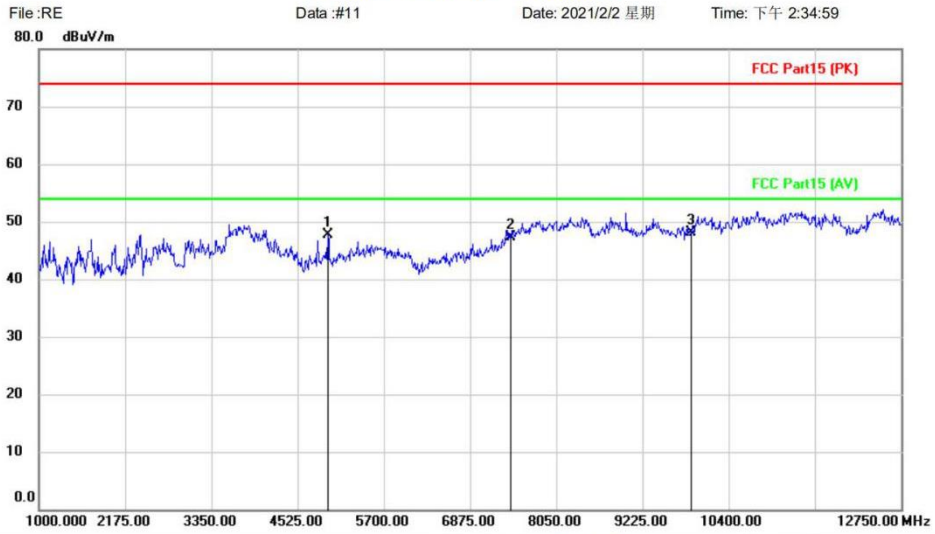


[TestMode: Test channel:Highest]; [Polarity: Vertical]

Radiated Emission Measurement



Site: Polarization: **Vertical** Temperature:
 Limit: FCC Part15 (PK) Power: Humidity: %
 EUT: WIFI Module Distance: 3m
 M/N: 6189S-SF
 Mode: TX-B-H
 Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree
1		4936.250	54.93	-7.22	47.71	74.00	-26.29	peak	
2		7416.000	49.94	-2.57	47.37	74.00	-26.63	peak	
3	*	9888.000	46.80	1.40	48.20	74.00	-25.80	peak	

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

Test Result: Pass

9 RADIATED EMISSIONS WHICH FALL IN THE RESTRICTED BANDS

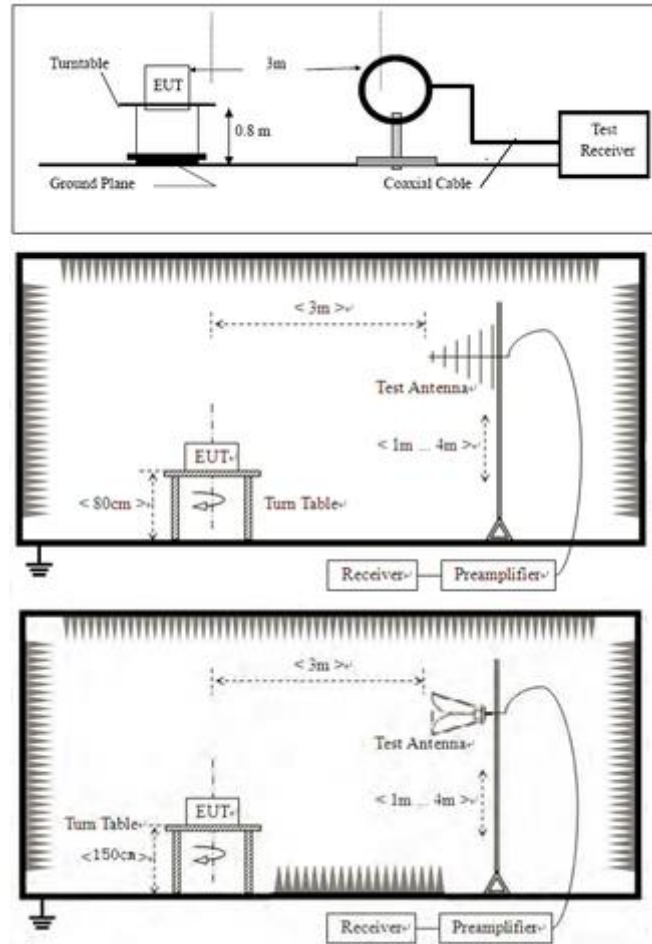
Test Standard	47 CFR Part 15, Subpart C 15.247
Test Method	ANSI C63.10 (2013) Section 6.10.5
Test Mode (Pre-Scan)	TX
Test Mode (Final Test)	TX
Tester	Jozu
Temperature	25°C
Humidity	60%

9.1 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.

9.2 BLOCK DIAGRAM OF TEST SETUP



9.3 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.

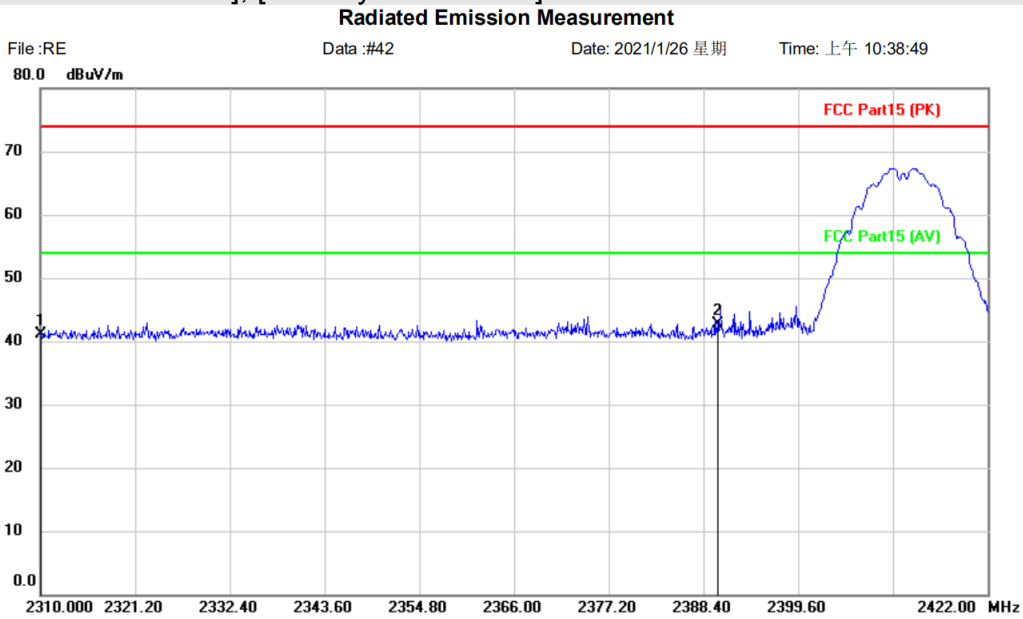
- h. Test the EUT in the lowest channel, the middle channel, the Highest channel.
- i. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.
- j. Repeat above procedures until all frequencies measured was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

Remark 1: $Level = Read\ Level + Cable\ Loss + Antenna\ Factor - Preamp\ Factor$

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.

