

TEST REPORT

Product Name : Wi-Fi/BT Module
Brand Mark : FN-LINK
Model No. : 6222D-UUC
FCC ID : 2AATL-6222D-UUC
Report Number : BLA-EMC-202103-A7003
Date of Sample Receipt : 2021/3/19
Date of Test : 2021/3/19 to 2021/4/7
Date of Issue : 2021/4/7
Test Standard : 47 CFR Part 15, Subpart C 15.247
Test Result : Pass

Prepared for:

HUNAN FN-LINK TECHNOLOGY LIMITED

**No.8, Litong Road, Liuyang Economic & Technical Development Zone,
Changsha, Hunan, CHINA**

Prepared by:

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2021/4/7



REPORT REVISE RECORD

Version No.	Date	Description
00	2021/4/7	Original

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1 TEST SUMMARY

Test item	Test Requirement	Test Method	Class/Severity	Result
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
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 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)(1)	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
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 7.8.8	47 CFR Part 15, Subpart C 15.247(d)	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
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

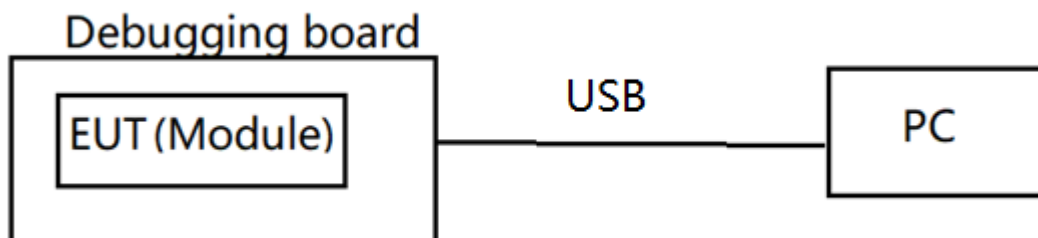
2 GENERAL INFORMATION

Applicant	HUNAN FN-LINK TECHNOLOGY LIMITED
Address	No.8, Litong Road, Liuyang Economic & Technical Development Zone, Changsha, Hunan, CHINA
Manufacturer	HUNAN FN-LINK TECHNOLOGY LIMITED
Address	No.8, Litong Road, Liuyang Economic & Technical Development Zone, Changsha, Hunan, CHINA
Factory	HUNAN FN-LINK TECHNOLOGY LIMITED
Address	No.8, Litong Road, Liuyang Economic & Technical Development Zone, Changsha, Hunan, CHINA
Product Name	Wi-Fi/BT Module
Test Model No.	6222D-UUC

3 GENERAL DESCRIPTION OF E.U.T.

Hardware Version	V2.0
Software Version	V2.0
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:	11
Antenna Type:	External Antenna
Antenna Gain:	2.5dBi(Provided by customer)

4 BLOCK DIAGRAM OF EUT CONNECTION



5 TEST ENVIRONMENT

Environment	Temperature	Voltage
Normal	25°C	DC3.3V

6 TEST MODE

TEST MODE	TEST MODE DESCRIPTION
TX	Keep the EUT in transmitting mode with modulation
Remark: Only the data of the worst mode would be recorded in this report.	

7 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

8 DESCRIPTION OF SUPPORT UNIT

Device Type	Manufacturer	Model Name	Serial No.	Remark
PC	HASEE	K610D	N/A	N/A

9 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.

10 TEST INSTRUMENTS LIST

Test Equipment Of Minimum 6dB Bandwidth					
Equipment	Manufacturer	Model	S/N	Cal.Date	Cal.Due
Spectrum	R&S	FSP40	100817	2020/10/12	2021/10/11
Spectrum	Agilent	N9020A	MY49100060	2020/10/12	2021/10/11
Signal Generator	Agilent	N5182A	MY49060650	2020/10/12	2021/10/11
Signal Generator	Agilent	E8257D	MY44320250	2020/10/12	2021/10/11

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	2020/10/12	2021/10/11
Receiver	R&S	ESR7	101199	2020/10/12	2021/10/11
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	2020/10/16	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 Peak Output Power					
Equipment	Manufacturer	Model	S/N	Cal.Date	Cal.Due

Spectrum	R&S	FSP40	100817	2020/10/12	2021/10/11
Spectrum	Agilent	N9020A	MY49100060	2020/10/12	2021/10/11
Signal Generator	Agilent	N5182A	MY49060650	2020/10/12	2021/10/11
Signal Generator	Agilent	E8257D	MY44320250	2020/10/12	2021/10/11

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	2020/10/12	2021/10/11
Receiver	R&S	ESR7	101199	2020/10/12	2021/10/11
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	2020/10/16	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 Spurious Emissions

Equipment	Manufacturer	Model	S/N	Cal.Date	Cal.Due
Spectrum	R&S	FSP40	100817	2020/10/12	2021/10/11
Spectrum	Agilent	N9020A	MY49100060	2020/10/12	2021/10/11

Signal Generator	Agilent	N5182A	MY49060650	2020/10/12	2021/10/11
Signal Generator	Agilent	E8257D	MY44320250	2020/10/12	2021/10/11

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	2020/10/12	2021/10/11
LISN	R&S	ENV216	3560.6550.15	2020/10/12	2021/10/11
LISN	AT	AT166-2	AKK1806000003	2020/10/12	2021/10/11
EMI software	EZ	EZ-EMC	EEMC-3A1	N/A	N/A

Test Equipment Of Power Spectrum Density

Equipment	Manufacturer	Model	S/N	Cal.Date	Cal.Due
Spectrum	R&S	FSP40	100817	2020/10/12	2021/10/11
Spectrum	Agilent	N9020A	MY49100060	2020/10/12	2021/10/11
Signal Generator	Agilent	N5182A	MY49060650	2020/10/12	2021/10/11
Signal Generator	Agilent	E8257D	MY44320250	2020/10/12	2021/10/11

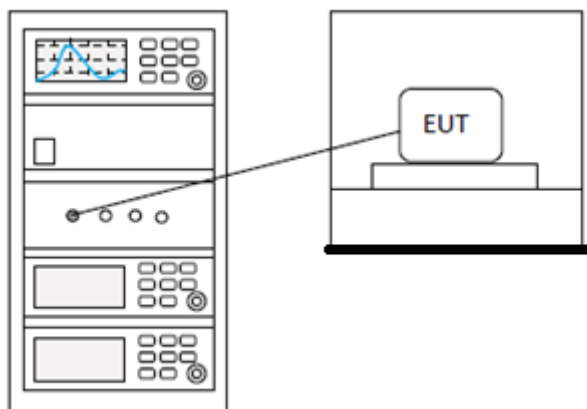
1 MINIMUM 6DB BANDWIDTH

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	Ben
Temperature	25°C
Humidity	60%

1.1 LIMITS

Limit:	≥ 500 kHz
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1.2 BLOCK DIAGRAM OF TEST SETUP



1.3 TEST DATA

Pass: Please Refer To Appendix: For Details

2 RADIATED EMISSIONS WHICH FALL IN THE RESTRICTED BANDS

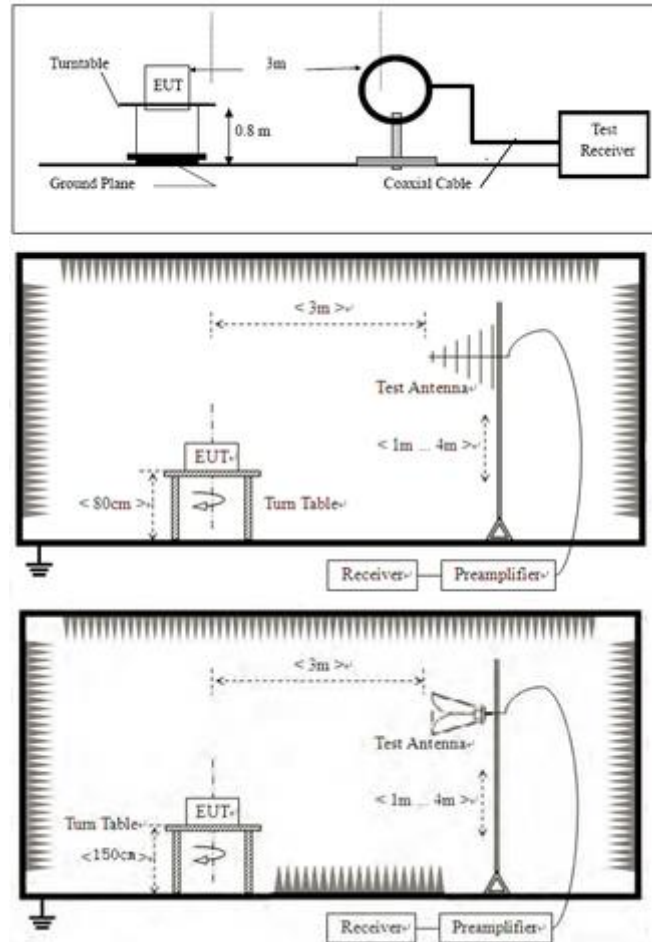
Test Standard	47 CFR Part 15, Subpart C 15.247
Test Method	ANSI C63.10 (2013) Section 6.10.5
Test Mode (Pre-Scan)	TX Low channel;TX high channel
Test Mode (Final Test)	TX Low channel;TX high channel
Tester	Ben
Temperature	25℃
Humidity	60%

2.1 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.

