

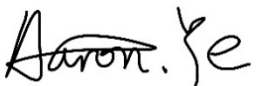
TEST REPORT

Product Name : MINIPC
Brand Name : N/A
Model : MS-02U-285HX
Series Model : See page 6
FCC ID : 2A49R-MS-02-ULTRA
Applicant : **MICRO COMPUTER (HK) TECH LIMITED**
Address : RM 18, 28/F, Shui On Centre, 6-8 Harbour Road, WaterfRont,
Wan Chai, HK
Manufacturer : **MICRO COMPUTER (HK) TECH LIMITED**
Address : RM 18, 28/F, Shui On Centre, 6-8 Harbour Road, WaterfRont,
Wan Chai, HK
Standard(s) : FCC CFR Title 47 Part 15 Subpart E Section 15.407
Date of Receipt : Oct. 11, 2025
Date of Test : Oct. 12, 2025~ Nov. 03, 2025
Issued Date : Nov. 04, 2025

Issued By: **Guangdong Asia Hongke Test Technology Limited**

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Reviewed by: 
Aalen.Ye

Approved by: 
Allen Wang



Note: This device has been tested and found to comply with the standard(s) listed, this test report merely corresponds to the test sample. It is not permitted to copy extracts of these test result without the written permission of the test laboratory. This report shall not be reproduced except in full, without the written approval of Guangdong Asia Hongke Test Technology Limited. If there is a need to alter or revise this document, the right belongs to Guangdong Asia Hongke Test Technology Limited, and it should give a prior written notice of the revision document. This test report must not be used by the client to claim product endorsement.

Guangdong Asia Hongke Test Technology Limited

B1/F, Building 11, Junfeng Industrial Park, Chongqing Road, Heping Community, Fuhai Street, Bao'an District, Shenzhen,
Guangdong, China.



Report Revise Record

Report Version	Issued Date	Notes
M0	Nov. 04, 2025	Initial Release

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1 TEST SUMMARY

1.1 Test Standards

The tests were performed according to following standards:

[FCC Rules Part 15 Subpart E](#)—Unlicensed National Information Infrastructure Devices.

[ANSI C63.10: 2020](#): American National Standard for Testing Unlicensed Wireless Devices

[KDB789033 D02](#): General UNII Test Procedures New Rules v02r01.

[KDB 662911 D01 Multiple Transmitter Output v02r01](#)

[KDB 291074 D02 EMC Measurement v01](#)

1.2 Test Summary

Test Item	Rules	Result
Antenna requirement	FCC Part 15.203	Pass
On Time and Duty Cycle	/	Pass
AC Power Line Conducted Emission	FCC Part 15.207	Pass
Maximum Conducted Output Power	FCC Part 15.407(a)	Pass
Power Spectral Density	FCC Part 15.407(a)	Pass
Minimum Emission Bandwidth(6dB Bandwidth)	FCC Part 15.407(e)	Pass
Emission Bandwidth(26dB Bandwidth)	FCC Part 15.407(a)	Pass
Radiated Emissions and Band Edge Measurement	FCC 15.407 (b) FCC 15.209 FCC 15.205	Pass
Frequency Stability	FCC 15.407(g)	Pass

1.3 Test Facility

Test Laboratory:

Guangdong Asia Hongke Test Technology Limited

B1/F, Building 11, Junfeng Industrial Park, Chongqing Road, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China

The test facility is recognized, certified or accredited by the following organizations:

FCC-Registration No.: 251906 Designation Number: CN1376

Guangdong Asia Hongke Test Technology Limited has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files.

IC —Registration No.: 31737 CAB identifier: CN0165

The 3m Semi-anechoic chamber of Guangdong Asia Hongke Test Technology Limited has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 31737

A2LA-Lab Cert. No.: 7133.01

Guangdong Asia Hongke Test Technology Limited has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

1.4 Measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report according to CISPR 16 - 4 "Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements" and is documented in the Guangdong Asia Hongke Test Technology Limited's quality system according to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for Asia Hongke laboratory is reported:

Test	Measurement Uncertainty	Notes
Power Line Conducted Emission	9KHz~30MHz ± 1.20 dB	(1)
Radiated Emission	9KHz~30MHz ± 3.10 dB	(1)
Radiated Emission	30MHz~1GHz ± 3.75 dB	(1)
Radiated Emission	1GHz~18GHz ± 3.88 dB	(1)
Radiated Emission	18GHz~40GHz ± 3.88 dB	(1)
RF power, conducted	30MHz~7.5GHz ± 0.16 dB	(1)
RF power density, conducted	± 0.24 dB	(1)
Spurious emissions, conducted	± 0.21 dB	(1)
Temperature	$\pm 1^{\circ}\text{C}$	(1)
Humidity	$\pm 3\%$	(1)
DC and low frequency voltages	$\pm 1.5\%$	(1)
Time	$\pm 2\%$	(1)
Duty cycle	$\pm 2\%$	(1)

The report uncertainty of measurement $y \pm U$, where expanded uncertainty U is based on a standard uncertainty Multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95%

2 GENERAL INFORMATION

2.1 Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Normal Temperature:	25°C
Relative Humidity:	55 %
Air Pressure:	101 kPa

2.2 General Description of EUT

Product Name:	MINIPC
Model/Type reference:	MS-02U-285HX
Serial Model:	MS-02U-275HX, MS-02U-265HX, MS-02U-255HX, MS-02U-245HX, MS-02U-235HX, MS-02***** (where*="0-9", "A-Z" "a-z", ".", blank space, no character difference between each model is only due to the different model naming methods for different sales regions, other circuit principles, safety structures and key components are all the same, and the difference not affect the safety and electromagnetic compatibility performance of the product.)
Power Supply:	AC 100-240V5.0A
Hardware Version:	V1.0
Software Version:	Win11 24H2
Sample(s) Status:	AiTSZ-251011020-1(Normal sample) AiTSZ-251011020-2(Engineer sample)

5.9G WIFI:

