

# **TEST REPORT**

Product Name : CozyAir A3 humidifier

Brand Mark : CozyAir Model No. : A1320

**FCC ID** : 2A259-A1320

Report Number : BLA-EMC-202109-A2402

**Date of Sample Receipt** : 2021/9/6

**Date of Test** : 2021/9/6 to 2021/10/14

**Date of Issue** : 2021/10/14

Test Standard : 47 CFR Part 15, Subpart C 15.247

Test Result : Pass

Jose Thong

# Prepared for:

Beijing Miaoxin Technology Co., Ltd.

022, 1st floor, East Annex Building, Beipu Factory (118 Zhongguancun East Road), West Academy of Agricultural Sciences, Dazhongsi No.2 Food Factory, Haidian District, Beijing City

# Prepared by:

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### **REPORT REVISE RECORD**

Version No.	Date	Description
00	2021/10/14	Original





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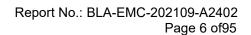
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# 1 TEST SUMMARY

Test item	Test Requirement Test Metho		Class/Severity	Result
Antenna Requirement	47 CFR Part 15, Subpart C 15.247	N/A	47 CFR Part 15, Subpart C 15.203 & 15.247(c)	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
Dwell Time	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 7.8.4	47 CFR Part 15, Subpart C 15.247a(1)(iii)	Pass
Hopping Channel Number	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 7.8.3	47 CFR Part 15, Subpart C 15.247a(1)(iii)	Pass
Carrier Frequencies Separation	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 7.8.2	47 CFR Part 15, Subpart C 15.247a(1)	Pass
20dB Bandwidth	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 7.8.7	47 CFR Part 15, Subpart C 15.247(a)(1)	Pass
Conducted Peak Output Power	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 7.8.5	47 CFR Part 15, Subpart C 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
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 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





2 GENERAL INFORMATION

Applicant	Beijing Miaoxin Technology Co., Ltd.		
Address	022, 1st floor, East Annex Building, Beipu Factory (118 Zhongguancun East Road), West Academy of Agricultural Sciences, Dazhongsi No.2 Food Factory, Haidian District, Beijing City		
Manufacturer	Beijing Miaoxin Technology Co., Ltd.		
Address	022, 1st floor, East Annex Building, Beipu Factory (118 Zhongguancun East Road), West Academy of Agricultural Sciences, Dazhongsi No.2 Food Factory, Haidian District, Beijing City		
Factory	Dongguan JingNuo Environment Science and Technology Inc.		
Address	#2 Limin Road, JinXiaoTang, ZhuTang, FengGang, DongGuan, GuangDong, China		
Product Name	CozyAir A3 humidifier		
Test Model No.	A1320		

# 3 GENERAL DESCRIPTION OF E.U.T.

Hardware Version	N/A
Software Version	N/A
Operation Frequency:	2402MHz-2480MHz
Modulation Type:	GFSK, pi/4DQPSK, 8DPSK
Channel Spacing:	1MHz
Number of Channels:	79
Antenna Type:	PCB Antenna
Antenna Gain:	3.68dBi



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# 4 TEST ENVIRONMENT

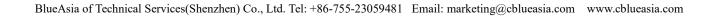
Environment	Temperature	Voltage		
Normal	25°C	DC3.3V		

### 5 TEST MODE

TEST MODE	EST MODE TEST MODE DESCRIPTION			
Transmitting Keep the EUT in continuously transmitting mode with modulation. (hopping and hopping mode all have been tested, non hopping mode is worse case for RE				
	Remark: DH1,DH3, DH5 all have been tested, during the test, GFSK, Pi/4QPSK, 8-DPSK modulation			
were all pre-sca	were all pre-scanned only worse case(8-DPSK) 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		





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# 7 DESCRIPTION OF SUPPORT UNIT

Device Type	Manufacturer	Model Name	Serial No.	Remark
N/A	N/A	N/A	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.





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# 9 TEST INSTRUMENTS LIST

Test Equipment Of Conducted Spurious Emissions					
Equipment	Manufacturer	Model	S/N	Cal.Date	Cal.Due
Spectrum	R&S	FSP40	100817	2021/10/12	2022/10/11
Spectrum	Agilent	N9020A	MY49100060	2021/10/12	2022/10/11
Signal Generator	Agilent	N5182A	MY49060650	2021/10/12	2022/10/11
Signal Generator	Agilent	E8257D	MY44320250	2021/10/12	2022/10/11

Test Equipment Of D	well Time				
Equipment	Manufacturer	Model	S/N	Cal.Date	Cal.Due
Spectrum	R&S	FSP40	100817	2021/10/12	2022/10/11
Spectrum	Agilent	N9020A	MY49100060	2021/10/12	2022/10/11
Signal Generator	Agilent	N5182A	MY49060650	2021/10/12	2022/10/11
Signal Generator	Agilent	E8257D	MY44320250	2021/10/12	2022/10/11

Test Equipment Of Hopping Channel Number								
Equipment	Equipment Manufacturer Model S/N Cal.Date Cal							
Spectrum	R&S	FSP40	100817	2021/10/12	2022/10/11			
Spectrum	Agilent	N9020A	MY49100060	2021/10/12	2022/10/11			
Signal Generator	Agilent	N5182A	MY49060650	2021/10/12	2022/10/11			
Signal Generator	Agilent	E8257D	MY44320250	2021/10/12	2022/10/11			

Test Equipment Of	Test Equipment Of Carrier Frequencies Separation							
Equipment	Manufacturer	Model	S/N	Cal.Date	Cal.Due			



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Spectrum	R&S	FSP40	100817	2021/10/12	2022/10/11
Spectrum	Agilent	N9020A	MY49100060	2021/10/12	2022/10/11
Signal Generator	Agilent	N5182A	MY49060650	2021/10/12	2022/10/11
Signal Generator	Agilent	E8257D	MY44320250	2021/10/12	2022/10/11

Test Equipment Of 2	0dB Bandwidth				
Equipment	Manufacturer	Model	S/N	Cal.Date	Cal.Due
Spectrum	R&S	FSP40	100817	2021/10/12	2022/10/11
Spectrum	Agilent	N9020A	MY49100060	2021/10/12	2022/10/11
Signal Generator	Agilent	N5182A	MY49060650	2021/10/12	2022/10/11
Signal Generator	Agilent	E8257D	MY44320250	2021/10/12	2022/10/11

Test Equipment Of Conducted Peak Output Power								
Equipment	Manufacturer	Model	S/N	Cal.Date	Cal.Due			
Spectrum	R&S	FSP40	100817	2021/10/12	2022/10/11			
Spectrum	Agilent	N9020A	MY49100060	2021/10/12	2022/10/11			
Signal Generator	Agilent	N5182A	MY49060650	2021/10/12	2022/10/11			
Signal Generator	Agilent	E8257D	MY44320250	2021/10/12	2022/10/11			

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	2020/11/25	2023/11/24			
Receiver	R&S	ESPI3	101082	2021/10/12	2022/10/11			



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LISN	R&S	ENV216	3560.6550.15	2021/10/12	2022/10/11
LISN	AT	AT166-2	AKK1806000003	2021/10/12	2022/10/11
EMI software	EZ	EZ-EMC	EEMC-3A1	N/A	N/A

Test Equipment Of Radiated Spurious Emissions							
Equipment	Manufacturer	Model	S/N	Cal.Date	Cal.Due		
Chamber	SKET	966	N/A	2020/11/10	2023/11/9		
Spectrum	R&S	FSP40	100817	2021/10/12	2022/10/11		
Receiver	R&S	ESR7	101199	2021/10/12	2022/10/11		
broadband Antenna	Schwarzbeck	VULB9168	00836 P:00227	2020/9/26	2022/9/25		
Horn Antenna	Schwarzbeck	9120D	01892 P:00331	2020/9/26	2022/9/25		
Amplifier	SKET	PA-000318G-45	N/A	2021/10/16	2022/10/15		
EMI software	EZ	EZ-EMC	EEMC-3A1	N/A	N/A		
Loop antenna	SCHNARZBECK	FMZB1519B	00102	2020/9/26	2022/9/25		
Controller	SKET	N/A	N/A	N/A	N/A		
Coaxial Cable	BlueAsia	BLA-XC-02	N/A	N/A	N/A		
Coaxial Cable	BlueAsia	BLA-XC-03	N/A	N/A	N/A		
Coaxial Cable	BlueAsia	BLA-XC-01	N/A	N/A	N/A		

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	2020/11/10	2023/11/9			
Spectrum	R&S	FSP40	100817	2021/10/12	2022/10/11			
Receiver	R&S	ESR7	101199	2021/10/12	2022/10/11			



