FCC RADIO TEST REPORT
FCC 47 CFR PART 15 SUBPART C

Test Standard	**FCC Part 15.231**
Trade name	**Continental**
Product name	**Radio Frequency Transmitter (Keyfob)**
Model No.	**TXPZ1**
Operation Freq.	**TX: 433.92MHz, RX: 125kHz**
Test Result	**Pass**
Statements of Conformity	**Determination of compliance is based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.**

The test Result was tested by Compliance Certification Services Inc. The test data, data evaluation, test procedures, and equipment configurations shown in this report were given in ANSI C63.10: 2013 and compliance standards.

The test results of this report relate only to the tested sample (EUT) identified in this report.
The test Report of full or partial shall not copy. Without written approval of SGS Compliance Certification Services Inc. (Wugu Laboratory)

Approved by:

Kevin Tsai
Deputy Manager

Revision History

Rev.	Issue Date	Revisions	Effect page	Revised By
00	January 27, 2021	Initial Issue	ALL	Mita Wu
01	April 12, 2021	See the following note Rev.(01)	P.10, 14, 16, 20-22, 33	Allison Chen

Note:
Rev.(01)
1. Added antenna requirement in section 4.6.
2. Revised test data in section 3.4 and 4.3.
3. Revised test procedure description in section 4.2.2.

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1. GENERAL INFORMATION

1.1 EUT INFORMATION

Applicant	Continental Automotive GmbH Siemensstrasse 12 SV C TS RBG EMC-Laboratory Regensburg, 93055, Germany
Manufacturer	Continental Automotive GmbH Siemensstrasse 12 SV C TS RBG EMC-Laboratory Regensburg, 93055, Germany
Factory	1. Continental Automotive Corporation Changchun Co., Ltd.Jingyue Branch 5800, Shengtai Street Changchun, Jillin Province, P.R. China 130000 2. Continental Automotive Guadalajara México, S.A.de C.V. Camino a la Tijera No.3 45640, Tlajomulco de Zúñiga, Jalisco, México
Equipment	Radio Frequency Transmitter (Keyfob)
Model Name	TXPZ1
Model Discrepancy	N/A
Received Date	December 08, 2020
Date of Test	December 09, 2020 ~ April 9, 2021

Periodic operation	☒ (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 ☐ (3) Periodic transmissions at regular predetermined intervals are not permitted. ☐ (4) Periodic transmissions (lower field strength): each transmission is not greater than 1 sec and the silent period between transmissions is at least 30 times the duration of the transmission but in no case less than 10 sec.
Power Operation	Power from Battery: CR2032 x1 (Lithium: 3V)
Operation Frequency	TX: 433.92MHz, RX: 125kHz
S/W Version	01.02
H/W Version	02

Model TXPZ1:

Product reference	Product variant	Drawing
S180146100	Lock/Unlock 433.92 MHz	
S180146102	Lock/Unlock/Panic 433.92 MHz	
S180146103	Lock/Unlock/PBD 433.92 MHz	
S180146105	Lock/Unlock/PBD/Panic 433.92 MHz	

Note:
1. All variants of the EUT were pre-scanned for the radiated measurement. The worst case is S180146102.

1.2 EUT CHANNEL INFORMATION

Frequency Range	TX: 433.92MHz, RX: 125kHz
Modulation Type	FSK

Remark:
Refer as ANSI 63.10:2013 clause 5.6.1 Table 4 for test channels

Number of frequencies to be tested		
Frequency range in which device operates	**Number of frequencies**	**Location in frequency range of operation**
☒ 1 MHz or less	1	Middle
☐ 1 MHz to 10 MHz	2	1 near top and 1 near bottom
☐ More than 10 MHz	3	1 near top, 1 near middle, and 1 near bottom

1.3 ANTENNA INFORMATION

Antenna Type	internal, 3D loop antenna
Antenna Gain	-17.5 dBi
Antenna Connector	N/A

Remark:
1. Disclaimer: Antenna information is provided by the applicant, test results of this report are applicable to the sample EUT received.

1.4 MEASUREMENT UNCERTAINTY

PARAMETER	UNCERTAINTY
AC Powerline Conducted Emission	+/- 1.2575
Emission bandwidth, 20dB bandwidth	+/- 0.0014
RF output power, conducted	+/- 1.14
Power density, conducted	+/- 1.40
3M Semi Anechoic Chamber / 30M~200M	+/- 4.12
3M Semi Anechoic Chamber / 200M~1000M	+/- 4.68
3M Semi Anechoic Chamber / 1G~8G	+/- 5.18
3M Semi Anechoic Chamber / 8G~18G	+/- 5.47
3M Semi Anechoic Chamber / 18G~26G	+/- 3.81
3M Semi Anechoic Chamber / 26G~40G	+/- 3.87

Remark:
1.This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2
2. ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report.

1.5 FACILITIES AND TEST LOCATION

All measurement facilities used to collect the measurement data are located at

No.11, Wugong 6th Rd., Wugu Dist., New Taipei City, Taiwan. (R.O.C.)

Test site	Test Engineer	Remark
AC Conduction Room	-	Not applicable, because EUT doesn't connect to AC Main Source direct.
Radiation	Ray Li, Jerry Chang	-
RF Conducted	Ryan Du	-

Remark: The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 and CISPR Publication 22.

1.6 INSTRUMENT CALIBRATION

RF Conducted Test Site					
Equipment	**Manufacturer**	**Model**	**S/N**	**Cal Date**	**Cal Due**
Signal Analyzer	R&S	FSV 40	101073	09/17/2020	09/16/2021
Software	N/A				

Fully Chamber Test Site					
Equipment	**Manufacturer**	**Model**	**S/N**	**Cal Date**	**Cal Due**
Bilog Antenna	Sunol Sciences	JB3	A030105	07/24/2020	07/23/2021
Coaxial Cable	HUBER SUHNER	SUCOFLEX 104PEA	20995	02/25/2020	02/24/2021
Coaxial Cable	EMCI	EMC105	190914+327109 /4	09/19/2020	09/18/2021
Digital Thermo-Hygro Meter	WISEWIND	1206	D07	01/15/2020	01/14/2021
double Ridged Guide Horn Antenna	ETC	MCTD 1209	DRH13M02003	09/30/2020	09/29/2021
High Pass Filter	SOLVANG TECHNOLOGY INC.	STI15	9923	02/25/2020	02/24/2021
Loop Ant	COM-POWER	AL-130	121051	03/27/2020	03/26/2021
Pre-Amplifier	EMEC	EM330	060609	02/25/2020	02/24/2021
Pre-Amplifier	HP	8449B	3008A00965	02/25/2020	02/24/2021
PSA Series Spectrum Analyzer	Agilent	E4446A	MY46180323	07/24/2020	07/23/2021
Antenna Tower	CCS	CC-A-1F	N/A	N.C.R	N.C.R
Controller	CCS	CC-C-1F	N/A	N.C.R	N.C.R
Software	e3 6.11-20180413				

Remark:
1. Each piece of equipment is scheduled for calibration once a year.
2. N.C.R. = No Calibration Required.

