

Radio Test Report

FCC ID:2BGOH-VC05-O

Report No. : TBR-C-202404-0264-4

Applicant : Shenzhen liyuanchuang electronics technology co.,ltd

Equipment Under Test (EUT)

EUT Name : Wireless intercom doorbell

Model No. : VC05-O

Series Model No. : VC05A-O, VC05B-O, VC05C-O, VC05D-O, VC05E-O,
VC05S-O

Brand Name : ----

Sample ID : HC-C-202404-0264-02-01

Receipt Date : 2024-05-09

Test Date : 2024-05-09 to 2024-05-30

Issue Date : 2024-05-30

Standards : FCC Part 15, Subpart C (15.231(a))

Test Method : ANSI C63.10:2013

Conclusions : **PASS**

In the configuration tested, the EUT complied with the standards specified above.

Tested By : Zkn Zhou

Reviewed By : Camille Li

Approved By : Ivan Su



This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in the report.

Contents

CONTENTS.....	2
1. GENERAL INFORMATION ABOUT EUT.....	5
1.1 Client Information.....	5
1.2 General Description of EUT (Equipment Under Test)	5
1.3 Block Diagram Showing the Configuration of System Tested.....	7
1.4 Description of Support Units	7
1.6 Description of Test Software Setting	9
1.7 Measurement Uncertainty	9
1.8 Test Facility	10
2. TEST SUMMARY.....	11
3. TEST SOFTWARE.....	11
4. TEST EQUIPMENT AND TEST SITE.....	12
5. CONDUCTED EMISSION.....	14
5.1 Test Standard and Limit.....	14
5.2 Test Setup.....	14
5.3 Test Procedure.....	14
5.4 Deviation From Test Standard.....	15
5.5 EUT Operating Mode	15
5.6 Test Data.....	15
6. RADIATED EMISSION TEST	16
6.1 Test Standard and Limit.....	16
6.2 Test Setup.....	17
6.3 Test Procedure.....	18
6.4 Deviation From Test Standard.....	19
6.5 EUT Operating Mode	19
6.6 Test Data.....	19
7. BANDWIDTH	20
7.1 Test Standard and Limit.....	20
7.2 Test Setup.....	20
7.3 Test Procedure.....	20
7.4 Deviation From Test Standard.....	20
7.5 EUT Operating Mode	20

7.6 Test Data.....	20
8. RELEASE TIME MEASUREMENT.....	21
8.1 Test Standard and Limit.....	21
8.2 Test Setup.....	21
8.3 Test Procedure.....	21
8.4 Deviation From Test Standard.....	21
8.5 EUT Operating Mode	21
8.6 Test Data.....	21
9. DUTY CYCLE	22
9.1 Test Standard and Limit.....	22
9.2 Test Setup.....	22
9.3 Test Procedure.....	22
9.4 Deviation From Test Standard.....	22
9.5 EUT Operating Mode	22
9.6 Test Data.....	22
10. ANTENNA REQUIREMENT.....	23
11.1 Test Standard and Limit	23
11.2 Deviation From Test Standard.....	23
11.3 Antenna Connected Construction	23
11.4 Test Data.....	23
ATTACHMENT A-- CONDUCTED EMISSION TEST DATA	24
ATTACHMENT B--UNWANTED EMISSIONS DATA	26
ATTACHMENT C--BANDWIDTH DATA	32
ATTACHMENT D-- RELEASE TIME MEASUREMENT DATA.....	33
ATTACHMENT E--DUTY CYCLE DATA.....	34

Revision History

1. General Information about EUT

1.1 Client Information

Applicant	:	Shenzhen liyuanchuang electronics technology co.,ltd
Address	:	Room 708~709 in Tiancheng Building, No.1221 on Guanguang Road, Guanlan Subdistrict, Longhua District, Shenzhen, China.
Manufacturer	:	Shenzhen liyuanchuang electronics technology co.,ltd
Address	:	Room 708~709 in Tiancheng Building, No.1221 on Guanguang Road, Guanlan Subdistrict, Longhua District, Shenzhen, China.

1.2 General Description of EUT (Equipment Under Test)

EUT Name	:	Wireless intercom doorbell
Models No.	:	VC05-O, VC05A-O, VC05B-O, VC05C-O, VC05D-O, VC05E-O, VC05S-O
Model Different	:	All these models are identical in the same PCB layout and electrical circuit, the only difference is that names.
Product Description	Operation Frequency:	433.39 MHz
	Max Out Power:	62.97 dBuV/m (PK Max.) 39.60 dBuV/m (AV Max.)
	Antenna Gain:	0dBi FPC Antenna
	Modulation Type:	FSK
Power Rating	:	Input: 5V---1.0A
Li-ion Polymer Battery	:	3.7V by 1200mAh Rechargeable Li-ion battery
Software Version	:	V2.0
Hardware Version	:	LYC-100 V7

Note:

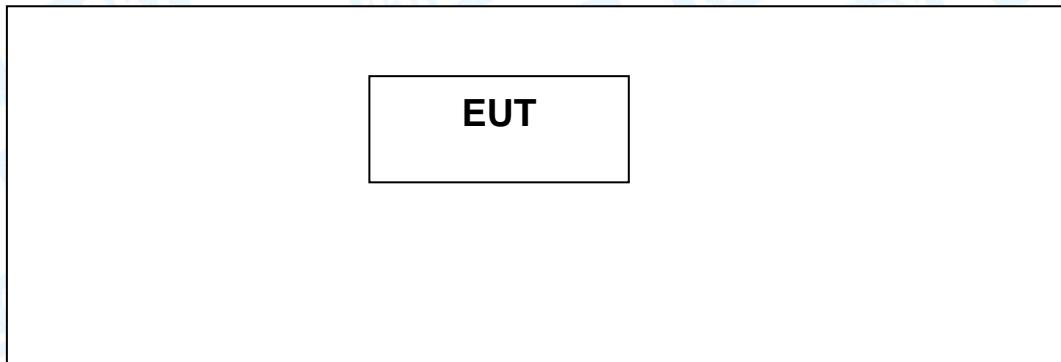
- (1) For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.

(2) Antenna description

Antenna	Brand	Model Name	Type	Antenna Gain(dBi)
1	N/A	N/A	FPC Ant.	0

1.3 Block Diagram Showing the Configuration of System Tested

TX Mode



1.4 Description of Support Units

The EUT has been test as an independent unit.

1.5 Description of Test Mode

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned follow was evaluated respectively.

Test Items	Note
Conducted Emission	Charging Mode
Radiated Emission	Continuously transmitting
Bandwidth	Continuously transmitting
Duty Cycle	Continuously transmitting
Release Time	Normal Mode

Note:

- (1) During the testing procedure, the continuously transmitting mode was programmed by the customer.
- (2) The EUT is considered a fixed unit, and it was pre-tested on the positioned of each 3 axis: X axis, Y axis and Z axis. The worst case was found positioned on Z-plane. There for only the test data of this Z-plane were used for radiated emission measurement test.

1.6 Description of Test Software Setting

During testing channel & Power controlling software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product power parameters of transmitting mode.

RF Power Setting in Test SW:	DEF
------------------------------	-----

1.7 Measurement Uncertainty

The reported uncertainty of measurement $y \pm U$, where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95 %.

