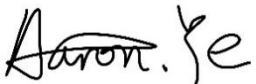


TEST REPORT

Product Name : video doorbell
Brand Name : N/A
Model : X3
Series Model : X1, X2, X5, X11, X12, X13, X15, X16, X17, X18, X19, X20, X22, X23, X25, X26, X27, X28, X29, X30
FCC ID : 2AUDZ-X3
Applicant : **Shenzhen Keithy Innovation Technology Co., Ltd.**
Address : RM101, Building B, Mili Cultural and Creative Park, No. 6, Changfa East Road, Yangmei Community, Bantian Street, Longgang District, Shenzhen
Manufacturer : **Shenzhen Keithy Innovation Technology Co., Ltd.**
Address : Building B, Mili Cultural and Creative Park, Bantian, Longgang District, Shenzhen City
Standard(s) : FCC CFR Title 47 Part 15 Subpart C Section 15.247
Date of Receipt : April 17, 2026
Date of Test : April 17, 2026~ June 05, 2026
Issued Date : June 08, 2026

Issued By: **Guangdong Asia Hongke Test Technology Limited**
B1/F, Building 11, Junfeng Industrial Park, Chongqing Road, Heping Community, Fuhai Street,
Bao'an District, Shenzhen, Guangdong, China
Tel.: +86 0755-230967639 Fax.: +86 0755-230967639

Reviewed by: 
Aalen.Ye

Approved by: 
Allen Wang



Note: This device has been tested and found to comply with the standard(s) listed, this test report merely corresponds to the test sample. It is not permitted to copy extracts of these test result without the written permission of the test laboratory. This report shall not be reproduced except in full, without the written approval of Guangdong Asia Hongke Test Technology Limited. If there is a need to alter or revise this document, the right belongs to Guangdong Asia Hongke Test Technology Limited, and it should give a prior written notice of the revision document. This test report must not be used by the client to claim product endorsement.



Report Revise Record

Report Version	Issued Date	Notes
M0	June 08, 2026	Initial Release

Contents

1	TEST SUMMARY	4
1.1	TEST STANDARDS	4
1.2	TEST SUMMARY	4
1.3	TEST FACILITY	5
1.4	MEASUREMENT UNCERTAINTY	5
2	GENERAL INFORMATION	6
2.1	ENVIRONMENTAL CONDITIONS	6
2.2	GENERAL DESCRIPTION OF EUT	6
2.3	DESCRIPTION OF TEST MODES AND TEST FREQUENCY.....	7
2.4	SPECIAL ACCESSORIES	7
2.5	EQUIPMENT LIST FOR THE TEST	7
3	TEST CONDITIONS AND RESULTS	9
3.1	CONDUCTED EMISSIONS TEST	9
3.2	RADIATED EMISSIONS AND BAND EDGE	12
3.3	MAXIMUM PEAK CONDUCTED OUTPUT POWER.....	19
3.4	POWER SPECTRAL DENSITY	20
3.5	6dB BANDWIDTH.....	21
3.6	OUT-OF-BAND EMISSIONS	22
3.7	ANTENNA REQUIREMENT.....	24
4	TEST SETUP PHOTOGRAPHS OF EUT	25
5	PHOTOS OF EUT	26

1 TEST SUMMARY

1.1 Test Standards

The tests were performed according to following standards:

[FCC Rules Part 15.247](#): Frequency Hopping, Direct Spread Spectrum and Hybrid Systems that are in operation within the bands of 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz

[ANSI C63.10: 2020](#): American National Standard for Testing Unlicensed Wireless Devices

[KDB558074 D01 15.247 Meas Guidance v05r02](#): Guidance for Compliance Measurements on Digital Transmission System, Frequency Hopping Spread Spectrum System, and Hybrid System Devices Operating Under Section 15.247 of the FCC Rules

1.2 Test Summary

Test Item	Section in 47 CFR	Result
Antenna requirement	§15.203	Pass
On Time and Duty Cycle	/	/
AC Power Line Conducted Emission	§ 15.207(a)	Pass
Maximum Conducted Peak Output Power	§15.247 (b)(3)	Pass
-6dB Bandwidth	§15.247 (a)(2)	Pass
Power Spectral Density	§15.247 (e)	Pass
Transmitter Radiated Spurious Emission	§15.205/15.209	Pass
Restricted Bands	§15.205/15.209	Pass
Conducted Unwanted emissions and Band edge	§15.205, §15.247(d)	Pass

1.3 Test Facility

Test Laboratory:

Guangdong Asia Hongke Test Technology Limited

B1/F, Building 11, Junfeng Industrial Park, Chongqing Road, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China

The test facility is recognized, certified or accredited by the following organizations:

FCC-Registration No.: 251906 Designation Number: CN1376

Guangdong Asia Hongke Test Technology Limited has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files.

IC —Registration No.: 31737 CAB identifier: CN0165

The 3m Semi-anechoic chamber of Guangdong Asia Hongke Test Technology Limited has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 31737

A2LA-Lab Cert. No.: 7133.01

Guangdong Asia Hongke Test Technology Limited has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

1.4 Measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report according to CISPR 16 - 4 "Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements" and is documented in the Guangdong Asia Hongke Test Technology Limited's quality system according to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for Asia Hongke laboratory is reported:

Test	Measurement Uncertainty	Notes
Power Line Conducted Emission	9KHz~30MHz ± 1.20 dB	(1)
Radiated Emission	9KHz~30MHz ± 3.10 dB	(1)
Radiated Emission	30MHz~1GHz ± 3.75 dB	(1)
Radiated Emission	1GHz~18GHz ± 3.88 dB	(1)
Radiated Emission	18GHz~40GHz ± 3.88 dB	(1)
RF power, conducted	30MHz~6GHz ± 0.16 dB	(1)
RF power density, conducted	± 0.24 dB	(1)
Spurious emissions, conducted	± 0.21 dB	(1)
Temperature	$\pm 1^{\circ}\text{C}$	(1)
Humidity	$\pm 3\%$	(1)
DC and low frequency voltages	$\pm 1.5\%$	(1)
Time	$\pm 2\%$	(1)
Duty cycle	$\pm 2\%$	(1)

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

2 GENERAL INFORMATION

2.1 Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Normal Temperature:	25°C
Relative Humidity:	55 %
Air Pressure:	101 kPa

2.2 General Description of EUT

Product Name:	video doorbell
Model/Type reference:	X3
Serial Model:	X1, X2, X5, X11, X12, X13, X15, X16, X17, X18, X19, X20, X22, X23, X25, X26, X27, X28, X29, X30
Model difference:	All models are the same except for the model name and color
Power Supply:	DC 3.7V from battery or DC 5V from external circuit
Hardware Version:	N/A
Software Version:	N/A
Sample(s) Status:	AiTSZ-260417020-1(Normal sample) AiTSZ-260417020-2(Engineer sample)
2.4G WIFI:	
Supported type:	802.11g
Modulation:	OFDM:BPSK,QPSK,16-QAM,64-QAM
Operation frequency:	2412MHz~2462MHz
Channel number:	11
Channel separation:	5MHz
Antenna type:	FPC antenna
Antenna gain:	3.71dBi
Remark: The above DUT's information was declared by manufacturer. For more detailed features description, please refer to the manufacturer's specifications or the User's Manual.	