1.7 SUPPORT AND EUT ACCESSORIES EQUIPMENT

There are no accessories and support equipment be used during the test.

EUT Accessories Equipment					
No.	**Equipment**	**Brand**	**Model**	**Series No.**	**FCC ID**
	N/A				

Support Equipment					
No.	**Equipment**	**Brand**	**Model**	**Series No.**	**FCC ID**
	N/A				

1.8 TEST METHODOLOGY AND APPLIED STANDARDS

The test methodology, setups and results comply with all requirements in accordance with ANSI C63.10:2013, FCC 15.231.

2. TEST SUMMARY

Standard Sec.	Chapter	Test Item	Result
15.207	4.1	AC Power-line Conducted Emission	Not applicable
15.231(c)	4.2	Emission Bandwidth	Pass
15.231(b)	4.3	Fundamental Emission	Pass
15.209(b)	4.4	Transmitter Radiated Emission	Pass
15.231(a)(1)	4.5	Operation Restriction	Pass
15.203	4.6	Antenna Requirement	Pass

3. DESCRIPTION OF TEST MODES

3.1 THE WORST MODE OF OPERATING CONDITION

Operation mode	TX: 433.92MHz, RX: 125kHz
RF Field strength	Peak: 80.73 dBuv/m Average : 60.92 dBuv/m

Remark: Field strength performed Average level at 3m.

3.2 THE WORST MODE OF MEASUREMENT

Radiated Emission Measurement Above 1G	
Test Condition	**Radiated Emission Above 1G**
Power supply Mode	**Mode 1: EUT_1(S180146100)power by Battery** **Mode 2: EUT_2(S180146102)power by Battery** **Mode 3: EUT_3(S180146103)power by Battery** **Mode 4: EUT_4(S180146105)power by Battery**
Worst Mode	☐ **Mode 1** ☒ **Mode 2** ☐ **Mode 3** ☐ **Mode 4**
Worst Position	☐ **Placed in fixed position.** ☐ **Placed in fixed position at X-Plane (E2-Plane)** ☒ **Placed in fixed position at Y-Plane (E1-Plane)** ☐ **Placed in fixed position at Z-Plane (H-Plane)**

Radiated Emission Measurement Below 1G	
Test Condition	**Radiated Emission Below 1G**
Power supply Mode	**Mode 1: EUT_1(S180146100)power by Battery** **Mode 2: EUT_2(S180146102)power by Battery** **Mode 3: EUT_3(S180146103)power by Battery** **Mode 4: EUT_4(S180146105)power by Battery**
Worst Mode	☐ **Mode 1** ☒ **Mode 2** ☐ **Mode 3** ☐ **Mode 4**

Remark:

1. The worst mode was record in this test report.
2. EUT pre-scanned in three axis ,X,Y, Z and two polarity, for radiated measurement. The worst case(Y-Plane) were recorded in this report

3.3 FCC PART 15.205 RESTRICTED BANDS OF OPERATIONS

According to FCC 15.231(b), 15.231(e),

(b) In addition to the provisions of §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 (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.

(1) The above field strength limits are specified at a distance of 3 meters. The tighter limits apply at the band edges.

(2) Intentional radiators operating under the provisions of this section shall demonstrate compliance with the limits on the field strength of emissions, as shown in the above table, based on the average value of the measured emissions. As an alternative, compliance with the limits in the above table may be based on the use of measurement instrumentation with a CISPR quasi-peak detector. The specific method of measurement employed shall be specified in the application for equipment authorization. If average emission measurements are employed, the provisions in §15.35 for averaging pulsed emissions and for limiting peak emissions apply. Further, compliance with the provisions of §15.205 shall be demonstrated using the measurement instrumentation specified in that section.

(3) The limits on the field strength of the spurious emissions in the above table are based on the fundamental frequency of the intentional radiator. Spurious emissions shall be attenuated to the average (or, alternatively, CISPR quasi-peak) limits shown in this table or to the general limits shown in §15.209, whichever limit permits a higher field strength.

(e) Intentional radiators may operate at a periodic rate exceeding that specified in paragraph (a) of this section and may be employed for any type of operation, including operation prohibited in paragraph (a) of this section, provided the intentional radiator complies with the provisions of paragraphs (b) through (d) of this section, except the field strength table in paragraph (b) of this section is replaced by the following:

Fundamental frequency (MHz)	Field strength of fundamental (microvolts/meter)	Field strength of spurious emissions (microvolts/meter)
40.66-40.70	1,000	100
70-130	500	50
130-174	500 to 1,500[1]	50 to 150[1]
174-260	1,500	150
260-470	1,500 to 5,000[1]	150 to 500[1]
Above 470	5,000	500

[1]Linear interpolations.

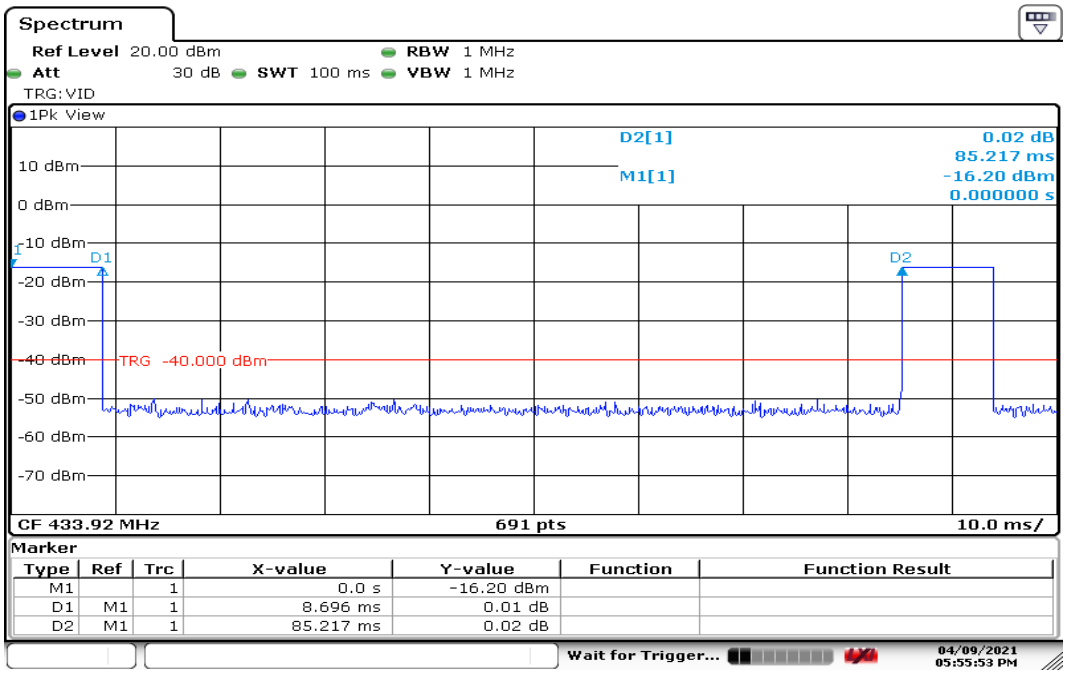
In addition, devices operated under the provisions of this paragraph shall be provided with a means for automatically limiting operation so that the duration of each transmission shall not be greater than one second and the silent period between transmissions shall be at least 30 times the duration of the transmission but in no case less than 10 seconds.

