Test Report No.:
FCC2025-0006-RF2

TEST REPORT

FCC ID	:	2AYXT61100003
Applicant	:	Eight Sleep Inc
Product Name	:	Pod Hub
Model No.	:	11504

CVC Testing Technology Co., Ltd.

Product Name	Pod Hub	**Trade Mark**	Eight Sleep
Type/Model	11504	**Sample Status**	/
Applicant	Eight Sleep Inc		
Applicant Address	915 Broadway STE 1301 New York, New York 10010		
Manufacturer	BoShiJie Technology Co., Ltd		
Manufacturer Address	Boshijie Industrial Park, No. 1 Huifeng West Third Road, Zhongkai High-tech Zone, Huizhou City, Guangdong, China. 516006		
Factory	BoShiJie Technology Co., Ltd		
Factory Address	Boshijie Industrial Park, No. 1 Huifeng West Third Road, Zhongkai High-tech Zone, Huizhou City, Guangdong, China. 516006		
Sample Identification	1-1	**Test Item**	See page 8
Tested According To	FCC CFR47 Part 15E ANSI C63.10-2020/Cor1-2023 KDB 789033 D02 General UNII Test Procedures New Rules v01r04 KDB 662911 D01 Multiple Transmitter Output v02r01 KDB905462 D02 UNII DFS Compliance Procedures New Rules v02 KDB 905462 D03 UNII Clients Without Radar Detection New Rules v01r02		
Receiving Date	2025-03-19	**Completing Date**	2025-04-16
Test conclusion	The equipment under test was found to comply with the requirements of the standards applied. Final Verdict：Pass. Seal of CVC Date of issue: **2025-04-30**		

Abbreviations: / Pass= passed Fail = failed N/A= not applicable

This test report relates only to the EUT, and shall not be reproduced except in full, without written approval of **CVC**.

Approved by:	Reviewed by:	Tested by:
Chen Huawen	**Xu Zhenfei**	**Lu Weiji**

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
FCC2025-0006-RF2	Original release	April.30,2025

1. General Product Information

1.1 General information

Product Name	Pod Hub
Model No.	11504
Additional model	/
Power Supply	110-240V AC 50-60Hz
Serial Number(SN)	/
specific power settings	IEEE 802.11a: 13 IEEE 802.11n(20MHz): 14 IEEE 802.11n(40MHz): 14 IEEE 802.11ac(20MHz): 14 IEEE 802. 11ac (40MHz): 14 IEEE 802. 11ac (80MHz): 14
Antenna Type	Internal antenna
Antenna Gain	U-NII-1: Ant1:-1.56 dBi, Ant2:-3.01 dBi (provided by client) U-NII-3: Ant1:2.88 dBi, Ant2:4.07 dBi (provided by client)
Beamforming gain	Unsupported
Frequency Range	U-NII-1: For 20MHz:5180-5240MHz For 40MHz:5190-5230MHz For 80MHz:5210MHz U-NII-3: For 20MHz:5745-5825MHz For 40MHz:5755-5795MHz For 80MHz:5775MHz
Modulation Type	802.11a/n(HT20/HT40): 64QAM, 16QAM, QPSK, BPSK for OFDM 802.11ac(VHT20/VHT40/VHT80): 256QAM,64QAM,16QAM, QPSK,BPSK for OFDM
Max. Conducted Power	U-NII-1: 16.59 dBm U-NII-3: 15.31 dBm
DFS device type	☐Master ☐Slave with radar detection ■Slave without radar detection
TPC Function	☐Support ■Not support
TDWR Band	☐Support ■Not support
Operate Temp.Range	-10℃~+70℃

Note：
1. The information of the EUT is declared by the manufacturer.
2. The laboratory is not responsible for the product technical specification provided by the client.
3. The product models of this application are: 11504. All the tests carried out on model 11504.
4. EUT photo refer to report (Report NO.:FCC2025-0006-EUT).
5. There are two power supplies, from different manufacturers.

Power supply information		
No.	**Manufacturer**	**MODEL**
1	Meanwell	LOP-400-12
2	Megmeet	MAP400-12

6. This time, the main engine+bedspread was used for testing, and the test results covered other combinations..
7. There are four ways to sell this product in combination:1)Host+Bed cover,2)Host+Pillow,3)Host+Bed cover+Pillow,4)Host+Bed cover+blanket.

2. Test Sites

2.1 Test Facilities

The tests and measurements refer to this report were performed by RF testing Lab of CVC Testing Technology Co., Ltd.

Add.: No.3, Tiantaiyi Road, Kaitai Avenue, Science City, Guangzhou,Guangdong,510663, People's Republic of China

Telephone : +86-20-32293888

Fax : +86-20-32293889

FCC(Test firm designation number：CN1282)

2.2 Description of Non-standard Method and Deviations

The testing and measurement methods used in this report are applied by all standard methods. Not any non-standard method or deviation from the used standards was used.

2.3 List of Test and Measurement Instruments

Refer to **Appendix X**.

3. Test Configuration

3.1 Test Mode

The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application.

Test Mode	Antenna Delivery	Test Channel
IEEE 802.11A	1TX / 1RX	36,44,48,149,157,165
IEEE 802.11N 20 MIMO	2TX / 2RX	36,44,48,149,157,165
IEEE 802.11N 40 MIMO	2TX / 2RX	38,46,151,159
IEEE 802.11AC 80 MIMO	2TX / 2RX	42,155

The radiated emission was measured in the following position: EUT stand-up position (Z axis), lie-down position (X, Y axis). The worst emission was found in lie-down position (X axis) and the worst case was recorded.

In order to find the worst case condition, Pre-tests are needed at the presence of different data rate and different channels.. Preliminary tests have been done on all the configurations for confirming worst case. Data rate below means worst-case rate of each test item.

Worst-case data rates and channels are shown as following table.

Test Mode	Antenna Delivery	Data Rate		
		Antenna 1	Antenna 2	MIMO
IEEE 802.11A	1TX / 1RX	6	6	/
IEEE 802.11N 20MHz	2TX / 2RX	MCS 0	MCS 0	MCS 8
IEEE 802.11N 40MHz	2TX / 2RX	MCS 0	MCS 0	MCS 8
IEEE 802.11AC 80MHz	2TX / 2RX	MCS 0	MCS 0	MCS 8

Test Items	Test Antennas	Test Modes	Test Channels
Maximum conducted output power	Antenna 1, Antenna 2, MIMO	IEEE 802.11A/ IEEE 802.11N 20/ IEEE 802.11N 40/ IEEE 802.11AC 80	36,44,48,149,157,165/ 36,44,48,149,157,165/ 38,46,151,159/ 42,155
Maximum Power spectral density	Antenna 1, Antenna 2, MIMO	IEEE 802.11A/ IEEE 802.11N 20/ IEEE 802.11N 40/ IEEE 802.11AC 80	36,44,48,149,157,165/ 36,44,48,149,157,165/ 38,46,151,159/ 42,155
Unwanted Emissions (Band Edge Measurement)	MIMO	IEEE 802.11N 20	36,48,149,165
Unwanted Emissions (Spurious Emissions)	MIMO	IEEE 802.11N 20	36,44,48,149,157,165
Min Emission Bandwidth and Emission Bandwidth and Occupied Bandwidth	Antenna 1, Antenna 2	IEEE 802.11A/ IEEE 802.11N 20/ IEEE 802.11N 40/ IEEE 802.11AC 80	36,44,48,149,157,165/ 36,44,48,149,157,165/ 38,46,151,159/ 42,155
Frequency stability	Antenna 1, Antenna 2	IEEE 802.11A/ IEEE 802.11N 20/ IEEE 802.11N 40/ IEEE 802.11AC 80	36,44,48,149,157,165/ 36,44,48,149,157,165/ 38,46,151,159/ 42,155

3.2 Duty cycle

TestMode	Antenna	Freq(MHz)	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	Limit	Verdict
11A	Ant1	5180	1.39	1.43	97.20	---	---
	Ant2	5180	1.39	1.43	97.20	---	---
	Ant1	5220	1.39	1.43	97.20	---	---
	Ant2	5220	1.38	1.43	96.50	---	---
	Ant1	5240	1.39	1.43	97.20	---	---
	Ant2	5240	1.39	1.42	97.89	---	---
	Ant1	5745	1.39	1.43	97.20	---	---
	Ant2	5745	1.40	1.43	97.90	---	---
	Ant1	5785	1.39	1.43	97.20	---	---
	Ant2	5785	1.39	1.43	97.20	---	---
	Ant1	5825	1.39	1.43	97.20	---	---
	Ant2	5825	1.39	1.43	97.20	---	---
11N20MIMO	Ant1	5180	1.29	1.33	96.99	---	---
	Ant2	5180	1.30	1.33	97.74	---	---
	Ant1	5220	1.29	1.33	96.99	---	---
	Ant2	5220	1.30	1.34	97.01	---	---
	Ant1	5240	1.30	1.33	97.74	---	---
	Ant2	5240	1.29	1.34	96.27	---	---
	Ant1	5745	1.29	1.34	96.27	---	---
	Ant2	5745	1.30	1.34	97.01	---	---
	Ant1	5785	1.29	1.33	96.99	---	---
	Ant2	5785	1.30	1.34	97.01	---	---
	Ant1	5825	1.30	1.33	97.74	---	---
	Ant2	5825	1.30	1.34	97.01	---	---
11N40MIMO	Ant1	5190	0.65	0.69	94.20	---	---
	Ant2	5190	0.65	0.69	94.20	---	---
	Ant1	5230	0.65	0.69	94.20	---	---
	Ant2	5230	0.65	0.69	94.20	---	---
	Ant1	5755	0.65	0.69	94.20	---	---
	Ant2	5755	0.65	0.69	94.20	---	---
	Ant1	5795	0.65	0.68	95.59	---	---
	Ant2	5795	0.64	0.68	94.12	---	---
11AC80MIMO	Ant1	5210	0.19	0.22	86.36	---	---
	Ant2	5210	0.19	0.23	82.61	---	---
	Ant1	5775	0.19	0.23	82.61	---	---
	Ant2	5775	0.18	0.22	81.82	---	---

4. Summary of measurement results

Summary of measurements of results	Clause in FCC rules	Verdict	Note
Conducted Emissions	15.207	PASS	/
Maximum conducted output power	15.407(a)	PASS	Appendix C of WIFI5G_ diagram
Maximum Power spectral density	15.407(a)	PASS	Appendix D of WIFI5G_ diagram
Unwanted Emissions	15.407(b)	PASS	/
Min Emission Bandwidth and Emission Bandwidth and Occupied Bandwidth	15.407(e), 15.407(a)	PASS	Appendix A of WIFI5G_ diagram
Frequency stability	15.407(g)	PASS	Appendix E of WIFI5G_ diagram
Dynamic Frequency Selection (DFS)	15.407(h)	PASS	/
Antenna Requirement	15.203	PASS	See note 1

Note 1: According to 15.203, it is considered sufficient to comply with the provisions of this section.

5. Measurement procedure

5.1 Conducted Emission

Ambient condition:

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.2kPa

Method of Measurement:

The EUT IS placed on a non-metallic table of 80cm height above the horizontal metal reference ground plane. During the test, the EUT was operating in its typical mode. The test method is according to ANSI C63.10-2020/Cor1-2023.Connect the AC power line of the EUT to the LISN Use EMI receiver to detect the average and Quasi-peak value. RBW is set to 9kHz, VBW is set to 30kHz The measurement result should include both L line and N line.
The test is in transmitting mode.

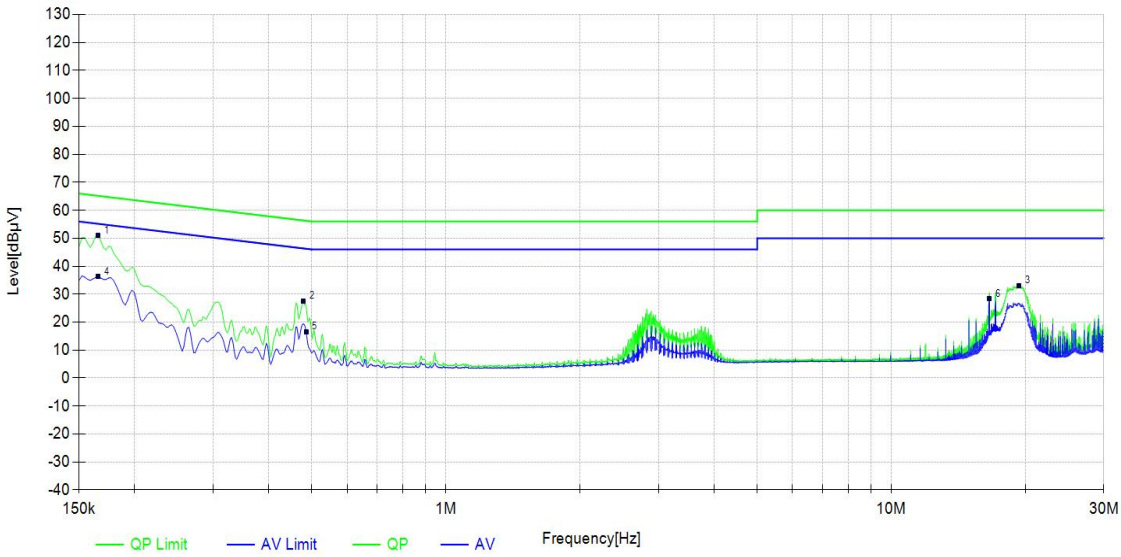
Limits:

Frequency (MHz)	Conducted Limits(dBμV)	
	Quasi-peak	Average
0.15 - 0.5	66 to 56 *	56 to 46*
0.5 - 5	56	46
5 - 30	60	50
Note 1: The lower limit shall apply at the transition frequencies. Note 2: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.		