9.4 TEST DATA

[TestMode: 802.11b-2412]; [Polarity: Horizontal]



Site	Polarization: Horizontal	Temperature:
Limit: FCC Part15 (PK)	Power:	Humidity: %
EUT: H155E-U	Distance: 3m	
M/N: H155E-U		
Mode: 802.11b-2412		
Note:		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1		2310.000	55.07	-14.01	41.06	74.00	-32.94	peak		
2	*	2390.000	56.29	-13.62	42.67	74.00	-31.33	peak		

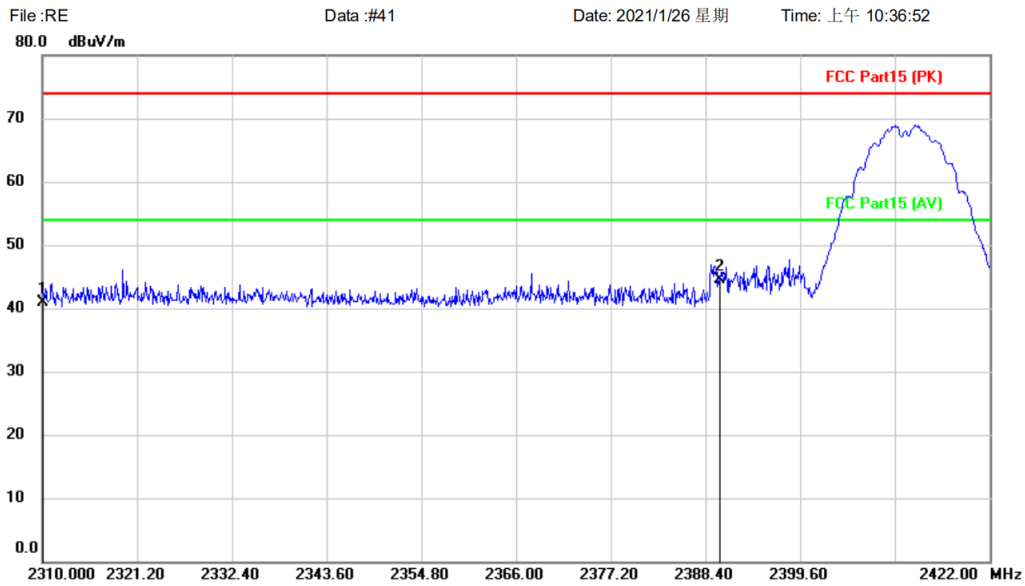
*:Maximum data x:Over limit !:over margin

<Reference Only

Test Result: Pass

[TestMode: 802.11b-2412]; [Polarity: Vertical]

Radiated Emission Measurement



Site	Polarization: Vertical	Temperature:
Limit: FCC Part15 (PK)	Power:	Humidity: %
EUT: H155E-U	Distance: 3m	
M/N: H155E-U		
Mode: 802.11b-2412		
Note:		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1		2310.000	55.27	-14.30	40.97	74.00	-33.03	peak		
2	*	2390.000	58.46	-13.95	44.51	74.00	-29.49	peak		

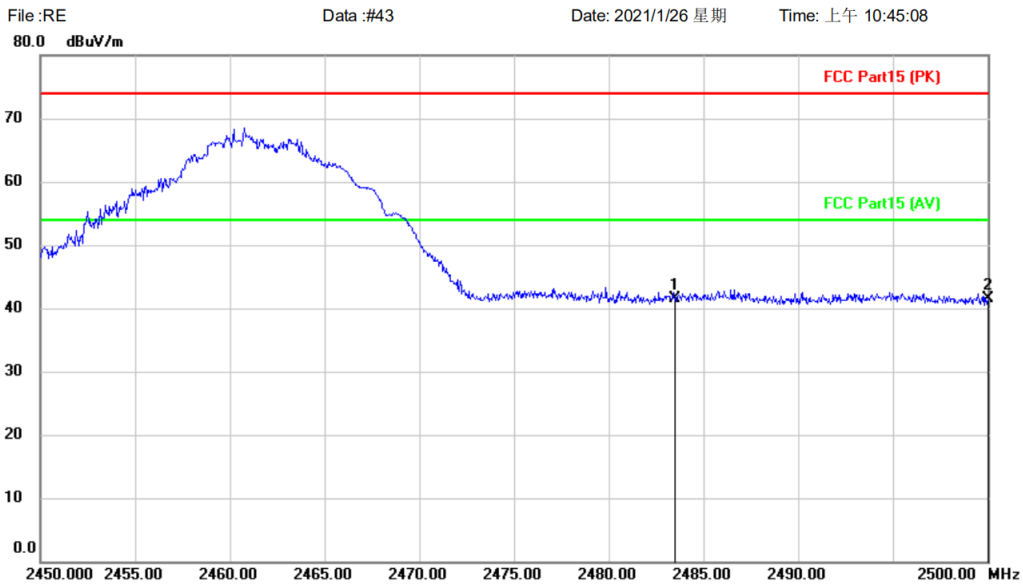
*:Maximum data x:Over limit !:over margin

⟨Reference Only

Test Result: Pass

[TestMode: 802.11b-2462]; [Polarity: Horizontal]

Radiated Emission Measurement



Site	Polarization: Horizontal	Temperature:
Limit: FCC Part15 (PK)	Power:	Humidity: %
EUT: H155E-U	Distance: 3m	
M/N: H155E-U		
Mode: 802.11b-2462		
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		2483.500	54.52	-13.11	41.41	74.00	-32.59	peak			
2	*	2500.000	54.48	-13.02	41.46	74.00	-32.54	peak			

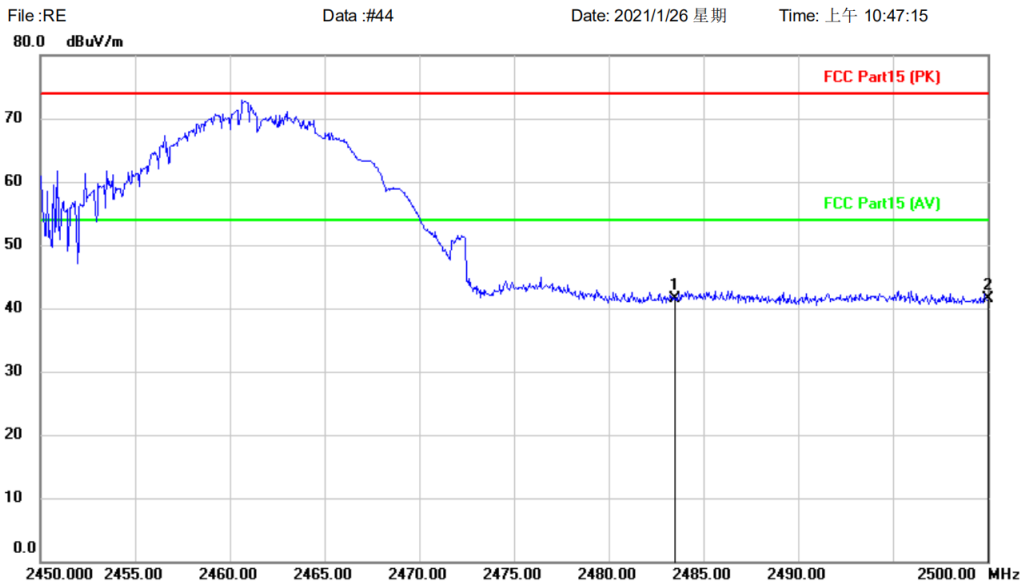
*:Maximum data x:Over limit !:over margin

<Reference Only

Test Result: Pass

[TestMode: 802.11b-2462]; [Polarity: Vertical]

Radiated Emission Measurement



Site	Polarization: Vertical	Temperature:
Limit: FCC Part15 (PK)	Power:	Humidity: %
EUT: H155E-U	Distance: 3m	
M/N: H155E-U		
Mode: 802.11b-2462		
Note:		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1		2483.500	54.97	-13.50	41.47	74.00	-32.53	peak		
2	*	2500.000	54.93	-13.42	41.51	74.00	-32.49	peak		