	20MHz system	40MHz system	80MHz system	160MHz system
Supported type:	802.11a 802.11n 802.11ac 802.11ax 802.11be	802.11n 802.11ac 802.11ax 802.11be	802.11ac 802.11ax 802.11be	802.11ac 802.11ax 802.11be
Operation frequency:	5845-5885MHz	5835MHz-5875MHz	5855MHz	5815
Modulation:	OFDM/OFDMA	OFDM/OFDMA	OFDM/OFDMA	OFDM/OFDMA
Channel number:	3	2	1	1
Channel separation:	20MHz	40MHz	80MHz	160MHz
MIMO	Support MIMO 2*2			
Antenna type:	PIFA Antenna MIMO 2*2			
Antenna gain:	Antenna1: 6.06dBi Antenna2: 3.67dBi			
Directional gain:	7.96dBi			

Remark:

- Directional gain = $10 \cdot \log[(10^{G1/20} + 10^{G2/20})^2 / N_{ANT}] = 10 \cdot \log[(10^{6.06/20} + 10^{3.67/20})^2 / 2] = 7.96\text{dBi}$
- The above DUT's information was declared by manufacturer. For more detailed features description, please refer to the manufacturer's specifications or the User's Manual.
- WIFI 802.11ax & 802.11be mode only Support Full RU.
- The device not support Channel Puncturing or Bandwidth Reduction mechanisms supported.

2.3 Description of Test Modes and Test Frequency

The Applicant provides communication tools software to control the EUT for staying in continuous transmitting (Duty Cycle more than 98%) and receiving mode for testing.

All test performed at the low, middle and high of operational frequency range of each mode.

.Operation Frequency List:

Operating band	20MHz		40MHz		80MHz		160 MHz	
	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
U-NII 4 (5850-5895MHz)	169	5845	167*	5835	171*	5855	163*	5815
	173	5865	175	5875				
	177	5885						

Note:

1. "--Means no channel(s) available any more.
2. The line display in grey is those Channels/Frequencies select to test in this report for each operation mode.
3. *Mean straddle channel cross U-NII 3 and U-NII 4.

Data Rate Used:

All test items were preliminary test with different data rate to find the worst radiated emission.

Investigation has been done on all the possible configurations for searching the worst cases. The following table is a list of the test modes shown in this test report.

Mode	Preliminary Data Rate	Worst-case Data Rate
802.11a	6Mbps ~ 54Mbps	6Mbps
802.11n	MCS0 ~ MCS15	MCS8
802.11ac	MCS0 ~ MCS9	MCS0
802.11ax	MCS0~ MCS11	MCS0
802.11be	MCS0~ MCS13	MCS0

Power setting during the test:

During testing, Channel & Power Controlling Software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product.

Power Parameters:

Test Software Version	DRTU		
Test Frequency	Lowest	Middle	Highest
U-NII 4	Default	Default	Default

2.4 Special Accessories

Follow auxiliary equipment(s) test with EUT that provided by the manufacturer or laboratory is listed as follow:

Description	Manufacturer	Model	Serial No.	Provided by	Other
Mouse	Dell	G2	SGG24280003175	Test lab	/
Keyboard	Dell	KK-3	Z2304KK333011	Test lab	/
Display	TITAN	M27T8T	NJVC00504416S30007	Test lab	/
/	/	/	/	/	/

2.5 Equipment List for the Test

Conducted Emission measurement						
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal.Due
☒ 1	EMI Test Receiver	R&S	ESPI	100771	2025.09.23	2026.09.22
☒ 2	LISN	R&S	NNLK 8129	8130179	2025.09.23	2026.09.22
☒ 3	ISN	TESEQ	T800	29429	2025.09.23	2026.09.22
☒ 4	Pulse Limiter	R&S	ESH3-Z2	102789	2025.09.23	2026.09.22
☒ 5	CE Software	EZ	EZ-EMC_CE	Ver.AIT-03A	N/A	N/A

Radiation Emission measurement						
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal.Due
☒ 1	EMI Measuring Receiver	R&S	ESR	101160	2025.09.23	2026.09.22
☒ 2	Low Noise Pre Amplifier	SCHWARZBECK	BBV 9745	00282	2025.09.23	2026.09.22
☒ 3	Low Noise Pre Amplifier	CESHENG	CSKJLNA231 016A	CSKJLNA23 1016A	2025.09.23	2026.09.22
☒ 4	Spectrum Analyzer	R&S	FSV40	101470	2025.09.23	2026.09.22
☒ 5	Passive Loop	ETS	6512	00165355	2024.08.29	2026.08.28
☒ 6	TRILOG Super Broadband test Antenna	SCHWARZBECK	VULB9168	01434	2024.08.29	2027.08.28
☒ 7	Broadband Horn Antenna	Schwarzbeck	BBHA 9120D	452	2024.08.29	2027.08.28
☒ 8	Horn Antenna 15-40GHz	SCHWARZBECK	BBHA9170	BBHA91703 67	2024.08.28	2027.08.27
☒ 9	6dB Attenuator	JFW	50FPE-006	4360846- 949-1	2025.09.23	2026.09.22
☒ 10	RE Software	EZ	EZ-EMC_RE	Ver.AIT-03A	N/A	N/A

RF Conducted measurement						
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal.Due
☒ 1	Spectrum Analyzer	Agilent	N9020A	MY53421570	2025.09.23	2026.09.22
☐ 2	Power Sensor	Agilent	8481A	MY41097697	2025.09.23	2026.09.22
☐ 3	Vector Signal Generator	Agilent	N5182A	MY50143009	2025.09.23	2026.09.22
☐ 4	Analog signal generator	Agilent	E8257	MY51554256	2025.09.23	2026.09.22
☐ 5	Const Temp. & Humidity Chamber	Eastlab	YH-HW-408L	23051109	2025.09.23	2026.09.22
☐ 6	Wideband Radio communication tester	R&S	CMW500	1201.0002K50	2025.09.23	2026.09.22
☐ 7	DC power supply	ZHAOXIN	RXN-305D-2	28070002559	2025.09.23	2026.09.22
☒ 8	RF Test box	TST	TSTPASS	21033016	2025.09.23	2026.09.22
☒ 9	RF Software	TST	TSTPASS	Version 2.0	N/A	N/A
☐ 10	RF Software	Cesheng	WCN Regulary	Ver 25.03.2901	N/A	N/A

Note: ☐ is not applicable in this Test Report. ☒ is applicable in this Test Report.

