Shenzhen CTA Testing Technology Co., Ltd.

Room 106, Building 1, Yibaolai Industrial Park, Qiaotou Community, Fuhai Street, Bao'an District, Shenzhen, China

FCC PART 15 SUBPART C TEST REPORT

FCC PART 15.231

Report Reference No. .....:	**CTA26090900202**
FCC ID. .....:	**2AYZG-LT286**
Compiled by (position+printed name+signature) . :	File administrators Zoey Cao
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Date of issue ..... :	Sep. 20, 2026
Testing Laboratory Name .....:	**Shenzhen CTA Testing Technology Co., Ltd.**
Address ..... :	Room 106, Building 1, Yibaolai Industrial Park, Qiaotou Community, Fuhai Street, Bao'an District, Shenzhen, China
Applicant's name ..... :	**ShenZhen litian technology Co.,Ltd**
Address ..... :	Rm609,#2 Zonghe Bldg,Bao yun da center, Xixiang St,Bao an District,Shenzhen,China
Test specification.....:	
Standard..... :	**FCC Part 15.231**

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Test item description.....:	**Sunrise Alarm Clock Radio With Bed Shaker**
Trade Mark..... :	N/A
Manufacturer..... :	ShenZhen litian technology Co.,Ltd
Model/Type reference..... :	LT286
Listed Models ..... :	N/A
Modulation ..... :	ASK
Frequency	433.925MHz
Ratings ..... :	Input: 5V ⎓ 2A Battery: 3.7V 800mAh 2.96Wh
Result ..... :	**PASS**

TEST REPORT

Equipment under Test	:	Sunrise Alarm Clock Radio With Bed Shaker
Model /Type	:	LT286
Listed Models	:	N/A
Applicant	:	**ShenZhen litian technology Co.,Ltd**
Address	:	Rm609,#2 Zonghe Bldg,Bao yun da center, Xixiang St,Bao an District,Shenzhen,China
Manufacturer	:	**ShenZhen litian technology Co.,Ltd**
Address	:	Rm609,#2 Zonghe Bldg,Bao yun da center, Xixiang St,Bao an District,Shenzhen,China

Test Result:	**PASS**

The 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.

Contents

1 TEST STANDARDS 4

2 SUMMARY 5

2.1 General Remarks 5
2.2 Product Description 5
2.3 Equipment Under Test 5
2.4 Short description of the Equipment under Test (EUT) 5
2.5 EUT configuration 5
2.6 Block Diagram of Test Setup 6
2.7 Special Accessories 6
2.8 Related Submittal(s) / Grant (s) 6
2.9 Modifications 6

3 TEST ENVIRONMENT 7

3.1 Address of the test laboratory 7
3.2 Test Facility 7
3.3 Environmental conditions 7
3.4 Summary of measurement results 8
3.5 Statement of the measurement uncertainty 8
3.6 Equipments Used during the Test 9

4 TEST CONDITIONS AND RESULTS 11

4.1 AC Power Conducted Emission 11
4.2 Radiated Emission 14
4.3 20dB Bandwidth 21
4.4 Deactivation Time 22
4.5 Antenna Requirement 23

5 TEST SETUP PHOTOS OF THE EUT 24

6 PHOTOS OF THE EUT 25

1 TEST STANDARDS

The tests were performed according to following standards:

FCC Rules Part 15.231:Periodic operation in the band 40.66-40.70 MHz and above 70 MHz.
ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024 : American National Standard for Testing Unlicensed Wireless Devices

2 SUMMARY

2.1 General Remarks

Date of receipt of test sample	:	Sep. 09, 2026
Testing commenced on	:	Sep. 09, 2026
Testing concluded on	:	Sep. 20, 2026

2.2 Product Description

Product description:	Sunrise Alarm Clock Radio With Bed Shaker
Model/Type reference:	LT286
Power supply:	Input: 5V ⎓ 2A Battery: 3.7V 800mAh 2.96Wh
Adapter information:	Model: YMK-10W050200 Input: 100-240VAC 50/60Hz 0.3A Max Output: 5V DC 2000mA
Testing sample ID:	CTA260812001-1# (Engineer sample), CTA260812001-2#(Normal sample)
Modulation:	ASK
Operation frequency:	433.925MHz
Channel number:	1
Antenna type:	PCB antenna
Antenna gain:	0 dBi

2.3 Equipment Under Test

Power supply system utilised

Power supply voltage	:	○	230V / 50 Hz	○	120V / 60Hz
		○	12 V DC	○	24 V DC
		●	Other (specified in blank below)		

Input: 5V ⎓ 2A
Battery: 3.7V 800mAh 2.96Wh

2.4 Short description of the Equipment under Test (EUT)

This is a Sunrise Alarm Clock Radio With Bed Shaker.

For more details, refer to the user's manual of the EUT.

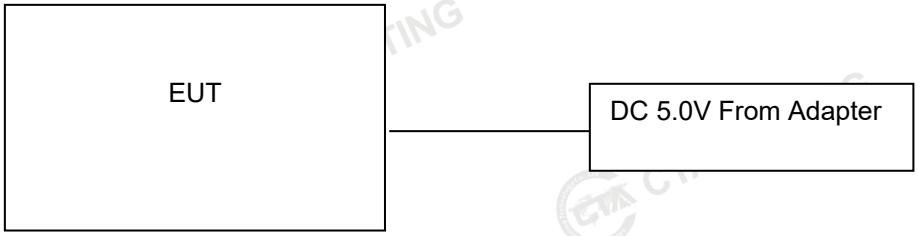
2.5 EUT configuration

The following peripheral devices and interface cables were connected during the measurement:

● - supplied by the manufacturer
○ - supplied by the lab

/		

2.6 Block Diagram of Test Setup



2.7 Special Accessories

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

Description	Manufacturer	Model	Technical Parameters	Certificate	Provided by
/	/	/	/	/	/
/	/	/	/	/	/

2.8 Related Submittal(s) / Grant (s)

This submittal(s) (test report) is intended for the device filing to comply with Section 15.231 of the FCC Part 15, Subpart C Rules.

2.9 Modifications

No modifications were implemented to meet testing criteria.

3 TEST ENVIRONMENT

3.1 Address of the test laboratory

Shenzhen CTA Testing Technology Co., Ltd.
Room 106, Building 1, Yibaolai Industrial Park, Qiaotou Community,Fuhai Street, Bao'an District, Shenzhen, China

.

3.2 Test Facility

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

FCC-Registration No.: 517856 Designation Number: CN1318
Shenzhen CTA Testing Technology Co., Ltd. has been listed on the US Federal Communications Commission list of test facilities recognized to perform electromagnetic emissions measurements.

Industry Canada Registration Number. Is: 27890 CAB identifier: CN0127
The Laboratory has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing.

A2LA-Lab Cert. No.: 6534.01
Shenzhen CTA Testing Technology Co., Ltd. has been listed by American Association for Laboratory Accreditation to perform electromagnetic emission measurement.

