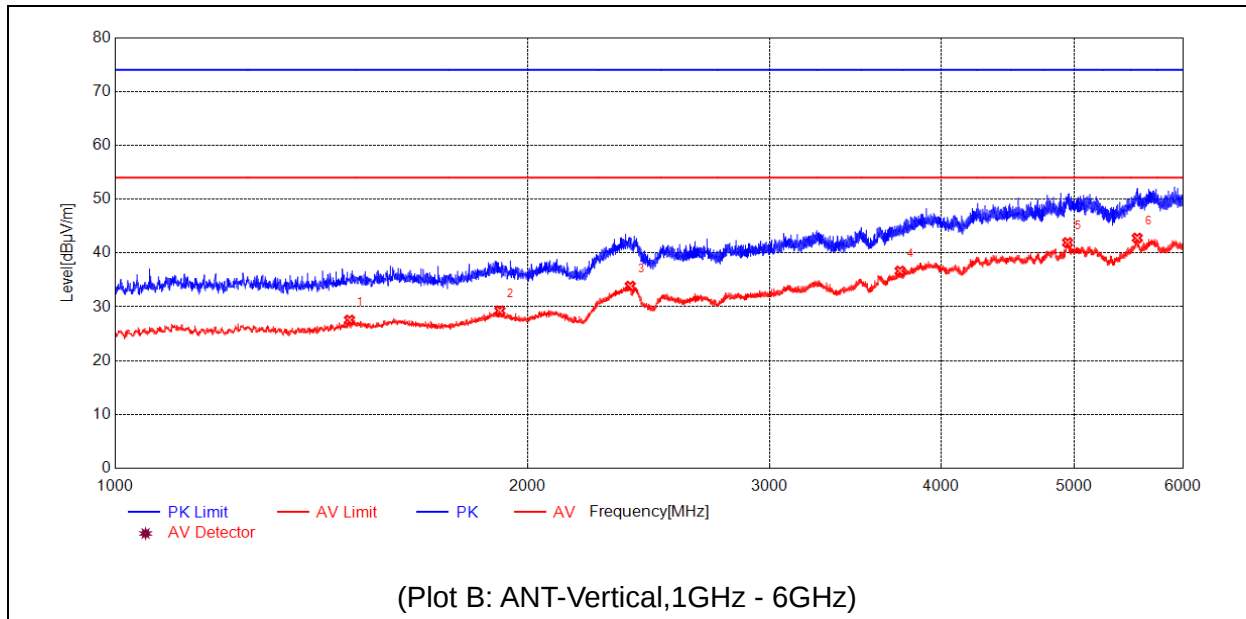
A_{Factor} : Antenna Factor at 3m

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

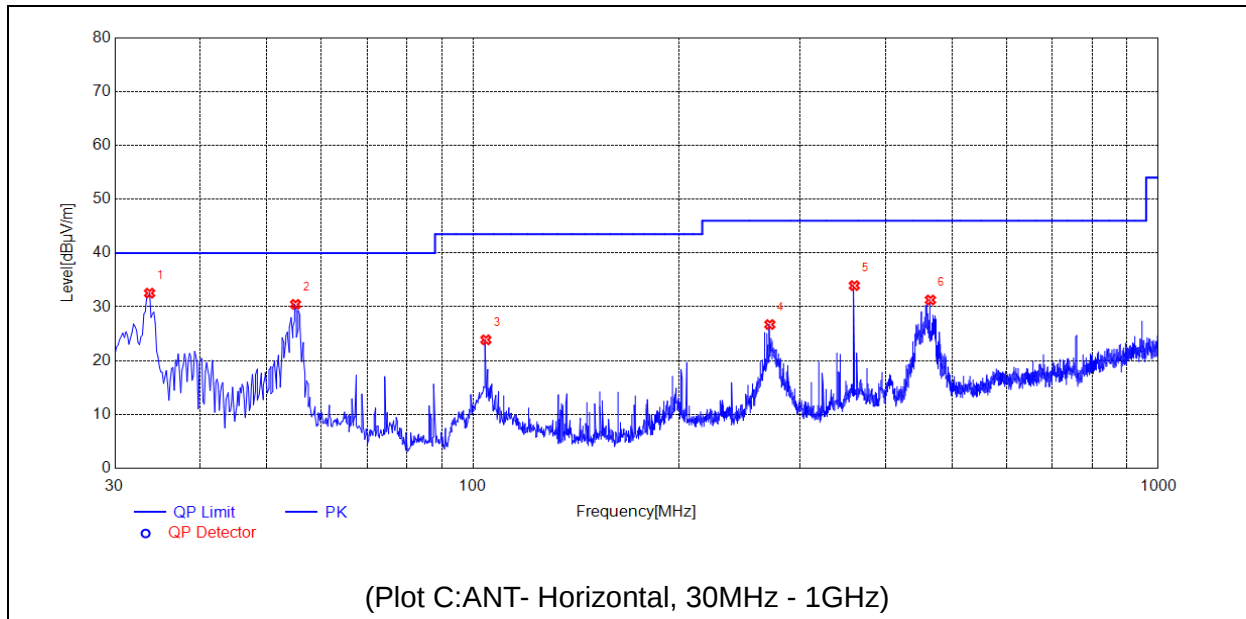
Note: All radiated emission tests were performed in X, Y, Z axis direction, and only the worst axis test condition was recorded in this test report.



