TEST REPORT

Product Name	:	ASIAIR Mini
Brand Mark	:	N/A
Model No.	:	ASIAIR Mini
Report Number	:	BLA-EMC-202208-A2402
FCC ID	:	2A7R3-ASIAIRMINI
Date of Sample Receipt	:	2022/8/10
Date of Test	:	2022/8/10 to 2022/9/15
Date of Issue	:	2022/9/15
Test Standard	:	47 CFR Part 15, Subpart C 15.247
Test Result	:	Pass

Prepared for:

SUZHOU ZWO CO., LTD.

Building#2, Peninsula Life Plaza, Moon bay road 6#, SuZhou Industrial Park, JiangSu , China

Prepared by:

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Approved by: Date: 2022/9/15

REPORT REVISE RECORD

Version No.	Date	Description
00	2022/9/15	Original

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1 TEST SUMMARY

Test item	Test Requirement	Test Method	Class/Severity	Result
Power Spectrum Density	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 11.10.2	47 CFR Part 15, Subpart C 15.247(e)	Pass
Conducted Peak Output Power	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 7.8.5 & Section 11.9.1	47 CFR Part 15, Subpart C 15.247(b)(1) & 15.247(b)(3)	Pass
Conducted Emissions at AC Power Line (150kHz-30MHz)	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 6.2	47 CFR Part 15, Subpart C 15.207	Pass
Antenna Requirement	47 CFR Part 15, Subpart C 15.247	N/A	47 CFR Part 15, Subpart C 15.203 & 15.247(c)	Pass
Radiated Spurious Emissions	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 6.4,6.5,6.6	47 CFR Part 15, Subpart C 15.209 & 15.247(d)	Pass
Radiated Emissions which fall in the restricted bands	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 6.10.5	47 CFR Part 15, Subpart C 15.209 & 15.247(d)	Pass
Conducted Spurious Emissions	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 7.8.6 & Section 11.11	47 CFR Part 15, Subpart C 15.247(d)	Pass
Conducted Band Edges Measurement	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 7.8.8 & Section 11.13.3.2	47 CFR Part 15, Subpart C 15.247(d)	Pass
Minimum 6dB Bandwidth	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 11.8.1	47 CFR Part 15, Subpart C 15.247a(2)	Pass

2 GENERAL INFORMATION

Applicant	SUZHOU ZWO CO., LTD.
Address	Building#2, Peninsula Life Plaza, Moon bay road 6#, SuZhou Industrial Park, JiangSu , China
Manufacturer	SUZHOU ZWO CO., LTD.
Address	Building#2, Peninsula Life Plaza, Moon bay road 6#, SuZhou Industrial Park, JiangSu , China
Factory	SUZHOU ZWO CO., LTD.
Address	Building#2, Peninsula Life Plaza, Moon bay road 6#, SuZhou Industrial Park, JiangSu , China
Product Name	ASIAIR Mini
Test Model No.	ASIAIR Mini

3 GENERAL DESCRIPTION OF E.U.T.

Hardware Version	N/A
Software Version	N/A
Operation Frequency:	802.11b/g/n(HT20): 2412MHz to 2462MHz 802.11n(HT40): 2422MHz to 2452MHz
Modulation Type:	802.11b: DSSS (CCK, DQPSK, DBPSK) 802.11g/n: OFDM (64QAM, 16QAM, QPSK, BPSK)
Channel Spacing:	5MHz
Number of Channels:	802.11b/g/n(HT20):11 802.11n(HT40):7
Antenna Type:	External Antenna
Antenna Gain:	5dBi (Provided by the applicant)

4 TEST ENVIRONMENT

Environment	Temperature	Voltage
Normal	25℃	DC12V

5 TEST MODE

TEST MODE	TEST MODE DESCRIPTION
Transmitting mode	Keep the EUT in continuously transmitting mode with modulation. (The duty cycle is greater than 98%)
Remark: Full battery is used during all test except ac conducted emission, 802.11a/n/ac (HT20), 802.11n/ac (HT40), 802.11ac(HT80) all have been tested, During the radiated spurious emission test, 802.11b/11g/11nH20/11nH40 modulations all have been tested, only worse case 802.11b is reported.	

6 MEASUREMENT UNCERTAINTY

Parameter	Expanded Uncertainty (Confidence of 95%)
Radiated Emission(9kHz-30MHz)	±4.34dB
Radiated Emission(30Mz-1000MHz)	±4.24dB
Radiated Emission(1GHz-18GHz)	±4.68dB
AC Power Line Conducted Emission(150kHz-30MHz)	±3.45dB

7 DESCRIPTION OF SUPPORT UNIT

Device Type	Manufacturer	Model Name	Serial No.	Remark
AC Adapter	UGREEN	CD112	N/A	N/A

8 LABORATORY LOCATION

All tests were performed at:
BlueAsia of Technical Services(Shenzhen) Co., Ltd.
Building C, No. 107, Shihuan Road, Shiyan Sub-District, Baoan District, Shenzhen, Guangdong Province, China
Telephone: TEL: +86-755-28682673 FAX: +86-755-28682673
No tests were sub-contracted.

9 TEST INSTRUMENTS LIST

Test Equipment Of Power Spectrum Density					
Equipment	**Manufacturer**	**Model**	**S/N**	**Cal.Date**	**Cal.Due**
Spectrum	R&S	FSP40	100817	24/9/2021	23/9/2022
Spectrum	Agilent	N9020A	MY49100060	24/9/2021	23/9/2022
Signal Generator	Agilent	N5182A	MY49060650	24/9/2021	23/9/2022
Signal Generator	Agilent	E8257D	MY44320250	24/9/2021	23/9/2022

Test Equipment Of Conducted Peak Output Power					
Equipment	**Manufacturer**	**Model**	**S/N**	**Cal.Date**	**Cal.Due**
Spectrum	R&S	FSP40	100817	24/9/2021	23/9/2022
Spectrum	Agilent	N9020A	MY49100060	24/9/2021	23/9/2022
Signal Generator	Agilent	N5182A	MY49060650	24/9/2021	23/9/2022
Signal Generator	Agilent	E8257D	MY44320250	24/9/2021	23/9/2022

Test Equipment Of Conducted Emissions at AC Power Line (150kHz-30MHz)					
Equipment	**Manufacturer**	**Model**	**S/N**	**Cal.Date**	**Cal.Due**
Shield room	SKET	833	N/A	25/11/2020	24/11/2023
Receiver	R&S	ESPI3	101082	24/9/2021	23/9/2022
LISN	R&S	ENV216	3560.6550.15	24/9/2021	23/9/2022
LISN	AT	AT166-2	AKK1806000003	26/9/2021	25/9/2022
EMI software	EZ	EZ-EMC	N/A	N/A	N/A

Test Equipment Of Radiated Spurious Emissions					
Equipment	**Manufacturer**	**Model**	**S/N**	**Cal.Date**	**Cal.Due**

Chamber	SKET	966	N/A	10/11/2020	9/11/2023
Spectrum	R&S	FSP40	100817	24/9/2021	23/9/2022
Receiver	R&S	ESR7	101199	24/9/2021	23/9/2022
broadband Antenna	Schwarzbeck	VULB9168	00836 P:00227	26/9/2020	25/9/2022
Horn Antenna	Schwarzbeck	9120D	01892 P:00331	26/9/2020	25/9/2022
Amplifier	SKET	LNPA-0118-45	N/A	24/9/2021	23/9/2022
EMI software	EZ	EZ-EMC	N/A	N/A	N/A
Loop antenna	SCHNARZBECK	FMZB1519B	00102	26/9/2020	25/9/2022

Test Equipment Of Radiated Emissions which fall in the restricted bands					
Equipment	**Manufacturer**	**Model**	**S/N**	**Cal.Date**	**Cal.Due**
Chamber	SKET	966	N/A	10/11/2020	9/11/2023
Spectrum	R&S	FSP40	100817	24/9/2021	23/9/2022
Receiver	R&S	ESR7	101199	24/9/2021	23/9/2022
broadband Antenna	Schwarzbeck	VULB9168	00836 P:00227	26/9/2020	25/9/2022
Horn Antenna	Schwarzbeck	9120D	01892 P:00331	26/9/2020	25/9/2022
Amplifier	SKET	LNPA-0118-45	N/A	24/9/2021	23/9/2022
EMI software	EZ	EZ-EMC	N/A	N/A	N/A
Loop antenna	SCHNARZBECK	FMZB1519B	00102	26/9/2020	25/9/2022

Test Equipment Of Conducted Spurious Emissions					
Equipment	**Manufacturer**	**Model**	**S/N**	**Cal.Date**	**Cal.Due**

Spectrum	R&S	FSP40	100817	24/9/2021	23/9/2022
Spectrum	Agilent	N9020A	MY49100060	24/9/2021	23/9/2022
Signal Generator	Agilent	N5182A	MY49060650	24/9/2021	23/9/2022
Signal Generator	Agilent	E8257D	MY44320250	24/9/2021	23/9/2022