Test Item	Parameters	Expanded Uncertainty (U_{Lab})
Conducted Emission	Level Accuracy: 9kHz~150kHz 150kHz to 30MHz	± 3.50 dB ± 3.10 dB
Radiated Emission	Level Accuracy: 9kHz to 30 MHz	± 4.60 dB
Radiated Emission	Level Accuracy: 30MHz to 1000 MHz	± 4.50 dB
Radiated Emission	Level Accuracy: Above 1000MHz	± 4.20 dB

1.8 Test Facility

The testing report were performed by the Shenzhen Toby Technology Co., Ltd., in their facilities located at 1/F., Building 6, Rundongsheng Industrial Zone, Longzhu, Xixiang, Bao'an District, Shenzhen, Guangdong, China. At the time of testing, the following bodies accredited the Laboratory:

CNAS (L5813)

The Laboratory has been accredited by CNAS to ISO/IEC 17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories for the competence in the field of testing. And the Registration No.: CNAS L5813.

A2LA Certificate No.: 4750.01

The laboratory has been accredited by American Association for Laboratory Accreditation(A2LA) to ISO/IEC 17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories for the technical competence in the field of Electrical Testing. And the A2LA Certificate No.: 4750.01.FCC Accredited Test Site Number: 854351. Designation Number: CN1223.

IC Registration No.: (11950A)

The Laboratory has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing. The site registration: Site# 11950A. CAB identifier: CN0056.

2. Test Summary

FCC Part 15, Subpart C (15.231(a))				
Standard Section	Test Item	Test Sample(s)	Judgment	Remark
FCC				
15.203	Antenna Requirement	HC-C-202404-0264-02-01	PASS	N/A
15.207	Conducted Emission	/	/	N/A
15.231	Release Time	HC-C-202404-0264-02-01	PASS	N/A
	Radiation Emission	HC-C-202404-0264-02-01	PASS	N/A
	20 dB Bandwidth	HC-C-202404-0264-02-01	PASS	N/A
	Duty Cycle	HC-C-202404-0264-02-01	PASS	N/A
Note: N/A is an abbreviation for Not Applicable.				

3. Test Software

Test Item	Test Software	Manufacturer	Version No.
Conducted Emission	EZ-EMC	EZ	CDI-03A2
Radiation Emission	EZ-EMC	EZ	FA-03A2RE
RF Conducted Measurement	MTS-8310	MWRFtest	V2.0.0.0
RF Test System	JS1120	Tonscend	V2.6.88.0336

4. Test Equipment and Test Site

Test Site					
No.	Test Site	Manufacturer	Specification	Used	
TB-EMCSR001	Shielding Chamber #1	YIHENG	7.5*4.0*3.0 (m)	√	
TB-EMCSR002	Shielding Chamber #2	YIHENG	8.0*4.0*3.0 (m)	√	
TB-EMCCA001	3m Anechoic Chamber #A	ETS	9.0*6.0*6.0 (m)	X	
TB-EMCCB002	3m Anechoic Chamber #B	YIHENG	9.0*6.0*6.0 (m)	√	

Conducted Emission Test

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Due Date
EMI Test Receiver	Rohde & Schwarz	ESCI	100321	Jun. 20, 2023	Jun. 19, 2024
RF Switching Unit	Compliance Direction Systems Inc	RSU-A4	34403	Jun. 20, 2023	Jun. 19, 2024
AMN	SCHWARZBECK	NNBL 8226-2	8226-2/164	Jun. 20, 2023	Jun. 19, 2024
LISN	Rohde & Schwarz	ENV216	101131	Jun. 20, 2023	Jun. 19, 2024
ISN	SCHWARZBECK	NTFM 8131	8131-193	Jun. 20, 2023	Jun. 19, 2024
ISN	SCHWARZBECK	CAT3 8158	cat3 5158-0094	Jun. 20, 2023	Jun. 19, 2024
ISN	SCHWARZBECK	NTFM5158	NTFM5158 0145	Jun. 20, 2023	Jun. 19, 2024
ISN	SCHWARZBECK	CAT 8158	cat5 8158-179	Jun. 20, 2023	Jun. 19, 2024

Radiation Emission Test (B Site)

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Due Date
Spectrum Analyzer	Agilent	N9020A	MY49100060	Aug. 30, 2023	Aug. 29, 2024
Spectrum Analyzer	Rohde & Schwarz	FSV40-N	102197	Jun. 20, 2023	Jun. 19, 2024
EMI Test Receiver	Rohde & Schwarz	ESU-8	100472/008	Feb. 23, 2024	Feb. 22, 2025
Bilog Antenna	SCHWARZBECK	VULB 9168	1225	Nov. 13, 2023	Nov. 12, 2025
Horn Antenna	SCHWARZBECK	BBHA 9120 D	2463	Jun. 26, 2022	Jun. 25, 2024
Horn Antenna	SCHWARZBECK	BBHA 9170	1118	Feb. 27, 2024	Feb. 26, 2026
Loop Antenna	SCHWARZBECK	FMZB 1519 B	1519B-059	Jun. 26, 2022	Jun. 25, 2024
HF Amplifier	Tonscend	TAP9E6343	AP21C806117	Aug. 30, 2023	Aug. 29, 2024
HF Amplifier	Tonscend	TAP051845	AP21C806141	Aug. 30, 2023	Aug. 29, 2024
HF Amplifier	Tonscend	TAP0184050	AP21C806129	Aug. 30, 2023	Aug. 29, 2024
Highpass Filter	CD	HPM-6.4/18G	---	N/A	N/A
Highpass Filter	CD	HPM-2.8/18G	---	N/A	N/A
Highpass Filter	XINBO	XBLBQ-HTA67(8-25G)	22052702-1	N/A	N/A

Antenna Conducted Emission

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Due Date
Spectrum Analyzer	Agilent	E4407B	MY45106456	Jun. 20, 2023	Jun. 19, 2024
Spectrum Analyzer	Rohde & Schwarz	FSV40-N	102197	Jun. 20, 2023	Jun. 19, 2024
MXA Signal Analyzer	KEYSIGHT	N9020B	MY60110172	Aug. 30, 2023	Aug. 29, 2024
MXA Signal Analyzer	Agilent	N9020A	MY47380425	Aug. 30, 2023	Aug. 29, 2024
Vector Signal Generator	Agilent	N5182A	MY50141294	Aug. 30, 2023	Aug. 29, 2024
Analog Signal Generator	Agilent	N5181A	MY48180463	Aug. 30, 2023	Aug. 29, 2024
Vector Signal Generator	KEYSIGHT	N5182B	MY59101429	Aug. 30, 2023	Aug. 29, 2024
Analog Signal Generator	KEYSIGHT	N5173B	MY61252685	Aug. 30, 2023	Aug. 29, 2024
RF Power Sensor	DARE!! Instruments	RadiPowerRPR3006W	17I00015SNO26	Aug. 30, 2023	Aug. 29, 2024
	DARE!! Instruments	RadiPowerRPR3006W	17I00015SNO29	Aug. 30, 2023	Aug. 29, 2024
	DARE!! Instruments	RadiPowerRPR3006W	17I00015SNO31	Aug. 30, 2023	Aug. 29, 2024
	DARE!! Instruments	RadiPowerRPR3006W	17I00015SNO33	Aug. 30, 2023	Aug. 29, 2024
RF Control Unit	Tonsced	JS0806-1	21C8060380	N/A	N/A
RF Control Unit	Tonsced	JS0806-2	21F8060439	Aug. 30, 2023	Aug. 29, 2024
Power Control Box	Tonsced	JS0806-4ADC	21C8060387	N/A	N/A
Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	144382	Aug. 30, 2023	Aug. 29, 2024
Universal Radio Communication Tester	Rohde & Schwarz	CMW500	168796	Feb. 23, 2024	Feb. 22, 2025
Temperature and Humidity Chamber	ZhengHang	ZH-QTH-1500	ZH2107264	Jun. 20, 2023	Jun. 19, 2024

