



No.:
FCCSZ2024-0047-EMC

TEST REPORT

FCC ID : 2BAW2-NDSFD004

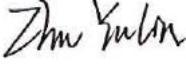
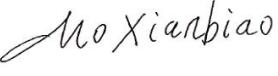
NAME OF SAMPLE : Smart Pet Feeder [Cubie M3]

APPLICANT : Pet Marvel Limited

CLASSIFICATION OF TEST : N/A

CVC Testing Technology (Shenzhen) Co., Ltd.



Applicant		<p>Name: Pet Marvel Limited</p> <p>Address: 350 Northern Blvd Ste 324-1331 Albany, NY 12204, New York, United States</p>	
Manufacturer		<p>Name: Shanghai Niaoyu Huaxiang Pet Co., Ltd.</p> <p>Address: Room 901, Block H, Xuhui Vanke Center, Xuhui District, Shanghai, China</p>	
Equipment Under Test		<p>Name: Smart Pet Feeder [Cubie M3]</p> <p>Model/Type: NDSFE004</p> <p>Brand: PET MARVEL</p> <p>Serial NO.: N/A</p> <p>Sample NO.: 3-1</p>	
Date of Receipt.	2024-07-02	Date of Testing	2024-07-02 ~ 2024-07-29
Test Specification		Test Result	
FCC Part 15, Subpart B, Class B		PASS	
Evaluation of Test Result		<p>The equipment under test was found to comply with the requirements of the standards applied.</p> <p>Seal of CVC</p> <p>Issue Date: 2024-07-31</p>	
Compiled by:  Zhu Yulin Name Signature		Reviewed by:  Mo Xianbiao Name Signature	
		Approved by:  Dong Sanbi Name Signature	
Other Aspects: NONE.			

This test report relates only to the EUT, and shall not be reproduced except in full, without written approval of CVC.



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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
FCCSZ2024-0047-EMC	Original release	2024-07-31



1. SUMMARY OF TEST RESULTS

EMISSION			
Standard	Test Item	Result	Remarks
FCC Part 15, Subpart B, Class B	Conducted Test	PASS	Minimum passing margin is 10.6dB at 0.589MHz
	Radiated Test (30MHz~1GHz)	PASS	Minimum passing margin is 6.43dB at 794.630MHz
	Radiated Test (Above 1GHz)	PASS	Minimum passing margin is 4.79dB at 3269.427MHz

1.1 List of Test and Measurement Instruments

CE Test - 3M Chamber					
Equipment	Manufacturer	Model No.	Serial Number	Cal. interval	Cal. Due
EMI Test Receiver	Rohde&Schwarz	ESR3	102693	1 year	2025/5/24
limiter (10 dB)	Rohde&Schwarz	ESH3-Z2	102824	1 year	2025/5/15
Voltage probe	Rohde&Schwarz	CVP9222C	28	1 year	2025/4/27
Current probe	Rohde&Schwarz	EZ-17	101442	1 year	2025/4/28
ISN network	Rohde&Schwarz	ENV 81	100401	1 year	2025/4/28
ISN network	Rohde&Schwarz	ENV 81 Cat6	101896	1 year	2025/4/28
#1 Shielding room	MORI	854	N/A	3 year	2026/5/16
LISN	SCHWARZBECK	NSLK 8129	5021	1 year	2025/4/27
Temperature and humidity meter	/	C193561430	C193561430	1 year	2025/4/27
RE Test - 3M Chamber					
Equipment	Manufacturer	Model No.	Serial Number	Cal. interval	Cal. Due
EMI Test Receiver	Rohde&Schwarz	ESR 26	101718	1 year	2025/5/24
Antenna(30MHz~1000MHz)	SCHWARZBECK	VULB 9168	01132	1 year	2025/5/27
Horn antenna(1GHz-18GHz)	ETS	3117	227634	1 year	2025/3/25
Horn antenna(18GHz-40GHz)	SCHWARZBECK	BBHA 9170	01003	1 year	2025/3/25
3m anechoic chamber	MORI	966	CS0200019	3 year	2026/5/18
LISN (single-phase)	Rohde&Schwarz	ESH3-Z6	102152/102156	1 year	2025/4/27
Preamplifier(10kHz-1GHz)	Rohde&Schwarz	SCU-01F	100298	1 year	2025/4/28
Attenuator	/	SJ-5dB	607684	1 year	2025/2/4
#1 control room	MORI	433	CS0300028	3 year	2026/5/17
Temperature and humidity meter	UNI-T	A10T	C193561473	1 year	2025/4/27