The 3m-Semi anechoic test site fulfils CISPR 16-1-4 according to ANSI C63.10 and CISPR 16-1-4:2010.

3.3 Environmental conditions

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

Radiated Emission:

Temperature:	25 ° C
Humidity:	45 %
Atmospheric pressure:	950-1050mbar

Conducted testing：

Temperature:	25 ° C
Humidity:	44 %
Atmospheric pressure:	950-1050mbar

3.4 Summary of measurement results

FCC and IC Requirements		
FCC Part 15.207	Conducted Emission	PASS
FCC Part 15.231(a)(2)	Automatically Deactivate	PASS
FCC Part 15.231(b)	Electric Field Strength of Fundamental Emission	PASS
FCC Part 15.205 &15.209& 15.231(b)	Electric Field Strength of Spurious Emission	PASS
FCC Part 15.231(c)	-20dB bandwidth	PASS

Remark: The measurement uncertainty is not included in the test result.

3.5 Statement of the 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 acc. to TR-100028-01" Electromagnetic compatibility and Radio spectrum Matters (ERM);Uncertainties in the measurement of mobile radio equipment characteristics; Part 1" and TR-100028-02 "Electromagnetic compatibility and Radio spectrum Matters (ERM);Uncertainties in the measurement of mobile radio equipment characteristics; Part 2 " and is documented in the Shenzhen CTA Testing Technology Co., Ltd. quality system acc. 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 Shenzhen CTA Testing Technology Co., Ltd.

Test	Range	Measurement Uncertainty	Notes
Radiated Emission	9KHz~30MHz	3.02 dB	(1)
Radiated Emission	30~1000MHz	4.06 dB	(1)
Radiated Emission	1~18GHz	5.14 dB	(1)
Radiated Emission	18-40GHz	5.38 dB	(1)
Conducted Disturbance	0.15~30MHz	2.14 dB	(1)
Output Peak power	30MHz~18GHz	0.55 dB	(1)
Power spectral density	/	0.57 dB	(1)
Spectrum bandwidth	/	1.1%	(1)
Radiated spurious emission (30MHz-1GHz)	30~1000MHz	4.10 dB	(1)
Radiated spurious emission (1GHz-18GHz)	1~18GHz	4.32 dB	(1)
Radiated spurious emission (18GHz-40GHz)	18-40GHz	5.54 dB	(1)

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

3.6 Equipments Used during the Test

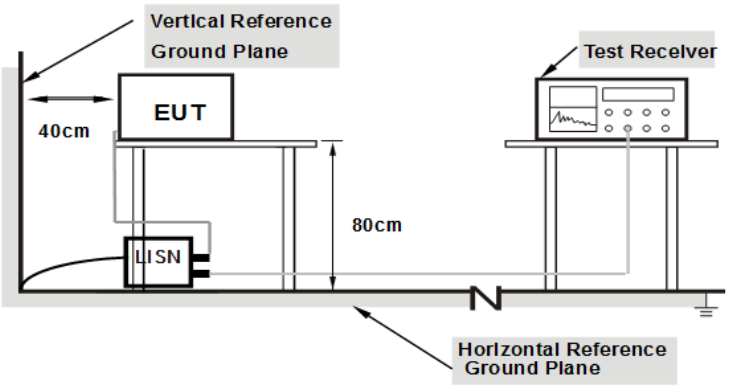
Item.	Test Equipment	Manufacturer	Model No.	Equipment No.	Calibration Date	Calibration Due Date
AC Conducted Test Equipment						
☒1	LISN	R&S	ENV216	CTA-308	2026/07/23	2027/07/22
☒2	LISN	R&S	ENV216	CTA-314	2026/07/23	2027/07/22
☒3	EMI Test Receiver	R&S	ESPI	CTA-307	2026/07/23	2027/07/22
☒4	CE Cable	SKET	RF Cable (9kHz-30MHz)	CTA-367	2026/07/23	2027/07/22
☒5	Temperature and humidity meter	Chigo	ZG-7020	CTA-327	2026/07/25	2027/07/24
☒6	EMI Test Software	Tonscend	TS®JS32-CE	5.0.0.1	N/A	N/A
RF Radiation Test Equipment						
☒1	EMI Test Receiver	R&S	ESCI	CTA-306	2026/07/23	2027/07/22
☒2	Spectrum analyzer	R&S	FSV40-N	CTA-344	2026/05/16	2027/05/15
☒3	Ultra-Broadband Antenna	Schwarzbeck	VULB9163	CTA-310	2023/10/17	2026/10/16
☒4	Horn Antenna	Schwarzbeck	BBHA 9120D	CTA-309	2023/10/13	2026/10/12
☒5	Loop Antenna	Zhinan	ZN30900C	CTA-311	2023/10/17	2026/10/16
☒6	Horn Antenna	Schwarzbeck	BBHA 9170	CTA-346	2025/05/18	2028/05/17
☒7	Amplifier	Schwarzbeck	BBV9745	CTA-312	2026/07/23	2027/07/22
☒8	Amplifier	Tonscend	TAP-011840	CTA-313	2026/07/23	2027/07/22
☒9	Amplifier	SKET	LNPA 1840G-50	CTA-345	2026/05/16	2027/05/15
☒10	6dB attenuator	Shanghaihuaxiang	GZL-TS5-6-6	CTA-347	2026/05/16	2027/05/15
☒11	RF cable	SKET	RF Cable (9kHz-1GHz)	CTA-360	2025/09/25	2026/09/24
☒12	RF cable	SKET	RF Cable (1GHz-18GHz)	CTA-361	2025/09/25	2026/09/24
☒13	Coaxialcable (1GHz-40GHz)	SKET	RE-04-D	CTA-348	2026/05/16	2027/05/15
☒14	Coaxialcable (1GHz-40GHz)	SKET	RE-04-M	CTA-349	2026/05/16	2027/05/15
☒15	Coaxialcable (1GHz-40GHz)	SKET	RE-04-L	CTA-350	2026/05/16	2027/05/15
☒16	Temperature and humidity meter	Chigo	ZG-7020	CTA-328	2026/07/25	2027/07/24
☐17	2.4GFilter	HX Microwave	HXLBQ-DZA61	CTA-365	2026/07/23	2027/07/22
☐18	5GFilter	CONCEPT	CNF05150M05850Q16A	CTA-366	2026/07/23	2027/07/22
☐19	902-928Filter	HX Microwave	HXLBQ-DZA05	CTA-371	2026/07/23	2027/07/22
☐20	400-415MHzFilter	HX Microwave	HXLBQ-DZA257LC	CTA-369	2026/07/23	2027/07/22
☐21	500-650MHzFilter	Tonscend	TSSF6-500-650	CTA-370	2026/07/23	2027/07/22
☐22	High-Pass Filter	XingBo	XBLBQ-GTA18	CTA-402	2026/07/23	2027/07/22
☐23	High-Pass Filter	XingBo	XBLBQ-GTA27	CTA-403	2026/07/23	2027/07/22
☐24	High-Pass Filter	XingBo	XBLBQ-GTA10	CTA-364	2026/07/23	2027/07/22
☒25	EMI Test Software	Tonscend	TS®JS32-RE	5.0.0.2	N/A	N/A
RF Conducted Test Equipment						
☒1	Spectrum Analyzer	Agilent	N9020A	CTA-342	2026/07/23	2027/07/22

