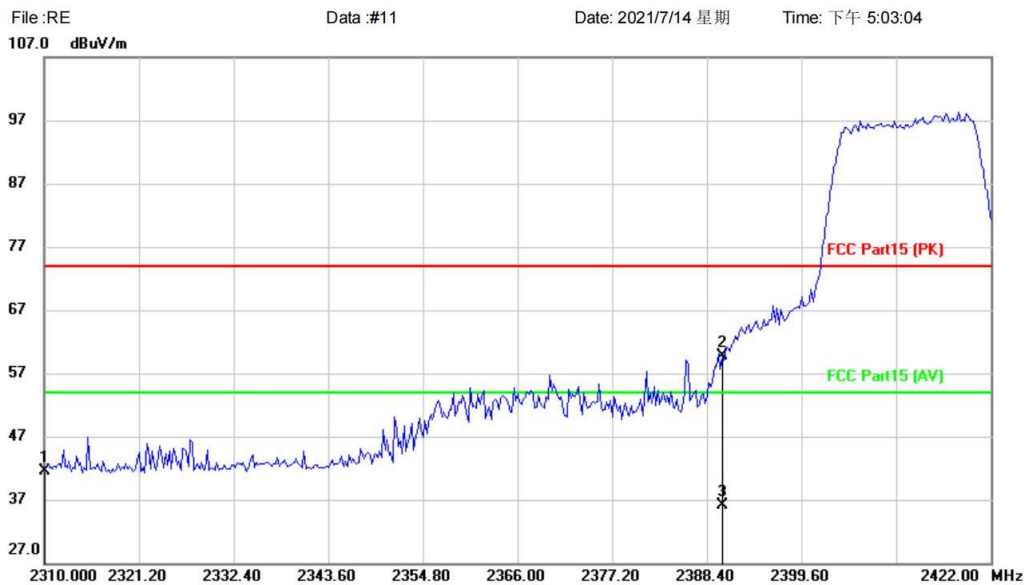


[TestMode: TX]; [Polarity: Vertical]

Radiated Emission Measurement



Site Limit: FCC Part15 (PK) Polarization: **Vertical** Temperature:
EUT: WiFi Module Power: Humidity: %
M/N: FLW3881VSA7-A Distance:
Mode: G-TX-L
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree
1		2310.000	46.07	-4.61	41.46	74.00	-32.54	peak		
2	*	2390.000	64.00	-4.27	59.73	74.00	-14.27	peak		
3		2390.000	40.36	-4.27	36.09	54.00	-17.91	AVG		

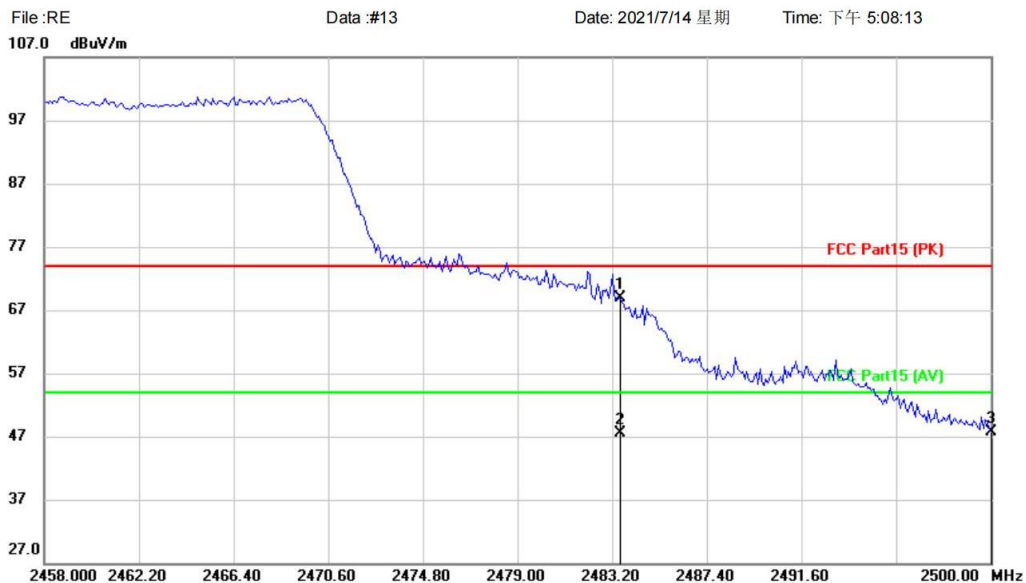
*:Maximum data x:Over limit !:over margin