1.2 Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

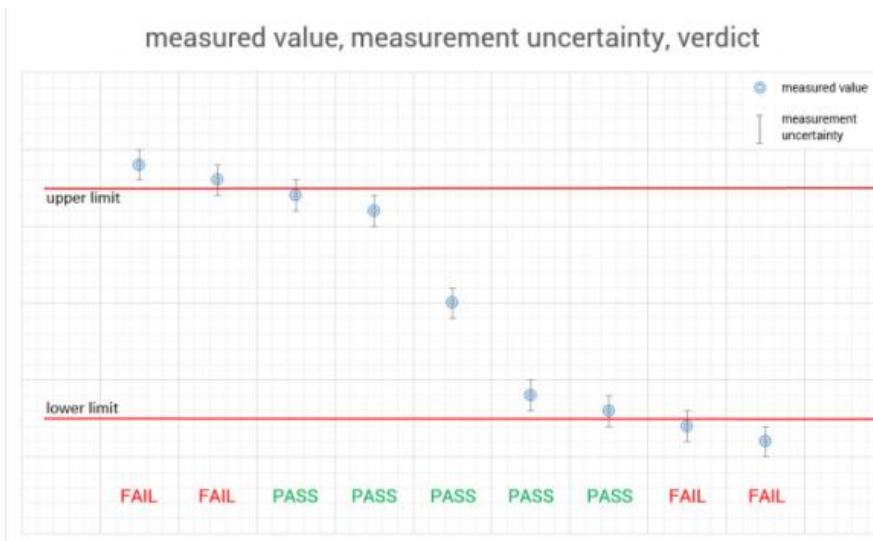
No.	Item	Measurement Uncertainty
1	Conducted emission test	+/- 2.7 dB
2	Radiated emission 30MHz-1GHz	+/- 4.6 dB
3	Radiated emission 1GHz-18GHz	+/- 4.4 dB
4	Radiated emission 18GHz-40GHz	+/-5.1 dB

Remark: 95% Confidence Levels, k=2.

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

Only the measured values related to their corresponding limits will be used to decide whether the equipment under test meets the requirements of the test standards listed.

The measurement uncertainty is mentioned in this test report, but is not taken into account - neither to the limits nor to the measurement results. Measurement results with a smaller margin to the corresponding limits than the measurement uncertainty have a potential risk of more than 5% that the decision might be wrong.



1.3 Test Location

The tests and measurements refer to this report were performed by EMC testing Lab of CVC Testing Technology (Shenzhen) Co., Ltd.

Address: No. 1301-14&16, Guanguang Road, Xinlan Community, Guanlan Subdistrict, Longhua District, Shenzhen, Guangdong, China

Post Code: 518110 Tel: 0755-23763060-8805
Fax: 0755-23763060 E-mail: sz-kf@cvc.org.cn
FCC(Test firm designation number: CN1363)
IC(Test firm CAB identifier number: CN0137)
CNAS(Test firm designation number: L16091)



2. GENERAL INFORMATION

2.1 GENERAL PRODUCT INFORMATION

PRODUCT	Smart Pet Feeder [Cubie M3]			
BRAND	PET MARVEL			
TEST MODEL	NDSFE004			
ADDITIONAL MODEL	N/A			
POWER SUPPLY	1. DC 5V from USB host 2. DC 4.5V (3*1.5V D Battery)			
OPERATING FREQUENCY	BT	2402MHz ~ 2480MHz for BT-LE TX/RX		
	2.4G WIFI	2412MHz ~ 2462MHz for 11b/g/n(HT20) TX/RX		
HARDWARE VERSION:	PS-M3-V20			
SOFTWARE VERSION:	V1.0.5			
I/O PORTS	Refer to user's manual			
CABLE SUPPLIED	USB Line, unshielded, 1.5m			
Remark:				
1. For more detailed features description, please refer to the manufacturer's specifications or the User's Manual.				
2. For the test results, the EUT had been tested with all conditions. But only the worst case was shown in test report.				
3. EUT photo refer to the report (Report NO.: FCCSZ2024-0047-EUT).				

2.2 DESCRIPTION OF ACCESSORIES

N/A



2.3 INDEPENDENT OPERATION MODES

The EUT were tested under the following modes, the final worst mode was marked in boldface and recorded in this report.

EMISSION Test Modes		
For Conducted Emission Tests		
Test Mode		Test Voltage
1	Normal Working + BT Link + WIFI Link	DC 5V from USB host
2	Normal Working (Manual Button)	DC 5V from USB host
3	Stand by + BT Link + WIFI Link	DC 5V from USB host
For Radiated Emission Tests		
Test Mode		Test Voltage
1	Normal Working + BT Link + WIFI Link	DC 5V from USB host
2	Normal Working + BT Link + WIFI Link	DC 4.5V (3*1.5V D Battery)
3	Normal Working (Manual Button)	DC 5V from USB host
4	Stand by + BT Link + WIFI Link	DC 5V from USB host

Remark: The above test modes in boldface were the worst cases, only the test data of these modes were reported.



2.4 GENERAL DESCRIPTION OF APPLIED STANDARDS

According to the specifications of the manufacturers, the EUT must comply with the requirements of the following standards:

FCC PART 15, SUBPART B, CLASS B

ANSI C63.4:2014

All test items have been performed and recorded as per the above standards.