Test Equipment Of Conducted Band Edges Measurement					
Equipment	**Manufacturer**	**Model**	**S/N**	**Cal.Date**	**Cal.Due**
Spectrum	R&S	FSP40	100817	24/9/2021	23/9/2022
Spectrum	Agilent	N9020A	MY49100060	24/9/2021	23/9/2022
Signal Generator	Agilent	N5182A	MY49060650	24/9/2021	23/9/2022
Signal Generator	Agilent	E8257D	MY44320250	24/9/2021	23/9/2022

Test Equipment Of Minimum 6dB Bandwidth					
Equipment	**Manufacturer**	**Model**	**S/N**	**Cal.Date**	**Cal.Due**
Spectrum	R&S	FSP40	100817	24/9/2021	23/9/2022
Spectrum	Agilent	N9020A	MY49100060	24/9/2021	23/9/2022
Signal Generator	Agilent	N5182A	MY49060650	24/9/2021	23/9/2022
Signal Generator	Agilent	E8257D	MY44320250	24/9/2021	23/9/2022

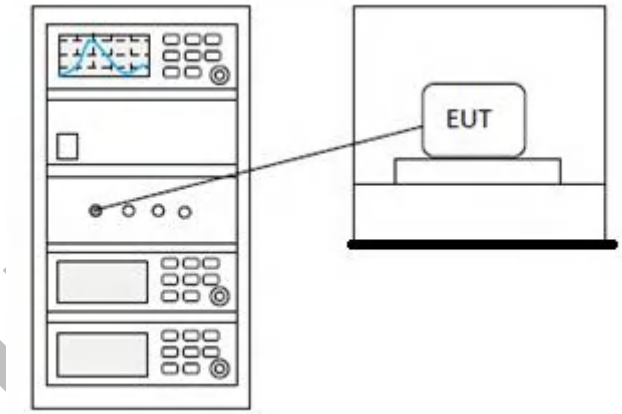
10 POWER SPECTRUM DENSITY

Test Standard	47 CFR Part 15, Subpart C 15.247
Test Method	ANSI C63.10 (2013) Section 11.10.2
Test Mode (Pre-Scan)	TX
Test Mode (Final Test)	TX
Tester	Jozu
Temperature	25℃
Humidity	60%

10.1 LIMITS

Limit:	≤8dBm in any 3 kHz band during any time interval of continuous transmission

10.2 BLOCK DIAGRAM OF TEST SETUP



10.3 TEST DATA

Pass: Please Refer To Appendix: Appendix1 For Details

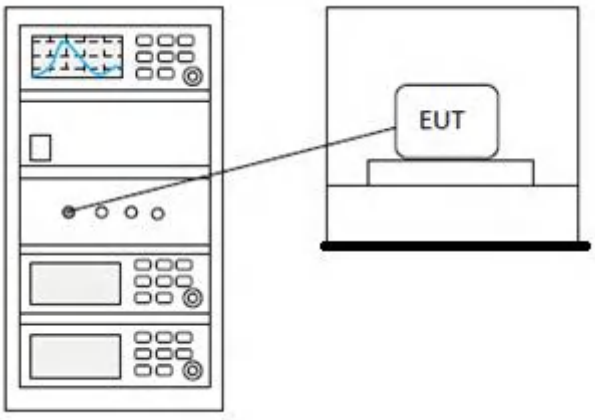
11 CONDUCTED PEAK OUTPUT POWER

Test Standard	47 CFR Part 15, Subpart C 15.247
Test Method	ANSI C63.10 (2013) Section 7.8.5 & Section 11.9.1
Test Mode (Pre-Scan)	TX
Test Mode (Final Test)	TX
Tester	Jozu
Temperature	25℃
Humidity	60%

11.1 LIMITS

Frequency range(MHz)	Output power of the intentional radiator(watt)
902-928	1 for ≥50 hopping channels
	0.25 for 25≤ hopping channels <50
	1 for digital modulation
2400-2483.5	1 for ≥75 non-overlapping hopping channels
	0.125 for all other frequency hopping systems
	1 for digital modulation
5725-5850	1 for frequency hopping systems and digital modulation

11.2 BLOCK DIAGRAM OF TEST SETUP



11.3 TEST DATA

Pass: Please Refer To Appendix: Appendix1 For Details

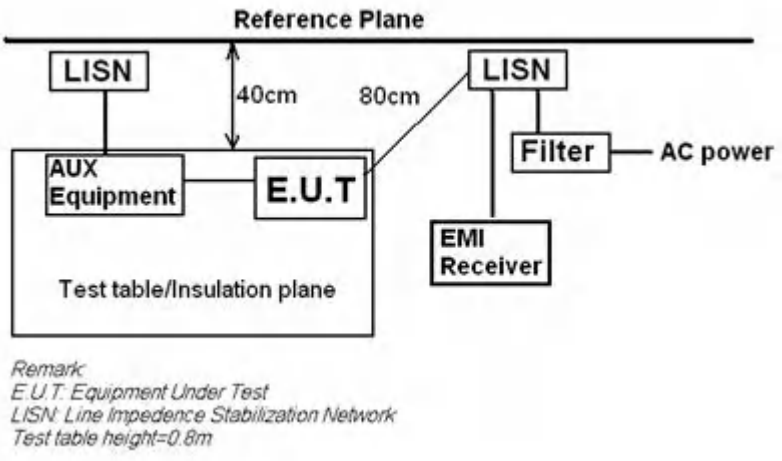
12 CONDUCTED EMISSIONS AT AC POWER LINE (150KHZ-30MHZ)

Test Standard	47 CFR Part 15, Subpart C 15.247
Test Method	ANSI C63.10 (2013) Section 6.2
Test Mode (Pre-Scan)	TX
Test Mode (Final Test)	TX
Tester	Jozu
Temperature	25℃
Humidity	60%

12.1 LIMITS

Frequency of emission(MHz)	Conducted limit(dBμV)	
	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.		

12.2 BLOCK DIAGRAM OF TEST SETUP



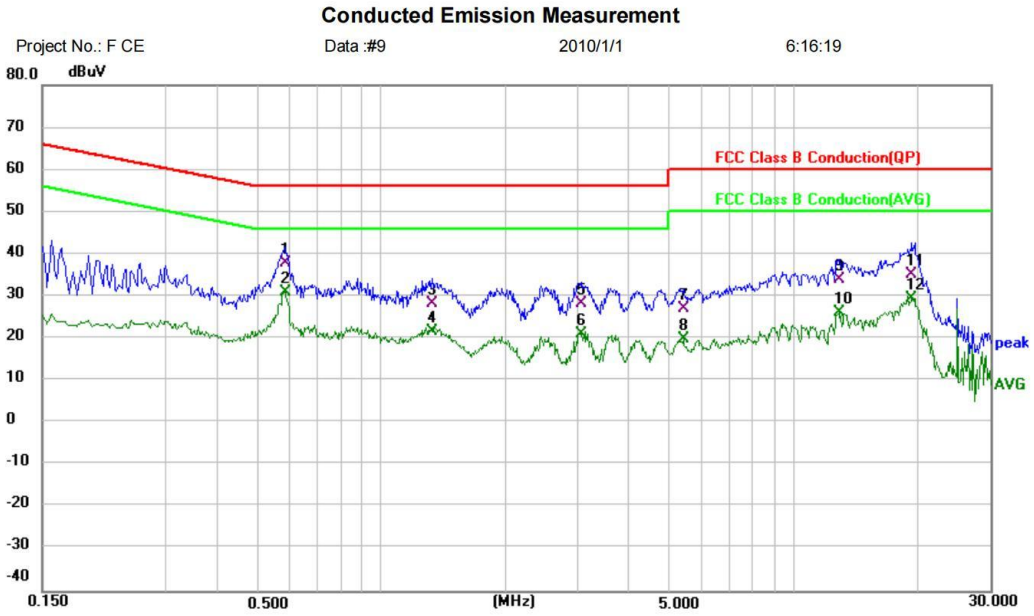
12.3 PROCEDURE

1) The mains terminal disturbance voltage test was conducted in a shielded room.
2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a 50ohm/50H + 5ohm linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded.