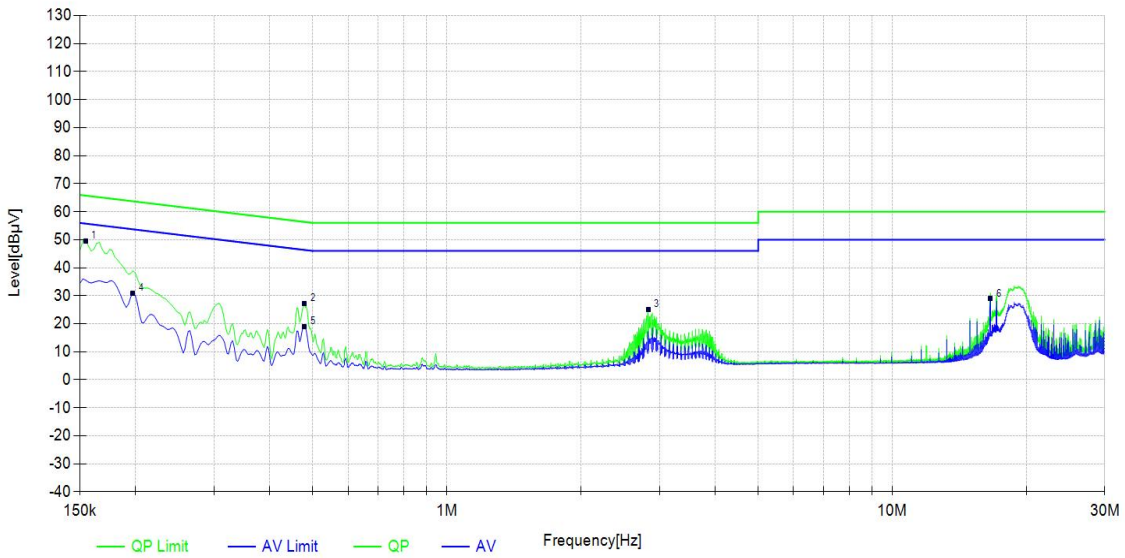
Test Results:

During the test, the Conducted Emission from 150kHz to 30MHz was carried out in 2 power modes, in all modes of WIFI, on all channels and all antennas. Power supply 1#, 802.11n20, Channel 36, MIMO are selected as the worst condition. The test data of the worst-case condition was recorded in this report.

Radiates Emission	150k~30MHz							
Power Line	L							
Test channel	Worst-Case							
Suspected List								
Freq. [MHz]	Factor [dB]	Reading [dBμV]	Level [dBμV]	Limit [dBμV]	Margin [dB]	Detector	Type	Pass/Fail
0.16575	10.20	40.74	50.94	65.17	14.23	QP	L	PASS
0.4785	10.22	17.24	27.46	56.37	28.91	QP	L	PASS
19.3605	11.45	21.52	32.97	60.00	27.03	QP	L	PASS
0.16575	10.20	26.08	36.28	55.17	18.89	AV	L	PASS
0.48525	10.22	6.41	16.63	46.25	29.62	AV	L	PASS
16.6245	11.68	16.64	28.32	50.00	21.68	AV	L	PASS



Radiates Emission	150k~30MHz							
Power Line	N							
Test channel	Worst-Case							
Suspected List								
Freq. [MHz]	Factor [dB]	Reading [dBµV]	Level [dBµV]	Limit [dBµV]	Margin [dB]	Detector	Type	Pass/Fail
0.1545	10.19	39.40	49.59	65.75	16.16	QP	N	PASS
0.4785	10.21	16.99	27.20	56.37	29.17	QP	N	PASS
2.83425	10.32	14.80	25.12	56.00	30.88	QP	N	PASS
0.19725	10.19	20.72	30.91	53.73	22.82	AV	N	PASS
0.4785	10.21	8.86	19.07	46.37	27.30	AV	N	PASS
16.6245	11.64	17.31	28.95	50.00	21.05	AV	N	PASS



5.2 Unwanted Emission

Ambient condition:

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.2kPa

Method of Measurement:

The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation.
The EUT was set 3 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 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.
Above 1GHz test procedure as below:
Different between above is the test site, change from Semi- Anechoic Chamber to fully Anechoic Chamber and change form table 0.8 meter to 1.5 meter(Above 18GHz the distance is 1 meter and table is 1.5 meter)..
Test the EUT in the lowest channel ,the middle channel ,the Highest channel
The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is worse case.
Repeat above procedures until all frequencies measured was complete.

Limits:

1. For transmitters operating in the 5725-5850 MHz band: All emissions shall be limited to a level of −27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.
2. For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz(68.2dBμV/m).
3. For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz(68.2dBμV/m).
4. For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz(68.2dBμV/m).

Note: the following formula is used to convert the EIRP to field strength

§1、E[dBμV/m] = EIRP[dBm] - 20 log(d[meters]) + 104.77, where E = field strength and

d = distance at which field strength limit is specified in the rules;

§2、E[dBμV/m] = EIRP[dBm] + 95.2, for d = 3 meters

5. Unwanted spurious emissions fallen in restricted bands per FCC Part15.205 shall comply with the general field strength limits set forth in § 15.209 as below table.

Frequency	Limit (μV/m)	Limit (dBμV/m @3m)	Remark
0.009MHz-0.490MHz	2400/F(kHz)@300m	20lg(24000000/F(kHz))	Quasi-peak Level
0.490MHz~1.705MHz	24000/F(kHz)@30m	20lg(2400000/F(kHz))	Quasi-peak Level
1.705MHz~30.0MHz	30@30m	69.54	Quasi-peak Level
30MHz-88MHz	100@3m	40.0	Quasi-peak Level
88MHz-216MHz	150@3m	43.5	Quasi-peak Level
216MHz-960MHz	200@3m	46.0	Quasi-peak Level
960MHz-1GHz	500@3m	54.0	Quasi-peak Level
Above 1GHz	500@3m	54.0	Average Level
	5000@3m	74.0	Peak Level

Measurement Data

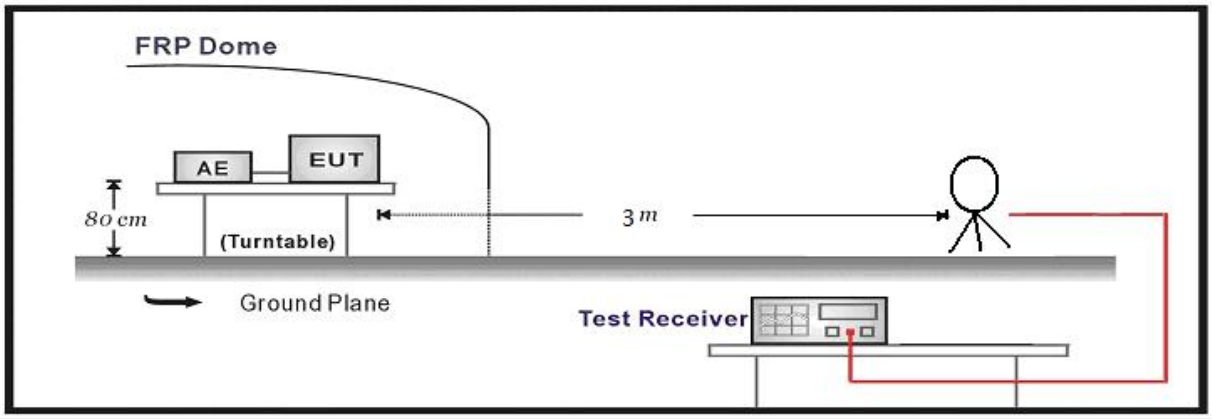
The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level =Receiver Reading - Correct Factor

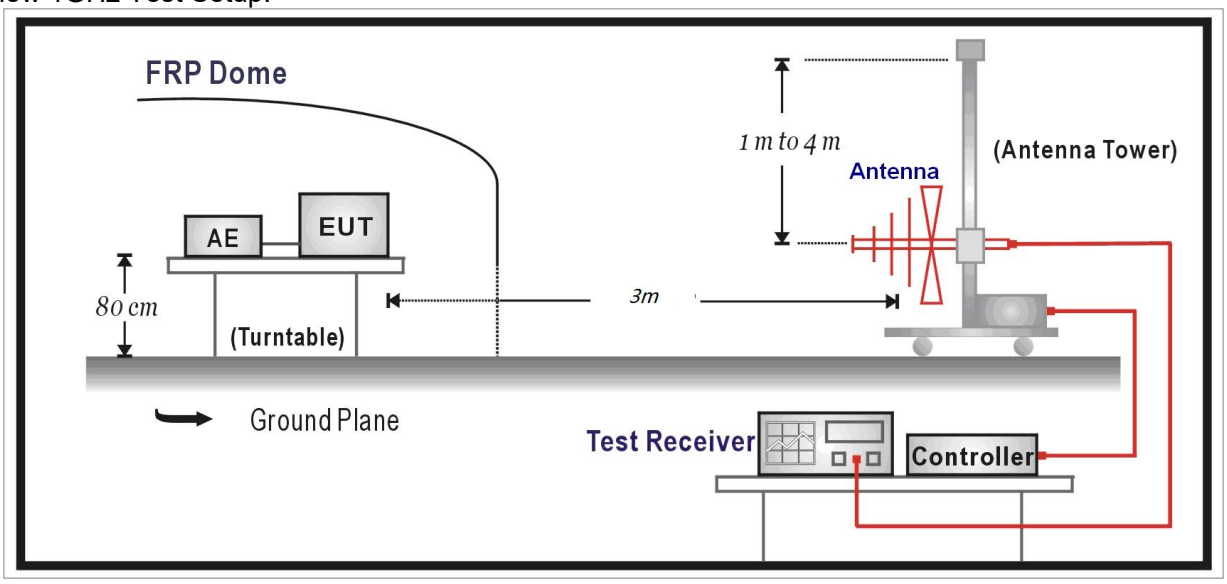
Correct Factor = Preamplifier Factor– Antenna Factor–Cable Factor

Test Setup:

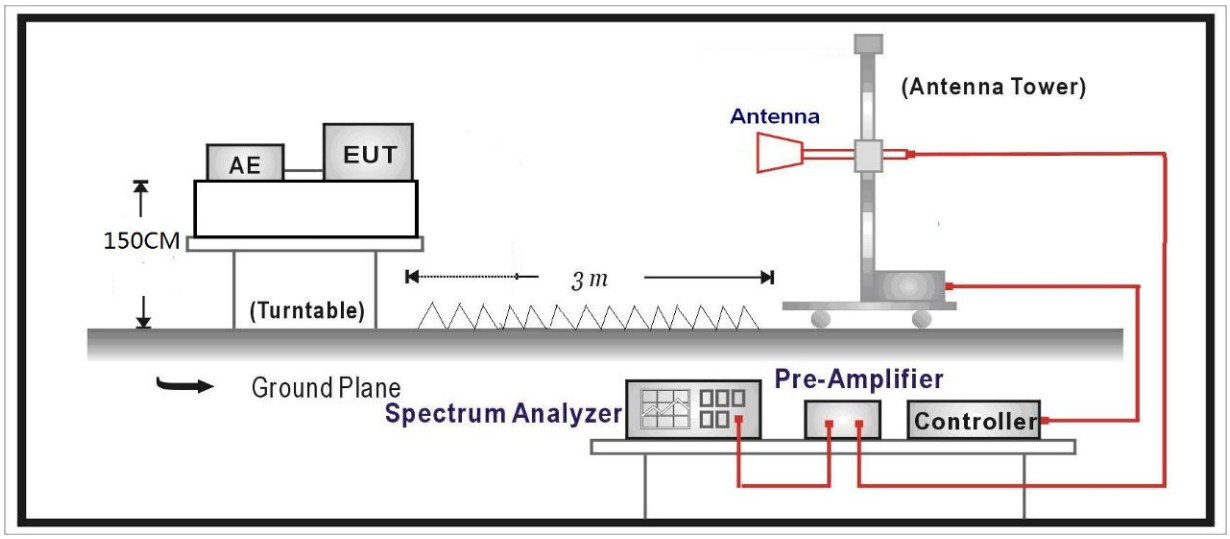
Below 30MHz Test Setup:



Below 1GHz Test Setup:



Above 1GHz Test Setup:



Measurement Uncertainty：

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor k = 1.96.

Frequency	Uncertainty
9KHz-30MHz	3.55 dB
30MHz-200MHz	4.19 dB
200MHz-1GHz	3.63 dB
1GHz-26.5G	3.68 dB
26.5G-40GHz	4.76dB

5.2.1 SPURIOUS EMISSIONS:

5.2.1.1 Below 1GHz:

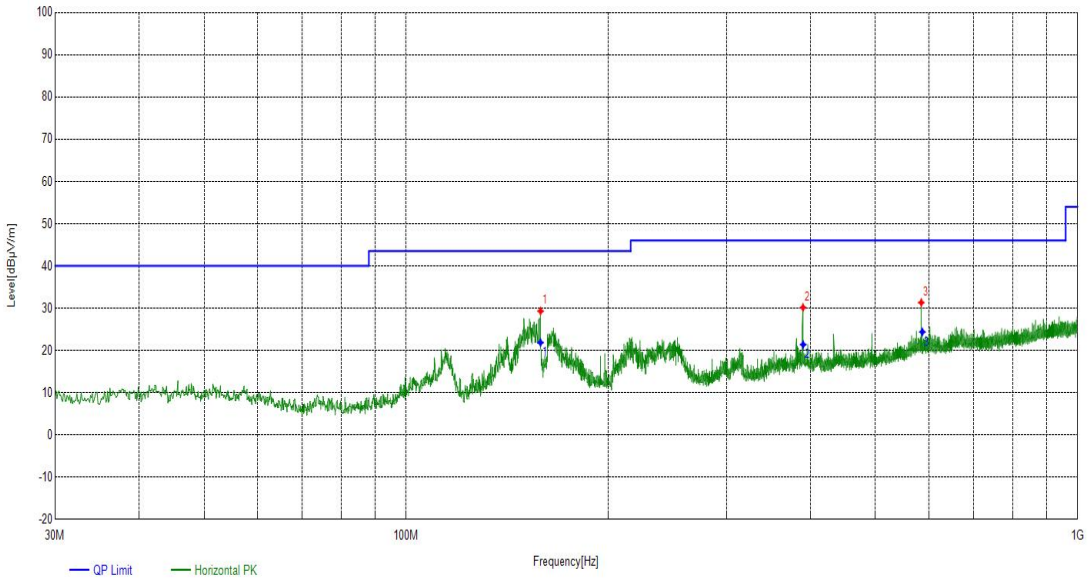
During the test, the Radiates Emission from 9kHz to 1GHz was carried out in 2 power modes, in all modes of WIFI, on all channels and all antennas. Power supply 1#,802.11n20, Channel 36, MIMO are selected as the worst condition. The test data of the worst-case condition was recorded in this report.

Radiates Emission	9k~1G
Test channel	Worst-Case
Polarity	Horizontal

Suspected List									
Frequency [MHz]	Factor [dB]	Reading [dBμV/m]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detector	Height [cm]	Angle deg	Pass/Fail
158.5379	9.95	19.36	29.31	43.50	14.19	PK	100	178	PASS
390.003	17.65	12.51	30.16	46.00	15.84	PK	100	79	PASS
584.9925	21.76	9.57	31.33	46.00	14.67	PK	100	185	PASS

Note: 9kHz~30MHz have been test and test data more than 20dB margin.