<Reference Only

Test Result: Pass

[TestMode: TX]; [Polarity: Horizontal]

Radiated Emission Measurement



Site Limit: FCC Part15 (PK) Polarization: **Horizontal** Temperature:
EUT: WiFi Module Power: Humidity: %
M/N: FLW3881VSA7-A Distance:
Mode: G-TX-H
Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Antenna Height cm	Table Degree	Comment
1	*	2483.500	72.69	-3.84	68.85	74.00	-5.15	peak		
2		2483.500	51.44	-3.84	47.60	54.00	-6.40	AVG		
3		2500.000	51.57	-3.78	47.79	74.00	-26.21	peak		

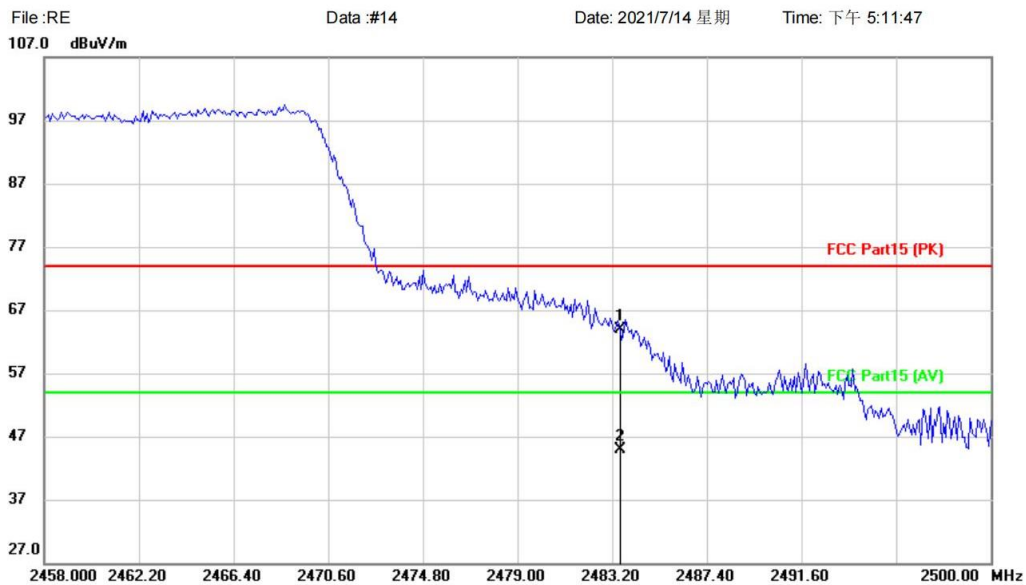
*:Maximum data x:Over limit !:over margin

<Reference Only

Test Result: Pass

[TestMode: TX]; [Polarity: Vertical]

Radiated Emission Measurement



Site Limit: FCC Part15 (PK) Polarization: **Vertical** Temperature:
EUT: WiFi Module Power: Humidity: %
M/N: FLW3881VSA7-A Distance:
Mode: G-TX-H
Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Antenna Height cm	Table Degree	Comment
1		2483.500	67.81	-3.84	63.97	74.00	-10.03	peak		
2	*	2483.500	48.80	-3.84	44.96	54.00	-9.04	AVG		