2.3 Description of Test Modes and Test Frequency

There are 11 channels provided to the EUT and Channel 01/06/11 were selected for test and channel.

Operation Frequency List:

Channel	Frequency(MHz)	Channel	Frequency(MHz)
1	2412	8	2447
2	2417	9	2452
3	2422	10	2457
4	2427	11	2462
5	2432		
6	2437		
7	2442		

Note: The line display in grey were the channel selected for testing

Power setting during the test:

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:

Test Software Version	Fixed frequency firmware		
Frequency	2412	2437MHz	2462MHz
2.4GHz	Default	Default	Default

2.4 Special Accessories

Follow auxiliary equipment(s) test with EUT that provided by the manufacturer or laboratory is listed as follow:

Description	Manufacturer	Model	Serial No.	Provided by	Other
Adapter	HNT	HNT-QC530	BJD0702002 4C17	Test lab	/
/	/	/	/	/	/

2.5 Equipment List for the Test

Conducted Emission measurement						
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal.Due
☒ 1	EMI Test Receiver	R&S	ESPI	100771	2025.09.23	2026.09.22
☒ 2	LISN	R&S	NNLK 8129	8130179	2025.09.23	2026.09.22
☒ 3	ISN	TESEQ	T800	29429	2025.09.23	2026.09.22
☒ 4	Pulse Limiter	R&S	ESH3-Z2	102789	2025.09.23	2026.09.22
☒ 5	CE Software	EZ	EZ-EMC_CE	Ver.AIT-03A	N/A	N/A

Radiation Emission measurement						
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal.Due
☒ 1	EMI Measuring Receiver	R&S	ESR	101160	2025.09.23	2026.09.22
☒ 2	Low Noise Pre Amplifier	SCHWARZBECK	BBV 9745	00282	2025.09.23	2026.09.22
☒ 3	Low Noise Pre Amplifier	COM-MW	DLAN8-1000-18000-1021	05231256	2025.06.26	2026.06.25

☒ 4	Spectrum Analyzer	R&S	FSV40	101470	2025.09.23	2026.09.22
☒ 5	Passive Loop	ETS	6512	00165355	2024.08.29	2026.08.28
☒ 6	TRILOG Super Broadband test Antenna	SCHWARZBECK	VULB9168	01434	2024.08.29	2027.08.28
☒ 7	Broadband Horn Antenna	Schwarzbeck	BBHA 9120D	452	2024.08.29	2027.08.28
☒ 8	Horn Antenna 15-40GHz	SCHWARZBECK	BBHA9170	BBHA91703 67	2024.08.28	2027.08.27
☒ 9	6dB Attenuator	JFW	50FPE-006	4360846- 949-1	2025.09.23	2026.09.22
☒ 10	RE Software	EZ	EZ-EMC_RE	Ver.AIT-03A	N/A	N/A

RF Conducted measurement						
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal.Due
☒ 1	Spectrum Analyzer	Agilent	N9020A	MY53421570	2025.09.23	2026.09.22
☒ 2	Power Sensor	Agilent	8481A	MY41097697	2025.09.23	2026.09.22
☐ 3	Vector Signal Generator	Agilent	N5182A	MY50143009	2025.09.23	2026.09.22
☐ 4	Analog signal generator	Agilent	E8257	MY51554256	2025.09.23	2026.09.22
☐ 5	Const Temp. & Humidity Chamber	Eastlab	YH-HW-408L	23051109	2025.09.23	2026.09.22
☐ 6	Wideband Radio communication tester	R&S	CMW500	1201.0002K50	2025.09.23	2026.09.22
☒ 7	DC power supply	ZHAOXIN	RXN-305D-2	28070002559	2025.09.23	2026.09.22
☐ 8	RF Test box	TST	TSTPASS	21033016	2025.09.23	2026.09.22
☒ 9	RF Software	TST	TSTPASS	Version 2.0	N/A	N/A
☐ 10	RF Software	Cesheng	WCN Regulary	Ver 25.03.2901	N/A	N/A

Note: ☐ is not applicable in this Test Report. ☒ is applicable in this Test Report.

3 TEST CONDITIONS AND RESULTS

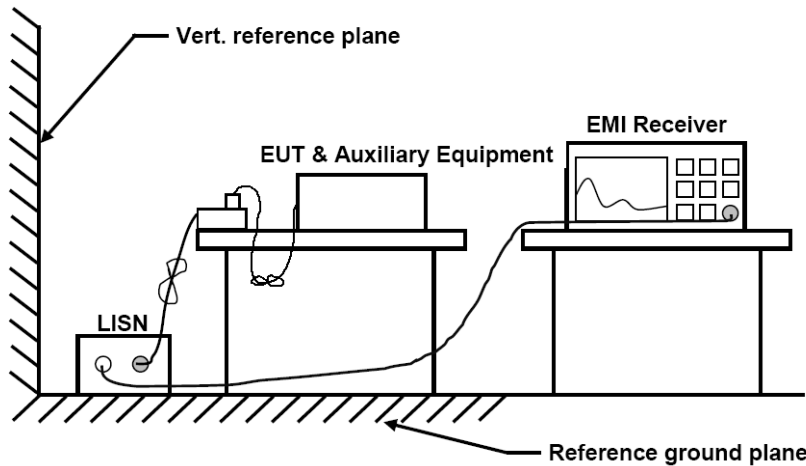
3.1 Conducted Emissions Test

LIMIT

Frequency range (MHz)	Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

* Decreases with the logarithm of the frequency.