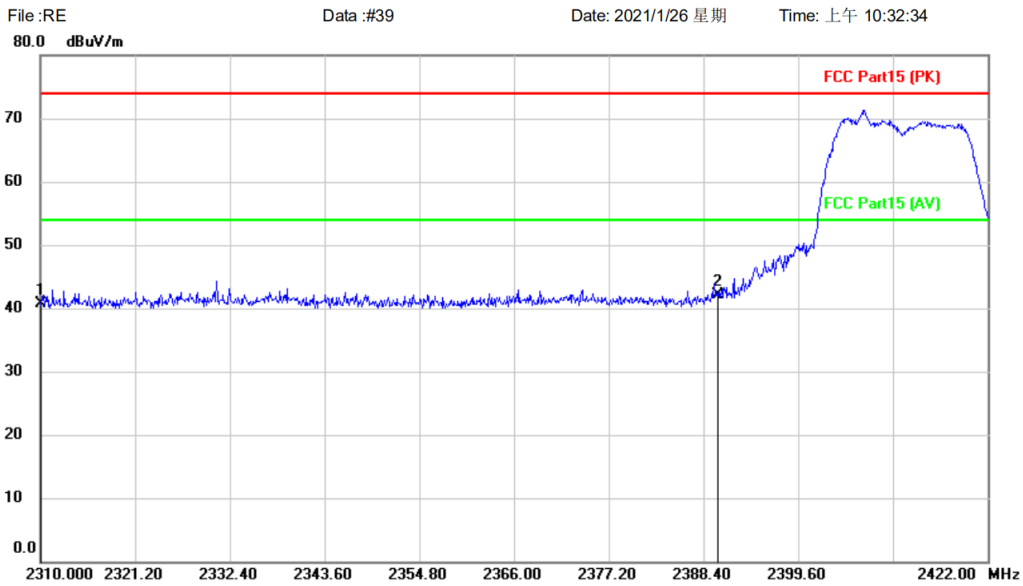
*:Maximum data x:Over limit !:over margin

<Reference Only

Test Result: Pass

[TestMode: 802.11g-2412]; [Polarity: Horizontal]

Radiated Emission Measurement



Site	Polarization: Horizontal	Temperature:
Limit: FCC Part15 (PK)	Power:	Humidity: %
EUT: H155E-U	Distance: 3m	
M/N: H155E-U		
Mode: 802.11g-2412		
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	54.63	-14.01	40.62	74.00	-33.38	peak			
2	*	2390.000	55.79	-13.62	42.17	74.00	-31.83	peak			

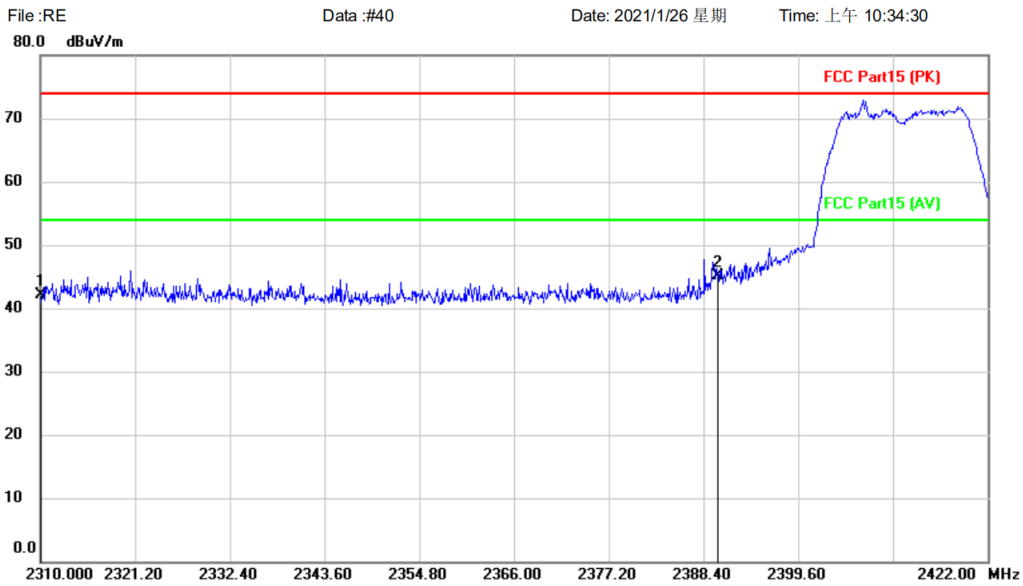
*:Maximum data x:Over limit !:over margin

⟨Reference Only

Test Result: Pass

[TestMode: 802.11g-2412]; [Polarity: Vertical]

Radiated Emission Measurement



Site	Polarization: Vertical	Temperature:
Limit: FCC Part15 (PK)	Power:	Humidity: %
EUT: H155E-U	Distance: 3m	
M/N: H155E-U		
Mode: 802.11g-2412		
Note:		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1		2310.000	56.32	-14.30	42.02	74.00	-31.98	peak		
2	*	2390.000	59.13	-13.95	45.18	74.00	-28.82	peak		

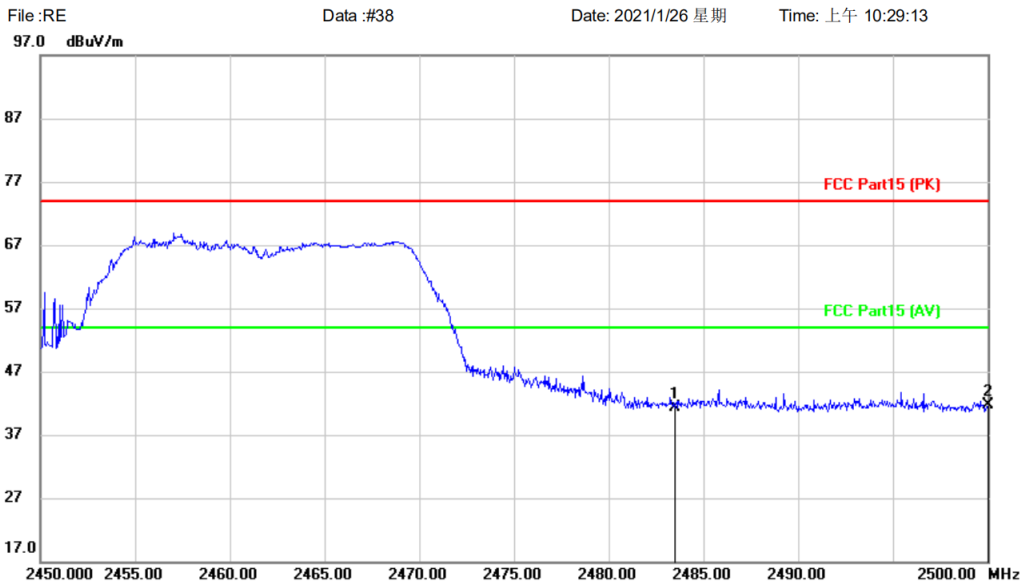
*:Maximum data x:Over limit !:over margin

<Reference Only

Test Result: Pass

[TestMode: 802.11g-2462]; [Polarity: Horizontal]

Radiated Emission Measurement



Site	Polarization: Horizontal	Temperature:
Limit: FCC Part15 (PK)	Power:	Humidity: %
EUT: H155E-U	Distance: 3m	
M/N: H155E-U		
Mode: 802.11g-2462		
Note:		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1		2483.500	54.40	-13.11	41.29	74.00	-32.71	peak		
2	*	2500.000	54.79	-13.02	41.77	74.00	-32.23	peak		