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broadband Antenna	Schwarzbeck	VULB9168	00836 P:00227	2020/9/26	2022/9/25
Horn Antenna	Schwarzbeck	9120D	01892 P:00331	2020/9/26	2022/9/25
Amplifier	SKET	PA-000318G-45	N/A	2021/10/16	2021/10/15
EMI software	EZ	EZ-EMC	EEMC-3A1	N/A	N/A
Loop antenna	SCHNARZBECK	FMZB1519B	00102	2020/9/26	2022/9/25
Controller	SKET	N/A	N/A	N/A	N/A
Coaxial Cable	BlueAsia	BLA-XC-02	N/A	N/A	N/A
Coaxial Cable	BlueAsia	BLA-XC-03	N/A	N/A	N/A
Coaxial Cable	BlueAsia	BLA-XC-01	N/A	N/A	N/A

Test Equipment Of Conducted Band Edges Measurement								
Equipment	Manufacturer	Model	S/N	Cal.Date	Cal.Due			
Spectrum	R&S	FSP40	100817	2021/10/12	2022/10/11			
Spectrum	Agilent	N9020A	MY49100060	2021/10/12	2022/10/11			
Signal Generator	Agilent	N5182A	MY49060650	2021/10/12	2022/10/11			
Signal Generator	Agilent	E8257D	MY44320250	2021/10/12	2022/10/11			



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#### **10 ANTENNA REQUIREMENT**

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

#### 10.1 CONCLUSION

# Standard 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 antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit permanently attached antenna or of an so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

#### **EUT Antenna:**

The antenna is integrated on the main PCB and no consideration of replacement. The best case gain of the antenna is 3.68dBi.





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#### 11 CONDUCTED SPURIOUS EMISSIONS

Test Standard	47 CFR Part 15, Subpart C 15.247		
Test Method	ANSI C63.10 (2013) Section 7.8.6 & Section 11.11		
Test Mode (Pre-Scan)	TX		
Test Mode (Final Test)	TX		
Tester	Jozu		
Temperature	25℃		
Humidity	60%		

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio

§15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated

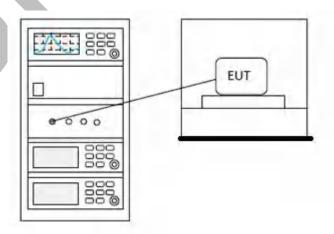
#### **11.1 LIMITS**

frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in

emission limits specified in §15.209(a) (see §15.205(c)).

Limit:

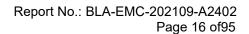
#### 11.2 BLOCK DIAGRAM OF TEST SETUP





### 11.3 TEST DATA







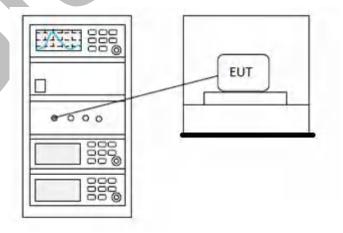
# 12 DWELL TIME

Test Standard	47 CFR Part 15, Subpart C 15.247		
Test Method	ANSI C63.10 (2013) Section 7.8.4		
Test Mode (Pre-Scan)	TX		
Test Mode (Final Test)	TX		
Tester	Jozu		
Temperature	25℃		
Humidity	60%		

#### **12.1 LIMITS**

Frequency(MHz)	Limit		
	0.4S within a 20S period(20dB		
002.028	bandwidth<250kHz)		
902-928	0.4S within a 10S period(20dB		
	bandwidth≥250kHz)		
	0.4S within a period of 0.4S multiplied by the		
2400-2483.5	number		
	of hopping channels		
5725-5850	0.4S within a 30S period		

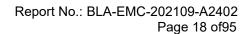
# 12.2 BLOCK DIAGRAM OF TEST SETUP





# 12.3 TEST DATA







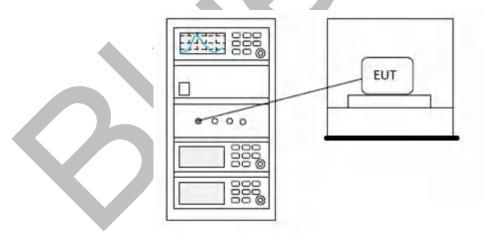
13 HOPPING CHANNEL NUMBER

Test Standard	47 CFR Part 15, Subpart C 15.247		
Test Method	ANSI C63.10 (2013) Section 7.8.3		
Test Mode (Pre-Scan)	TX		
Test Mode (Final Test)	TX		
Tester	Jozu		
Temperature	25℃		
Humidity	60%		

# **13.1 LIMITS**

Frequency range(MHz)	Number of hopping channels (minimum)		
002.020	50 for 20dB bandwidth <250kHz		
902-928	25 for 20dB bandwidth ≥250kHz		
2400-2483.5	15		
5725-5850	75		

# 13.2 BLOCK DIAGRAM OF TEST SETUP



### 13.3 TEST DATA



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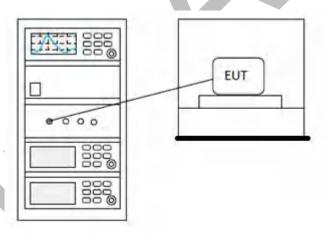
# 14 CARRIER FREQUENCIES SEPARATION

Test Standard	47 CFR Part 15, Subpart C 15.247		
Test Method	ANSI C63.10 (2013) Section 7.8.2		
Test Mode (Pre-Scan)	TX		
Test Mode (Final Test)	TX		
Tester	Jozu		
Temperature	25℃		
Humidity	60%		

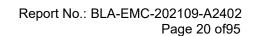
#### **14.1 LIMITS**

**Limit:** 2/3 of the 20dB bandwidth base on the transmission power is less than 0.125W

#### 14.2 BLOCK DIAGRAM OF TEST SETUP



### 14.3 TEST DATA

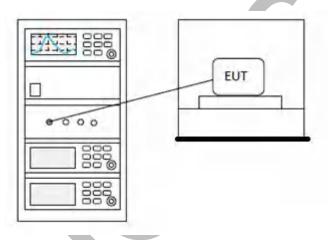




### 15 20DB BANDWIDTH

Test Standard	47 CFR Part 15, Subpart C 15.247		
Test Method	ANSI C63.10 (2013) Section 7.8.7		
Test Mode (Pre-Scan)	TX		
Test Mode (Final Test)	TX		
Tester	Jozu		
Temperature	25℃		
Humidity	60%		

#### 15.1 BLOCK DIAGRAM OF TEST SETUP



# 15.2 TEST DATA



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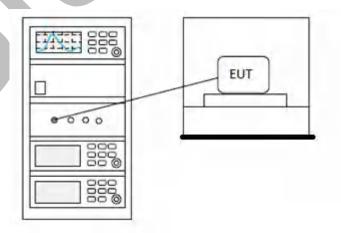
# **16 CONDUCTED PEAK OUTPUT POWER**

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

#### **16.1 LIMITS**

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

# 16.2 BLOCK DIAGRAM OF TEST SETUP





16.3 TEST DATA





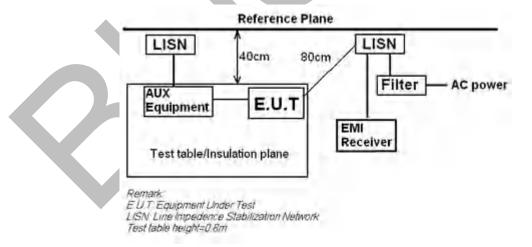
17 CONDUCTED EMISSIONS AT AC POWER LINE (150KHZ-30MHZ)

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

#### **17.1 LIMITS**

Frequency of	Conducted limit(dBμV)		
emission(MHz)	Quasi-peal	k	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.			

### 17.2 BLOCK DIAGRAM OF TEST SETUP



#### 17.3 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.



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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.