5. Conducted Emission

5.1 Test Standard and Limit

5.1.1 Test Standard

FCC Part 15.207

5.1.2 Test Limit

Frequency	Maximum RF Line Voltage (dB μ V)	
	Quasi-peak Level	Average Level
150kHz~500kHz	66 ~ 56 *	56 ~ 46 *
500kHz~5MHz	56	46
5MHz~30MHz	60	50

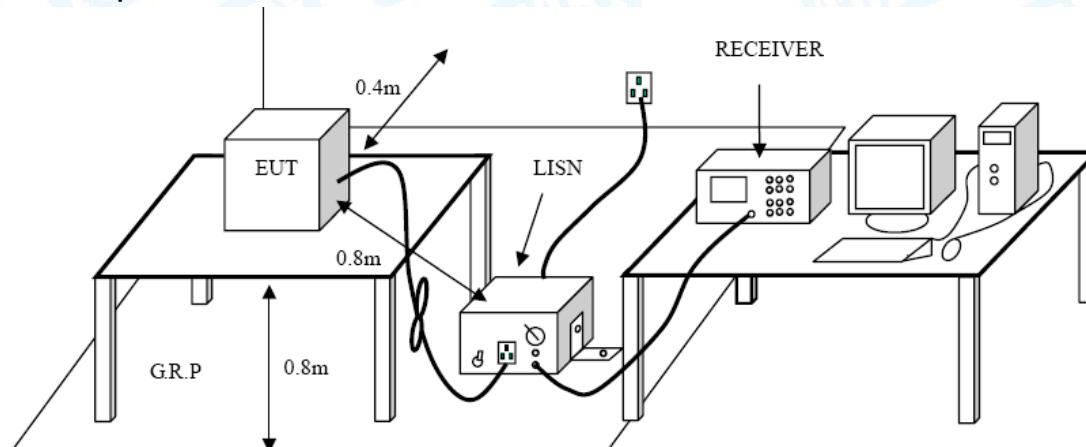
Notes:

(1) *Decreasing linearly with logarithm of the frequency.

(2) The lower limit shall apply at the transition frequencies.

(3) The limit decrease in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

5.2 Test Setup



5.3 Test Procedure

- The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- LISN at least 80 cm from nearest part of EUT chassis.

- The bandwidth of EMI test receiver is set at 9 kHz, and the test frequency band is from 0.15MHz to 30MHz.

5.4 Deviation From Test Standard

No deviation

5.5 EUT Operating Mode

Please refer to the description of test mode.

5.6 Test Data

The EUT is powered by DC battery, no requirement for this test item.

6. Radiated Emission Test

6.1 Test Standard and Limit

6.1.1 Test Standard

FCC 15.231e

6.1.2 Test Limit

According to FCC 15.231(e) requirement:

In addition to the provisions of Section 15.205, the field strength of emissions from intentional radiators operated under this Section shall not exceed the following:

Fundamental Frequency (MHz)	Field Strength of Fundamental (microvolt/meter) at 3m	Field Strength of Spurious Emissions (microvolt/meter) at 3m
40.66~40.70	1000	100
70~130	500	50
130~174	500 to 1500(**)	50 to 150(**)
174~260	1500	150
260~470	1500 to 5000(**)	150 to 500(**)
Above 470	5000	500

** Linear interpolations, the formulas for calculating the maximum permitted fundamental field strengths are as follows:

(1) for the band 130~174 MHz, uV/m at 3 meters= $22.7273(F)-2454.5455$;

(2) for the band 260~470 MHz, uV/m at 3 meter= $16.6667(F)-2833.3333$.

(3) The maximum permitted unwanted emissions level is 20 dB below the maximum permitted fundamental level. In addition field strength of any emissions which appear inside of the restriction band shall not exceed the general radiated emissions limits in FCC Part15.209.

Frequency (MHz)	Field Strength (microvolt/meter)	Measurement Distance (meters)
0.009~0.490	$2400/F(KHz)$	300
0.490~1.705	$24000/F(KHz)$	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3

216~960	200	3
Above 960	500	3

Note:

(1) The tighter limit applies at the band edges.

(2) For above 30MHz:

Emission Level(dBuV/m)=20log Emission Level(uV/m)

For 0.009~0.490MHz:

Emission Level(dBuV/m)=20log Emission Level(uV/m) +40log(300/3)

For 0.049~30MHz:

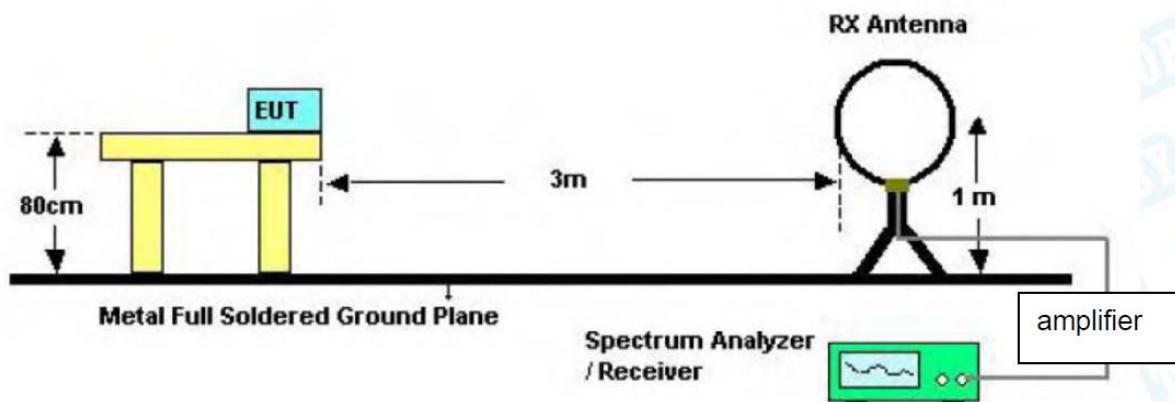
Emission Level(dBuV/m)=20log Emission Level(uV/m) +40log(30/3)

So the field strength of emission limits have been calculated in below table.

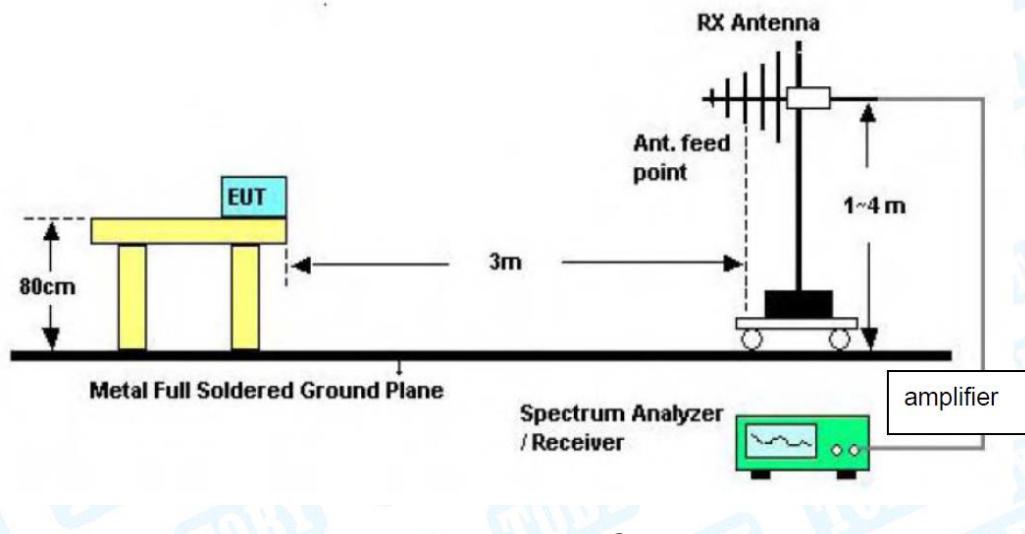
Fundamental Frequency (MHz)	Field Strength of Fundamental (microvolt/meter) at 3m
433.92 MHz	80.82 (Average)
433.92 MHz	100.82 (Peak)