3 TEST CONDITIONS AND RESULTS

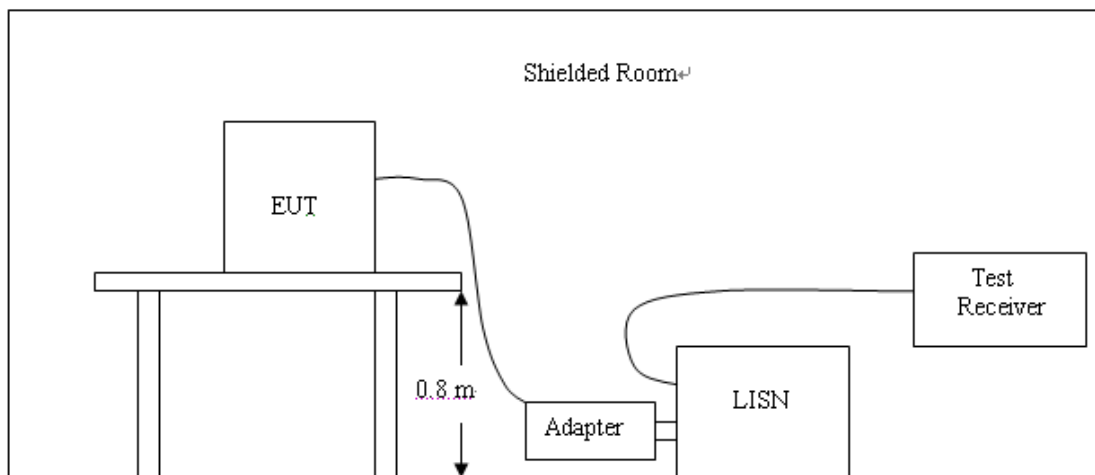
3.1 Conducted Emissions Test

LIMIT

Frequency range (MHz)	Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

* Decreases with the logarithm of the frequency.

TEST CONFIGURATION

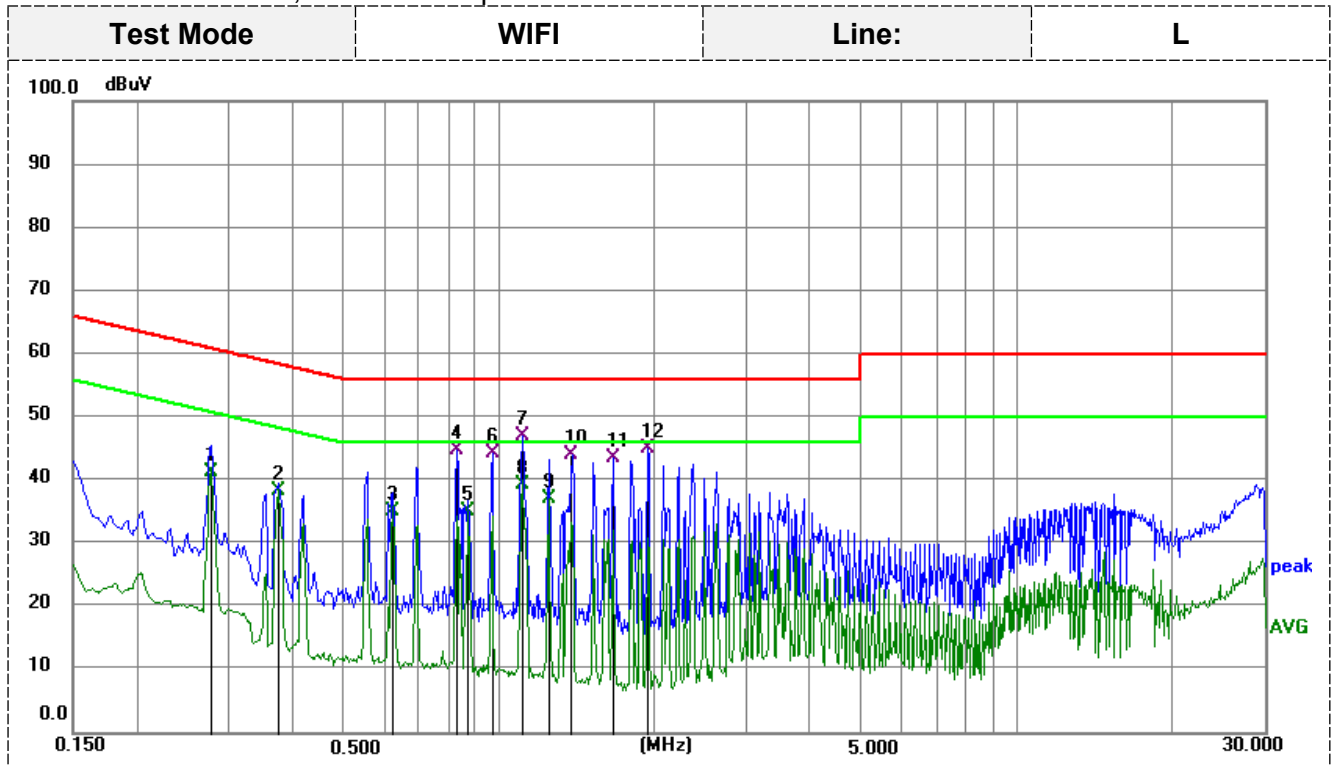


TEST PROCEDURE

1. The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. The EUT is a tabletop system; a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.10:2020.
2. Support equipment, if needed, was placed as per ANSI C63.10:2020.
3. All I/O cables were positioned to simulate typical actual usage as per ANSI C63.10:2020.
4. The adapter received AC120V/60Hz power through a Line Impedance Stabilization Network (LISN) which supplied power source and was grounded to the ground plane.
5. All support equipments received AC power from a second LISN, if any.
6. The EUT test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
7. Analyzer / Receiver scanned from 150 KHz to 30MHz for emissions in each of the test modes.
8. During the above scans, the emissions were maximized by cable manipulation.