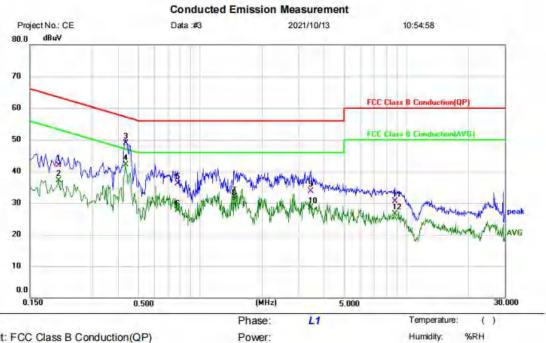
Remark: LISN=Read Level+ Cable Loss+ LISN Factor





#### 17.4 TEST DATA

# [TestMode: BT mode]; [Line: Line] ;[Power:AC120V/60Hz]



Limit: FCC Class B Conduction(QP)

EUT: CozyAir A3 humidifier M/N: A1320

Mode: BT mode

Note:

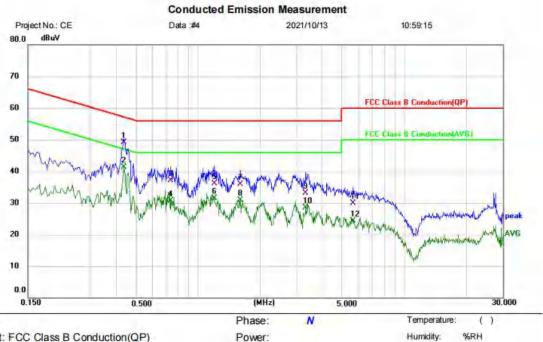
Site

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.2060	31.56	10.25	41.81	63.37	-21.56	QP	
2		0.2060	26.85	10.25	37.10	53.37	-16.27	AVG	
3		0.4340	39.04	9.85	48.89	57.18	-8.29	QP	
4	*	0.4340	32.19	9.85	42.04	47.18	-5.14	AVG	
5		0.7820	26.22	9.89	36.11	56.00	-19.89	QP	
6		0.7820	17.85	9.89	27.74	46.00	-18.26	AVG	
7		1.4700	22.05	9.93	31.98	56.00	-24.02	QP	
8		1.4700	21.09	9.93	31.02	46.00	-14.98	AVG	
9		3.4380	23.78	9.93	33.71	56.00	-22.29	QP	
10		3.4380	18.55	9.93	28.48	46.00	-17.52	AVG	
11		8.7820	20.15	10.40	30.55	60.00	-29.45	QP	
12		8.7820	16.07	10.40	26.47	50.00	-23.53	AVG	

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



# [TestMode: BT mode]; [Line: Nutral] ;[Power:AC120V/60Hz]



Limit: FCC Class B Conduction(QP)

EUT: CozyAir A3 humidifier

M/N: A1320 Mode: BT mode

Note:

Site

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.4380	39.27	9.78	49.05	57.10	-8.05	QP	
2		0.4380	31.60	9.78	41.38	47.10	-5.72	AVG	
3		0.7419	27.35	9.82	37.17	56.00	-18.83	QP	
4		0.7419	20.88	9.82	30.70	46.00	-15.30	AVG	
5		1.2019	26.36	9.84	36.20	56.00	-19.80	QP	
6		1.2019	21.59	9.84	31.43	46.00	-14.57	AVG	
7		1.6019	26.11	9.85	35.96	56.00	-20.04	QP	
8		1.6019	21.09	9.85	30.94	46.00	-15.06	AVG	
9		3.3380	23.20	9.90	33.10	56.00	-22.90	QP	
10		3.3380	18.70	9.90	28.60	46.00	-17.40	AVG	
11		5.6740	19.92	9.98	29.90	60.00	-30.10	QP	
12		5.6740	14.31	9.98	24.29	50.00	-25.71	AVG	

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



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#### 18 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%

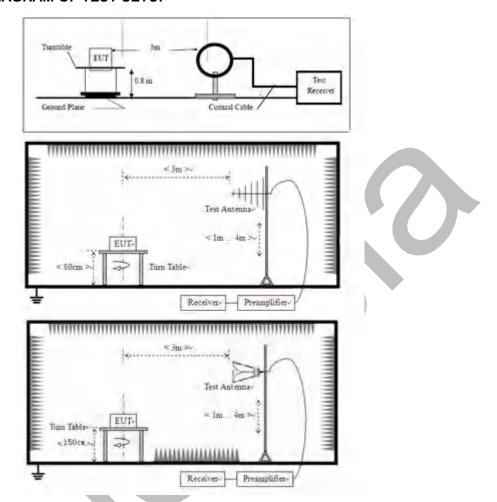
#### **18.1 LIMITS**

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.



#### 18.2 BLOCK DIAGRAM OF TEST SETUP



#### 18.3 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.



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- 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.

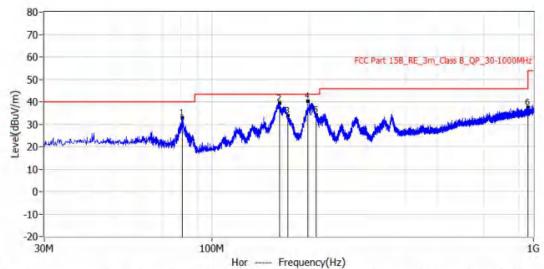




### 18.4 TEST DATA

# [TestMode: TX below 1G]; [Polarity: Horizontal]

Test Lab: BlueAsia EMC Lab ( RE #1)	Project: BLA-EMC-202109-A24	
EUT: CozyAir A3humidifier	Test Engineer: charlie	
M/N: A1320	Temperature:	
S/N:	Humidity:	
Test Mode: BT TX mode	Test Voltage:	
Note:	Test Data: 2021-10-13 14:00:21	

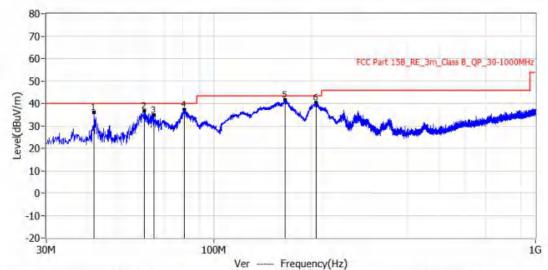


No.	Frequency	Limit dBuV/m	Level dBuV/m	Delta dB	Reading dBuV	Factor dB/m	Detector	Polar	Height cm	Angle deg
1*	80.683MHz	40.0	33.0	-7.0	13.3	19.7	QP	Hor	100.0	197.0
2*	161.799MHz	43.5	39.4	-4.1	16.3	23.1	QP	Hor	100.0	184.0
3*	172.105MHz	43.5	33.8	-9.7	11.6	22.2	QP	Hor	100.0	5.0
4*	198.174MHz	43.5	40.4	-3.1	19.8	20.6	QP	Hor	100.0	56.0
5*	211.026MHz	43.5	34.2	-9.3	13.0	21.2	QP	Hor	100.0	78.0
6*	959.988MHz	46.0	37.6	-8.4	1.9	35.7	QP	Hor	100.0	5.0

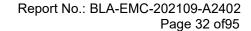


# [TestMode: TX below 1G]; [Polarity: Vertical]

Test Lab: BlueAsia EMC Lab ( RE #1 )	Project: BLA-EMC-202109-A24	
EUT: CozyAir A3humidifier	Test Engineer: charlie	
M/N: A1320	Temperature:	
S/N:	Humidity:	
Test Mode: BT TX mode	Test Voltage:	
Note:	Test Data: 2021-10-13 14:04:19	

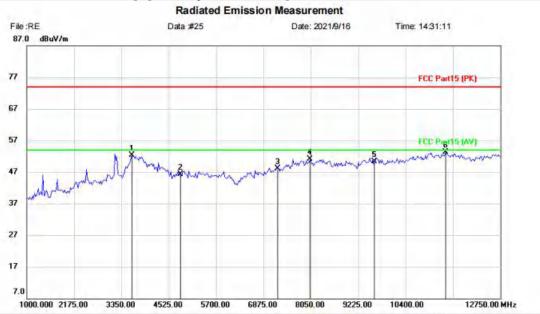


Reading Delta Height Angle Limit Level Factor Detector No. Frequency Polar dBuV/m dB/m dBuV/m dB dBuV cm deg 42.246MHz 40.0 36.1 -3.9 12.1 24.0 Ver 100.0 254.0 60.434MHz 40.0 36.5 -3.513.1 23.4 QP Ver 100.0 0.0 40.0 3\* 64.920MHz 34.8 -5.2 22.5 Ver 12.3 QP 100.0 0.0 40.0 4\* 80.683MHz 37.3 19.7 Ver 100.0 142.0 -2.7 17.6 QP 166.285MHz 43.5 41.5 -2.0 18.8 22.7 QP Ver 100.0 358.0 207.146MHz 43.5 40.2 -3.3 19.2 21.0 100.0 QP Ver 135.0





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



Site

Limit: FCC Part15 (PK)

EUT: CozyAir A3 humidifier

M/N: A1230 Mode: BT TX-L

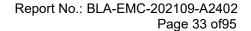
Note:

Polarization:	Horizontal	Temperature:
Power:		Humidity:

Distance:

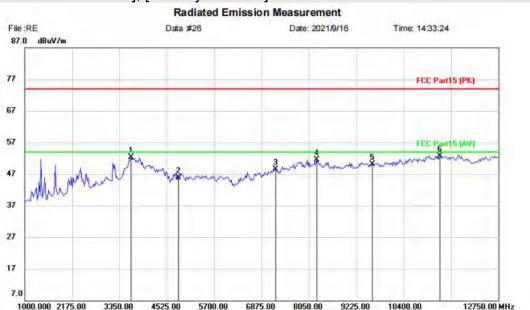
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		3608.500	44.51	7.80	52.31	74.00	-21.69	peak			
2		4804.000	42.50	3.71	46.21	74.00	-27.79	peak			
3		7206.000	42.17	5.96	48.13	74.00	-25.87	peak			
4		8026.500	43.03	7.98	51.01	74.00	-22.99	peak			
5		9608.000	41.09	9.29	50.38	74.00	-23.62	peak			
6	* 1	1387.000	41.44	11.78	53.22	74.00	-20.78	peak			