TEST CONFIGURATION



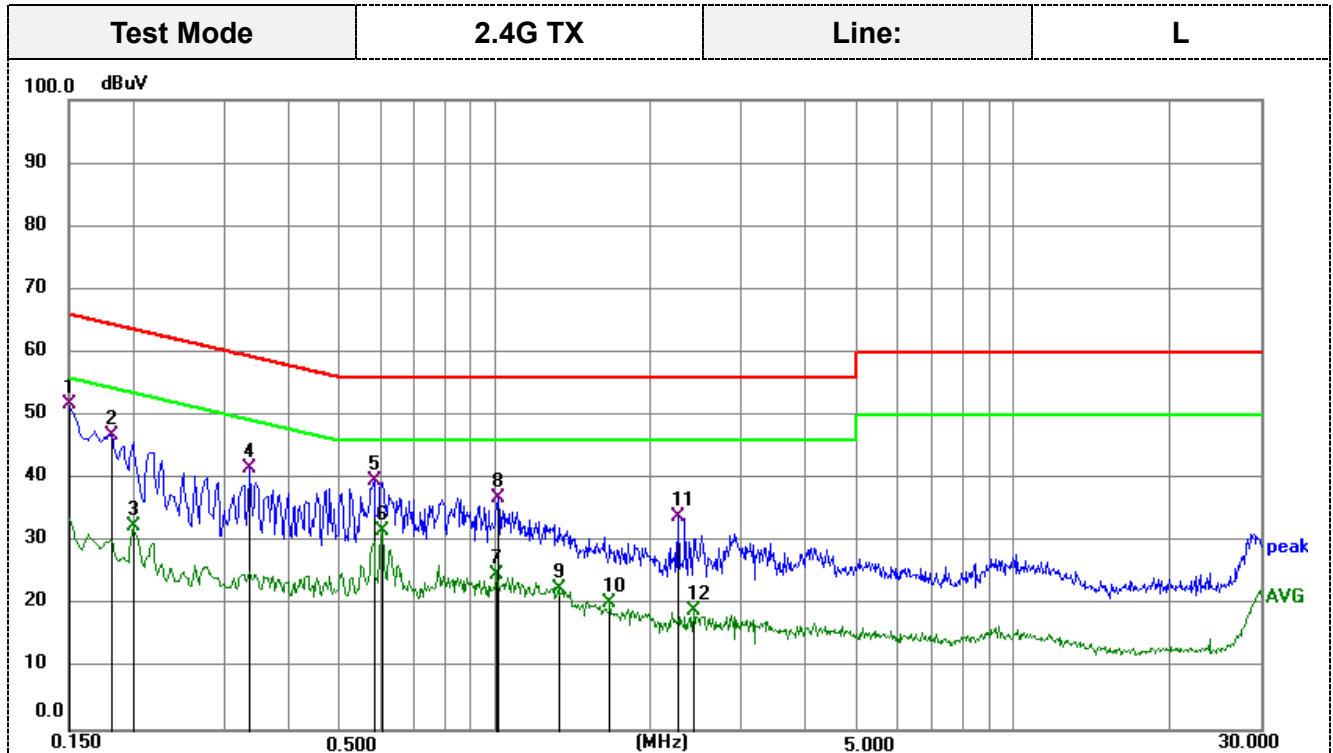
TEST PROCEDURE

1. The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. The EUT is a tabletop system; a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.10:2020.
2. Support equipment, if needed, was placed as per ANSI C63.10:2020.
3. All I/O cables were positioned to simulate typical actual usage as per ANSI C63.10:2020.
4. The adapter received AC120V/60Hz power through a Line Impedance Stabilization Network (LISN) which supplied power source and was grounded to the ground plane.
5. All support equipment received AC power from a second LISN, if any.
6. The EUT test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
7. Analyzer / Receiver scanned from 150 KHz to 30MHz for emissions in each of the test modes.
8. During the above scans, the emissions were maximized by cable manipulation.

TEST RESULTS

Remark:

- Both 120 VAC, 50/60 Hz and 240 VAC, 50/60 Hz power supply have been tested, only the worst result of 120 VAC, 60 Hz was reported as below:
- Pre-scan at Low, Middle, and High channel; only the worst result of midde channel was reported as below:

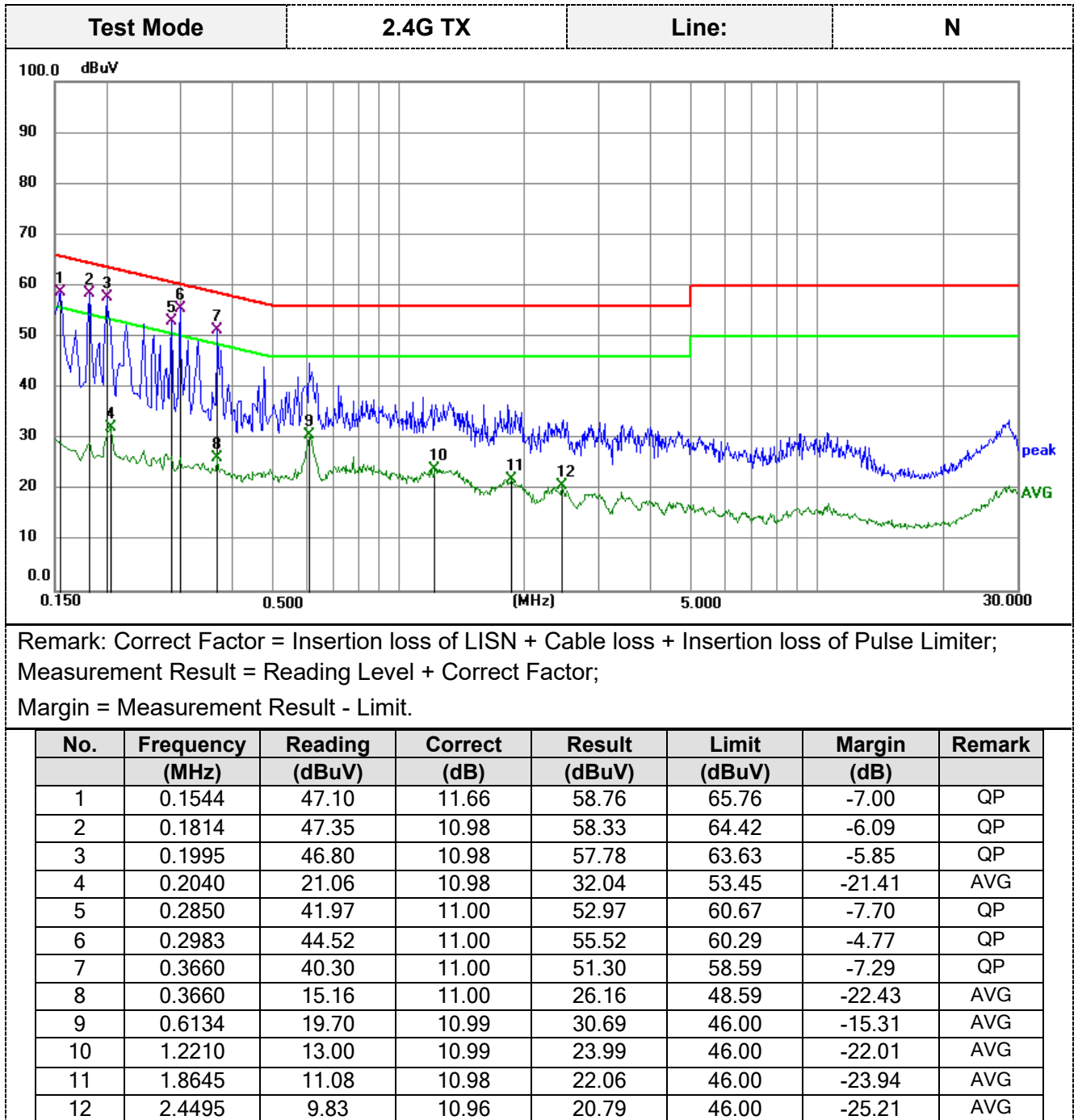


Remark: Correct Factor = Insertion loss of LISN + Cable loss + Insertion loss of Pulse Limiter;

Measurement Result = Reading Level + Correct Factor;

Margin = Measurement Result – Limit.

No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1500	39.41	12.29	51.70	66.00	-14.30	QP
2	0.1815	35.67	11.07	46.74	64.42	-17.68	QP
3	0.1995	21.34	11.06	32.40	53.63	-21.23	AVG
4	0.3345	30.48	11.06	41.54	59.34	-17.80	QP
5	0.5820	28.46	11.05	39.51	56.00	-16.49	QP
6	0.6045	20.52	11.04	31.56	46.00	-14.44	AVG
7	1.0095	13.52	11.07	24.59	46.00	-21.41	AVG
8	1.0140	25.71	11.07	36.78	56.00	-19.22	QP
9	1.3290	11.44	11.06	22.50	46.00	-23.50	AVG
10	1.6665	9.18	11.05	20.23	46.00	-25.77	AVG
11	2.2605	22.83	11.03	33.86	56.00	-22.14	QP
12	2.4135	8.01	11.02	19.03	46.00	-26.97	AVG



3.2 Radiated Emissions and Band Edge

Limit

For intentional device, according to § 15.209(a), the general requirement of field strength of radiated emission out of authorized band shall not exceed the following table at a 3 meters measurement distance.