2.2 BLOCK DIAGRAM OF TEST SETUP



2.3 PROCEDURE

- 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.
- 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.
- 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.
- 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.
- 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.
- The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- 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: $\text{Level} = \text{Read Level} + \text{Cable Loss} + \text{Antenna Factor} - \text{Preamplifier Factor}$

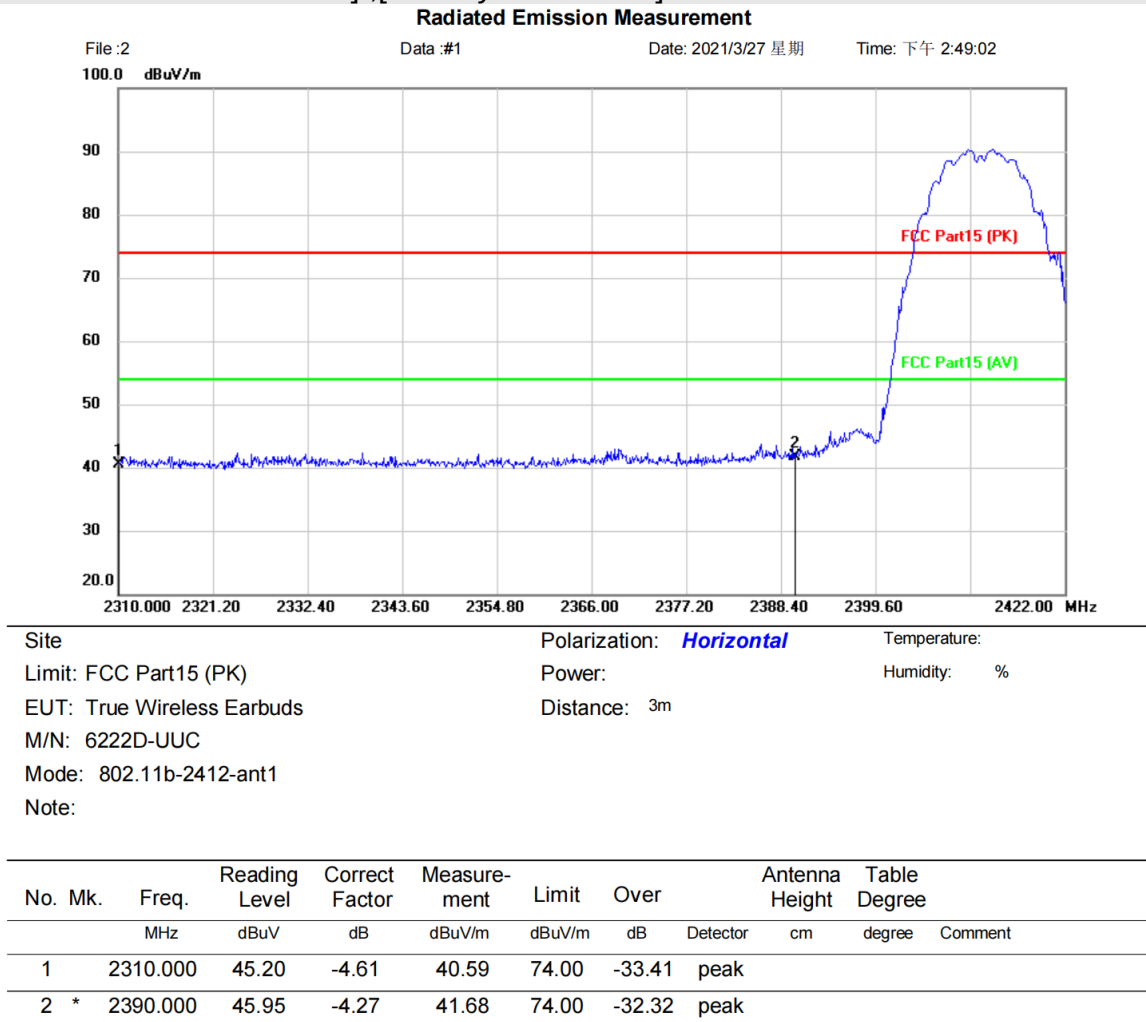
Remark 2: For frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report.

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2.4 TEST DATA

Remark: In SISO mode, The pre-test were performed on Antenna1 and Antenna2 frequencies, only the worst case's (Antenna1) data was showed.

[Test Moed: TX Low channel] ;[Polarity: Horizontal]



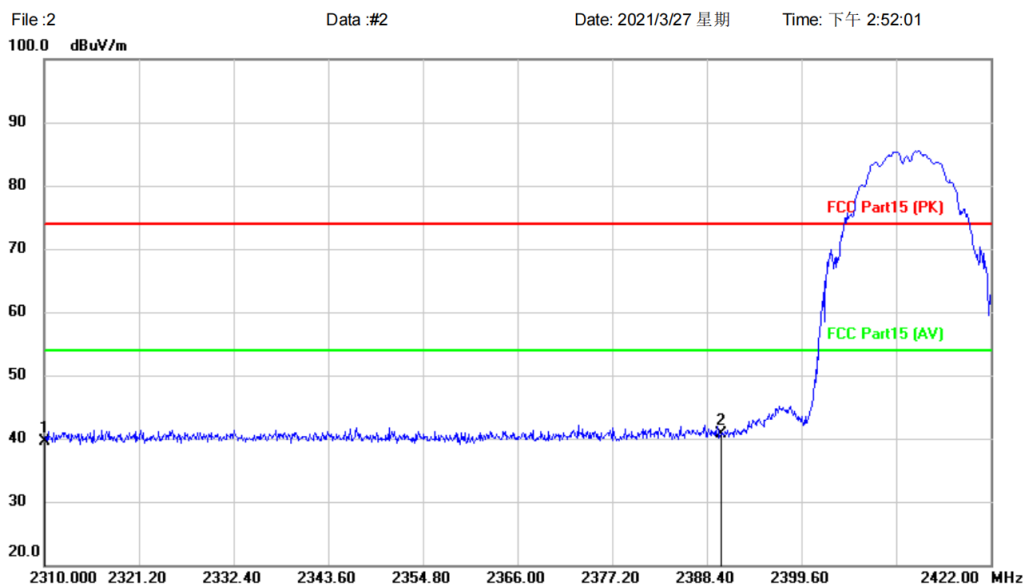
*:Maximum data x:Over limit !:over margin

<Reference Only

Test Result:

[Test Moed: TX Low channel] ; [Polarity: Vertical]

Radiated Emission Measurement



Site Limit: FCC Part15 (PK) Polarization: **Vertical** Temperature:
EUT: True Wireless Earbuds Power: Humidity: %
M/N: 6222D-UUC Distance: 3m
Mode: 802.11b-2412-ant1
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
1		2310.000	44.13	-4.61	39.52	74.00	-34.48	peak		
2	*	2390.000	45.06	-4.27	40.79	74.00	-33.21	peak		

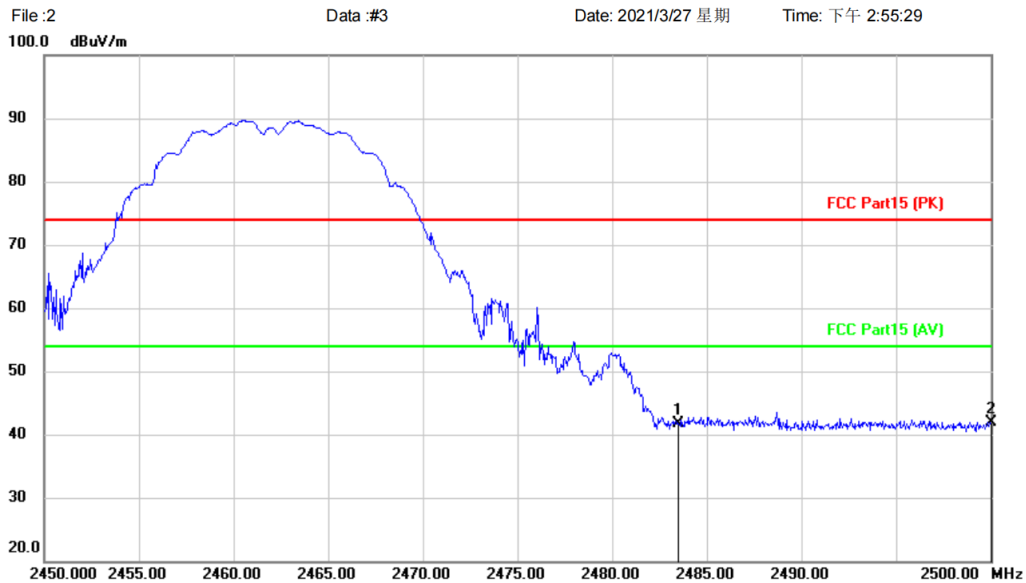
*:Maximum data x:Over limit !:over margin

<Reference Only

Test Result:

[Test Moed: TX high channel] ; [Polarity: Horizontal]

Radiated Emission Measurement



Site
Limit: FCC Part15 (PK)
EUT: True Wireless Earbuds
M/N: 6222D-UUC
Mode: 802.11b-2462-ant1
Note:

Polarization: **Horizontal**
Power:
Distance: 3m

Temperature:
Humidity: %

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	45.57	-3.84	41.73	74.00	-32.27	peak		
2	*	2500.000	45.59	-3.78	41.81	74.00	-32.19	peak		