3.4 EUT DUTY CYCLE

433MHz - 434MHz

Temperature:	24.3℃	**Test Date:**	April 9, 2021
Humidity:	55.2 % RH	**Tested by:**	Ryan Du

Duty Cycle			
TX ON (ms)	TX All(ms)	Duty Cycle (%)	Duty Factor(dB)
8.70	85.22	10.22%	-19.82



Date: 9.APR.2021 17:55:54

Notes:

1. The transmitter duty cycle was measured using a spectrum analyser in the time domain and calculated by 20 log (Time$_{(on)}$ / [Period or 100 ms whichever is the lesser])
2. The EUT transmits for a Time(on) of 8.7 milliseconds.

   20 log (Time$_{(on)}$ / [Period or 100 ms whichever is the lesser]).

   20 log (8.7 / 85.22) = -19.82 dB

4. TEST RESULT

4.1 AC POWER LINE CONDUCTED EMISSION

4.1.1 Test Limit

According to §15.207(a),

Frequency Range (MHz)	Limits(dBμV)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56*	56 to 46*
0.50 to 5	56	46
5 to 30	60	50

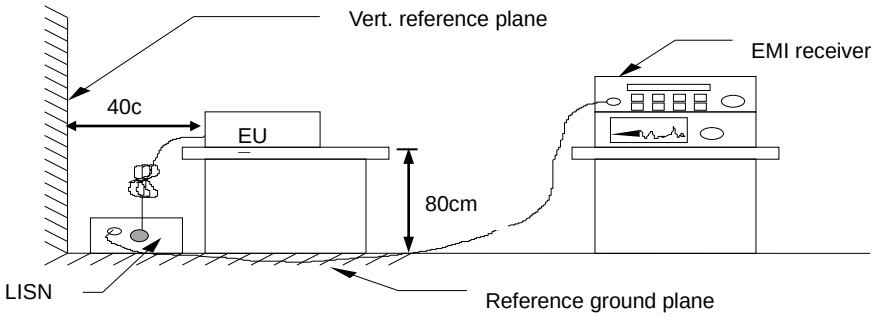
* Decreases with the logarithm of the frequency.

4.1.2 Test Procedure

Test method Refer as ANSI 63.10:2013 clause 6.2,

1. The EUT was placed on a table, which is 0.8m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. Repeat above procedures until all frequency measured were complete

4.1.3 Test Setup



4.1.4 Test Result

Not applicable, because EUT doesn't connect to AC Main Source direct.

4.2 EMISSION BANDWIDTH

4.2.1 Test Limit

According to §15.231(c),

Limit	☒ 70 MHz – 900 MHz : Fc * 0.25 % ☐ Above 900 MHz : Fc * 0. 5 %

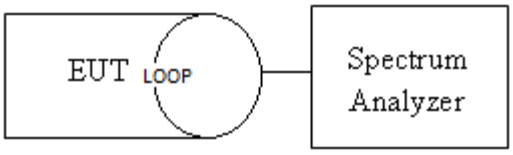
4.2.2 Test Procedure

Test method Refer as ANSI 63.10:2013 clause 6.9.2,

The Loop antenna connected to the spectrum analyzer, was touching to the transmitter antenna. Set the RBW=10KHz, VBW=30KHz, Detector = Peak, Trace mode = Max hold, Sweep = Auto. Measure the maximum width of the emission that is constrained by the frequencies associated with the 20dB Bandwidth.

The Loop antenna connected to the spectrum analyzer, was touching to the transmitter antenna. SA set RBW = 1% ~ 5% OBW, VBW = three times the RBW and Detector = Peak, Trace mode = Max hold, Sweep = Auto. Measure the maximum width of the emission that is constrained by the frequencies associated with the Occupied Bandwidth (99%).

4.2.3 Test Setup



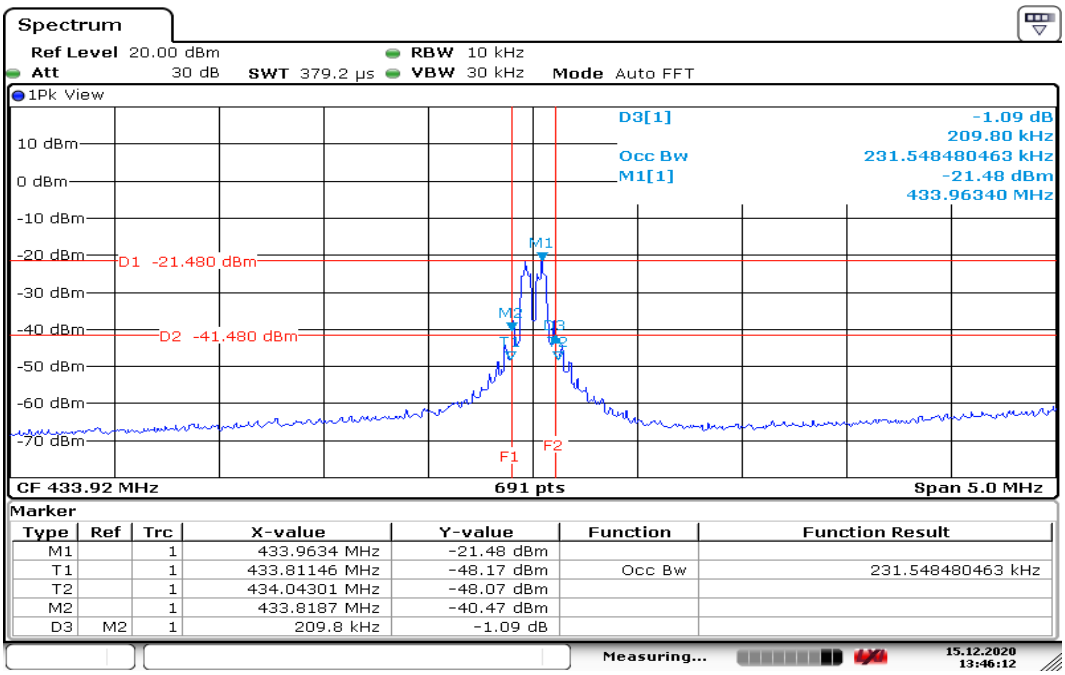
4.2.4 Test Result

Temperature:	24.3℃	**Test Date:**	December 15, 2020
Humidity:	55.2 % RH	**Tested by:**	Ryan Du