☐2	Spectrum analyzer	R&S	FSV40-N	CTA-344	2026/05/16	2027/05/15
☒3	RF Coaxial Cable	SKET	RF Cable (9kHz-40GHz)	CTA-368	2026/07/23	2027/07/22
☒4	Temperature and humidity meter	ZG-7020	Chigo	CTA-329	2026/07/25	2027/07/24
☐5	Programmable Constant Temperature And Humidity Test Chamber	DONGGUAN JINGYU	HT-H-408	CTA-053	2026/07/23	2027/07/22
☐6	Vector Signal generator	Agilent	N5182A	CTA-305	2026/07/23	2027/07/22
☐7	Analog Signal Generator	R&S	E4421B	CTA-304	2026/07/23	2027/07/22
☐8	WIDEBAND RADIO COMMUNICATION TESTER	R&S	CMW500	CTA-302	2026/07/23	2027/07/22
☒9	Automatic control unit	Tonscend	JS0806-2	CTA-351	2026/07/23	2027/07/22
☒10	RF Test Software	Tonscend	TS®JS1120-3	3.1.65	N/A	N/A
☒11	RF Test Software	Tonscend	TS®JS1120	3.1.46	N/A	N/A
☒12	RF Connection Cable	N/A	N/A	1#	Each time	N/A

4 TEST CONDITIONS AND RESULTS

4.1 AC Power Conducted Emission

TEST CONFIGURATION



Note: 1. Support units were connected to second LISN.
2. Both of LISNs (AMN) are 80 cm from EUT and at least 80 cm from other units and other metal planes support units.

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 EUT received DC 12V power from adapter, the adapter received AC120V/60Hz and AC 240V/60Hz power through a Line Impedance Stabilization Network (LISN) which supplied power source and was grounded to the ground plane.
5 All support equipments 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.

AC Power Conducted Emission Limit

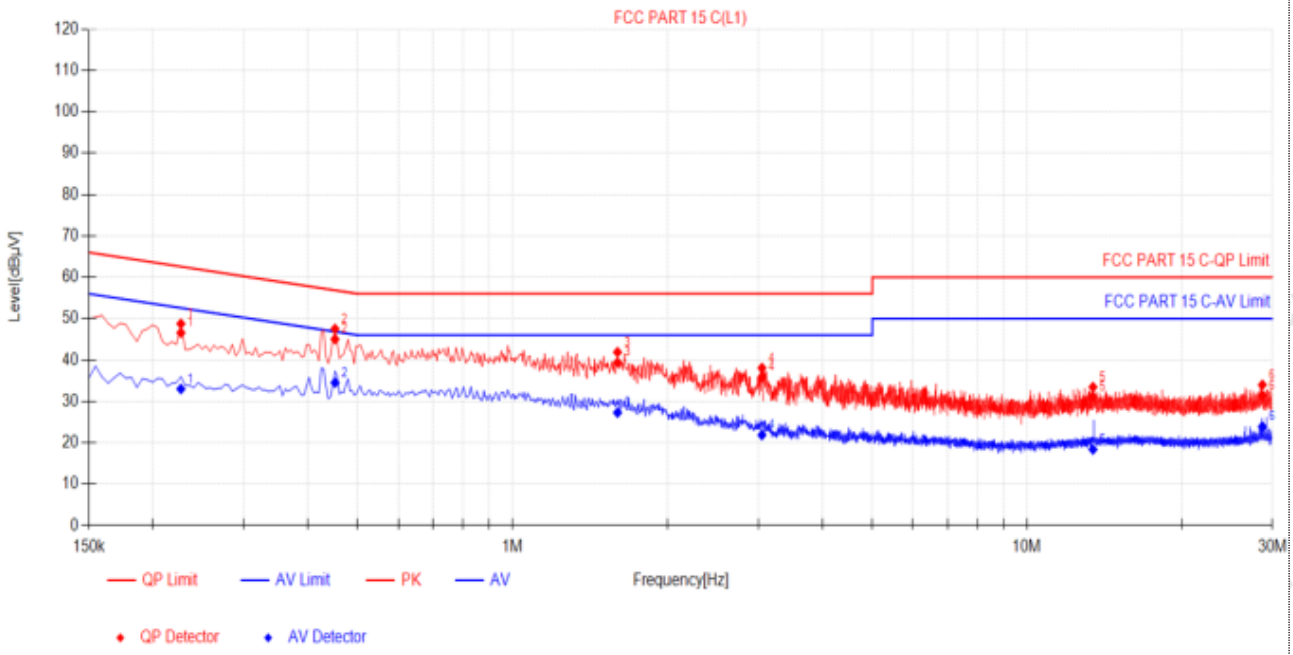
For intentional device, according to § 15.207(a) AC Power Conducted Emission Limits is as following：

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 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:

Polarization:	L

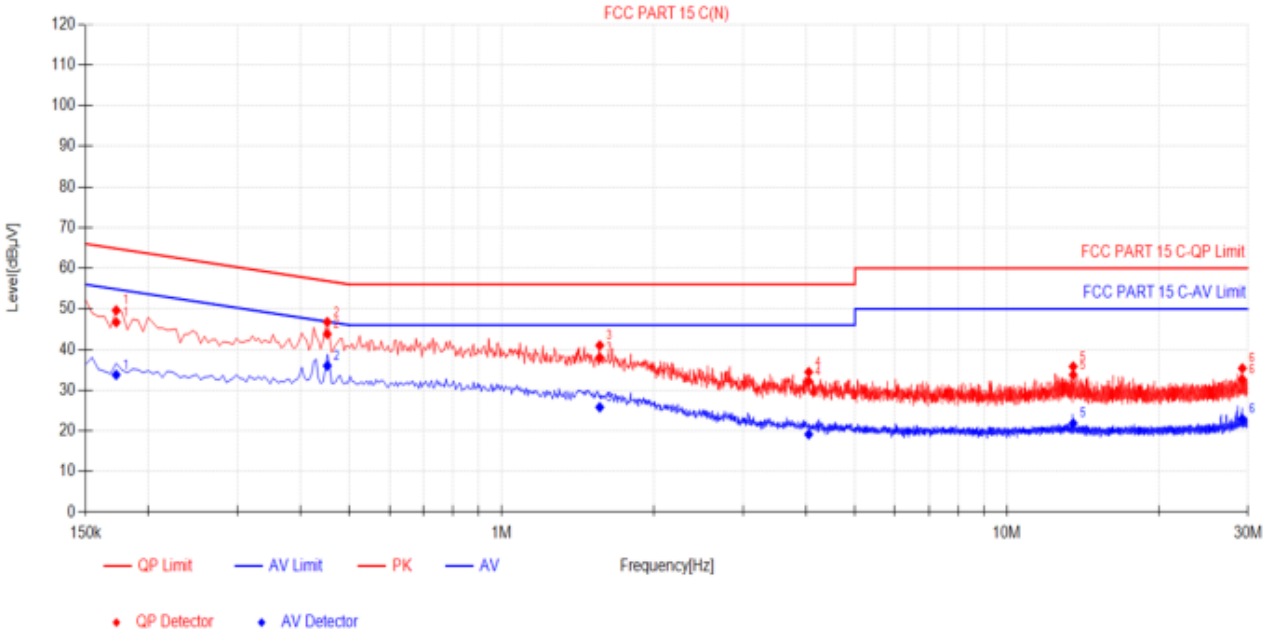


Final Data List

NO.	Freq. [MHz]	Factor [dB]	QP Reading[dBµV]	QP Value [dBµV]	QP Limit [dBµV]	QP Margin [dB]	AV Reading [dBµV]	AV Value [dBµV]	AV Limit [dBµV]	AV Margin [dB]	Verdict
1	0.2265	9.82	36.76	46.58	62.58	16.00	23.17	32.99	52.58	19.59	PASS
2	0.4515	10.20	34.83	45.03	56.85	11.82	24.33	34.53	46.85	12.32	PASS
3	1.599	10.46	28.94	39.40	56.00	16.60	16.80	27.26	46.00	18.74	PASS
4	3.0525	10.63	25.27	35.90	56.00	20.10	11.23	21.86	46.00	24.14	PASS
5	13.434	12.02	19.12	31.14	60.00	28.86	6.36	18.38	50.00	31.62	PASS
6	28.6845	13.48	17.90	31.38	60.00	28.62	10.42	23.90	50.00	26.10	PASS

Note:1).QP Value (dBµV)= QP Reading (dBµV)+ Factor (dB)
2). Factor (dB)=insertion loss of LISN (dB) + Cable loss (dB)
3). QPMargin(dB) = QP Limit (dBµV) - QP Value (dBµV)
4). AVMargin(dB) = AV Limit (dBµV) - AV Value (dBµV)

Polarization:	N



Final Data List

NO.	Freq. [MHz]	Factor [dB]	QP Reading[dBμV]	QP Value [dBμV]	QP Limit [dBμV]	QP Margin [dB]	AV Reading [dBμV]	AV Value [dBμV]	AV Limit [dBμV]	AV Margin [dB]	Verdict
1	0.1725	9.90	36.80	46.70	64.84	18.14	23.88	33.78	54.84	21.06	PASS
2	0.4515	10.22	33.60	43.82	56.85	13.03	25.79	36.01	46.85	10.84	PASS
3	1.563	10.42	27.64	38.06	56.00	17.94	15.37	25.79	46.00	20.21	PASS
4	4.0515	10.80	21.39	32.19	56.00	23.81	8.34	19.14	46.00	26.86	PASS
5	13.524	12.12	21.63	33.75	60.00	26.25	9.72	21.84	50.00	28.16	PASS
6	29.238	13.75	18.93	32.68	60.00	27.32	9.17	22.92	50.00	27.08	PASS

Note:1).QP Value (dBμV)= QP Reading (dBμV)+ Factor (dB)
2). Factor (dB)=insertion loss of LISN (dB) + Cable loss (dB)
3). QPMargin(dB) = QP Limit (dBμV) - QP Value (dBμV)
4). AVMargin(dB) = AV Limit (dBμV) - AV Value (dBμV)

4.2 Radiated Emission

Limit

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

Frequency (MHz)	Distance (Meters)	Radiated (dBμV/m)	Radiated (μV/m)
0.009-0.49	3	20log(2400/F(KHz))+40log(300/3)	2400/F(KHz)
0.49-1.705	3	20log(24000/F(KHz))+ 40log(30/3)	24000/F(KHz)
1.705-30	3	20log(30)+ 40log(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

In addition to the provisions of 15.231(b), the field strength of emissions from intentional radiators operated under this section shall not exceed the following:

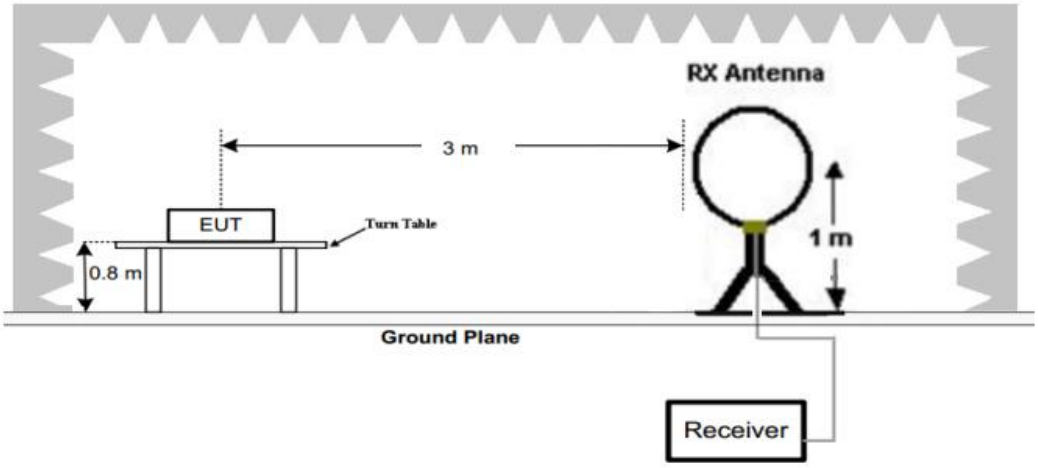
Fundamental frequency (MHz)	Field strength of fundamental (microvolts/meter)	Field strength of spurious emissions (microvolts/meter)
40.66–40.70.	2,250	225
70–130	1,250	125
130–174	[1] 1,250 to 3,750	[1] 125 to 375
174–260	3,750	375
260–470	[1] 3,750 to 12,500	[1] 375 to 1,250
Above 470	12,500	1,250

[1] Linear interpolations.