Final Data List							
Frequency [MHz]	Factor [dB]	QP Value [dBμV/m]	QP Limit [dBμV/m]	QP Margin [dB]	Height [cm]	Angle [°]	Pass/Fail
158.5195	9.95	21.86	43.50	21.64	370	180	PASS
390.161	17.65	21.38	46.00	24.62	120	76	PASS
587.2275	21.76	24.39	46.00	21.61	380	190	PASS



Radiates Emission	9k~1G
Test channel	Worst-Case
Polarity	Vertical

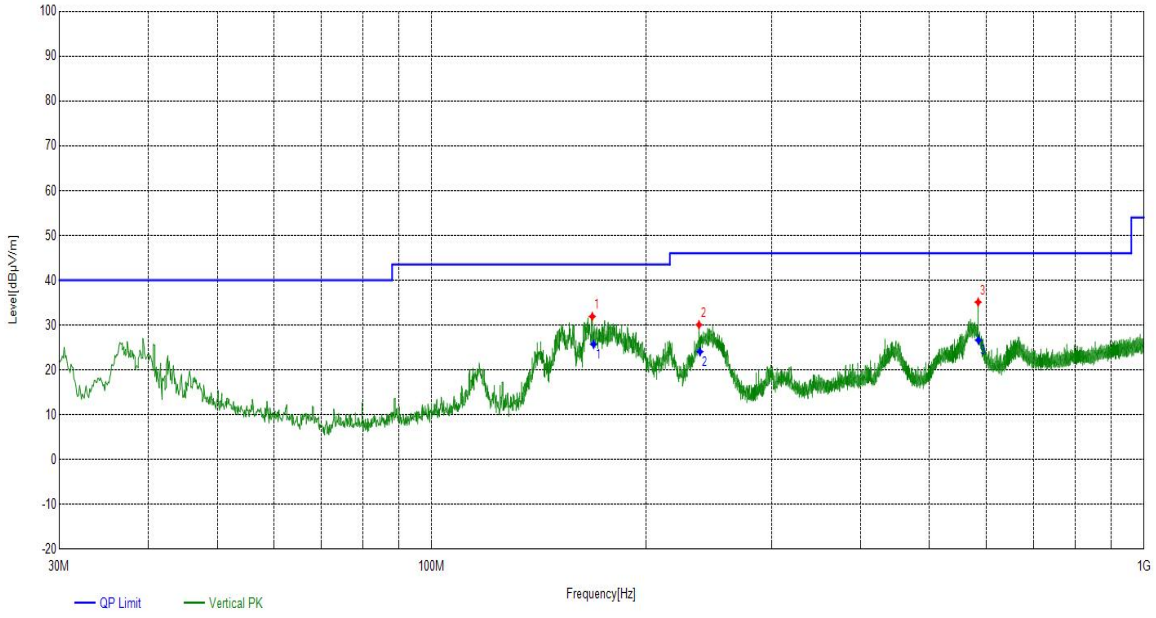
Suspected List

Frequency [MHz]	Factor [dB]	Reading [dBμV/m]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detector	Height [cm]	Angle deg	Pass/Fail
168.0448	10.68	21.24	31.92	43.50	11.58	PK	100	41	PASS
237.3097	13.89	16.17	30.06	46.00	15.94	PK	100	172	PASS
584.9925	21.76	13.35	35.11	46.00	10.89	PK	100	100	PASS

Note: 9kHz~30MHz have been test and test data more than 20dB margin.

Final Data List

Frequency [MHz]	Factor [dB]	QP Value [dBμV/m]	QP Limit [dBμV/m]	QP Margin [dB]	Height [cm]	Angle [°]	Pass/Fail
168.7379	10.68	25.72	43.50	17.78	220	37	PASS
238.000	13.89	24.06	46.00	21.94	110	174	PASS
585.4666	21.76	26.63	46.00	19.37	120	96	PASS



5.2.1.2 Above 1GHz:

During the test, the Radiates Emission from 1GHz to 40GHz was carried out in 2 power modes, in all modes of WIFI, on all channels and all antennas. Power supply 1#, 802.11n20, Highest, medium, lowest channels, MIMO are selected as the worst condition. The test data of the worst-case condition was recorded in this report.

5.2.1.2.1 U-NII-1:

Radiates Emission	Above 1GHz								
Test channel	Lowest								
polarization	Horizontal								
Suspected List									
Frequency [MHz]	Factor [dB]	Reading [dBμV/m]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detector	Height [cm]	Angle deg	Pass/Fail
6954.09541	7.77	36.77	44.54	74.00	29.46	PK	150	160	PASS
10225.62256	11.79	34.95	46.74	74.00	27.26	PK	150	80	PASS
14382.83828	16.82	30.22	47.04	74.00	26.96	PK	150	140	PASS
6954.09541	7.77	24.44	32.21	54.00	21.79	AV	150	20	PASS
10225.62256	11.79	22.42	34.21	54.00	19.79	AV	150	10	PASS
14382.83828	16.82	18.20	35.02	54.00	18.98	AV	150	80	PASS
Radiates Emission	Above 1GHz								
Test channel	Lowest								
polarization	Vertical								
Suspected List									
Frequency [MHz]	Factor [dB]	Reading [dBμV/m]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detector	Height [cm]	Angle deg	Pass/Fail
6986.49865	7.94	35.96	43.90	74.00	30.10	PK	150	270	PASS
10950.49505	11.68	34.50	46.18	74.00	27.82	PK	150	330	PASS
16636.66366	18.35	29.71	48.06	74.00	25.94	PK	150	150	PASS
7028.50285	8.02	25.49	33.51	54.00	20.49	AV	150	10	PASS
10933.69336	11.70	24.08	35.78	54.00	18.22	AV	150	10	PASS
16406.24062	17.53	20.85	38.38	54.00	15.62	AV	150	10	PASS

Note: The emission levels of other frequencies were greater than 20dB margin.

Radiates Emission	Above 1GHz								
Test channel	Medium								
polarization	Horizontal								
Suspected List									
Frequency [MHz]	Factor [dB]	Reading [dBμV/m]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detector	Height [cm]	Angle deg	Pass/Fail
7657.3657	8.37	37.03	45.40	74.00	28.60	PK	150	50	PASS
10910.8911	11.71	35.03	46.74	74.00	27.26	PK	150	270	PASS
13503.1503	13.49	32.61	46.10	74.00	27.90	PK	150	200	PASS
7671.7672	8.38	26.25	34.63	54.00	19.37	AV	150	110	PASS
10931.2931	11.70	24.07	35.77	54.00	18.23	AV	150	312	PASS
13505.5506	13.50	21.76	35.26	54.00	18.74	AV	150	150	PASS
Radiates Emission	Above 1GHz								
Test channel	Medium								
polarization	Vertical								
Suspected List									
Frequency [MHz]	Factor [dB]	Reading [dBμV/m]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detector	Height [cm]	Angle deg	Pass/Fail
6987.6988	7.95	36.25	44.20	74.00	29.80	PK	150	250	PASS
10181.2181	11.75	34.34	46.09	74.00	27.91	PK	150	180	PASS
12792.6793	12.76	33.54	46.30	74.00	27.70	PK	150	170	PASS
6950.495	7.75	25.33	33.08	54.00	20.92	AV	150	210	PASS
10240.024	11.80	23.67	35.47	54.00	18.53	AV	150	190	PASS
12731.4731	12.57	22.71	35.28	54.00	18.72	AV	150	310	PASS

Note: The emission levels of other frequencies were greater than 20dB margin.

Radiates Emission	Above 1GHz								
Test channel	Highest								
polarization	Horizontal								
Suspected List									
Frequency [MHz]	Factor [dB]	Reading [dBμV/m]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detector	Height [cm]	Angle deg	Pass/Fail
7666.966697	8.37	36.69	45.06	74.00	28.94	PK	150	220	PASS
10925.29252	11.70	34.25	45.95	74.00	28.05	PK	150	120	PASS
16375.03750	17.43	30.58	48.01	74.00	25.99	PK	150	110	PASS
7666.966697	8.37	25.33	33.70	54.00	20.30	AV	150	120	PASS
10925.29252	11.70	24.37	36.07	54.00	17.93	AV	150	180	PASS
16375.03750	17.43	19.57	37.00	54.00	17.00	AV	150	380	PASS
Radiates Emission	Above 1GHz								
Test channel	Highest								
polarization	Vertical								
Suspected List									
Frequency [MHz]	Factor [dB]	Reading [dBμV/m]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detector	Height [cm]	Angle deg	Pass/Fail
7668.1668	8.37	36.76	45.13	74.00	28.87	PK	150	100	PASS
10142.8143	11.70	34.16	45.86	74.00	28.14	PK	150	40	PASS
12909.0909	13.06	32.19	45.25	74.00	28.75	PK	150	150	PASS
7707.7708	8.39	26.07	34.46	54.00	19.54	AV	150	230	PASS
10192.0192	11.76	23.95	35.71	54.00	18.29	AV	150	170	PASS
12760.276	12.66	23.69	36.35	54.00	17.65	AV	150	19	PASS

Note: The emission levels of other frequencies were greater than 20dB margin.

5.2.1.2.2 U-NII-3:

Radiates Emission	Above 1GHz								
Test channel	Lowest								
polarization	Horizontal								
Suspected List									
Frequency [MHz]	Factor [dB]	Reading [dBμV/m]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detector	Height [cm]	Angle deg	Pass/Fail
7654.282714	5.24	36.41	41.65	74.00	32.35	PK	150	150	PASS
10680.83404	8.05	34.36	42.41	74.00	31.59	PK	150	70	PASS
15168.45842	11.72	34.00	45.72	74.00	28.28	PK	150	240	PASS
7654.282714	5.24	24.26	29.50	54.00	24.50	AV	150	120	PASS
10680.83404	8.05	22.66	30.71	54.00	23.29	AV	150	20	PASS
15168.45842	11.72	22.32	34.04	54.00	19.96	AV	150	50	PASS
Radiates Emission	Above 1GHz								
Test channel	Lowest								
polarization	Vertical								
Suspected List									
Frequency [MHz]	Factor [dB]	Reading [dBμV/m]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detector	Height [cm]	Angle deg	Pass/Fail
7700.485024	5.25	36.42	41.67	74.00	32.33	PK	150	340	PASS
10708.43542	8.02	34.98	43.00	74.00	31.00	PK	150	140	PASS
16523.92619	13.22	33.00	46.22	74.00	27.78	PK	150	360	PASS
7700.485024	5.25	24.39	29.64	54.00	24.36	AV	150	30	PASS
10708.43542	8.02	23.22	31.24	54.00	22.76	AV	150	311	PASS
16523.92619	13.22	21.65	34.87	54.00	19.13	AV	150	20	PASS

Note: The emission levels of other frequencies were greater than 20dB margin.

Radiates Emission	Above 1GHz								
Test channel	Medium								
polarization	Horizontal								
Suspected List									
Frequency [MHz]	Factor [dB]	Reading [dBμV/m]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detector	Height [cm]	Angle deg	Pass/Fail
7660.883044	5.24	36.69	41.93	74.00	32.07	PK	150	210	PASS
10608.23041	8.11	31.73	39.84	74.00	34.16	PK	150	220	PASS
15148.05740	11.78	32.03	43.81	74.00	30.19	PK	150	280	PASS
7660.883044	5.24	24.69	29.93	54.00	24.07	AV	150	20	PASS
10608.23041	8.11	22.09	30.20	54.00	23.80	AV	150	170	PASS
15148.05740	11.78	21.00	32.78	54.00	21.22	AV	150	90	PASS
Radiates Emission	Above 1GHz								
Test channel	Medium								
polarization	Vertical								
Suspected List									
Frequency [MHz]	Factor [dB]	Reading [dBμV/m]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detector	Height [cm]	Angle deg	Pass/Fail
6682.834142	3.41	36.22	39.63	74.00	34.37	PK	150	310	PASS
9789.789489	7.88	34.21	42.09	74.00	31.91	PK	150	230	PASS
14531.22656	12.69	32.93	45.62	74.00	28.38	PK	150	320	PASS
6682.834142	3.41	24.34	27.75	54.00	26.25	AV	150	230	PASS
9789.789489	7.88	21.82	29.70	54.00	24.30	AV	150	150	PASS
14531.22656	12.69	20.87	33.56	54.00	20.44	AV	150	20	PASS

Note: The emission levels of other frequencies were greater than 20dB margin.

Radiates Emission	Above 1GHz								
Test channel	Highest								
polarization	Horizontal								
Suspected List									
Frequency [MHz]	Factor [dB]	Reading [dBμV/m]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detector	Height [cm]	Angle deg	Pass/Fail
7652.482624	5.24	34.49	39.73	74.00	34.27	PK	150	10	PASS
10632.23161	8.09	32.27	40.36	74.00	33.64	PK	150	120	PASS
15170.25851	11.72	31.46	43.18	74.00	30.82	PK	150	170	PASS
7652.482624	5.24	24.15	29.39	54.00	24.61	AV	150	350	PASS
10632.23161	8.09	23.26	31.35	54.00	22.65	AV	150	217	PASS
15170.25851	11.72	21.26	32.98	54.00	21.02	AV	150	236	PASS
Radiates Emission	Above 1GHz								
Test channel	Highest								
polarization	Vertical								
Suspected List									
Frequency [MHz]	Factor [dB]	Reading [dBμV/m]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detector	Height [cm]	Angle deg	Pass/Fail
7669.883494	5.24	34.62	39.86	74.00	34.14	PK	150	140	PASS
10566.82834	8.17	33.95	42.12	74.00	31.88	PK	150	250	PASS
14530.02650	12.70	31.49	44.19	74.00	29.81	PK	150	320	PASS
7669.883494	5.24	26.26	31.50	54.00	22.50	AV	150	189	PASS
10566.82834	8.17	21.85	30.02	54.00	23.98	AV	150	160	PASS
14530.02650	12.70	21.35	34.05	54.00	19.95	AV	150	201	PASS

Note: The emission levels of other frequencies were greater than 20dB margin.

5.2.2 Band edge measurements (Radiates):

Test Results:

U-NII-1: 5150-5250MHz:

During the test, the Band Edge was performed in WIFI all modes with all channels and all antennas. 802.11n20, MIMO are selected as the worst condition. The test data of the worst-case condition was recorded in this report.