TEST RESULTS

1. Pre-scan all WIFI operation modes at Low, Middle, and High channel; only the worst result of 802.11a mode low channel was reported as below:
2. Both 120 VAC, 50/60 Hz and 240 VAC, 50/60 Hz power supply have been tested, only the worst result of 120 VAC, 60 Hz was reported as below:

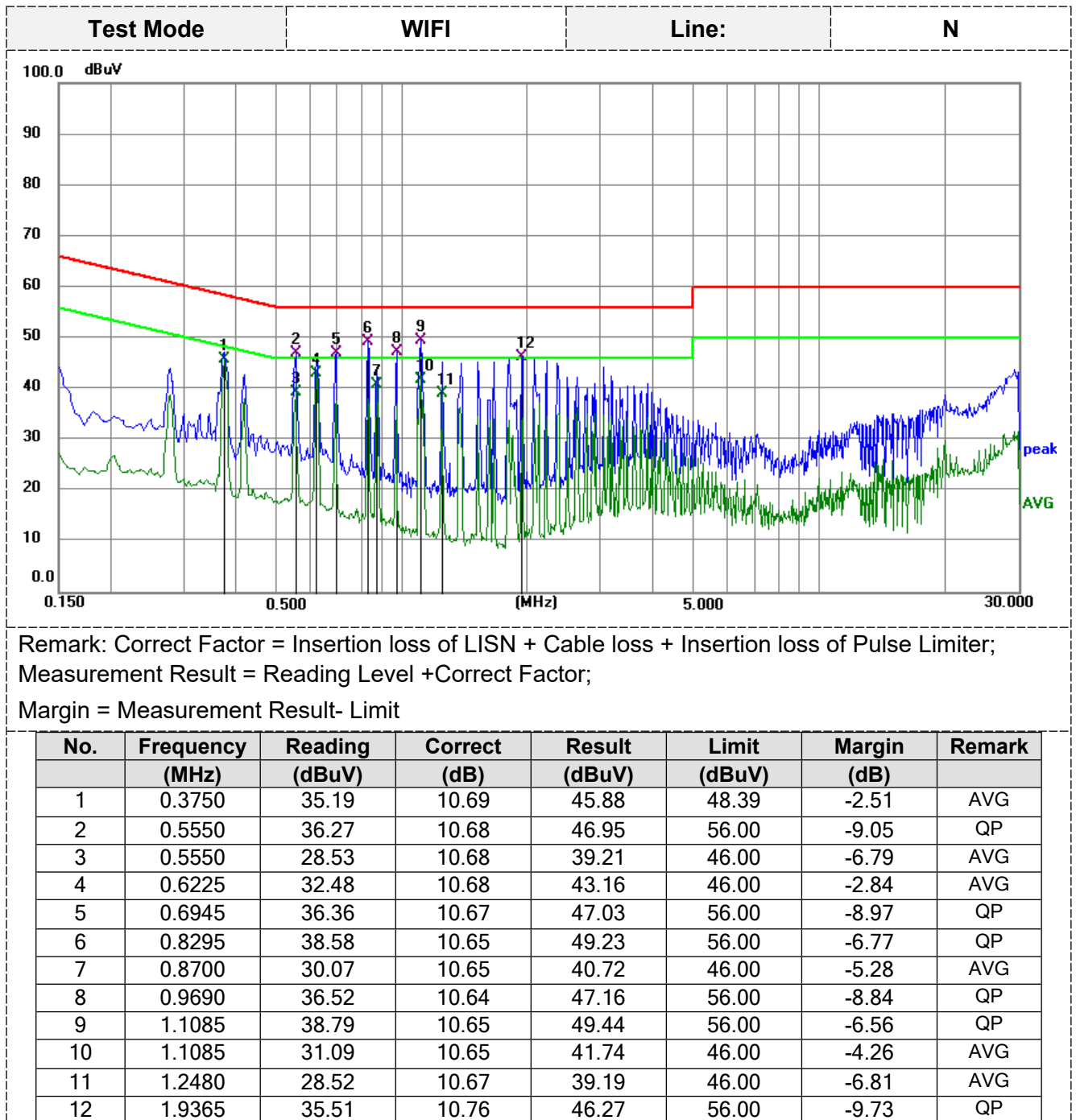


Remark: Correct Factor = Insertion loss of LISN + Cable loss + Insertion loss of Pulse Limiter;

Measurement Result = Reading Level + Correct Factor;

Margin = Measurement Result - Limit

No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.2760	30.66	10.69	41.35	50.94	-9.59	AVG
2	0.3750	27.74	10.69	38.43	48.39	-9.96	AVG
3	0.6225	24.45	10.68	35.13	46.00	-10.87	AVG
4	0.8295	34.15	10.65	44.80	56.00	-11.20	QP
5	0.8745	24.46	10.64	35.10	46.00	-10.90	AVG
6	0.9690	33.74	10.64	44.38	56.00	-11.62	QP
7	1.1085	36.48	10.65	47.13	56.00	-8.87	QP
8	1.1085	28.75	10.65	39.40	46.00	-6.60	AVG
9	1.2480	26.44	10.67	37.11	46.00	-8.89	AVG
10	1.3829	33.40	10.69	44.09	56.00	-11.91	QP
11	1.6620	32.84	10.73	43.57	56.00	-12.43	QP
12	1.9365	34.26	10.76	45.02	56.00	-10.98	QP



3.2 Radiated Emissions and Band Edge

Limit

For transmitters operating solely in the 5.850-5.895 GHz band or operating on a channel that spans across 5.725-5.895 GHz:

For an indoor access point or subordinate device, all emissions at or above 5.895 GHz shall not exceed an e.i.r.p. of 15 dBm/MHz and shall decrease linearly to an e.i.r.p. of -7 dBm/MHz at or above 5.925 GHz.

For a client device, all emissions at or above 5.895 GHz shall not exceed an e.i.r.p. of -5 dBm/MHz and shall decrease linearly to an e.i.r.p. of -27 dBm/MHz at or above 5.925 GHz.

For a client device or indoor access point or subordinate device, all emissions below 5.725 GHz shall not exceed an e.i.r.p. of -27 dBm/MHz at 5.65 GHz increasing linearly to 10 dBm/MHz at 5.7 GHz, and from 5.7 GHz increasing linearly to a level of 15.6 dBm/MHz at 5.72 GHz, and from 5.72 GHz increasing linearly to a level of 27 dBm/MHz at 5.725 GHz.

