Radio Test Report

FCC ID:2ALN5-RL24002

Report No.	:	TBR-C-202409-0108-5
Applicant	:	Siffron
Equipment Under Test (EUT)		
EUT Name	:	LoRa Sonr Echo Box
Model No.	:	RL-24002-0
Series Model No.	:	N/A
Brand Name	:	Siffron
Sample ID	:	HC-C-202409-0008-01-01& HC-C-202409-0008-01-02
Receipt Date	:	2024-10-10
Test Date	:	2024-10-10 to 2024-12-13
Issue Date	:	2024-12-13
Standards	:	FCC Part 15, Subpart C (15.231(e)
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	:	Henry huang
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.

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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 6
1.4 Description of Support Units 6
1.6 Description of Test Software Setting 8
1.7 Measurement Uncertainty 8
1.8 Test Facility 9
2. TEST SUMMARY 10
3. TEST SOFTWARE 10
4. TEST EQUIPMENT AND TEST SITE 11
5. CONDUCTED EMISSION 12
5.1 Test Standard and Limit 12
5.2 Test Setup 12
5.3 Test Procedure 12
5.4 Deviation From Test Standard 13
5.5 EUT Operating Mode 13
5.6 Test Data 13
6. RADIATED EMISSION TEST 14
6.1 Test Standard and Limit 14
6.2 Test Setup 15
6.3 Test Procedure 16
6.4 Deviation From Test Standard 17
6.5 EUT Operating Mode 17
6.6 Test Data 17
7. BANDWIDTH 18
7.1 Test Standard and Limit 18
7.2 Test Setup 18
7.3 Test Procedure 18
7.4 Deviation From Test Standard 18
7.5 EUT Operating Mode 18

7.6 Test Data 18
8. RELEASE TIME MEASUREMENT 19
8.1 Test Standard and Limit 19
8.2 Test Setup 19
8.3 Test Procedure 19
8.4 Deviation From Test Standard 19
8.5 EUT Operating Mode 19
8.6 Test Data 19
9. DUTY CYCLE 20
9.1 Test Standard and Limit 20
9.2 Test Setup 20
9.3 Test Procedure 20
9.4 Deviation From Test Standard 20
9.5 EUT Operating Mode 20
9.6 Test Data 20
10. ANTENNA REQUIREMENT 21
11.1 Test Standard and Limit 21
11.2 Deviation From Test Standard 21
11.3 Antenna Connected Construction 21
11.4 Test Data 21
ATTACHMENT A-- CONDUCTED EMISSION TEST DATA 22
ATTACHMENT B--UNWANTED EMISSIONS DATA 24
ATTACHMENT C--BANDWIDTH DATA 30
ATTACHMENT D-- RELEASE TIME MEASUREMENT DATA 31
ATTACHMENT E--DUTY CYCLE DATA 32

Revision History

Report No.	Version	Description	Issued Date
TBR-C-202409-0108-5	Rev.01	Initial issue of report	2024-12-13

1. General Information about EUT

1.1 Client Information

Applicant	:	Siffron
Address	:	8181 Darrow Road Twinsburg, OH 44087 USA
Manufacturer	:	Shenzhen Allcomm Electronic Co. Ltd.
Address	:	Block A,101A,302,401 of Block B, No.272 Guangtian Road, Tangxiayong,Yanluo Street,Baoan District, Shenzhen City，Guangdong Province,China

1.2 General Description of EUT (Equipment Under Test)

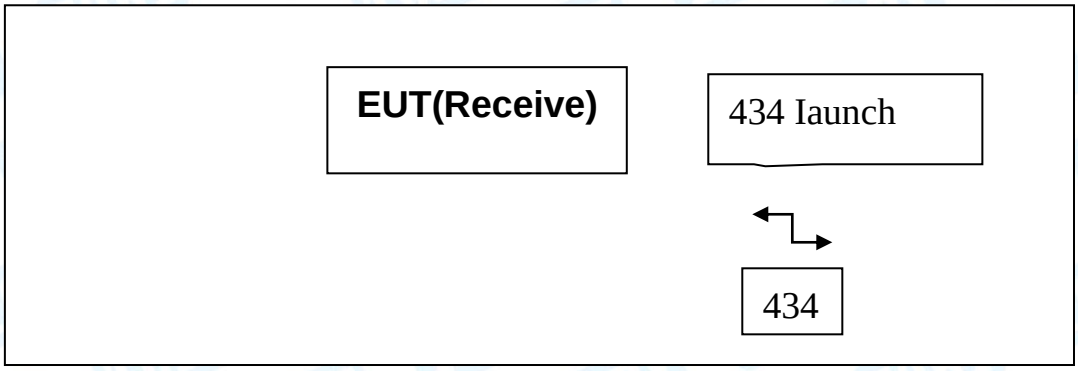
EUT Name	:	LoRa Sonr Echo Box	
Models No.	:	RL-24002-0	
Model Different	:	N/A	
Product Description	:	Operation Frequency:	434 MHz
		Max Out Power:	67.58 dBuV/m (PK Max.) 67.58 dBuV/m (AV Max.)
		Antenna Gain:	5dBi Copper Rod Antenna
		Modulation Type:	ASK
Power Rating	:	4.5V DC (powered by 3pcs AA batteries)	
Software Version	:	V1.0	
Hardware Version	:	V1.0	

Note:

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

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±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 (15.231(e))			
Standard Section / **FCC**	**Test Item**	**Test Sample(s)**	**Judgment**	**Remark**
15.203	Antenna Requirement	HC-C-202409-0108-01-02	PASS	**N/A**
15.207	Conducted Emission	HC-C-202409-0108-01-02	PASS	**N/A**
15.231(e)	Release Time	HC-C-202409-0108-01-01	PASS	**N/A**
	Radiation Emission	HC-C-202409-0108-01-02	PASS	**N/A**
	20 dB Bandwidth	HC-C-202409-0108-01-01	PASS	**N/A**
	Duty Cycle	HC-C-202409-0108-01-01	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. 17, 2024	Jun. 16, 2025
RF Switching Unit	Compliance Direction Systems Inc	RSU-A4	34403	Jun. 17, 2024	Jun. 16, 2025
AMN	SCHWARZBECK	NNBL 8226-2	8226-2/164	Jun. 17, 2024	Jun. 16, 2025
LISN	Rohde & Schwarz	ENV216	101131	Jun. 17, 2024	Jun. 16, 2025
Radiation Emission Test(B Site)					
Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Last Cal.**	**Cal. Due Date**
Spectrum Analyzer	Agilent	N9020A	MY49100060	Aug. 29, 2024	Aug. 28, 2025
Spectrum Analyzer	Rohde & Schwarz	FSV40-N	102197	Jun. 17, 2024	Jun. 16, 2025
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. 14, 2024	Jun. 13, 2026
Horn Antenna	SCHWARZBECK	BBHA 9170	1118	Feb. 27, 2024	Feb.26, 2026
Loop Antenna	SCHWARZBECK	FMZB 1519 B	1519B-059	Jun. 14, 2024	Jun. 13, 2026
HF Amplifier	Tonscend	TAP9E6343	AP21C806117	Aug. 29, 2024	Aug. 28, 2025
HF Amplifier	Tonscend	TAP051845	AP21C806141	Aug. 29, 2024	Aug. 28, 2025
HF Amplifier	Tonscend	TAP0184050	AP21C806129	Aug. 29, 2024	Aug. 28, 2025
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	Rohde & Schwarz	FSV40-N	102197	Jun. 17, 2024	Jun. 16, 2025
MXA Signal Analyzer	KEYSIGHT	N9020B	MY60110172	Aug. 29, 2024	Aug. 28, 2025
MXA Signal Analyzer	Agilent	N9020A	MY47380425	Aug. 29, 2024	Aug. 28, 2025
RF Power Sensor	DARE!! Instruments	RadiPowerRPR3006W	17I00015SNO26	Aug. 29, 2024	Aug. 28, 2025
	DARE!! Instruments	RadiPowerRPR3006W	17I00015SNO29	Aug. 29, 2024	Aug. 28, 2025
	DARE!! Instruments	RadiPowerRPR3006W	17I00015SNO31	Aug. 29, 2024	Aug. 28, 2025
	DARE!! Instruments	RadiPowerRPR3006W	17I00015SNO33	Aug. 29, 2024	Aug. 28, 2025
Temperature and Humidity Chamber	ZhengHang	ZH-QTH-1500	ZH2107264	Jun. 17, 2024	Jun. 16, 2025

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 (dBμV)	
	Quasi-peak Level	Average Level
150kHz~500kHz	66 ~ 56 *	56 ~ 46 *
500kHz~5MHz	56	46
5MHz~30MHz	60	50

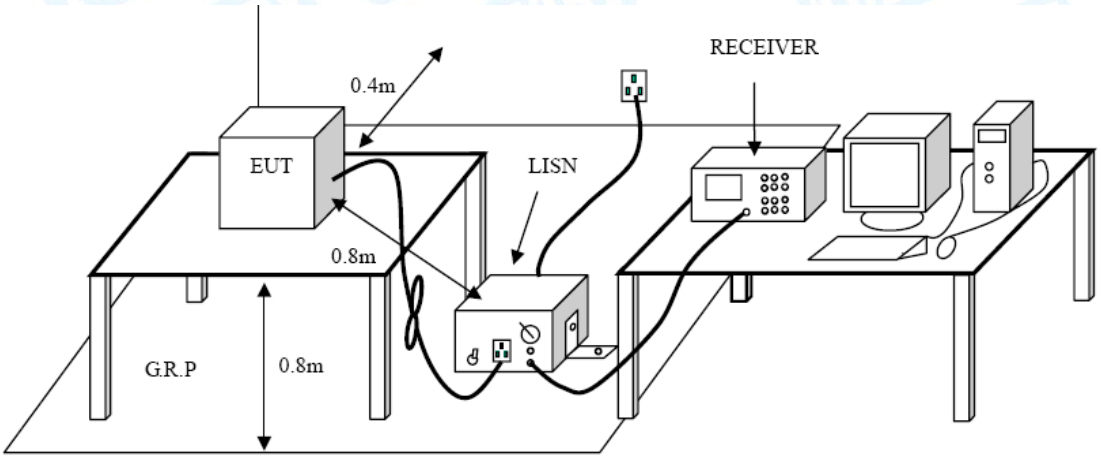
Notes:

(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

Please refer to the Attachment A inside test report

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:

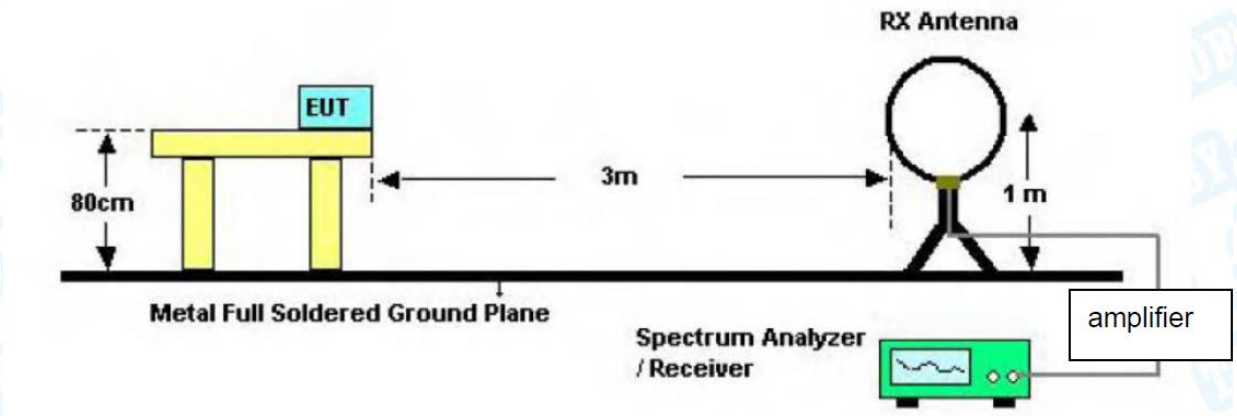
Emission Level(dBuV/m)=20log Emission Level(uV/m) +40log(30/3)

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

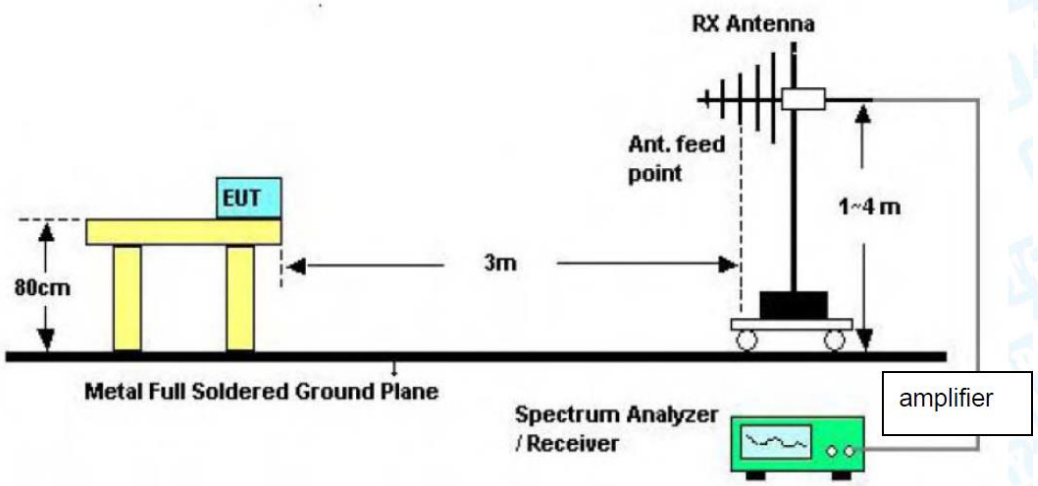
Fundamental Frequency (MHz)	Field Strength of Fundamental (microvolt/meter) at 3m
434 MHz	72.87 (Average)
434 MHz	92.87 (Peak)

6.2 Test Setup

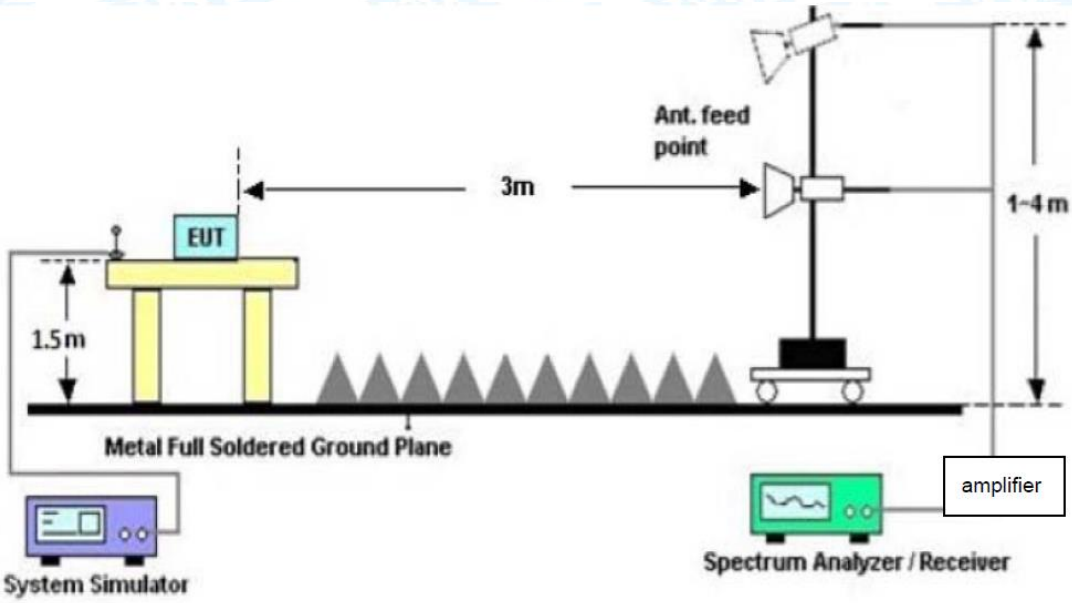
Radiated measurement



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

Please refer to the Attachment B inside test report.

7. Bandwidth

7.1 Test Standard and Limit

7.1.1 Test Standard

FCC 15.231

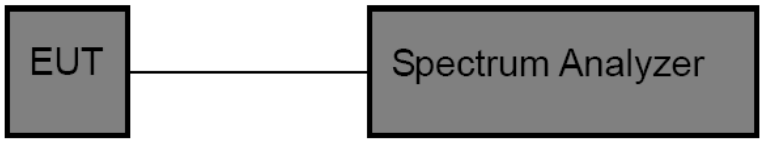
7.1.2 Test Limit

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)
434MHz	1.085

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 C inside test report.