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





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



Site

Limit: FCC Part15 (PK)

EUT: CozyAir A3 humidifier

M/N: A1230 Mode: BT TX-L

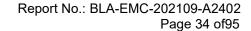
Note:

Polarization:	Vertical	Temperature:
Power:		Humidity:

Distance:

No.	Mk.	Freq.	Reading Level	Correct	Measure- ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		3632.000	44.52	7.77	52.29	74.00	-21.71	peak			
2		4804.000	42.23	3.71	45.94	74.00	-28.06	peak			
3		7206.000	42.45	5.96	48.41	74.00	-25.59	peak			
4		8238.000	43.22	8.22	51.44	74.00	-22.56	peak			
5		9608.000	40.84	9.29	50.13	74.00	-23.87	peak			
6	* 1	1293.000	40.79	11.91	52.70	74.00	-21.30	peak			

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

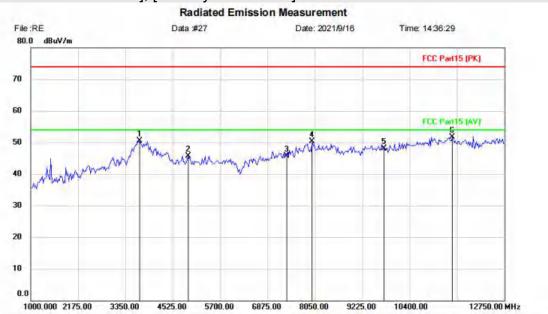


Temperature:

Humidity:



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



Site

Limit: FCC Part15 (PK)

EUT: CozyAir A3 humidifier

M/N: A1230 Mode: BT TX-M

Note:

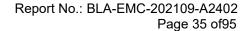
Power:	
Dietanca	

Polarization: Horizontal

Distance:

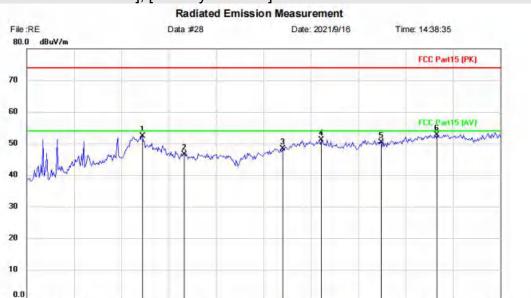
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		3702.500	42.84	7.72	50.56	74.00	-23.44	peak			
2		4882.000	42.44	3.36	45.80	74.00	-28.20	peak			
3		7323.000	39.27	6.43	45.70	74.00	-28.30	peak			
4		7979.500	42.34	7.92	50.26	74.00	-23.74	peak			
5		9764.000	38.51	9.63	48.14	74.00	-25.86	peak			
6	* 1	1457.500	39.90	11.84	51.74	74.00	-22.26	peak			

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





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



Site

Limit: FCC Part15 (PK)

EUT: CozyAir A3 humidifier

1000.000 2175.00

3350.00

4525.00

5700.00

M/N: A1230 Mode: BT TX-M

Note:

8050.00 Polarization: Vertical

9225.00

10400.00

Temperature:

Humidity:

12750.00 MHz

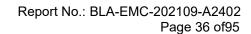
Power:

Distance:

6875.00

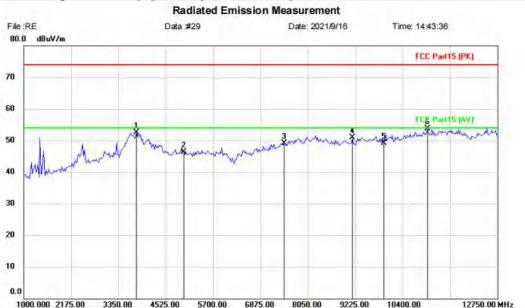
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		3867.000	45.55	6.82	52.37	74.00	-21.63	peak			
2		4884.000	43.16	3.34	46.50	74.00	-27.50	peak			
3		7323.000	41.96	6.43	48.39	74.00	-25.61	peak			
4		8308.500	42.81	8.25	51.06	74.00	-22.94	peak			
5		9768.000	40.65	9.63	50.28	74.00	-23.72	peak			
6	* 1	1175.500	40.77	12.03	52.80	74.00	-21.20	peak			

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





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



Site

Limit: FCC Part15 (PK)

EUT: CozyAir A3 humidifier

M/N: A1230 Mode: BT TX-H

Note:

Polarization: Horizontal Temperature: Humidity: Power:

10400.00

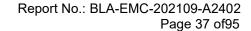
8050.00

Distance:

6875.00

MHz 3796.500	0.90	dB	dBuV/m	dBuV/m	dB	-			
W. T. T. T. T. T.	5.500 44.84				GB.	Detector	cm	degree	Comment
1000 000		7.65	52.49	74.00	-21.51	peak			
4960.000	0.000 42.63	3.75	46.38	74.00	-27.62	peak			
7440.000	0.000 42.20	6.86	49.06	74.00	-24.94	peak			
9154.500	1.500 42.36	8.45	50.81	74.00	-23.19	peak			
9920.000	0.000 39.04	10.16	49.20	74.00	-24.80	peak			
	000 41 70	11.99	53.69	74.00	-20.31	peak			
	-51-0	9920.000 39.04 11011.000 41.70	71-11-11-11-11-11-11-11-11-11-11-11-11-1		THE PERSON NAMED OF THE PE	THE PERSON NAMED OF THE PE	The state of the s		

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

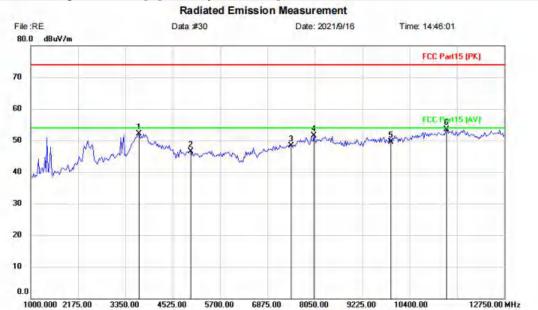


Temperature:

Humidity:



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



Polarization: Vertical

Site

Limit: FCC Part15 (PK)

EUT: CozyAir A3 humidifier

M/N: A1230 Mode: BT TX-H

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		3679.000	44.44	7.73	52.17	74.00	-21.83	peak			
2		4960.000	42.74	3.75	46.49	74.00	-27.51	peak			
3		7440.000	41.37	6.86	48.23	74.00	-25.77	peak			
4	- 3	8026.500	43.56	7.98	51.54	74.00	-22.46	peak			
5		9920.000	39.38	10.16	49.54	74.00	-24.46	peak			
6	* 1	1316.500	41.67	11.88	53.55	74.00	-20.45	peak			

Power:

Distance:

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



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### 19 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%

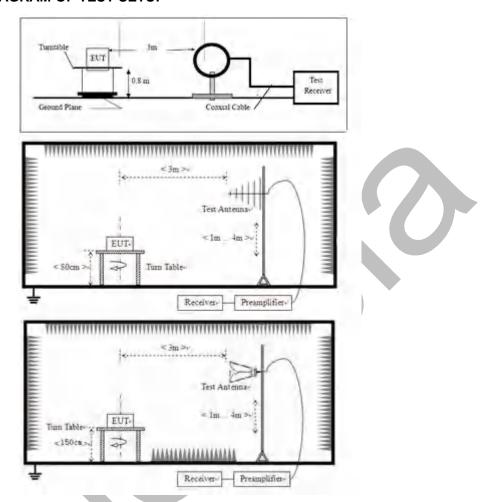
#### **19.1 LIMITS**

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.



#### 19.2 BLOCK DIAGRAM OF TEST SETUP



#### 19.3 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.



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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.