2.5 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Support Equipment					
NO	Description	Brand	Model No.	Serial Number	Supplied by
1	Mobile phone	MIYU	MIYU R17-X25	N/A	Lab
2	N/A	N/A	N/A	N/A	N/A

3. EMISSION

3.1 CONDUCTED EMISSION

3.1.1 LIMITS OF CONDUCTED EMISSION

TEST STANDARD: FCC Part 15, Subpart B (Section: 15.107)

Frequency (MHz)	Class A (dBuV)		Class B (dBuV)	
	Quasi-peak	Average	Quasi-peak	Average
0.15 - 0.5	79	66	66 - 56	56 - 46
0.50 - 5.0	73	60	56	46
5.0 - 30.0	73	60	60	50

NOTE: 1. The lower limit shall apply at the transition frequencies.
NOTE: 2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.
NOTE: 3. All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

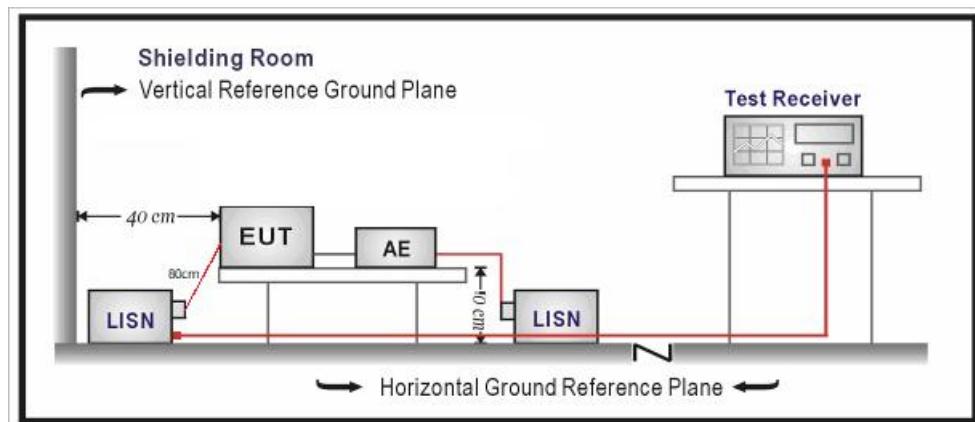
3.1.2 TEST PROCEDURES

The basic test procedure was in accordance with ANSI C63.4:2014 (section 7).

- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- c. The test results of conducted emissions at mains ports are recorded of six worst margins for quasi-peak (mandatory) [and average (if necessary)] values against the limits at frequencies of interest unless the margin is 20 dB or greater.

Note: The resolution bandwidth and video bandwidth of test receiver is 9kHz for quasi-peak detection (QP) and average detection (AV) at frequency 0.15MHz-30MHz.

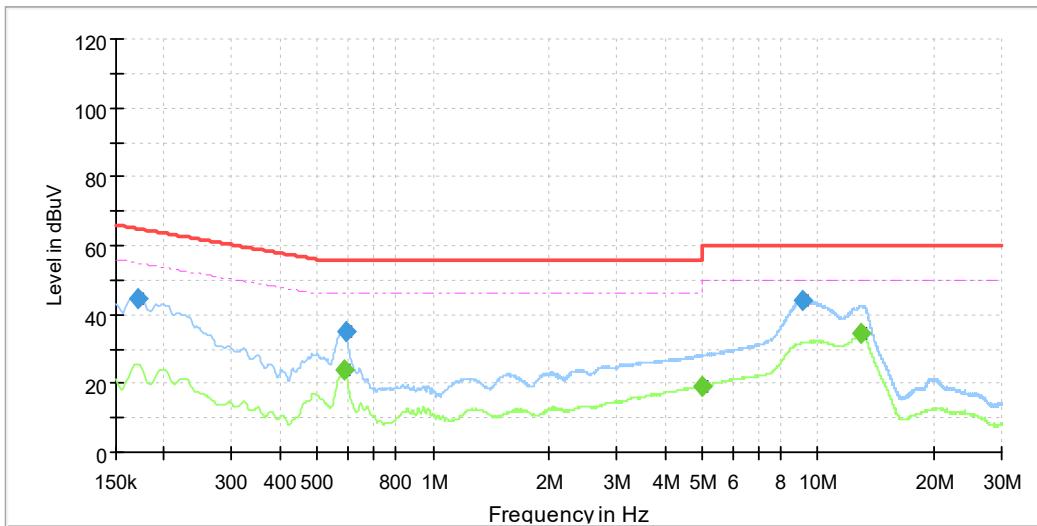
3.1.3 TEST SETUP



3.1.4 TEST RESULTS

CONDUCTED WORST-CASE DATA:

Test Mode	See section 2.3	Frequency Range	150KHz ~ 30MHz
Test Voltage	See section 2.3	PHASE	Line (L)
Environmental Conditions	25.6deg. C, 57% RH	Tested By	Zhou Ye