(2) Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in §15.209

Radiated emission limits

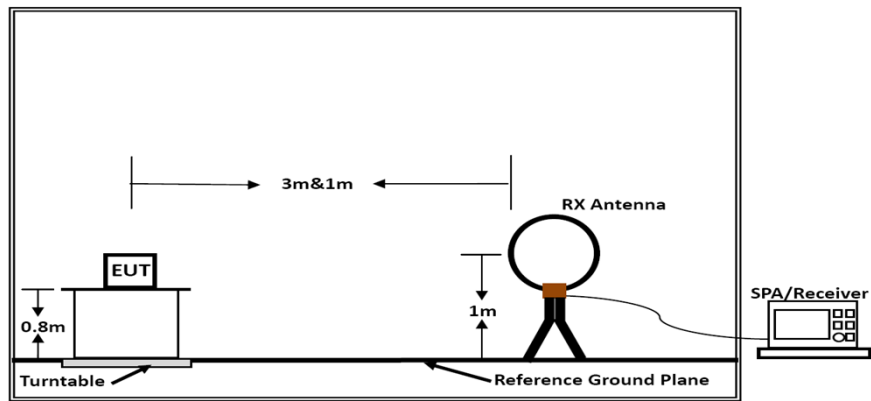
Frequency (MHz)	Distance (Meters)	Radiated (dBμV/m)	Radiated (μV/m)
0.009-0.49	3	$20\log(2400/F(\text{KHz}))+40\log(300/3)$	$2400/F(\text{KHz})$
0.49-1.705	3	$20\log(24000/F(\text{KHz}))+40\log(30/3)$	$24000/F(\text{KHz})$
1.705-30	3	$20\log(30)+40\log(30/3)$	30
30-88	3	40.0	100
88-216	3	43.5	150
216-960	3	46.0	200
Above 960	3	54.0	500

(3) In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a)

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
¹ 0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	(²)
13.36-13.41			

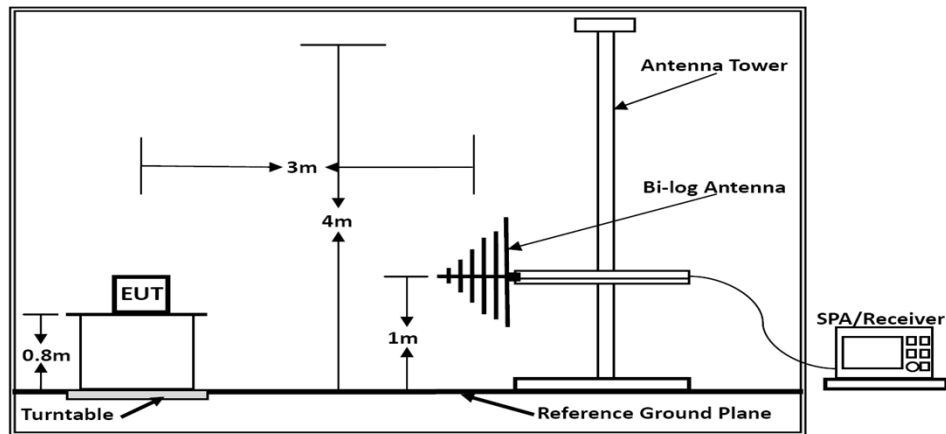
TEST CONFIGURATION

(A) Radiated Emission Test Set-Up, Frequency Below 30MHz



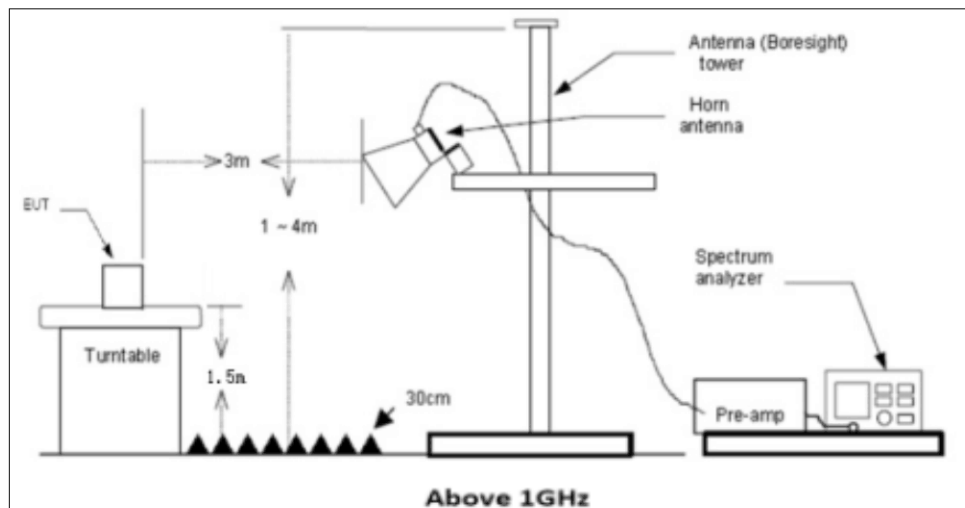
Below 30MHz

(B) Radiated Emission Test Set-Up, Frequency below 1000MHz



Below 1GHz

(C) Radiated Emission Test Set-Up, Frequency above 1000MHz



Above 1GHz

Test Procedure

- Below 1GHz measurement the EUT is placed on a turntable which is 0.8m above ground plane, and above 1GHz measurement EUT was placed on a low permittivity and low loss tangent turn table which is 1.5m above ground plane.
- Maximum procedure was performed by raising the receiving antenna from 1m to 4m and rotating the turn table from 0° to 360° to acquire the highest emissions from EUT
- And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
- Repeat above procedures until all frequency measurements have been completed.
- Radiated emission test frequency band from 9KHz to 40GHz.
- The distance between test antenna and EUT as following table states:

Test Frequency range	Test Antenna Type	Test Distance
9KHz-30MHz	Active Loop Antenna	3
30MHz-1GHz	Bilog Antenna	3
1GHz-18GHz	Horn Antenna	3
18GHz-40GHz	Horn Antenna	1

- Setting test receiver/spectrum as following table states:

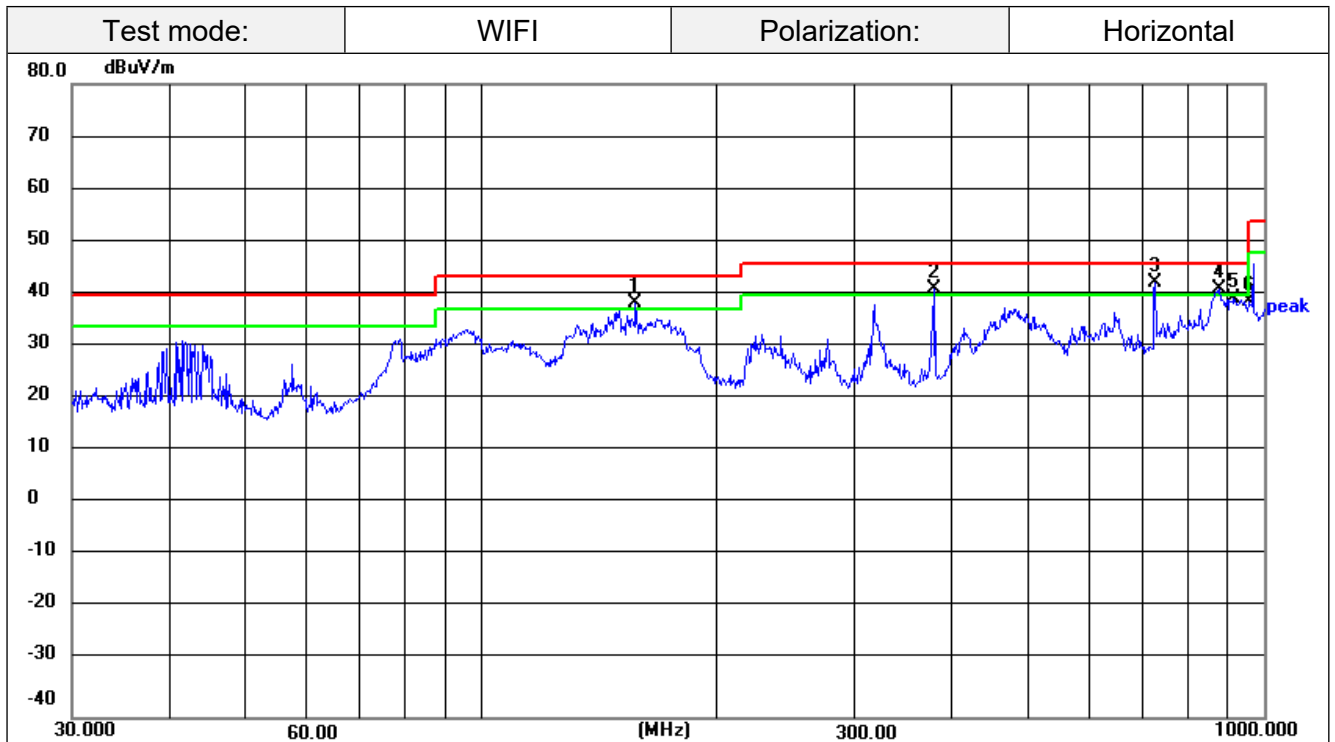
Test Frequency range	Test Receiver/Spectrum Setting	Detector
9KHz-150KHz	RBW=200Hz/VBW=3KHz, Sweep time=Auto	QP
150KHz-30MHz	RBW=9KHz/VBW=100KHz, Sweep time=Auto	QP
30MHz-1GHz	RBW=120KHz/VBW=1000KHz, Sweep time=Auto	QP
1GHz-40GHz	Peak Value: RBW=1MHz/VBW=3MHz, Sweep time=Auto Average Value: RBW=1MHz/VBW=10Hz, Sweep time=Auto	Peak

TEST RESULTS

Remark:

- Pre-scan all operation modes for below 1GHz test, only the worst case 802.11a Ant1 low channel of U-NII 1 band was recorded.
- Pre-scan all operation modes for above 1GHz test, only the worst case 802.11a Ant1 was recorded.
- Pre-scan all operation modes for U-NII 4 bandedge test, only the worst case of 802.11ax20 MIMO mode was recorded.
- Radiated emission test from 9 KHz to 10th harmonic of fundamental was verified, and no emission found except system noise floor in 9 KHz to 30MHz and not recorded in this report.