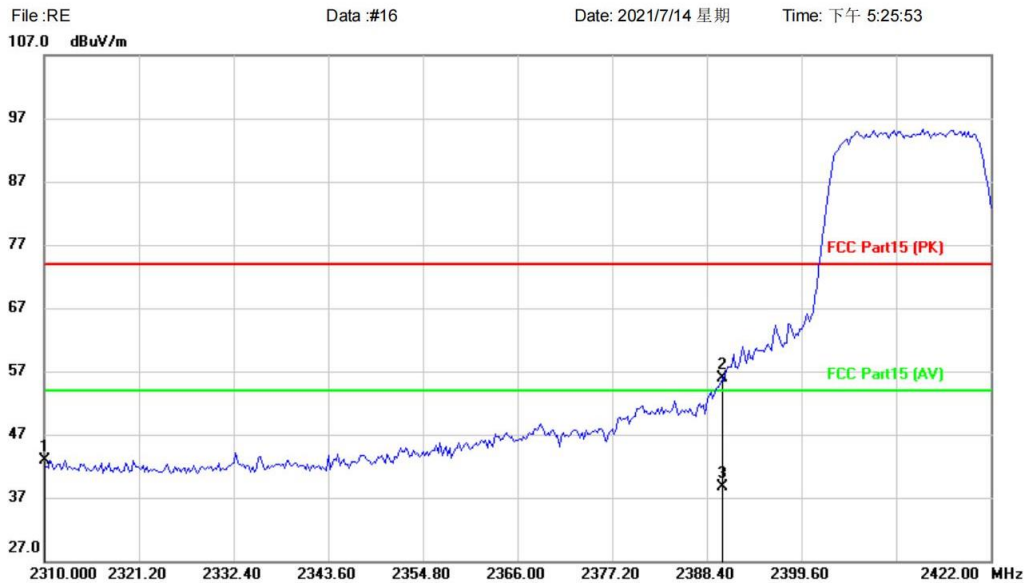
*:Maximum data x:Over limit !:over margin

〈Reference Only

Test Result: Pass

802.11n20:

[TestMode: TX]; [Polarity: Horizontal]

Radiated Emission Measurement


Site Limit: FCC Part15 (PK) Polarization: **Horizontal** Temperature:
EUT: WiFi Module Power: Humidity: %
M/N: FLW3881VSA7-A Distance:
Mode: N-TX-L
Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Antenna Height cm	Table Degree	Comment
1		2310.000	47.46	-4.61	42.85	74.00	-31.15	peak		
2		2390.000	60.25	-4.27	55.98	74.00	-18.02	peak		
3	*	2390.000	43.06	-4.27	38.79	54.00	-15.21	AVG		

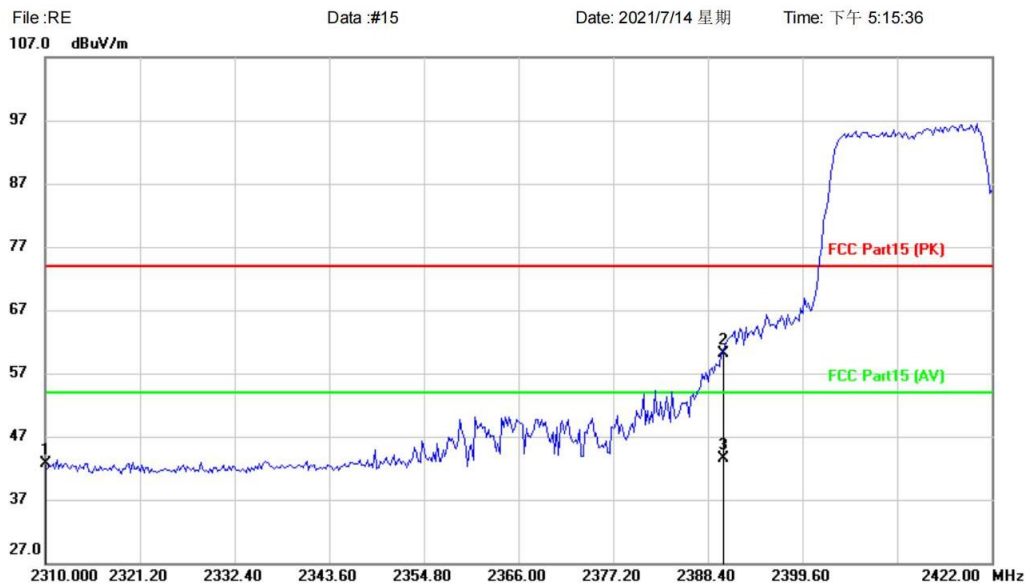
*:Maximum data x:Over limit !:over margin