8. Release Time Measurement

8.1 Test Standard and Limit

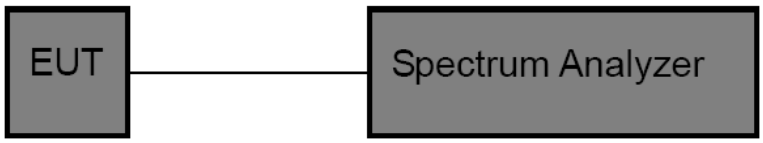
8.1.1 Test Standard

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 Attachment D inside test report.

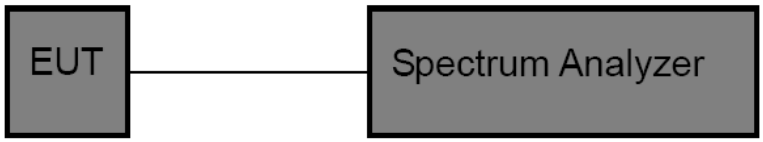
9. Duty Cycle

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 Attachment E inside test report.

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 5dBi, and the antenna de-signed with permanent attachment and no consideration of replacement. Please see the EUT photo for details.

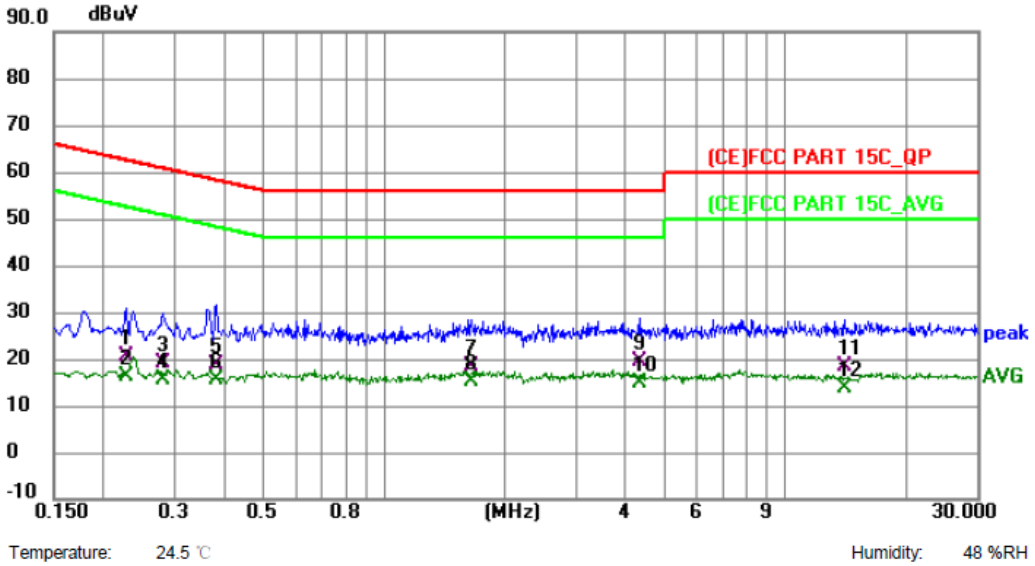
11.4 Test Data

The EUT antenna is a Phosphor Copper Rod Antenna. It complies with the standard requirement.

Antenna Type
☒Permanent attached antenna
☐Unique connector antenna
☐Professional installation antenna

Attachment A-- Conducted Emission Test Data

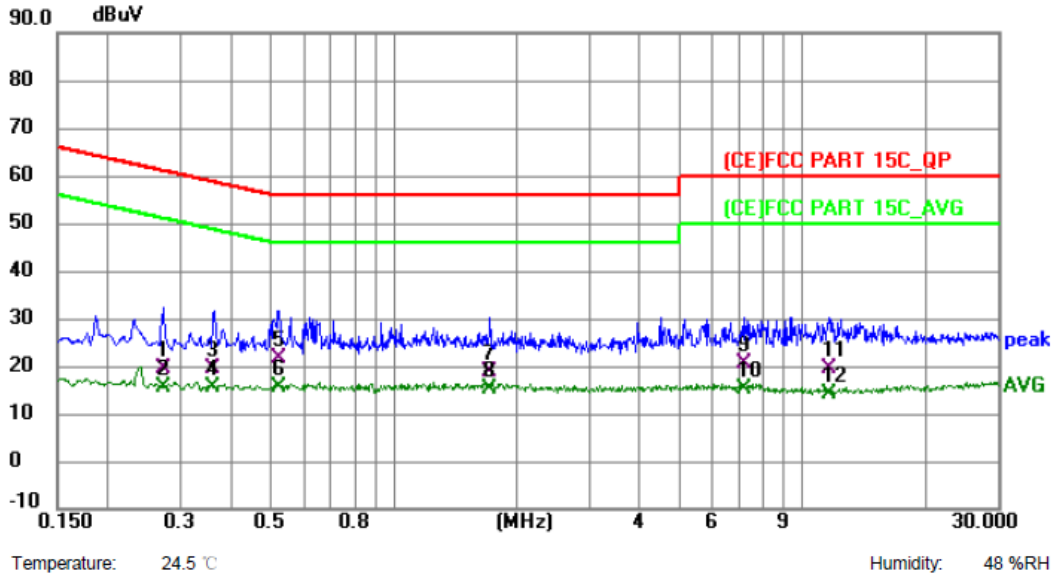
Test Voltage:	AC 120V/60Hz
Terminal:	Line
Test Mode:	Mode 1
Remark:	Only worse case is reported.