6.2 Test Setup

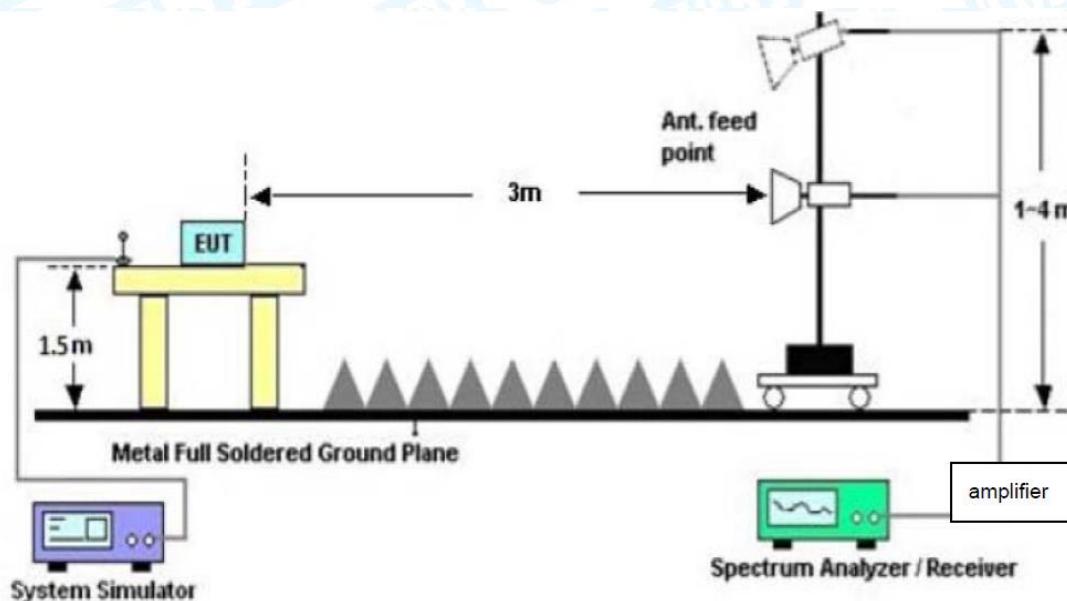
Radiated measurement



Below 30MHz Test Setup



Below 1000MHz Test Setup



Above 1GHz Test Setup

6.3 Test Procedure

---Radiated measurement

- The measuring distance of 3m shall be used for measurements at frequency up to 1GHz and above 1 GHz. The EUT was placed on a rotating 0.8m high above ground, the table was rotated 360 degrees to determine the position of the highest radiation.
- Measurements at frequency above 1GHz. The EUT was placed on a rotating 1.5m high above the ground. RF absorbers covered the ground plane with a minimum area of 3.0m by 3.0m between the EUT and measurement receiver antenna. The RF absorber shall not exceed 30cm in high above the conducting floor. The table was rotated 360 degrees to determine the position of the highest radiation.

- The Test antenna shall vary between 1m and 4m, Both Horizontal and Vertical antenna are set to make measurement.
- The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit Below 1 GHz, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed. But the Peak Value and average value both need to comply with applicable limit above 1 GHz.
- Testing frequency range 30MHz-1GHz the measuring instrument use VBW=120 kHz with Quasi-peak detection. Testing frequency range 9KHz-150Hz the measuring instrument use VBW=200Hz with Quasi-peak detection. Testing frequency range 9KHz-30MHz the measuring instrument use VBW=9kHz with Quasi-peak detection.
- Testing frequency range above 1GHz the measuring instrument use RBW=1 MHz and VBW=3 MHz with Peak Detector for Peak Values, and use RBW=1 MHz and VBW=10 Hz with Peak Detector for Average Values.
- For the actual test configuration, please see the test setup photo.

6.4 Deviation From Test Standard

No deviation

6.5 EUT Operating Mode

Please refer to the description of test mode.

6.6 Test Data

Radiated measurement please refer to the Attachment A inside test report.

7. Bandwidth

7.1 Test Standard and Limit

7.1.1 Test Standard

FCC 15.231

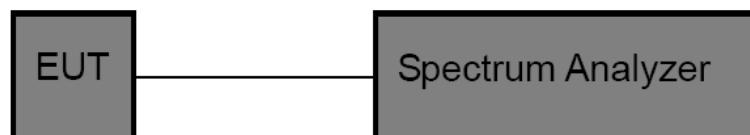
7.1.2 Test Limit

The 99%bandwidth of the emissions shall be no wider than 0.25% of the center frequency for devices operating above 70 MHz and below 900 MHz. So the emission bandwidth limits have been calculated in below table.

Fundamental Frequency	20 dB Bandwidth Limits (MHz)
433.92MHz	1.0848

7.2 Test Setup

Conducted measurement



7.3 Test Procedure

- (1) Set Spectrum Analyzer Center Frequency= Fundamental Frequency, RBW=10 kHz, VBW= 30 kHz, Span= 1 MHz.
- (2) Measured the spectrum width with power higher than 20 dB below carrier.

7.4 Deviation From Test Standard

No deviation

7.5 EUT Operating Mode

Please refer to the description of test mode.

7.6 Test Data

Please refer to the Attachment B.

8. Release Time Measurement

8.1 Test Standard and Limit

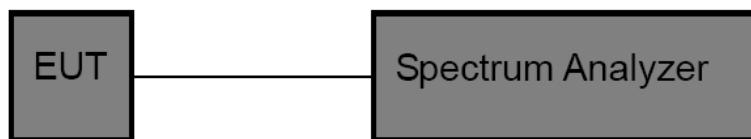
8.1.1 Test Standard

FCC 15.231

8.1.2 Test Limit

According to FCC 15.231a, A manually operated transmitter shall employ a switch that will automatically deactivate the transmitter within not more than 5 seconds of being released.

8.2 Test Setup



8.3 Test Procedure

- (1) Setup the EUT as show in the block diagram above.
- (2) Set Spectrum Analyzer Centre Frequency= Fundamental Frequency, RBW=100 kHz, VBW= 300 kHz, Span= 0 Hz. Sweep Time= 5 Seconds.
- (3) Setup the EUT as normal operation and press Transmitter button.
- (4) Set Spectrum Analyzer View, Delta Mark time.

8.4 Deviation From Test Standard

No deviation

8.5 EUT Operating Mode

Please refer to the description of test mode.

8.6 Test Data

Please refer to the Appendix C.

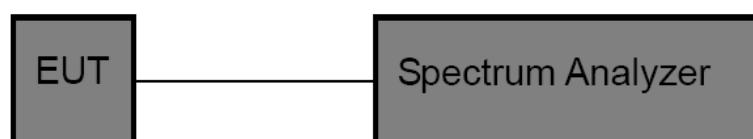
9. Duty Cycle

9.1 Test Standard and Limit

9.1.1 Test Standard

FCC 15.231

9.2 Test Setup



9.3 Test Procedure

- (1) The EUT was placed on a turntable which is 0.8m above ground plane.
- (2) Set EUT operating in continuous transmitting mode.
- (3) Set the Spectrum Analyzer to the transmitter carrier frequency, and set the spectrum analyzer resolution bandwidth (RBW) to 100 kHz and video bandwidth (VBW) to 300 kHz, Span was set to 0 Hz.
- (4) The Duty Cycle was measured and recorded.