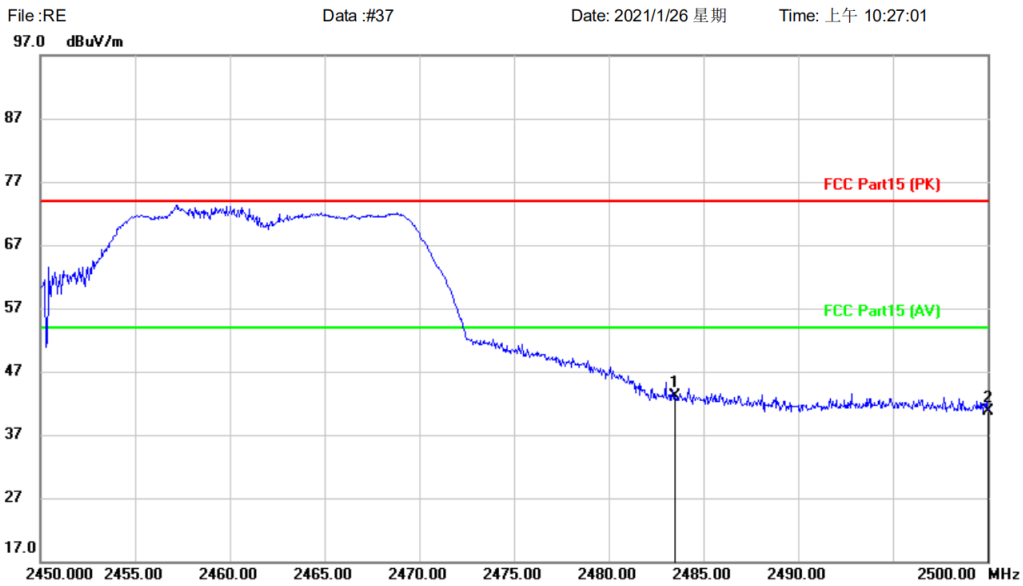
*:Maximum data x:Over limit !:over margin

< Reference Only

Test Result: Pass

[TestMode: 802.11g-2462]; [Polarity: Vertical]

Radiated Emission Measurement



Site	Polarization: Vertical	Temperature:
Limit: FCC Part15 (PK)	Power:	Humidity: %
EUT: H155E-U	Distance: 3m	
M/N: H155E-U		
Mode: 802.11g-2462		
Note:		

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Antenna Height cm	Table Degree	Comment
1	*	2483.500	56.64	-13.50	43.14	74.00	-30.86	peak			
2		2500.000	54.05	-13.42	40.63	74.00	-33.37	peak			

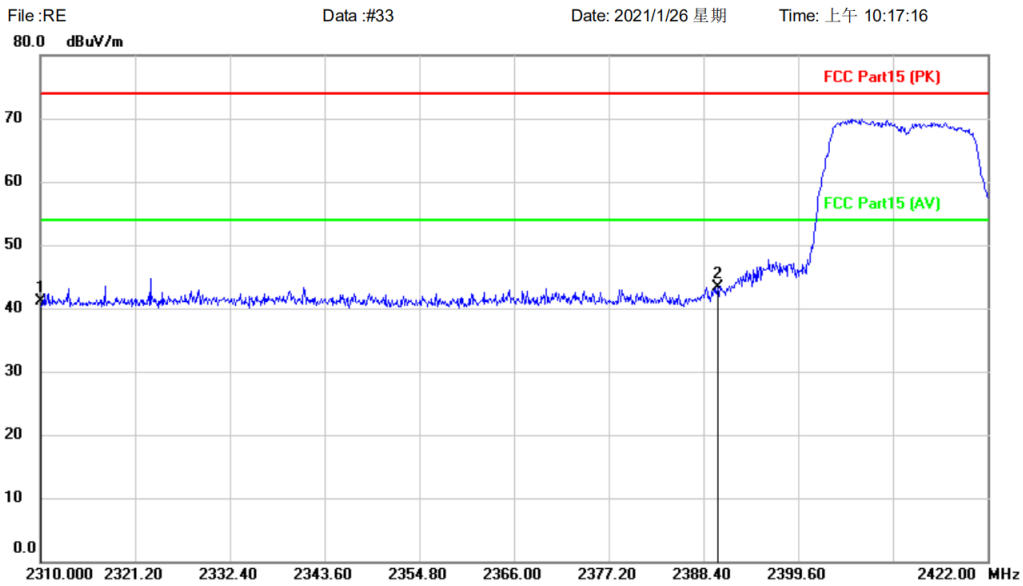
*:Maximum data x:Over limit !:over margin

<Reference Only

Test Result: Pass

[TestMode: 802.11n20-2412]; [Polarity: Horizontal]

Radiated Emission Measurement



Site	Polarization: Horizontal	Temperature:
Limit: FCC Part15 (PK)	Power:	Humidity: %
EUT: H155E-U	Distance: 3m	
M/N: H155E-U		
Mode: 802.11n20-2412		
Note:		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1		2310.000	55.12	-14.01	41.11	74.00	-32.89	peak		
2	*	2390.000	57.00	-13.62	43.38	74.00	-30.62	peak		

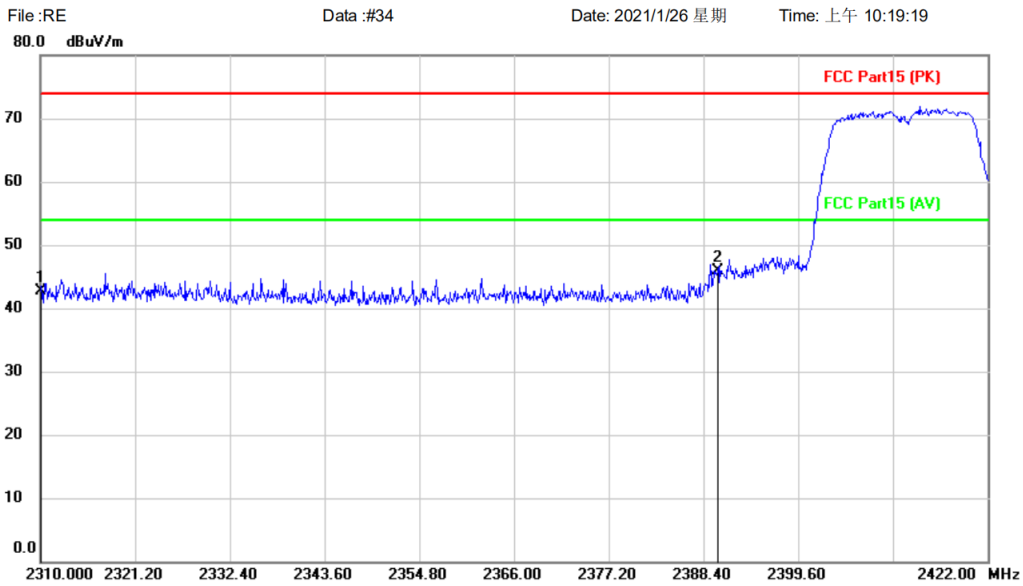
*:Maximum data x:Over limit !:over margin

<Reference Only

Test Result: Pass

[TestMode: 802.11n20-2412]; [Polarity: Vertical]

Radiated Emission Measurement



Site	Polarization: Vertical	Temperature:
Limit: FCC Part15 (PK)	Power:	Humidity: %
EUT: H155E-U	Distance: 3m	
M/N: H155E-U		
Mode: 802.11n20-2412		
Note:		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1		2310.000	57.01	-14.30	42.71	74.00	-31.29	peak		
2	*	2390.000	59.95	-13.95	46.00	74.00	-28.00	peak		