3) The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane,
4) The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the LISN 2.
5) In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10 on conducted measurement.
Remark: LISN=Read Level+ Cable Loss+ LISN Factor

12.4 TEST DATA

[TestMode: TX]; [Line: Line] [Power:AC120V/60Hz]



Site
Limit: FCC Class B Conduction(QP)
EUT: AIR Mini
M/N: AIR Mini
Mode: 2.4G mode
Note:

Phase: *L1*
Power:

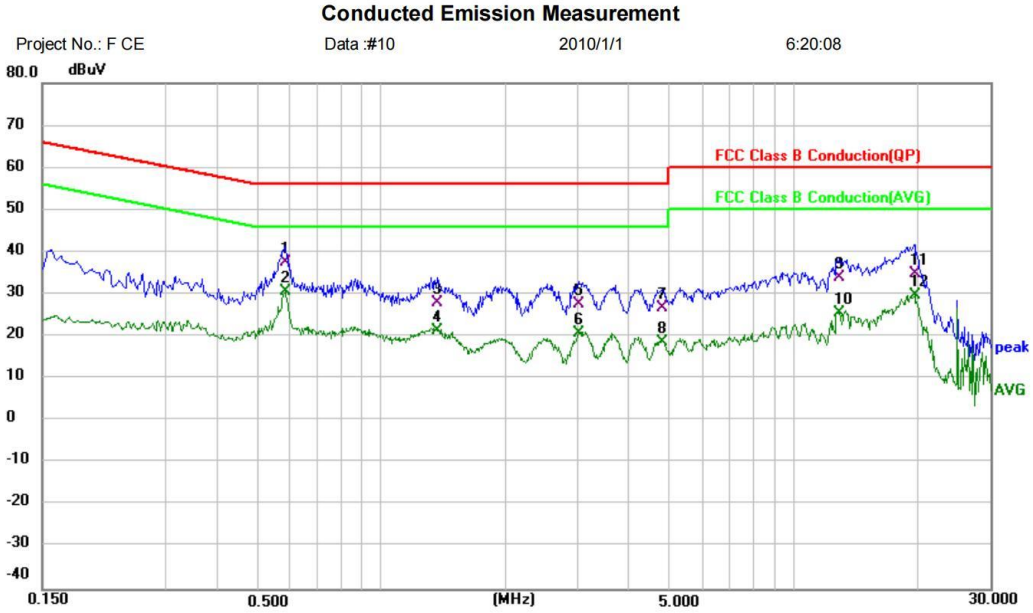
Temperature: (C)
Humidity: %RH

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.5820	28.09	9.87	37.96	56.00	-18.04	QP	
2	*	0.5820	21.17	9.87	31.04	46.00	-14.96	AVG	
3		1.3260	18.17	9.93	28.10	56.00	-27.90	QP	
4		1.3260	11.67	9.93	21.60	46.00	-24.40	AVG	
5		3.0540	18.39	9.97	28.36	56.00	-27.64	QP	
6		3.0540	11.20	9.97	21.17	46.00	-24.83	AVG	
7		5.3980	17.16	10.03	27.19	60.00	-32.81	QP	
8		5.3980	9.82	10.03	19.85	50.00	-30.15	AVG	
9		12.8740	23.77	10.26	34.03	60.00	-25.97	QP	
10		12.8740	15.75	10.26	26.01	50.00	-23.99	AVG	
11		19.4100	24.86	10.42	35.28	60.00	-24.72	QP	
12		19.4100	19.15	10.42	29.57	50.00	-20.43	AVG	

*:Maximum data x:Over limit !:over margin 〈Reference Only

Test Result: Pass

[TestMode: TX]; [Line: Neutral] [Power:AC120V/60Hz]



Site
Limit: FCC Class B Conduction(QP)
EUT: AIR Mini
M/N: AIR Mini
Mode: 2.4G mode
Note:

Phase: *N*
Power:

Temperature: (C)
Humidity: %RH

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.5820	27.64	9.80	37.44	56.00	-18.56	QP	
2	*	0.5820	20.74	9.80	30.54	46.00	-15.46	AVG	
3		1.3700	17.98	9.85	27.83	56.00	-28.17	QP	
4		1.3700	11.56	9.85	21.41	46.00	-24.59	AVG	
5		3.0140	17.76	9.90	27.66	56.00	-28.34	QP	
6		3.0140	10.77	9.90	20.67	46.00	-25.33	AVG	
7		4.8020	16.85	9.94	26.79	56.00	-29.21	QP	
8		4.8020	8.86	9.94	18.80	46.00	-27.20	AVG	
9		12.9300	23.64	10.25	33.89	60.00	-26.11	QP	
10		12.9300	15.21	10.25	25.46	50.00	-24.54	AVG	
11		19.7139	24.28	10.43	34.71	60.00	-25.29	QP	
12		19.7139	19.32	10.43	29.75	50.00	-20.25	AVG	

*:Maximum data x:Over limit !:over margin 〈Reference Only

Test Result: Pass

13 ANTENNA REQUIREMENT

Test Standard	47 CFR Part 15, Subpart C 15.247
Test Method	N/A

13.1 CONCLUSION

EUT Antenna:

15.203 requirement:

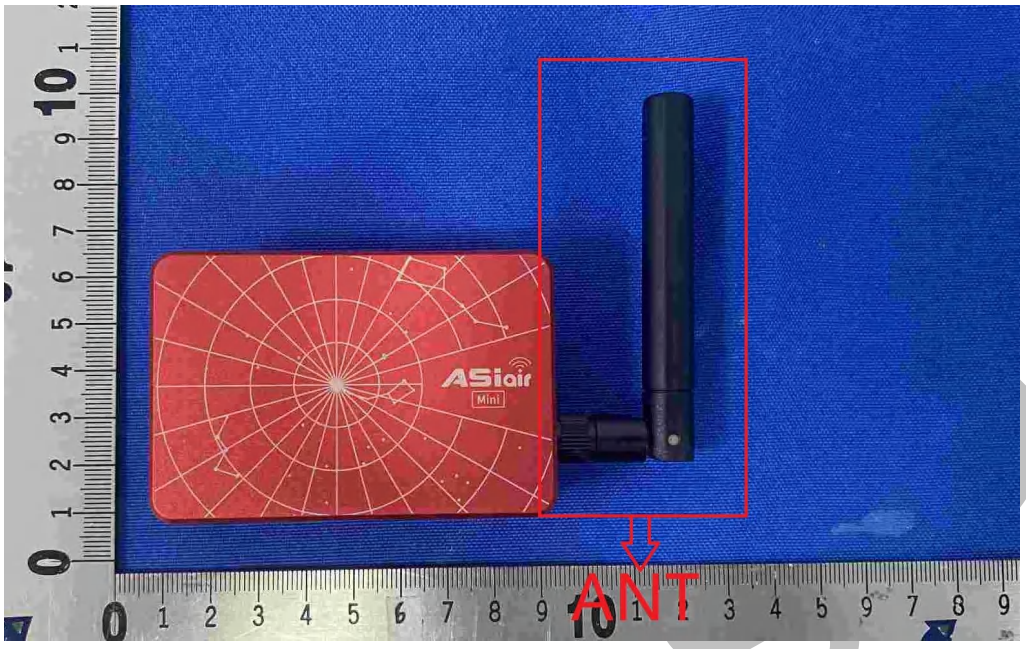
An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

15.247(c) (1)(i) requirement:

(i) Systems operating in the 2400-2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6dBi.

Evaluation Information:

Product uses uniquely coupled antenna with intentional radiator, detachable non-standard jack antenna, it is reverse polarity, connector is RP-SMA, female screw female. fulfill the requirement of this section.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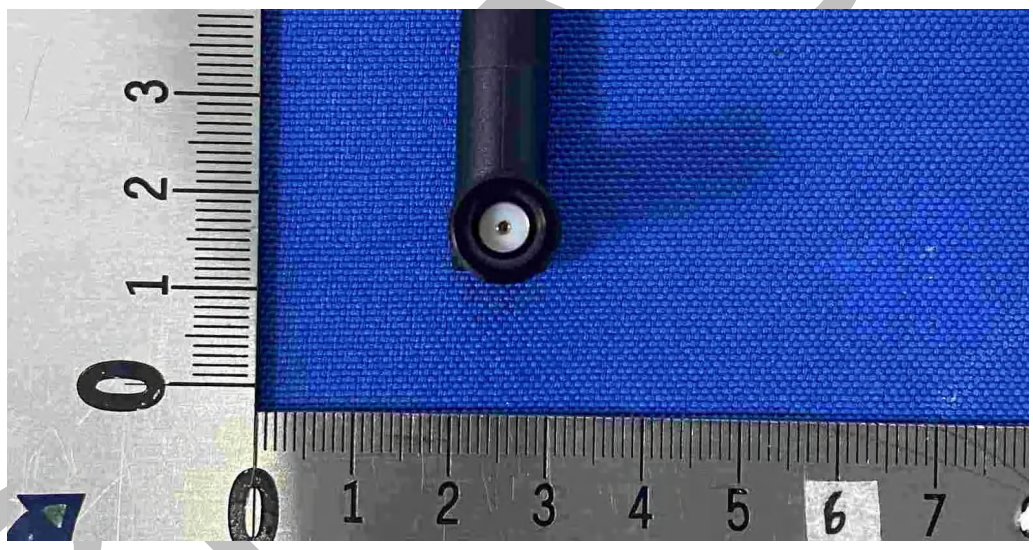