<Reference Only

Test Result: Pass

[TestMode: TX]; [Polarity: Vertical]

Radiated Emission Measurement



Site: Polarization: **Vertical** Temperature:
Limit: FCC Part15 (PK) Power: Humidity: %
EUT: WiFi Module Distance:
M/N: FLW3881VSA7-A
Mode: N-TX-L
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree Comment
1		2310.000	47.25	-4.61	42.64	74.00	-31.36	peak		
2		2390.000	64.28	-4.27	60.01	74.00	-13.99	peak		
3	*	2390.000	47.79	-4.27	43.52	54.00	-10.48	AVG		

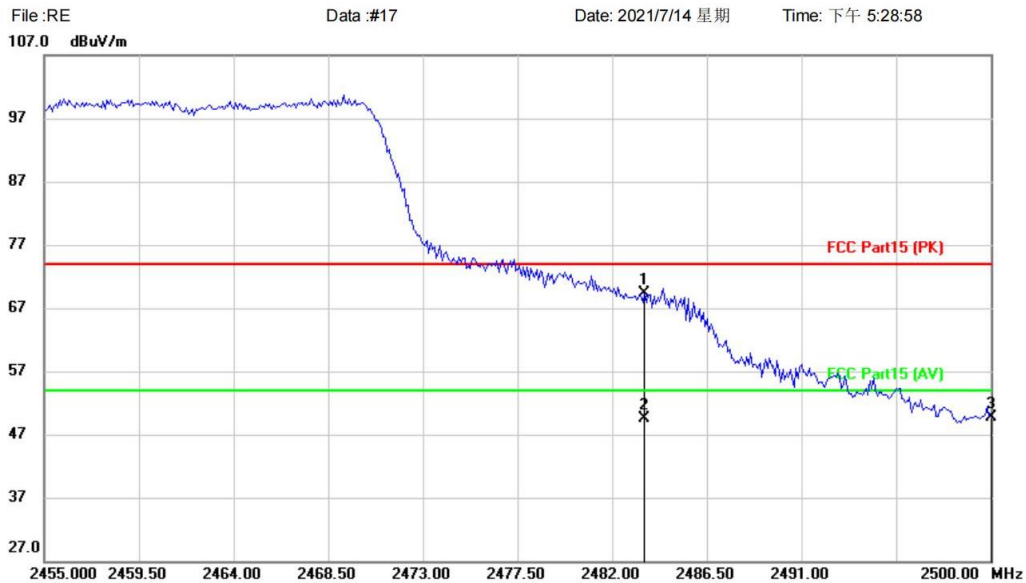
*:Maximum data x:Over limit !:over margin

<Reference Only

Test Result: Pass

[TestMode: TX]; [Polarity: Horizontal]

Radiated Emission Measurement



Site Limit: FCC Part15 (PK) Polarization: **Horizontal** Temperature:
EUT: WiFi Module Power: Humidity: %
M/N: FLW3881VSA7-A Distance:
Mode: N-TX-H
Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Antenna Height cm	Table Degree	Comment
1		2483.500	73.19	-3.84	69.35	74.00	-4.65	peak		
2	*	2483.500	53.34	-3.84	49.50	54.00	-4.50	AVG		
3		2500.000	53.40	-3.78	49.62	74.00	-24.38	peak		