9.4 Deviation From Test Standard

No deviation

9.5 EUT Operating Mode

Please refer to the description of test mode.

9.6 Test Data

Please refer to the Appendix D.

10. Antenna Requirement

11.1 Test Standard and Limit

11.1.1 Test Standard

FCC Part 15.203

11.1.2 Requirement

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

11.2 Deviation From Test Standard

No deviation

11.3 Antenna Connected Construction

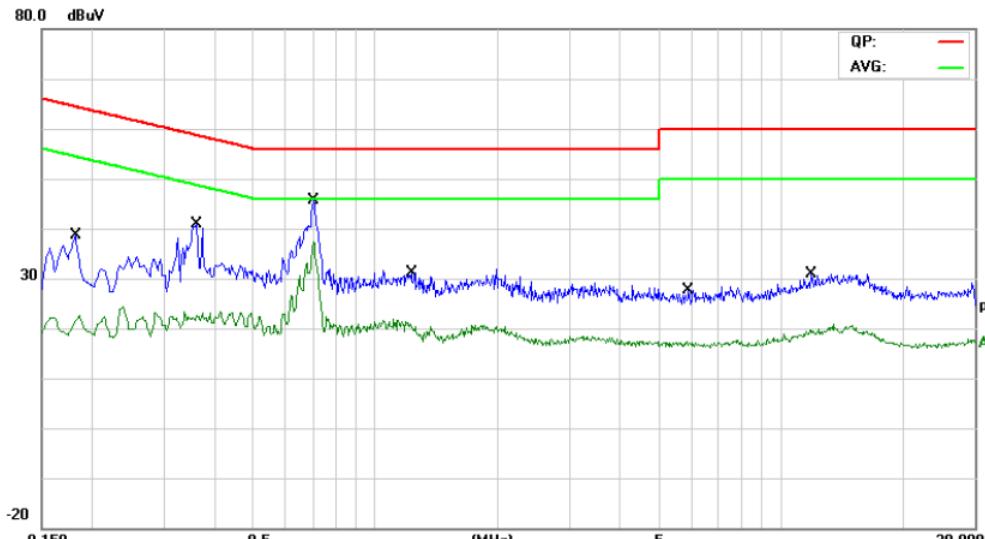
The gains of the antenna used for transmitting is 0dBi, and the antenna de-signed with permanent attachment and no consideration of replacement. Please see the EUT photo for details.

11.4 Test Data

The EUT antenna is a FPC Antenna. It complies with the standard requirement.

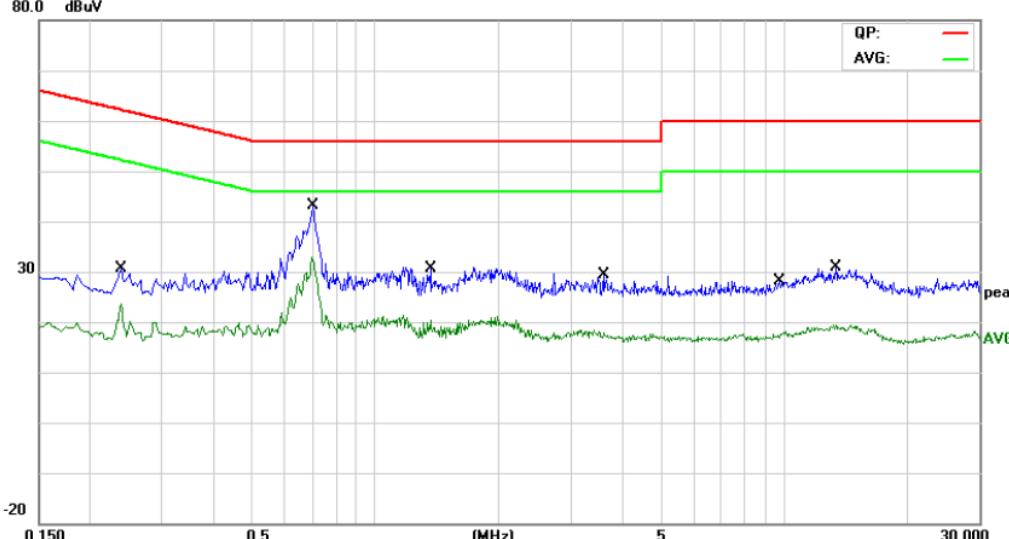
Antenna Type
<input checked="" type="checkbox"/> Permanent attached antenna
<input type="checkbox"/> Unique connector antenna
<input type="checkbox"/> Professional installation antenna

Attachment A-- Conducted Emission Test Data

Test Voltage:	AC 120V/60Hz						
Terminal:	Line						
Test Mode:	Mode 1						
Remark:	Only worse case is reported.						
 Temperature: 22.8 (C) Humidity: 46 %							
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over
		MHz	dBuV	dB	dBuV	dBuV	dB
1		0.1819	14.40	10.32	24.72	64.39	-39.67
2		0.1819	8.21	10.32	18.53	54.39	-35.86
3		0.3620	15.50	10.39	25.89	58.68	-32.79
4		0.3620	8.36	10.39	18.75	48.68	-29.93
5		0.7019	28.69	10.20	38.89	56.00	-17.11
6	*	0.7019	18.92	10.20	29.12	46.00	-16.88
7		1.2260	11.54	10.44	21.98	56.00	-34.02
8		1.2260	6.48	10.44	16.92	46.00	-29.08
9		5.9180	9.73	10.73	20.46	60.00	-39.54
10		5.9180	5.18	10.73	15.91	50.00	-34.09
11		11.8979	11.42	11.33	22.75	60.00	-37.25
12		11.8979	5.51	11.33	16.84	50.00	-33.16

Remark:

1. Corr. Factor (dB) = LISN Factor (dB) + Cable Loss (dB)
2. Margin (dB) = QuasiPeak/Average (dBuV)-Limit (dBuV)

Test Voltage:	AC 120V/60Hz						
Terminal:	Neutral						
Test Mode:	Mode 1						
Remark:	Only worse case is reported.						
 Temperature: 22.8 (C) Humidity: 46 %							
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over
		MHz	dBuV	dB	dBuV	dBuV	dB
1		0.2380	18.20	10.41	28.61	62.16	-33.55
2		0.2380	13.00	10.41	23.41	52.16	-28.75
3		0.7019	28.16	10.60	38.76	56.00	-17.24
4	*	0.7019	18.83	10.60	29.43	46.00	-16.57
5		1.3660	10.76	10.22	20.98	56.00	-35.02
6		1.3660	5.93	10.22	16.15	46.00	-29.85
7		3.6180	10.71	10.46	21.17	56.00	-34.83
8		3.6180	5.69	10.46	16.15	46.00	-29.85
9		9.7180	9.51	11.15	20.66	60.00	-39.34
10		9.7180	4.75	11.15	15.90	50.00	-34.10
11		13.3940	12.68	11.20	23.88	60.00	-36.12
12		13.3940	6.29	11.20	17.49	50.00	-32.51

Remark:

1. Corr. Factor (dB) = LISN Factor (dB) + Cable Loss (dB)
2. Margin (dB) = QuasiPeak/Average (dBuV)-Limit (dBuV)

Attachment B--Unwanted Emissions Data

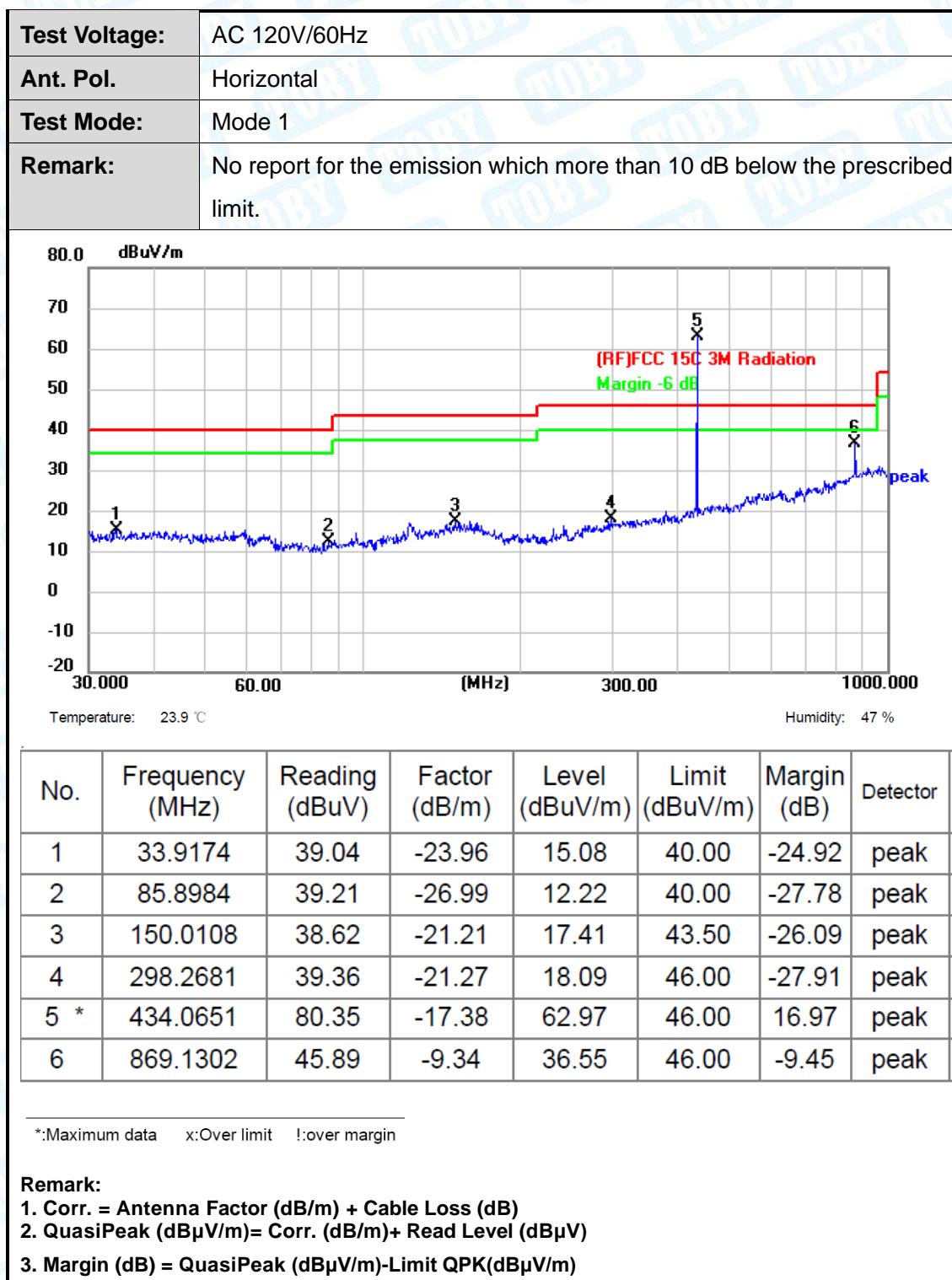
--Radiated Unwanted Emissions

9 KHz~30 MHz

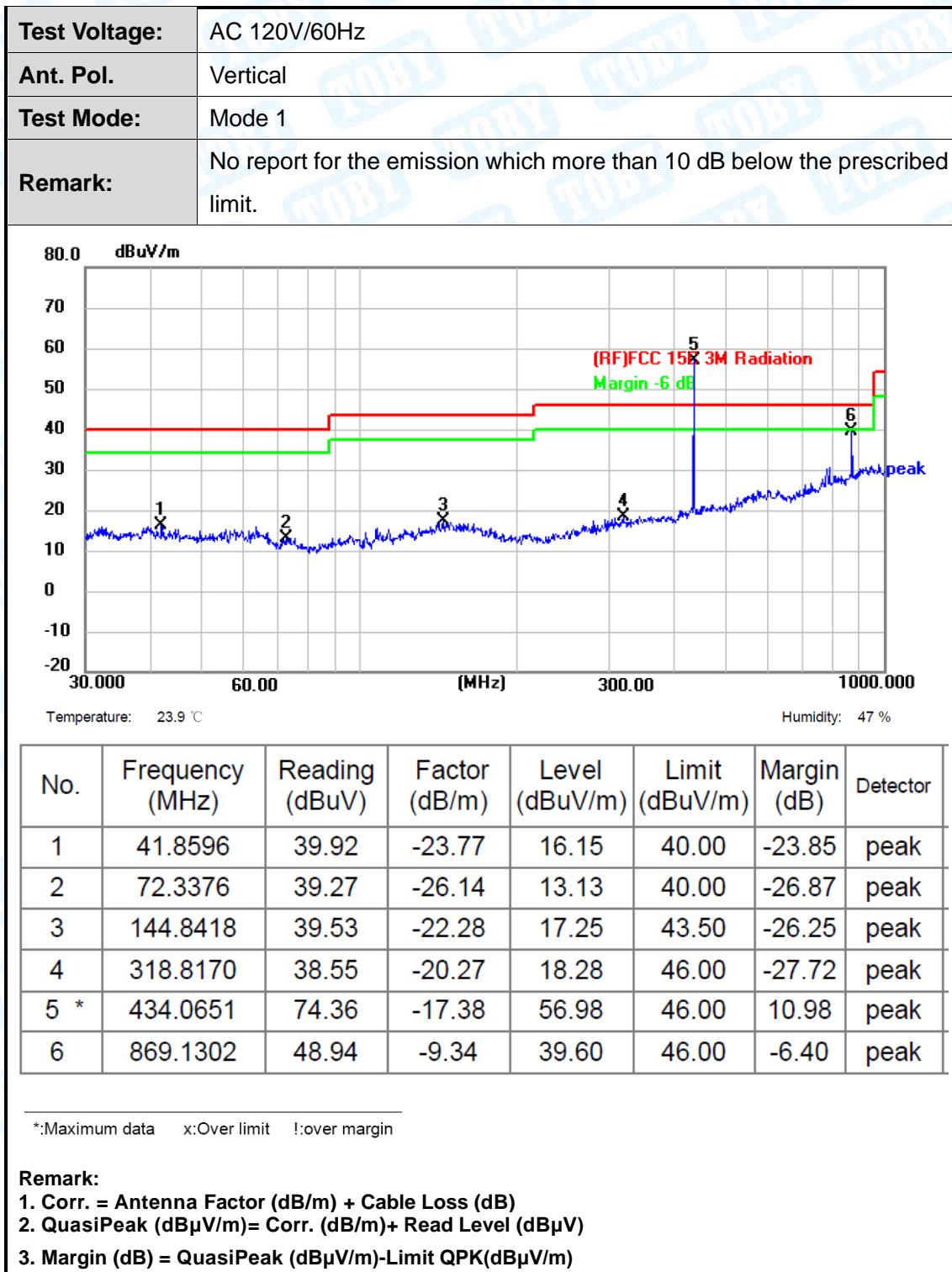
From 9 KHz to 30 MHz: Conclusion: PASS

Note: The amplitude of spurious emissions which are attenuated by more than 20dB Below the permissible value has no need to be reported.