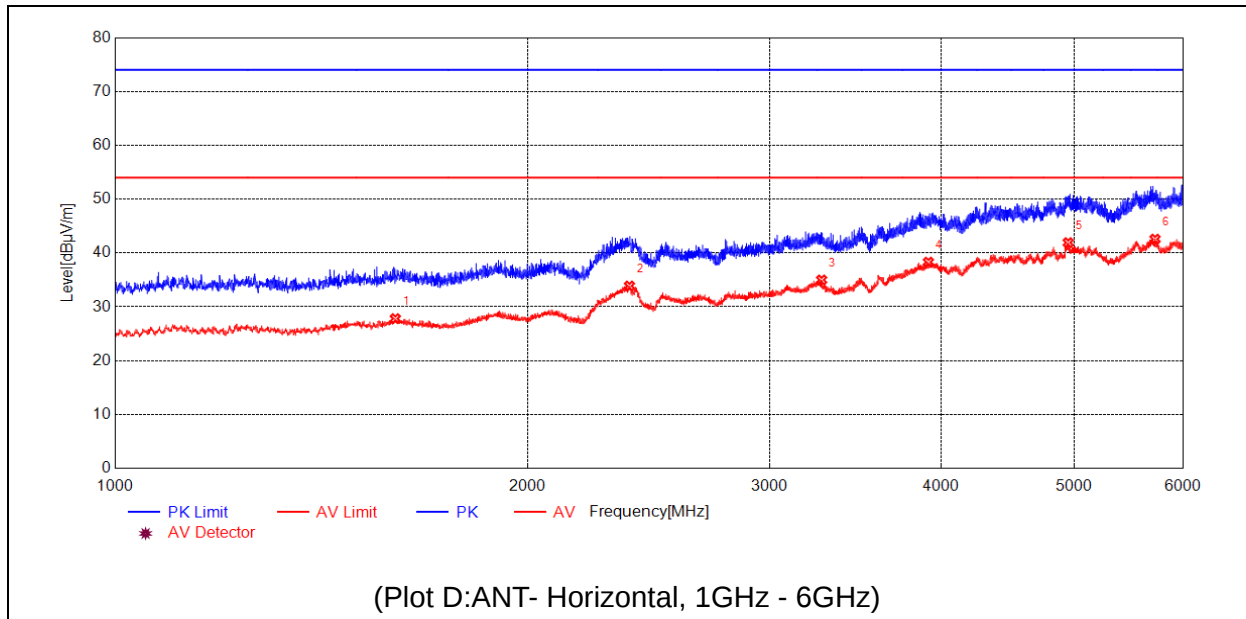
No.	Fre. MHz	PK dBμV/m	QP dBμV/m	AV dBμV/m	Limit-PK dBμV/m	Limit-QP dBμV/m	Limit-AV dBμV/m	ANT	Verdict
1	39.3782	33.32	N.A.	N.A.	N.A.	40.00	N.A.	V	PASS
2	47.6246	32.38	N.A.	N.A.	N.A.	40.00	N.A.	V	PASS
3	105.5109	26.87	N.A.	N.A.	N.A.	43.50	N.A.	V	PASS
4	129.9267	25.96	N.A.	N.A.	N.A.	43.50	N.A.	V	PASS
5	267.3662	28.56	N.A.	N.A.	N.A.	46.00	N.A.	V	PASS
6	360.0167	30.39	N.A.	N.A.	N.A.	46.00	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	1482.5000	N.A.	N.A.	27.56	74.00	N.A.	54.00	V	PASS
2	1908.0000	N.A.	N.A.	29.27	74.00	N.A.	54.00	V	PASS
3	2374.5000	N.A.	N.A.	33.85	74.00	N.A.	54.00	V	PASS
4	3734.5000	N.A.	N.A.	36.67	74.00	N.A.	54.00	V	PASS
5	4946.0000	N.A.	N.A.	41.94	74.00	N.A.	54.00	V	PASS
6	5560.0000	N.A.	N.A.	42.78	74.00	N.A.	54.00	V	PASS