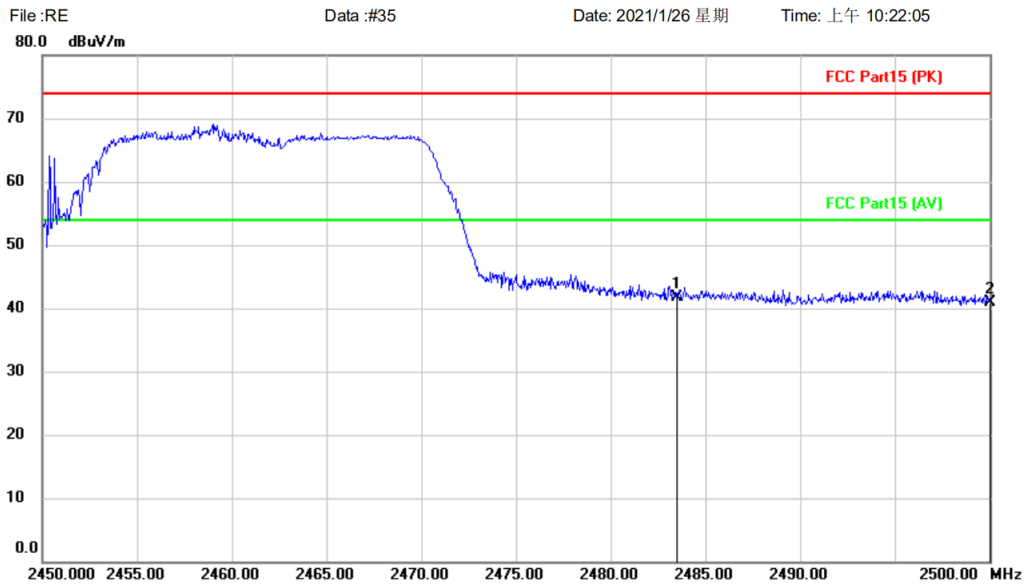
*:Maximum data x:Over limit !:over margin

<Reference Only

Test Result: Pass

[TestMode: 802.11n20-2462]; [Polarity: Horizontal]

Radiated Emission Measurement



Site	Polarization: Horizontal	Temperature:
Limit: FCC Part15 (PK)	Power:	Humidity: %
EUT: H155E-U	Distance: 3m	
M/N: H155E-U		
Mode: 802.11n20-2462		
Note:		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1	*	2483.500	54.83	-13.11	41.72	74.00	-32.28	peak		
2		2500.000	53.94	-13.02	40.92	74.00	-33.08	peak		

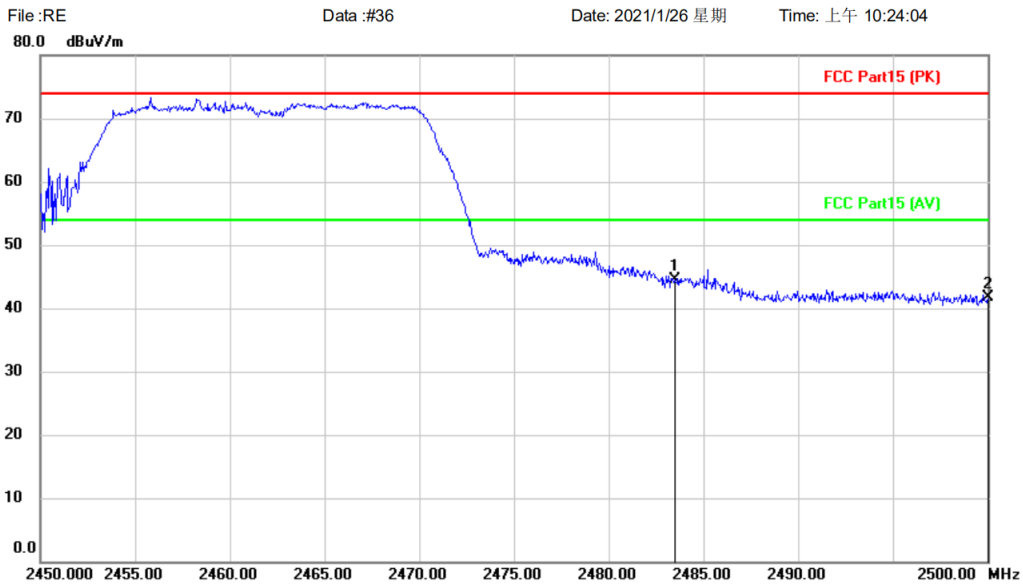
*:Maximum data x:Over limit !:over margin

<Reference Only

Test Result: Pass

[TestMode: 802.11n20-2462]; [Polarity: Vertical]

Radiated Emission Measurement



Site	Polarization: Vertical	Temperature:
Limit: FCC Part15 (PK)	Power:	Humidity: %
EUT: H155E-U	Distance: 3m	
M/N: H155E-U		
Mode: 802.11n20-2462		
Note:		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1	*	2483.500	58.07	-13.50	44.57	74.00	-29.43	peak		
2		2500.000	55.19	-13.42	41.77	74.00	-32.23	peak		

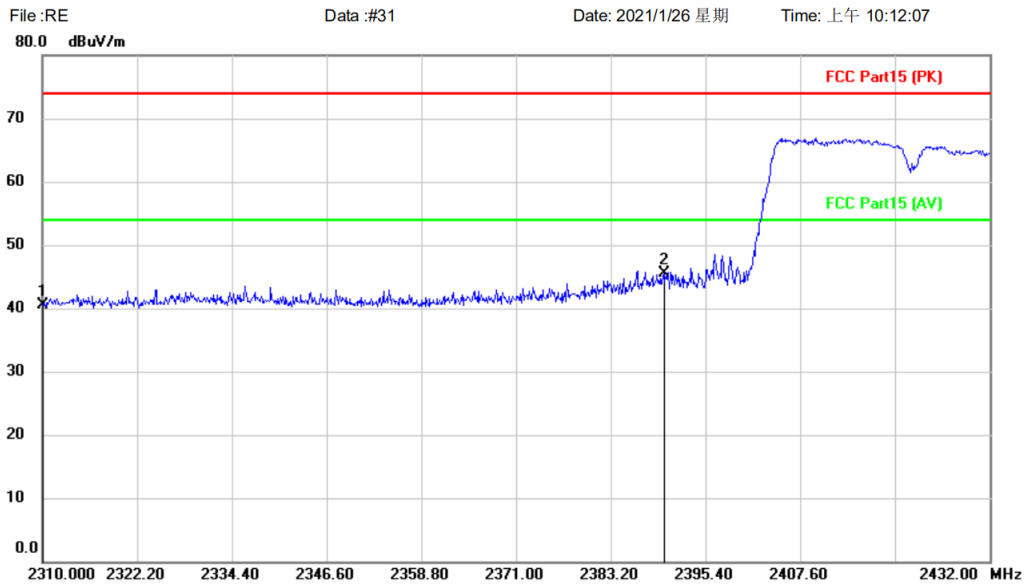
*:Maximum data x:Over limit !:over margin

<Reference Only

Test Result: Pass

[TestMode: 802.11n40-2422]; [Polarity: Horizontal]

Radiated Emission Measurement



Site	Polarization: Horizontal	Temperature:
Limit: FCC Part15 (PK)	Power:	Humidity: %
EUT: H155E-U	Distance: 3m	
M/N: H155E-U		
Mode: 802.11n40-2422		
Note:		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1		2310.000	54.55	-14.01	40.54	74.00	-33.46	peak		
2	*	2390.000	59.17	-13.62	45.55	74.00	-28.45	peak		