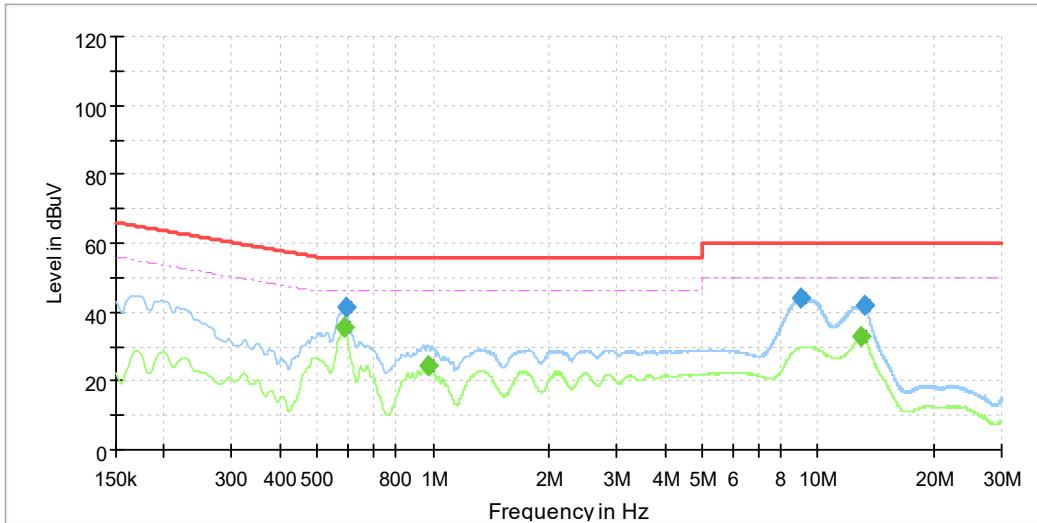


NO	Frequency (MHz)	QuasiPeak (dBuV)	Average (dBuV)	Limit (dBuV)	Margin (dB)	Line	Corr.Factor (dB)
1	0.170	44.7	---	64.9	20.2	L	10.2
2	0.589	---	23.9	46.0	22.1	L	10.3
3	0.591	35.1	---	56.0	20.9	L	10.3
4	4.985	---	19.2	46.0	26.8	L	10.4
5	9.146	44.0	---	60.0	16.0	L	10.5
6	12.930	---	34.5	50.0	15.5	L	10.7

Remark: The emission levels of other frequencies were very low against the limit.



Test Mode	See section 2.3	Frequency Range	150KHz ~ 30MHz
Test Voltage	See section 2.3	PHASE	Line (N)
Environmental Conditions	25.6deg. C, 57% RH	Tested By	Zhou Ye



NO	Frequency (MHz)	QuasiPeak (dBuV)	Average (dBuV)	Limit (dBuV)	Margin (dB)	Line	Corr.Factor (dB)
1	0.589	---	35.4	46.0	10.6	N	10.3
2	0.591	41.5	---	56.0	14.5	N	10.3
3	0.971	---	24.3	46.0	21.7	N	10.3
4	8.993	44.2	---	60.0	15.8	N	10.5
5	12.966	---	33.0	50.0	17.0	N	10.7
6	13.162	42.2	---	60.0	17.8	N	10.7

Remark: The emission levels of other frequencies were very low against the limit.



3.2 RADIATED EMISSION

3.2.1 LIMITS OF RADIATED EMISSION

TEST STANDARD:

FCC Part 15, Subpart B (Section: 15.109), for above 1GHz(section 3.2.2 Table 4)

FCC Part 15, Subpart B

Frequency (MHz)	Distance (m)	Class A (dBuV)	Class B (dBuV)
30 - 88	3	QP: 49.5	QP: 40
88 - 216	3	QP: 54	QP: 43.5
216 - 960	3	QP: 56.9	QP: 46
960-1000	3	QP: 60	QP: 54
Above 1000	3	Avg: 60 Peak: 80	Avg: 54 Peak: 74

NOTE: 1. The lower limit shall apply at the transition frequencies.
NOTE: 2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
NOTE: 3. All emanation from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.



3.2.2 TEST PROCEDURES

The basic test procedure was in accordance with ANSI C63.4:2014 (section 12).