Spectrum Bandwidth				
Frequency (MHz)	**20dB Bandwidth (KHz)**	**20dB Bandwidth Limits (MHz)**	**99% Occupied BW (KHz)**	**99% Bandwidth Limits (MHz)**
433.92	209.8	1.0848	231.5484	1.0848

Test Data

20dB Bandwidth and 99% Occupied BW



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4.3 FIELD STRENGTH OF FUNDAMENTAL

4.3.1 Test Limit

According to §15.231(b)

Fundamental frequency (MHz)	Field strength of fundamental (microvolts/meter)	Field strength of fundamental (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

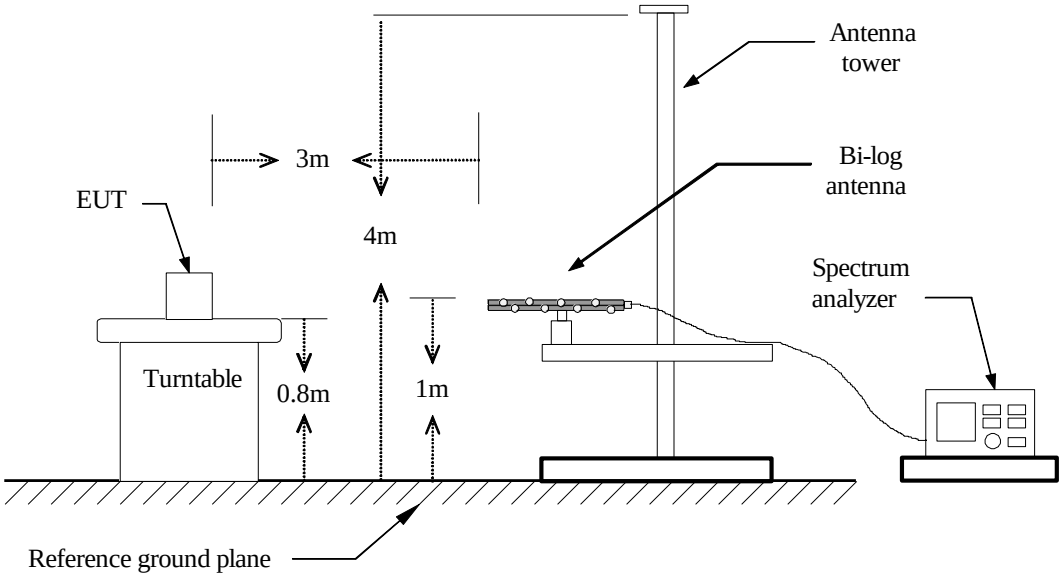
* Linear interpolation with frequency, f, in MHz:
For 130-174 MHz: Field Strength (μV/m) = (56.82 × f)−6136
For 260-470 MHz: Field Strength (μV/m) = (41.67 × f)−7083

4.3.2 Test Procedure

Test method Refer as ANSI 63.10:2013 clause 4.1.4 and clause 6.5

clause 4.1.4	☒ 4.1.4.2.2: Measurement Peak value. ☐ 4.1.4.2.3: Duty cycle ≥ 100%. ☒ 4.1.4.2.4: Measurement Average value.

4.3.3 Test Setup



4.3.4 Test Result

Field Strength					
Frequency (MHz)	**Fundamental (dBuV/m) at 3m**	**Limit (dBuV/m) at 3m**	**Margin (dB)**	**Axis/Pol.**	**Remark**
433.92	60.91	80.82	-19.91	Y/V	AVG

Remark:

1. Fundamental measured method setting on spectrum, RBW=100 kHz, VBW=100kHz and Detector=Peak.
2. Average result = Peak result + Duty factor = 80.73 dBuV/m –19.82= 60.91 dBuV/m
3. 260MHz ~ 470MHz limit is 41.67 * (Frequency, MHz) – 7083

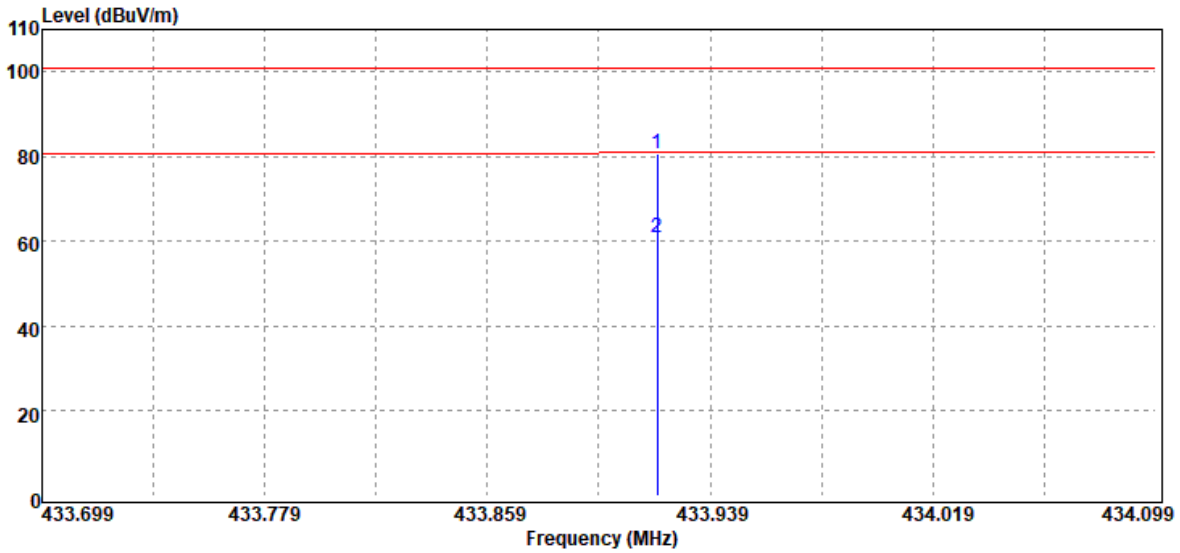
   Limit = 41.67 * (433.92 MHz) – 7083

   =10998.44640 (uV/m)