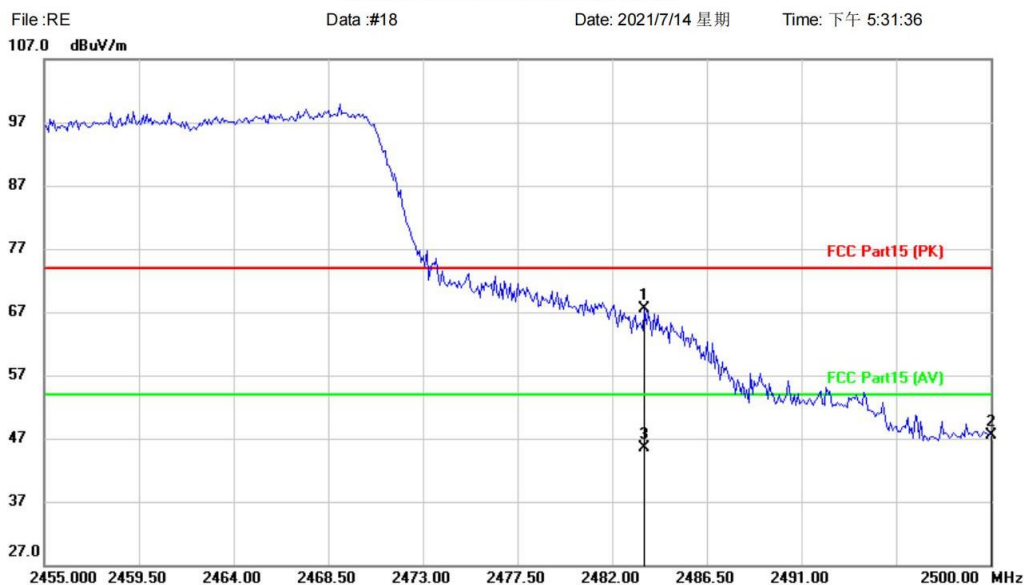
*:Maximum data x:Over limit !:over margin

〈Reference Only

Test Result: Pass

[TestMode: TX]; [Polarity: Vertical]

Radiated Emission Measurement



Site: Limit: FCC Part15 (PK) Polarization: **Vertical** Temperature:
EUT: WiFi Module Power: Humidity: %
M/N: FLW3881VSA7-A Distance:
Mode: N-TX-H
Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Antenna Height cm	Table Degree	Comment
1	*	2483.500	71.24	-3.84	67.40	74.00	-6.60	peak		
2		2500.000	51.19	-3.78	47.41	74.00	-26.59	peak		
3		2483.500	49.30	-3.84	45.46	54.00	-8.54	AVG		

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

〈Reference Only

Test Result: Pass

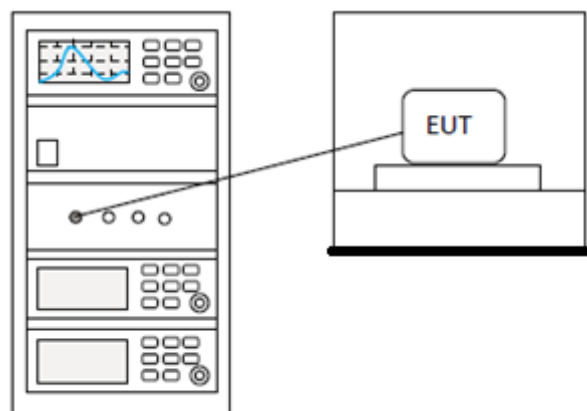
12 CONDUCTED SPURIOUS EMISSIONS

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	Eason
Temperature	25°C
Humidity	52%

12.1 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)).
---------------	--

12.2 BLOCK DIAGRAM OF TEST SETUP



12.3 TEST DATA

Pass: Please Refer To Appendix: For Details

BlueAsia

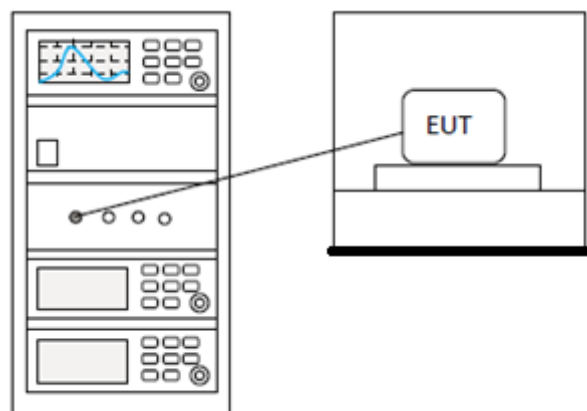
13 CONDUCTED BAND EDGES MEASUREMENT

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	Eason
Temperature	25°C
Humidity	52%