1. From 30 MHz to 1GHz test procedure as below:

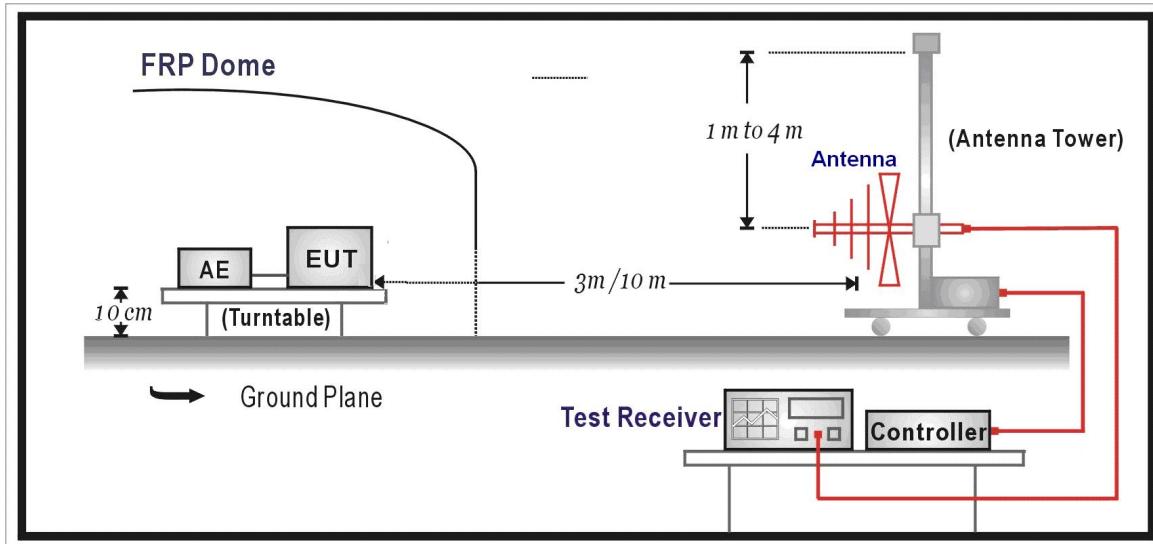
- 1) The radiated emissions were tested in a semi-anechoic chamber.
- 2) The Product was placed on the non-conductive turntable 0.1 m above the ground at a chamber.
- 3) Set the spectrum analyzer/receiver in Peak detector, Max Hold mode, and 120 kHz RBW. Record the maximum field strength of all the pre-scan process in the full band when the antenna is varied between 1~4 m in both horizontal and vertical, and the turntable is rotated from 0 to 360 degrees.
- 4) For each frequency whose maximum record was higher or close to limit, measure its QP value: vary the antenna's height and rotate the turntable from 0 to 360 degrees to find the height and degree where Product radiated the maximum emission, then set the test frequency analyzer/receiver to QP Detector and specified bandwidth with Maximum Hold Mode, and record the maximum value.

2. Above 1GHz test procedure as below:

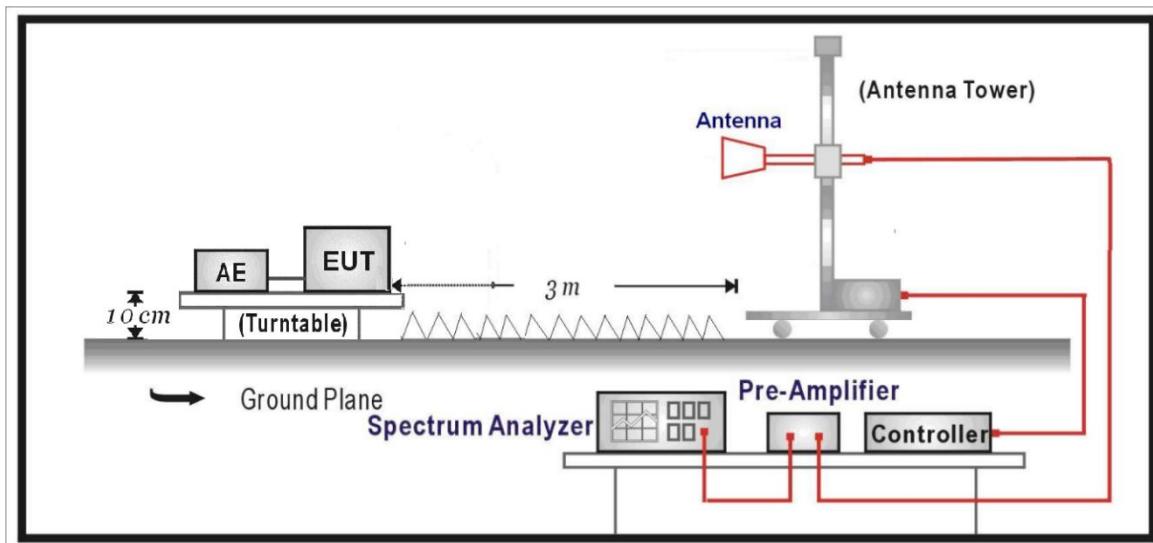
- 1) The radiated emissions were tested in a fully Anechoic Chamber.
- 2) Set the spectrum analyzer/receiver in Peak detector, Max Hold mode, and 1MHz RBW. Record the maximum field strength of all the pre-scan process in the full band when the antenna is varied in both horizontal and vertical, and the turntable is rotated from 0 to 360 degrees.
- 3) For each frequency whose maximum record was higher or close to limit, measure its AV value: rotate the turntable from 0 to 360 degrees to find the degree where Product radiated the maximum emission, then set the test frequency analyzer/receiver to AV value and specified bandwidth with Maximum Hold Mode, and record the maximum value.