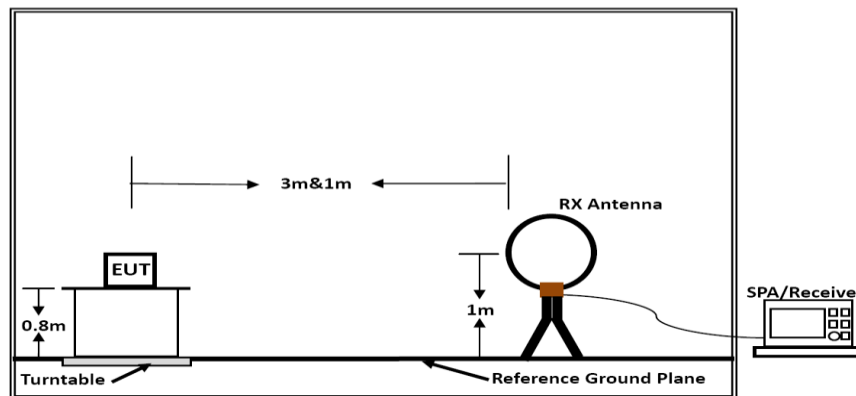
In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a)

Radiated emission limits

Frequency (MHz)	Distance (Meters)	Radiated (dBμV/m)	Radiated (μV/m)
0.009-0.49	3	$20\log(2400/F(\text{KHz}))+40\log(300/3)$	$2400/F(\text{KHz})$
0.49-1.705	3	$20\log(24000/F(\text{KHz}))+40\log(30/3)$	$24000/F(\text{KHz})$
1.705-30	3	$20\log(30)+40\log(30/3)$	30
30-88	3	40.0	100
88-216	3	43.5	150
216-960	3	46.0	200
Above 960	3	54.0	500

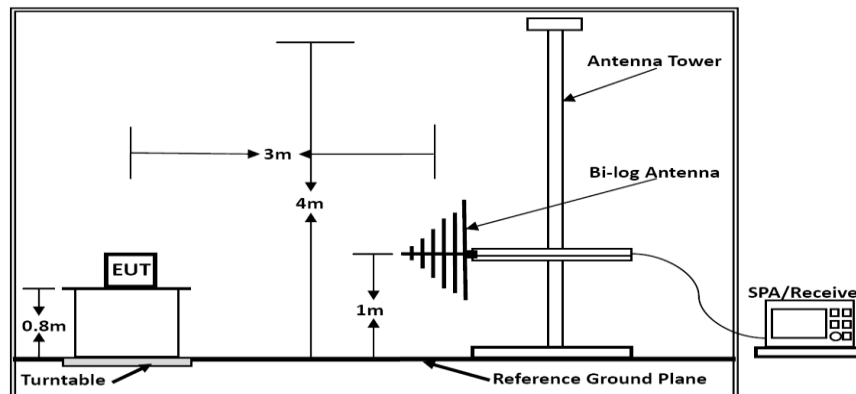
TEST CONFIGURATION

(A) Radiated Emission Test Set-Up, Frequency Below 30MHz



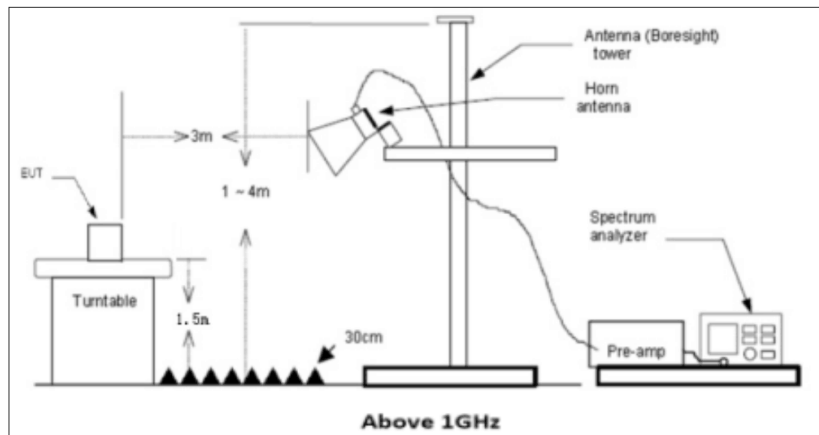
Below 30MHz

(B) Radiated Emission Test Set-Up, Frequency below 1000MHz



Below 1GHz

(C) Radiated Emission Test Set-Up, Frequency above 1000MHz



Test Procedure

- Below 1GHz measurement the EUT is placed on a turntable which is 0.8m above ground plane, and above 1GHz measurement EUT was placed on a low permittivity and low loss tangent turn table which is 1.5m above ground plane.
- Maximum procedure was performed by raising the receiving antenna from 1m to 4m and rotating the turn table from 0°C to 360°C to acquire the highest emissions from EUT
- And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
- Repeat above procedures until all frequency measurements have been completed.
- Radiated emission test frequency band from 9KHz to 25GHz.
- The distance between test antenna and EUT as following table states:

Test Frequency range	Test Antenna Type	Test Distance
9KHz-30MHz	Active Loop Antenna	3
30MHz-1GHz	Bilog Antenna	3
1GHz-18GHz	Horn Antenna	3
18GHz-25GHz	Horn Antenna	1

- Setting test receiver/spectrum as following table states:

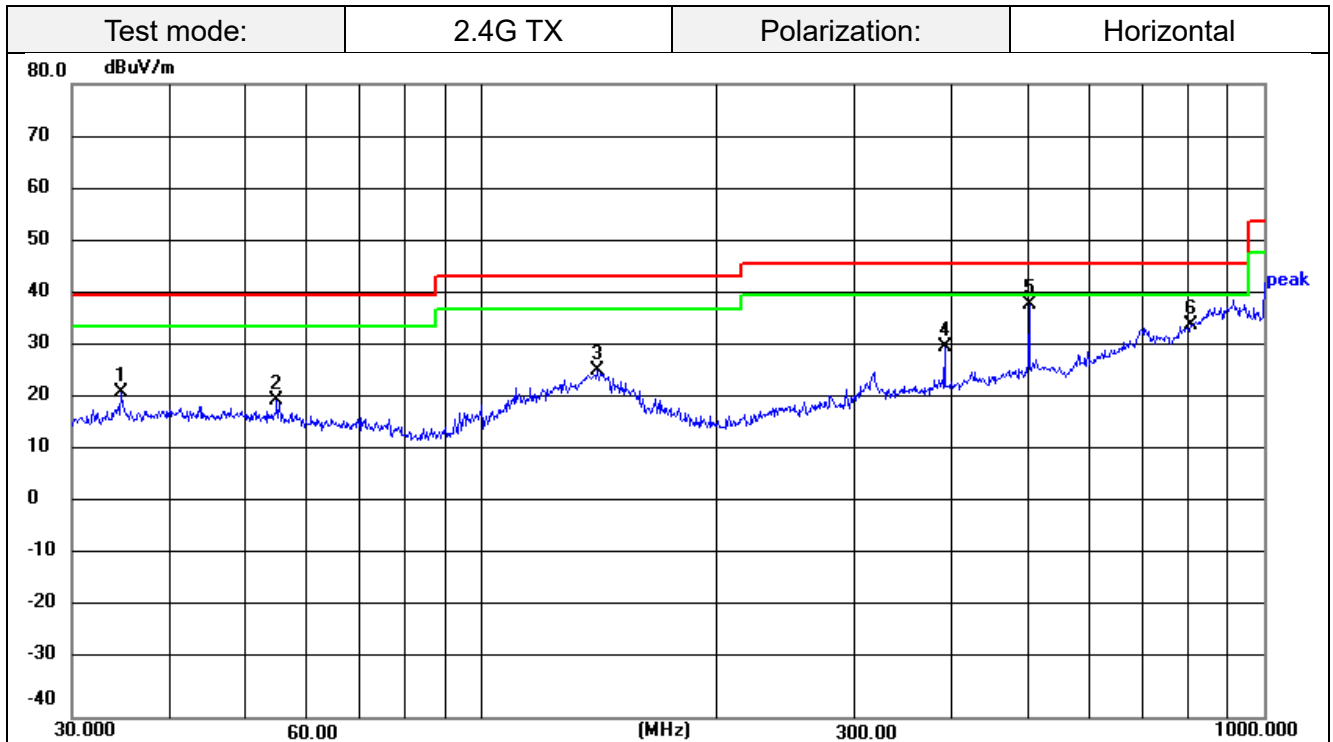
Test Frequency range	Test Receiver/Spectrum Setting	Detector
9KHz-150KHz	RBW=200Hz/VBW=3KHz, Sweep time=Auto	QP
150KHz-30MHz	RBW=9KHz/VBW=100KHz, Sweep time=Auto	QP
30MHz-1GHz	RBW=120KHz/VBW=1000KHz, Sweep time=Auto	QP
1GHz-40GHz	Peak Value: RBW=1MHz/VBW=3MHz, Sweep time=Auto Average Value: RBW=1MHz/VBW=10Hz, Sweep time=Auto	Peak

TEST RESULTS

Remark:

- Pre-scan at Low, Middle, and High channel for below 1GHz test; only the worst result of middle channel was reported as below:
- Radiated emission test from 9 KHz to 10th harmonic of fundamental was verified, and The emission levels from 9kHz to 30MHz are attenuated 20dB below the limit and not recorded in report

For 30MHz-1GHz



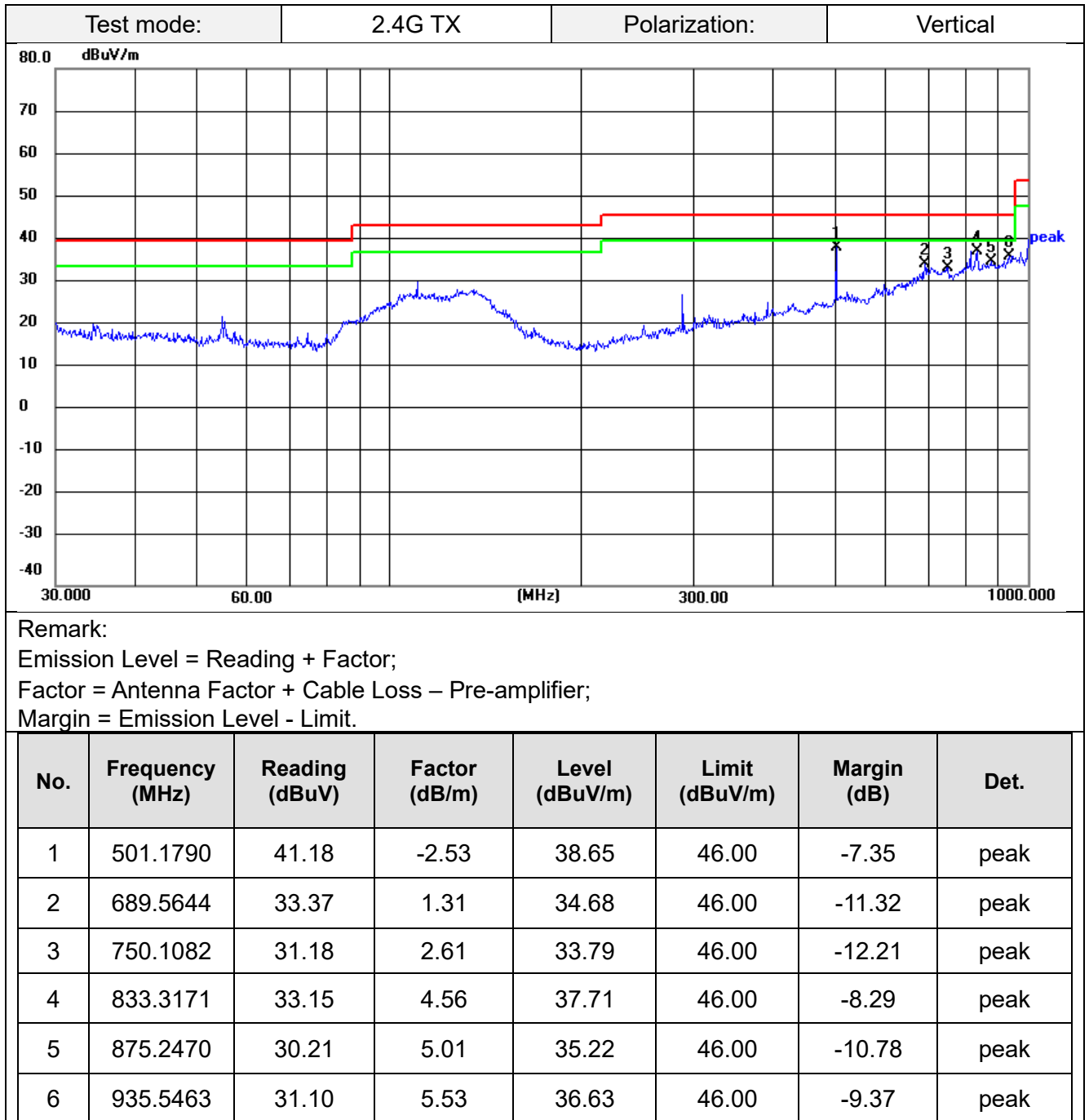
Remark:

Emission Level = Reading + Factor;

Factor = Antenna Factor + Cable Loss – Pre-amplifier;

Margin = Emission Level - Limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	34.6385	31.50	-9.90	21.60	40.00	-18.40	peak
2	54.8348	30.11	-9.86	20.25	40.00	-19.75	peak
3	140.8350	34.94	-9.20	25.74	43.50	-17.76	peak
4	390.7225	35.83	-5.56	30.27	46.00	-15.73	peak
5	501.1790	40.78	-2.53	38.25	46.00	-7.75	peak
6	807.4290	30.43	3.88	34.31	46.00	-11.69	peak