Test mode	802.11n20
Test channel	Lowest channel
polarization	Horizontal

Suspected List									
Frequency [MHz]	Factor [dB]	Reading [dBμV/m]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detector	Height [cm]	Angle deg	Pass/ Fail
5095.4095	1.77	46.66	48.43	74.00	25.57	PK	150	96	PASS
5139.4139	1.90	57.09	58.99	74.00	15.01	PK	150	109	PASS
5150.4150	1.93	60.07	62.00	74.00	12.00	PK	150	102	PASS
5095.4095	1.77	33.85	35.62	54.00	18.38	AV	150	134	PASS
5139.4139	1.90	39.12	41.02	54.00	12.98	AV	150	109	PASS
5150.4150	1.93	44.83	46.76	54.00	7.24	AV	150	115	PASS

Test mode	802.11n20
Test channel	Lowest channel
polarization	Vertical

Suspected List									
Frequency [MHz]	Factor [dB]	Reading [dBμV/m]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detector	Height [cm]	Angle deg	Pass/ Fail
5127.4127	1.86	51.55	53.41	74.00	20.59	PK	150	19	PASS
5138.9138	1.89	59.90	61.79	74.00	12.21	PK	150	124	PASS
5150.4150	1.93	62.85	64.78	74.00	9.22	PK	150	131	PASS
5127.4127	1.86	38.80	40.66	54.00	13.34	AV	150	321	PASS
5139.4139	1.90	42.65	44.55	54.00	9.45	AV	150	354	PASS
5150.4150	1.93	46.05	47.98	54.00	6.02	AV	150	65	PASS

Test mode	802.11n20
Test channel	Highest channel
polarization	Horizontal

Suspected List

Frequency [MHz]	Factor [dB]	Reading [dBμV/m]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detector	Height [cm]	Angle deg	Pass/ Fail
5350.4350	2.69	57.52	60.21	74.00	13.79	PK	150	86	PASS
5360.9360	2.72	47.98	50.70	74.00	23.30	PK	150	180	PASS
5377.4377	2.75	42.52	45.27	74.00	28.73	PK	150	97	PASS
5350.4350	2.69	36.43	39.12	54.00	14.88	AV	150	134	PASS
5360.9360	2.72	30.79	33.51	54.00	20.49	AV	150	354	PASS
5377.4377	2.75	28.85	31.60	54.00	22.40	AV	150	354	PASS

Test mode	802.11n20
Test channel	Highest channel
polarization	Vertical

Suspected List

Frequency [MHz]	Factor [dB]	Reading [dBμV/m]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detector	Height [cm]	Angle deg	Pass/ Fail
5350.4350	2.69	45.16	47.85	74.00	26.15	PK	150	129	PASS
5375.9375	2.75	39.24	41.99	74.00	32.01	PK	150	254	PASS
5413.9413	2.85	39.05	41.90	74.00	32.10	PK	150	51	PASS
5350.4350	2.69	28.80	31.49	54.00	22.51	AV	150	103	PASS
5375.9375	2.75	26.76	29.51	54.00	24.49	AV	150	57	PASS
5413.9413	2.85	26.78	29.63	54.00	24.37	AV	150	228	PASS

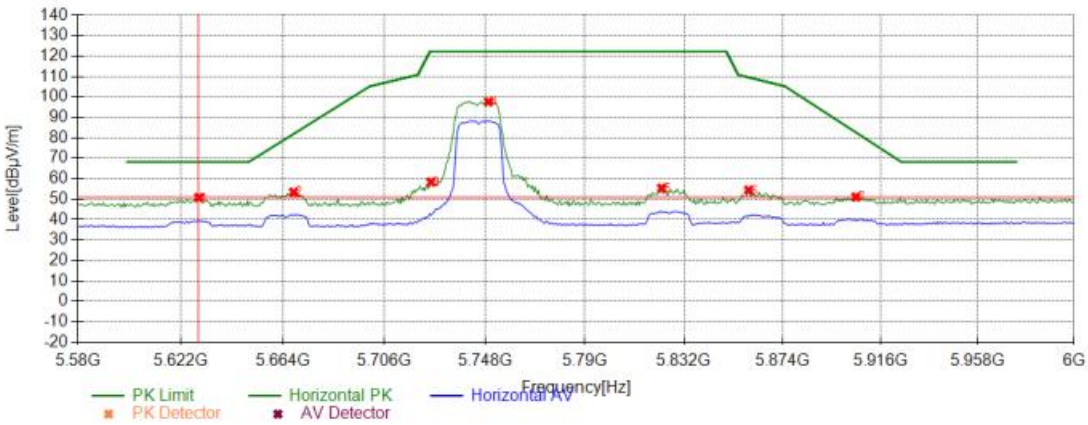
U-NII-3 5725-5850MHz：

During the test, the Band Edge was performed in WIFI all modes with all channels and all antennas. 802.11n20, MIMO are selected as the worst condition. The test data of the worst-case condition was recorded in this report.

Test mode	802.11n20
Test channel	Lowest channel
polarization	Horizontal

Suspected List

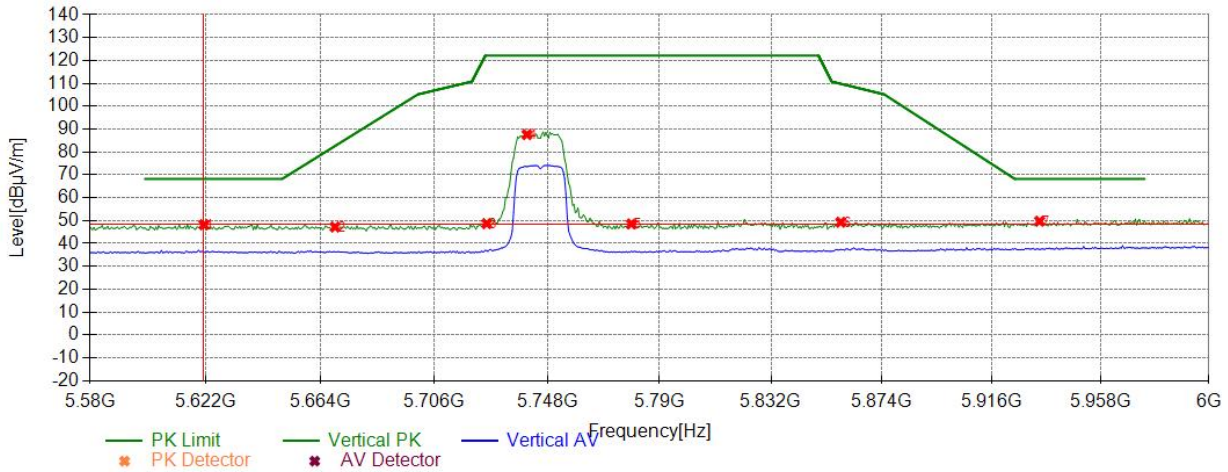
Frequency [MHz]	Factor [dB]	Reading [dBμV/m]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detector	Height [cm]	Angle deg	Pass/ Fail
5629.4629	3.61	47.13	50.74	68.20	17.46	PK	150	1	PASS
5668.4668	3.78	49.61	53.39	81.90	28.51	PK	150	25	PASS
5725.4725	4.02	54.32	58.34	122.20	63.86	PK	150	12	PASS
5749.4749	4.12	93.44	97.56	122.20	24.64	PK	150	38	PASS
5822.4822	4.43	50.96	55.39	122.20	66.81	PK	150	12	PASS
5859.4859	4.60	49.80	54.40	109.54	55.14	PK	150	25	PASS
5905.4905	4.81	46.24	51.05	82.60	31.55	PK	150	19	PASS



Test mode	802.11n20
Test channel	Lowest channel
polarization	Vertical

Suspected List

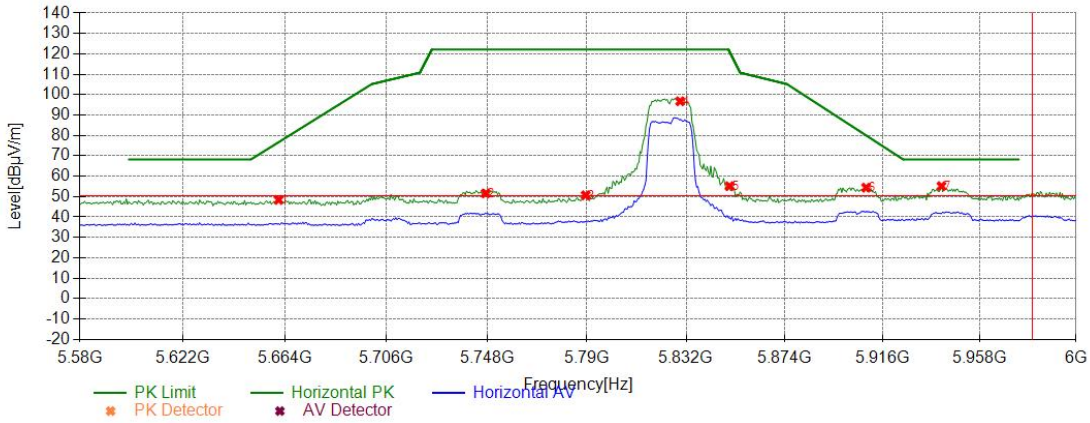
Frequency [MHz]	Factor [dB]	Reading [dBµV/m]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Detector	Height [cm]	Angle deg	Pass/ Fail
5621.4621	3.58	44.62	48.20	68.20	20.00	PK	150	234	PASS
5669.4669	3.78	43.42	47.20	82.64	35.44	PK	150	31	PASS
5725.4725	4.02	44.65	48.67	122.20	73.53	PK	150	168	PASS
5740.4740	4.09	83.52	87.61	122.20	34.59	PK	150	162	PASS
5779.4779	4.25	44.31	48.56	122.20	73.64	PK	150	12	PASS
5858.4858	4.60	44.70	49.30	109.82	60.52	PK	150	162	PASS
5934.4934	4.94	44.81	49.75	68.20	18.45	PK	150	57	PASS



Test mode	802.11n20
Test channel	Highest channel
polarization	Horizontal

Suspected List

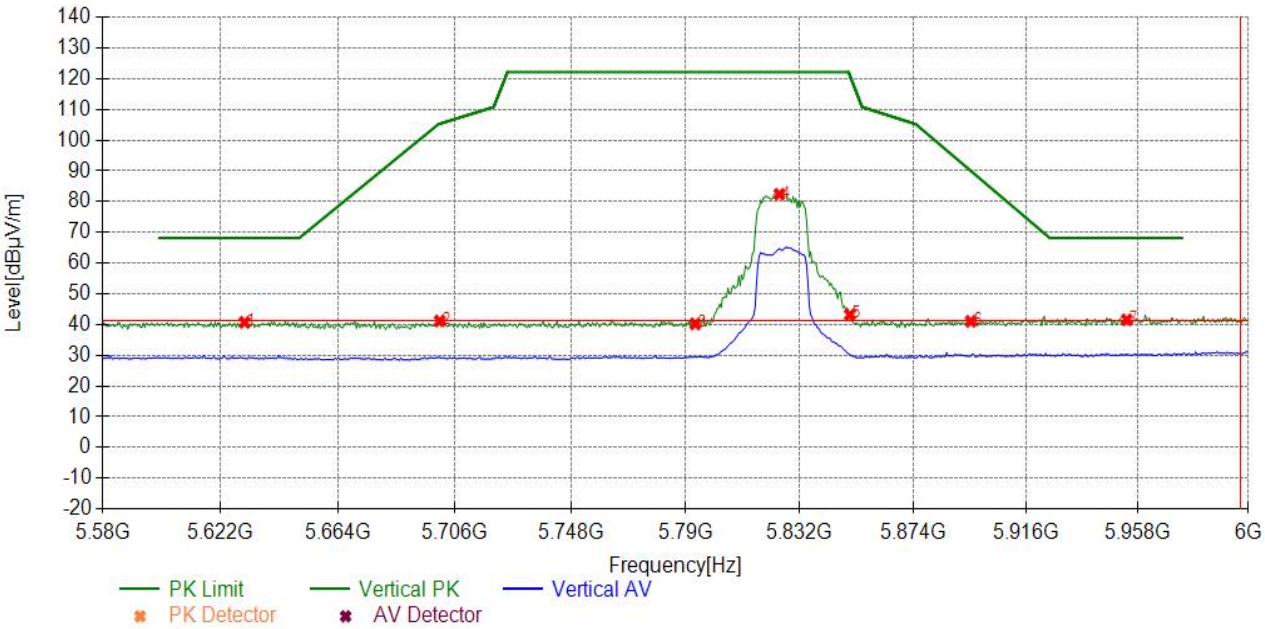
Frequency [MHz]	Factor [dB]	Reading [dBμV/m]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detector	Height [cm]	Angle deg	Pass/ Fail
5661.4661	3.75	44.66	48.41	76.71	28.30	PK	150	359	PASS
5747.4747	4.12	47.44	51.56	122.20	70.64	PK	150	359	PASS
5789.4789	4.30	46.34	50.64	122.20	71.56	PK	150	179	PASS
5829.4829	4.47	92.30	96.77	122.20	25.43	PK	150	23	PASS
5850.4850	4.56	50.57	55.13	121.09	65.96	PK	150	30	PASS
5908.9908	4.82	49.59	54.41	80.01	25.60	PK	150	10	PASS
5941.4941	4.97	50.22	55.19	68.20	13.01	PK	150	10	PASS



Test mode	802.11n20
Test channel	Highest channel
polarization	Vertical

Suspected List

Frequency [MHz]	Factor [dB]	Reading [dBμV/m]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detector	Height [cm]	Angle deg	Pass/ Fail
5655.4655	3.72	39.18	42.90	72.26	29.36	PK	150	195	PASS
5747.4747	4.12	39.17	43.29	122.20	78.91	PK	150	142	PASS
5795.9795	4.32	42.70	47.02	122.20	75.18	PK	150	84	PASS
5821.9821	4.43	84.96	89.39	122.20	32.81	PK	150	319	PASS
5850.4850	4.56	45.93	50.49	121.09	70.60	PK	150	84	PASS
5908.9908	4.82	38.48	43.30	80.01	36.71	PK	150	338	PASS
5954.4954	5.03	37.37	42.40	68.20	25.80	PK	150	116	PASS



5.3 Maximum conducted output power

Ambient condition:

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.2kPa

Method of Measurement:

During the process of the testing, The EUT was connected to spectrum analyzer through an external attenuator and a known loss cable. The EUT is max power transmission with proper modulation. Use the Peak detector.

The conducted Power is measured at each antenna port. The measured results at the various antenna ports are then summed mathematically.

Limits:

For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Frequency(MHz)	Antenna Gain(dBi)		Directional gain	Power Limit Reduction
	Antenna 1	Antenna 2		
5150-5250	-1.56	-3.01	0.76	23.98
5725-5825	2.88	4.07	6.51	29.49

Refer to KDB662911 D01 Multiple Transmitter Output v02r01.