3.2.3 TEST SETUP

Below 1GHz Test Setup:

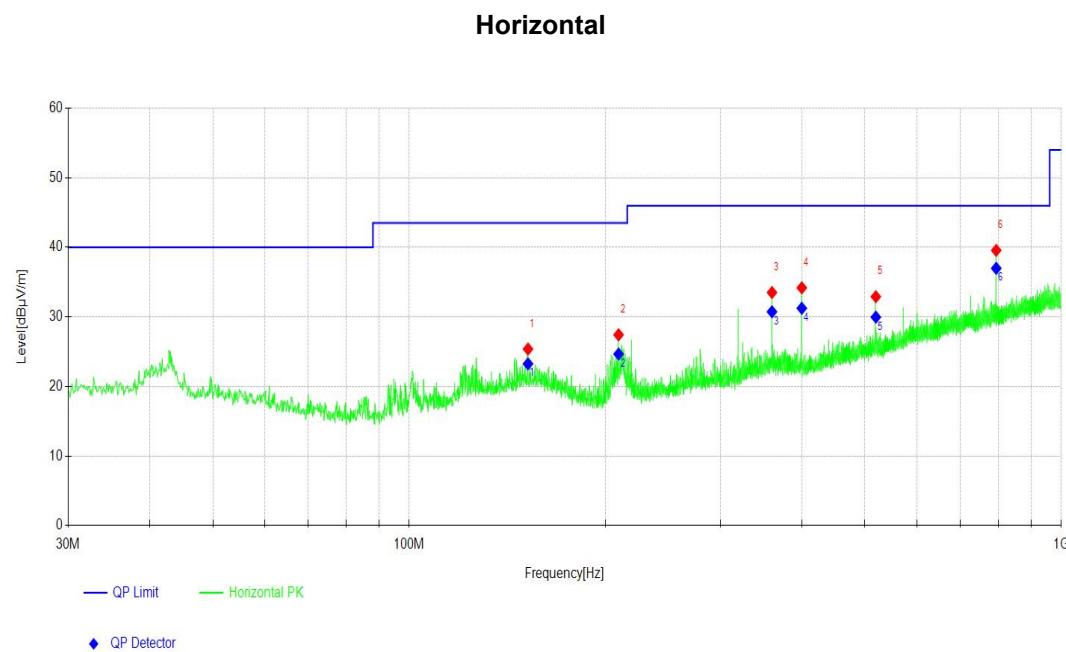


Above 1GHz Test Setup:



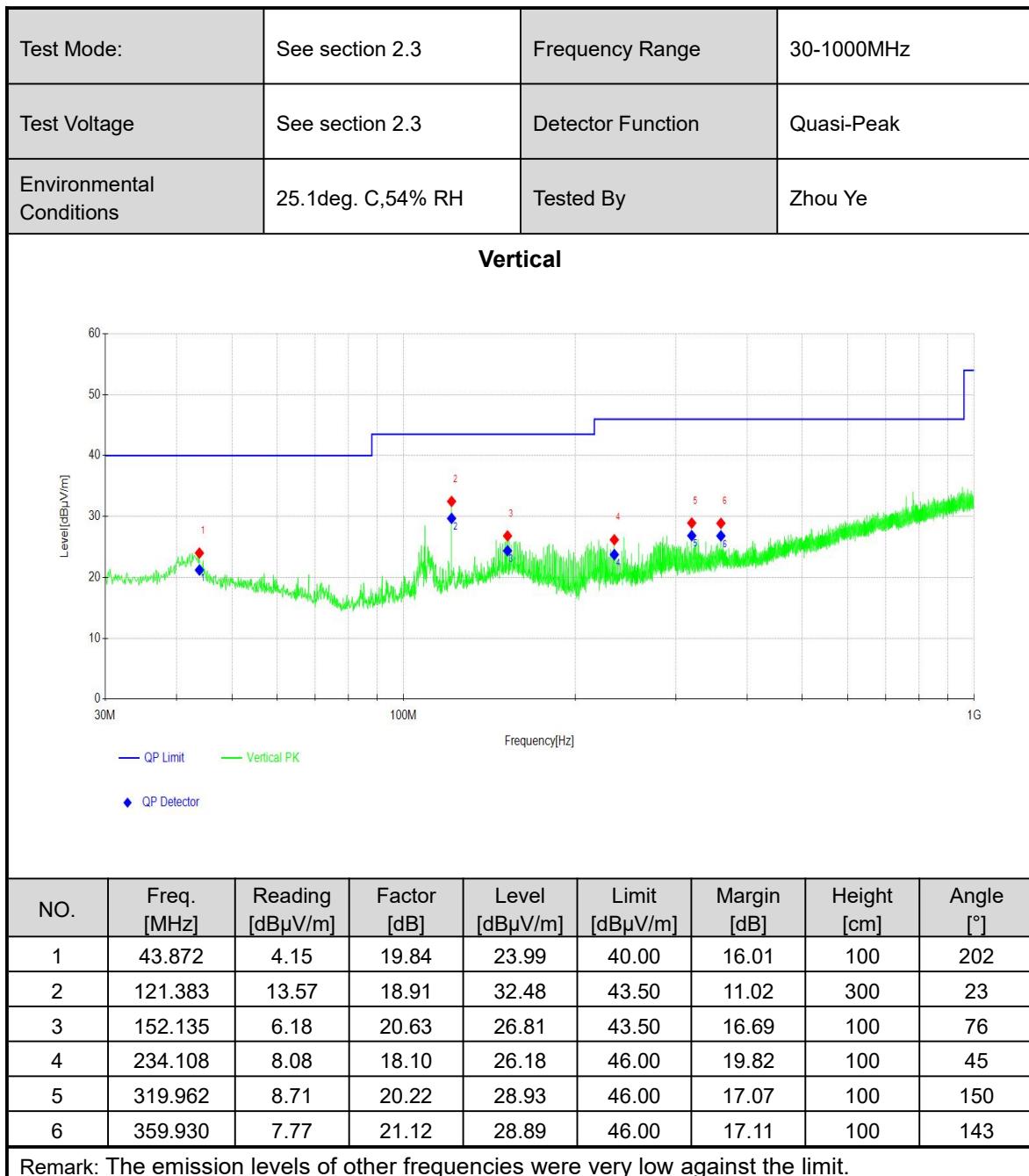
3.2.4 TEST RESULTS (Below 1GHz)