For 30MHz-1GHz



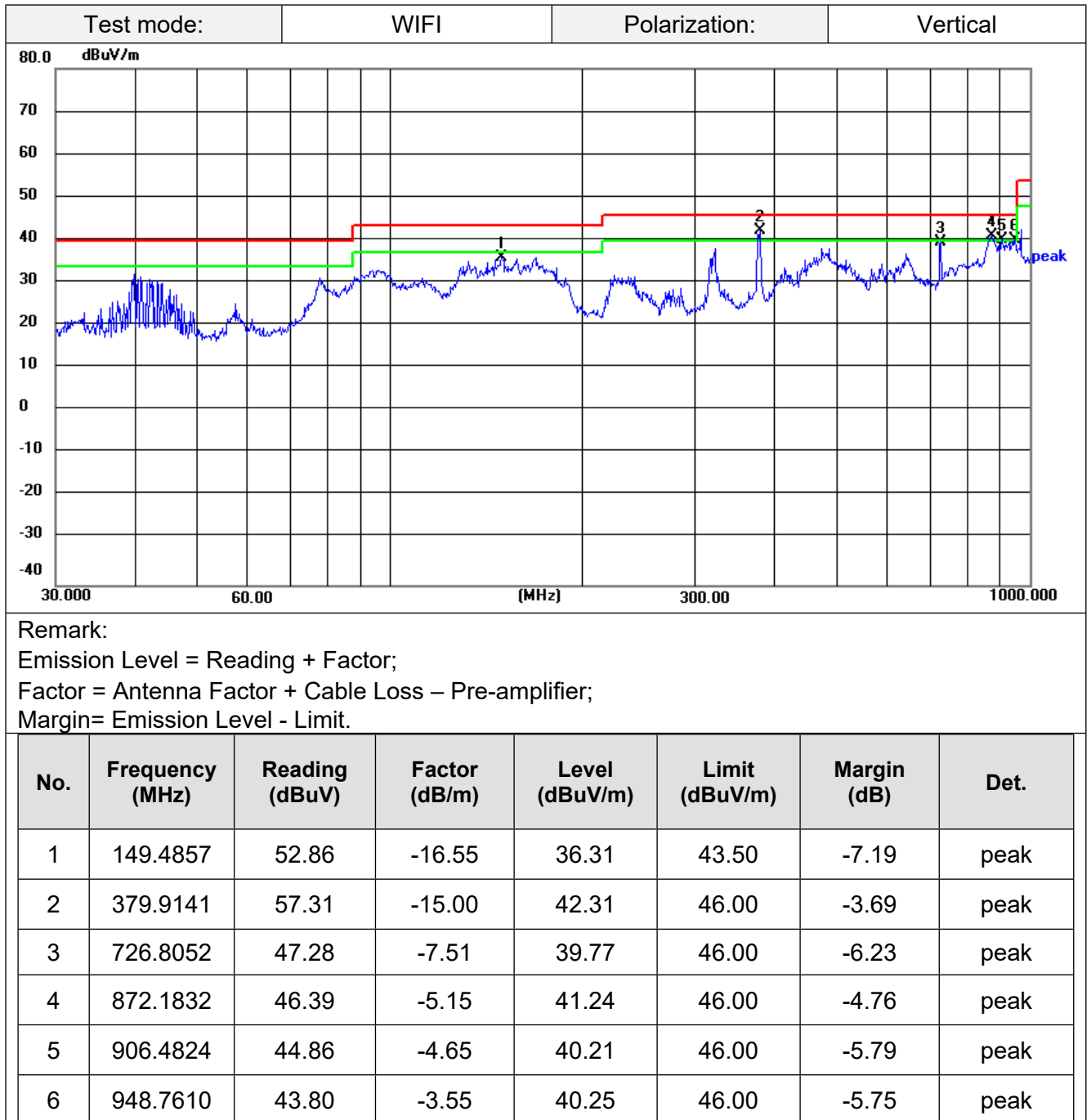
Remark:

Emission Level = Reading + Factor;

Factor = Antenna Factor + Cable Loss – Pre-amplifier;

Margin= Emission Level - Limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	157.5586	55.02	-16.54	38.48	43.50	-5.02	peak
2	379.9141	56.31	-15.00	41.31	46.00	-4.69	peak
3	726.8052	49.86	-7.51	42.35	46.00	-3.65	peak
4	878.3214	46.19	-5.08	41.11	46.00	-4.89	peak
5	916.0684	43.72	-4.40	39.32	46.00	-6.68	peak
6	958.7943	42.47	-3.48	38.99	46.00	-7.01	peak



For above 1GHz

Remark: All WIFI operation modes have been tested for above 1GHz test, only the worst case 802.11a mode was recorded as below:

U-NII band 4 @ 802.11a mode (above 1GHz)

Tested Channel	Frequency (MHz)	Meter Reading (dBμV)	Factor (dB/m)	Emission Level (dBμV/m)	Limit (dBuV/m)	Margin (dB)	ANT Pol	Detector Mode
169 (5845MHz)	11690.00	52.12	3.80	55.92	68.20	-12.28	V	PK
	11690.00	42.14	3.80	45.94	54.00	-8.06	V	AV
	--	--	--	--	--	--	--	--
173 (5865MHz)	11730.00	53.05	3.95	57.00	68.20	-11.20	V	PK
	11730.00	43.02	3.95	46.97	54.00	-7.03	V	AV
	--	--	--	--	--	--	--	--
177 (5885MHz)	11770.00	52.20	4.42	56.62	68.20	-11.58	V	PK
	11770.00	42.90	4.42	47.32	54.00	-6.68	V	AV
	--	--	--	--	--	--	--	--

Tested Channel	Frequency (MHz)	Meter Reading (dBμV)	Factor (dB/m)	Emission Level (dBμV/m)	Limit (dBuV/m)	Margin (dB)	ANT Pol	Detector Mode
169 (5845MHz)	11690.00	52.44	3.80	56.24	68.20	-11.96	H	PK
	11690.00	43.61	3.80	47.41	54.00	-6.59	H	AV
	--	--	--	--	--	--	--	--
173 (5865MHz)	11730.00	51.81	3.95	55.76	68.20	-12.44	H	PK
	11730.00	41.33	3.95	45.28	54.00	-8.72	H	AV
	--	--	--	--	--	--	--	--
177 (5885MHz)	11770.00	52.05	4.42	56.47	68.20	-11.73	H	PK
	11770.00	41.51	4.42	45.93	54.00	-8.07	H	AV
	--	--	--	--	--	--	--	--