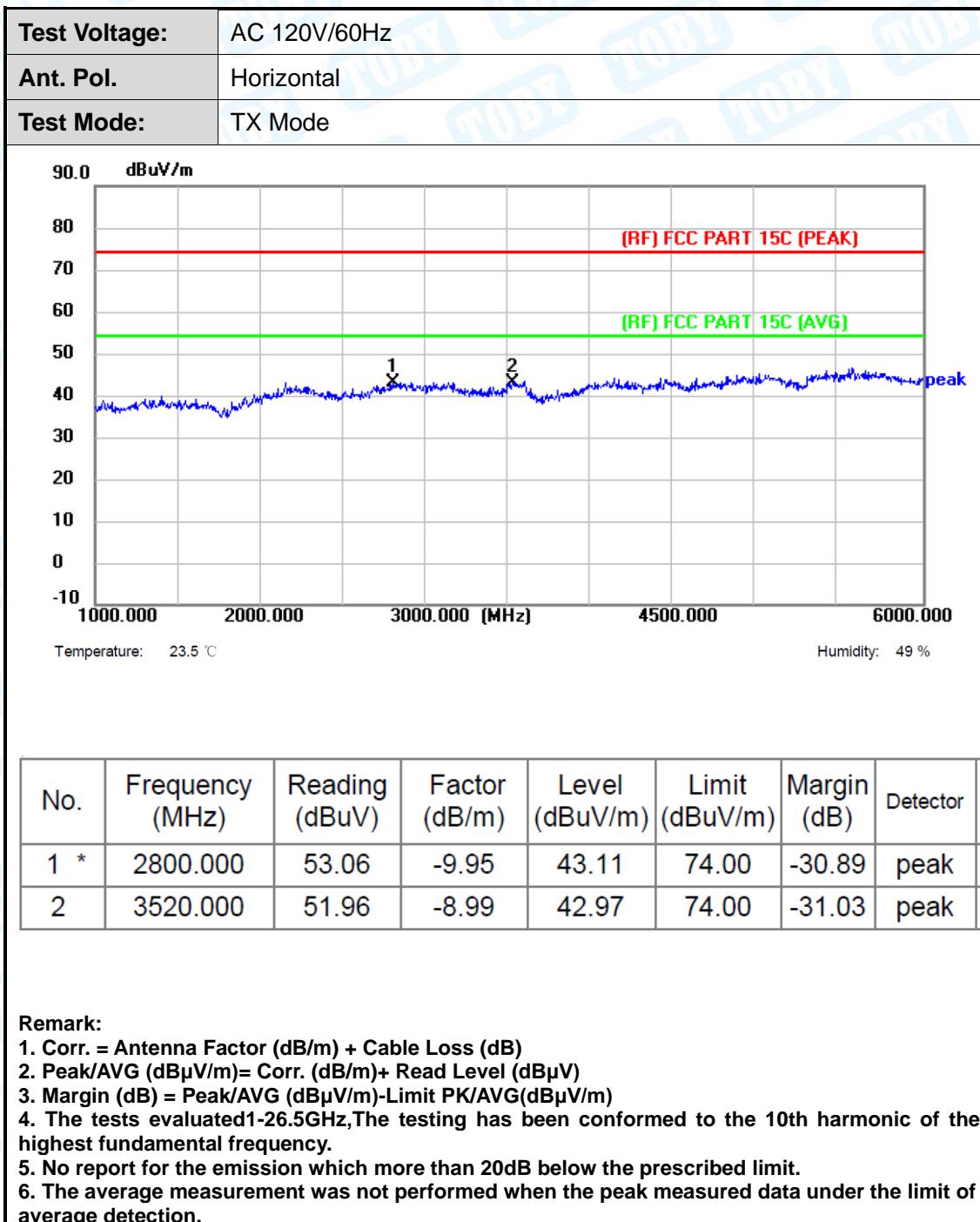
30MHz~1GHz

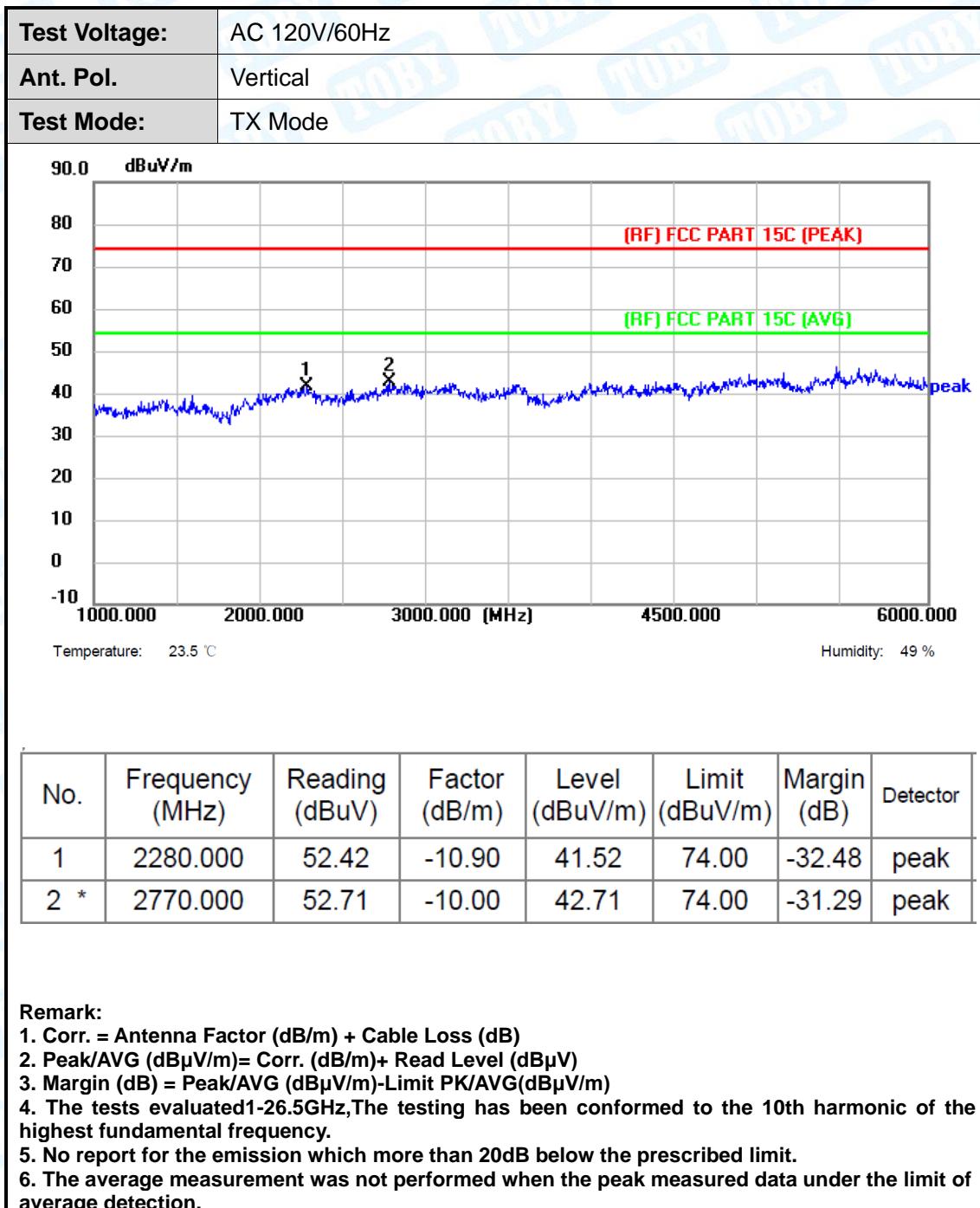


Fundamental and Harmonics Result						
Freq(MHz)	Peak Level (dB μ V/m)	AV Factor(dB μ V/m) (see Attachment E)	Average Level (dB μ V/m)	Limit(dB μ V/m) (average)	Limit(dB μ V/m) (Peak)	Conclusion
434.0651	62.97	-8.28	54.69	80.80	100.80	PASS
869.1302	36.55	-8.28	28.27	60.80	80.80	PASS

