FCC TEST REPORT

FCC ID: 2A48I-JFH40F3

Product	:	TREADMILL
Model Name	:	JF-H-40F-3; JF-H-40D; JF-H-40E; JF-H-40K: JF-H-40DA;JF-H-40DE; JF-H-40DF;JF-H-40F;JF-H-40DC;JF-H-42H;JF-H-40DS;TP-TM01W; TP-TM02W;TP-TM03W;TP-TM04W;TP-TM05W;TP-TM01F;TP-TM02F; TP-TM03F;TP-TM04F;TP-TM05F;TP-TM01L;TP-TM02L;TM01W-HM; TM02W-HM;TM03W-HM;TM04W-HM;TM05W-HM;TM01F-HM; TM02F-HM;TM03F-HM;TM04F-HM;TM05F-HM;TM01L-HM;TM02L-HM
Brand	:	N/A
Report No.	:	PTC23032204301E-FC01
Sample ID	:	PTC23032204301E-01#

Prepared for

Ningbo Jiufeng Electrical Appliance Co. Ltd.

Huangbo Industrial Disrict, Chunhu Town, Fenghua,Ningbo,China

Prepared by

Precise Testing & Certification Co., Ltd
Building 1, No. 6, Tongxin Road, Dongcheng Street, Dongguan, Guangdong, China

1 TEST RESULT CERTIFICATION

Applicant's name	:	Ningbo Jiufeng Electrical Appliance Co. Ltd.
Address	:	Huangbo Industrial Disrict, Chunhu Town, Fenghua,Ningbo,China
Manufacture's name	:	Ningbo Jiufeng Electrical Appliance Co. Ltd.
Address	:	Huangbo Industrial Disrict, Chunhu Town, Fenghua,Ningbo,China
Product	:	TREADMILL
Model	:	JF-H-40F-3; JF-H-40D; JF-H-40E; JF-H-40K: JF-H-40DA;JF-H-40DE; JF-H-40DF;JF-H-40F;JF-H-40DC;JF-H-42H;JF-H-40DS;TP-TM01W; TP-TM02W;TP-TM03W;TP-TM04W;TP-TM05W;TP-TM01F;TP-TM02F; TP-TM03F;TP-TM04F;TP-TM05F;TP-TM01L;TP-TM02L;TM01W-HM; TM02W-HM;TM03W-HM;TM04W-HM;TM05W-HM;TM01F-HM; TM02F-HM;TM03F-HM;TM04F-HM;TM05F-HM;TM01L-HM;TM02L-HM
Standards	:	FCC CFR47 Part 15 Section 15.231
Test procedure	:	ANSI C63.10:2013
Test Date	:	March 22, 2023 to Apr. 06, 2023
Date of Issue	:	Apr. 07, 2023
Test Result	:	Pass

This device described above has been tested by PTS, and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.

This report shall not be reproduced except in full, without the written approval of PTS, this document may be altered or revised by PTS, personal only, and shall be noted in the revision of the document.

Test Engineer:

Simon Pu / Engineer

Technical Manager:

Ronnie Liu / Manager

Contents

2 Test Summary

Test Items	Test Requirement	Result
Conducted Emissions	15.207	N/A
Radiated Emission	15.231(a) 15.209 15.205(a)	PASS
Periodic Operation	15.35(c)	PASS
Outside of Band Emission	15.231(a) 15.205 15.209	PASS
20dB Bandwidth	15:215(c)	PASS
Antenna Requirement	15.203	PASS
Remark: N/A: Not Applicable		

3 General Information

3.1 General Description of E.U.T.

Product Name	:	TREADMILL
Model Name	:	JF-H-40F-3; JF-H-40D; JF-H-40E; JF-H-40K: JF-H-40DA;JF-H-40DE; JF-H-40DF;JF-H-40F;JF-H-40DC;JF-H-42H;JF-H-40DS;TP-TM01W; TP-TM02W;TP-TM03W;TP-TM04W;TP-TM05W;TP-TM01F;TP-TM02F; TP-TM03F;TP-TM04F;TP-TM05F;TP-TM01L;TP-TM02L;TM01W-HM; TM02W-HM;TM03W-HM;TM04W-HM;TM05W-HM;TM01F-HM; TM02F-HM;TM03F-HM;TM04F-HM;TM05F-HM;TM01L-HM;TM02L-HM
Operation Frequency:	:	433.92MHz
Antenna installation:	:	PCB Printed Antenna
Antenna Gain:	:	1.24dBi
Type of Modulation	:	ASK
The lowest oscillator	:	433.92MHz
Power supply	:	DC 3V (CR2025*1)

3.2 Test Mode

All test mode(s) and condition(s) mentioned were considered and evaluated respectively by performing full tests, the worst data were recorded and reported.

Modulation	Test mode	Low channel	Middle channel	High channel
ASK	continuously Transmitting	433.92MHz	\	\

3.3 Test Site

Precise Testing & Certification Co., Ltd.

Address: Building 1, No.6 Tongxin Road, Dongcheng Street, Dongguan,China

FCC Registration Number: 790290

Designation Number：CN1219

A2LA Certificate No.: 4408.01

IC Registration Number: 12191A

CAB identifier: CN0080

4 Equipment During Test

4.1 Equipments List

RF Conducted Test

Name of Equipment	Manufacturer	Model	Serial No.	Characteristics	Calibration Due
MXG Signal Analyzer	Agilent	N9020A	MY56070279	10Hz-30GHz	Aug21,2023
Coaxial Cable	CDS	79254	46107086	10Hz-30GHz	Aug21,2023
Antenna Connector	Florida RF Labs	N/A	RF01#	N/A	Aug21,2023
Scope	Tektronix	TDS3032B	B014131	300MHz BW; 2 way scope	Aug21,2023
DC power	eTOMENS	eTM-1560	--	15V 60A	Aug21,2023
Power Meter	Anritsu	ML2495A	0949003	300MHz-40GHz	Aug21,2023
Power Sensor	Anritsu	MA2411B	0917017	300MHz-40GHz	Aug21,2023

Remark: The temporary antenna connector is soldered on the PCB board in order to perform conducted tests and this temporary antenna connector is listed in the equipment list.