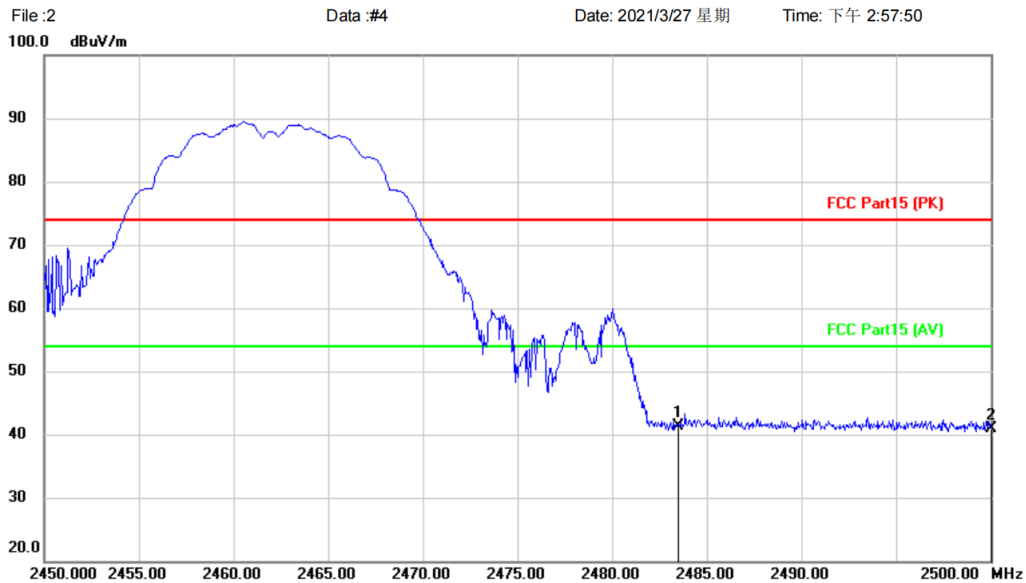
*:Maximum data x:Over limit !:over margin

〈Reference Only

Test Result:

[Test Moed: TX high channel] ; [Polarity: Vertical]

Radiated Emission Measurement



Site Limit: FCC Part15 (PK) Polarization: **Vertical** Temperature:
EUT: True Wireless Earbuds Power: Humidity: %
M/N: 6222D-UUC Distance: 3m
Mode: 802.11b-2462-ant1
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	45.20	-3.84	41.36	74.00	-32.64	peak		
2		2500.000	44.65	-3.78	40.87	74.00	-33.13	peak		

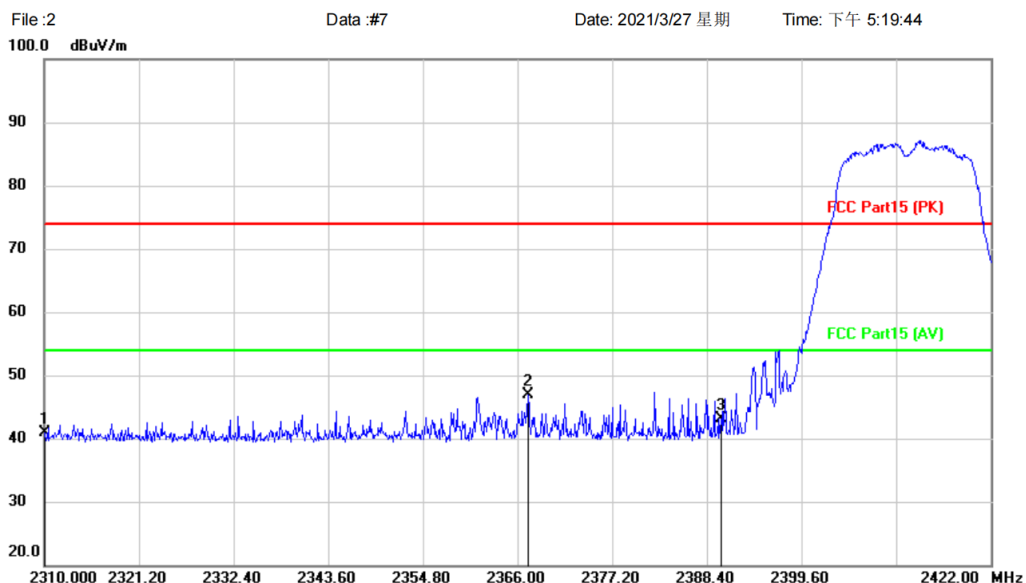
*:Maximum data x:Over limit !:over margin

〈Reference Only

Test Result:

[Test Moed: TX Low channel] ; [Polarity: Horizontal]

Radiated Emission Measurement



Site Limit: FCC Part15 (PK) Polarization: **Horizontal** Temperature:
EUT: True Wireless Earbuds Power: Humidity: %
M/N: 6222D-UUC Distance: 3m
Mode: 802.11g-2412-ant1
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	45.53	-4.61	40.92	74.00	-33.08	peak		
2	*	2367.232	51.21	-4.37	46.84	74.00	-27.16	peak		
3		2390.000	47.40	-4.27	43.13	74.00	-30.87	peak		

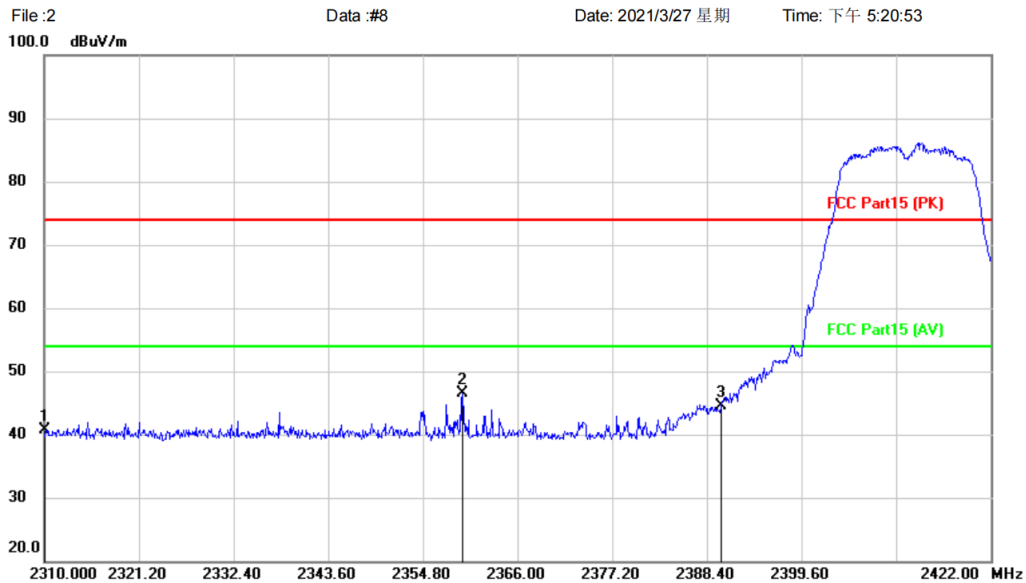
*:Maximum data x:Over limit !:over margin

<Reference Only

Test Result:

[Test Moed: TX Low channel] ; [Polarity: Vertical]

Radiated Emission Measurement



Site Limit: FCC Part15 (PK) Polarization: **Vertical** Temperature:
EUT: True Wireless Earbuds Power: Humidity: %
M/N: 6222D-UUC Distance: 3m
Mode: 802.11g-2412-ant1
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
1		2310.000	45.36	-4.61	40.75	74.00	-33.25	peak		
2	*	2359.504	50.91	-4.40	46.51	74.00	-27.49	peak		
3		2390.000	48.82	-4.27	44.55	74.00	-29.45	peak		

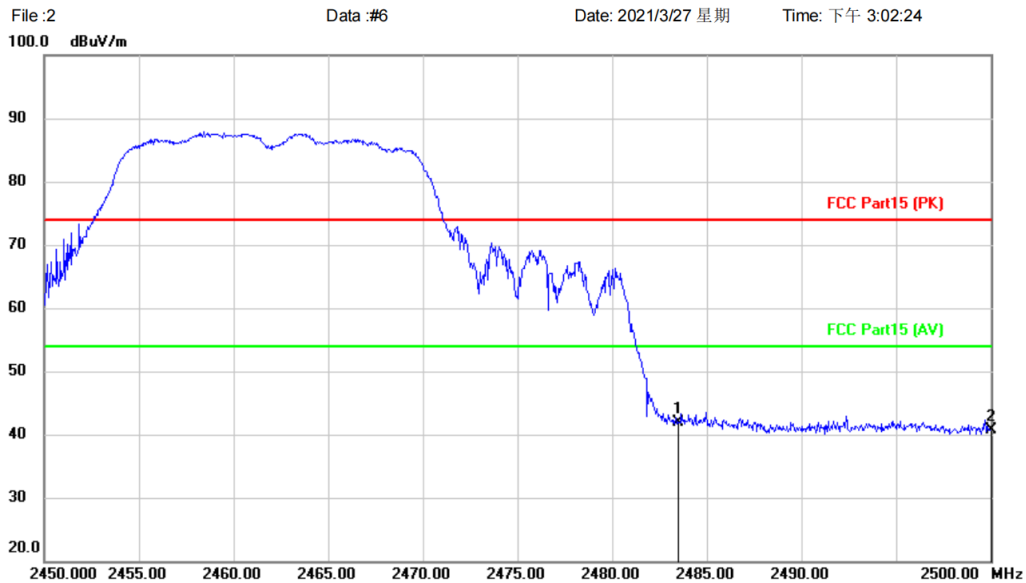
*:Maximum data x:Over limit !:over margin

〈Reference Only

Test Result:

[Test Moed: TX high channel] ; [Polarity: Vertical]

Radiated Emission Measurement



Site Limit: FCC Part15 (PK) Polarization: **Horizontal** Temperature:
EUT: True Wireless Earbuds Power: Humidity: %
M/N: 6222D-UUC Distance: 3m
Mode: 802.11g-2462-ant1
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	45.69	-3.84	41.85	74.00	-32.15	peak		
2		2500.000	44.40	-3.78	40.62	74.00	-33.38	peak		

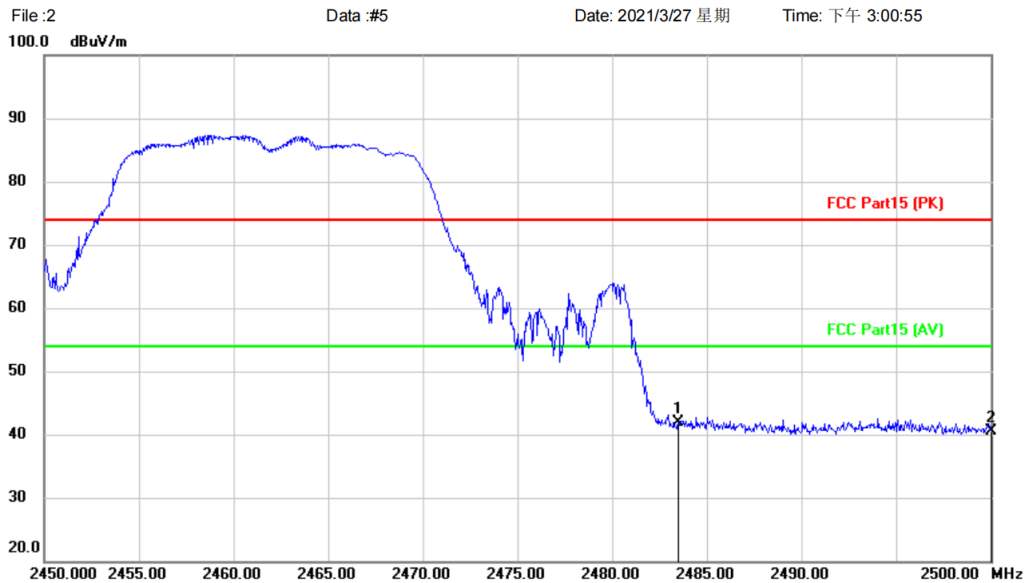
*:Maximum data x:Over limit !:over margin

<Reference Only

Test Result:

[Test Moed: TX high channel] ; [Polarity: Horizontal]

Radiated Emission Measurement



Site
Limit: FCC Part15 (PK)
EUT: True Wireless Earbuds
M/N: 6222D-UUC
Mode: 802.11g-2462-ant1
Note:

Polarization: **Vertical** Temperature:
Power: Humidity: %
Distance: 3m

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	45.77	-3.84	41.93	74.00	-32.07	peak		
2		2500.000	44.31	-3.78	40.53	74.00	-33.47	peak		

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

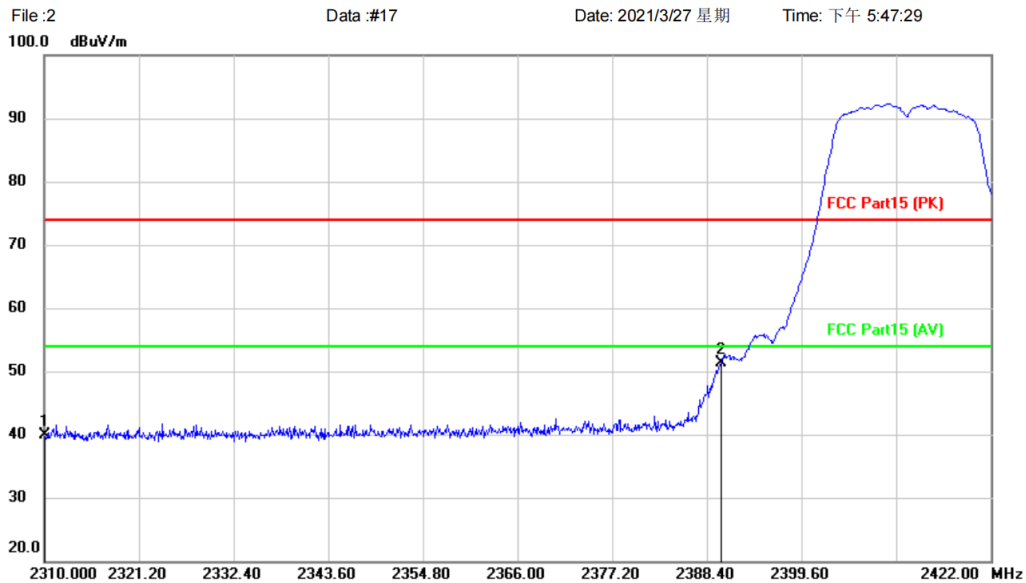
〈Reference Only

Test Result:

MIMO:

[Test Moed: TX Low channel] ; [Polarity: Horizontal]

Radiated Emission Measurement



Site
Limit: FCC Part15 (PK)
EUT: True Wireless Earbuds
M/N: 6222D-UUC
Mode: 802.11n20-2412-ant1&2
Note:

Polarization: **Horizontal**
Power:
Distance: 3m

Temperature:
Humidity: %

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	44.55	-4.61	39.94	74.00	-34.06	peak		
2	*	2390.000	55.58	-4.27	51.31	74.00	-22.69	peak		

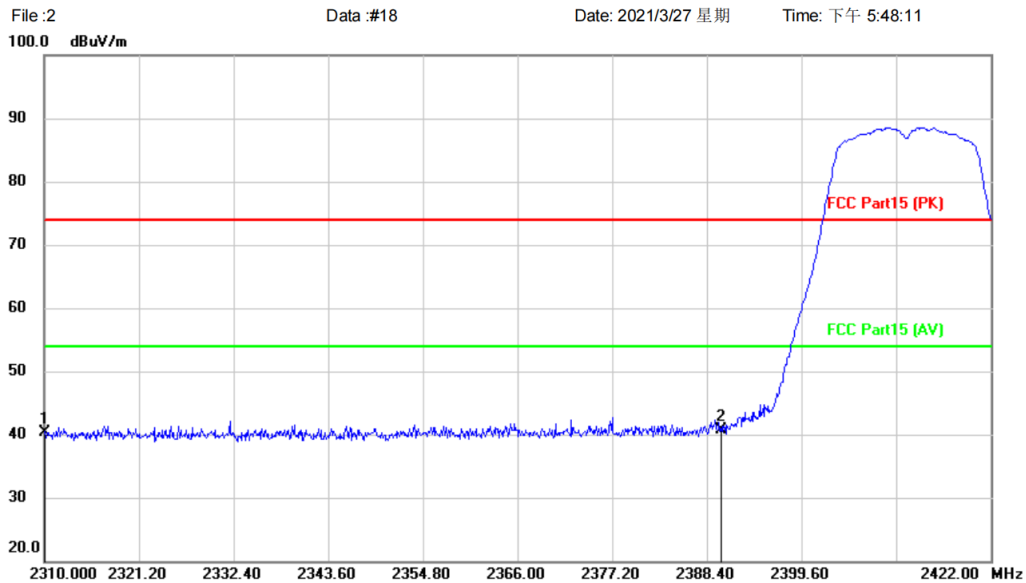
*:Maximum data x:Over limit !:over margin

〈Reference Only

Test Result:

[Test Moed: TX Low channel] ; [Polarity: Vertical]

Radiated Emission Measurement



Site Limit: FCC Part15 (PK) Polarization: **Vertical** Temperature:
EUT: True Wireless Earbuds Power: Humidity: %
M/N: 6222D-UUC Distance: 3m
Mode: 802.11n20-2412-ant1&2
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	44.81	-4.61	40.20	74.00	-33.80	peak		
2	*	2390.000	45.03	-4.27	40.76	74.00	-33.24	peak		

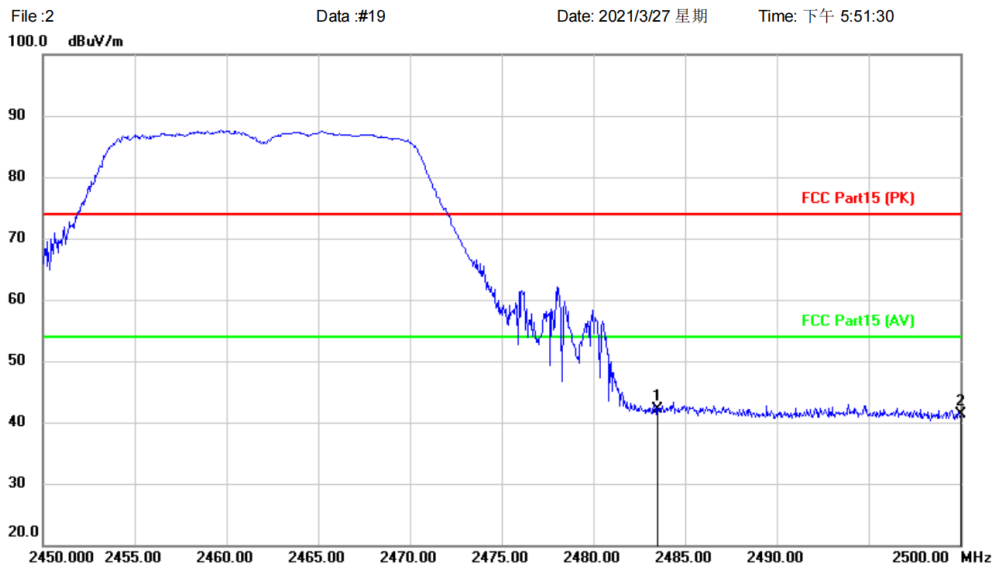
*:Maximum data x:Over limit !:over margin