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1		0.227	11.11	9.51	20.62	62.56	-41.94	QP
2		0.227	6.86	9.51	16.37	52.56	-36.19	AVG
3		0.281	9.62	9.50	19.12	60.79	-41.67	QP
4		0.281	6.06	9.50	15.56	50.79	-35.23	AVG
5		0.380	9.31	9.46	18.77	58.28	-39.51	QP
6		0.380	5.92	9.46	15.38	48.28	-32.90	AVG
7		1.653	8.90	9.61	18.51	56.00	-37.49	QP
8	*	1.653	5.65	9.61	15.26	46.00	-30.74	AVG
9		4.317	9.86	9.55	19.41	56.00	-36.59	QP
10		4.317	5.21	9.55	14.76	46.00	-31.24	AVG
11		14.055	8.91	9.63	18.54	60.00	-41.46	QP
12		14.055	4.17	9.63	13.80	50.00	-36.20	AVG

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.



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1		0.272	9.86	9.46	19.32	61.06	-41.74	QP
2		0.272	6.18	9.46	15.64	51.06	-35.42	AVG
3		0.361	10.07	9.47	19.54	58.71	-39.17	QP
4		0.361	6.15	9.47	15.62	48.71	-33.09	AVG
5		0.523	12.08	9.46	21.54	56.00	-34.46	QP
6	*	0.523	6.12	9.46	15.58	46.00	-30.42	AVG
7		1.720	9.23	9.49	18.72	56.00	-37.28	QP
8		1.720	5.83	9.49	15.32	46.00	-30.68	AVG
9		7.224	10.93	9.57	20.50	60.00	-39.50	QP
10		7.224	5.55	9.57	15.12	50.00	-34.88	AVG
11		11.656	9.83	9.63	19.46	60.00	-40.54	QP
12		11.656	4.31	9.63	13.94	50.00	-36.06	AVG

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

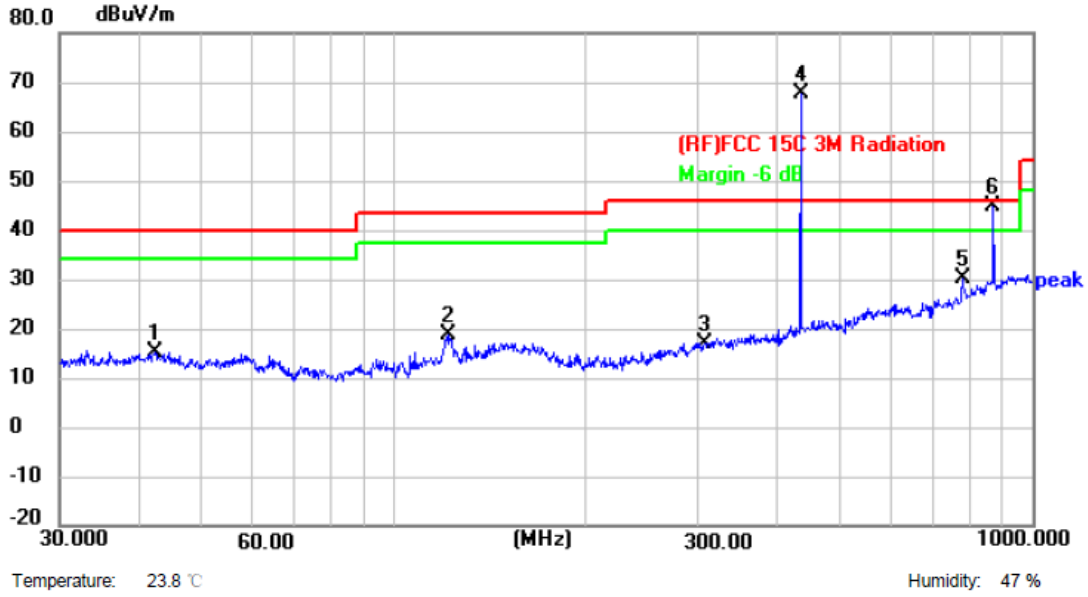
9 KHz~30 MHz

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

Test Voltage:	AC 120V/60Hz
Ant. Pol.	Horizontal
Test Mode:	Mode 1
Remark:	No report for the emission which more than 10 dB below the prescribed limit.



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	42.4508	39.05	-23.89	15.16	40.00	-24.84	peak
2	121.9755	42.01	-23.28	18.73	43.50	-24.77	peak
3	306.7537	37.89	-20.78	17.11	46.00	-28.89	peak
4 *	434.0650	84.96	-17.38	67.58	46.00	21.58	peak
5	776.8778	41.75	-11.53	30.22	46.00	-15.78	peak
6 !	869.1301	54.02	-9.34	44.68	46.00	-1.32	peak

Remark:

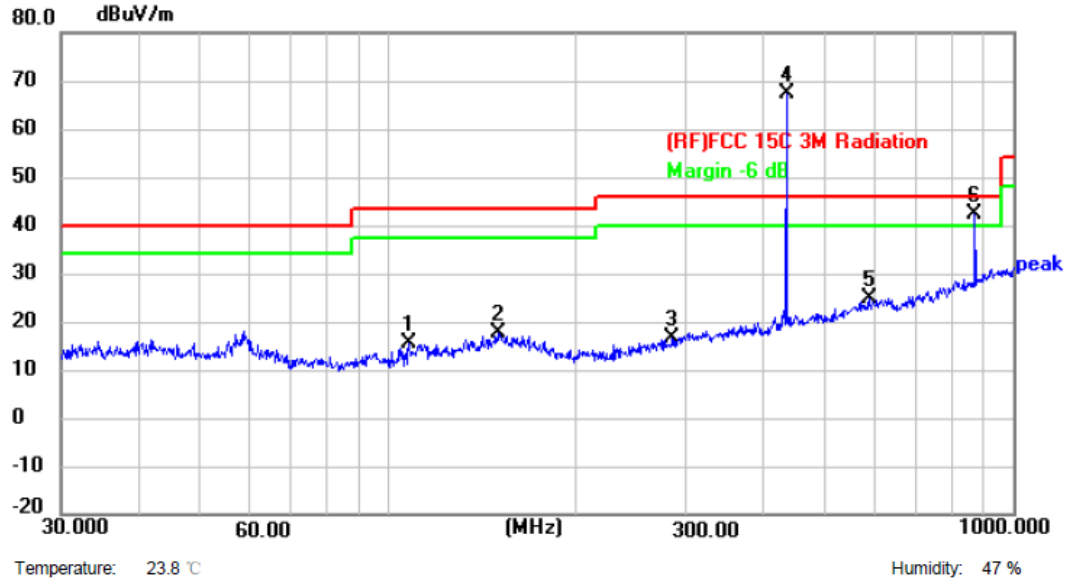
1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)