Radiated Emissions

Name of Equipment	**Manufacturer**	**Model**	**Serial No.**	**Characteristics**	**Calibration Due**
EMI Test Receiver	Rohde&Schwarz	ESCI	101417	9KHz-3GHz	Aug21,2023
Loop Antenna	Schwarzbeck	FMZB 1519	012	9 KHz -30MHz	Aug21,2023
Bilog Antenna	SCHWARZBECK	VULB9160	9160-3355	25MHz-2GHz	Aug21,2023
Preamplifier (low frequency)	SCHWARZBECK	BBV 9475	9745-0013	1MHz-1GHz	Aug21,2023
Cable	Schwarzbeck	PLF-100	549489	9KHz-3GHz	Aug21,2023
Spectrum Analyzer	Agilent	E4407B	MY45109572	9KHz-40GHz	Aug21,2023
Horn Antenna	SCHWARZBECK	9120D	9120D-1246	1GHz-18GHz	Aug21,2023
High NOISE AMPLIFIER	ZHINAN	ZN3380C	15002	10KHz-18GHz	Aug21,2023
Cable	H+S	CBL-26	N/A	1GHz-26.5GHz	Aug21,2023
Spectrum Analyzer	Rohde&Schwarz	FSVR40	101003	10Hz-40GHz	Aug21,2023
Horn Antenna	SCHWARZBECK	BBHA9170	01066	15GHZ-40GHZ	Aug21,2023
Preamplifier	SCHWARZBECK	BBV-9721	81	18GHZ-40GHZ	Aug21,2023
Test S/W	Tonscend	JS32-RE/4.0.0.0			

Conducted Emissions

Name of Equipment	Manufacturer	Model	Serial No.	Characteristics	Calibration Due
EMI Test Receiver	Rohde&Schwarz	ESCI	101417	9KHz-3GHz	Aug21,2023
Artificial Mains Network	Rohde&Schwarz	L2-16B	000WX31025	9KHz-300MHz	Aug21,2023
Artificial Mains Network	Rohde&Schwarz	ENV216	102453	9KHz-300MHz	Aug21,2023
Test S/W	Tonscend	JS32-CE/4.0.0.3			

4.2 Measurement Uncertainty

Parameter	Uncertainty
RF output power, conducted	±1.0dB
Power Spectral Density, conducted	±2.2dB
Radio Frequency	± 1 x 10^{-6}
Bandwidth	± 1.5 x 10^{-6}
Time	±2%
Duty Cycle	±2%
Temperature	±1°C
Humidity	±5%
DC and low frequency voltages	±3%
Conducted Emissions (150kHz~30MHz)	±3.64dB
Radiated Emission(30MHz~1GHz)	±5.03dB
Radiated Emission(1GHz~25GHz)	±4.74dB
Remark: The coverage Factor (k=2), and measurement Uncertainty for a level of Confidence of 95%	

5 Conducted Emission

Test Requirement:	:	FCC CFR 47 Part 15 Section 15.207
Test Method:	:	ANSI C63.10:2013
Frequency Range:	:	150kHz to 30MHz
Class/Severity:	:	Class B
Limit:	:	66-56 dBμV between 0.15MHz & 0.5MHz
	:	56 dBμV between 0.5MHz & 5MHz
	:	60 dBμV between 5MHz & 30MHz
Detector:	:	Peak for pre-scan (9kHz Resolution Bandwidth)
Test Result:	:	The device is powered by battery, this test is not applicable

6 Periodic Operation

The duty cycle was determined by the following equation:

To calculate the actual field intensity, the duty cycle correction factor in decibel is needed for later use and can be obtained from following conversion

Duty Cycle(%)=Total On interval in a complete pulse train/ Length of a complete pulse train * %

Duty Cycle Correction Factor (dB)=20 * Log_{10}(Duty Cycle(%))

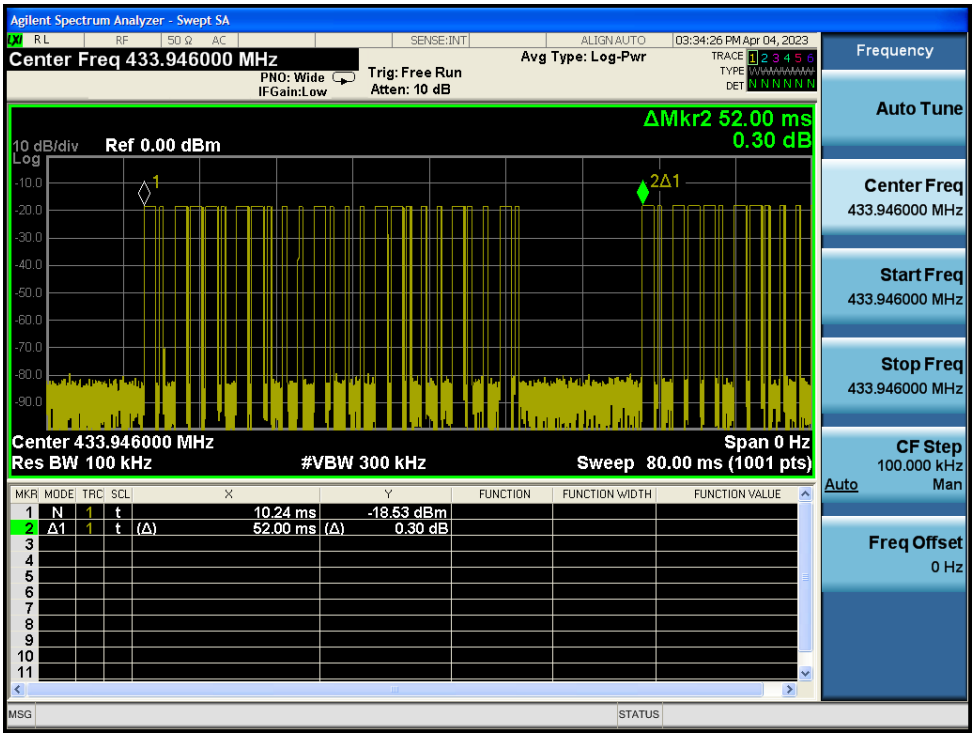
Total transmission time(ms)	0.42*14+1.24*11=19.52
Length of a complete transmission period(ms)	52
Duty Cycle(%)	37.538
Duty Cycle Correction Factor(dB)	-8.51