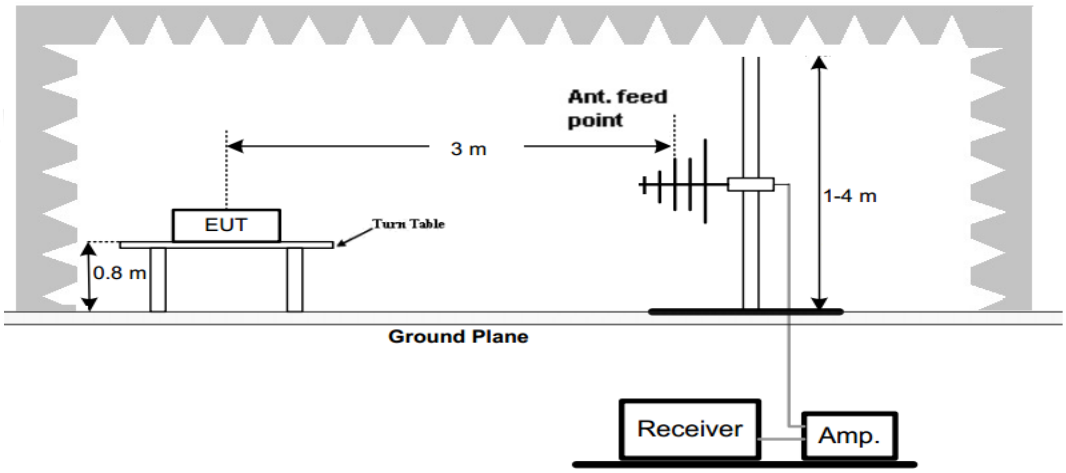
[Where F is the frequency in MHz, the formulas for calculating the maximum permitted fundamental field strengths are as follows: for the band 260-470 MHz, 20*log(41.6667*433.92-7083.3333)=80.83dBuV/m The maximum permitted unwanted emission level is 20 dB below the maximum permitted fundamental level.]

TEST CONFIGURATION

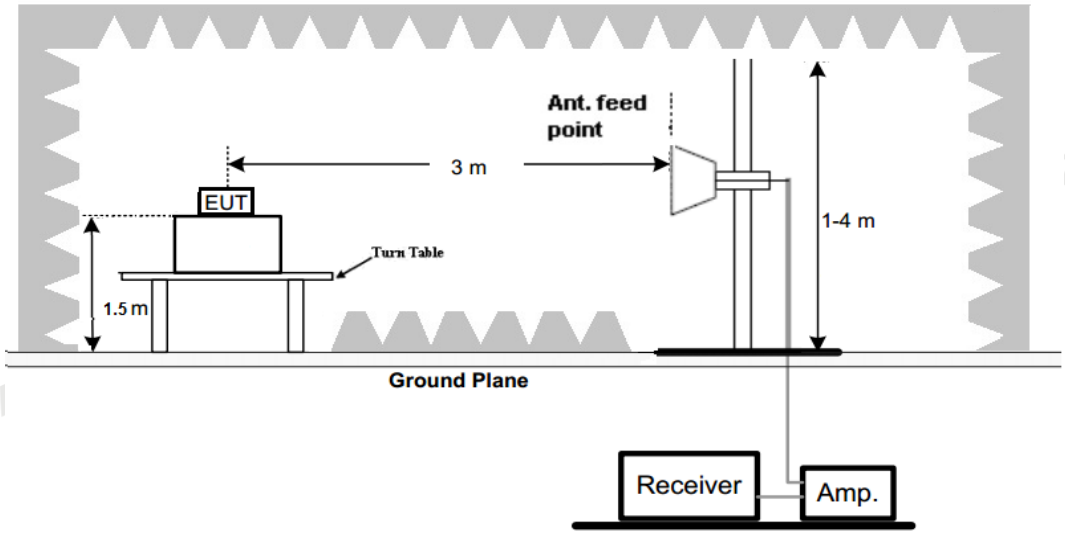
(A) Radiated Emission Test Set-Up, Frequency Below 30MHz

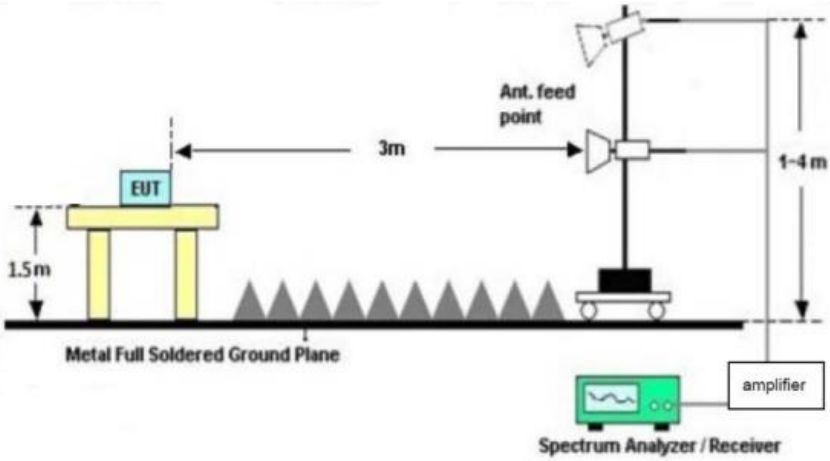


(B) Radiated Emission Test Set-Up, Frequency below 1000MHz



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





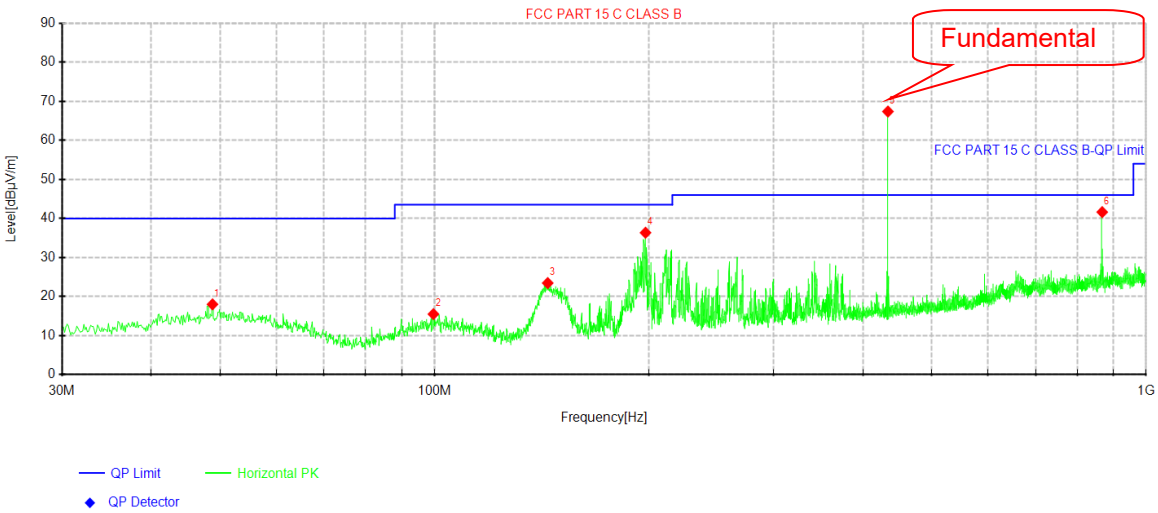
Test Procedure

1. 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.
2. Maximum procedure was performed by raising the receiving antenna from 1m to 4m and rotating the turn table from 0℃ to 360℃ to acquire the highest emissions from EUT

3. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
4. Repeat above procedures until all frequency measurements have been completed.
5. There were no emissions found below 30MHz within 20dB of the limit.