〈Reference Only

Test Result:

[Test Moed: TX high channel] ; [Polarity: Horizontal]

Radiated Emission Measurement



Site Polarization: **Horizontal** Temperature:
Limit: FCC Part15 (PK) Power: Humidity: %
EUT: True Wireless Earbuds Distance: 3m
M/N: 6222D-UUC
Mode: 802.11n20-2462-ant1&2
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
1	*	2483.500	45.89	-3.84	42.05	74.00	-31.95	peak		
2		2500.000	45.15	-3.78	41.37	74.00	-32.63	peak		

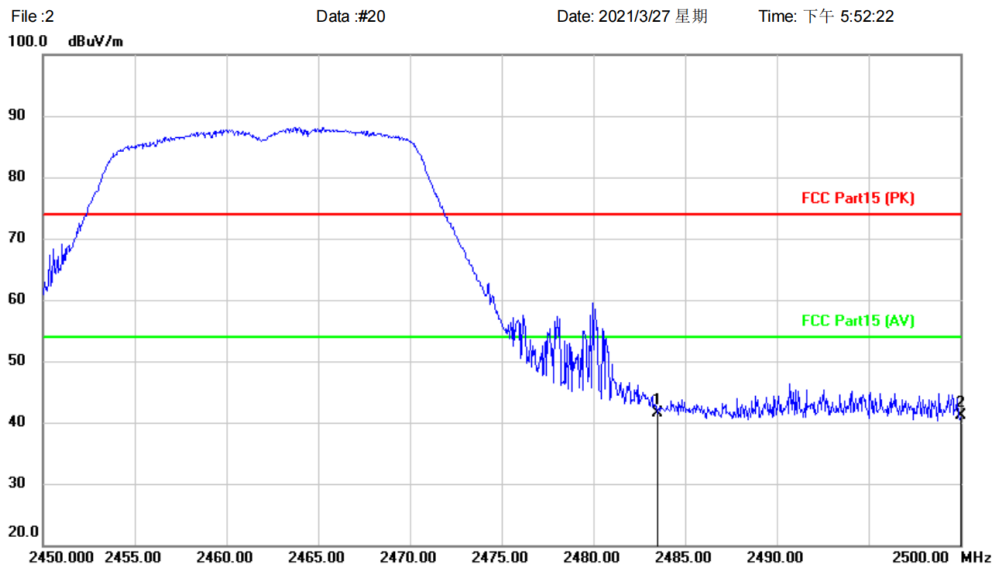
*:Maximum data x:Over limit !:over margin

<Reference Only

Test Result:

[Test Moed: TX high channel] ; [Polarity: Vertical]

Radiated Emission Measurement



Site Polarization: **Vertical** Temperature:
Limit: FCC Part15 (PK) Power: Humidity: %
EUT: True Wireless Earbuds Distance: 3m
M/N: 6222D-UUC
Mode: 802.11n20-2462-ant1&2
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 degree	Comment
1	*	2483.500	45.40	-3.84	41.56	74.00	-32.44	peak		
2		2500.000	44.91	-3.78	41.13	74.00	-32.87	peak		

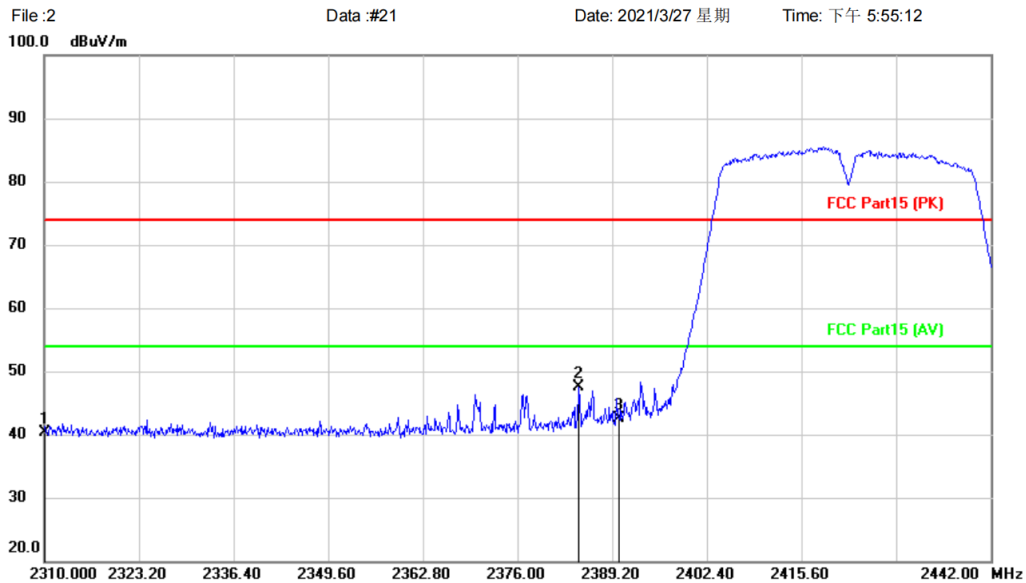
*:Maximum data x:Over limit !:over margin

⟨Reference Only

Test Result:

[Test Moed: TX Low channel] ; [Polarity: Horizontal]

Radiated Emission Measurement



Site Limit: FCC Part15 (PK) Polarization: **Horizontal** Temperature:
EUT: True Wireless Earbuds Power: Humidity: %
M/N: 6222D-UUC Distance: 3m
Mode: 802.11n40-2422-ant1&2
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	44.88	-4.61	40.27	74.00	-33.73	peak		
2	*	2384.580	51.70	-4.29	47.41	74.00	-26.59	peak		
3		2390.000	46.79	-4.27	42.52	74.00	-31.48	peak		

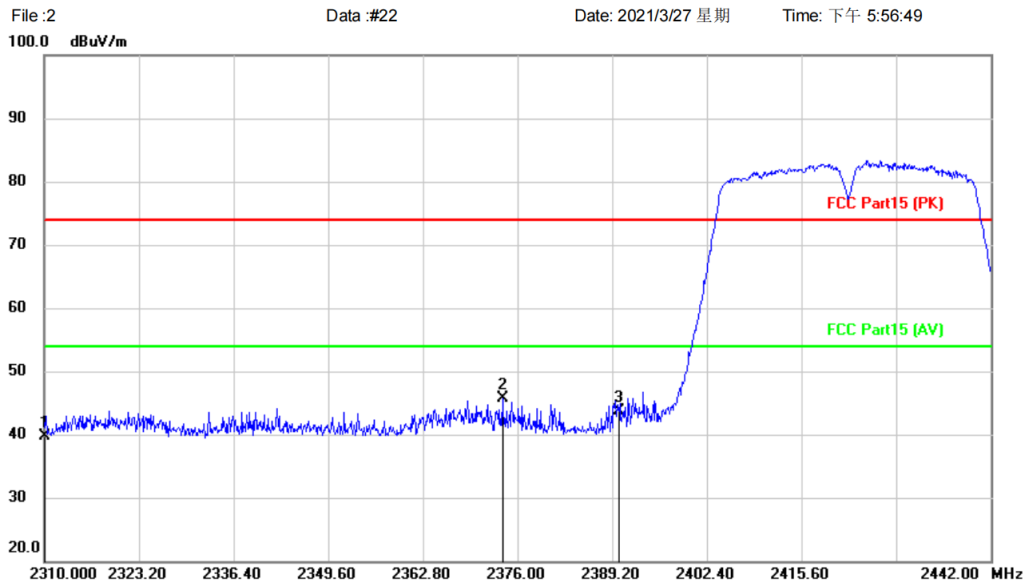
*:Maximum data x:Over limit !:over margin

〈Reference Only

Test Result:

[Test Moed: TX Low channel] ; [Polarity: Vertical]

Radiated Emission Measurement



Site
Limit: FCC Part15 (PK)
EUT: True Wireless Earbuds
M/N: 6222D-UUC
Mode: 802.11n40-2422-ant1&2
Note:

Polarization: **Vertical** Temperature:
Power: Humidity: %
Distance: 3m

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	44.31	-4.61	39.70	74.00	-34.30	peak		
2	*	2373.888	50.08	-4.35	45.73	74.00	-28.27	peak		
3		2390.000	48.05	-4.27	43.78	74.00	-30.22	peak		