2. QuasiPeak (dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)

3. Margin (dB) = QuasiPeak (dBμV/m)-Limit QPK(dBμV/m)

Fundamental and Harmonics Result						
Freq(MHz)	Peak Level (dBμV/m)	AV Factor(dBμV/m) (see Attachment D)	Average Level (dBμV/m)	Limit(dBμV/m) (average)	Limit(dBμV/m) (Peak)	Conclusion
434.0650	67.58	0	67.58	72.87	92.87	PASS
869.1301	44.68	0	44.68	52.87	72.87	PASS

Test Voltage:	AC 120V/60Hz
Ant. Pol.	Vertical
Test Mode:	Mode 1
Remark:	No report for the emission which more than 10 dB below the prescribed limit.



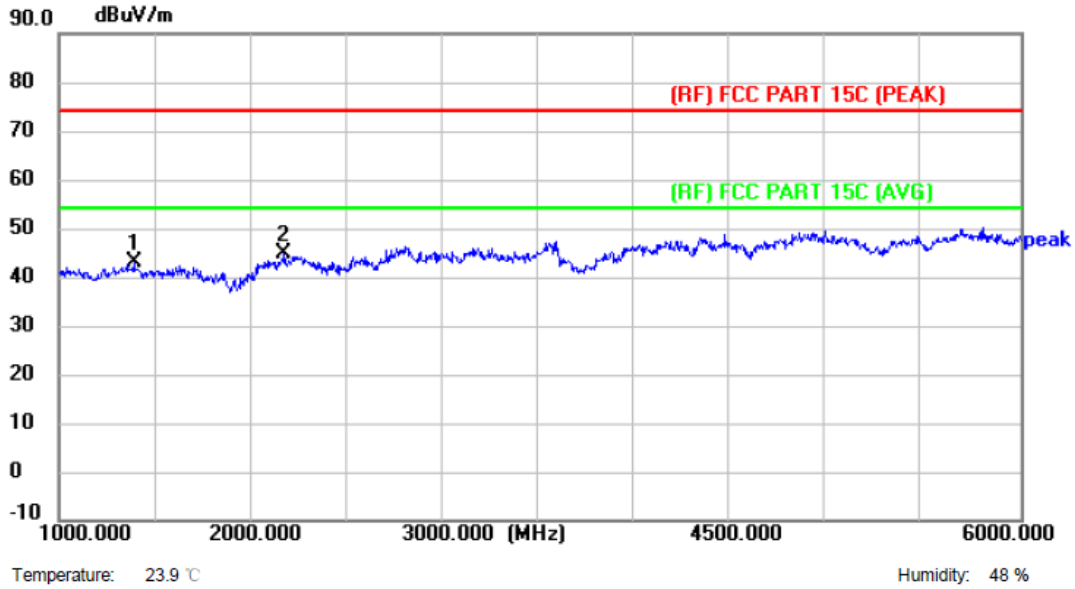
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	107.8877	40.16	-24.55	15.61	43.50	-27.89	peak
2	150.0108	38.72	-21.21	17.51	43.50	-25.99	peak
3	284.9767	38.82	-22.20	16.62	46.00	-29.38	peak
4 *	434.0651	84.66	-17.38	67.28	46.00	21.28	peak
5	588.9051	39.06	-14.14	24.92	46.00	-21.08	peak
6 !	869.1302	51.76	-9.34	42.42	46.00	-3.58	peak

Remark:
1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
2. QuasiPeak (dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)
3. Margin (dB) = QuasiPeak (dBμV/m)-Limit QPK(dBμV/m)

Fundamental and Harmonics Result						
Freq(MHz)	Peak Level (dBμV/m)	AV Factor(dBμV/m) (see Attachment D)	Average Level (dBμV/m)	Limit(dBμV/m) (average)	Limit(dBμV/m) (Peak)	Conclusion
434.0561	67.28	0	67.28	72.87	92.87	PASS
869-1302	42.42	0	42.42	52.87	72.87	PASS