   dBuv/m = 20 Log (uV/m) = 20 Log (10998.44640 uV/m)= 80.82dBuV/m

Test Data

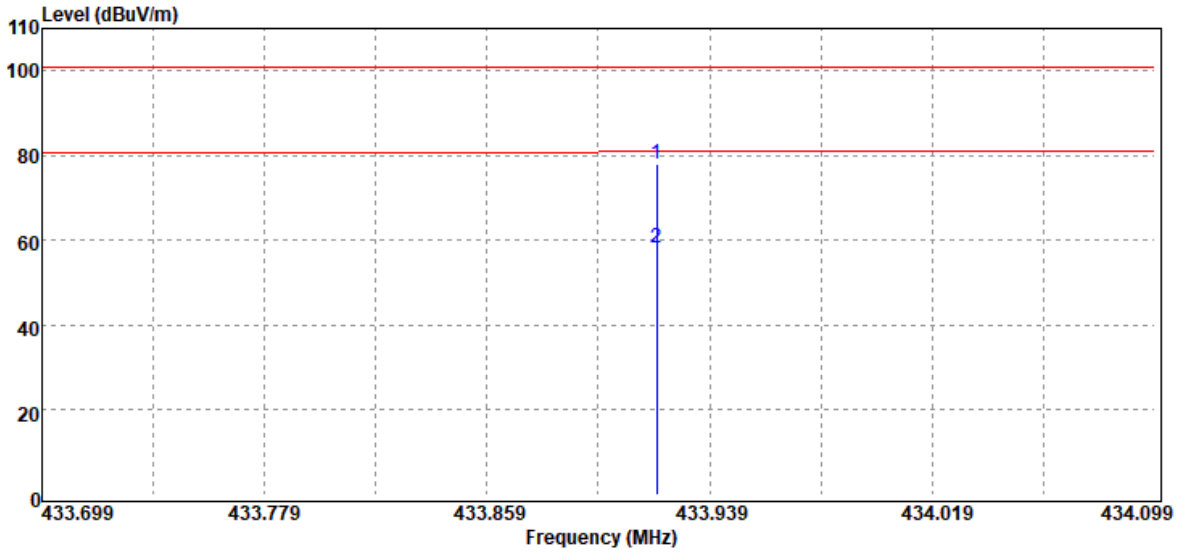
Test Mode:	TX-433.92MHz	Temp/Hum	20.9(℃)/ 72%RH
Test Item	Fundamental	Test Date	December 15, 2020
Axis/Polarize	Y-Plane / Ver.	Test Engineer	Ray Li
Detector	Peak & AVG		



No	Frequency (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dBuV)	Factor (dB)	Actual FS (dBuV/m)	Limit @3m (dBuV/m)	Margin (dB)
1	433.92	Peak	85.37	-4.64	80.73	100.82	-20.09

Note:
Average result = Peak result + Duty factor = 80.73 dBuV/m –19.82= 60.91dBuV/m

Test Mode:	TX-433.92MHz	Temp/Hum	20.9(℃)/ 72%RH
Test Item	Fundamental	Test Date	December 15, 2020
Axis/Polarize	Y-Plane / Hor.	Test Engineer	Ray Li
Detector	Peak & AVG		



No	Frequency (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dBuV)	Factor (dB)	Actual FS (dBuV/m)	Limit @3m (dBuV/m)	Margin (dB)
1	433.92	Peak	82.53	-4.64	77.89	100.82	-22.93

Note:
Average result = Peak result + Duty factor = 77.89 dBuV/m –19.82= 58.07dBuV/m

4.4 RADIATION UNWANTED EMISSION

4.4.1 Test Limit

According to §15.231(b) and §15.209, §15.205
Unwanted emissions limit follow the table or the FCC Part 15.209, whichever limit permits higher field strength.

According to §15.231(b)

Fundamental frequency (MHz)	Field strength of fundamental (microvolts/meter)	Field strength of fundamental (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.

Below 30MHz

Frequency (MHz)	Field Strength				
	(μV/m)	(dBμV/m)	Measurement Distance (meter)	(dBμV/m)	Measurement Distance (meter)
0.009 - 0.490	2400/F(kHz)	48.52 – 13.80	300	128.52–104.84	3
0.490 - 1.705	24000/F(kHz)	33.80 – 22.97	30	73.80– 62.97	3
1.705 – 30.0	30	29.54	30	69.54	3

Above 30MHz

Frequency (MHz)	Field Strength		Measurement Distance (meter)
	(μV/m)	(dBμV/m)	
30-88	100	40.0	3
88-216	150	43.5	3
216-960	200	46.0	3
Above 960	500	54.0	3

.

4.4.2 Test Procedure

Test method Refer as ANSI 63.10:2013

☒ Unwanted Emission	☒ clause 4.1.4.2.2: Measurement Peak value. ☐ clause 4.1.4.2.3: Duty cycle ≥ 100%. ☒ clause 4.1.4.2.4: Measurement Average value.

☒ Radiated Emission	☒ clause 6.4: below 30 MHz and test distance is 3m. ☒ clause 6.5: below 30 MHz -1 GHz and test distance is 3m. ☒ clause 6.6: Above 30 MHz and test distance is 3m.

1. The EUT is placed on a turntable, which is 0.8m for test below 1GHz and 1.5m for test above 1GHz, 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 varied from 1m to 4m to find out the highest emissions.
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. Set the spectrum analyzer in the following setting as:

   Below 1GHz:

   RBW=100kHz / VBW=300kHz / Sweep=AUTO

   Above 1GHz:

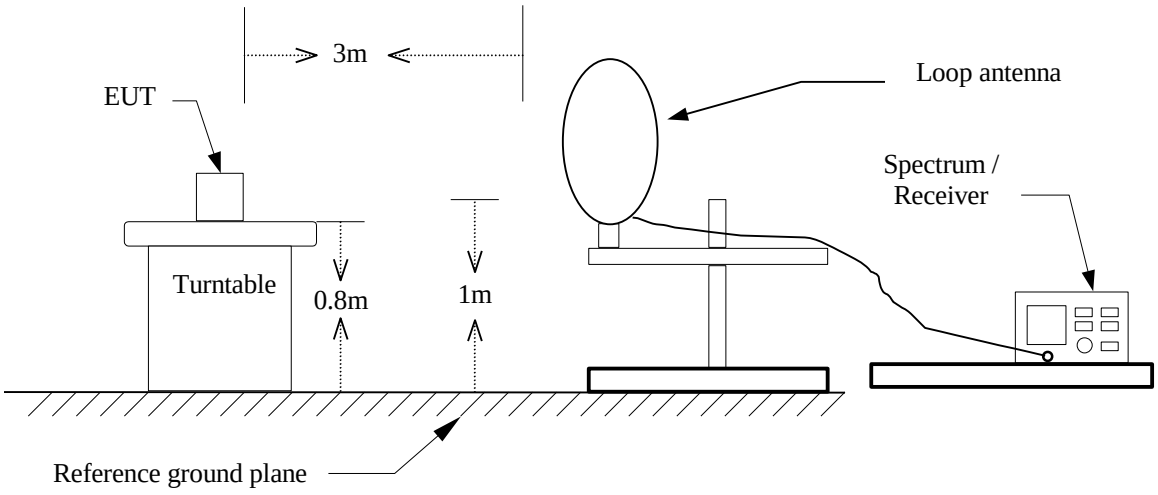
   (a)PEAK: RBW=1MHz / VBW=3MHz / Sweep=AUTO

   (b)AVERAGE: RBW=1MHz,
7. Repeat above procedures until the measurements for all frequencies are complete.