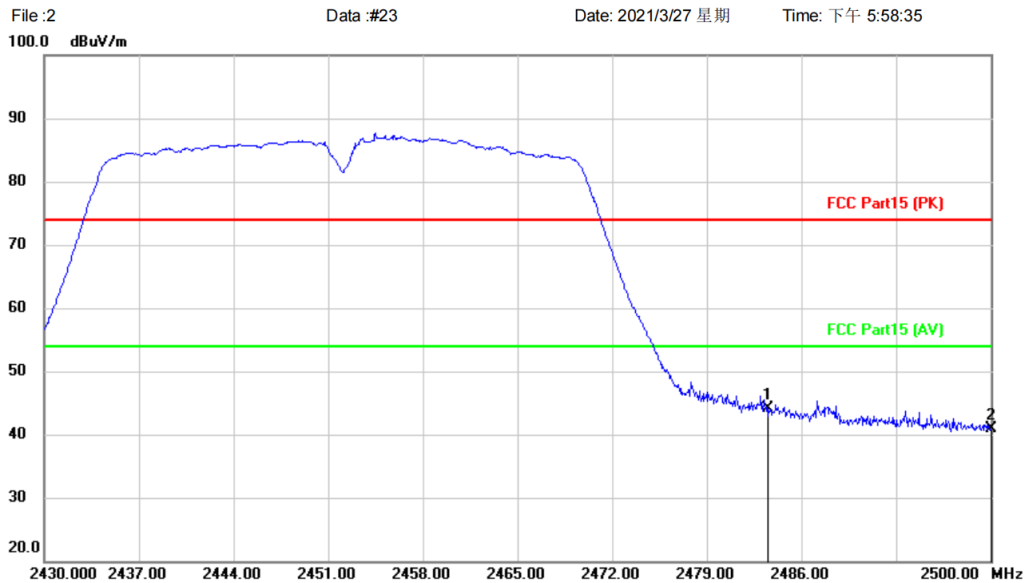
*:Maximum data x:Over limit !:over margin

〈Reference Only

Test Result:

[Test Moed: TX high channel] ; [Polarity: Horizontal]

Radiated Emission Measurement



Site Limit: FCC Part15 (PK) Polarization: **Horizontal** Temperature:
EUT: True Wireless Earbuds Power: Humidity: %
M/N: 6222D-UUC Distance: 3m
Mode: 802.11n40-2452-ant1&2
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	47.87	-3.84	44.03	74.00	-29.97	peak		
2		2500.000	44.63	-3.78	40.85	74.00	-33.15	peak		

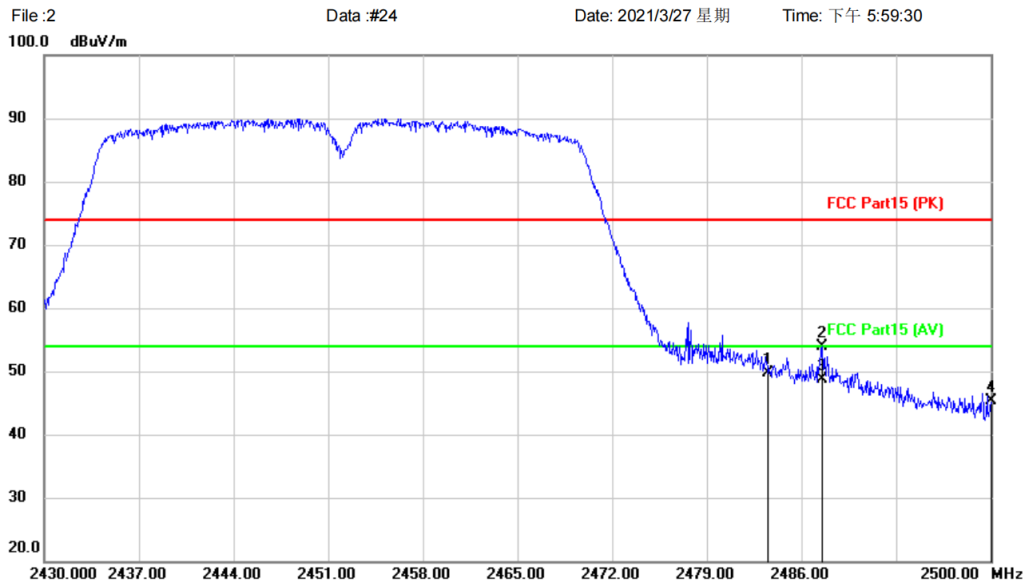
*:Maximum data x:Over limit !:over margin

〈Reference Only

Test Result:

[Test Moed: TX high channel] ; [Polarity: Vertical]

Radiated Emission Measurement



Site Limit: FCC Part15 (PK) Polarization: **Vertical** Temperature:
EUT: True Wireless Earbuds Power: Humidity: %
M/N: 6222D-UUC Distance: 3m
Mode: 802.11n40-2452-ant1&2
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	53.56	-3.84	49.72	74.00	-24.28	peak		
2		2487.540	57.70	-3.84	53.86	74.00	-20.14	peak		
3	*	2487.540	52.63	-3.84	48.79	54.00	-5.21	AVG		
4		2500.000	49.02	-3.78	45.24	74.00	-28.76	peak		

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

〈Reference Only

Test Result:

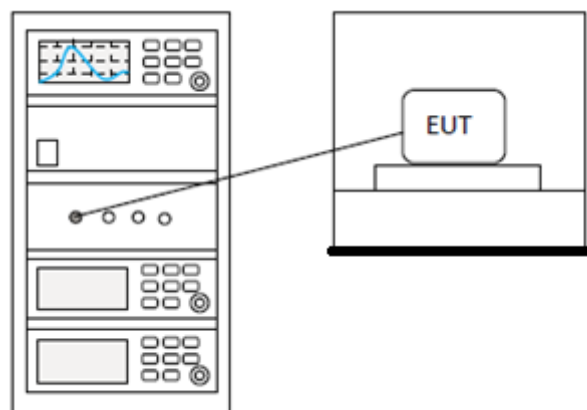
3 CONDUCTED PEAK OUTPUT POWER

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	Ben
Temperature	25°C
Humidity	60%

3.1 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

3.2 BLOCK DIAGRAM OF TEST SETUP



3.3 EST DATA

Pass: Please Refer To Appendix: For Details

4 RADIATED SPURIOUS EMISSIONS

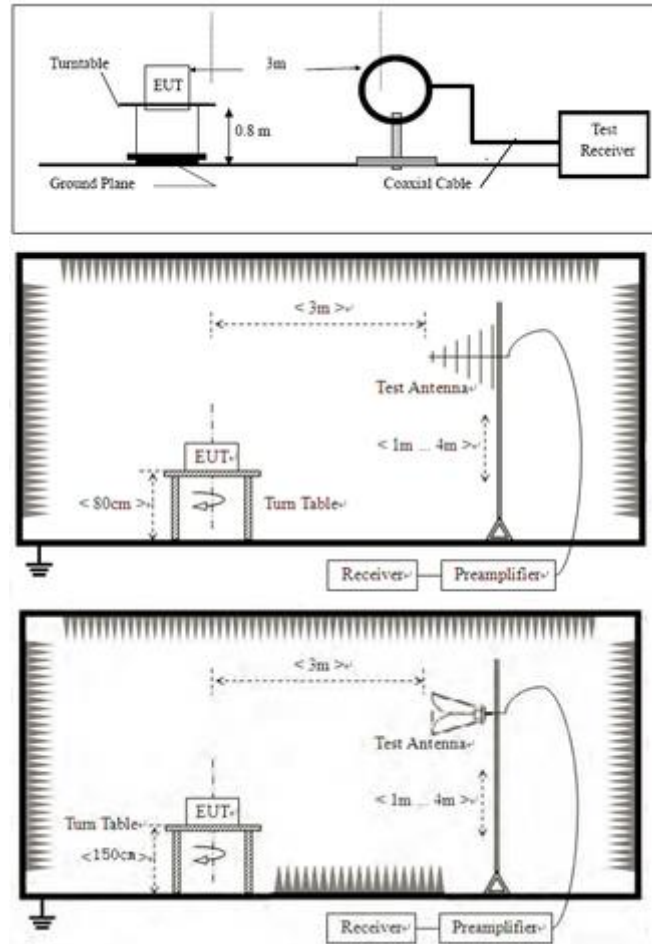
Test Standard	47 CFR Part 15, Subpart C 15.247
Test Method	ANSI C63.10 (2013) Section 6.4,6.5,6.6
Test Mode (Pre-Scan)	TX mode (SE) below 1G;TX Low channel;TX middle channel;TX high channel
Test Mode (Final Test)	TX mode (SE) below 1G;TX Low channel;TX middle channel;TX high channel
Tester	Ben
Temperature	25°C
Humidity	60%

4.1 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.

4.2 BLOCK DIAGRAM OF TEST SETUP



4.3 PROCEDURE

- 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.
- 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.
- 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.
- 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.
- 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.
- The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- 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.