Refer to the duty cycle plot (as below), This device meets the FCC requirement.

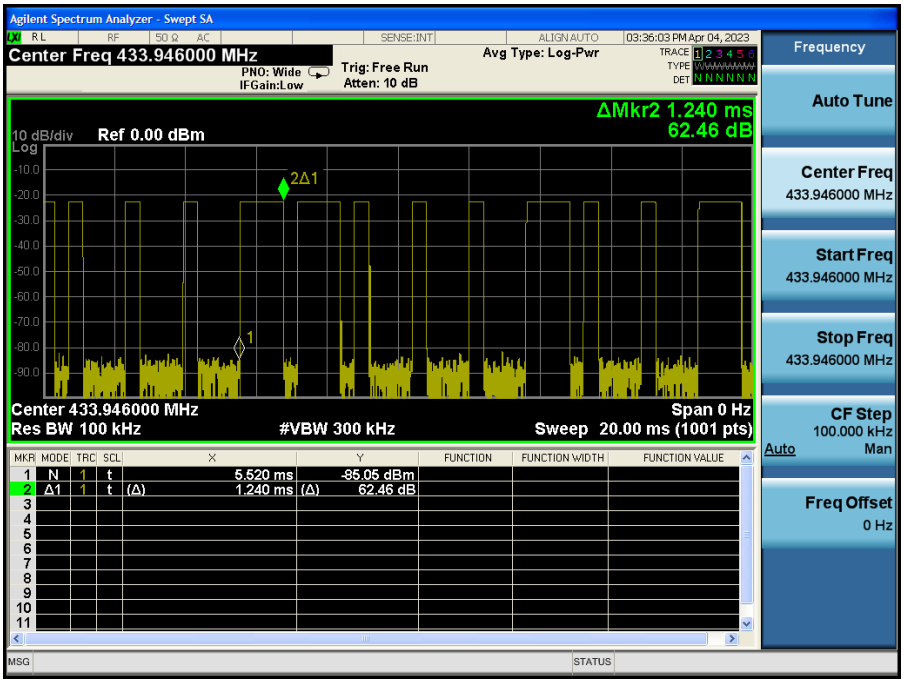
Length of a complete pulse train:

Remark: FCC part15.35(c) required that a complete pulse train is more than 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum value.