TEST RESULTS

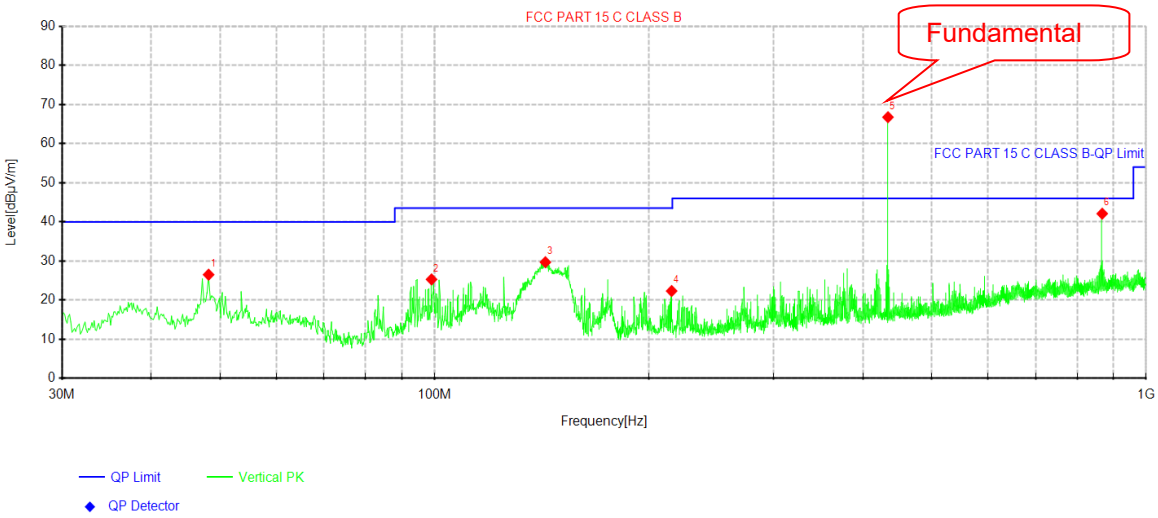
The emissions from 30MHz to 5GHz are measured peak and average level, below 1 GHz measured QP level, detailed test data please see below.



Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	48.7938	28.49	18.00	-10.49	40.00	22.00	100	155	Horizontal
2	99.7188	28.27	15.50	-12.77	43.50	28.00	100	51	Horizontal
3	144.3388	40.43	23.45	-16.98	43.50	20.05	100	248	Horizontal
4	198.0525	49.66	36.35	-13.31	43.50	7.15	100	189	Horizontal
5	433.92	76.84	67.39	-9.45	N/A	N/A	100	3	Horizontal
6	867.84	44.07	41.63	-2.44	N/A	N/A	100	260	Horizontal

Emission Styles	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	PK Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Direction (H)
Fundamental	433.92	76.84	-9.45	67.39	100.83	33.44	PK	H
Harmonics	867.84	44.07	-2.44	41.63	80.83	39.20	PK	H

Emission Styles	Frequency (MHz)	PK Level (dBuV/m)	AV Factor (dB/m)	AV Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Direction (H)
Fundamental	433.95	67.39	-5.01	62.38	80.83	18.45	H
Harmonics	867.90	41.63	-5.01	36.62	60.83	24.21	H

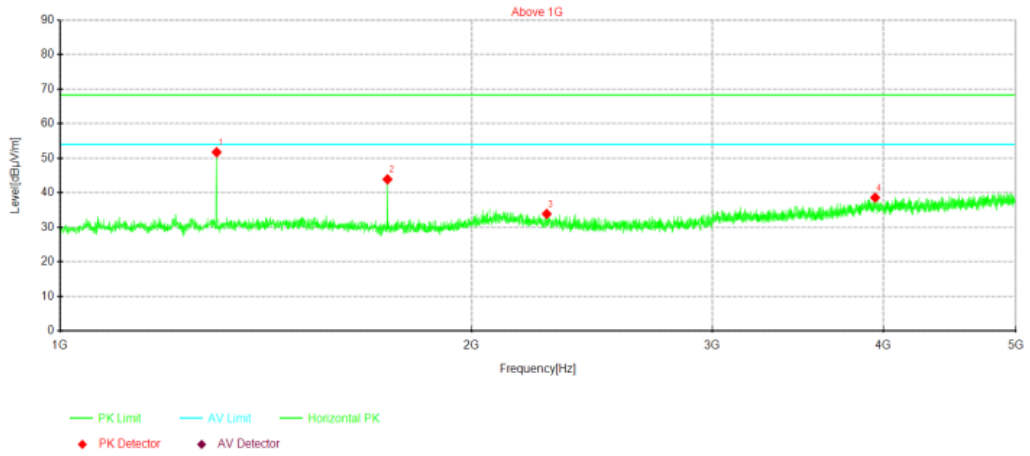


Suspected Data List									
NO.	Freq. [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	48.1875	37.07	26.50	-10.57	40.00	13.50	100	237	Vertical
2	99.1125	38.11	25.29	-12.82	43.50	18.21	100	0	Vertical
3	143.2475	46.65	29.69	-16.96	43.50	13.81	100	237	Vertical
4	215.5125	36.04	22.33	-13.71	43.50	21.17	100	0	Vertical
5	433.92	76.22	66.77	-9.45	N/A	N/A	100	90	Vertical
6	867.84	44.54	42.10	-2.44	N/A	N/A	100	122	Vertical

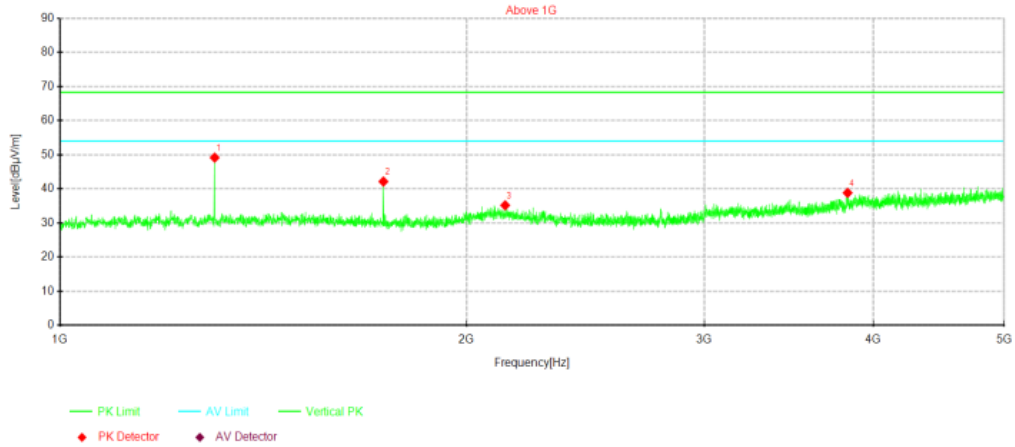
Emission Styles	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	PK Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Direction (V)
Fundamental	433.92	76.22	-9.45	66.77	100.83	34.06	PK	V
Harmonics	867.84	44.54	-2.44	42.10	80.83	38.73	PK	V