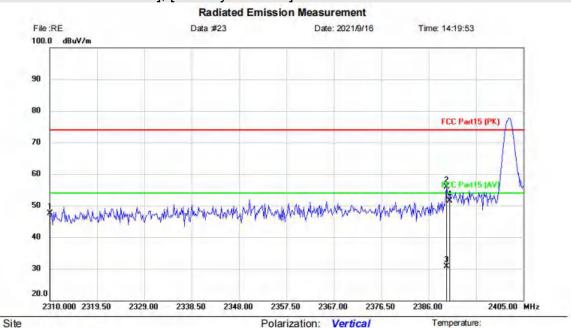


Humidity:



### 19.4 TEST DATA

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



Limit: FCC Part15 (PK)

EUT: CozyAir A3 humidifier

M/N: A1230 Mode: BT TX-L

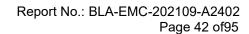
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		2310.000	52.03	-4.61	47.42	74.00	-26.58	peak			
2	*	2389.610	60.08	-4.27	55.81	74.00	-18.19	peak			
3		2389.610	34.93	-4.27	30.66	54.00	-23.34	AVG			
4		2390.000	55.77	-4.27	51.50	74.00	-22.50	peak			

Power:

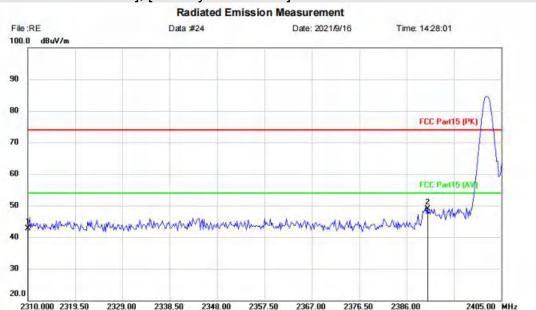
Distance:







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



Site

Limit: FCC Part15 (PK)

EUT: CozyAir A3 humidifier

M/N: A1230 Mode: BT TX-L

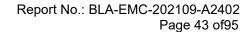
Note:

Polarization: Horizontal Temperature:
Power: Humidity:

Distance:

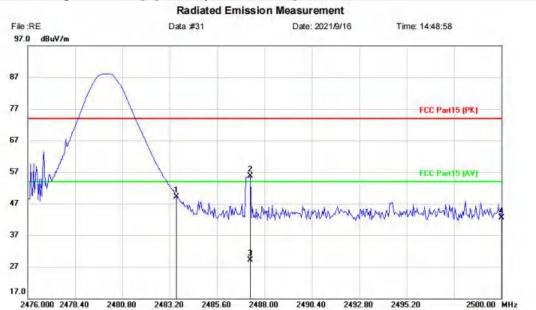
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over			Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		2310.000	47.26	-4.61	42.65	74.00	-31.35	peak			
2	*	2390.000	53.15	-4.27	48.88	74.00	-25.12	peak			

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





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



Site

Limit: FCC Part15 (PK) EUT: CozyAir A3 humidifier

M/N: A1230 Mode: BT TX-H

Note:

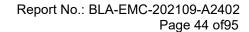
Polarization: Horizontal Temperature:

Power: Humidity:

Distance:

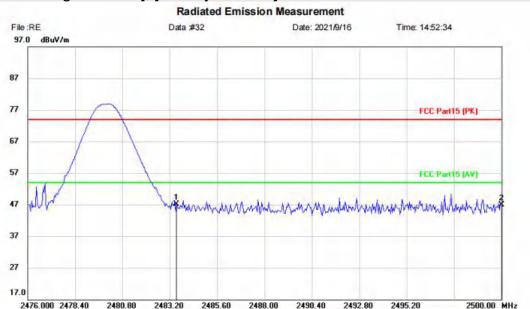
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		2483.500	52.97	-3.84	49.13	74.00	-24.87	peak			
2	*	2487.280	59.51	-3.84	55.67	74.00	-18.33	peak			
3		2487.280	32.89	-3.84	29.05	54.00	-24.95	AVG			
4		2500.000	46.36	-3.78	42.58	74.00	-31.42	peak			

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





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



Site

Limit: FCC Part15 (PK)

EUT: CozyAir A3 humidifier

M/N: A1230 Mode: BT TX-H

Note:

Polarization: Vertical Temperature:

Power: Humidity:

Distance:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	2483.500	51.02	-3.84	47.18	74.00	-26.82	peak			
2		2500.000	50.66	-3.78	46.88	74.00	-27.12	peak			

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



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### 20 CONDUCTED BAND EDGES MEASUREMENT

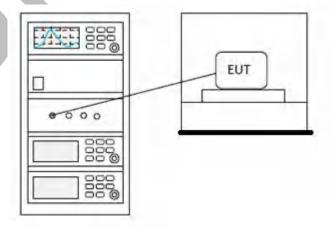
Test Standard	47 CFR Part 15, Subpart C 15.247
Test Method	ANSI C63.10 (2013) Section 7.8.8 & Section 11.13.3.2
Test Mode (Pre-Scan)	TX
Test Mode (Final Test)	TX
Tester	Jozu
Temperature	<b>25</b> ℃
Humidity	60%

#### **20.1 LIMITS**

Limit:

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

### 20.2 BLOCK DIAGRAM OF TEST SETUP





20.3 TEST DATA

# Pass: Please Refer To Appendix: Appendix1 For Details



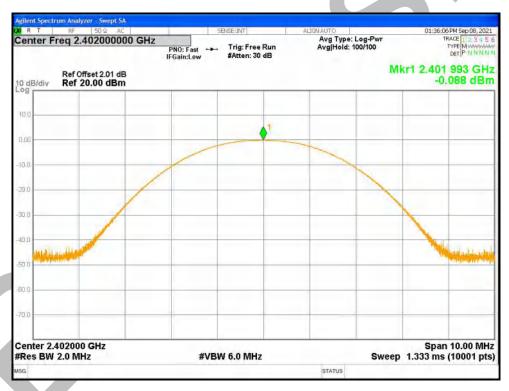


### 21 APPENDIX

### **Maximum Conducted Output Power**

Condition	Mode	Frequency	Antenna	Conducted	Total Power	Limit	Verdict
		(MHz)		Power (dBm)	(dBm)	(dBm)	
NVNT	1-DH1	2402	Ant1	-0.088	-0.088	21	Pass
NVNT	1-DH1	2441	Ant1	0.564	0.564	21	Pass
NVNT	1-DH1	2480	Ant1	0.67	0.67	21	Pass
NVNT	2-DH1	2402	Ant1	1.989	1.989	21	Pass
NVNT	2-DH1	2441	Ant1	2.686	2.686	21	Pass
NVNT	2-DH1	2480	Ant1	2.743	2.743	21	Pass
NVNT	3-DH1	2402	Ant1	2.32	2.32	21	Pass
NVNT	3-DH1	2441	Ant1	3.149	3.149	21	Pass
NVNT	3-DH1	2480	Ant1	2.954	2.954	21	Pass

# Power NVNT 1-DH1 2402MHz Ant1



Power NVNT 1-DH1 2441MHz Ant1





Power NVNT 1-DH1 2480MHz Ant1



Power NVNT 2-DH1 2402MHz Ant1





Power NVNT 2-DH1 2441MHz Ant1



Power NVNT 2-DH1 2480MHz Ant1





Power NVNT 3-DH1 2402MHz Ant1



Power NVNT 3-DH1 2441MHz Ant1





Power NVNT 3-DH1 2480MHz Ant1





#### -20dB Bandwidth

Condition	Mode	Frequency	Antenna	-20 dB Bandwidth	Limit -20 dB	Verdict
		(MHz)		(MHz)	Bandwidth (MHz)	
NVNT	1-DH1	2402	Ant1	0.872	0	Pass
NVNT	1-DH1	2441	Ant1	0.919	0	Pass
NVNT	1-DH1	2480	Ant1	0.928	0	Pass
NVNT	2-DH1	2402	Ant1	1.3	0	Pass
NVNT	2-DH1	2441	Ant1	1.291	0	Pass
NVNT	2-DH1	2480	Ant1	1.274	0	Pass
NVNT	3-DH1	2402	Ant1	1.271	0	Pass
NVNT	3-DH1	2441	Ant1	1.251	0	Pass
NVNT	3-DH1	2480	Ant1	1.269	0	Pass

-20dB Bandwidth NVNT 1-DH1 2402MHz Ant1



-20dB Bandwidth NVNT 1-DH1 2441MHz Ant1





-20dB Bandwidth NVNT 1-DH1 2480MHz Ant1



-20dB Bandwidth NVNT 2-DH1 2402MHz Ant1





-20dB Bandwidth NVNT 2-DH1 2441MHz Ant1



-20dB Bandwidth NVNT 2-DH1 2480MHz Ant1





-20dB Bandwidth NVNT 3-DH1 2402MHz Ant1



-20dB Bandwidth NVNT 3-DH1 2441MHz Ant1





-20dB Bandwidth NVNT 3-DH1 2480MHz Ant1

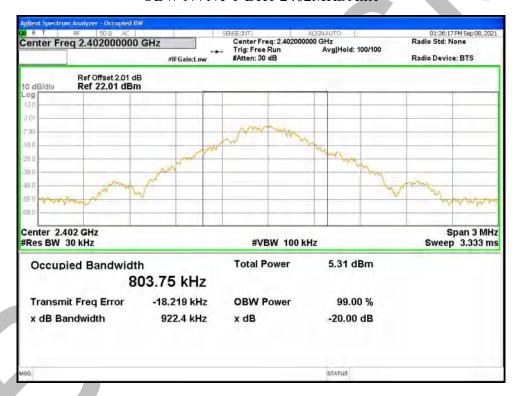




#### **Occupied Channel Bandwidth**

Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	1-DH1	2402	Antl	0.8037499617
NVNT	1-DH1	2441	Antl	0.8028509808
NVNT	1-DH1	2480	Ant1	0.8157945642
NVNT	2-DH1	2402	Ant1	1.15429249
NVNT	2-DH1	2441	Ant1	1.169595843
NVNT	2-DH1	2480	Ant1	1.172108898
NVNT	3-DH1	2402	Ant1	1.161154624
NVNT	3-DH1	2441	Ant1	1.155649285
NVNT	3-DH1	2480	Ant1	1.161124687