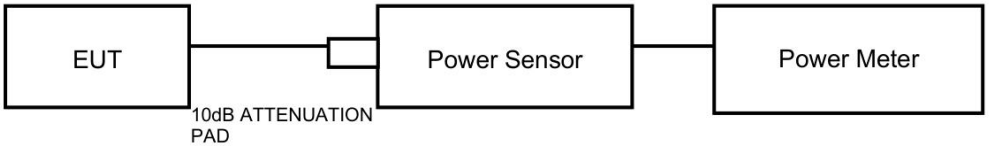
Note：B is the 26 dB emission bandwidth in megahertz.

Directional gain is to be computed as follows:

transmit signals are correlated, then

Directional gain = 10 log[$(10^{G_1/20} + 10^{G_2/20} + ... + 10^{G_N/20})^2 / N_{ANT}$] dBi [Note the “20”s in the denominator of each exponent and the square of the sum of terms; the object is to combine the signal levels coherently.

Test Setup:



Measurement Uncertainty：

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor k = 2, U= 0.44 dB.

Test Results:

Test Mode	Antenna	Channel	Conducted power Result [dBm]	Limit [dBm]	Verdict
11A	Ant1	5180	13.97	≤23.98	PASS
	Ant2	5180	13.63	≤23.98	PASS
	Ant1	5220	13.61	≤23.98	PASS
	Ant2	5220	14.86	≤23.98	PASS
	Ant1	5240	14.76	≤23.98	PASS
	Ant2	5240	14.26	≤23.98	PASS
	Ant1	5745	13.74	≤29.49	PASS
	Ant2	5745	11.14	≤29.49	PASS
	Ant1	5785	13.98	≤29.49	PASS
	Ant2	5785	11.84	≤29.49	PASS
	Ant1	5825	14.04	≤29.49	PASS
	Ant2	5825	12.45	≤29.49	PASS
11N20MIMO	Ant1	5180	11.63	≤23.98	PASS
	Ant2	5180	12.15	≤23.98	PASS
	total	5180	14.91	≤23.98	PASS
	Ant1	5220	12.55	≤23.98	PASS
	Ant2	5220	13.03	≤23.98	PASS
	total	5220	15.81	≤23.98	PASS
	Ant1	5240	13.54	≤23.98	PASS
	Ant2	5240	13.62	≤23.98	PASS
	total	5240	16.59	≤23.98	PASS
	Ant1	5745	13.18	≤29.49	PASS
	Ant2	5745	10.81	≤29.49	PASS
	total	5745	15.16	≤29.49	PASS
	Ant1	5785	12.90	≤29.49	PASS
	Ant2	5785	11.36	≤29.49	PASS
	total	5785	15.21	≤29.49	PASS
	Ant1	5825	12.31	≤29.49	PASS
	Ant2	5825	11.88	≤29.49	PASS
	total	5825	15.11	≤29.49	PASS
11N40MIMO	Ant1	5190	11.91	≤23.98	PASS
	Ant2	5190	12.94	≤23.98	PASS
	total	5190	15.46	≤23.98	PASS
	Ant1	5230	12.80	≤23.98	PASS
	Ant2	5230	13.40	≤23.98	PASS
	total	5230	16.12	≤23.98	PASS
	Ant1	5755	13.13	≤29.49	PASS
	Ant2	5755	11.26	≤29.49	PASS
	total	5755	15.31	≤29.49	PASS
	Ant1	5795	12.86	≤29.49	PASS
	Ant2	5795	11.08	≤29.49	PASS
	total	5795	15.07	≤29.49	PASS
11AC80MIMO	Ant1	5210	10.86	≤23.98	PASS
	Ant2	5210	11.38	≤23.98	PASS
	total	5210	14.14	≤23.98	PASS
	Ant1	5775	11.40	≤29.49	PASS
	Ant2	5775	10.61	≤29.49	PASS
	total	5775	14.03	≤29.49	PASS

5.4 Min Emission Bandwidth and Emission Bandwidth and Occupied Bandwidth

Ambient condition:

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.2kPa

Method of Measurement:

The EUT was connected to the spectrum analyzer through an external attenuator (20dB) and a known loss cable.

For U-NII-1, set RBW ≈1% OCB kHz, VBW ≥ 3 × RBW, measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 26 dB relative to the maximum level measured in the fundamental emission.

For U-NII-3, Set RBW = 100 kHz, VBW ≥ 3 × RBW, measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

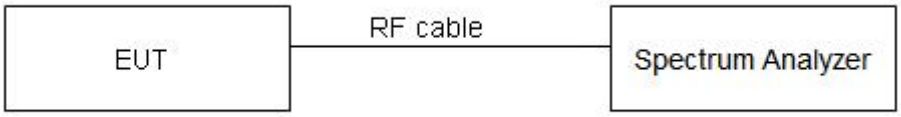
Note: The automatic bandwidth measurement capability of a spectrum analyzer or EMI receiver may be employed if it implements the functionality described above.

Use the 99 % power bandwidth function of the instrument.

Limits:

Within the 5.725-5.85 GHz band, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.

Test Setup:



Measurement Uncertainty：

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor k = 2, U= 936 Hz.

Test Results: Min emission bandwidth

TestMode	Antenna	Freq(MHz)	6db EBW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5745	14.52	5737.12	5751.64	≥0.5	PASS
	Ant2	5745	15.88	5737.28	5753.16	≥0.5	PASS
	Ant1	5785	16.32	5776.84	5793.16	≥0.5	PASS
	Ant2	5785	15.68	5777.52	5793.20	≥0.5	PASS
	Ant1	5825	16.00	5817.12	5833.12	≥0.5	PASS
	Ant2	5825	15.72	5817.44	5833.16	≥0.5	PASS
11N20MIMO	Ant1	5745	16.48	5736.84	5753.32	≥0.5	PASS
	Ant2	5745	17.28	5736.52	5753.80	≥0.5	PASS
	Ant1	5785	14.92	5778.48	5793.40	≥0.5	PASS
	Ant2	5785	17.24	5776.56	5793.80	≥0.5	PASS
	Ant1	5825	13.04	5818.52	5831.56	≥0.5	PASS
	Ant2	5825	16.92	5816.60	5833.52	≥0.5	PASS
11N40MIMO	Ant1	5755	33.20	5738.68	5771.88	≥0.5	PASS
	Ant2	5755	35.84	5737.32	5773.16	≥0.5	PASS
	Ant1	5795	34.40	5778.20	5812.60	≥0.5	PASS
	Ant2	5795	35.60	5777.24	5812.84	≥0.5	PASS
11AC80MIMO	Ant1	5775	75.20	5737.40	5812.60	≥0.5	PASS
	Ant2	5775	75.20	5737.40	5812.60	≥0.5	PASS

Test Results: Emission Bandwidth

TestMode	Antenna	Freq(MHz)	26db EBW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5180	20.56	5169.68	5190.24	---	---
	Ant2	5180	20.48	5169.72	5190.20	---	---
	Ant1	5220	20.48	5209.76	5230.24	---	---
	Ant2	5220	20.44	5209.76	5230.20	---	---
	Ant1	5240	20.52	5229.80	5250.32	---	---
	Ant2	5240	20.64	5229.72	5250.36	---	---
	Ant1	5745	20.44	5734.84	5755.28	---	---
	Ant2	5745	20.48	5734.80	5755.28	---	---
	Ant1	5785	20.48	5774.68	5795.16	---	---
	Ant2	5785	20.44	5774.72	5795.16	---	---
	Ant1	5825	20.52	5814.76	5835.28	---	---
	Ant2	5825	20.44	5814.76	5835.20	---	---
11N20MIMO	Ant1	5180	20.76	5169.60	5190.36	---	---
	Ant2	5180	20.60	5169.68	5190.28	---	---
	Ant1	5220	20.88	5209.44	5230.32	---	---
	Ant2	5220	20.56	5209.72	5230.28	---	---
	Ant1	5240	20.76	5229.60	5250.36	---	---
	Ant2	5240	20.76	5229.64	5250.40	---	---
	Ant1	5745	20.80	5734.64	5755.44	---	---
	Ant2	5745	20.44	5734.72	5755.16	---	---
	Ant1	5785	20.76	5774.64	5795.40	---	---
	Ant2	5785	20.48	5774.76	5795.24	---	---
	Ant1	5825	20.84	5814.56	5835.40	---	---
	Ant2	5825	20.56	5814.72	5835.28	---	---
11N40MIMO	Ant1	5190	41.52	5169.28	5210.80	---	---
	Ant2	5190	41.76	5169.12	5210.88	---	---
	Ant1	5230	41.44	5209.20	5250.64	---	---
	Ant2	5230	41.44	5209.20	5250.64	---	---
	Ant1	5755	41.76	5734.04	5775.80	---	---
	Ant2	5755	41.36	5734.28	5775.64	---	---
	Ant1	5795	41.76	5774.04	5815.80	---	---
	Ant2	5795	41.28	5774.28	5815.56	---	---
11AC80MIMO	Ant1	5210	82.24	5168.88	5251.12	---	---
	Ant2	5210	81.76	5169.20	5250.96	---	---
	Ant1	5775	81.92	5734.04	5815.96	---	---
	Ant2	5775	81.60	5734.20	5815.80	---	---

Test Results: Occupied channel bandwidth

TestMode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit [MHz]	Verdict
11A	Ant1	5180	16.743	5171.6084	5188.3516	---	---
	Ant2	5180	16.863	5171.6084	5188.4715	---	---
	Ant1	5220	16.783	5211.6084	5228.3916	---	---
	Ant2	5220	16.783	5211.6484	5228.4316	---	---
	Ant1	5240	16.823	5231.5684	5248.3916	---	---
	Ant2	5240	16.783	5231.6484	5248.4316	---	---
	Ant1	5745	16.863	5736.5684	5753.4316	---	---
	Ant2	5745	16.863	5736.5285	5753.3916	---	---
	Ant1	5785	16.823	5776.5684	5793.3916	---	---
	Ant2	5785	16.943	5776.5684	5793.5115	---	---
	Ant1	5825	16.863	5816.5684	5833.4316	---	---
	Ant2	5825	16.863	5816.5684	5833.4316	---	---
11N20MIMO	Ant1	5180	17.742	5171.0889	5188.8312	---	---
	Ant2	5180	17.782	5171.0889	5188.8711	---	---
	Ant1	5220	17.742	5211.1289	5228.8711	---	---
	Ant2	5220	17.742	5211.1688	5228.9111	---	---
	Ant1	5240	17.702	5231.1688	5248.8711	---	---
	Ant2	5240	17.822	5231.1289	5248.9510	---	---
	Ant1	5745	17.742	5736.1289	5753.8711	---	---
	Ant2	5745	17.822	5736.0889	5753.9111	---	---
	Ant1	5785	17.742	5776.1289	5793.8711	---	---
	Ant2	5785	17.822	5776.1289	5793.9510	---	---
	Ant1	5825	17.742	5816.1289	5833.8711	---	---
	Ant2	5825	17.862	5816.0889	5833.9510	---	---
11N40MIMO	Ant1	5190	36.124	5171.9381	5208.0619	---	---
	Ant2	5190	36.124	5171.9381	5208.0619	---	---
	Ant1	5230	36.124	5211.9381	5248.0619	---	---
	Ant2	5230	36.044	5212.0180	5248.0619	---	---
	Ant1	5755	36.124	5736.9381	5773.0619	---	---
	Ant2	5755	36.124	5736.9381	5773.0619	---	---
	Ant1	5795	36.124	5776.9381	5813.0619	---	---
	Ant2	5795	36.124	5777.0180	5813.1419	---	---
11AC80MIMO	Ant1	5210	75.604	5172.2777	5247.8821	---	---
	Ant2	5210	75.604	5172.2777	5247.8821	---	---
	Ant1	5775	75.125	5737.5974	5812.7223	---	---
	Ant2	5775	75.764	5737.2777	5813.0420	---	---

5.5 Maximum Power Spectral Density

Ambient condition:

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.2kPa

Method of Measurement:

The EUT was connected to the spectrum analyzer through an external attenuator (20dB) and a known loss cable.

Set RBW = 500 kHz, VBW =1.5MHz for the band 5.725-5.85 GHz

Set RBW = 1 MHz, VBW =3MHz for the band 5.150-5.250 GHz

The conducted PSD is measured at each antenna port. The measured results at the various antenna ports are then summed mathematically.

Limits:

For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the band 5.725-5.85 GHz, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Frequency Bands/MHz	Limits
5150-5250	11dBm/MHz
5.25-5.35 GHz and 5.47-5.725 GHz	11dBm/MHz
5725-5850	30dBm/500kHz

Frequency(MHz)	Antenna Gain(dBi)		Directional gain	Limit
	Antenna 1	Antenna 2		
5150-5250	-1.56	-3.01	0.76	11.00dBm/MHz
5725-5825	2.88	4.07	6.51	29.49dBm/500kHz

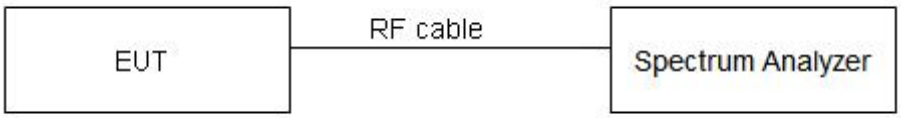
Refer to KDB662911 D01 Multiple Transmitter Output v02r01.

Directional gain is to be computed as follows:

transmit signals are correlated, then

Directional gain = 10 log[$(10^{G_1/20} + 10^{G_2/20} + ... + 10^{G_N/20})^2 / N_{ANT}$] dBi [Note the “20”s in the denominator of each exponent and the square of the sum of terms; the object is to combine the signal levels coherently.

Test Setup:



Measurement Uncertainty：

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor k = 2, U= 0.75dB.