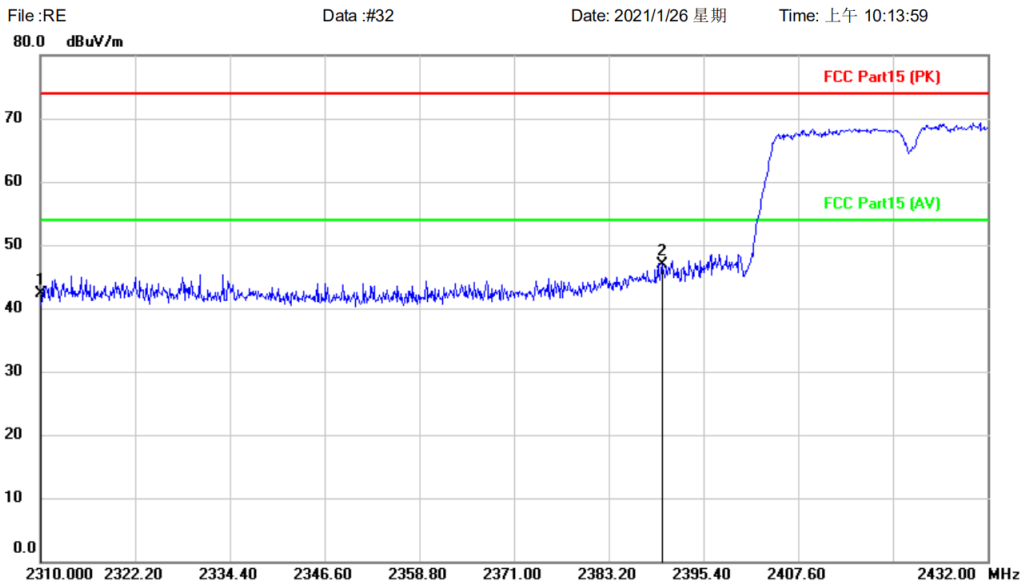
*:Maximum data x:Over limit !:over margin

<Reference Only

Test Result: Pass

[TestMode: 802.11n40-2422]; [Polarity: Vertical]

Radiated Emission Measurement



Site	Polarization: Vertical	Temperature:
Limit: FCC Part15 (PK)	Power:	Humidity: %
EUT: H155E-U	Distance: 3m	
M/N: H155E-U		
Mode: 802.11n40-2422		
Note:		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1		2310.000	56.54	-14.30	42.24	74.00	-31.76	peak		
2	*	2390.000	60.91	-13.95	46.96	74.00	-27.04	peak		

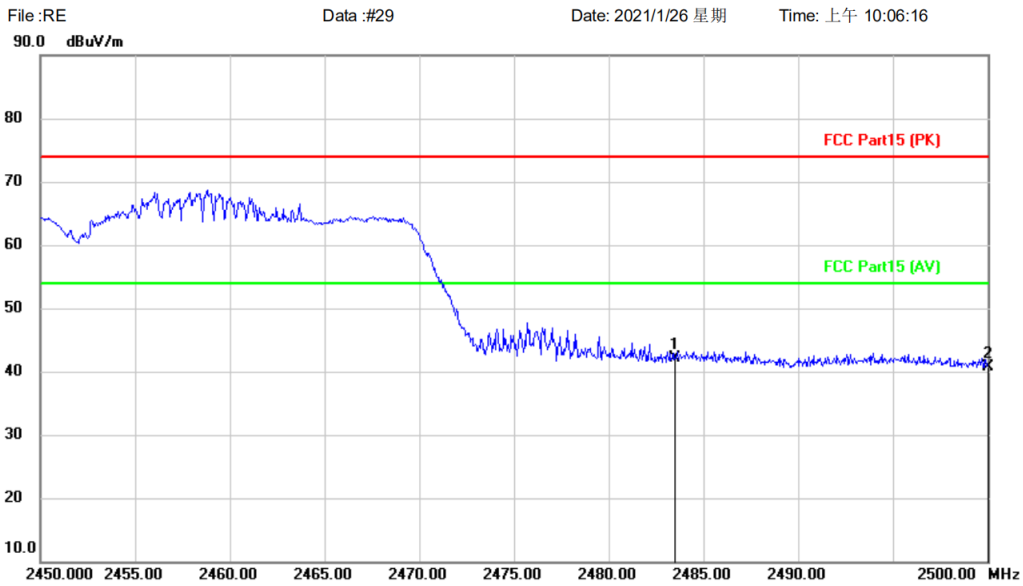
*:Maximum data x:Over limit !:over margin

<Reference Only

Test Result: Pass

[TestMode: 802.11n40-2452]; [Polarity: Horizontal]

Radiated Emission Measurement



Site	Polarization: Horizontal	Temperature:
Limit: FCC Part15 (PK)	Power:	Humidity: %
EUT: H155E-U	Distance: 3m	
M/N: H155E-U		
Mode: 802.11n40-2452		
Note:		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1	*	2483.500	55.15	-13.11	42.04	74.00	-31.96	peak		
2		2500.000	53.78	-13.02	40.76	74.00	-33.24	peak		

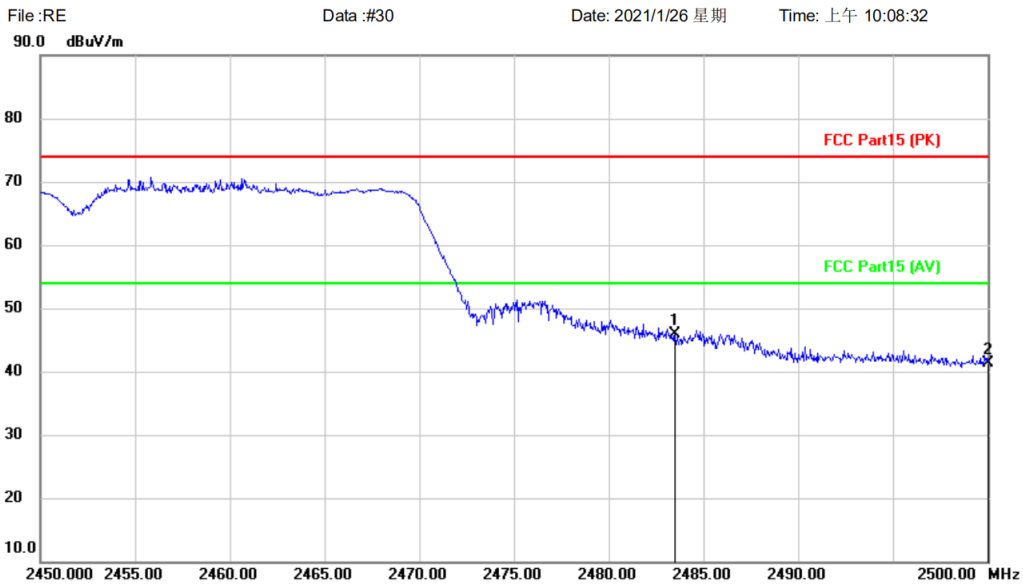
*:Maximum data x:Over limit !:over margin

<Reference Only

Test Result: Pass

[TestMode: 802.11n40-2452]; [Polarity: Vertical]

Radiated Emission Measurement



Site	Polarization: Vertical	Temperature:
Limit: FCC Part15 (PK)	Power:	Humidity: %
EUT: H155E-U	Distance: 3m	
M/N: H155E-U		
Mode: 802.11n40-2452		
Note:		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1	*	2483.500	59.32	-13.50	45.82	74.00	-28.18	peak		
2		2500.000	54.78	-13.42	41.36	74.00	-32.64	peak		

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

< Reference Only

Test Result: Pass

10 APPENDIX

10.1 APPENDIX : DTS BANDWIDTH

Test Result

TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	10.120	2406.920	2417.040	>=0.5	PASS
		2437	10.080	2431.960	2442.040	>=0.5	PASS
		2462	10.120	2456.920	2467.040	>=0.5	PASS
11G	Ant1	2412	16.440	2403.760	2420.200	>=0.5	PASS
		2437	16.440	2428.760	2445.200	>=0.5	PASS
		2462	16.440	2453.760	2470.200	>=0.5	PASS
11N20SISO	Ant1	2412	17.680	2403.160	2420.840	>=0.5	PASS
		2437	17.680	2428.160	2445.840	>=0.5	PASS
		2462	17.680	2453.160	2470.840	>=0.5	PASS
11N40SISO	Ant1	2422	36.480	2403.760	2440.240	>=0.5	PASS
		2437	36.480	2418.760	2455.240	>=0.5	PASS
		2452	36.480	2433.760	2470.240	>=0.5	PASS