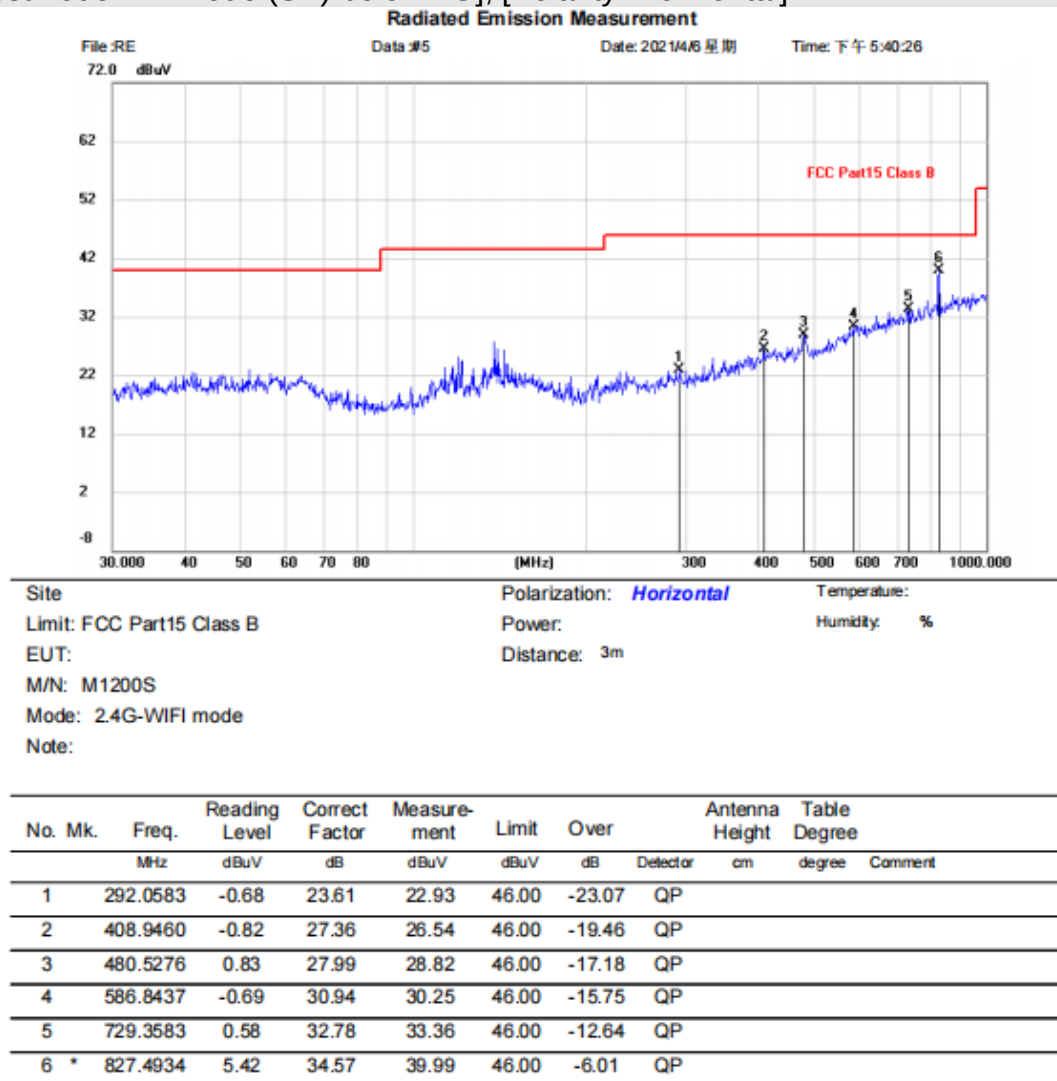
- h. Test the EUT in the lowest channel, the middle channel, the Highest channel.
- i. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.
- j. Repeat above procedures until all frequencies measured was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

4.4 TEST DATA

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

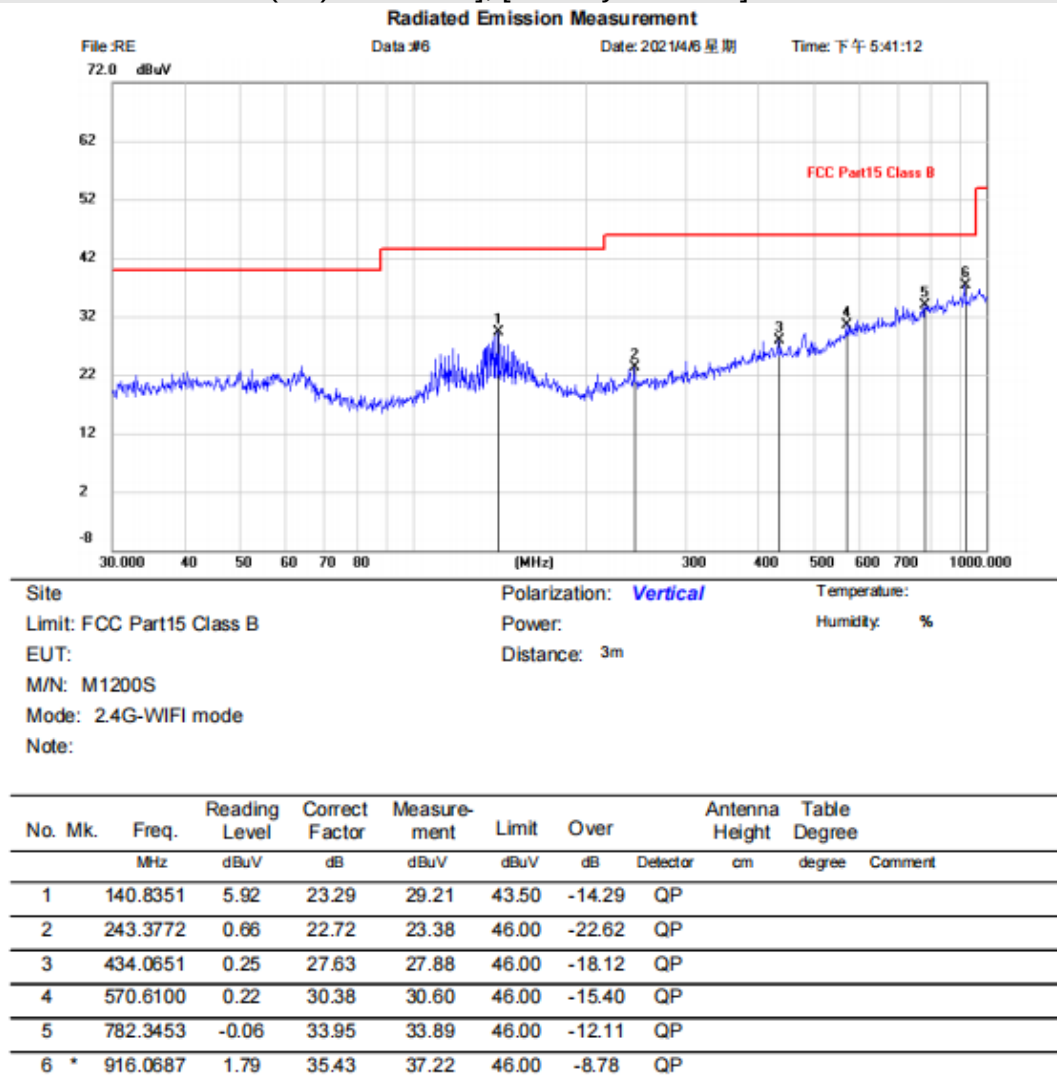


*:Maximum data x:Over limit !:over margin

(Reference Only)

Test Result: Pass

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



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

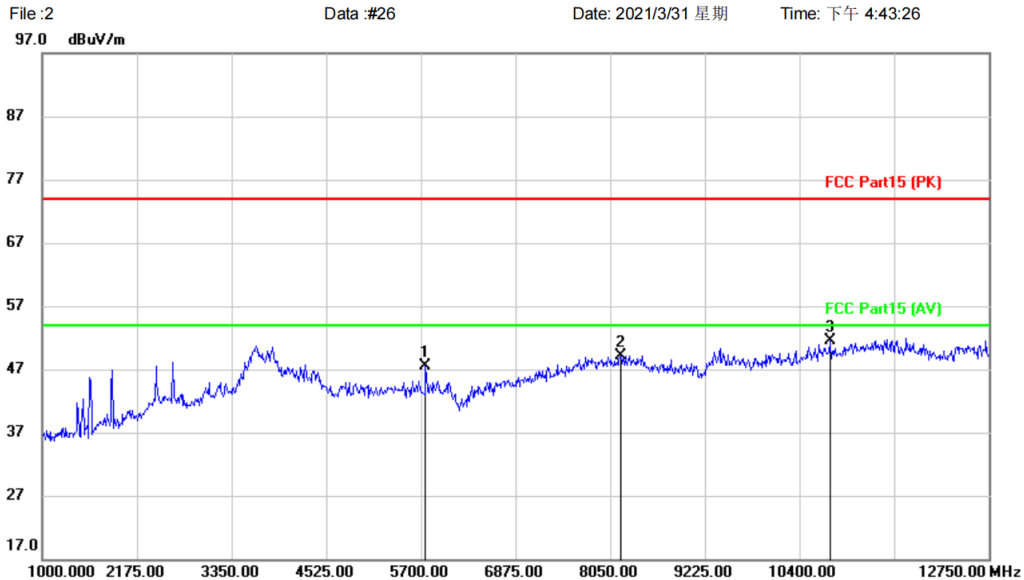
(Reference Only)

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]

Radiated Emission Measurement



Site	Polarization: Horizontal	Temperature:
Limit: FCC Part15 (PK)	Power:	Humidity: %
EUT: True Wireless Earbuds	Distance: 3m	
M/N: 6222D-UUC		
Mode: 802.11b-2412-ant1		
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		5758.750	43.51	3.92	47.43	74.00	-26.57	peak		
2		8179.250	41.00	8.18	49.18	74.00	-24.82	peak		
3	*	10776.000	39.82	11.70	51.52	74.00	-22.48	peak		