13.1 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)).
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13.2 BLOCK DIAGRAM OF TEST SETUP



13.3 TEST DATA

Pass: Please Refer To Appendix: For Details

BlueAsia

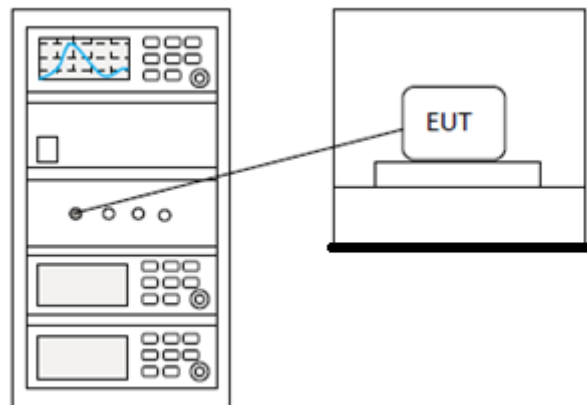
14 POWER SPECTRUM DENSITY

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	Eason
Temperature	25°C
Humidity	52%

14.1 LIMITS

Limit:	$\leq 8\text{dBm}$ in any 3 kHz band during any time interval of continuous transmission
---------------	--

14.2 BLOCK DIAGRAM OF TEST SETUP



14.3 TEST DATA

Pass: Please Refer To Appendix: For Details

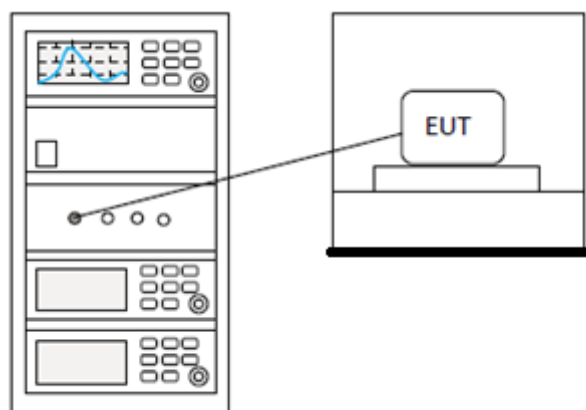
15 CONDUCTED PEAK OUTPUT POWER

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	Eason
Temperature	25°C
Humidity	52%

15.1 LIMITS

Frequency range(MHz)	Output power of the intentional radiator(watt)
902-928	1 for ≥ 50 hopping channels
	0.25 for $25 \leq \text{hopping channels} < 50$
	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

15.2 BLOCK DIAGRAM OF TEST SETUP



15.3 TEST DATA**Pass: Please Refer To Appendix: For Details**

BlueAsia

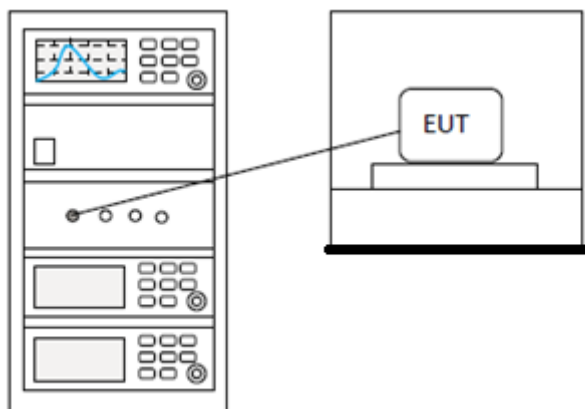
16 MINIMUM 6DB BANDWIDTH

Test Standard	47 CFR Part 15, Subpart C 15.247
Test Method	ANSI C63.10 (2013) Section 11.8.1
Test Mode (Pre-Scan)	TX
Test Mode (Final Test)	TX
Tester	Eason
Temperature	25°C
Humidity	52%

16.1 LIMITS

Limit:	≥ 500 kHz
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16.2 BLOCK DIAGRAM OF TEST SETUP