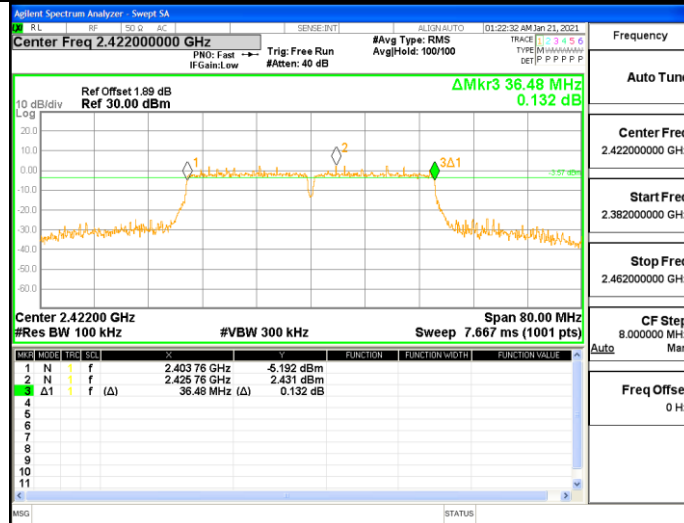
Test Graphs



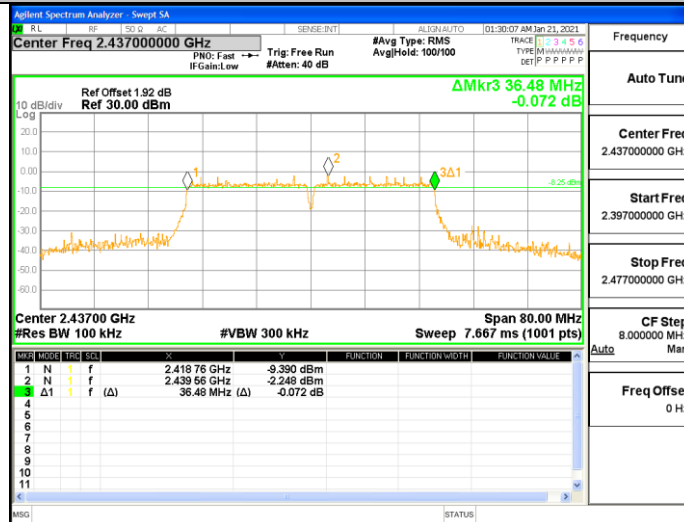




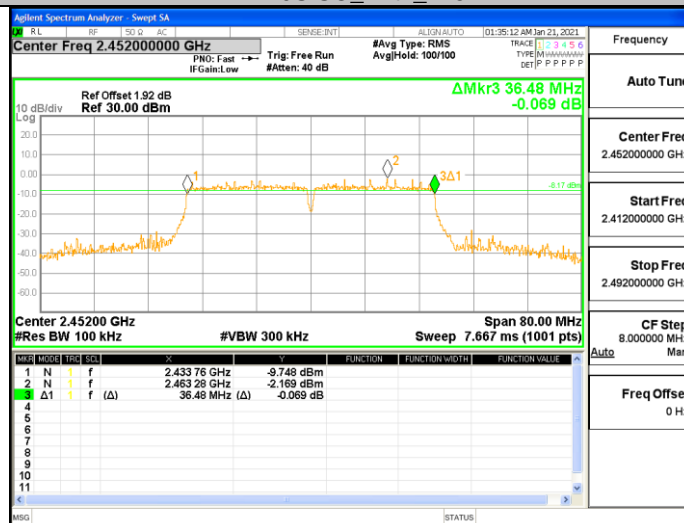
11N40SISO_Ant1_2422



11N40SISO_Ant1_2437



11N40SISO_Ant1_2452



10.2 APPENDIX : OCCUPIED CHANNEL BANDWIDTH

Test Result

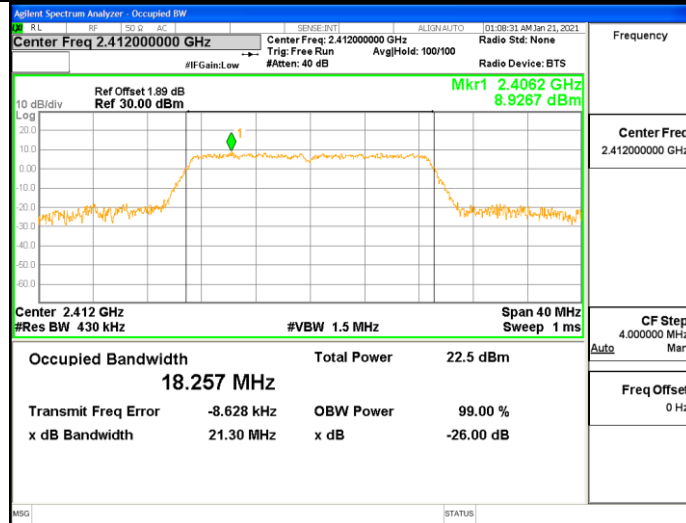
TestMode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	15.163	2404.390	2419.553	---	PASS
		2437	15.169	2429.423	2444.592	---	PASS
		2462	15.154	2454.386	2469.540	---	PASS
11G	Ant1	2412	17.393	2403.240	2420.633	---	PASS
		2437	17.432	2428.252	2445.684	---	PASS
		2462	17.333	2453.313	2470.646	---	PASS
11N20SISO	Ant1	2412	18.257	2402.863	2421.120	---	PASS
		2437	18.197	2427.950	2446.147	---	PASS
		2462	18.242	2452.861	2471.103	---	PASS
11N40SISO	Ant1	2422	36.882	2403.502	2440.384	---	PASS
		2437	36.817	2418.578	2455.395	---	PASS
		2452	36.647	2433.668	2470.315	---	PASS