For 1GHz to 25GHz

Frequency(MHz):		2412		Polarity:	Horizontal	
Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB/m)	(dBμV/m)	(dBμV/m)	(dB)	
4824.00	63.94	-7.34	56.60	74	-17.40	PEAK
4824.00	53.07	-7.34	45.73	54	-8.27	AVG
7236.05	51.34	-1.34	50.00	74	-24.00	PEAK
--	--	--	--	--	--	AVG

Frequency(MHz):		2412		Polarity:	VERTICAL	
Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB/m)	(dBμV/m)	(dBμV/m)	(dB)	
4824.00	65.07	-7.34	57.73	74	-16.27	PEAK
4824.00	54.73	-7.34	47.39	54	-6.61	AVG
7236.05	52.51	-1.34	51.17	74	-22.83	PEAK
--	--	--	--	--	--	AVG

Frequency(MHz):		2437		Polarity:	Horizontal	
Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB/m)	(dBμV/m)	(dBμV/m)	(dB)	
4874.00	65.00	-6.82	58.18	74	-15.82	PEAK
4874.00	53.79	-6.82	46.97	54	-7.03	AVG
7310.85	52.16	-0.61	51.55	74	-22.45	PEAK
--	--	--	--	--	--	AVG

Frequency(MHz):		2437		Polarity:	VERTICAL	
Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB/m)	(dBμV/m)	(dBμV/m)	(dB)	
4874.00	65.24	-6.82	58.42	74	-15.58	PEAK
4874.00	55.22	-6.82	48.40	54	-5.60	AVG
7310.85	52.53	-0.61	51.92	74	-22.08	PEAK
--	--	--	--	--	--	AVG

Frequency(MHz):		2462		Polarity:	Horizontal	
Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB/m)	(dBμV/m)	(dBμV/m)	(dB)	
4924.35	64.87	-6.23	58.64	74	-15.36	PEAK
4924.35	53.85	-6.23	47.62	54	-6.38	AVG
7386.60	47.01	0.06	47.07	74	-26.93	PEAK
--	--	--	--	--	--	AVG

Frequency(MHz):		2462		Polarity:	VERTICAL	
Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB/m)	(dBμV/m)	(dBμV/m)	(dB)	
4924.35	65.65	-6.23	59.42	74	-14.58	PEAK
4924.35	55.64	-6.23	49.41	54	-4.59	AVG
7386.60	47.89	0.06	47.95	74	-26.05	PEAK
--	--	--	--	--	--	AVG

REMARKS:

1. Emission level (dBuV/m) = Reading (dBuV) + Factor (dB/m).
2. Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) - Pre-amplifier Factor.
3. Margin value = Emission level- Limit value.
4. -- Mean the PK detector measured value is below average limit.
5. Other emission levels are attenuated 20dB below the limit and not recorded in report.
6. RBW1MHz VBW3MHz Peak detector is for PK value; RBW 1MHz VBW10Hz Peak detector is for AV value.

Radiation Restricted band

Frequency(MHz):		2412		Polarity:	Horizontal	
Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB/m)	(dBμV/m)	(dBμV/m)	(dB)	
2388.13	56.02	-4.07	51.95	74	-22.05	PEAK
2388.13	47.69	-4.07	43.62	54	-10.38	AVG
2390.00	57.00	-4.10	52.90	74	-21.10	PEAK
2390.00	49.00	-4.10	44.90	54	-9.10	AVG

Frequency(MHz):		2412		Polarity:	Vertical	
Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB/m)	(dBμV/m)	(dBμV/m)	(dB)	
2387.94	56.41	-4.07	52.34	74	-21.66	PEAK
2387.94	47.55	-4.07	43.48	54	-10.52	AVG
2390.00	58.03	-4.10	53.93	74	-20.07	PEAK
2390.00	49.57	-4.10	45.47	54	-8.53	AVG

Frequency(MHz):		2462		Polarity:	Horizontal	
Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB/m)	(dBμV/m)	(dBμV/m)	(dB)	
2483.50	61.93	-3.09	58.84	74	-15.16	PEAK
2483.50	53.61	-3.09	50.52	54	-3.48	AVG
2486.40	58.44	-3.05	55.39	74	-18.61	PEAK
2486.40	49.65	-3.05	46.60	54	-7.40	AVG

Frequency(MHz):		2462		Polarity:	Vertical	
Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB/m)	(dBμV/m)	(dBμV/m)	(dB)	
2483.50	62.81	-3.09	59.72	74	-14.28	PEAK
2483.50	54.60	-3.09	51.51	54	-2.49	AVG
2487.32	59.00	-3.04	55.96	74	-18.04	PEAK
2487.32	51.00	-3.04	47.96	54	-6.04	AVG

REMARKS:

1. Emission level (dBuV/m) = Reading (dBuV) + Factor (dB/m).
2. Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) - Pre-amplifier Factor.
3. Margin value = Emission level - Limit value.
4. Other emission levels are attenuated 20dB below the limit and not recorded in report.
5. RBW1MHz VBW3MHz Peak detector is for PK value; RBW 1MHz VBW10Hz Peak detector is for AV value.

3.3 Maximum Peak Conducted Output Power

Limit

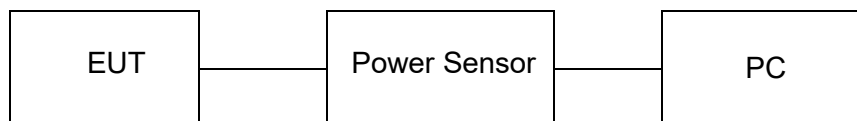
The maximum peak conducted output power shall not exceed 1.0 W.

Test Procedure

Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the Power Meter.

PKPM1 Peak power meter method described in ANSI C63.10-2020 section 11.9.1.2 is used to measure the Conducted Output Power.

Test Configuration



Test Results

☒ **Pass** ☐ **Not Applicable**

Note:

For test data, please refer to Appendix RF test data for WIFI2.4G.

3.4 Power Spectral Density

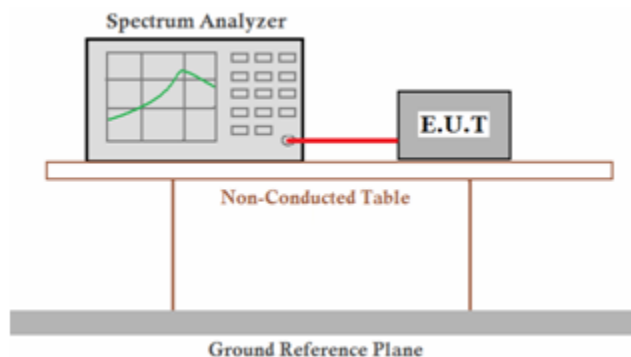
Limit

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

Test Procedure

1. Use this procedure when the maximum peak conducted output power in the fundamental emission is used to demonstrate compliance.
2. Set the RBW ≥ 3 kHz.
3. Set the VBW $\geq 3 \times$ RBW.
4. Set the span to 1.5 times the DTS channel bandwidth.
5. Detector = peak.
6. Sweep time = auto couple.
7. Trace mode = max hold.
8. Allow trace to fully stabilize.
9. Use the peak marker function to determine the maximum power level.
10. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.
11. The resulting peak PSD level must be 8dBm.

Test Configuration



Test Results

☒ Pass ☐ Not Applicable

Note:

For test data, please refer to Appendix RF test data for WIFI2.4G.