16.3 TEST DATA

Pass: Please Refer To Appendix: For Details

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

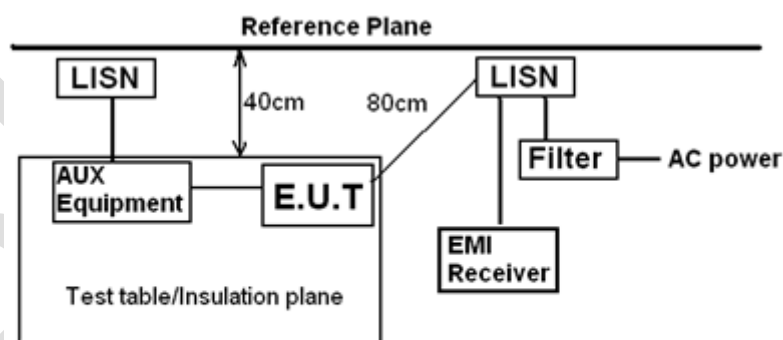
Test Standard	47 CFR Part 15, Subpart C 15.247
Test Method	ANSI C63.10 (2013) Section 6.2
Test Mode (Pre-Scan)	TX
Test Mode (Final Test)	TX
Tester	Eason
Temperature	25°C
Humidity	52%

17.1 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.

17.2 BLOCK DIAGRAM OF TEST SETUP



Remark:
E.U.T: Equipment Under Test
LISN: Line Impedance Stabilization Network
Test table height=0.8m

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.

- 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.

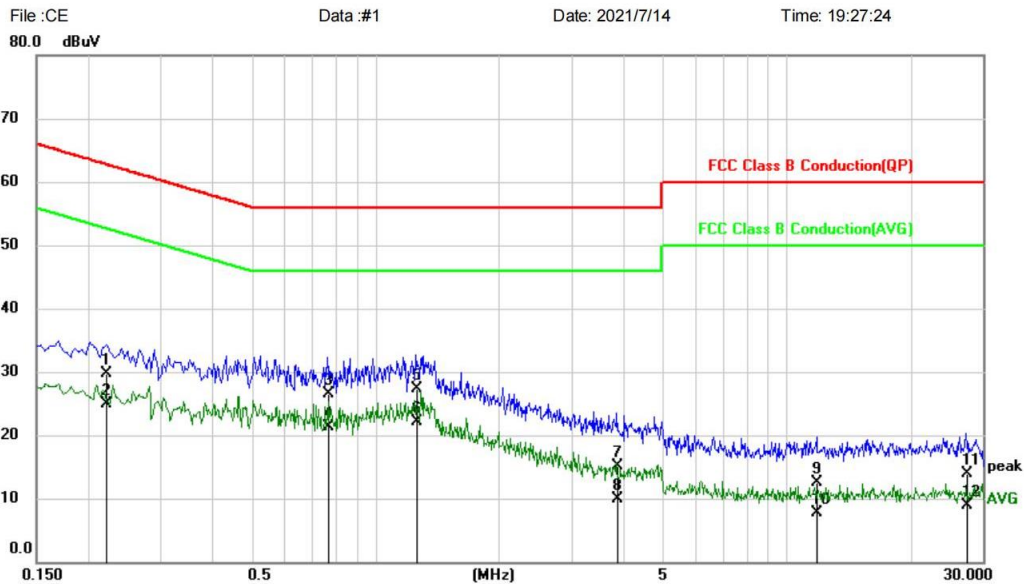
Remark: $LISN = Read\ Level + Cable\ Loss + LISN\ Factor$

17.4 TEST DATA

[TestMode: TX]; [Line: Line]

AC 120V 60Hz

Conducted Emission Measurement



Site

Phase: **L1**

Temperature:

Limit: FCC Class B Conduction (QP)

Power:

Humidity: %

EUT: WiFi Module

M/N: FLW3881VSA7-A

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBuV	dB	dBuV	dBuV	dB		
1		0.2220	19.97	9.83	29.80	62.74	-32.94	QP	
2		0.2220	14.98	9.83	24.81	52.74	-27.93	AVG	
3		0.7660	16.62	9.89	26.51	56.00	-29.49	QP	
4		0.7660	11.36	9.89	21.25	46.00	-24.75	AVG	
5		1.2620	17.43	9.93	27.36	56.00	-28.64	QP	
6	*	1.2620	12.16	9.93	22.09	46.00	-23.91	AVG	
7		3.8740	5.08	9.98	15.06	56.00	-40.94	QP	
8		3.8740	-0.12	9.98	9.86	46.00	-36.14	AVG	
9		11.8180	2.26	10.27	12.53	60.00	-47.47	QP	
10		11.8180	-2.66	10.27	7.61	50.00	-42.39	AVG	
11		27.3420	3.45	10.46	13.91	60.00	-46.09	QP	
12		27.3420	-1.63	10.46	8.83	50.00	-41.17	AVG	

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

(Reference Only)

Test Result: Pass

[TestMode: TX]; [Line: Neutral]

AC 120V 60Hz

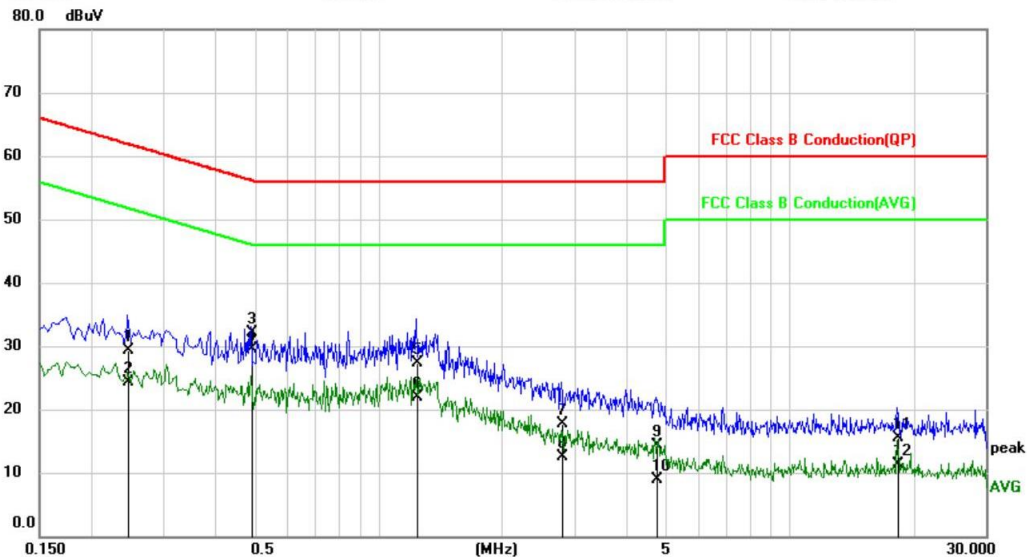
Conducted Emission Measurement

File :CE

Data :#2

Date: 2021/7/14

Time: 19:28:52



Site

Phase: **N**

Temperature:

Limit: FCC Class B Conduction(QP)

Power:

Humidity: %

EUT: WiFi Module

M/N: FLW3881VSA7-A

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBuV	dB	dBuV	dBuV	dB		
1		0.2460	19.48	9.76	29.24	61.89	-32.65	QP	
2		0.2460	14.55	9.76	24.31	51.89	-27.58	AVG	
3		0.4900	22.24	9.79	32.03	56.17	-24.14	QP	
4	*	0.4900	19.74	9.79	29.53	46.17	-16.64	AVG	
5		1.2380	17.37	9.84	27.21	56.00	-28.79	QP	
6		1.2380	12.15	9.84	21.99	46.00	-24.01	AVG	
7		2.7860	7.80	9.89	17.69	56.00	-38.31	QP	
8		2.7860	2.56	9.89	12.45	46.00	-33.55	AVG	
9		4.7340	4.33	9.94	14.27	56.00	-41.73	QP	
10		4.7340	-0.96	9.94	8.98	46.00	-37.02	AVG	
11		18.2460	5.18	10.39	15.57	60.00	-44.43	QP	
12		18.2460	0.99	10.39	11.38	50.00	-38.62	AVG	

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

(Reference Only)

Test Result: Pass

18 ANTENNA REQUIREMENT

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

18.1 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 an 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 1.0 dBi.