14 RADIATED SPURIOUS EMISSIONS

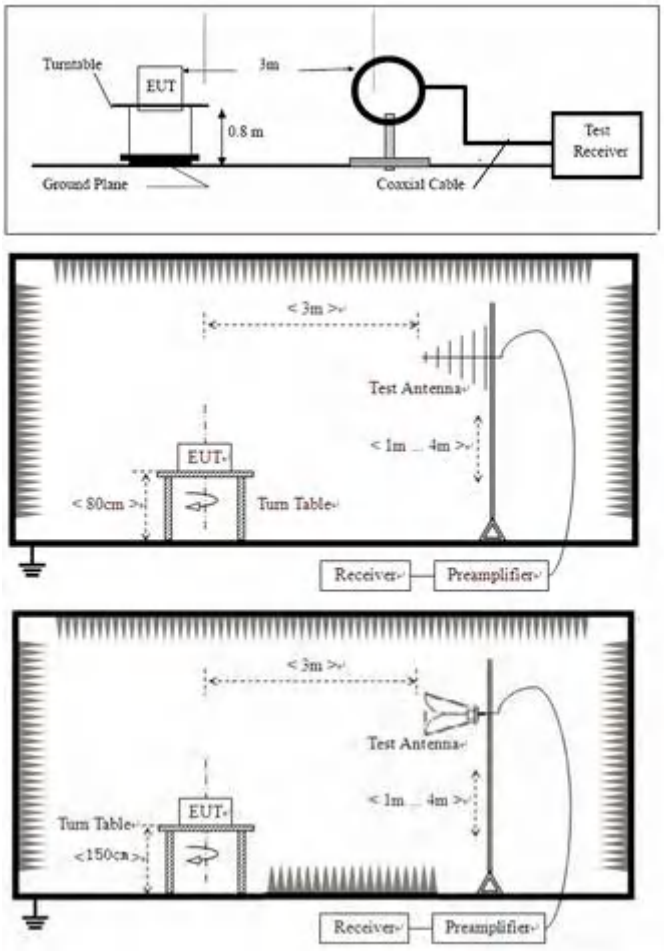
Test Standard	47 CFR Part 15, Subpart C 15.247
Test Method	ANSI C63.10 (2013) Section 6.4,6.5,6.6
Test Mode (Pre-Scan)	TX
Test Mode (Final Test)	TX
Tester	Jozu
Temperature	25℃
Humidity	60%

14.1 LIMITS

Frequency(MHz)	Field strength(microvolts/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

Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90kHz, 110-490kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

14.2 BLOCK DIAGRAM OF TEST SETUP



14.3 PROCEDURE

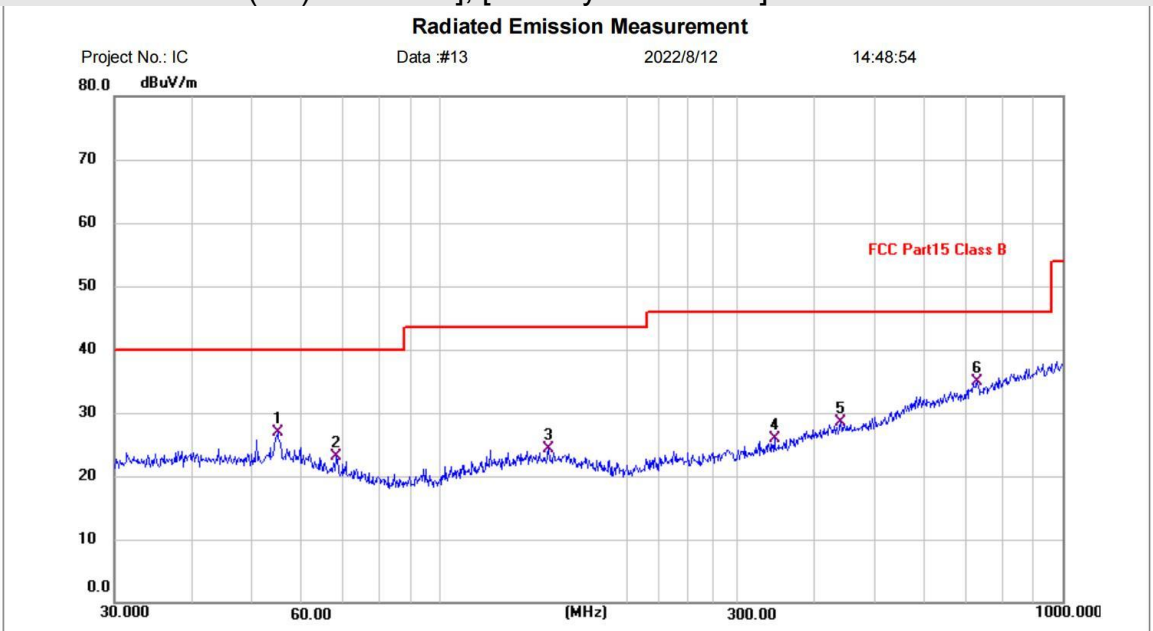
a. For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
b. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
c. The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
d. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
e. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
f. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
g. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

h. Test the EUT in the lowest channel, the middle channel, the Highest channel.
i. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.
j. Repeat above procedures until all frequencies measured was complete.

Remark:
1) For emission below 1GHz, through pre-scan found the worst case is the lowest channel. Only the worst case is recorded in the report.
2) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:
Final Test Level =Receiver Reading + Antenna Factor + Cable Factor - Preamplifier Factor
3) Scan from 9kHz to 25GHz, the disturbance above 12.75GHz and below 30MHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported. fundamental frequency is blocked by filter, and only spurious emission is shown.
4) For frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report.

14.4 TEST DATA

[TestMode: TX mode (SE) below 1G]; [Polarity: Horizontal]



Site
Limit: FCC Part15 Class B
EUT: AIR Mini
M/N: AIR Mini
Mode: 2.4G TX mode
Note:

Polarization: *Horizontal*
Power:

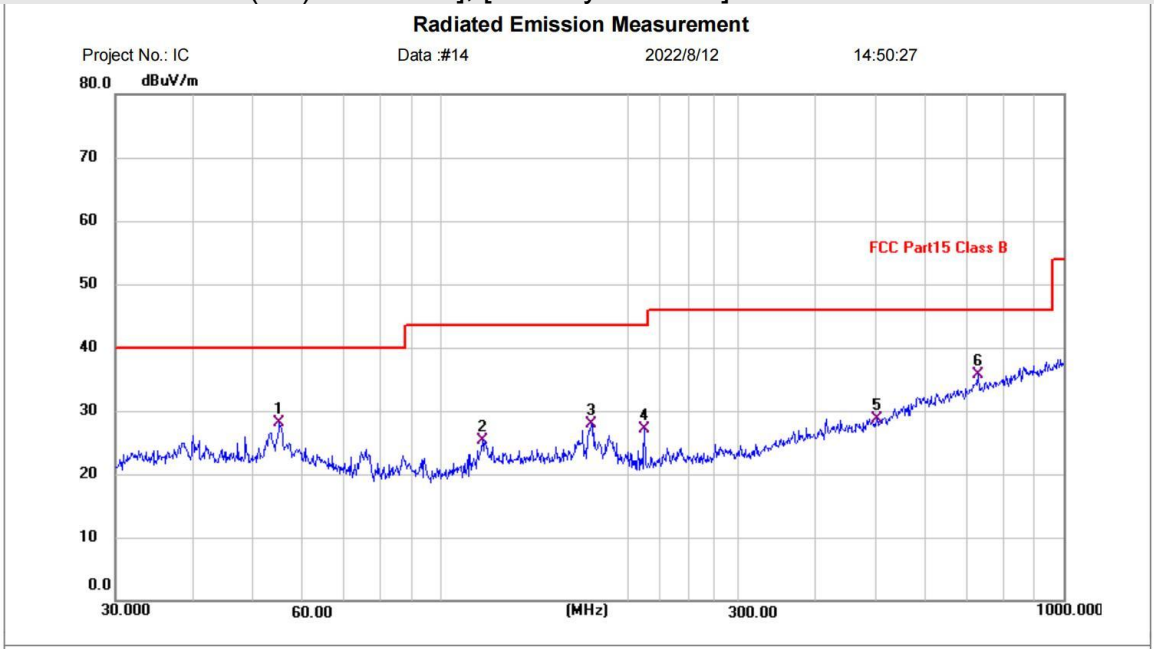
Temperature: (C)
Humidity: %RH

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	54.8348	3.89	23.00	26.89	40.00	-13.11	QP	P	
2	68.1514	1.96	21.15	23.11	40.00	-16.89	QP	P	
3	149.4857	1.42	22.97	24.39	43.50	-19.11	QP	P	
4	344.3855	1.14	24.86	26.00	46.00	-20.00	QP	P	
5	440.1962	1.45	27.03	28.48	46.00	-17.52	QP	P	
6 *	729.3582	2.81	32.12	34.93	46.00	-11.07	QP	P	

*:Maximum data x:Over limit !:over margin

Test Result: Pass

[TestMode: TX mode (SE) below 1G]; [Polarity: Vertical]



Site
Limit: FCC Part15 Class B
EUT: AIR Mini
M/N: AIR Mini
Mode: 2.4G TX mode
Note:

Polarization: *Vertical*
Power:

Temperature: (C)
Humidity: %RH

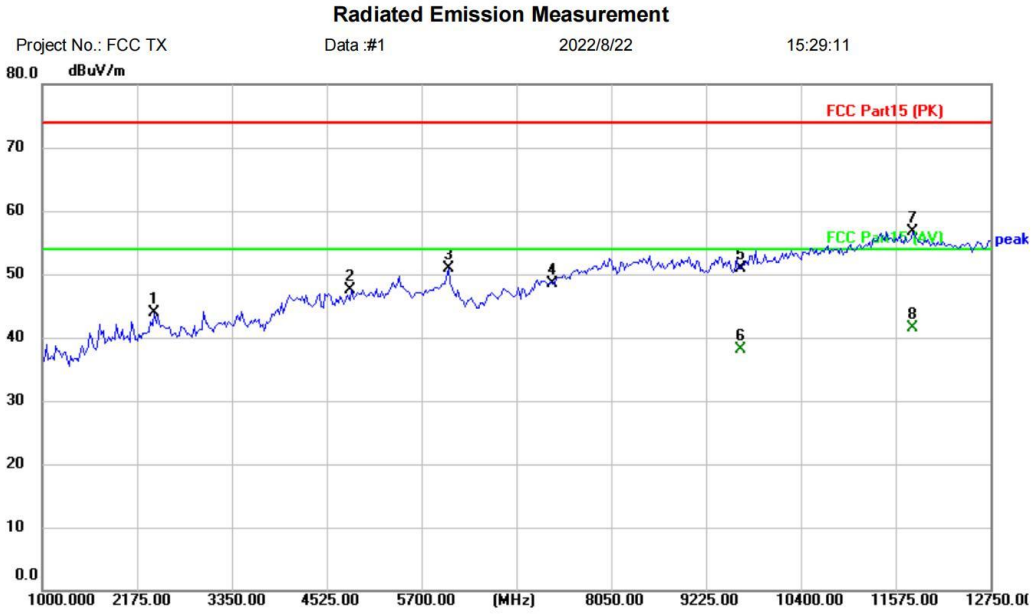
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	55.0274	5.01	23.00	28.01	40.00	-11.99	QP	P	
2	116.5401	3.41	21.89	25.30	43.50	-18.20	QP	P	
3	174.4241	6.33	21.66	27.99	43.50	-15.51	QP	P	
4	212.2695	6.00	21.02	27.02	43.50	-16.48	QP	P	
5	501.1790	0.80	27.93	28.73	46.00	-17.27	QP	P	
6 *	729.3583	3.59	32.12	35.71	46.00	-10.29	QP	P	

*:Maximum data x:Over limit !:over margin

Test Result: Pass

Remark: During the test, pre-scan the 802.11b/g/n mode, and found the 802.11b mode which it is worse case.

[TestMode: TX low channel]; [Polarity: Horizontal]



Site
Limit: FCC Part15 (PK)
EUT: AIR Mini
M/N: AIR Mini
Mode: 11B TX-L
Note:

Polarization: ***Horizontal***
Power:

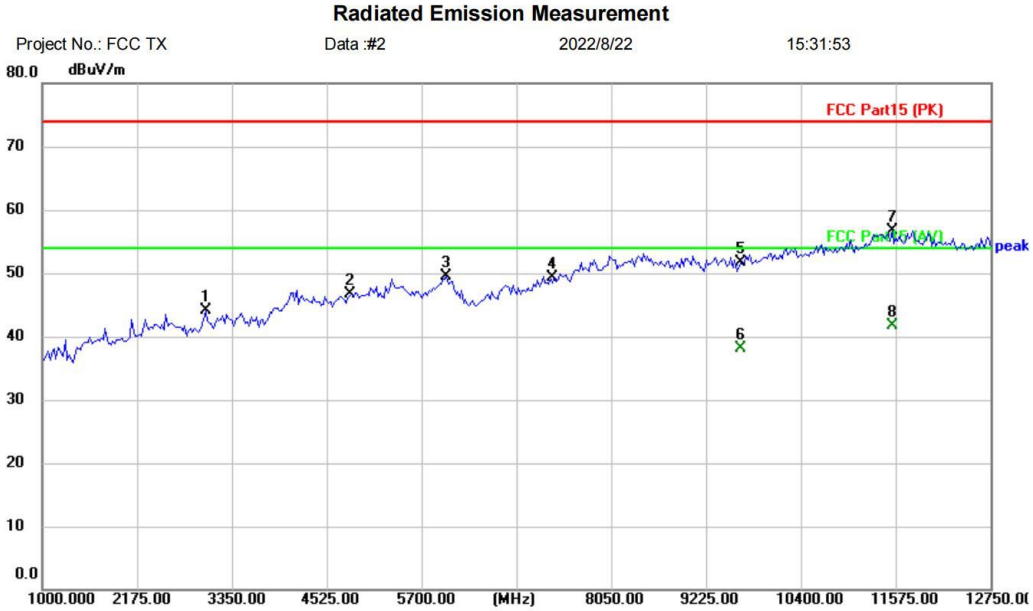
Temperature: (C)
Humidity: %RH

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment
1		2386.500	43.65	0.22	43.87	74.00	-30.13	peak	
2		4824.000	41.85	5.61	47.46	74.00	-26.54	peak	
3		6029.000	44.18	6.80	50.98	74.00	-23.02	peak	
4		7326.000	38.54	10.03	48.57	74.00	-25.43	peak	
5		9648.000	37.87	13.11	50.98	74.00	-23.02	peak	
6		9648.000	25.07	13.11	38.18	54.00	-15.82	AVG	
7		11786.500	39.71	16.93	56.64	74.00	-17.36	peak	
8	*	11786.500	24.48	16.93	41.41	54.00	-12.59	AVG	

*:Maximum data x:Over limit !:over margin 〈Reference Only

Test Result: Pass

[TestMode: TX low cahnnel]; [Polarity: Vertical]



Site
Limit: FCC Part15 (PK)
EUT: AIR Mini
M/N: AIR Mini
Mode: 11B TX-L
Note:

Polarization: *Vertical*
Power:

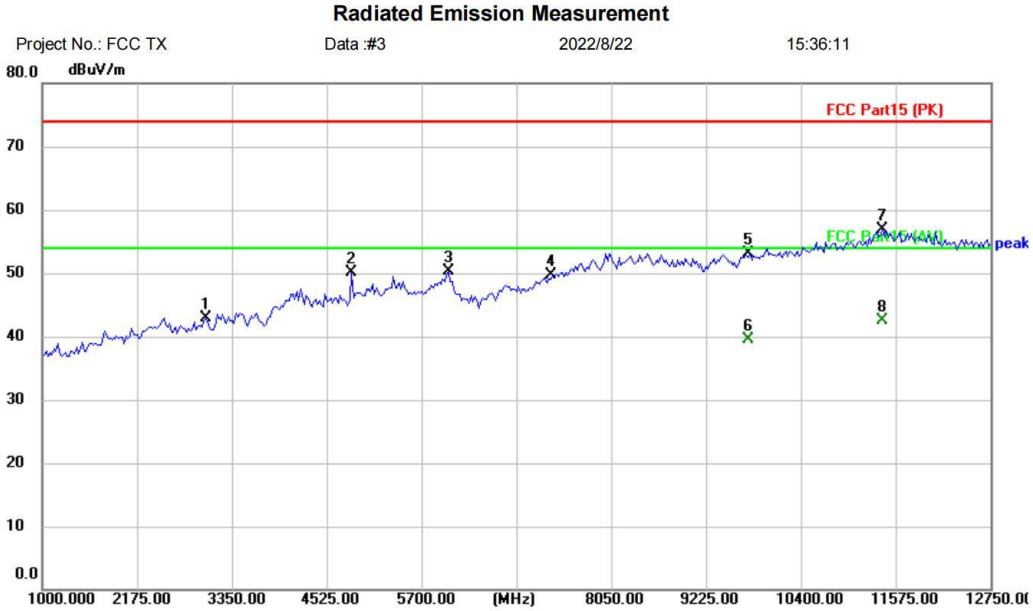
Temperature: (C)
Humidity: %RH

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment
1		3021.000	44.44	-0.33	44.11	74.00	-29.89	peak	
2		4824.000	41.03	5.61	46.64	74.00	-27.36	peak	
3		6005.500	42.75	6.76	49.51	74.00	-24.49	peak	
4		7326.000	39.33	10.03	49.36	74.00	-24.64	peak	
5		9648.000	38.64	13.11	51.75	74.00	-22.25	peak	
6		9648.000	25.00	13.11	38.11	54.00	-15.89	AVG	
7		11528.000	39.26	17.53	56.79	74.00	-17.21	peak	
8	*	11528.000	24.12	17.53	41.65	54.00	-12.35	AVG	

*:Maximum data x:Over limit !:over margin 〈Reference Only

Test Result: Pass

[TestMode: TX mid cahnnel]; [Polarity: Horizontal]



Site
Limit: FCC Part15 (PK)
EUT: AIR Mini
M/N: AIR Mini
Mode: 11B TX-M
Note:

Polarization: ***Horizontal***
Power:

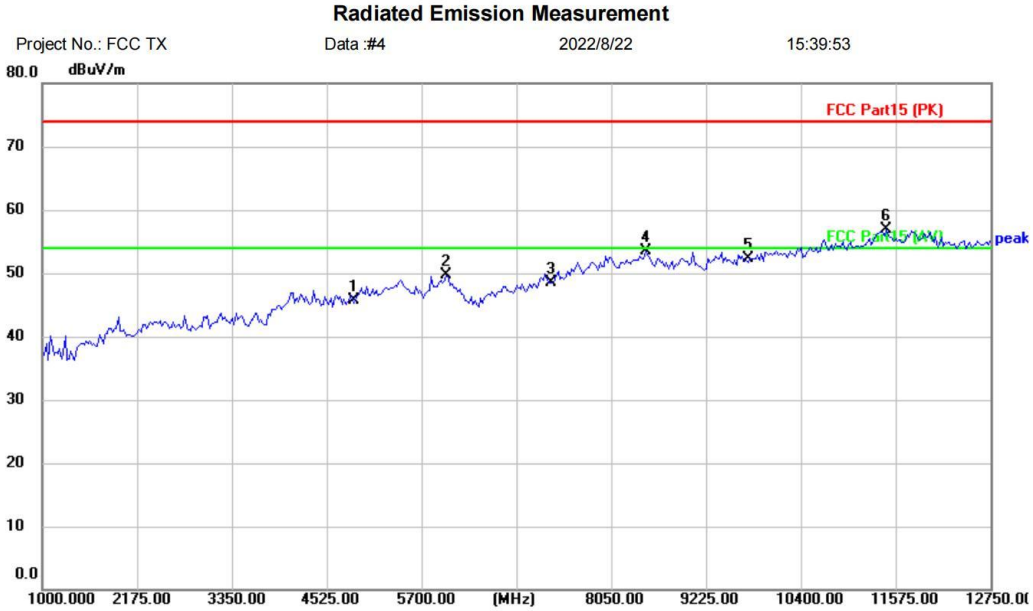
Temperature: (C)
Humidity: %RH

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment
1		3021.000	43.16	-0.33	42.83	74.00	-31.17	peak	
2		4830.500	44.47	5.62	50.09	74.00	-23.91	peak	
3		6029.000	43.52	6.80	50.32	74.00	-23.68	peak	
4		7311.000	39.75	9.97	49.72	74.00	-24.28	peak	
5		9748.000	39.07	14.02	53.09	74.00	-20.91	peak	
6		9748.000	25.42	14.02	39.44	54.00	-14.56	AVG	
7		11410.500	39.33	17.48	56.81	74.00	-17.19	peak	
8	*	11410.500	25.00	17.48	42.48	54.00	-11.52	AVG	

*:Maximum data x:Over limit !:over margin 〈Reference Only

Test Result: Pass

[TestMode: TX mid channel]; [Polarity: Vertical]



Site
Limit: FCC Part15 (PK)
EUT: AIR Mini
M/N: AIR Mini
Mode: 11B TX-M
Note:

Polarization: *Vertical*
Power:

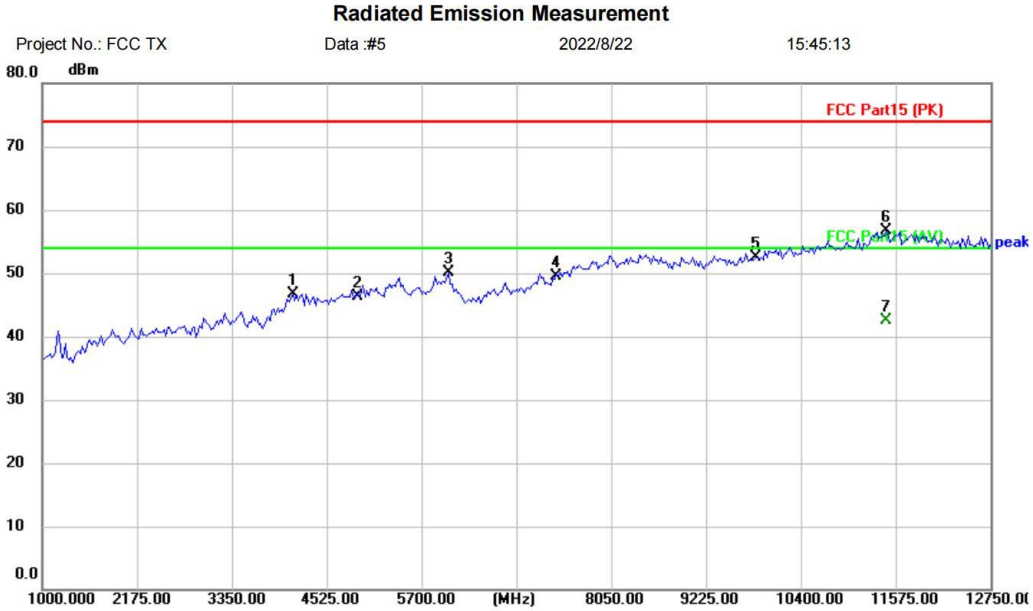
Temperature: (C)
Humidity: %RH

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment
1		4874.000	39.96	5.78	45.74	74.00	-28.26	peak	
2		6005.500	42.90	6.76	49.66	74.00	-24.34	peak	
3		7311.000	38.46	9.97	48.43	74.00	-25.57	peak	
4		8473.000	40.54	12.92	53.46	74.00	-20.54	peak	
5		9748.000	38.21	14.02	52.23	74.00	-21.77	peak	
6	*	11457.500	39.35	17.50	56.85	74.00	-17.15	peak	

*:Maximum data x:Over limit !:over margin 〈Reference Only

Test Result: Pass

[TestMode: TX high channel]; [Polarity: Horizontal]



Site
Limit: FCC Part15 (PK)
EUT: AIR Mini
M/N: AIR Mini
Mode: 11B TX-H
Note:

Polarization: ***Horizontal***
Power:

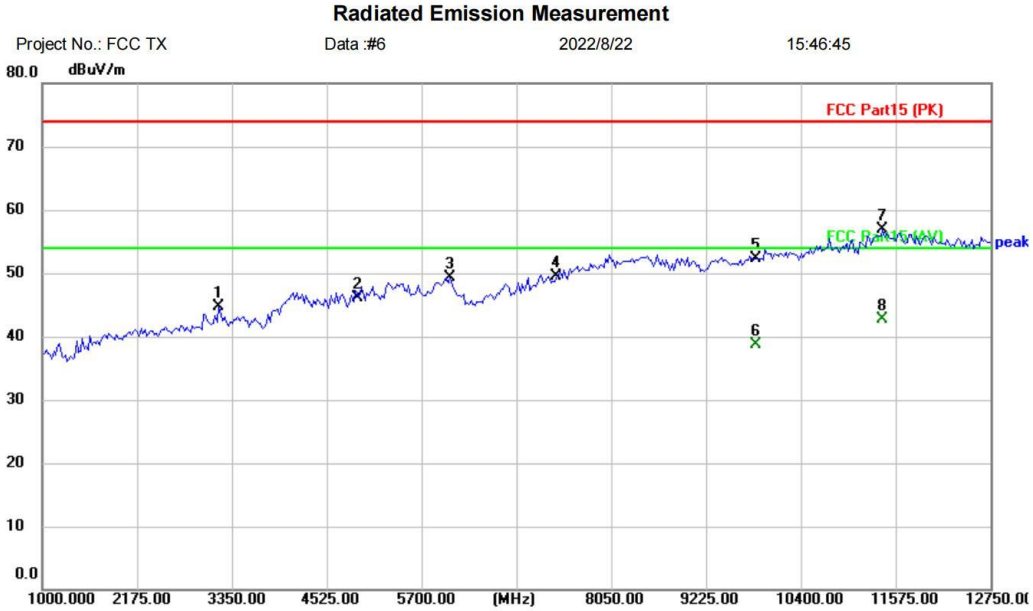
Temperature: (C)
Humidity: %RH

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1		4102.000	42.43	4.35	46.78	74.00	-27.22	peak	
2		4924.000	40.08	6.26	46.34	74.00	-27.66	peak	
3		6029.000	43.22	6.80	50.02	74.00	-23.98	peak	
4		7386.000	39.17	10.24	49.41	74.00	-24.59	peak	
5		9848.000	37.82	14.67	52.49	74.00	-21.51	peak	
6		11457.500	39.25	17.50	56.75	74.00	-17.25	peak	
7	*	11457.500	24.95	17.50	42.45	54.00	-11.55	AVG	

*:Maximum data x:Over limit !:over margin 〈Reference Only

Test Result: Pass

[TestMode: TX high cahnnel]; [Polarity: Vertical]



Site
Limit: FCC Part15 (PK)
EUT: AIR Mini
M/N: AIR Mini
Mode: 11B TX-H
Note:

Polarization: *Vertical*
Power:

Temperature: (C)
Humidity: %RH

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment
1		3185.500	45.03	-0.35	44.68	74.00	-29.32	peak	
2		4924.000	39.81	6.26	46.07	74.00	-27.93	peak	
3		6052.500	42.41	6.86	49.27	74.00	-24.73	peak	
4		7386.000	39.31	10.24	49.55	74.00	-24.45	peak	
5		9848.000	37.59	14.67	52.26	74.00	-21.74	peak	
6		9848.000	24.06	14.67	38.73	54.00	-15.27	AVG	
7		11410.500	39.41	17.48	56.89	74.00	-17.11	peak	
8	*	11410.500	25.23	17.48	42.71	54.00	-11.29	AVG	