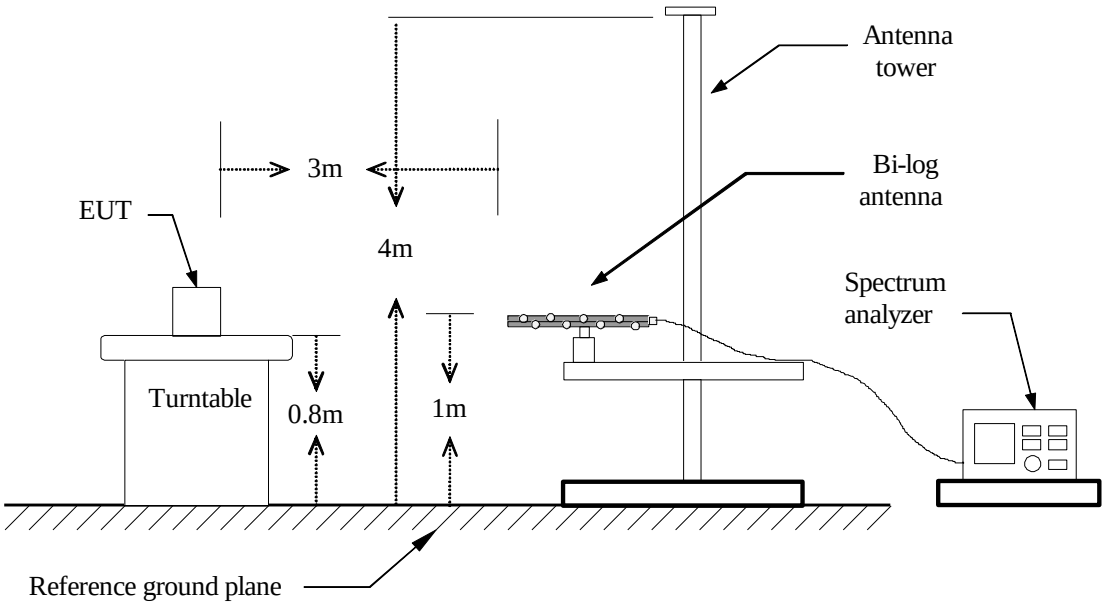
Remark.
1. Although these tests were performed other than open area test site, adequate comparison measurements were confirmed against 30 m open are test site. Therefore sufficient tests were made to demonstrate that the alternative site produces results that correlate with the ones of tests made in an open field based on KDB 414788.
2. No emission found between lowest internal used/generated frequency to 30MHz (9kHz~30MHz).

4.4.3 Test Setup

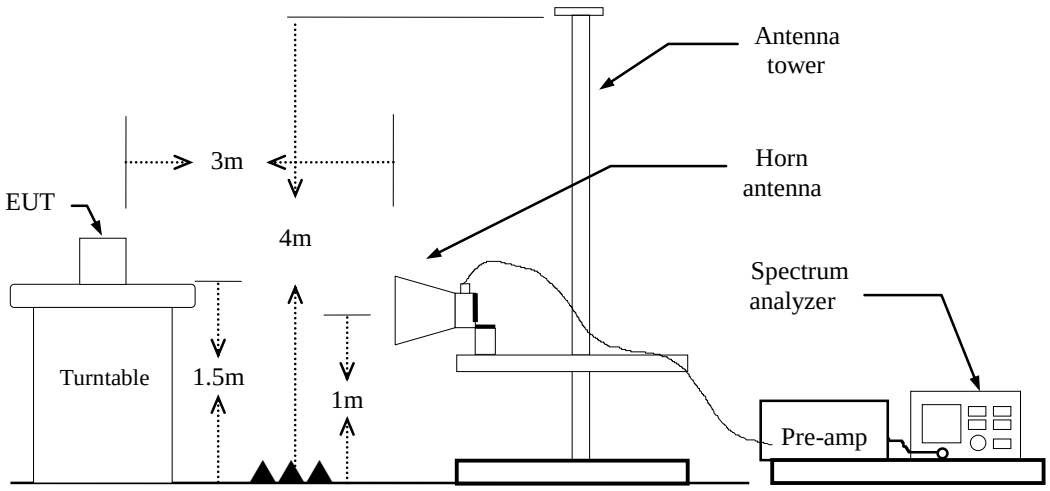
9kHz ~ 30MHz



30MHz ~ 1 GHz



Above 1 GHz



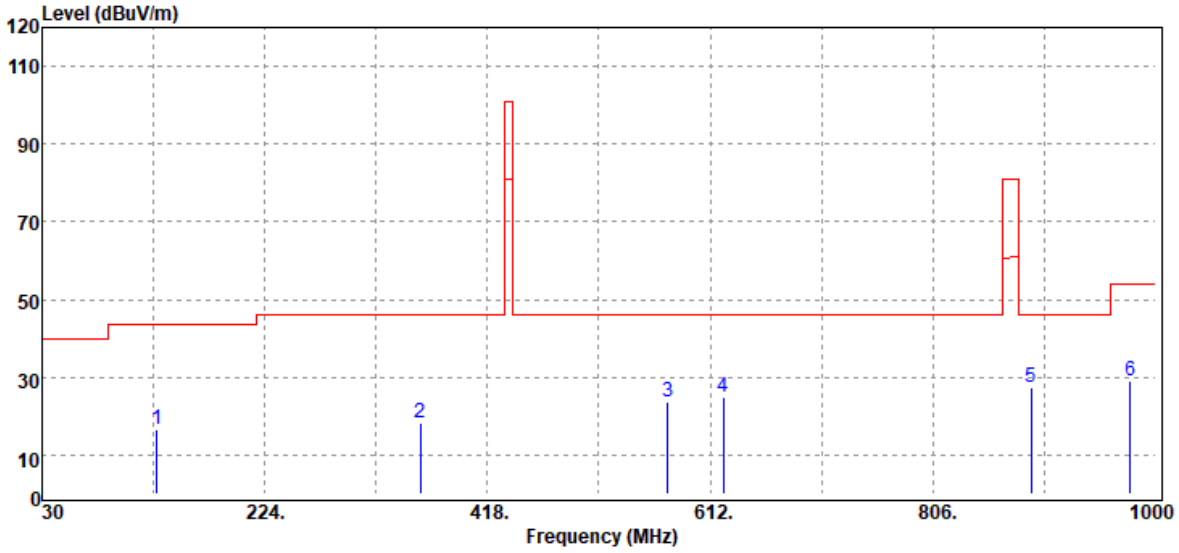
4.4.4 Test Result

Pass.