3.5 6dB Bandwidth

Limit

For digital modulation systems, the minimum 6 dB bandwidth shall be at least 500 kHz

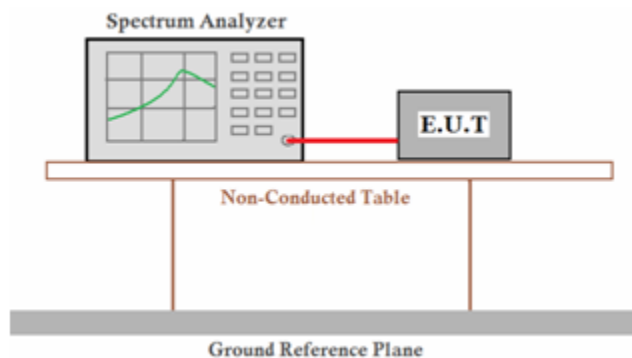
Test Procedure

Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the Spectrum Analyzer. Set EUT in transmitting mode.

- Set Spectrum Analyzer to OBW measurement mode and set bandwidth mode with X set to 6 dB.
- Set RBW = shall be in the range of 1% to 5% of the OBW but not less than 100 kHz.
- Set the VBW $\geq [3 \times \text{RBW}]$.
- Detector = peak.
- Sweep time = auto couple.
- Trace mode = max hold.

Allow trace to fully stabilize

Test Configuration



Test Results

☒ Pass ☐ Not Applicable

Note:

For test data, please refer to Appendix RF test data for WIFI2.4G.

3.6 Out-of-band Emissions

Limit

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided that the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of root-mean-square averaging over a time interval, as permitted under section 5.4(d), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general field strength limits specified in RSS-Gen is not required.

Test Procedure

Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the Spectrum Analyzer. Place the EUT on the table and set it in transmitting mode.

Step 1: Reference level measurement using the following procedure:

- g) Set instrument center frequency to DTS channel center frequency.
- h) Set the span to ≥ 1.5 times the DTS bandwidth.
- i) Set the RBW = 100 kHz.
- j) Set the VBW $\geq [3 \times \text{RBW}]$.
- k) Detector = peak.
- l) Sweep time = auto couple.
- m) Trace mode = max hold.
- n) Allow trace to fully stabilize.
- o) Use the peak marker function to determine the maximum PSD level.

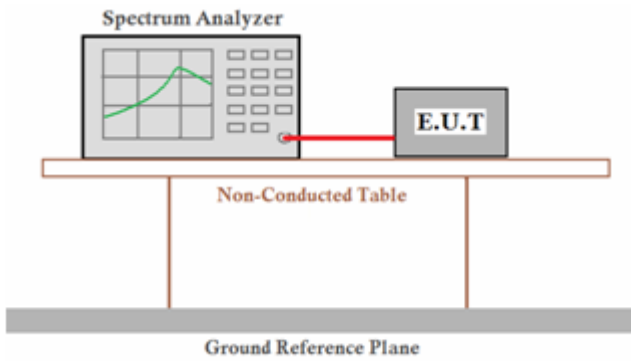
Note that the channel found to contain the maximum PSD level can be used to establish the reference level.

Step 2: Emission level measurement using the following procedure:

- a) Set the center frequency and span to encompass frequency range to be measured.
- b) Set the RBW = 100 kHz.
- c) Set the VBW $\geq [3 \times \text{RBW}]$.
- d) Detector = peak.
- e) Sweep time = auto couple.
- f) Trace mode = max hold.
- g) Allow trace to fully stabilize.
- h) Use the peak marker function to determine the maximum amplitude level.

Ensure that the amplitude of all unwanted emissions outside of the authorized frequency band (excluding restricted frequency bands) is attenuated by at least the minimum requirements of PSD level measured in step 1 Reference level measurement.

Test Configuration



Test Results

Passed

☒ **Pass** ☐ **Not Applicable**

Note:

For test data, please refer to Appendix RF test data for WIFI2.4G.

3.7 Antenna Requirement

Standard Applicable

For intentional device, according to FCC 47 CFR Section 15.203:

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, 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

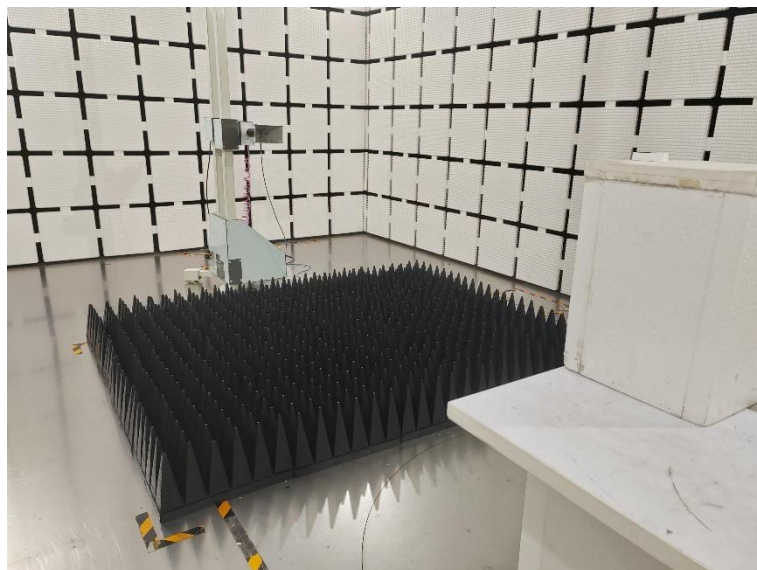
FCC CFR Title 47 Part 15 Subpart C Section 15.247(b) (4):

(4) The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Test Result

The maximum gain of antenna was 3.71dBi with impedance 50Ω.