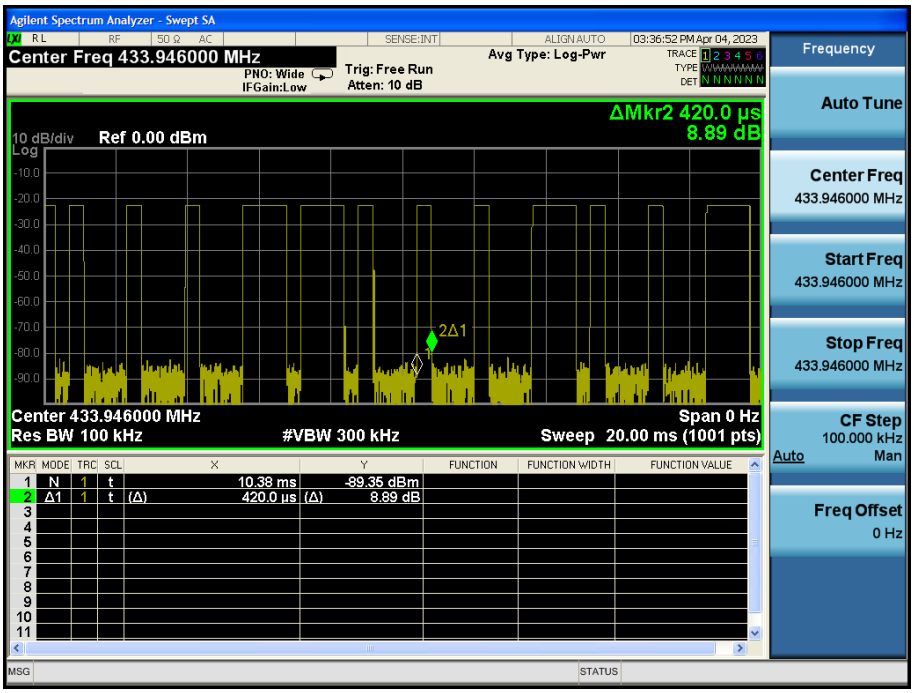
Tp



Pulse 1

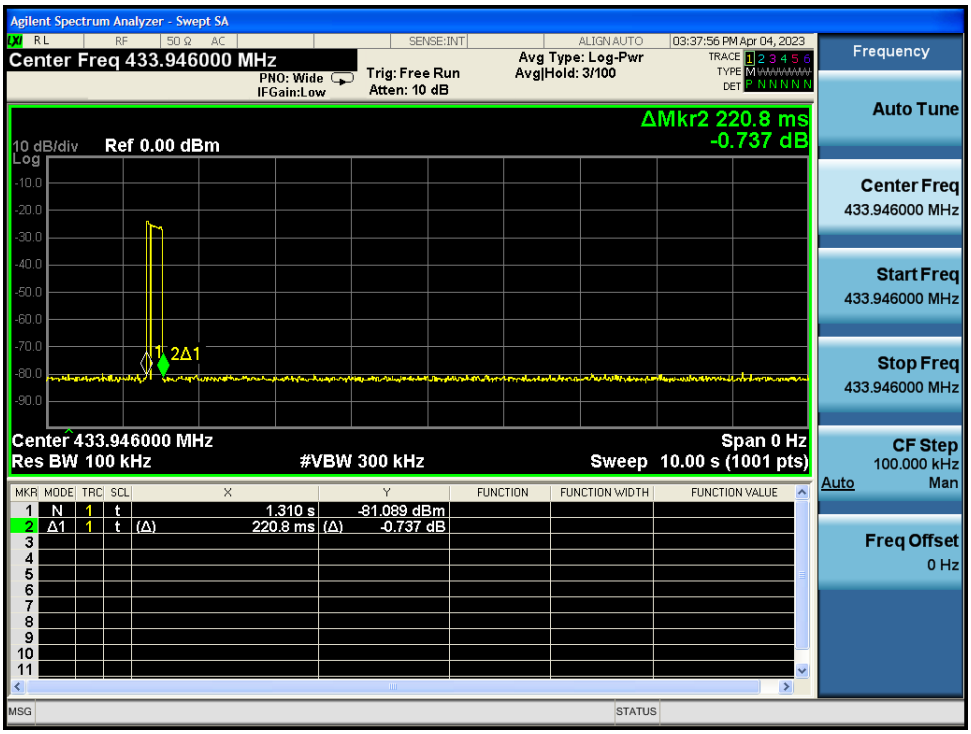


Pulse 2



FCC Part15.231 (a) (1) A manually operated transmitter shall employ a switch that will automatically deactivate the transmitter within not more than 5 seconds of being released.

(2)A transmitter activated automatically shall cease transmission within 5 seconds after activation.



Frequency(MHz)	Silent period between transmissions	Limit	Verdict
433.92	0.2208s	5 seconds	PASS

7 Radiated Spurious Emissions

Test Requirement: : FCC CFR47 Part 15 Section 15.231 & 15.207 &15.205

Test Method: : ANSI C63.10:2013

Test Result: : PASS

Measurement Distance: : 3m

Limit: : See the follow table

Frequency (MHz)	Field Strength		Field Strength Limit at 3m Measurement Dist	
	uV/m	Distance (m)	uV/m	dBuV/m
0.009 ~ 0.490	2400/F(kHz)	300	10000 * 2400/F(kHz)	$20\log^{(2400/F(kHz))} + 80$
0.490 ~ 1.705	24000/F(kHz)	30	100 * 24000/F(kHz)	$20\log^{(24000/F(kHz))} + 40$
1.705 ~ 30	30	30	100 * 30	$20\log^{(30)} + 40$
30 ~ 88	100	3	100	$20\log^{(100)}$
88 ~ 216	150	3	150	$20\log^{(150)}$
216 ~ 960	200	3	200	$20\log^{(200)}$
Above 960	500	3	500	$20\log^{(500)}$

7.1 EUT Operation

Operating Environment :