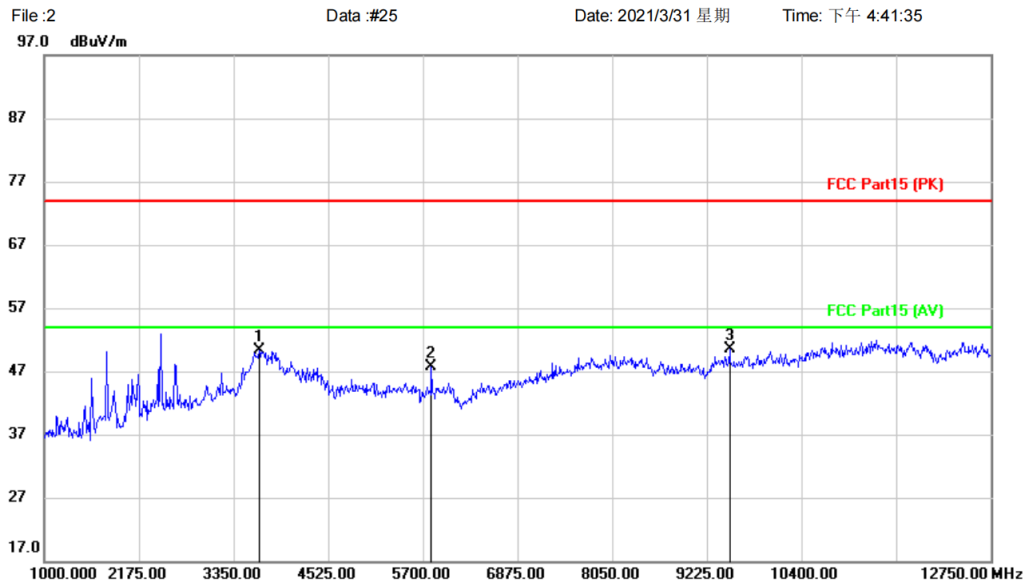
*:Maximum data x:Over limit !:over margin

〈Reference Only

Test Result: Pass

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

Radiated Emission Measurement



Site Limit: FCC Part15 (PK) Polarization: **Vertical** Temperature:
EUT: True Wireless Earbuds Power: Humidity: %
M/N: 6222D-UUC Distance: 3m
Mode: 802.11b-2412-ant1
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		3667.250	42.60	7.75	50.35	74.00	-23.65	peak		
2		5805.750	43.74	3.87	47.61	74.00	-26.39	peak		
3	*	9507.000	41.35	9.06	50.41	74.00	-23.59	peak		

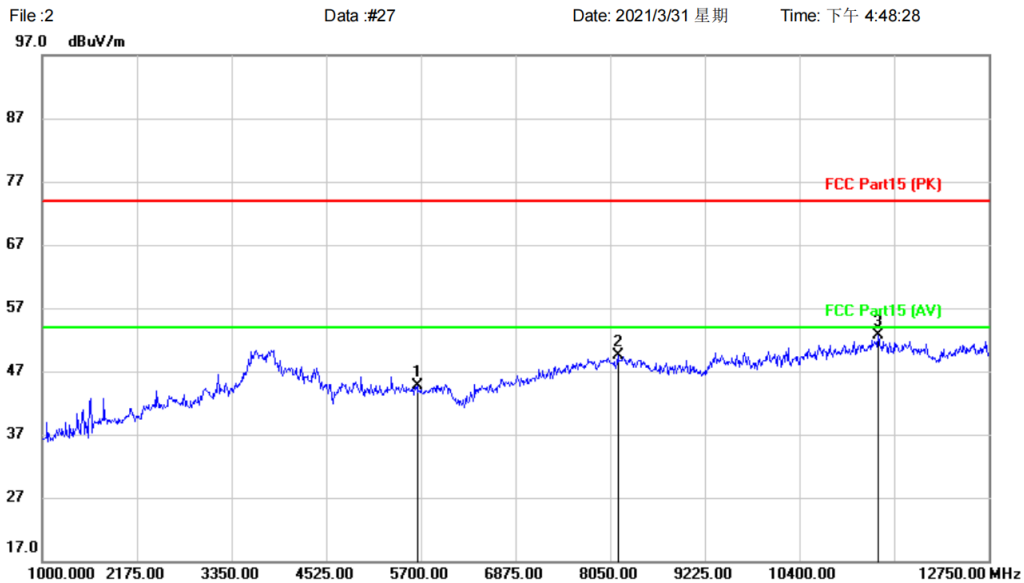
*:Maximum data x:Over limit !:over margin

〈Reference Only

Test Result: Pass

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

Radiated Emission Measurement



Site Limit: FCC Part15 (PK) Polarization: **Horizontal** Temperature:
EUT: True Wireless Earbuds Power: Humidity: %
M/N: 6222D-UUC Distance: 3m
Mode: 802.11b-2437-ant1
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		5653.000	40.72	3.95	44.67	74.00	-29.33	peak		
2		8144.000	41.28	8.13	49.41	74.00	-24.59	peak		
3	*	11375.250	40.82	11.79	52.61	74.00	-21.39	peak		

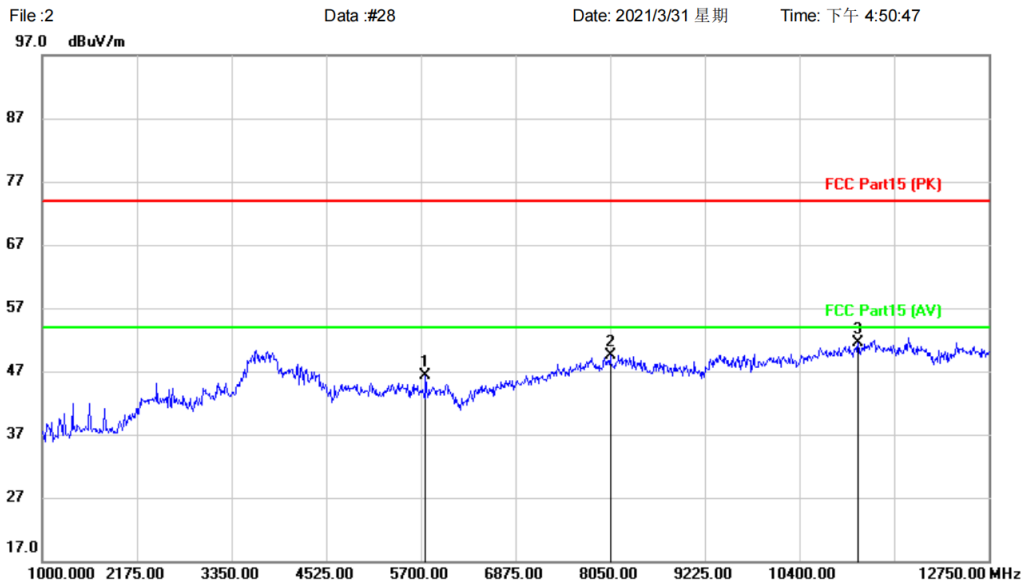
*:Maximum data x:Over limit !:over margin

<Reference Only

Test Result: Pass

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

Radiated Emission Measurement



Site Limit: FCC Part15 (PK) Polarization: **Vertical** Temperature:
EUT: True Wireless Earbuds Power: Humidity: %
M/N: 6222D-UUC Distance: 3m
Mode: 802.11b-2437-ant1
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		5758.750	42.43	3.92	46.35	74.00	-27.65	peak		
2		8050.000	41.53	8.01	49.54	74.00	-24.46	peak		
3	*	11128.500	39.43	12.02	51.45	74.00	-22.55	peak		

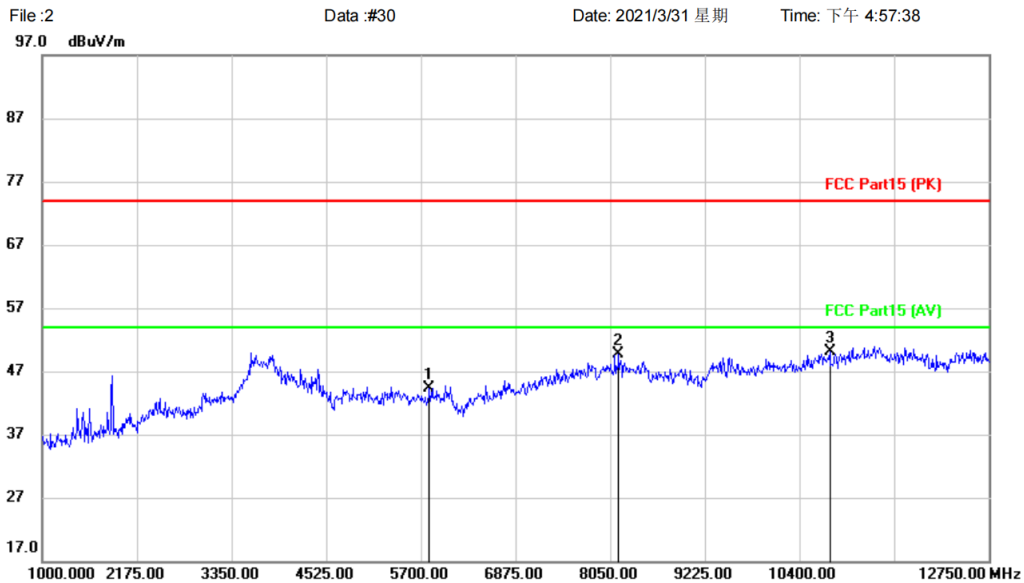
*:Maximum data x:Over limit !:over margin

〈Reference Only

Test Result: Pass

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

Radiated Emission Measurement



Site Limit: FCC Part15 (PK) Polarization: **Horizontal** Temperature:
EUT: True Wireless Earbuds Power: Humidity: %
M/N: 6222D-UUC Distance: 3m
Mode: 802.11b-2462-ant1
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		5805.750	40.53	3.87	44.40	74.00	-29.60	peak		
2		8155.750	41.49	8.15	49.64	74.00	-24.36	peak		
3	*	10776.000	38.49	11.70	50.19	74.00	-23.81	peak		

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

〈Reference Only

Test Result: Pass