Test Data

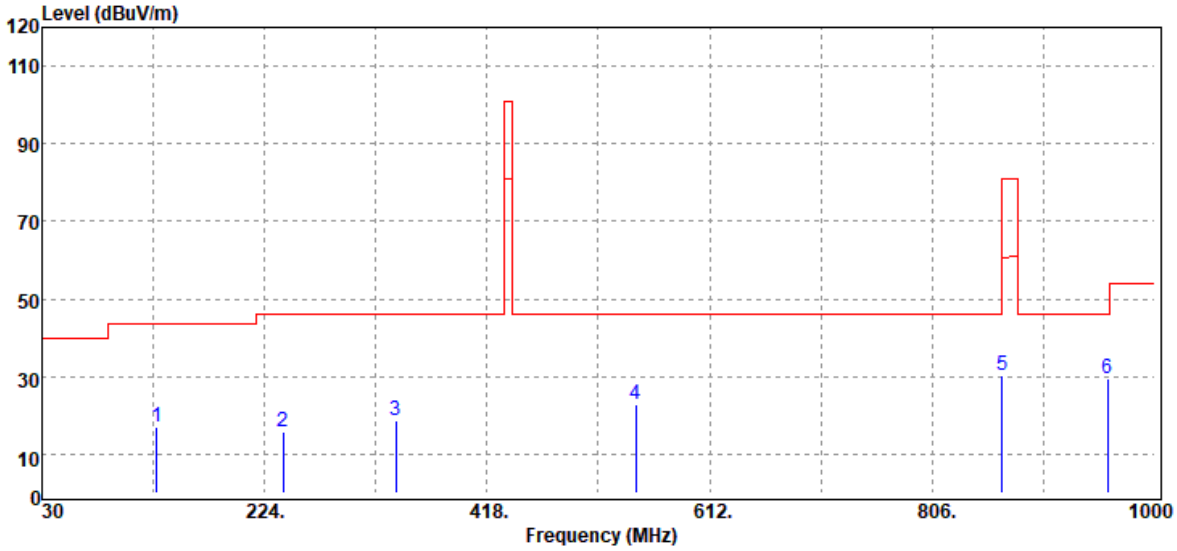
Below 1GHz

Test Mode:	TX-433.92MHz	Temp/Hum	20.5(℃)/ 62%RH
Test Item	Below 1GHz	Test Date	December 16, 2020
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak		



Frequency (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dBuV)	Factor (dB)	Actual FS (dBuV/m)	Limit @3m (dBuV/m)	Margin (dB)
129.91	Peak	25.63	-8.99	16.64	43.50	-26.86
359.80	Peak	25.17	-6.78	18.39	46.00	-27.61
575.14	Peak	25.64	-2.01	23.63	46.00	-22.37
623.64	Peak	25.98	-1.07	24.91	46.00	-21.09
891.36	Peak	24.75	2.71	27.46	46.00	-18.54
977.69	Peak	24.99	4.10	29.09	54.00	-24.91

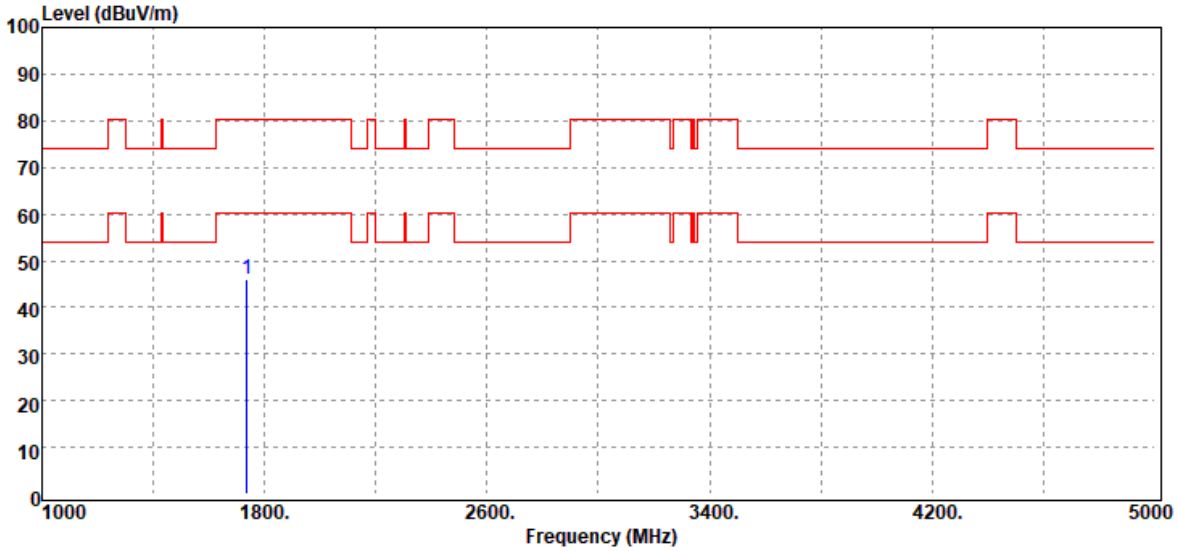
Test Mode:	TX-433.92MHz	Temp/Hum	20.5(℃)/ 62%RH
Test Item	Below 1GHz	Test Date	December 16, 2020
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak		



Frequency (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dBuV)	Factor (dB)	Actual FS (dBuV/m)	Limit @3m (dBuV/m)	Margin (dB)
129.91	Peak	25.98	-8.99	16.99	43.50	-26.51
240.49	Peak	26.34	-10.75	15.59	46.00	-30.41
338.46	Peak	26.48	-7.79	18.69	46.00	-27.31
547.98	Peak	25.44	-2.43	23.01	46.00	-22.99
867.11	Peak	27.88	2.48	30.36	80.81	-50.45
959.26	Peak	25.55	3.76	29.31	46.00	-16.69