Temperature: : 23.5 °C

Humidity: : 51.1 % RH

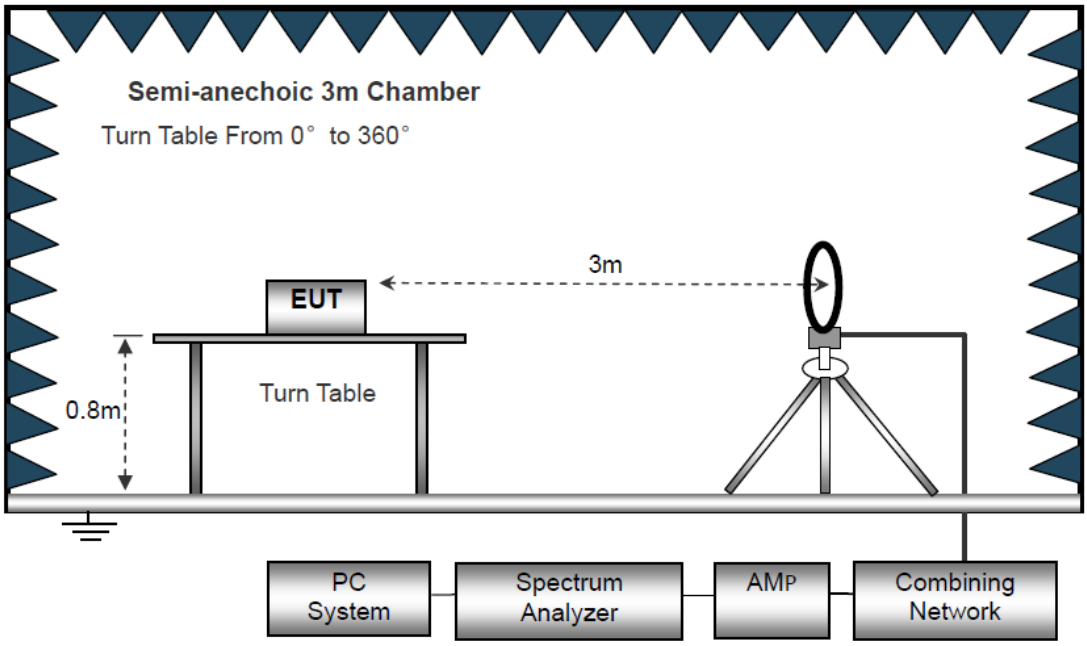
Atmospheric Pressure: : 101.2kPa

EUT Operation : : Refer to section 3.3

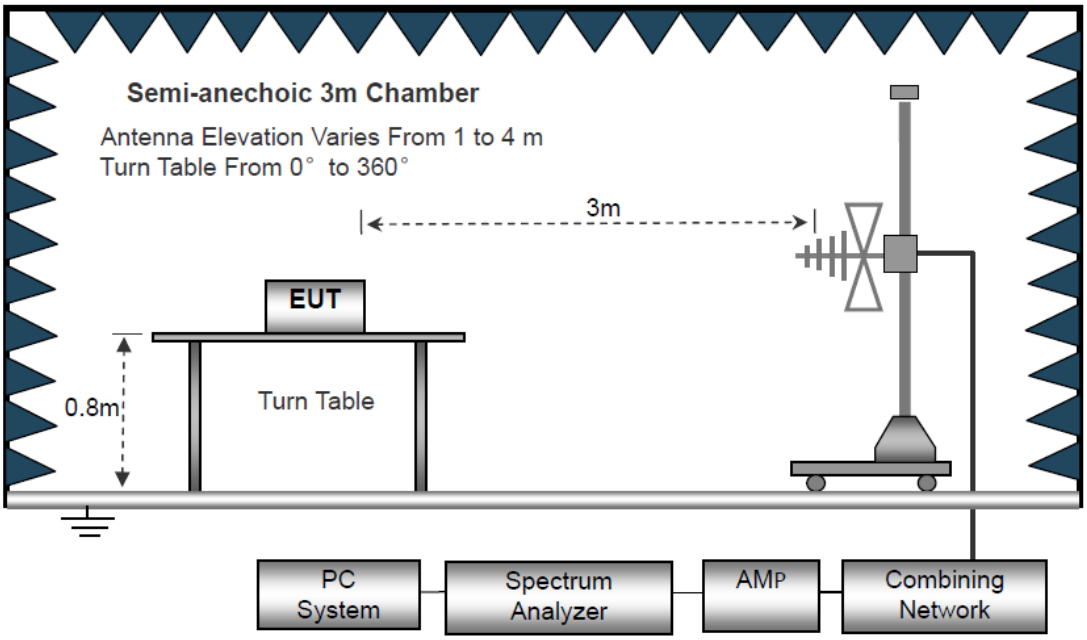
7.2 Test Setup

The radiated emission tests were performed in the 3m Semi- Anechoic Chamber test site

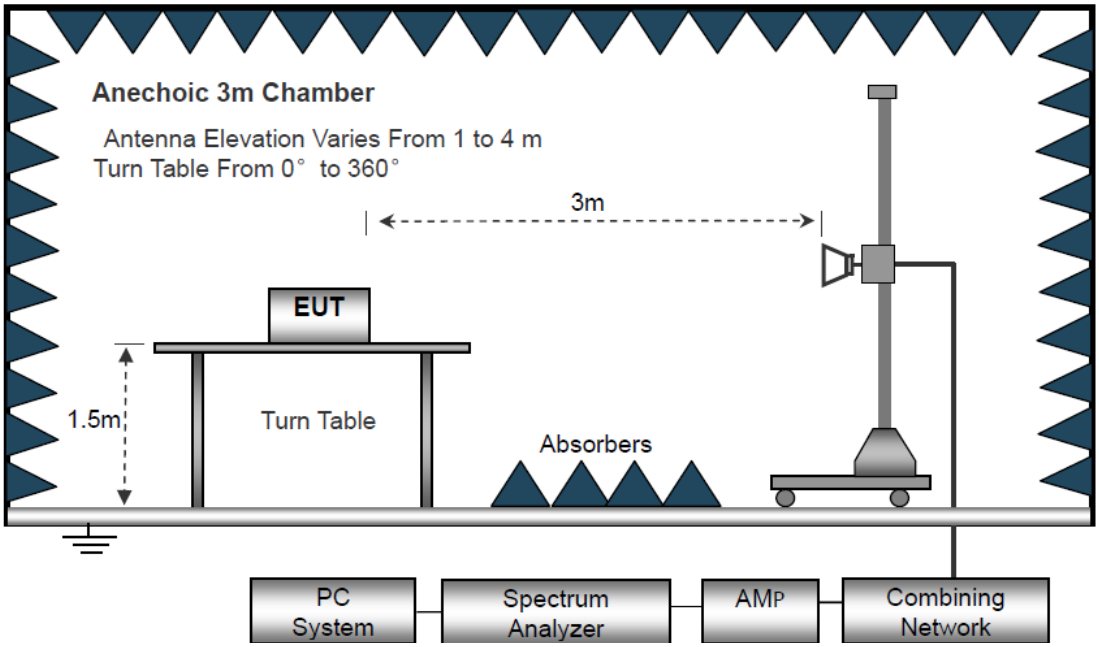
The test setup for emission measurement below 30MHz



The test setup for emission measurement from 30 MHz to 1 GHz.