Emission Styles	Frequency (MHz)	PK Level (dBuV/m)	AV Factor (dB/m)	AV Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Direction (V)
Fundamental	433.92	66.77	-5.01	61.76	80.83	19.07	V
Harmonics	867.84	42.10	-5.01	37.09	60.83	23.74	V

Above 1G



Suspected Data List									
NO.	Freq. [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1301.76	76.73	51.73	-25.00	68.30	38.57	150	100	Horizontal
2	1735.68	68.37	43.89	-24.48	68.30	37.41	150	170	Horizontal
3	2269.5	55.42	33.87	-21.55	68.30	34.43	150	120	Horizontal
4	3946	54.87	38.60	-16.27	68.30	29.70	150	110	Horizontal



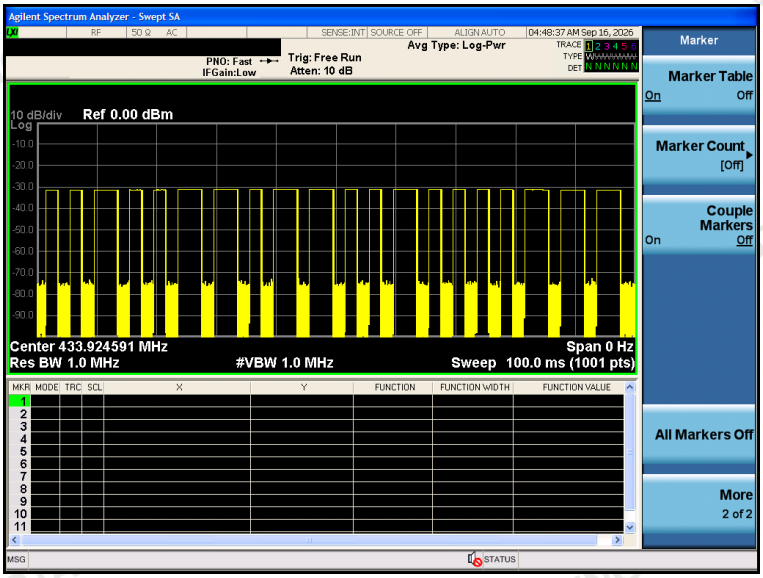
Suspected Data List									
NO.	Freq. [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1301.76	74.16	49.16	-25.00	68.30	36.64	150	80	Vertical
2	1735.68	66.63	42.15	-24.48	68.30	37.15	150	200	Vertical
3	2136	56.91	35.18	-21.73	68.30	33.12	150	120	Vertical
4	3829.5	56.16	38.83	-17.33	68.30	29.47	150	300	Vertical

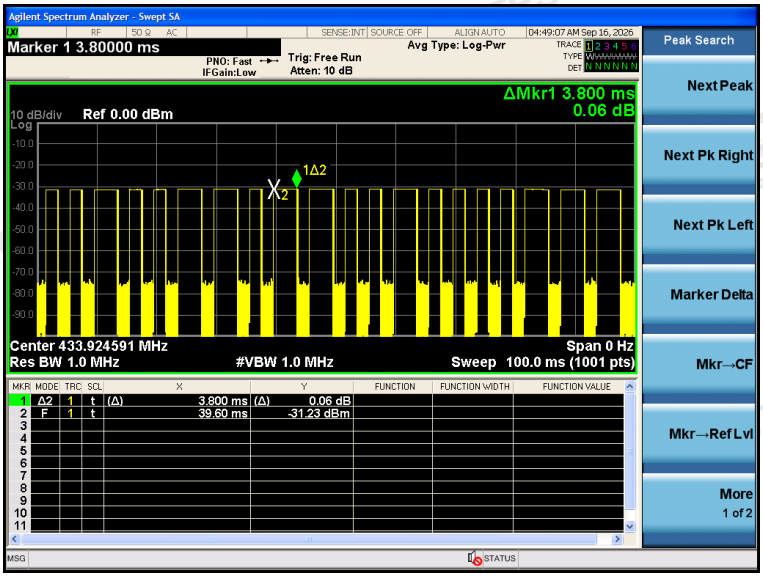
Note:

--: The other emission levels were very low against the limit.

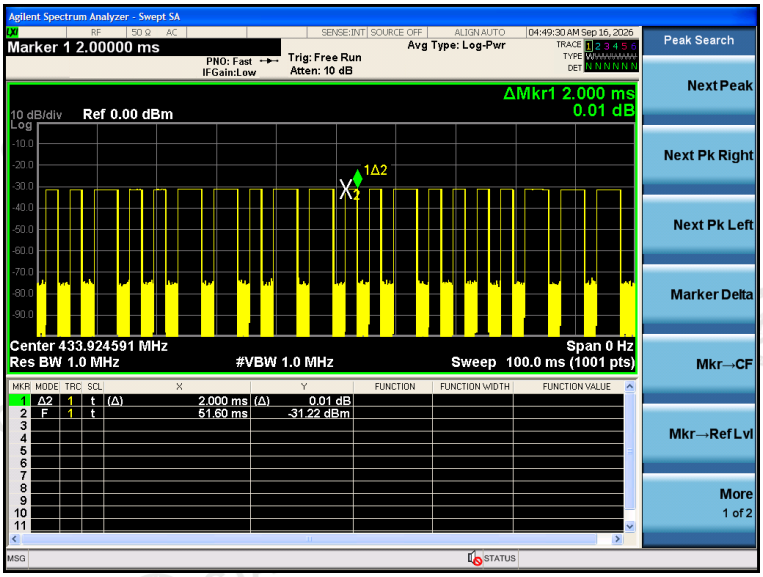
1. Level (dBuV/m)= Reading (dBuV)+Factor(dB/m)
2. AV Level (dBuV/m)= PK Level (dBuV/m)+ AV Factor(dB)
3. In a transmit cycle 100ms period found burst 41pcs, the Duty Cycle can calculate as below:
   Duty Cycle= (3.8*9+2.0*11)/100=56.2/100=0.562
   AV Factor=20*log(Duty Cycle)=20*log(0.562)=-5.01

(The plot of Duty Cycle See the follow page)





(Time per burst: 3.8ms*9pcs)



(Time per burst: 2.0 ms*11pcs)

4.3 20dB Bandwidth

Limit

According to 47 CFR 15.231(c) The bandwidth of the emission shall be no wider than 0.25% of the centre frequency for devices operating above 70MHz and below 900MHz. Bandwidth is determined at the points 20dB down from the modulated carrier.