Above 1GHz

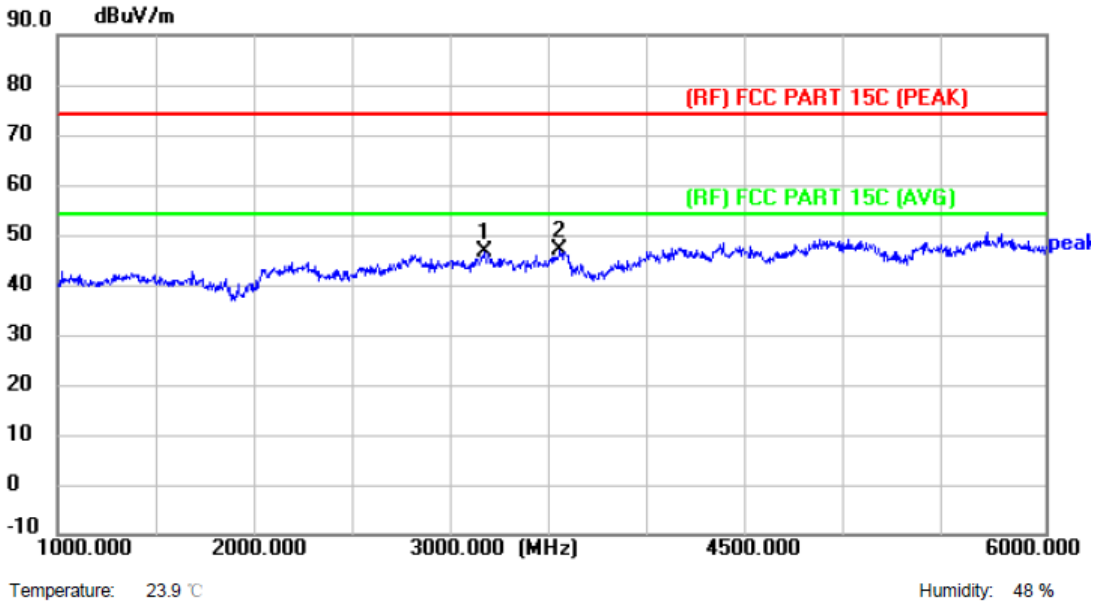
Test Voltage:	DC 4.5V
Ant. Pol.	Horizontal
Test Mode:	TX Mode



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	1390.000	55.88	-12.83	43.05	74.00	-30.95	peak	P
2 *	2170.000	55.24	-10.44	44.80	74.00	-29.20	peak	P

Remark:
1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
2. Peak/AVG (dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)
3. Margin (dB) = Peak/AVG (dBμV/m)-Limit PK/AVG(dBμV/m)
4. The tests evaluated1-26.5GHz,The testing has been conformed to the 10th harmonic of the highest fundamental frequency.
5. No report for the emission which more than 20dB below the prescribed limit.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Test Voltage:	DC 4.5V
Ant. Pol.	Vertical
Test Mode:	TX Mode



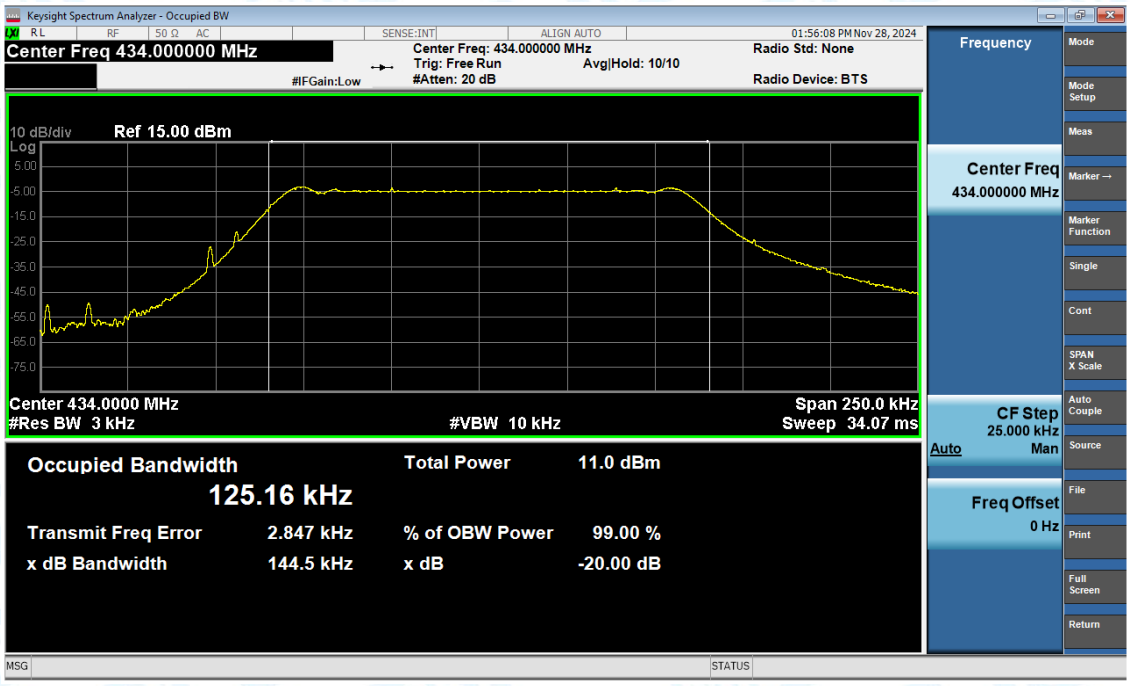
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	3160.000	54.24	-7.62	46.62	74.00	-27.38	peak	P
2 *	3545.000	53.67	-6.75	46.92	74.00	-27.08	peak	P

Remark:
1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
2. Peak/AVG (dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)
3. Margin (dB) = Peak/AVG (dBμV/m)-Limit PK/AVG(dBμV/m)
4. The tests evaluated1-26.5GHz,The testing has been conformed to the 10th harmonic of the highest fundamental frequency.
5. No report for the emission which more than 20dB below the prescribed limit.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Attachment C--Bandwidth Data

Temperature	:	24.3 ℃
Relative Humidity	:	52.4 %
Pressure	:	1010 hPa
Test Power	:	DC 4.5V