The test setup for emission measurement above 1 GHz



7.3 Spectrum Analyzer Setup

Below 30MHz

IF Bandwidth		10kHz
Resolution Bandwidth		10kHz
Video Bandwidth		10kHz

30MHz ~ 1GHz

Detector	:	PK
Resolution Bandwidth	:	100kHz
Video Bandwidth	:	300kHz
Detector	:	QP
Resolution Bandwidth	:	120kHz
Video Bandwidth	:	300kHz

Above 1GHz

Detector	:	PK
Resolution Bandwidth	:	1MHz
Video Bandwidth	:	3MHz
Detector	:	AV
Resolution Bandwidth	:	1MHz
Video Bandwidth	:	10Hz

7.4 Test Procedure

1. The EUT is placed on a turntable, which is 0.8m or 1.5m above ground plane.

2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.

3. EUT is set 3m away from the receiving antenna, which is moved from 1m to 4m to find out the maximum emissions. The spectrum was investigated from the lowest radio frequency signal generated in the device, without going below 9 kHz, up to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.

4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.

5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.

6. Repeat above procedures until the measurements for all frequencies are complete.

7. The radiation measurements are tested under 3-axes(X,Y,Z) position(X denotes lying on the table, Y denotes side stand and Z denotes vertical stand), After pre-test, It was found that the worse radiation emission was get at the X position. So the data shown was the X position only.

8. The test above 1GHz must be use the fully anechoic room, and the test below 1GHz use the half anechoic room

7.5 Summary of Test Results

Test Frequency: 9KHz ~ 30MHz

Frequency (MHz)	Level@3m (dBμV/m		Limit@3m (dBμV/m)	
--	--	--	--	--
--	--	--	--	--
--	--	--	--	--

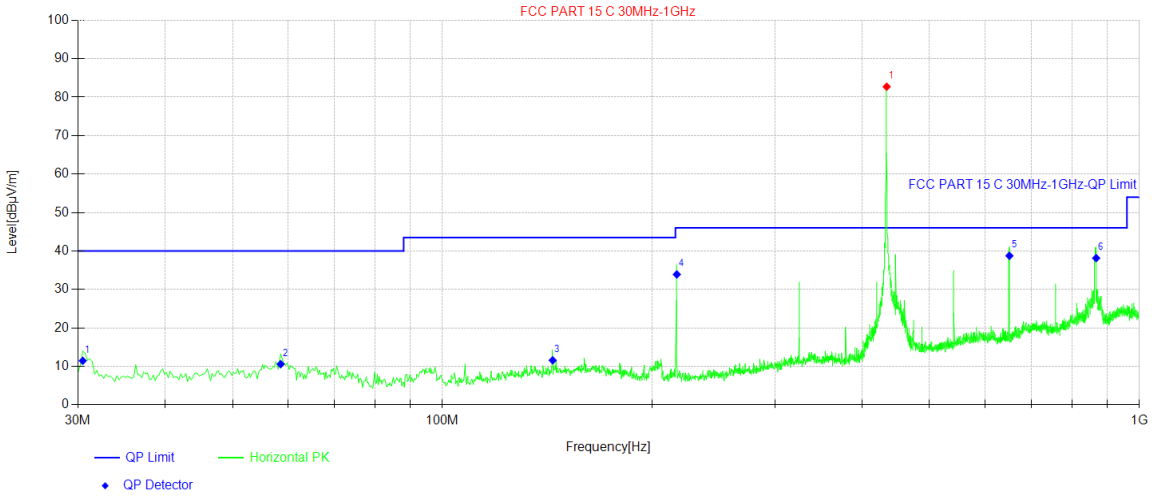
Note: 1. Emission Level=Reading+ Cable loss-Antenna factor-Amp factor

2. The emission levels are 20 dB below the limit value, which are not reported. It is deemed to comply with the requirement.

Test Frequency: 30MHz ~ 1GHz

All applicable test modes have been tested with TX mode(433.92MHz)