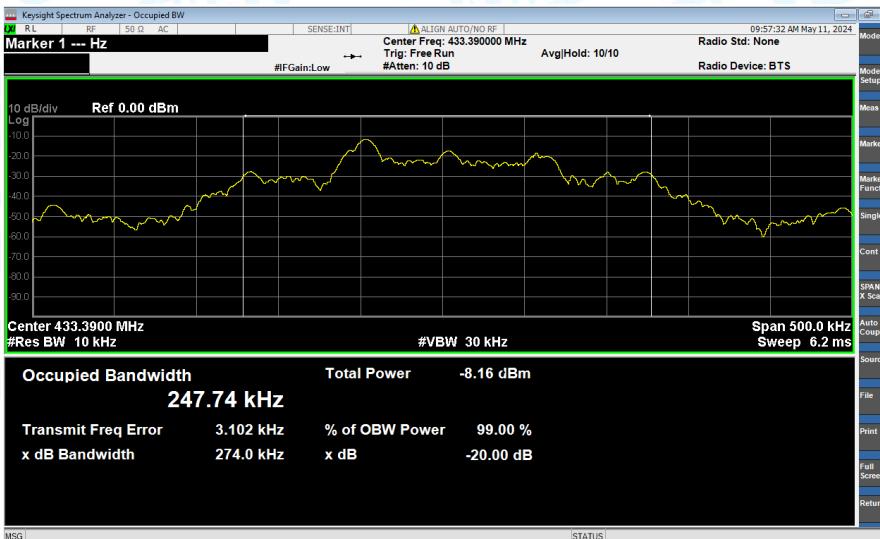


Fundamental and Harmonics Result						
Freq(MHz)	Peak Level (dB μ V/m)	AV Factor(dB μ V/m) (see Attachment E)	Average Level (dB μ V/m)	Limit(dB μ V/m) (average)	Limit(dB μ V/m) (Peak)	Conclusion
434.0651	56.98	-8.28	48.7	80.80	100.80	PASS
869.1302	39.60	-8.28	31.32	60.80	80.80	PASS

Above 1GHz




Attachment C--Bandwidth Data

Temperature	:	25 °C	
Relative Humidity	:	65 %	
Pressure	:	1010 hPa	
Test Power	:	DC 3.7V	
Frequency (MHz)	20 dBc Bandwidth (kHz)	Limit (kHz)	Result
433.39	274.0	1084.8	PASS
			

Attachment D-- Release Time Measurement Data

Temperature	:	25 °C
Relative Humidity	:	65 %
Pressure	:	1010 hPa
Test Power	:	DC 3.7V

Release Time(s)	Limit (s)	Result
3.180	5	PASS



Attachment E--Duty Cycle Data

Please refer the following pages:

Plot 1: transmit once in 100ms, and each cycle is 14.00ms there are one kinds of pulse in each cycle, the large pulses total 1.

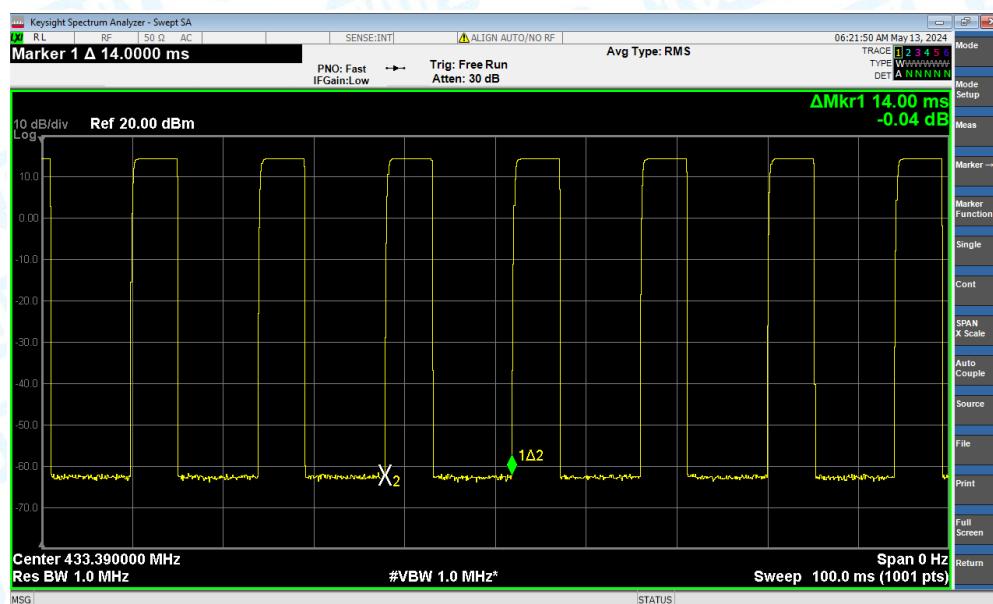
Plot 2: one large pulse in a time period of 5.4 ms

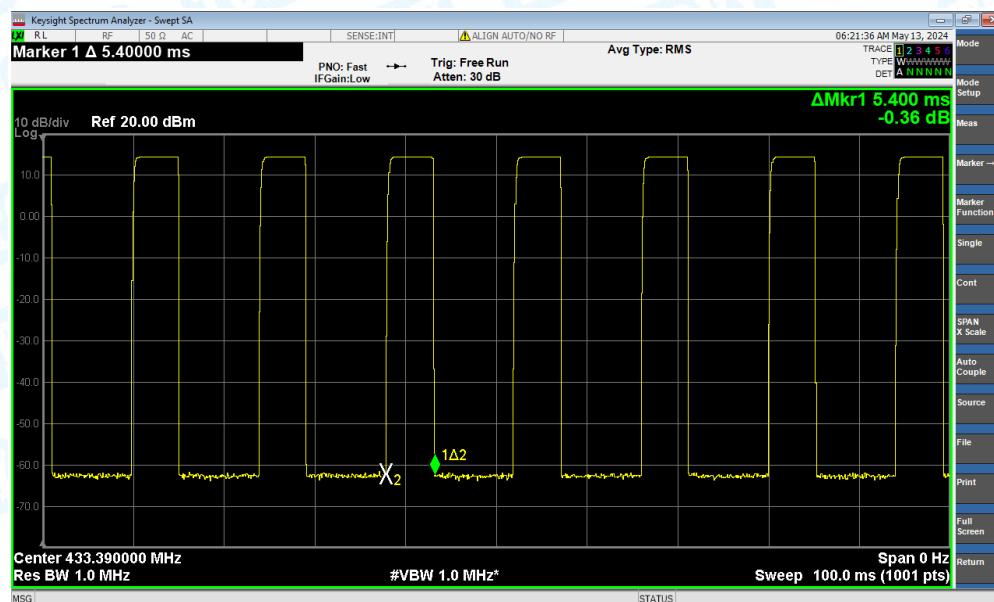
Duty Cycle=ON/Total= $5.4/14.00=38.6\%$

20log (Duty Cycle) =-8.28

Average=Peak Value+ 20log (Duty Cycle), AV=PK-8.28

Plot 1



Plot 2

-----END OF REPORT-----