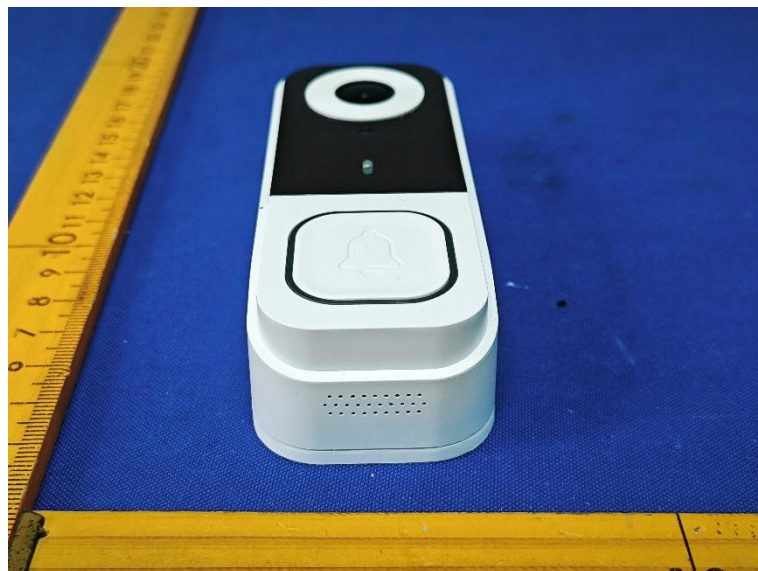
4 Test Setup Photographs of EUT



5 Photos of EUT

External photos



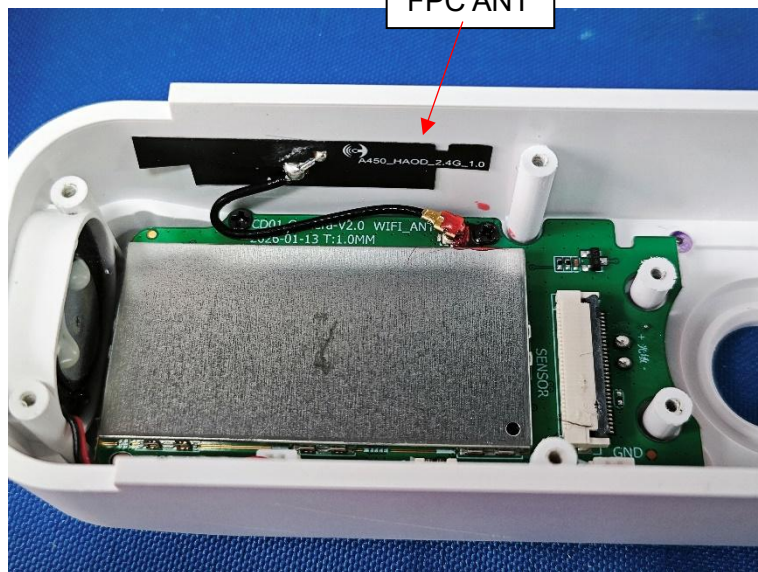


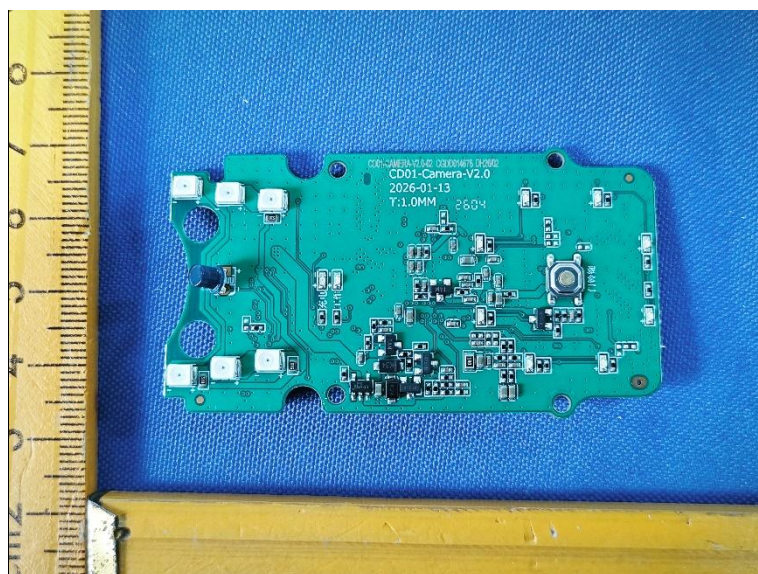
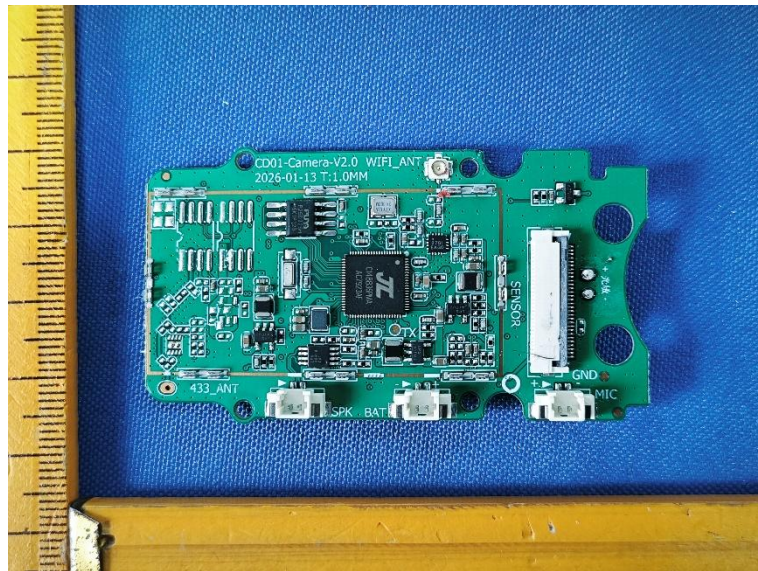


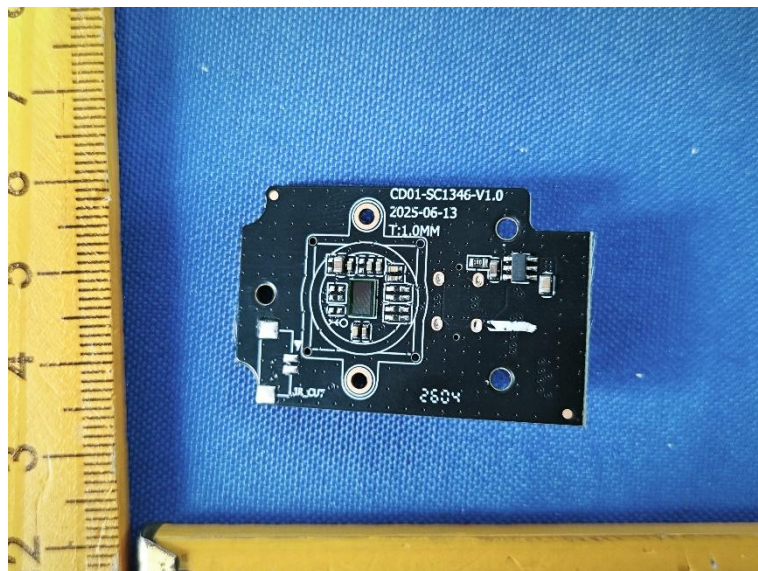
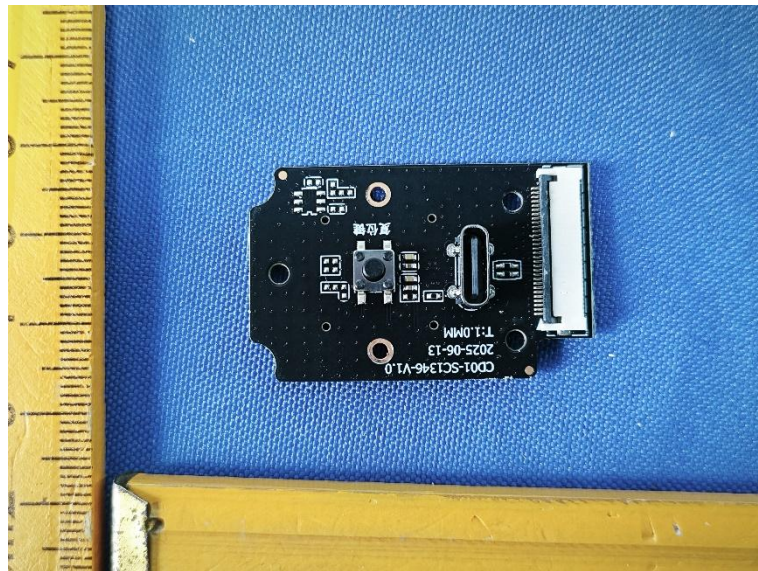
Internal photos



FPC ANT







***** End of Report *****