### OBW NVNT 1-DH1 2402MHz Ant1



OBW NVNT 1-DH1 2441MHz Ant1





# OBW NVNT 1-DH1 2480MHz Ant1



OBW NVNT 2-DH1 2402MHz Ant1





# OBW NVNT 2-DH1 2441MHz Ant1



OBW NVNT 2-DH1 2480MHz Ant1





# OBW NVNT 3-DH1 2402MHz Ant1



OBW NVNT 3-DH1 2441MHz Ant1





# OBW NVNT 3-DH1 2480MHz Ant1





#### **Band Edge**

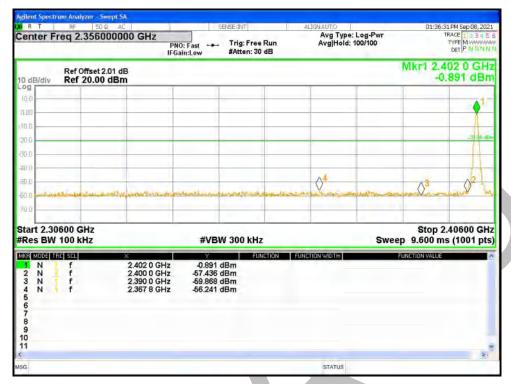
Condition	Mode	Frequency	Antenna	Hopping	Max Value	Limit	Verdict
		(MHz)		Mode	(dBc)	(dBc)	
NVNT	1-DH1	2402	Ant1	No-Hopping	-55.65	-20	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	-55.37	-20	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	-53.93	-20	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	-55.58	-20	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	-55.03	-20	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	-56.17	-20	Pass

Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Ref



Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Emission



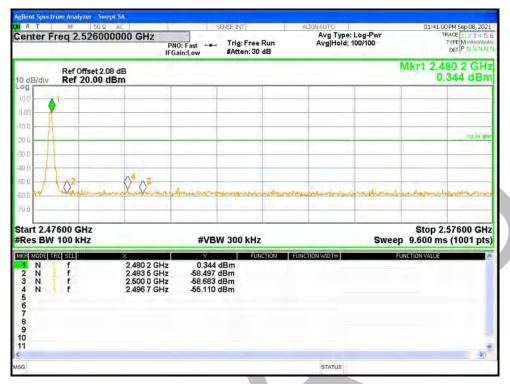


Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Ref



Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Emission



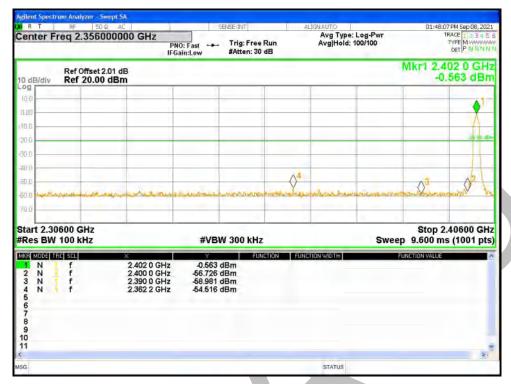


Band Edge NVNT 2-DH1 2402MHz Ant1 No-Hopping Ref



Band Edge NVNT 2-DH1 2402MHz Ant1 No-Hopping Emission



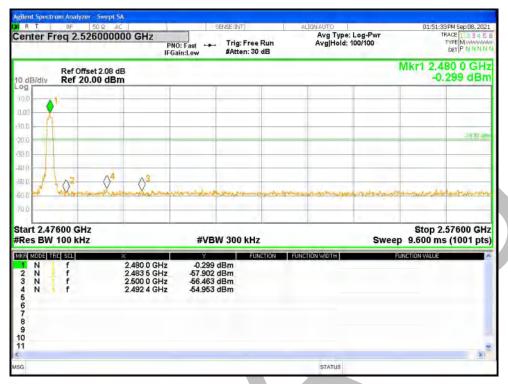


Band Edge NVNT 2-DH1 2480MHz Ant1 No-Hopping Ref

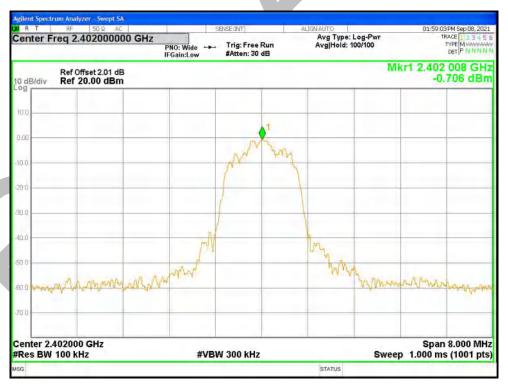


Band Edge NVNT 2-DH1 2480MHz Ant1 No-Hopping Emission



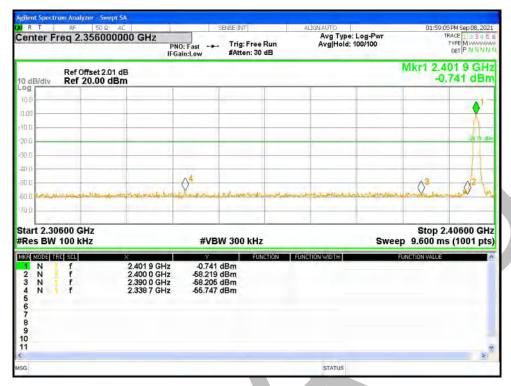


Band Edge NVNT 3-DH1 2402MHz Ant1 No-Hopping Ref

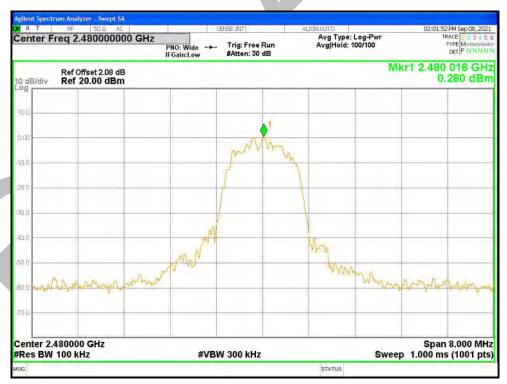


Band Edge NVNT 3-DH1 2402MHz Ant1 No-Hopping Emission



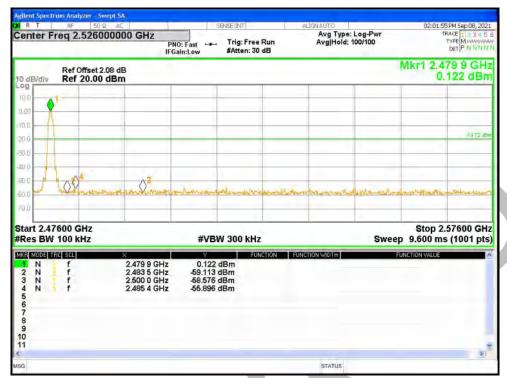


Band Edge NVNT 3-DH1 2480MHz Ant1 No-Hopping Ref



Band Edge NVNT 3-DH1 2480MHz Ant1 No-Hopping Emission







### Band Edge(Hopping)

Condition	Mode	Frequency	Antenna	Hopping	Max Value	Limit	Verdict
		(MHz)		Mode	(dBc)	(dBc)	
NVNT	1-DH1	2402	Ant1	Hopping	-53.79	-20	Pass
NVNT	1-DH1	2480	Ant1	Hopping	-54.72	-20	Pass
NVNT	2-DH1	2402	Ant1	Hopping	-54.23	-20	Pass
NVNT	2-DH1	2480	Ant1	Hopping	-54.57	-20	Pass
NVNT	3-DH1	2402	Ant1	Hopping	-54.29	-20	Pass
NVNT	3-DH1	2480	Ant1	Hopping	-54.8	-20	Pass