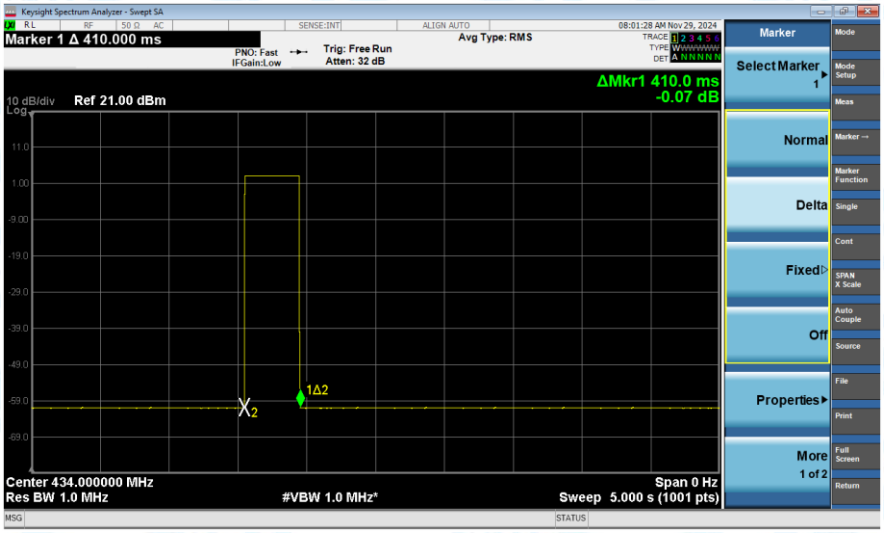
Frequency (MHz)	20 dBc Bandwidth (kHz)	Limit (kHz)	Result
434	144.5	1085	PASS



Attachment D-- Release Time Measurement Data

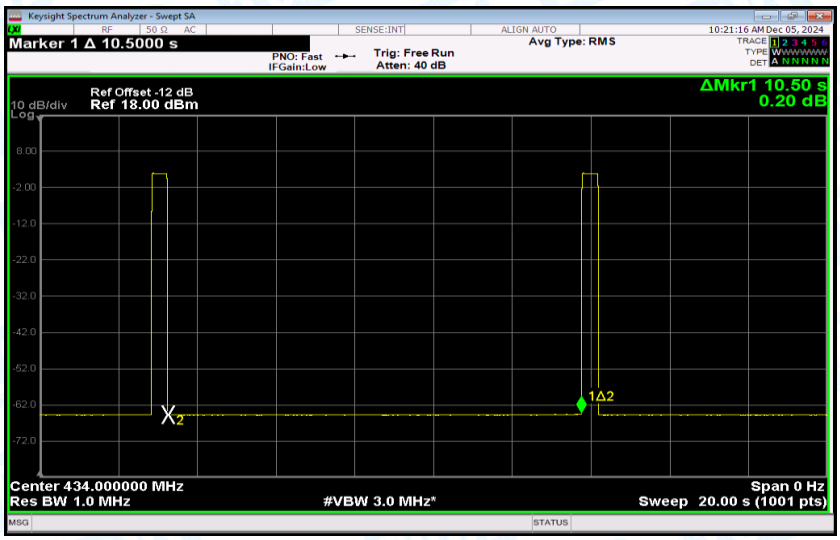
Temperature	:	24.3 ℃
Relative Humidity	:	52.4 %
Pressure	:	1010 hPa
Test Power	:	DC 4.5V

Release Time(s)	Limit (s)	Result
0.410	1	PASS



Silent period (s)	Limit (s)	Result
10.50	>10s >30* Release Time	PASS

Note: 30* Release Time=12.3



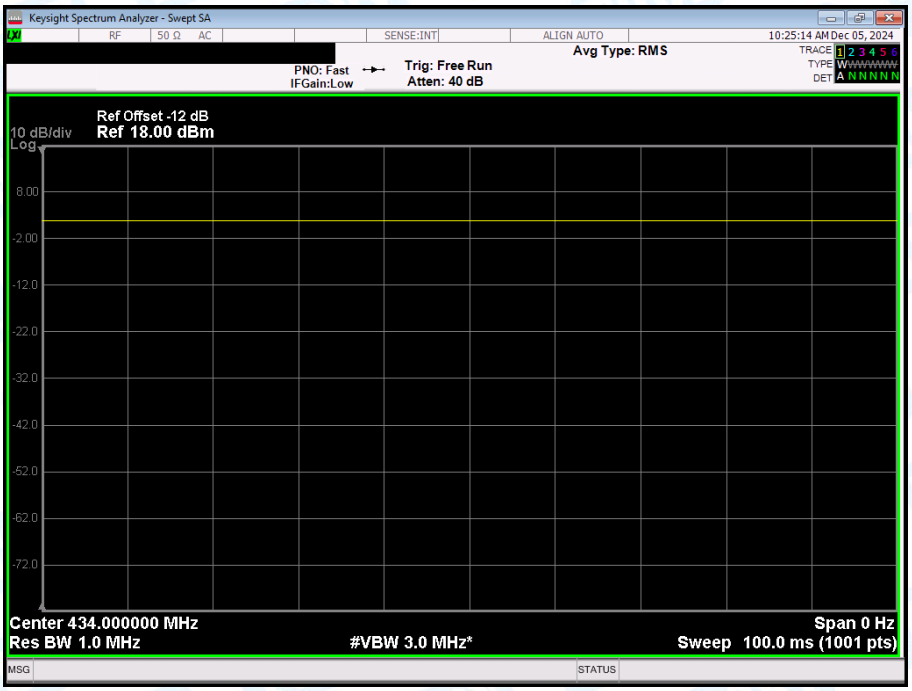
Attachment E--Duty Cycle Data

Plot 1: each cycle is 100ms there are One kinds of pulse in each cycle, Duty Cycle is 100% launch

Average=Peak Value+20log(Duty Cycle), AV=PK-0

Test Plot

Plot 1



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