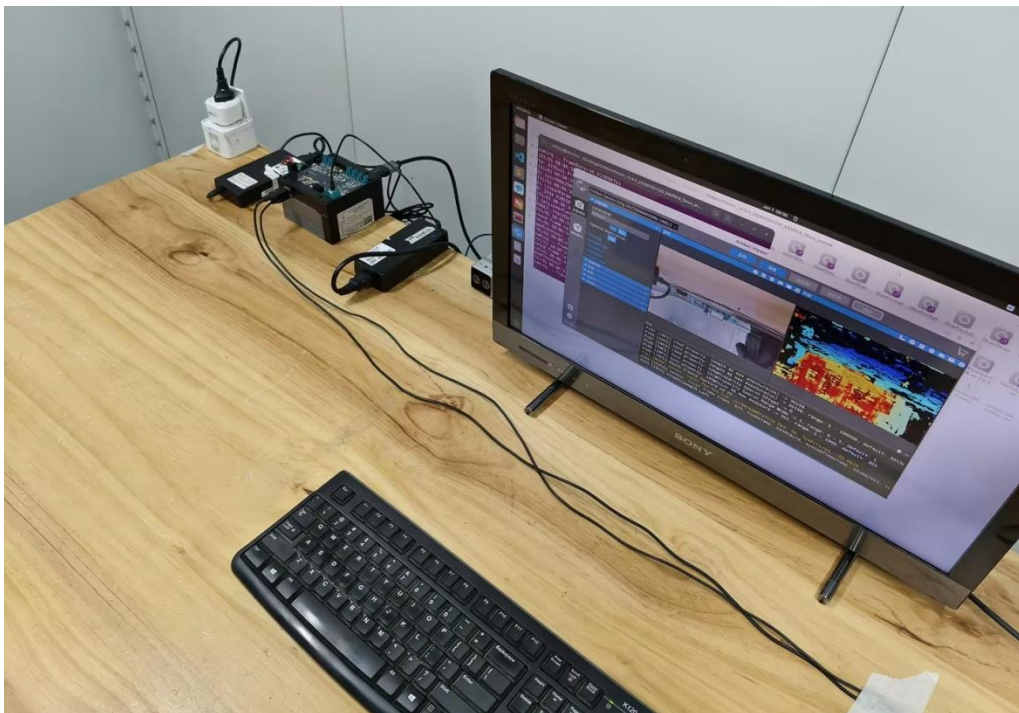
No.	Fre. MHz	PK dBμV/m	QP dBμV/m	AV dBμV/m	Limit-PK dBμV/m	Limit-QP dBμV/m	Limit-AV dBμV/m	ANT	Verdict
1	33.7190	32.54	N.A.	N.A.	N.A.	40.00	N.A.	H	PASS
2	55.0625	30.46	N.A.	N.A.	N.A.	40.00	N.A.	H	PASS
3	104.3791	23.87	N.A.	N.A.	N.A.	43.50	N.A.	H	PASS
4	271.0852	26.71	N.A.	N.A.	N.A.	46.00	N.A.	H	PASS
5	360.0167	33.94	N.A.	N.A.	N.A.	46.00	N.A.	H	PASS
6	464.9558	31.27	N.A.	N.A.	N.A.	46.00	N.A.	H	PASS