Test Results:

TestMode	Antenna	Freq(MHz)	Result [dBm/MHz]	Limit[dBm/MHz]	Verdict
11A	Ant1	5180	2.86	≤11.00	PASS
	Ant2	5180	2.91	≤11.00	PASS
	Ant1	5220	3.16	≤11.00	PASS
	Ant2	5220	3.66	≤11.00	PASS
	Ant1	5240	3.83	≤11.00	PASS
	Ant2	5240	3.81	≤11.00	PASS
	Ant1	5745	0.55	≤29.49	PASS
	Ant2	5745	-1.85	≤29.49	PASS
	Ant1	5785	0.88	≤29.49	PASS
	Ant2	5785	-1.25	≤29.49	PASS
	Ant1	5825	0.67	≤29.49	PASS
	Ant2	5825	-0.66	≤29.49	PASS
11N20MIMO	Ant1	5180	1.04	≤11.00	PASS
	Ant2	5180	1.22	≤11.00	PASS
	total	5180	4.14	≤11.00	PASS
	Ant1	5220	1.44	≤11.00	PASS
	Ant2	5220	2.12	≤11.00	PASS
	total	5220	4.80	≤11.00	PASS
	Ant1	5240	2.25	≤11.00	PASS
	Ant2	5240	2.43	≤11.00	PASS
	total	5240	5.35	≤11.00	PASS
	Ant1	5745	-1.04	≤29.49	PASS
	Ant2	5745	-3.42	≤29.49	PASS
	total	5745	0.94	≤29.49	PASS
	Ant1	5785	-0.73	≤29.49	PASS
	Ant2	5785	-2.71	≤29.49	PASS
	total	5785	1.40	≤29.49	PASS
	Ant1	5825	-0.89	≤29.49	PASS
	Ant2	5825	-2.08	≤29.49	PASS
	total	5825	1.57	≤29.49	PASS
11N40MIMO	Ant1	5190	-1.55	≤11.00	PASS
	Ant2	5190	-1.03	≤11.00	PASS
	total	5190	1.73	≤11.00	PASS
	Ant1	5230	-0.90	≤11.00	PASS
	Ant2	5230	-0.30	≤11.00	PASS
	total	5230	2.42	≤11.00	PASS
	Ant1	5755	-3.68	≤29.49	PASS
	Ant2	5755	-6.17	≤29.49	PASS
	total	5755	-1.74	≤29.49	PASS
	Ant1	5795	-3.61	≤29.49	PASS
	Ant2	5795	-5.27	≤29.49	PASS
	total	5795	-1.35	≤29.49	PASS
11AC80MIMO	Ant1	5210	-6.50	≤11.00	PASS
	Ant2	5210	-5.87	≤11.00	PASS
	total	5210	-3.16	≤11.00	PASS
	Ant1	5775	-7.80	≤29.49	PASS
	Ant2	5775	-8.93	≤29.49	PASS
	total	5775	-5.32	≤29.49	PASS

5.6 Frequency Stability

Ambient condition:

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.2kPa

Method of Measurement:

1. Frequency stability with respect to ambient temperature

a) Supply the EUT with a nominal ac voltage or install a new or fully charged battery in the EUT. If possible, a dummy load shall be connected to the EUT because an antenna near the metallic walls of an environmental test chamber could affect the output frequency of the EUT. If the EUT is equipped with a permanently attached, adjustable-length antenna, then the EUT shall be placed in the center of the chamber with the antenna adjusted to the shortest length possible. Turn ON the EUT and tune it to one of the number of frequencies shown in 5.6.

b) Couple the unlicensed wireless device output to the measuring instrument by connecting an antenna to the measuring instrument with a suitable length of coaxial cable and placing the measuring antenna near the EUT (e.g., 15 cm away), or by connecting a dummy load to the measuring instrument, through an attenuator if necessary.

c) Adjust the location of the measurement antenna and the controls on the measurement instrument to obtain a suitable signal level (i.e., a level that will not overload the measurement instrument but is strong enough to allow measurement of the operating or fundamental frequency of the EUT).

d) Turn the EUT OFF and place it inside the environmental temperature chamber. For devices that have oscillator heaters, energize only the heater circuit.

e) Set the temperature control on the chamber to the highest specified in the regulatory requirements for the type of device and allow the oscillator heater and the chamber temperature to stabilize.

f) While maintaining a constant temperature inside the environmental chamber, turn the EUT ON and record the operating frequency at startup, and at 2 minutes, 5 minutes, and 10 minutes after the EUT is energized. Four measurements in total are made.

g) Measure the frequency at each of frequencies specified in 5.6.

h) Switch OFF the EUT but do not switch OFF the oscillator heater.

i) Lower the chamber temperature by not more that 10 C, and allow the temperature inside the chamber to stabilize.

j) Repeat step f) through step i) down to the lowest specified temperature.

2. Frequency stability when varying supply voltage

Unless otherwise specified, these tests shall be made at ambient room temperature (+15 C to +25 C). An antenna shall be connected to the antenna output terminals of the EUT if possible. If the EUT is equipped with or uses an adjustable-length antenna, then it shall be fully extended.

a) Supply the EUT with nominal voltage or install a new or fully charged battery in the EUT. Turn ON the EUT and couple its output to a frequency counter or other frequency-measuring instrument.

b) Tune the EUT to one of the number of frequencies required in 5.6. Adjust the location of the measurement antenna and the controls on the measurement instrument to obtain a suitable signal level (i.e., a level that will not overload the measurement instrument but is strong enough to allow measurement of the operating or fundamental frequency of the EUT).

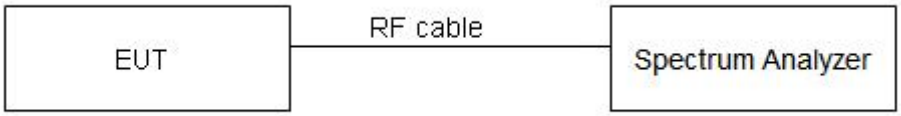
c) Measure the frequency at each of the frequencies specified in 5.6.

d) Repeat the above procedure at 85% and 115% of the nominal supply voltage.

Limits:

Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

Test Setup:



Measurement Uncertainty：

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor k = 2, U= 936 Hz.

Test Results:

Voltage								
TestMode	Antenna	Freq(MHz)	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
11A	Ant1	5180	NV	NT	0.00	0.000000	20	PASS
			LV	NT	20000.00	3.861004	20	PASS
			HV	NT	20000.00	3.861004	20	PASS
	Ant2	5180	NV	NT	0.00	0.000000	20	PASS
			LV	NT	20000.00	3.861004	20	PASS
			HV	NT	0.00	0.000000	20	PASS
	Ant1	5220	NV	NT	20000.00	3.831418	20	PASS
			LV	NT	20000.00	3.831418	20	PASS
			HV	NT	20000.00	3.831418	20	PASS
	Ant2	5220	NV	NT	20000.00	3.831418	20	PASS
			LV	NT	20000.00	3.831418	20	PASS
			HV	NT	20000.00	3.831418	20	PASS
	Ant1	5240	NV	NT	20000.00	3.816794	20	PASS
			LV	NT	0.00	0.000000	20	PASS
			HV	NT	20000.00	3.816794	20	PASS
	Ant2	5240	NV	NT	0.00	0.000000	20	PASS
			LV	NT	0.00	0.000000	20	PASS
			HV	NT	0.00	0.000000	20	PASS
	Ant1	5745	NV	NT	0.00	0.000000	20	PASS
			LV	NT	20000.00	3.481288	20	PASS
			HV	NT	20000.00	3.481288	20	PASS
	Ant2	5745	NV	NT	0.00	0.000000	20	PASS
			LV	NT	0.00	0.000000	20	PASS
			HV	NT	20000.00	3.481288	20	PASS
	Ant1	5785	NV	NT	0.00	0.000000	20	PASS
			LV	NT	0.00	0.000000	20	PASS
			HV	NT	0.00	0.000000	20	PASS
	Ant2	5785	NV	NT	20000.00	3.457217	20	PASS
			LV	NT	20000.00	3.457217	20	PASS
			HV	NT	40000.00	6.914434	20	PASS
	Ant1	5825	NV	NT	20000.00	3.433476	20	PASS
			LV	NT	0.00	0.000000	20	PASS
			HV	NT	20000.00	3.433476	20	PASS
	Ant2	5825	NV	NT	20000.00	3.433476	20	PASS
			LV	NT	20000.00	3.433476	20	PASS
			HV	NT	40000.00	6.866953	20	PASS
11N20MIMO	Ant1	5180	NV	NT	0.00	0.000000	20	PASS
			LV	NT	0.00	0.000000	20	PASS
			HV	NT	0.00	0.000000	20	PASS
	Ant2	5180	NV	NT	0.00	0.000000	20	PASS
			LV	NT	0.00	0.000000	20	PASS
			HV	NT	20000.00	3.861004	20	PASS
	Ant1	5220	NV	NT	-20000.00	-3.831418	20	PASS
			LV	NT	0.00	0.000000	20	PASS
			HV	NT	-20000.00	-3.831418	20	PASS
	Ant2	5220	NV	NT	0.00	0.000000	20	PASS
			LV	NT	0.00	0.000000	20	PASS
			HV	NT	20000.00	3.831418	20	PASS
	Ant1	5240	NV	NT	20000.00	3.816794	20	PASS
			LV	NT	-40000.00	-7.633588	20	PASS
			HV	NT	-20000.00	-3.816794	20	PASS
	Ant2	5240	NV	NT	20000.00	3.816794	20	PASS
			LV	NT	0.00	0.000000	20	PASS
			HV	NT	0.00	0.000000	20	PASS
	Ant1	5745	NV	NT	-20000.00	-3.481288	20	PASS
			LV	NT	-20000.00	-3.481288	20	PASS
			HV	NT	20000.00	3.481288	20	PASS
	Ant2	5745	NV	NT	-20000.00	-3.481288	20	PASS

			LV	NT	0.00	0.000000	20	PASS
			HV	NT	20000.00	3.481288	20	PASS
	Ant1	5785	NV	NT	0.00	0.000000	20	PASS
			LV	NT	0.00	0.000000	20	PASS
			HV	NT	20000.00	3.457217	20	PASS
	Ant2	5785	NV	NT	0.00	0.000000	20	PASS
			LV	NT	20000.00	3.457217	20	PASS
			HV	NT	0.00	0.000000	20	PASS
	Ant1	5825	NV	NT	20000.00	3.433476	20	PASS
			LV	NT	0.00	0.000000	20	PASS
			HV	NT	20000.00	3.433476	20	PASS
	Ant2	5825	NV	NT	0.00	0.000000	20	PASS
			LV	NT	0.00	0.000000	20	PASS
			HV	NT	0.00	0.000000	20	PASS
11N40MIMO	Ant1	5190	NV	NT	0.00	0.000000	20	PASS
			LV	NT	0.00	0.000000	20	PASS
			HV	NT	0.00	0.000000	20	PASS
	Ant2	5190	NV	NT	0.00	0.000000	20	PASS
			LV	NT	-40000.00	-7.707129	20	PASS
			HV	NT	0.00	0.000000	20	PASS
	Ant1	5230	NV	NT	-40000.00	-7.648184	20	PASS
			LV	NT	0.00	0.000000	20	PASS
			HV	NT	0.00	0.000000	20	PASS
	Ant2	5230	NV	NT	-40000.00	-7.648184	20	PASS
			LV	NT	40000.00	7.648184	20	PASS
			HV	NT	0.00	0.000000	20	PASS
	Ant1	5755	NV	NT	0.00	0.000000	20	PASS
			LV	NT	0.00	0.000000	20	PASS
			HV	NT	0.00	0.000000	20	PASS
	Ant2	5755	NV	NT	0.00	0.000000	20	PASS
			LV	NT	0.00	0.000000	20	PASS
			HV	NT	0.00	0.000000	20	PASS
	Ant1	5795	NV	NT	0.00	0.000000	20	PASS
			LV	NT	0.00	0.000000	20	PASS
			HV	NT	0.00	0.000000	20	PASS
	Ant2	5795	NV	NT	0.00	0.000000	20	PASS
			LV	NT	0.00	0.000000	20	PASS
			HV	NT	40000.00	6.902502	20	PASS
11AC80MIMO	Ant1	5210	NV	NT	0.00	0.000000	20	PASS
			LV	NT	0.00	0.000000	20	PASS
			HV	NT	0.00	0.000000	20	PASS
	Ant2	5210	NV	NT	0.00	0.000000	20	PASS
			LV	NT	0.00	0.000000	20	PASS
			HV	NT	0.00	0.000000	20	PASS
	Ant1	5775	NV	NT	0.00	0.000000	20	PASS
			LV	NT	80000.00	13.852814	20	PASS
			HV	NT	80000.00	13.852814	20	PASS
	Ant2	5775	NV	NT	0.00	0.000000	20	PASS
			LV	NT	0.00	0.000000	20	PASS
			HV	NT	0.00	0.000000	20	PASS

Temperature								
TestMode	Antenna	Freq(MHz)	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
11A	Ant1	5180	NV	-30	0.00	0.000000	20	PASS
			NV	-20	0.00	0.000000	20	PASS
			NV	-10	0.00	0.000000	20	PASS
			NV	0	20000.00	3.861004	20	PASS
			NV	10	20000.00	3.861004	20	PASS
			NV	20	0.00	0.000000	20	PASS
			NV	30	0.00	0.000000	20	PASS

			NV	40	0.00	0.000000	20	PASS
			NV	50	40000.00	7.722008	20	PASS
	Ant2	5180	NV	-30	0.00	0.000000	20	PASS
			NV	-20	20000.00	3.861004	20	PASS
			NV	-10	20000.00	3.861004	20	PASS
			NV	0	0.00	0.000000	20	PASS
			NV	10	20000.00	3.861004	20	PASS
			NV	20	20000.00	3.861004	20	PASS
			NV	30	0.00	0.000000	20	PASS
			NV	40	20000.00	3.861004	20	PASS
			NV	50	20000.00	3.861004	20	PASS
	Ant1	5220	NV	-30	0.00	0.000000	20	PASS
			NV	-20	20000.00	3.831418	20	PASS
			NV	-10	20000.00	3.831418	20	PASS
			NV	0	20000.00	3.831418	20	PASS
			NV	10	20000.00	3.831418	20	PASS
			NV	20	0.00	0.000000	20	PASS
			NV	30	0.00	0.000000	20	PASS
			NV	40	20000.00	3.831418	20	PASS
			NV	50	20000.00	3.831418	20	PASS
	Ant2	5220	NV	-30	20000.00	3.831418	20	PASS
			NV	-20	0.00	0.000000	20	PASS
			NV	-10	20000.00	3.831418	20	PASS
			NV	0	20000.00	3.831418	20	PASS
			NV	10	20000.00	3.831418	20	PASS
			NV	20	20000.00	3.831418	20	PASS
			NV	30	0.00	0.000000	20	PASS
			NV	40	0.00	0.000000	20	PASS
			NV	50	20000.00	3.831418	20	PASS
	Ant1	5240	NV	-30	20000.00	3.816794	20	PASS
			NV	-20	-20000.00	-3.816794	20	PASS
			NV	-10	0.00	0.000000	20	PASS
			NV	0	20000.00	3.816794	20	PASS
			NV	10	0.00	0.000000	20	PASS
			NV	20	0.00	0.000000	20	PASS
			NV	30	20000.00	3.816794	20	PASS
			NV	40	20000.00	3.816794	20	PASS
			NV	50	0.00	0.000000	20	PASS
	Ant2	5240	NV	-30	20000.00	3.816794	20	PASS
			NV	-20	20000.00	3.816794	20	PASS
			NV	-10	0.00	0.000000	20	PASS
			NV	0	20000.00	3.816794	20	PASS
			NV	10	0.00	0.000000	20	PASS
			NV	20	20000.00	3.816794	20	PASS
			NV	30	20000.00	3.816794	20	PASS
			NV	40	20000.00	3.816794	20	PASS
			NV	50	20000.00	3.816794	20	PASS
	Ant1	5745	NV	-30	0.00	0.000000	20	PASS
			NV	-20	0.00	0.000000	20	PASS
			NV	-10	20000.00	3.481288	20	PASS
			NV	0	20000.00	3.481288	20	PASS
			NV	10	20000.00	3.481288	20	PASS
			NV	20	0.00	0.000000	20	PASS
			NV	30	0.00	0.000000	20	PASS
			NV	40	20000.00	3.481288	20	PASS
			NV	50	20000.00	3.481288	20	PASS
	Ant2	5745	NV	-30	20000.00	3.481288	20	PASS
			NV	-20	0.00	0.000000	20	PASS
			NV	-10	20000.00	3.481288	20	PASS
			NV	0	20000.00	3.481288	20	PASS
			NV	10	-20000.00	-3.481288	20	PASS
			NV	20	20000.00	3.481288	20	PASS
			NV	30	20000.00	3.481288	20	PASS
			NV	40	0.00	0.000000	20	PASS