Test Mode:	See section 2.3	Frequency Range	30-1000MHz
Test Voltage	See section 2.3	Detector Function	Quasi-Peak
Environmental Conditions	25.1deg. C, 54% RH	Tested By	Wang Zhiming



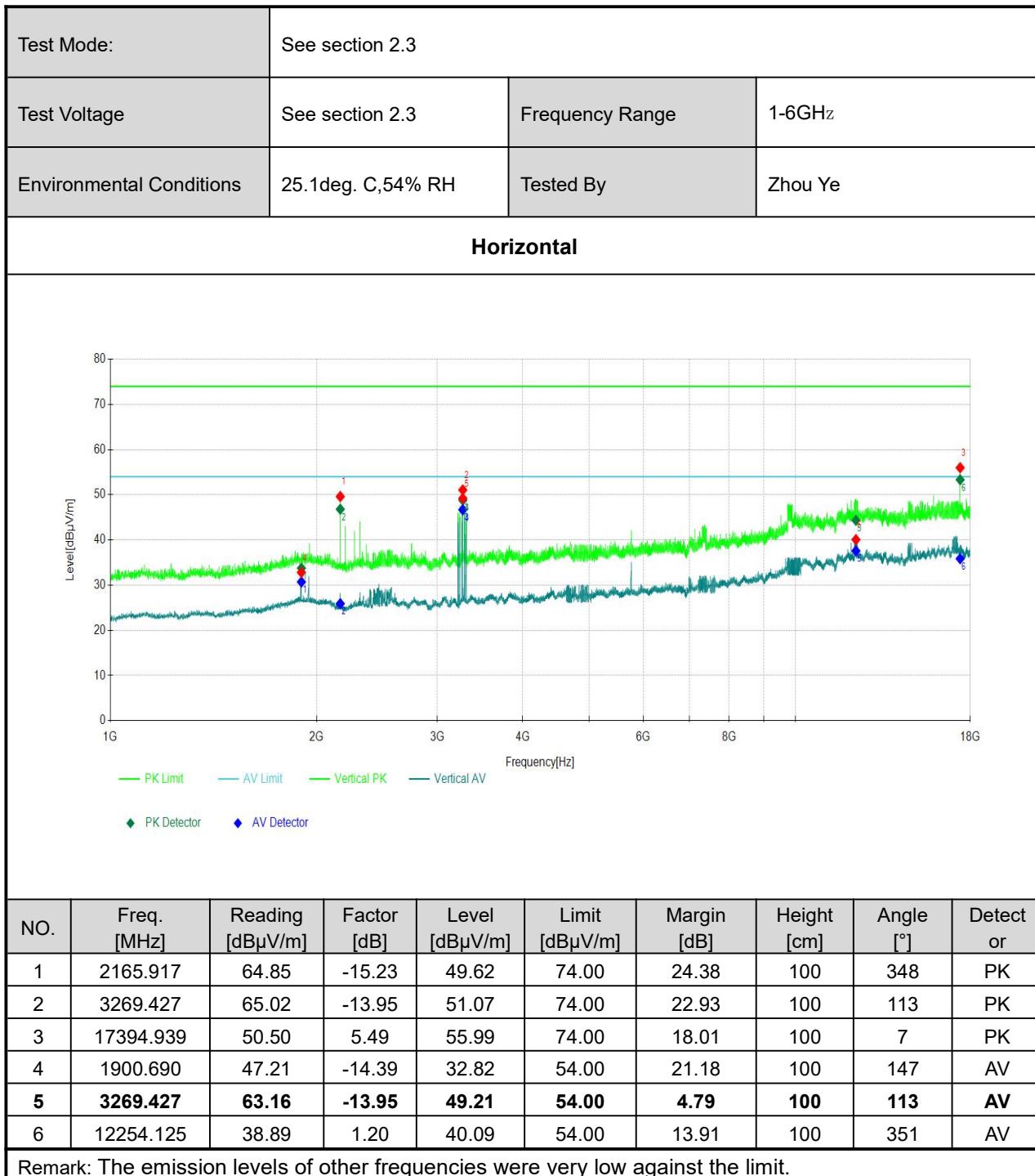
NO.	Freq. [MHz]	Reading [dB μ V/m]	Factor [dB]	Level [dB μ V/m]	Limit [dB μ V/m]	Margin [dB]	Height [cm]	Angle [°]
1	152.135	4.75	20.63	25.38	43.50	18.12	300	220
2	209.468	10.63	16.80	27.43	43.50	16.07	200	108
3	360.027	12.39	21.12	33.51	46.00	12.49	200	115
4	399.995	12.24	21.94	34.18	46.00	11.82	100	72
5	519.511	8.55	24.36	32.91	46.00	13.09	300	160
6	794.630	11.14	28.43	39.57	46.00	6.43	100	185

Remark: The emission levels of other frequencies were very low against the limit.