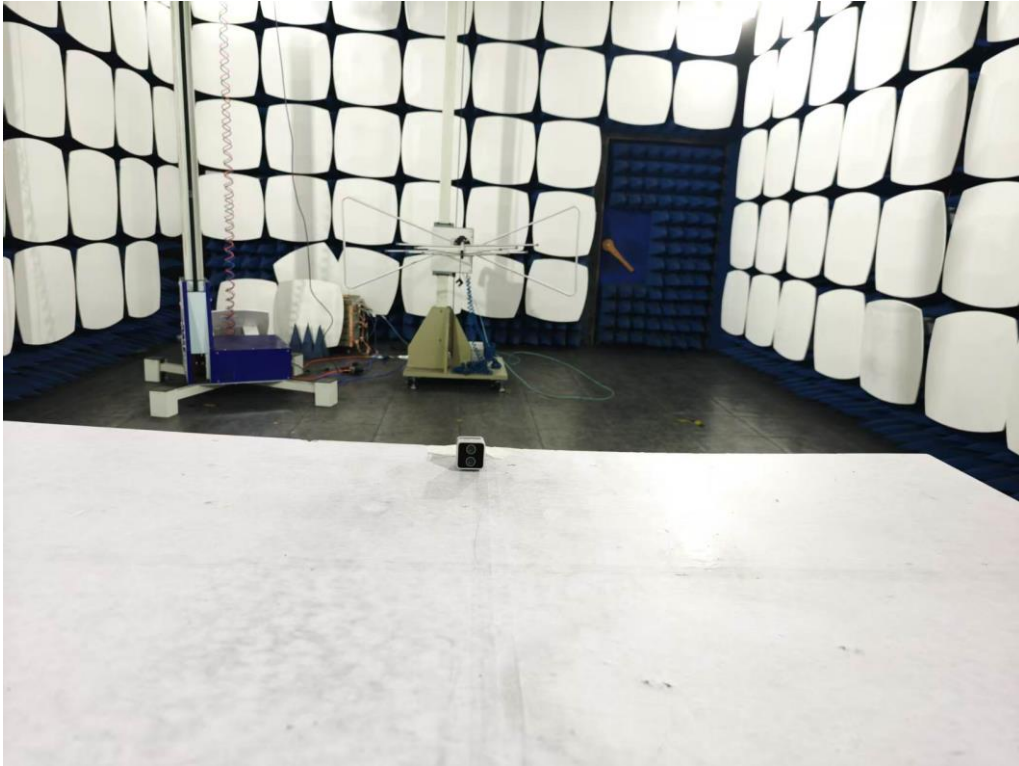
No.	Fre. MHz	PK dBμV/m	QP dBμV/m	AV dBμV/m	Limit-PK dBμV/m	Limit-QP dBμV/m	Limit-AV dBμV/m	ANT	Verdict
1	1601.0000	N.A.	N.A.	27.81	74.00	N.A.	54.00	H	PASS
2	2371.5000	N.A.	N.A.	33.88	74.00	N.A.	54.00	H	PASS
3	3273.5000	N.A.	N.A.	35.00	74.00	N.A.	54.00	H	PASS
4	3916.0000	N.A.	N.A.	38.31	74.00	N.A.	54.00	H	PASS
5	4951.0000	N.A.	N.A.	41.93	74.00	N.A.	54.00	H	PASS
6	5728.0000	N.A.	N.A.	42.58	74.00	N.A.	54.00	H	PASS

Annex A Photographs of Test Setup

1. Conducted Emission



2. Radiated Emission (30MHz-1GHz)



3. Radiated Emission (above 1GHz)





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, Block 67, 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, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China

3. Accreditation Certificate

Accredited Testing Laboratory:	The FCC designation number is CN1192. Test firm registration number is 226174. (Shenzhen Morlab Communications Technology Co., Ltd.)
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4. 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

**5. 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	MY541300 16	Agilent	2025/12/26	2026/12/25
Signal Analyzer	N9020A	MY560601 45	Agilent	2026/5/7	2027/5/6
Preamplifier	S020180L3203	61171/611 72	LUCIX CORP.	2026/5/7	2027/5/6
Preamplifier	S10M100L3802	46732	LUCIX CORP.	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	QA500-18-NN-5	22120181	Qualwave	N/A	N/A
RF Coaxial Cable	N/A	EMC-CE-0 0514	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
INTELLIGENT PURE SINE-WAVE POWER SUPPLY	TPS 500B	1008004	EVERFINE	2025/9/11	2026/9/10

6. 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	N/A
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 _____