			NV	50	20000.00	3.481288	20	PASS
	Ant1	5785	NV	-30	20000.00	3.457217	20	PASS
			NV	-20	0.00	0.000000	20	PASS
			NV	-10	0.00	0.000000	20	PASS
			NV	0	20000.00	3.457217	20	PASS
			NV	10	40000.00	6.914434	20	PASS
			NV	20	20000.00	3.457217	20	PASS
			NV	30	20000.00	3.457217	20	PASS
			NV	40	20000.00	3.457217	20	PASS
			NV	50	20000.00	3.457217	20	PASS
	Ant2	5785	NV	-30	20000.00	3.457217	20	PASS
			NV	-20	20000.00	3.457217	20	PASS
			NV	-10	20000.00	3.457217	20	PASS
			NV	0	20000.00	3.457217	20	PASS
			NV	10	20000.00	3.457217	20	PASS
			NV	20	0.00	0.000000	20	PASS
			NV	30	20000.00	3.457217	20	PASS
			NV	40	20000.00	3.457217	20	PASS
			NV	50	0.00	0.000000	20	PASS
	Ant1	5825	NV	-30	20000.00	3.433476	20	PASS
			NV	-20	0.00	0.000000	20	PASS
			NV	-10	0.00	0.000000	20	PASS
			NV	0	0.00	0.000000	20	PASS
			NV	10	20000.00	3.433476	20	PASS
			NV	20	0.00	0.000000	20	PASS
			NV	30	20000.00	3.433476	20	PASS
			NV	40	20000.00	3.433476	20	PASS
			NV	50	20000.00	3.433476	20	PASS
	Ant2	5825	NV	-30	20000.00	3.433476	20	PASS
			NV	-20	0.00	0.000000	20	PASS
			NV	-10	0.00	0.000000	20	PASS
			NV	0	-20000.00	-3.433476	20	PASS
			NV	10	0.00	0.000000	20	PASS
			NV	20	20000.00	3.433476	20	PASS
			NV	30	0.00	0.000000	20	PASS
			NV	40	20000.00	3.433476	20	PASS
			NV	50	20000.00	3.433476	20	PASS
11N20MIMO	Ant1	5180	NV	-30	0.00	0.000000	20	PASS
			NV	-20	20000.00	3.861004	20	PASS
			NV	-10	0.00	0.000000	20	PASS
			NV	0	0.00	0.000000	20	PASS
			NV	10	0.00	0.000000	20	PASS
			NV	20	0.00	0.000000	20	PASS
			NV	30	20000.00	3.861004	20	PASS
			NV	40	0.00	0.000000	20	PASS
			NV	50	20000.00	3.861004	20	PASS
	Ant2	5180	NV	-30	0.00	0.000000	20	PASS
			NV	-20	40000.00	7.722008	20	PASS
			NV	-10	0.00	0.000000	20	PASS
			NV	0	0.00	0.000000	20	PASS
			NV	10	0.00	0.000000	20	PASS
			NV	20	0.00	0.000000	20	PASS
			NV	30	0.00	0.000000	20	PASS
			NV	40	0.00	0.000000	20	PASS
			NV	50	20000.00	3.861004	20	PASS
	Ant1	5220	NV	-30	0.00	0.000000	20	PASS
			NV	-20	0.00	0.000000	20	PASS
			NV	-10	40000.00	7.662835	20	PASS
			NV	0	0.00	0.000000	20	PASS
			NV	10	20000.00	3.831418	20	PASS
			NV	20	0.00	0.000000	20	PASS
			NV	30	20000.00	3.831418	20	PASS
			NV	40	-20000.00	-3.831418	20	PASS
			NV	50	0.00	0.000000	20	PASS

	Ant2	5220	NV	-30	20000.00	3.831418	20	PASS
			NV	-20	0.00	0.000000	20	PASS
			NV	-10	20000.00	3.831418	20	PASS
			NV	0	0.00	0.000000	20	PASS
			NV	10	0.00	0.000000	20	PASS
			NV	20	0.00	0.000000	20	PASS
			NV	30	0.00	0.000000	20	PASS
			NV	40	0.00	0.000000	20	PASS
			NV	50	0.00	0.000000	20	PASS
	Ant1	5240	NV	-30	0.00	0.000000	20	PASS
			NV	-20	0.00	0.000000	20	PASS
			NV	-10	0.00	0.000000	20	PASS
			NV	0	0.00	0.000000	20	PASS
			NV	10	20000.00	3.816794	20	PASS
			NV	20	20000.00	3.816794	20	PASS
			NV	30	20000.00	3.816794	20	PASS
			NV	40	0.00	0.000000	20	PASS
			NV	50	-20000.00	-3.816794	20	PASS
	Ant2	5240	NV	-30	0.00	0.000000	20	PASS
			NV	-20	0.00	0.000000	20	PASS
			NV	-10	0.00	0.000000	20	PASS
			NV	0	0.00	0.000000	20	PASS
			NV	10	20000.00	3.816794	20	PASS
			NV	20	0.00	0.000000	20	PASS
			NV	30	20000.00	3.816794	20	PASS
			NV	40	-20000.00	-3.816794	20	PASS
			NV	50	0.00	0.000000	20	PASS
	Ant1	5745	NV	-30	20000.00	3.481288	20	PASS
			NV	-20	-20000.00	-3.481288	20	PASS
			NV	-10	20000.00	3.481288	20	PASS
			NV	0	0.00	0.000000	20	PASS
			NV	10	0.00	0.000000	20	PASS
			NV	20	0.00	0.000000	20	PASS
			NV	30	-20000.00	-3.481288	20	PASS
			NV	40	0.00	0.000000	20	PASS
			NV	50	20000.00	3.481288	20	PASS
	Ant2	5745	NV	-30	0.00	0.000000	20	PASS
			NV	-20	0.00	0.000000	20	PASS
			NV	-10	0.00	0.000000	20	PASS
			NV	0	20000.00	3.481288	20	PASS
			NV	10	0.00	0.000000	20	PASS
			NV	20	20000.00	3.481288	20	PASS
			NV	30	0.00	0.000000	20	PASS
			NV	40	20000.00	3.481288	20	PASS
			NV	50	-20000.00	-3.481288	20	PASS
	Ant1	5785	NV	-30	20000.00	3.457217	20	PASS
			NV	-20	0.00	0.000000	20	PASS
			NV	-10	20000.00	3.457217	20	PASS
			NV	0	0.00	0.000000	20	PASS
			NV	10	0.00	0.000000	20	PASS
			NV	20	20000.00	3.457217	20	PASS
			NV	30	0.00	0.000000	20	PASS
			NV	40	0.00	0.000000	20	PASS
			NV	50	0.00	0.000000	20	PASS
	Ant2	5785	NV	-30	0.00	0.000000	20	PASS
			NV	-20	0.00	0.000000	20	PASS
			NV	-10	0.00	0.000000	20	PASS
			NV	0	20000.00	3.457217	20	PASS
			NV	10	0.00	0.000000	20	PASS
			NV	20	20000.00	3.457217	20	PASS
			NV	30	0.00	0.000000	20	PASS
			NV	40	0.00	0.000000	20	PASS
			NV	50	40000.00	6.914434	20	PASS
	Ant1	5825	NV	-30	0.00	0.000000	20	PASS

			NV	-20	0.00	0.000000	20	PASS
			NV	-10	0.00	0.000000	20	PASS
			NV	0	-20000.00	-3.433476	20	PASS
			NV	10	0.00	0.000000	20	PASS
			NV	20	0.00	0.000000	20	PASS
			NV	30	-20000.00	-3.433476	20	PASS
			NV	40	20000.00	3.433476	20	PASS
			NV	50	0.00	0.000000	20	PASS
	Ant2	5825	NV	-30	0.00	0.000000	20	PASS
			NV	-20	0.00	0.000000	20	PASS
			NV	-10	0.00	0.000000	20	PASS
			NV	0	0.00	0.000000	20	PASS
			NV	10	0.00	0.000000	20	PASS
			NV	20	0.00	0.000000	20	PASS
			NV	30	0.00	0.000000	20	PASS
			NV	40	0.00	0.000000	20	PASS
			NV	50	0.00	0.000000	20	PASS
11N40MIMO	Ant1	5190	NV	-30	0.00	0.000000	20	PASS
			NV	-20	0.00	0.000000	20	PASS
			NV	-10	0.00	0.000000	20	PASS
			NV	0	-40000.00	-7.707129	20	PASS
			NV	10	0.00	0.000000	20	PASS
			NV	20	0.00	0.000000	20	PASS
			NV	30	0.00	0.000000	20	PASS
			NV	40	0.00	0.000000	20	PASS
			NV	50	0.00	0.000000	20	PASS
	Ant2	5190	NV	-30	40000.00	7.707129	20	PASS
			NV	-20	0.00	0.000000	20	PASS
			NV	-10	0.00	0.000000	20	PASS
			NV	0	0.00	0.000000	20	PASS
			NV	10	0.00	0.000000	20	PASS
			NV	20	0.00	0.000000	20	PASS
			NV	30	0.00	0.000000	20	PASS
			NV	40	0.00	0.000000	20	PASS
			NV	50	0.00	0.000000	20	PASS
	Ant1	5230	NV	-30	0.00	0.000000	20	PASS
			NV	-20	0.00	0.000000	20	PASS
			NV	-10	0.00	0.000000	20	PASS
			NV	0	0.00	0.000000	20	PASS
			NV	10	0.00	0.000000	20	PASS
			NV	20	0.00	0.000000	20	PASS
			NV	30	0.00	0.000000	20	PASS
			NV	40	0.00	0.000000	20	PASS
			NV	50	-40000.00	-7.648184	20	PASS
	Ant2	5230	NV	-30	40000.00	7.648184	20	PASS
			NV	-20	0.00	0.000000	20	PASS
			NV	-10	0.00	0.000000	20	PASS
			NV	0	0.00	0.000000	20	PASS
			NV	10	40000.00	7.648184	20	PASS
			NV	20	40000.00	7.648184	20	PASS
			NV	30	0.00	0.000000	20	PASS
			NV	40	0.00	0.000000	20	PASS
			NV	50	0.00	0.000000	20	PASS
	Ant1	5755	NV	-30	0.00	0.000000	20	PASS
			NV	-20	0.00	0.000000	20	PASS
			NV	-10	0.00	0.000000	20	PASS
			NV	0	0.00	0.000000	20	PASS
			NV	10	40000.00	6.950478	20	PASS
			NV	20	0.00	0.000000	20	PASS
			NV	30	0.00	0.000000	20	PASS
			NV	40	0.00	0.000000	20	PASS
			NV	50	0.00	0.000000	20	PASS
	Ant2	5755	NV	-30	0.00	0.000000	20	PASS
			NV	-20	0.00	0.000000	20	PASS

			NV	-10	0.00	0.000000	20	PASS
			NV	0	0.00	0.000000	20	PASS
			NV	10	0.00	0.000000	20	PASS
			NV	20	0.00	0.000000	20	PASS
			NV	30	0.00	0.000000	20	PASS
			NV	40	0.00	0.000000	20	PASS
			NV	50	0.00	0.000000	20	PASS
	Ant1	5795	NV	-30	0.00	0.000000	20	PASS
			NV	-20	0.00	0.000000	20	PASS
			NV	-10	0.00	0.000000	20	PASS
			NV	0	0.00	0.000000	20	PASS
			NV	10	0.00	0.000000	20	PASS
			NV	20	0.00	0.000000	20	PASS
			NV	30	0.00	0.000000	20	PASS
			NV	40	0.00	0.000000	20	PASS
			NV	50	40000.00	6.902502	20	PASS
	Ant2	5795	NV	-30	0.00	0.000000	20	PASS
			NV	-20	0.00	0.000000	20	PASS
			NV	-10	0.00	0.000000	20	PASS
			NV	0	0.00	0.000000	20	PASS
			NV	10	40000.00	6.902502	20	PASS
			NV	20	0.00	0.000000	20	PASS
			NV	30	0.00	0.000000	20	PASS
			NV	40	0.00	0.000000	20	PASS
			NV	50	0.00	0.000000	20	PASS
11AC80MIMO	Ant1	5210	NV	-30	0.00	0.000000	20	PASS
			NV	-20	0.00	0.000000	20	PASS
			NV	-10	0.00	0.000000	20	PASS
			NV	0	0.00	0.000000	20	PASS
			NV	10	0.00	0.000000	20	PASS
			NV	20	80000.00	15.355086	20	PASS
			NV	30	0.00	0.000000	20	PASS
			NV	40	0.00	0.000000	20	PASS
			NV	50	0.00	0.000000	20	PASS
	Ant2	5210	NV	-30	0.00	0.000000	20	PASS
			NV	-20	0.00	0.000000	20	PASS
			NV	-10	0.00	0.000000	20	PASS
			NV	0	0.00	0.000000	20	PASS
			NV	10	0.00	0.000000	20	PASS
			NV	20	0.00	0.000000	20	PASS
			NV	30	0.00	0.000000	20	PASS
			NV	40	0.00	0.000000	20	PASS
			NV	50	0.00	0.000000	20	PASS
	Ant1	5775	NV	-30	0.00	0.000000	20	PASS
			NV	-20	80000.00	13.852814	20	PASS
			NV	-10	80000.00	13.852814	20	PASS
			NV	0	0.00	0.000000	20	PASS
			NV	10	80000.00	13.852814	20	PASS
			NV	20	0.00	0.000000	20	PASS
			NV	30	0.00	0.000000	20	PASS
			NV	40	-80000.00	-13.852814	20	PASS
			NV	50	80000.00	13.852814	20	PASS
	Ant2	5775	NV	-30	0.00	0.000000	20	PASS
			NV	-20	0.00	0.000000	20	PASS
			NV	-10	0.00	0.000000	20	PASS
			NV	0	0.00	0.000000	20	PASS
			NV	10	0.00	0.000000	20	PASS
			NV	20	0.00	0.000000	20	PASS
			NV	30	0.00	0.000000	20	PASS
			NV	40	0.00	0.000000	20	PASS
			NV	50	0.00	0.000000	20	PASS