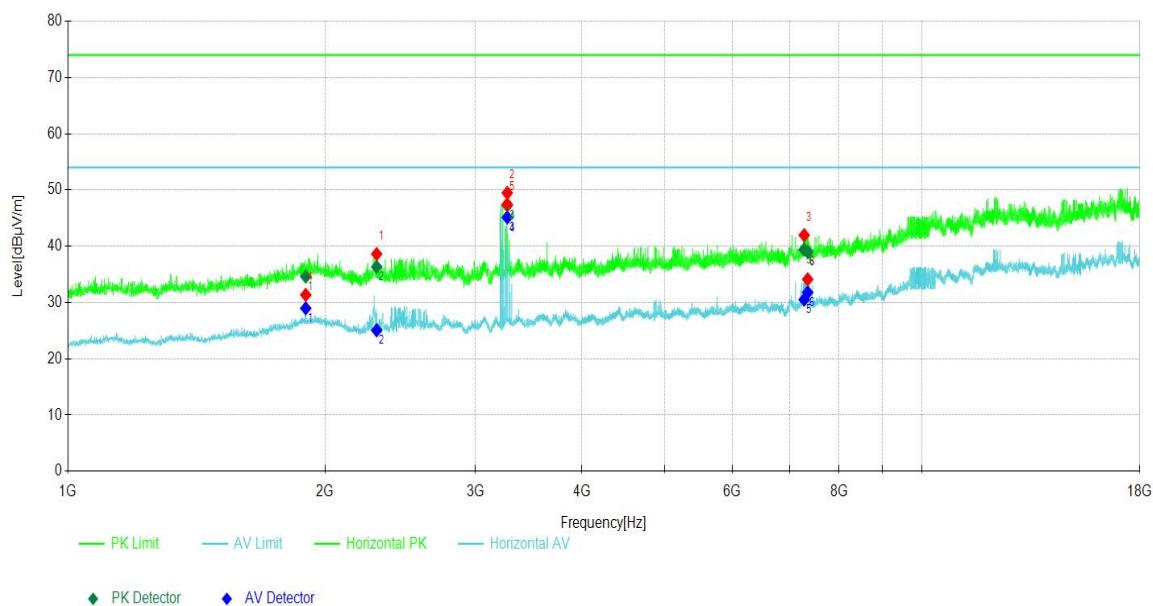
3.2.5 TEST RESULTS (Above 1GHz)





Test Mode:	See section 2.3		
Test Voltage	See section 2.3	Frequency Range	1-6GHz
Environmental Conditions	25.1deg. C, 54% RH	Tested By	Zhou Ye

Vertical



NO.	Freq. [MHz]	Reading [dB μ V/m]	Factor [dB]	Level [dB μ V/m]	Limit [dB μ V/m]	Margin [dB]	Height [cm]	Angle [°]	Detector
1	2299.130	53.90	-15.27	38.63	74.00	35.37	100	184	PK
2	3269.427	63.44	-13.95	49.49	74.00	24.51	100	192	PK
3	7281.628	49.48	-7.49	41.99	74.00	32.01	100	2	PK
4	1898.890	45.77	-14.40	31.37	54.00	22.63	100	298	AV
5	3269.427	61.41	-13.95	47.46	54.00	6.54	100	192	AV
6	7352.035	41.51	-7.38	34.13	54.00	19.87	100	248	AV

Remark: The emission levels of other frequencies were very low against the limit.



4. PHOTOGRAPHS OF TEST SETUP

Please refer to the attached file (Test Photos).



5. PHOTOGRAPHS OF THE EUT

Please refer to the attached file (External Photos and Internal Photos).

----- End of the Report -----



Important

- (1) The test report is invalid without the official stamp of CVC;
- (2) Any part photocopies of the test report are forbidden without the written permission from CVC;
- (3) The test report is invalid without the signatures of Approval and Reviewer;
- (4) The test report is invalid if altered;
- (5) Objections to the test report must be submitted to CVC within 15 days.
- (6) Generally, commission test is responsible for the tested samples only.
- (7) As for the test result “-” or “N” means “not applicable”, “/” means “not test”, “P” means “pass” and “F” means “fail”

Address: No. 1301-14&16, Guanguang Road, Xinlan Community, Guanlan Subdistrict, Longhua District, Shenzhen, Guangdong, China

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Fax: 0755-23763060 E-mail: sz-kf@cvc.org.cn

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