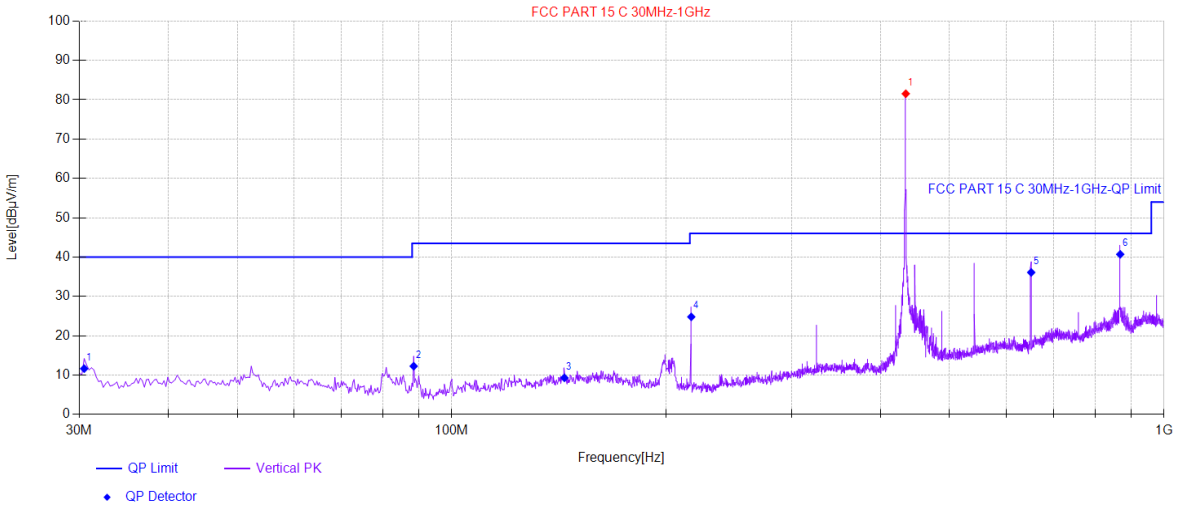
Horizontal



Final Data List[QP]								
NO.	Freq. [MHz]	QP Reading [dBµV/m]	Factor [dB]	QP Value [dBµV/m]	QP Limit [dBµV/m]	QP Margin [dB]	Polarity	Verdict
1	30.49	29.78	-18.32	11.46	40.00	28.54	Horizontal	PASS
2	58.62	28.46	-17.88	10.58	40.00	29.42	Horizontal	PASS
3	143.98	28.04	-16.46	11.58	43.50	31.92	Horizontal	PASS
4	216.97	52.25	-18.35	33.90	46.00	12.10	Horizontal	PASS
5	651.04	46.12	-7.37	38.75	46.00	7.25	Horizontal	PASS
6	867.11	41.56	-3.41	38.15	46.00	7.85	Horizontal	PASS

Remark:Emission Level=Reading+Cable Loss+ANT Factor-AMP Factor

Vertical



Final Data List[QP]								
NO.	Freq. [MHz]	QP Reading [dBµV/m]	Factor [dB]	QP Value [dBµV/m]	QP Limit [dBµV/m]	QP Margin [dB]	Polarity	Verdict
1	30.49	29.98	-18.32	11.66	40.00	28.34	Vertical	PASS
2	88.44	33.03	-20.76	12.27	43.50	31.23	Vertical	PASS
3	143.98	25.77	-16.46	9.31	43.50	34.19	Vertical	PASS
4	216.97	43.16	-18.35	24.81	46.00	21.19	Vertical	PASS
5	651.04	43.48	-7.37	36.11	46.00	9.89	Vertical	PASS
6	868.08	44.11	-3.40	40.71	46.00	5.29	Vertical	PASS

Remark:Emission Level=Reading+Cable Loss+ANT Factor-AMP Factor

Fundamental

Emission Styles	Frequency (MHz)	PK Level (dBuV/m)	AV Factor (dB/m)	AV Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Direction (H/V)
Fundamental	434.01	82.71	-8.51	74.2	80.83	6.63	H
Fundamental	434.01	81.53	-8.51	73.02	80.83	7.81	V

Above 1GHz

Horizontal

No.	Frequency	Reading	Corr.	Duty cycle	Result	Limit	Margin	Remark
	MHz	dBuV/m	Factor (dB)	Factor (dB)	dBuV/m	dBuV/m	dB	
1	1302.3	24.19	25.83	N/A	50.02	74	-23.98	Peak
	1302.3	/	/	-8.51	39.33	54	-6.16	Ave
2	1736.4	20.54	27.25	N/A	47.79	74	-26.21	Peak
	1736.4	/	/	-8.51	35.10	54	-10.39	Ave

Vertical

No.	Frequency	Reading	Corr.	Duty cycle	Result	Limit	Margin	Remark
	MHz	dBuV/m	Factor (dB)	Factor (dB)	dBuV/m	dBuV/m	dB	
1	1302.3	21.46	25.83	N/A	47.29	74	-26.71	Peak
	1302.3	/	/	-8.51	36.60	54	-8.89	Ave
2	1736.4	19.37	27.25	N/A	46.62	74	-27.38	Peak
	1736.4	/	/	-8.51	35.93	54	-9.56	Ave

Note: Testing is carried out with frequency rang 30MHz to the tenth harmonics, which above 5th Harmonics are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

The fundamental frequency is 433MHz, so the fundamental and spurious emissions radiated limit base on the the operating frequency 433MHz.

8 20dB Bandwidth Measurement

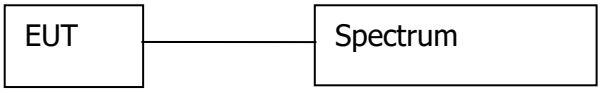
Test Requirement	:	FCC Part15.231(c)
Test Method	:	FCC Part15.231(c)
Test Mode	:	Refer to section 3.3
Limit	:	The bandwidth of the emission shall be no wider than 0.25% of the center frequency for devices operating above 70 MHz and below 900 MHz. For devices operating above 900 MHz, the emission shall be no wider than 0.5% of the center frequency.

8.1 Test Procedure

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum;

2. Set the spectrum analyzer: RBW = 270Hz, VBW = 2.7kHz,

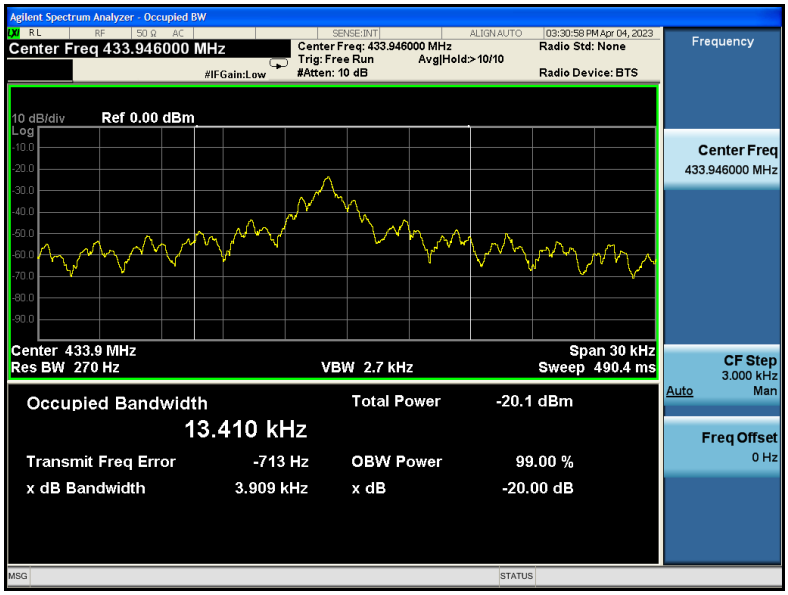
3. Test set



8.2 Test Result

Test Frequency (MHz)	Bandwidth (kHz)	Limit (kHz)	Result
433.92	3.909	1084.80	pass