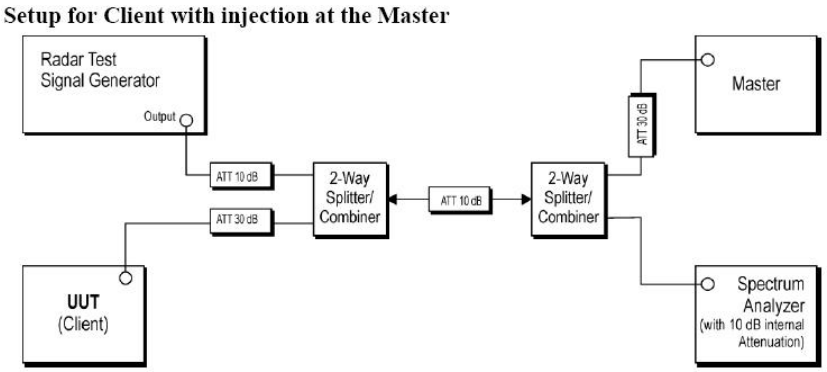
5.7 Dynamic Frequency Selection (DFS)

Ambient condition:

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.2kPa

5.7.1 DFS detection threshold level

Test Setup:



Test Results:

Not required

5.7.2 UNII Detection Bandwidth

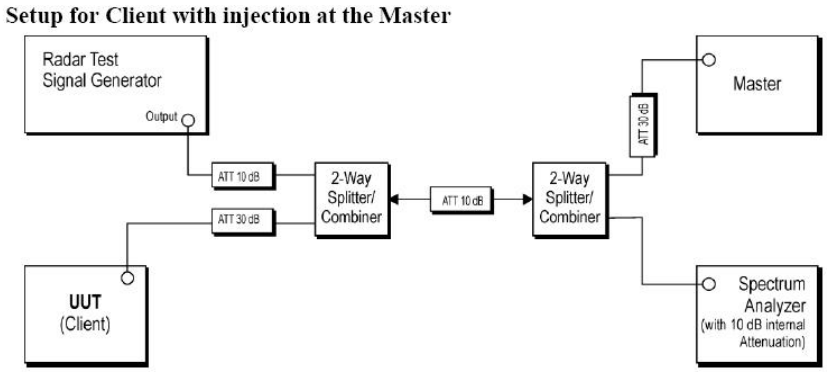
Method of Measurement:

Refer as KDB905462 D02 UNII DFS Compliance Procedures New Rules v02, clause 7.8.1 for UNII Detection Bandwidth test. During the U-NII Detection Bandwidth detection test, radar type 1 is used and for each frequency step the minimum percentage of detection is 90 percent. Measurements are performed with no data traffic. The EUT is set up as a standalone device (no associated Client and no traffic). The radar frequency is increased in 1 MHz steps, repeating the above test sequence, until the detection rate falls below 90%. The highest frequency at which detection is greater than or equal to 90% is denoted as FH. The radar frequency is decreased in 1 MHz steps, repeating the above test sequence, until the detection rate falls below 90%. The lowest frequency at which detection is greater than or equal to 90% is denoted as FL. UNII Detection Bandwidth = FH -FL

Limits:

Channel Bandwidth (MHz)	99% Power Bandwidth (MHz)	UNII Detection Bandwidth (MHz)
20	N/A	N/A
40	N/A	N/A
80	N/A	N/A
UNII Detection Bandwidth is minimum 100% of the 99% power bandwidth. A single radar Burst is generated for a minimum of 10 trials, and the response of the UUT is noted. The UUT must detect the Radar Waveform 90% or more of the time.		

Test Setup:



Test Results:

Not required

5.7.3 Channel Availability Check (CAC)

Method of Measurement:

Refer as KDB905462 D02 UNII DFS Compliance Procedures New Rules v02, clause 7.8.2.1 for Initial Channel Availability Check Time. The EUT does not emit beacon, control, or data signals on the test Channel until the power-up sequence has been completed and the UNII device checks for Radar Waveforms for one minute on the test Channel. This test does not use any Radar Waveforms.

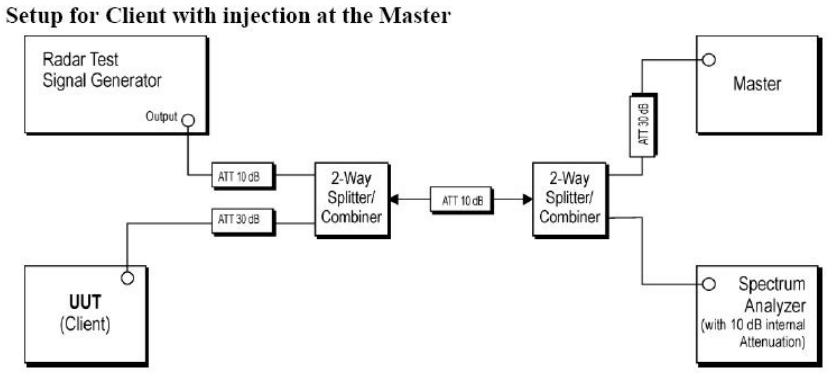
Refer as FCC 06-96 Appendix, clause 7.8.2.2 for Radar Burst at the Beginning of the Channel Availability Check Time. To verify successful radar detection on the selected Channel during a period equal to the Beginning of the Channel Availability Check Time.

Refer as FCC 06-96 Appendix, clause 7.8.2.3 for Radar Burst at the End of the Channel Availability Check Time. To verify successful radar detection on the selected Channel during a period equal to the End of the Channel Availability Check Time.

Limits:

Channel Availability Check Limit
☒The EUT shall perform a Channel Availability Check to ensure that there is no radar operating on the channel. After power-up sequence, receive at least 1 minute (60 sec) on the intended operating frequency.

Test Setup:



Test Results:

Not required

5.7.4 In-service Monitoring

Method of Measurement:

Refer as KDB905462 D02 UNII DFS Compliance Procedures New Rules v02, clause 7.8.3 verified during In-Service Monitoring; Channel Closing Transmission Time, Channel Move Time. Client Device will associate with the EUT. Observe the transmissions of the EUT at the end of the radar Burst on the Operating Channel for duration greater than 10 seconds. Measure and record the transmissions from the EUT during the observation time (Channel Move Time). Compare the Channel Move Time and Channel Closing Transmission Time limits.

Refer as KDB905462 D02 UNII DFS Compliance Procedures New Rules v02, clause 8.3 verified during In-Service Monitoring; Channel Closing Transmission Time, Channel Move Time. One 10 sec plot needs to be reported for the Short Pulse Radar Types 1-4 and one for the Long Pulse Radar Type in a 22 sec plot. And zoom-in a 600 ms plot verified channel closing time for the aggregate transmission time starting from 200ms after the end of the radar signal to the completion of the channel move.

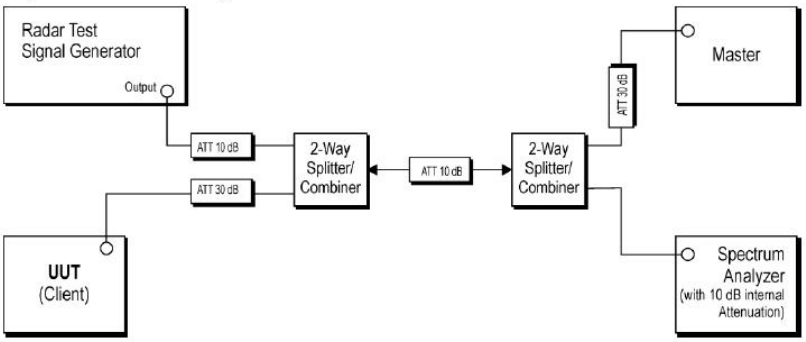
Refer as KDB905462 D02 UNII DFS Compliance Procedures New Rules v02, clause 7.8.3 verified during In-Service Monitoring; Non-Occupancy Period. Client Device will associate with the EUT. Observe the transmissions of the EUT at the end of the radar Burst on the Operating Channel for duration greater than 10 seconds. Measure and record the transmissions from the EUT during the observation time (Non-Occupancy Period). Compare the Non-Occupancy Period limits.

Limits:

In-service Monitoring Limit	
Channel Move Time	10 sec
Channel Closing Transmission Time	200 ms + an aggregate of 60 ms over remaining 10 sec periods.
Non-occupancy period	Minimum 30 minutes

Test Setup:

Setup for Client with injection at the Master



Test Results:

Not required

5.7.5 Statistical Performance Check

Method of Measurement:

Refer as KDB905462 D02 UNII DFS Compliance Procedures New Rules v02, clause 7.8.4 for Statistical Performance Check test. Stream the MPEG test file from the Master Device to the Client Device on the test Channel for the entire period of the test. Observe the transmissions of the UUT at the end of the Burst on the Operating Channel for duration greater than 10 seconds for Short Pulse Radar Types 1-4 and 6 to ensure detection occurs. Then Observe the transmissions of the UUT at the end of the Burst on the Operating Channel for duration greater than 22 seconds for Long Pulse Radar Type 5 to ensure detection occurs. The device can utilize a test mode to demonstrate when detection occurs to prevent the need to reset the device between trial runs.

Limits:

Radar Type	Minimum Percentage of Successful Detection (Pd)	Minimum Trials
1	60%	30
2	60%	30
3	60%	30
4	60%	30
Aggregate (Radar Types 1-4)	80%	120
5	80%	30
6	70%	30

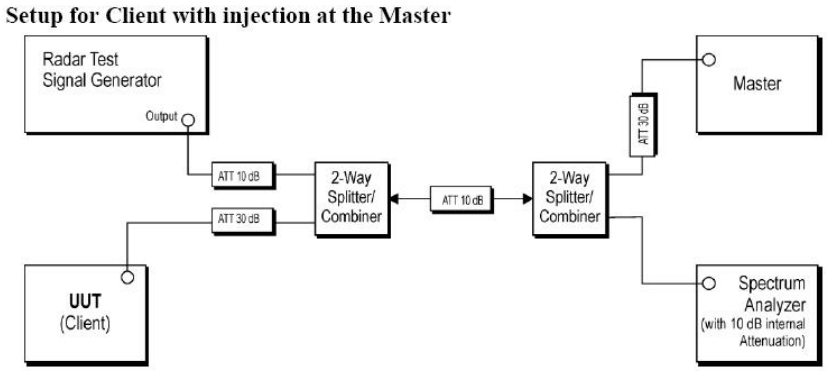
The percentage of successful detection is calculated by:

$$\frac{\text{Total Waveform Detections}}{\text{Total Waveform Trails}} \times 100 = \text{Probability of Detection Radar Waveform}$$

In addition an aggregate minimum percentage of successful detection across all Short Pulse Radar Types 1-4 is required and is calculated as follows:

$$\frac{Pd1+Pd2+Pd3+Pd4}{4}$$

Test Setup:



Test Results:

Not required

6. Appendix X

Test Equipment	Type/Mode	SERIAL NO.	Equipment No.	Manufacturer	Cal. Due
Communication Shielded Room 2	4m*3m*3m	CRTDSWKSR44301	/	CRT	2027/04/22
Spectrum Analyzer	FSV40	101580	DZ-000238-3	R&S	2026/03/27
RF Radio Frequency Switch	JS0806-2	19H9080187	DZ-000241	Tonscend	2026/03/27
Programmable DC Power Supply	E3644A	MY58036222	DZ-000178	KEYSIGHT	2026/04/10
5m Semi-Anechoic Chamber	SAC-5	SAC-5-2.0	EM-000557	COMTEST	2027/02/01
Spectrum Analyzer	N9010B	MY57470323	DZ-000174	KEYSIGHT	2026/01/01
EMI Test Receiver	N9038A-508	MY532290079	EM-000397	Agilent	2025/12/26
EMI Test Receiver	ESR7	102235	EM-000574	R&S	2026/01/05
loop antenna	HLA 6121	540046	EM-000546	TESEQ	2025/06/04
Broadband Antenna	VULB 9163	9163-530	EM-000342	SCHWARZBECK	2025/06/09
Waveguide Horn Antenna	BBHA9170	00949	DZ-000209-2	SCHWARZBECK	2025/08/03
Preamplifier	BBV 9721	9721-050	DZ-000209-1	SCHWARZBECK	2025/06/02
5G Bandstop Filters	WRCJV12-4900-5100-5900-6100-50EE	1	DZ-000186	WI	2025/12/02
Preamplifier	BBV 9721	9721-050	DZ-000209-1	SCHWARZBECK	2025/06/03
Temperature and humidity meter	MHO-C201	/	DZ-000249-2	Seconds test	2025/07/28
Temperature and humidity meter	MHO-C201	/	DZ-000249-5	Seconds test	2025/07/28

Dynacomm	Software Release	Software Developer
TS1120-3 Test System(Conduction test)	3.3.38	Tonscend
TS+（5m,Radiation test）	JS32-RE 5.0.0	Tonscend

No Body Text Below

Important

1. The test report is invalid without the official stamp of CVC;
2. Any part photocopies of the test report are forbidden without the written permission from CVC;
3. The test report is invalid without the signatures of Author and Reviewer;
4. The test report is invalid if altered;
5. Objections to the test report must be submitted to CVC within 15 days;
6. Generally, commission test is responsible for the tested samples only;
7. As for the test result, "—" or " N/A" means "not applicable", " / "means "not testing", "P" means "pass" and "F" means "fail".

Address: No.3,Tiantaiyi Road, Kaitai Avenue, Science City, Guangzhou, China (Test location)
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FAX：020 32293889 E-mail：office@cvc.org.cn