Test Graphs

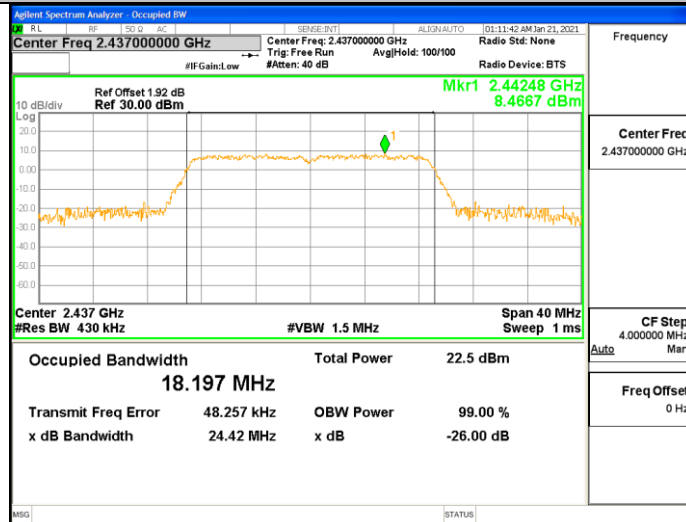




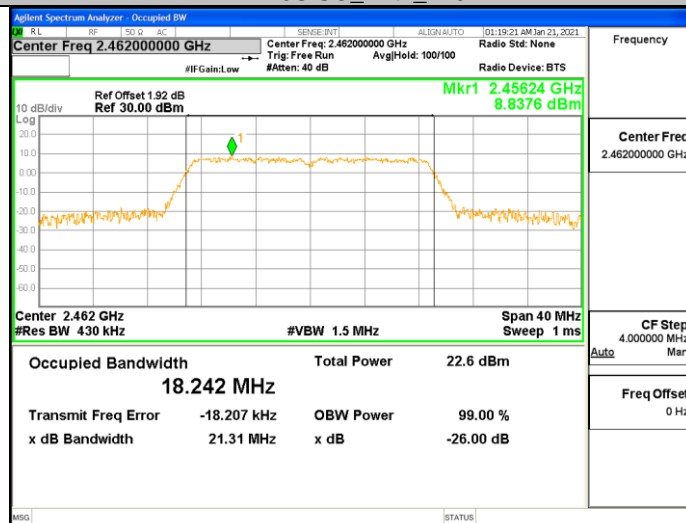
11N20SISO_Ant1_2412



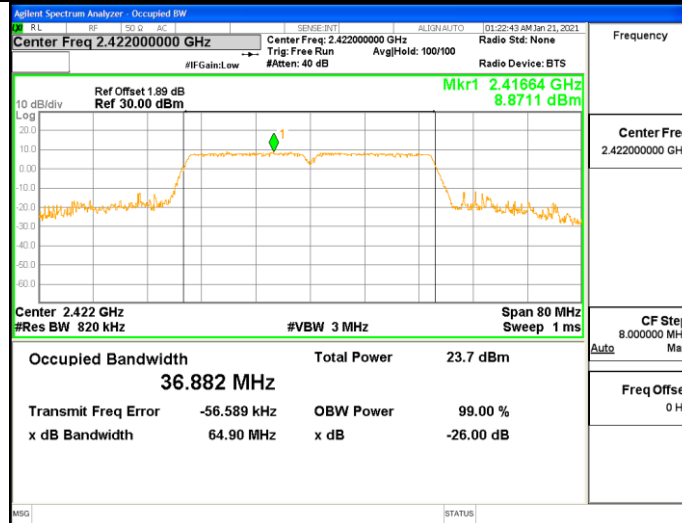
11N20SISO_Ant1_2437



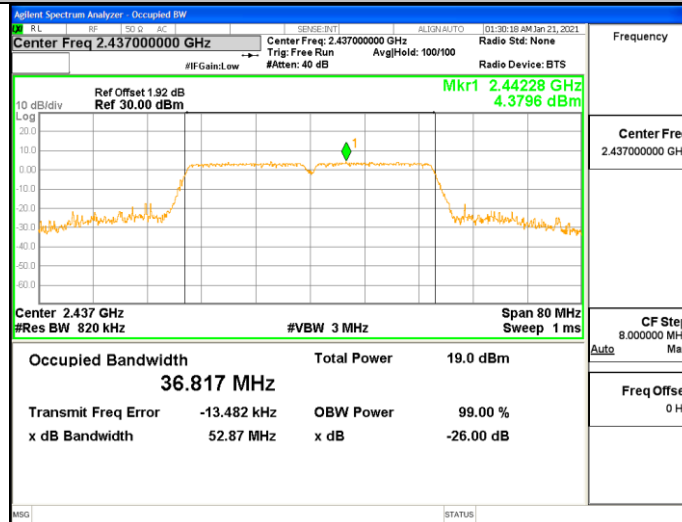
11N20SISO_Ant1_2462



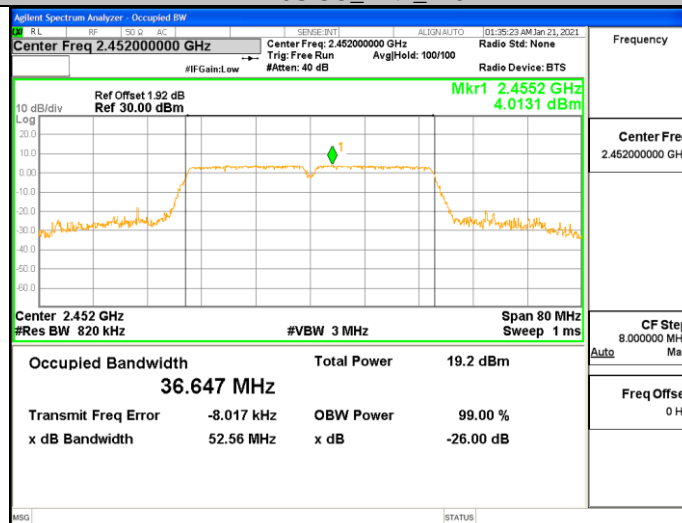
11N40SISO_Ant1_2422



11N40SISO_Ant1_2437



11N40SISO_Ant1_2452



10.3 APPENDIX : MAXIMUM CONDUCTED OUTPUT POWER

Test Result

TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	2412	15.39	<=30	PASS
		2437	15.31	<=30	PASS
		2462	15.38	<=30	PASS
11G	Ant1	2412	16.28	<=30	PASS
		2437	16.26	<=30	PASS
		2462	16.34	<=30	PASS
11N20SISO	Ant1	2412	16.28	<=30	PASS
		2437	16.27	<=30	PASS
		2462	16.33	<=30	PASS
11N40SISO	Ant1	2422	16.81	<=30	PASS
		2437	12.20	<=30	PASS
		2452	12.25	<=30	PASS

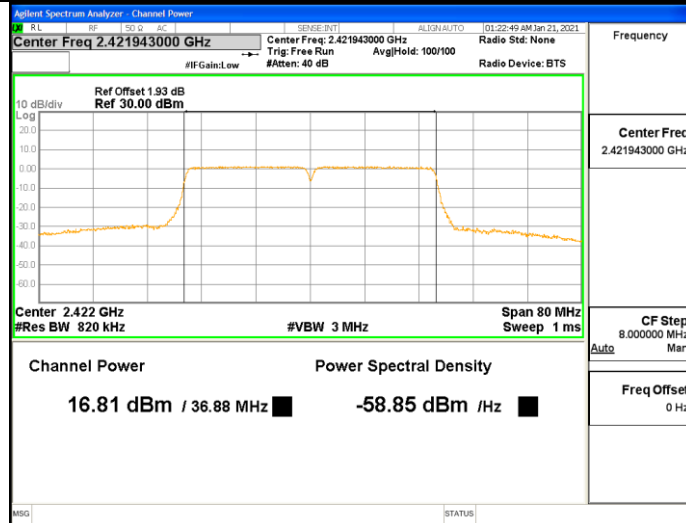
Test Graphs



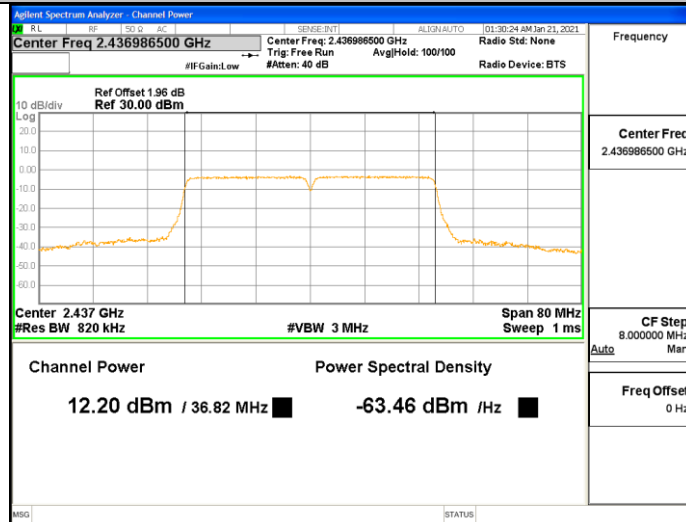




11N40SISO_Ant1_2422



11N40SISO_Ant1_2437



11N40SISO_Ant1_2452