Test plots

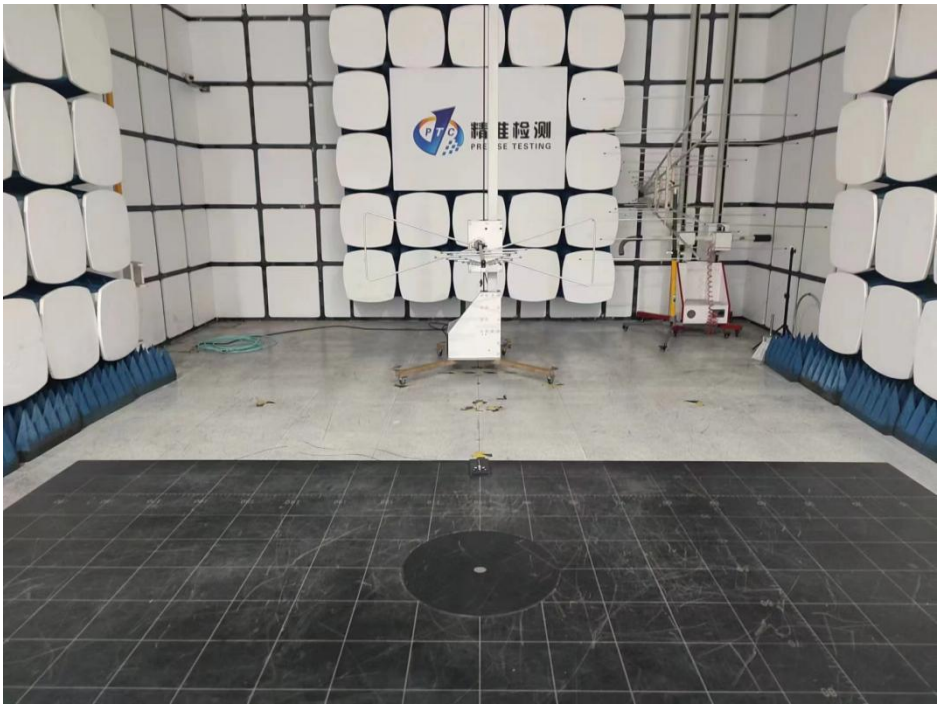


9 Antenna Requirement

According to the FCC part15.203, a transmitter can only be sold or operated with antennas with which it was approved. This product has an PCB Printed Antenna, the gain is 1.24dbi, which meet the requirement of this section.

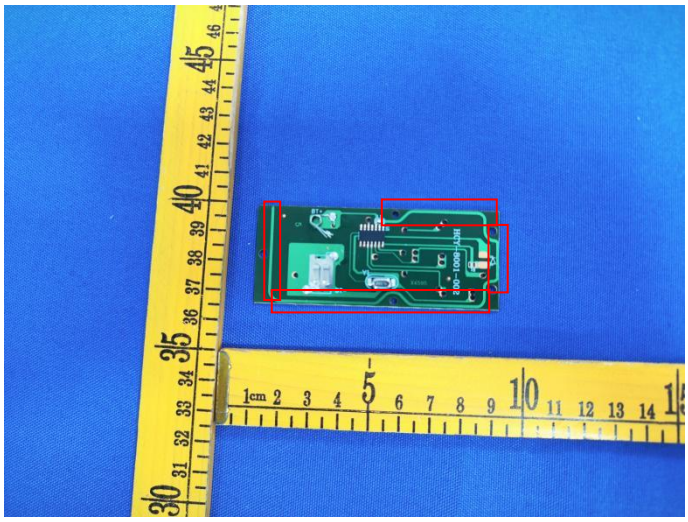
10 Test Setup

Radiated Spurious Emissions
From 30MHz-1000MHz

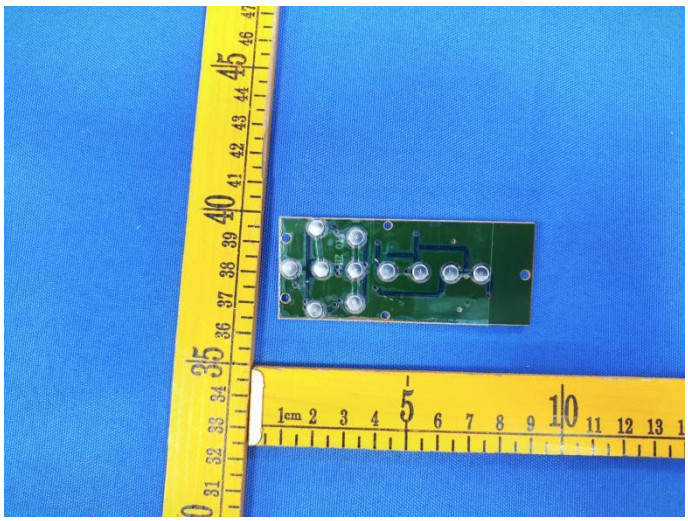


Above 1GHz

11 EUT Photos



Antenna



******THE END REPORT******