*:Maximum data x:Over limit !:over margin 〈Reference Only

Test Result: Pass

15 RADIATED EMISSIONS WHICH FALL IN THE RESTRICTED BANDS

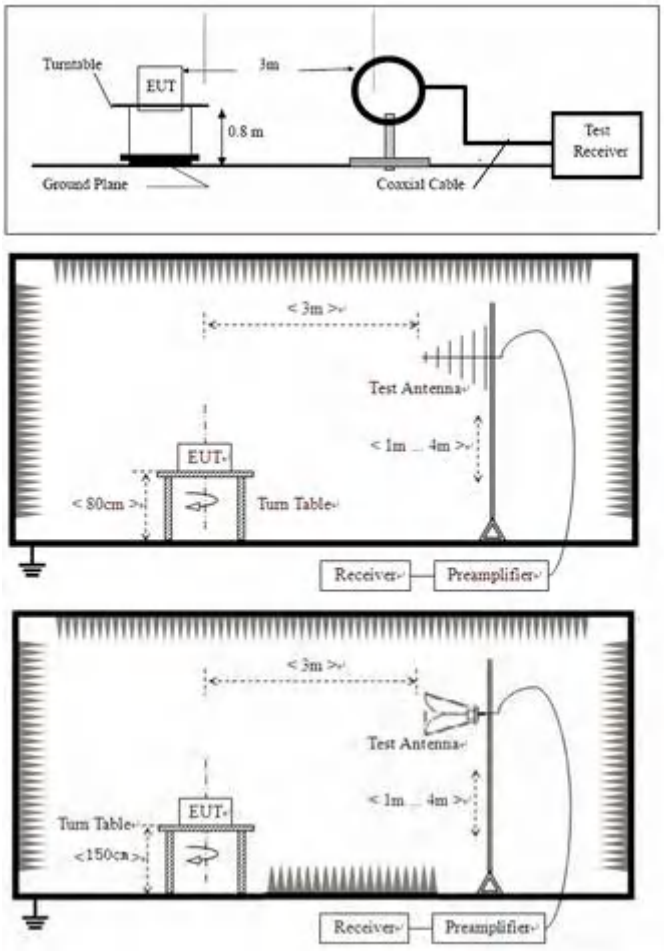
Test Standard	47 CFR Part 15, Subpart C 15.247
Test Method	ANSI C63.10 (2013) Section 6.10.5
Test Mode (Pre-Scan)	TX
Test Mode (Final Test)	TX
Tester	Jozu
Temperature	25℃
Humidity	60%

15.1 LIMITS

Frequency(MHz)	Field strength(microvolts/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

Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90kHz, 110-490kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

15.2 BLOCK DIAGRAM OF TEST SETUP



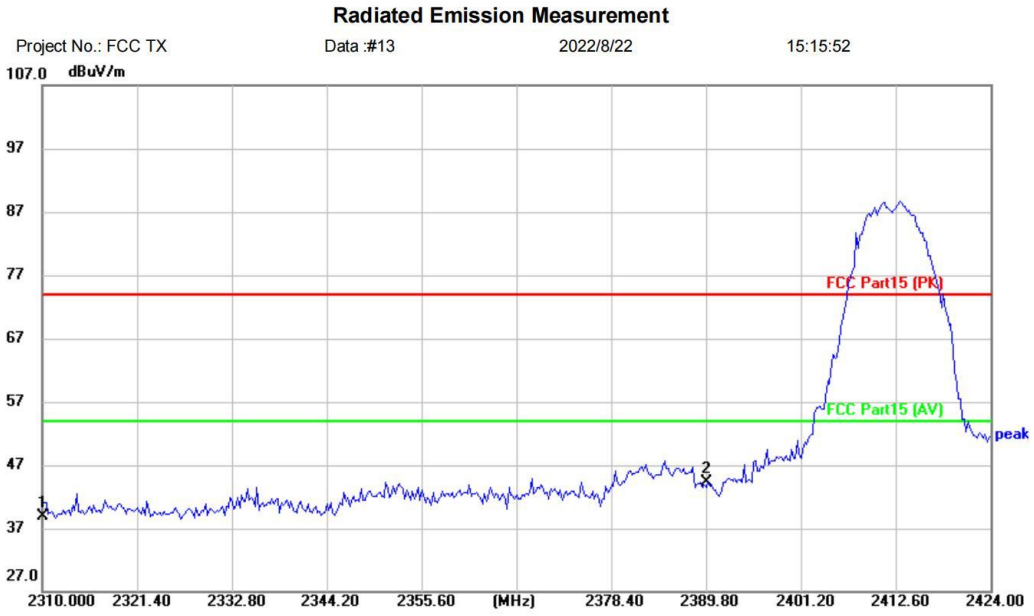
15.3 PROCEDURE

a. For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
b. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
c. The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
d. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
e. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
f. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
g. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

h. Test the EUT in the lowest channel, the middle channel, the Highest channel.
i. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.
j. Repeat above procedures until all frequencies measured was complete.
Remark 1: Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor
Remark 2: For frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report.

15.4 TEST DATA

[TestMode: TX b low channel]; [Polarity: Horizontal]



Site
Limit: FCC Part15 (PK)
EUT: AIR Mini
M/N: AIR Mini
Mode: 11B TX-L
Note:

Polarization: ***Horizontal***
Power:

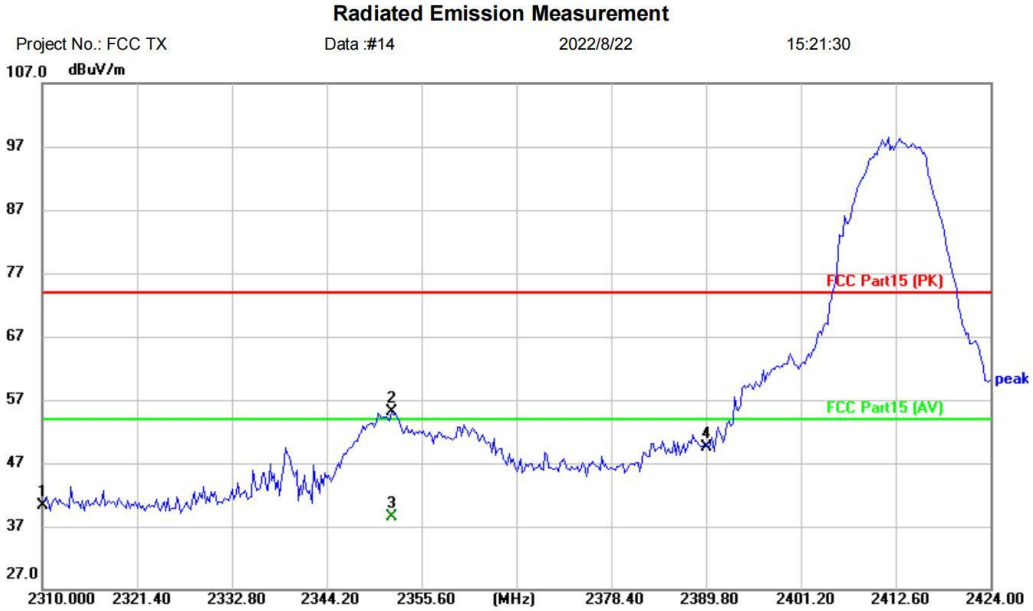
Temperature: (C)
Humidity: %RH

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment
1		2310.000	41.84	-3.02	38.82	74.00	-35.18	peak	
2	*	2390.000	46.73	-2.50	44.23	74.00	-29.77	peak	

*:Maximum data x:Over limit !:over margin 〈Reference Only

Test Result: Pass

[TestMode: TX b low channel]; [Polarity: Vertical]



Site
Limit: FCC Part15 (PK)
EUT: AIR Mini
M/N: AIR Mini
Mode: 11B TX-L
Note:

Polarization: *Vertical*
Power:

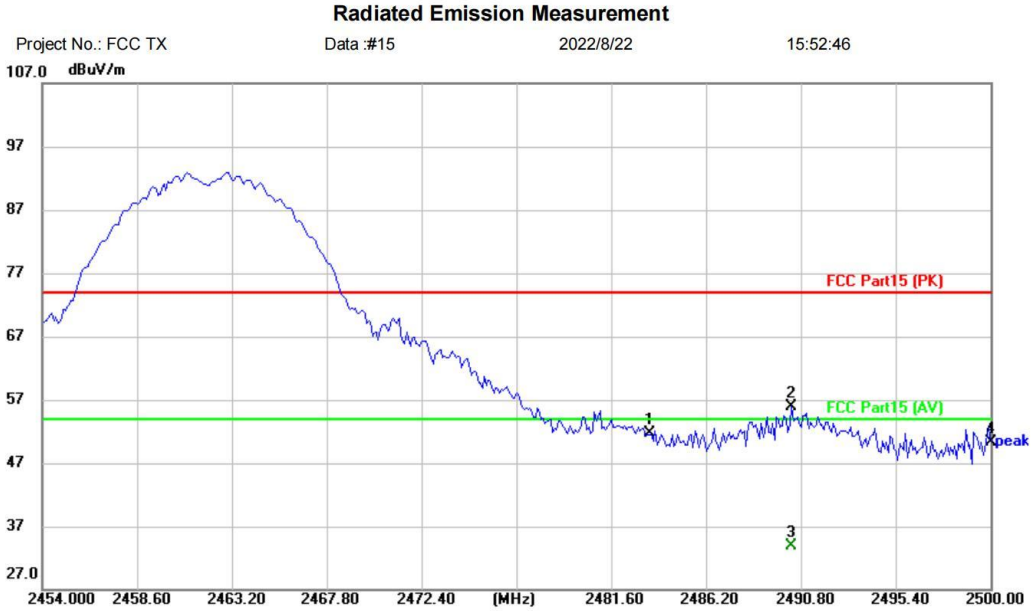
Temperature: (C)
Humidity: %RH

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment
1		2310.000	43.42	-3.02	40.40	74.00	-33.60	peak	
2		2351.952	57.84	-2.75	55.09	74.00	-18.91	peak	
3	*	2351.952	41.33	-2.75	38.58	54.00	-15.42	AVG	
4		2390.000	52.10	-2.50	49.60	74.00	-24.40	peak	