Band Edge(Hopping) NVNT 1-DH1 2402MHz Ant1 Hopping Ref



Band Edge(Hopping) NVNT 1-DH1 2402MHz Ant1 Hopping Emission





Band Edge(Hopping) NVNT 1-DH1 2480MHz Ant1 Hopping Ref

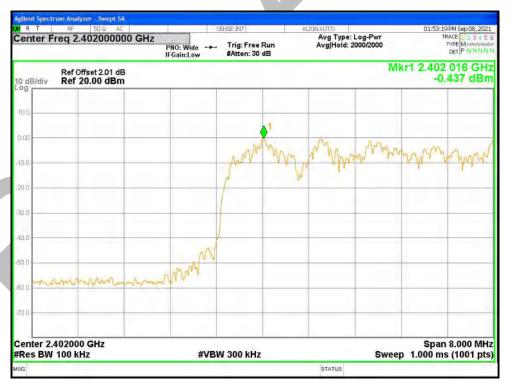


Band Edge(Hopping) NVNT 1-DH1 2480MHz Ant1 Hopping Emission





Band Edge(Hopping) NVNT 2-DH1 2402MHz Ant1 Hopping Ref



Band Edge(Hopping) NVNT 2-DH1 2402MHz Ant1 Hopping Emission



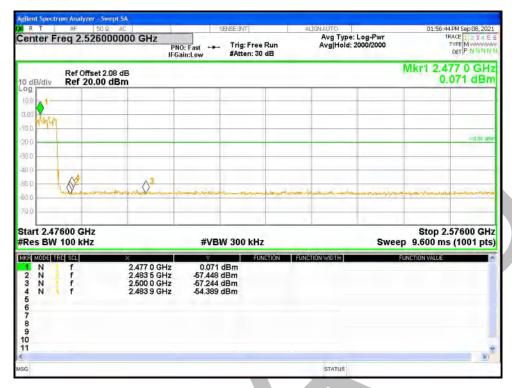


Band Edge(Hopping) NVNT 2-DH1 2480MHz Ant1 Hopping Ref



Band Edge(Hopping) NVNT 2-DH1 2480MHz Ant1 Hopping Emission



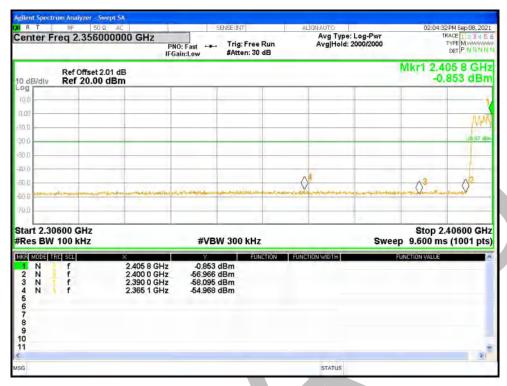


Band Edge(Hopping) NVNT 3-DH1 2402MHz Ant1 Hopping Ref



Band Edge(Hopping) NVNT 3-DH1 2402MHz Ant1 Hopping Emission





Band Edge(Hopping) NVNT 3-DH1 2480MHz Ant1 Hopping Ref



Band Edge(Hopping) NVNT 3-DH1 2480MHz Ant1 Hopping Emission







### **Conducted RF Spurious Emission**

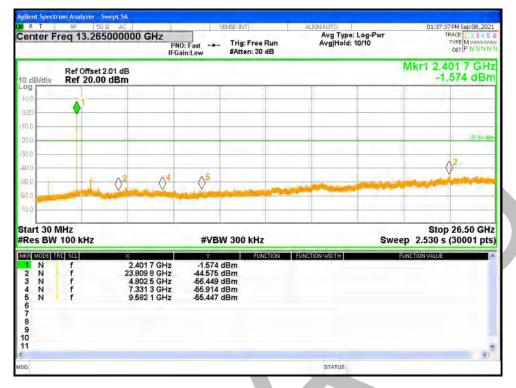
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	-43.94	-20	Pass
NVNT	1-DH1	2441	Ant1	-45.34	-20	Pass
NVNT	1-DH1	2480	Ant1	-46.07	-20	Pass
NVNT	2-DH1	2402	Ant1	-44.88	-20	Pass
NVNT	2-DH1	2441	Ant1	-45.15	-20	Pass
NVNT	2-DH1	2480	Ant1	-45.78	-20	Pass
NVNT	3-DH1	2402	Ant1	-44.91	-20	Pass
NVNT	3-DH1	2441	Ant1	-46.19	-20	Pass
NVNT	3-DH1	2480	Ant1	-45.79	-20	Pass

Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Ref



Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Emission



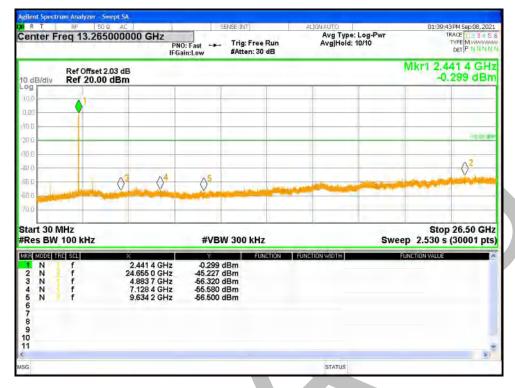


Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Ref



Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Emission



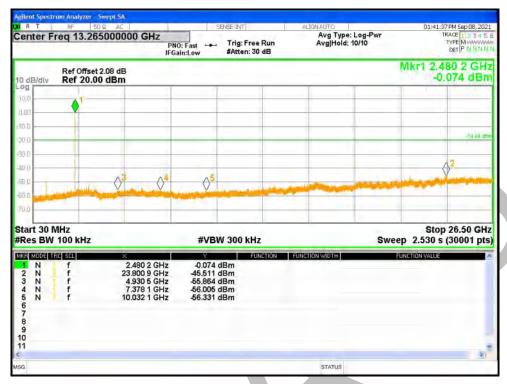


Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Ref



Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Emission



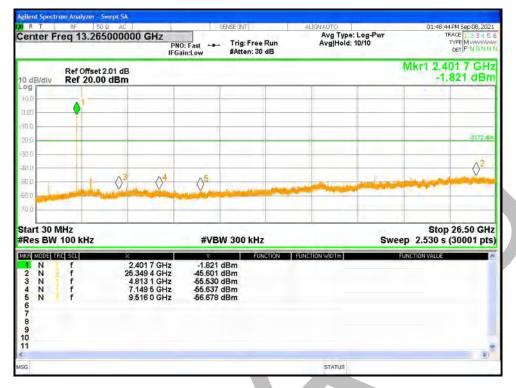


Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Ref



Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Emission



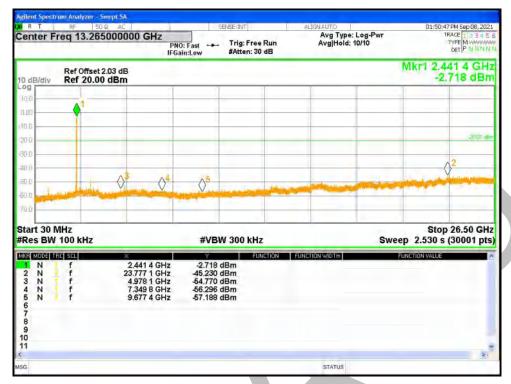


Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Ref



Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Emission



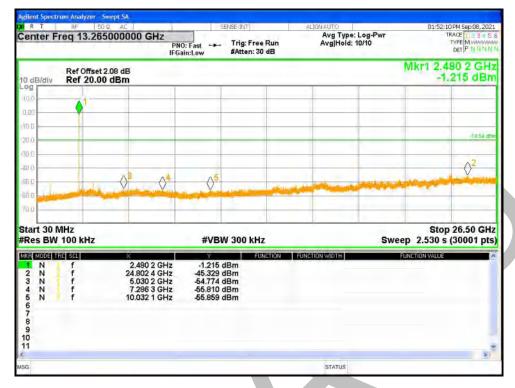


Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Ref



Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Emission



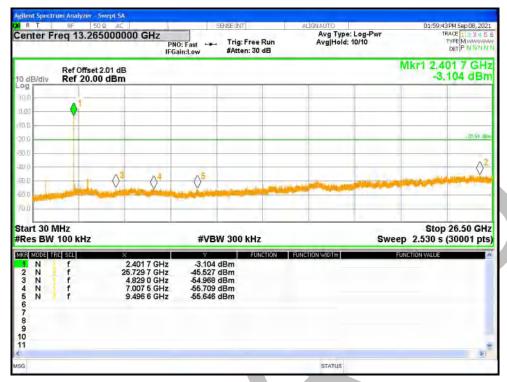


Tx. Spurious NVNT 3-DH1 2402MHz Ant1 Ref



Tx. Spurious NVNT 3-DH1 2402MHz Ant1 Emission



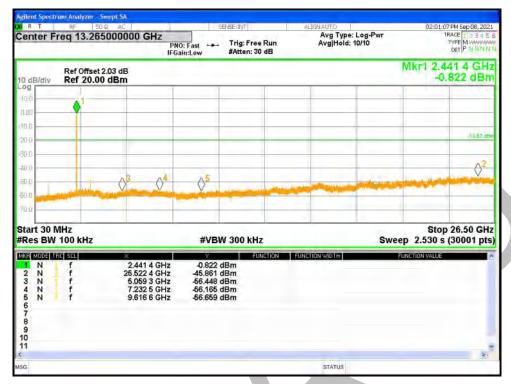


Tx. Spurious NVNT 3-DH1 2441MHz Ant1 Ref



Tx. Spurious NVNT 3-DH1 2441MHz Ant1 Emission



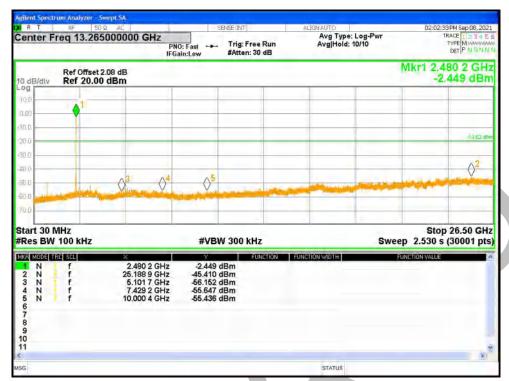


Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Ref



Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Emission







#### **Carrier Frequencies Separation**

Condition	Mode	Antenna	Hopping Freq1	Hopping Freq2	HFS	Limit	Verdict
			(MHz)	(MHz)	(MHz)	(MHz)	
NVNT	1-DH1	Ant1	2440.9525	2441.9755	1.023	0.919	Pass
NVNT	2-DH1	Ant1	2441.0245	2441.983	0.9585	0.861	Pass
NVNT	3-DH1	Ant1	2441.0065	2442.004	0.9975	0.834	Pass

## CFS NVNT 1-DH1 2441MHz Ant1



CFS NVNT 2-DH1 2441MHz Ant1





CFS NVNT 3-DH1 2441MHz Ant1





### **Number of Hopping Channel**

Condition	Mode	Antenna	Hopping Number	Limit	Verdict
NVNT	1-DH1	Ant1	79	15	Pass
NVNT	2-DH1	Ant1	79	15	Pass
NVNT	3-DH1	Ant1	79	15	Pass

Hopping No. NVNT 1-DH1 2441MHz Ant1



Hopping No. NVNT 2-DH1 2441MHz Ant1





Hopping No. NVNT 3-DH1 2441MHz Ant1

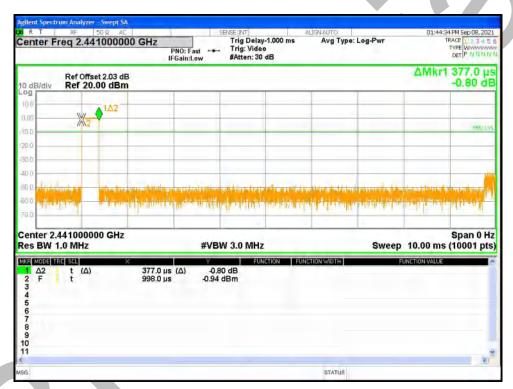




#### **Dwell Time**

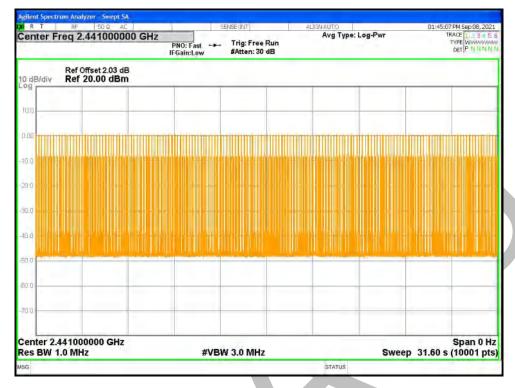
Condition	Mode	Frequency	Antenna	Pulse	Total	Burst	Period	Limit	Verdict
		(MHz)		Time	Dwell	Count	Time	(ms)	
				(ms)	Time		(ms)		
					(ms)				
NVNT	1-DH1	2441	Ant1	0.377	120.263	319	31600	400	Pass
NVNT	1-DH3	2441	Ant1	1.633	271.078	166	31600	400	Pass
NVNT	1-DH5	2441	Ant1	2.881	311.148	108	31600	400	Pass

## Dwell NVNT 1-DH1 2441MHz Ant1 One Burst

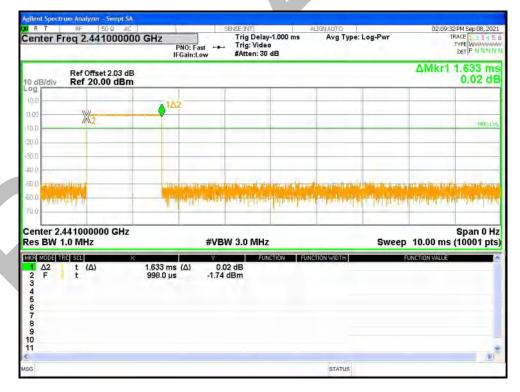


Dwell NVNT 1-DH1 2441MHz Ant1 Accumulated



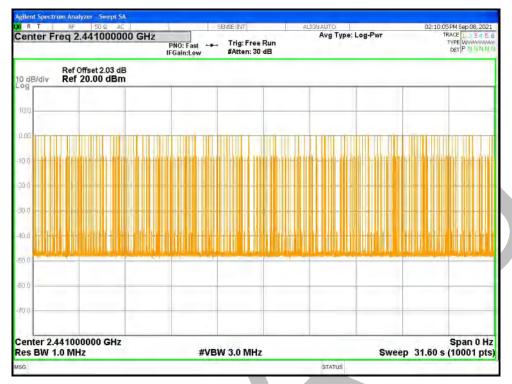


Dwell NVNT 1-DH3 2441MHz Ant1 One Burst



Dwell NVNT 1-DH3 2441MHz Ant1 Accumulated



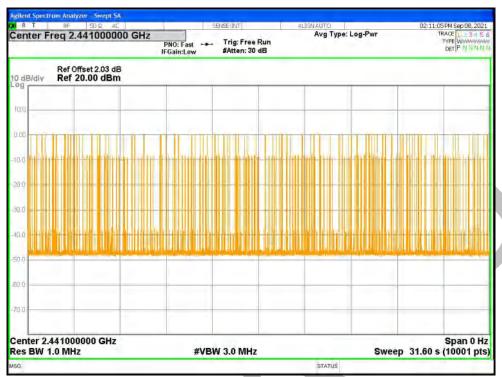


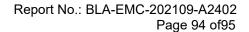
Dwell NVNT 1-DH5 2441MHz Ant1 One Burst



Dwell NVNT 1-DH5 2441MHz Ant1 Accumulated

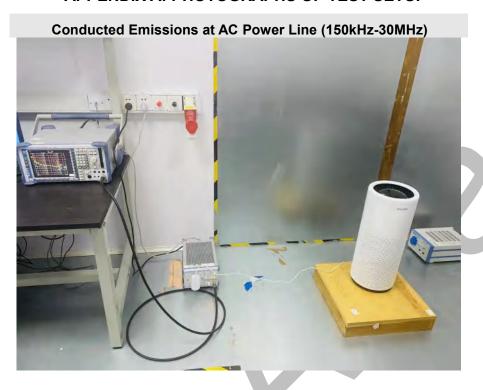


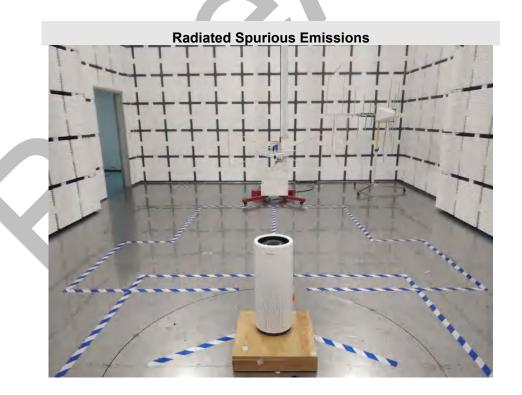






## **APPENDIX A: PHOTOGRAPHS OF TEST SETUP**









# **APPENDIX B: PHOTOGRAPHS OF EUT**

Reference to the test report No. BLA-EMC-202109-A2401

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

The test report is effective only with both signature and specialized stamp, The result(s) shown in this report refer only to the sample(s) tested. Without written approval of BlueAsia, this report can't be reproduced except in full.