Above 1GHz

Test Mode:	TX-433.92MHz	Temp/Hum	20.9(℃)/ 72%RH
Test Item	Above 1GHz	Test Date	December 9, 2020
Polarize	Vertical	Test Engineer	Jerry Chang
Detector	Peak		

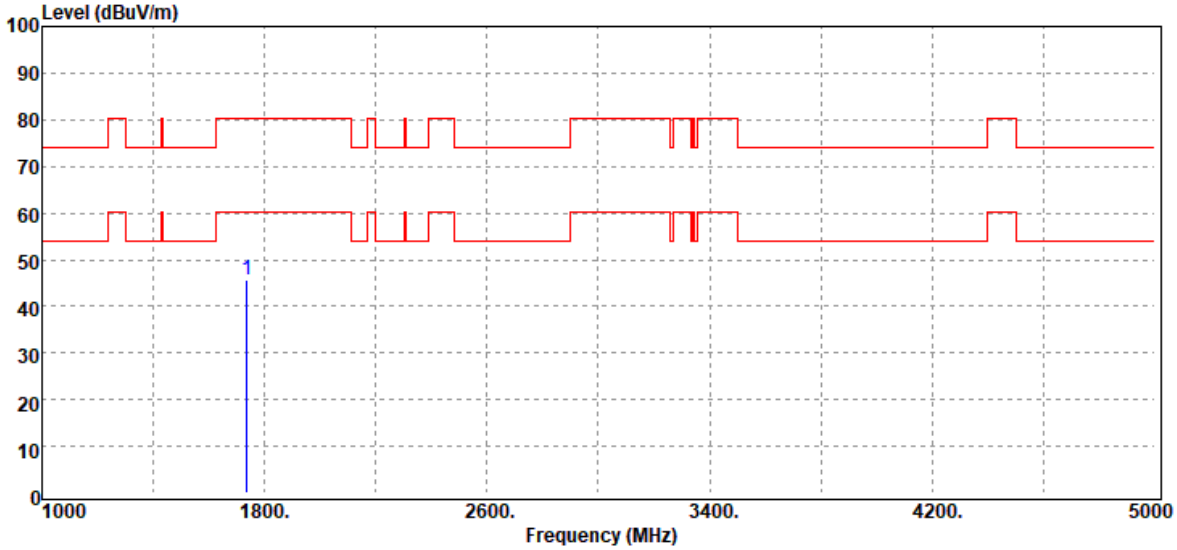


Frequency (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dBuV)	Factor (dB)	Actual FS (dBuV/m)	Limit @3m (dBuV/m)	Margin (dB)
1735.68	Peak	65.64	-19.54	46.10	80.14	-34.04
N/A						

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

Test Mode:	TX-433.92MHz	Temp/Hum	20.9(℃)/ 72%RH
Test Item	Above 1GHz	Test Date	December 9, 2020
Polarize	Horizontal	Test Engineer	Jerry Chang
Detector	Peak		



Frequency (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dBuV)	Factor (dB)	Actual FS (dBuV/m)	Limit @3m (dBuV/m)	Margin (dB)
1735.68	Peak	65.25	-19.54	45.71	80.14	-34.43
N/A						

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

4.5 OPERATION RESTRICTION

4.5.1 Test Limit

15.231(a)(1),

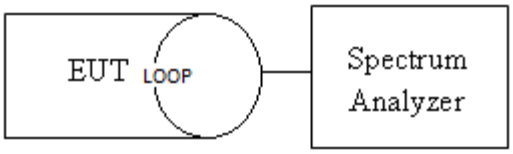
A manually operated transmitter shall employ a switch that will automatically deactivate the transmitter within not more than 5 seconds of being released.

4.5.2 Test Procedure

Test method Refer as ANSI 63.10:2013 clause 7.4

The Loop antenna connected to the spectrum analyzer, was touching to the transmitter antenna. Set the RBW=1MHz, VBW=1MHz, Detector = Peak, Trace mode = Max hold, Sweep = 1s. Measure

4.5.3 Test Setup



4.5.4 Test Result

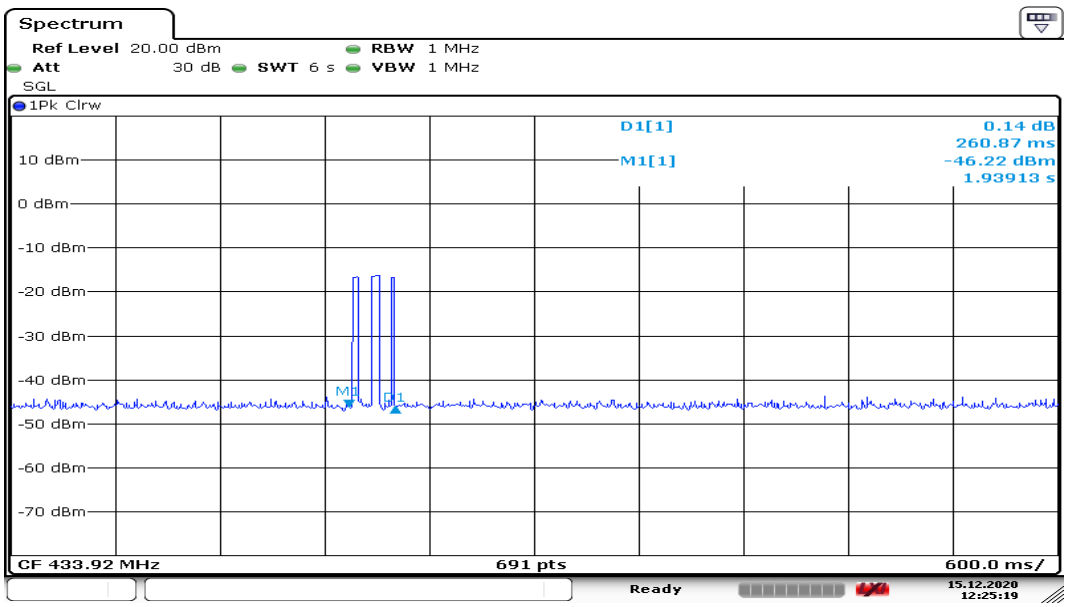
433.92MHz

Temperature:	24.3℃	**Test Date:**	December 15, 2020
Humidity:	55.2 % RH	**Tested by:**	Ryan Du

Dwell Time			
Operation condition	**Pulse On Time (s)**	**Limits**	**Result**
manually operated	0.26087	5 sec	PASS

Test Data

433.92MHz



4.6 ANTENNA REQUIREMENT

§ 15.203 Antenna 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. This requirement does not apply to carrier current devices or to devices operated under the provisions of §15.211, §15.213, §15.217, §15.219, or §15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with §15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

- End of Test Report -