*:Maximum data x:Over limit !:over margin 〈Reference Only

Test Result: Pass

[TestMode: TX b high channel]; [Polarity: Vertical]



Site
Limit: FCC Part15 (PK)
EUT: AIR Mini
M/N: AIR Mini
Mode: 11B TX-H
Note:

Polarization: ***Horizontal***
Power:

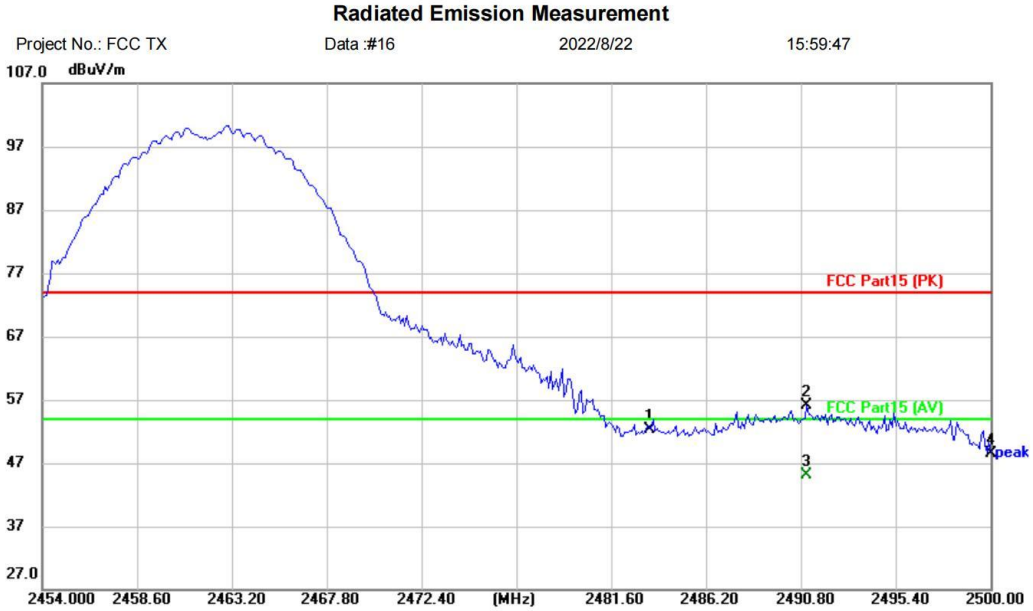
Temperature: (C)
Humidity: %RH

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment
1		2483.500	54.24	-2.52	51.72	74.00	-22.28	peak	
2	*	2490.340	58.48	-2.53	55.95	74.00	-18.05	peak	
3		2490.340	36.46	-2.53	33.93	54.00	-20.07	AVG	
4		2500.000	52.91	-2.55	50.36	74.00	-23.64	peak	

*:Maximum data x:Over limit !:over margin 〈Reference Only

Test Result: Pass

[TestMode: TX b high channel]; [Polarity: Vertical]



Site
Limit: FCC Part15 (PK)
EUT: AIR Mini
M/N: AIR Mini
Mode: 11B TX-H
Note:

Polarization: *Vertical*
Power:

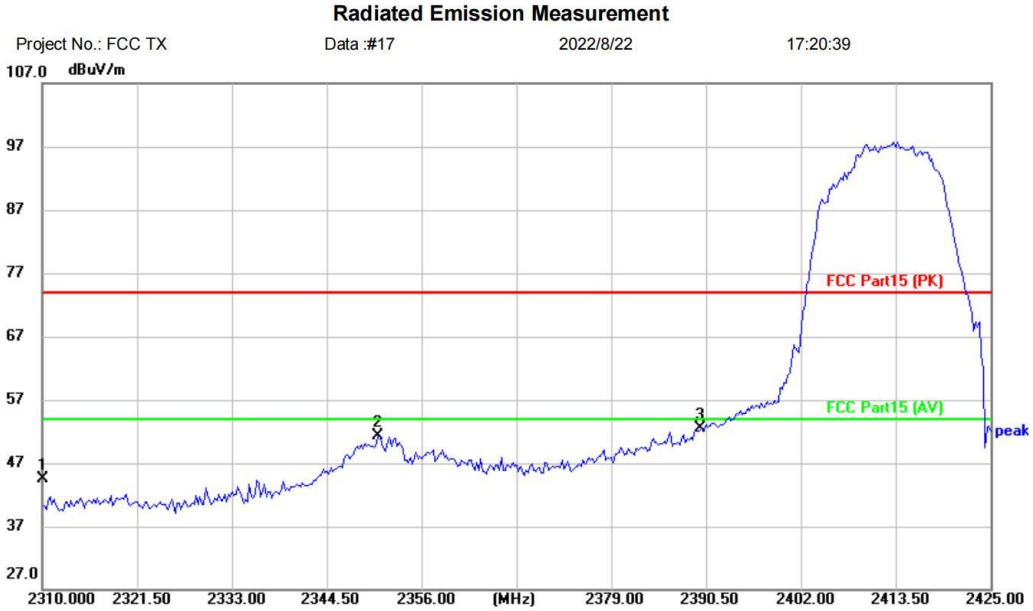
Temperature: (C)
Humidity: %RH

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment
1		2483.500	54.92	-2.52	52.40	74.00	-21.60	peak	
2		2491.076	58.68	-2.53	56.15	74.00	-17.85	peak	
3	*	2491.076	47.71	-2.53	45.18	54.00	-8.82	AVG	
4		2500.000	51.04	-2.55	48.49	74.00	-25.51	peak	

*:Maximum data x:Over limit !:over margin 〈Reference Only

Test Result: Pass

[TestMode: TX g low channel]; [Polarity: Horizontal]



Site
Limit: FCC Part15 (PK)
EUT: AIR Mini
M/N: AIR Mini
Mode: 11G TX-L
Note:

Polarization: ***Horizontal***
Power:

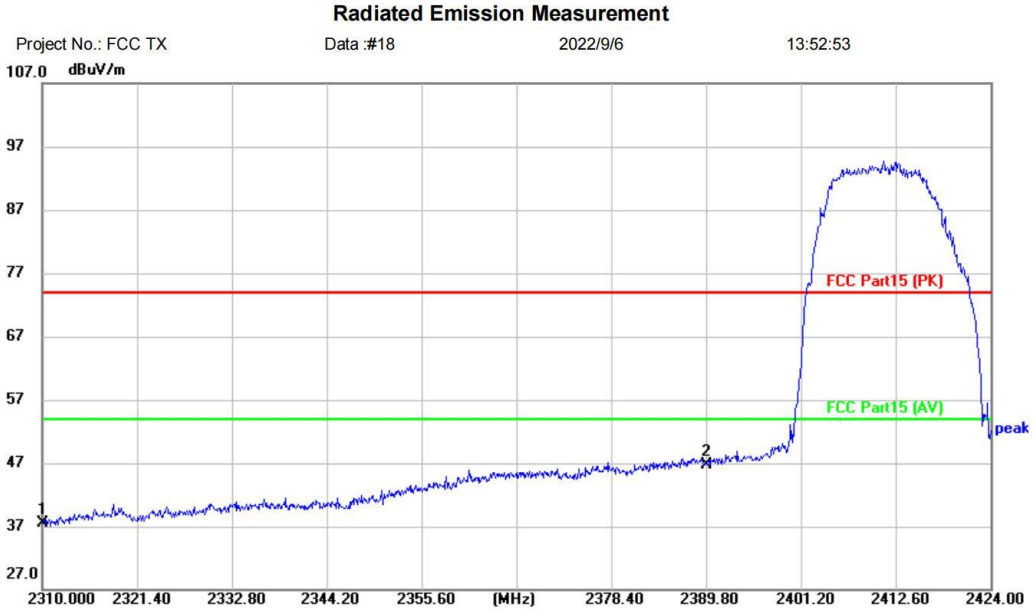
Temperature: (C)
Humidity: %RH

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment
1		2310.000	47.61	-3.02	44.59	74.00	-29.41	peak	
2		2350.710	54.13	-2.75	51.38	74.00	-22.62	peak	
3	*	2390.000	55.05	-2.50	52.55	74.00	-21.45	peak	

*:Maximum data x:Over limit !:over margin 〈Reference Only

Test Result: Pass

[TestMode: TX g low channel]; [Polarity: Vertical]



Site
Limit: FCC Part15 (PK)
EUT: AIR Mini
M/N: AIR Mini
Mode: 11G TX-L
Note:

Polarization: ***Vertical***
Power:

Temperature: (C)
Humidity: %RH

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment
1		2310.000	41.70	-4.27	37.43	74.00	-36.57	peak	
2	*	2390.000	50.44	-3.82	46.62	74.00	-27.38	peak	

*:Maximum data x:Over limit !:over margin 〈Reference Only

Test Result: Pass