Test Configuration

Test Procedure

The 20dB bandwidth and 99% bandwidth is measured with a spectrum analyzer connected via a receive antenna placed near the EUT while the EUT is operating in transmission mode.

The 20dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 20dB.

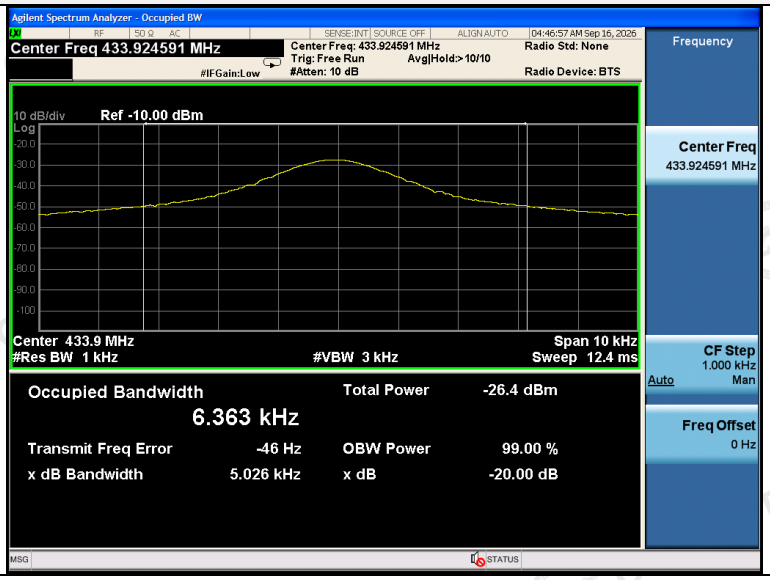
The occupied bandwidth (OBW), that is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission.

Test Results

Modulation	Channel Frequency (MHz)	99% OBW (KHz)	20dB bandwidth (KHz)	Limit (KHz)	Result
ASK	433.925	6.363	5.026	0.25%*433.925*1000=1084.8125	Pass

Test plot as follows:

ASK Modulation

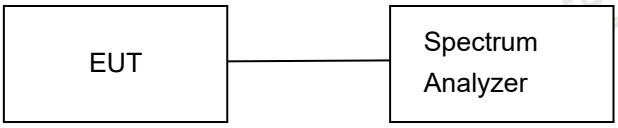


4.4 Deactivation Time

Limit

According to FCC §15.231(a)(2), A transmitter activated automatically shall cease transmission within 5 seconds after activation.

Test Configuration



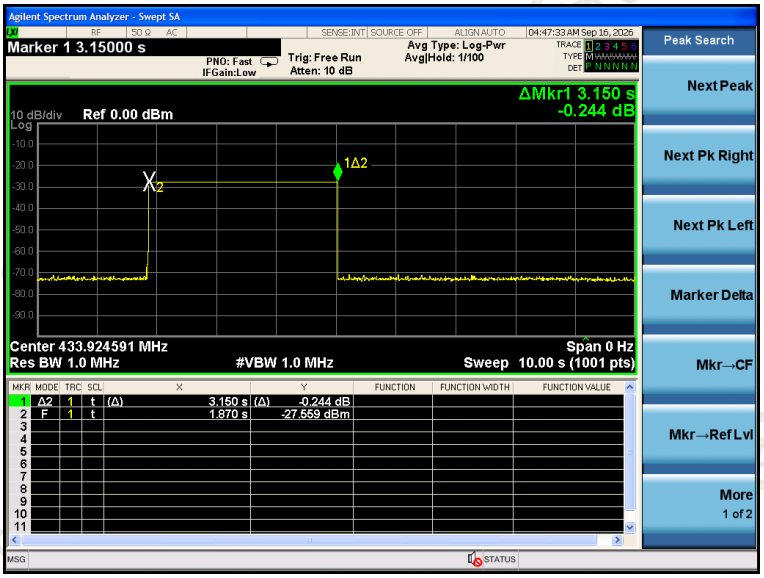
Test Procedure

1. The EUT was placed on a wooded table which is 0.8m height and close to receiver antenna of spectrum analyzer.
2. The spectrum analyzer resolution bandwidth was set to 1 MHz and video bandwidth was set to 1 MHz to encompass all significant spectral components during the test. The spectrum analyzer was operated in linear scale and zero span mode after tuning to the transmitter carrier frequency.

TEST RESULTS

Note: The transmitter was automatically activated, and the carrier frequency 433.925MHz:

Frequency (MHz)	One transmission time (S)	Limit(S)	Result
433.925	3.15	5	Pass



4.5 Antenna Requirement

Standard Applicable

According to FCC Part 15C 15.203

a) An intentional radiator shall be de-signed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

b) 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.

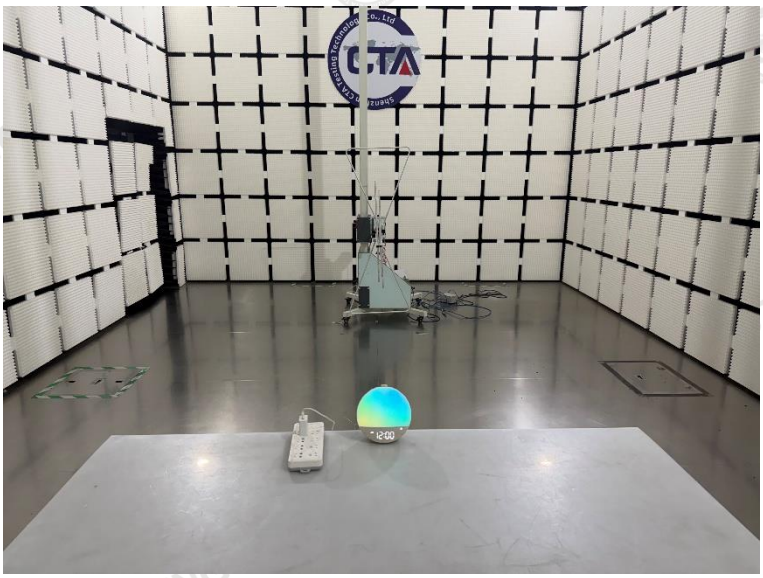
Refer to statement below for compliance.

The manufacturer may design the unit so that the user can replace a broken antenna, but the use of a standard antenna jack or electrical connector is prohibited. Further, this requirement does not apply to intentional radiators that must be professionally installed.

Antenna Connected Construction

The antenna used in this product is a PCB antenna, The directional gains of antenna used for transmitting is 0. dBi.
Remark: The antenna gain is provided by the customer , if the data provided by the customer is not accurate, Shenzhen CTA Testing Technology Co., Ltd. does not assume any responsibility.

5 Test Setup Photos of the EUT



6 Photos of the EUT

Reference to the test report No. **CTA26090900201.**

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