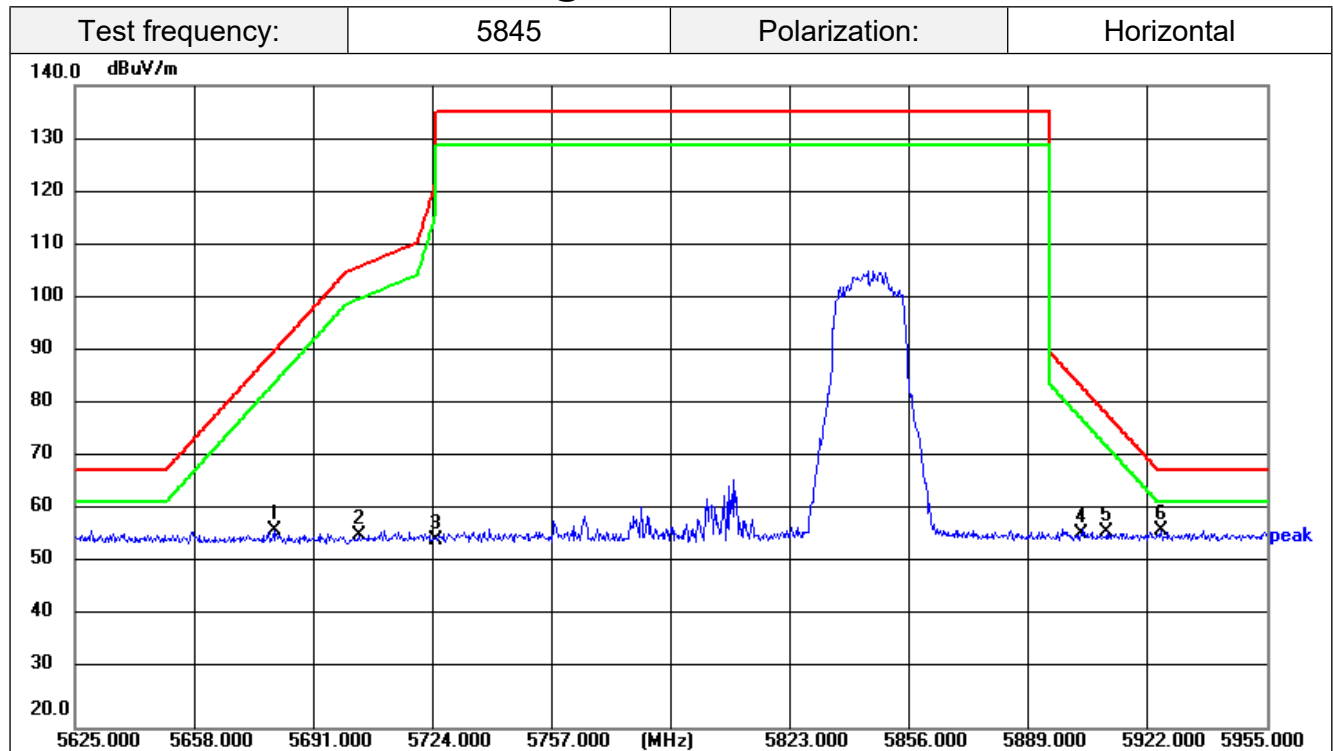
REMARKS:

1. Emission level (dBuV/m) =Meter Reading(dBuV)+ Factor (dB/m)
2. Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor
3. Margin value = Emission level- Limit value.
4. --Other emission levels are attenuated 20dB below the limit and not recorded in report.
5. RBW1MHz VBW3MHz Peak detector is for PK value; RBW 1MHz VBW10Hz Peak detector is for AV value.

Band Edge Test Plots of U-NII 4

Remark: All WIFI operation modes have been tested for above 1GHz test, only the worst case 802.11ax20 MIMO mode was recorded as below:

U-NII 4 @ 802.11ax20 MIMO mode



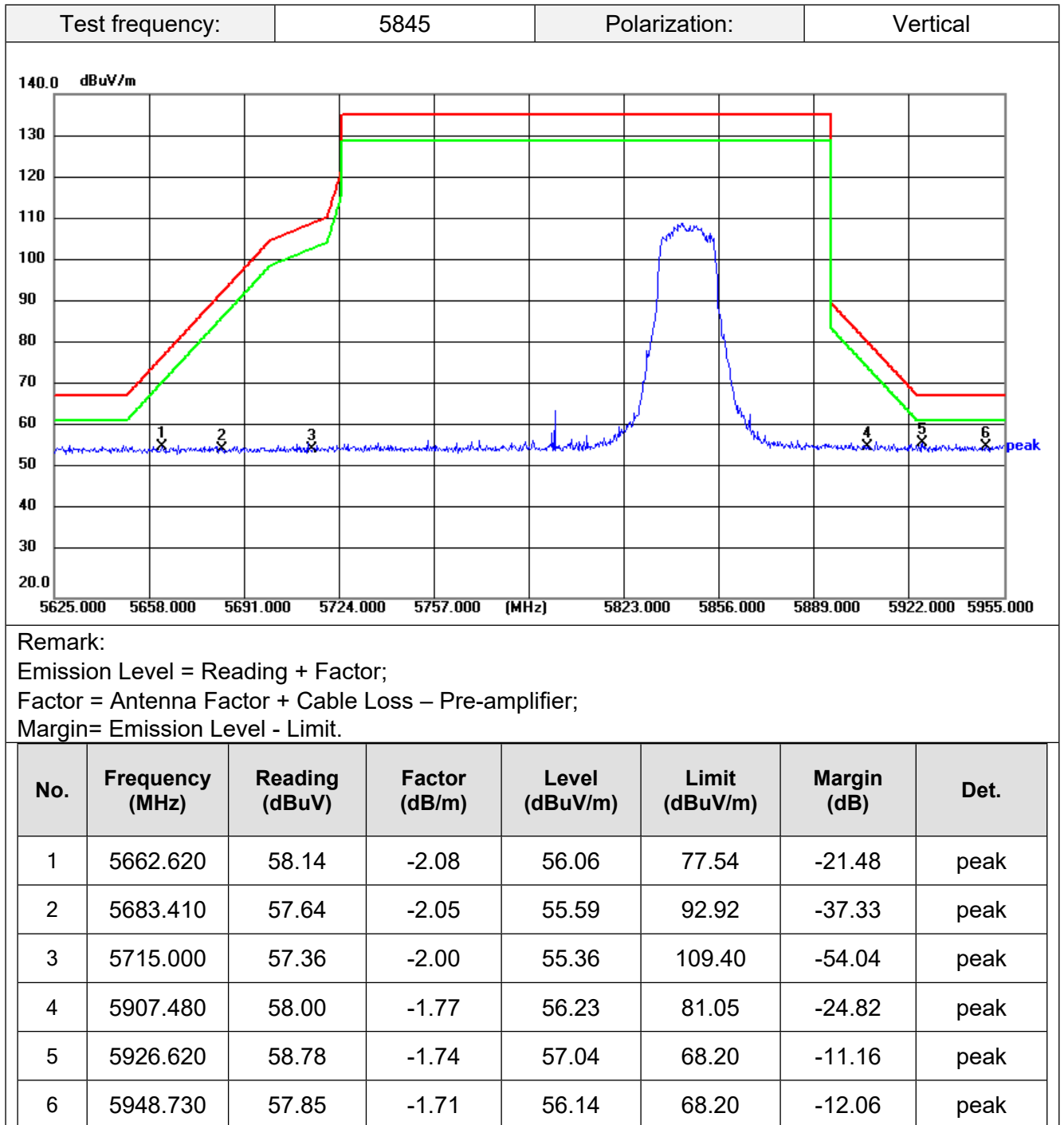
Remark:

Emission Level = Reading + Factor;

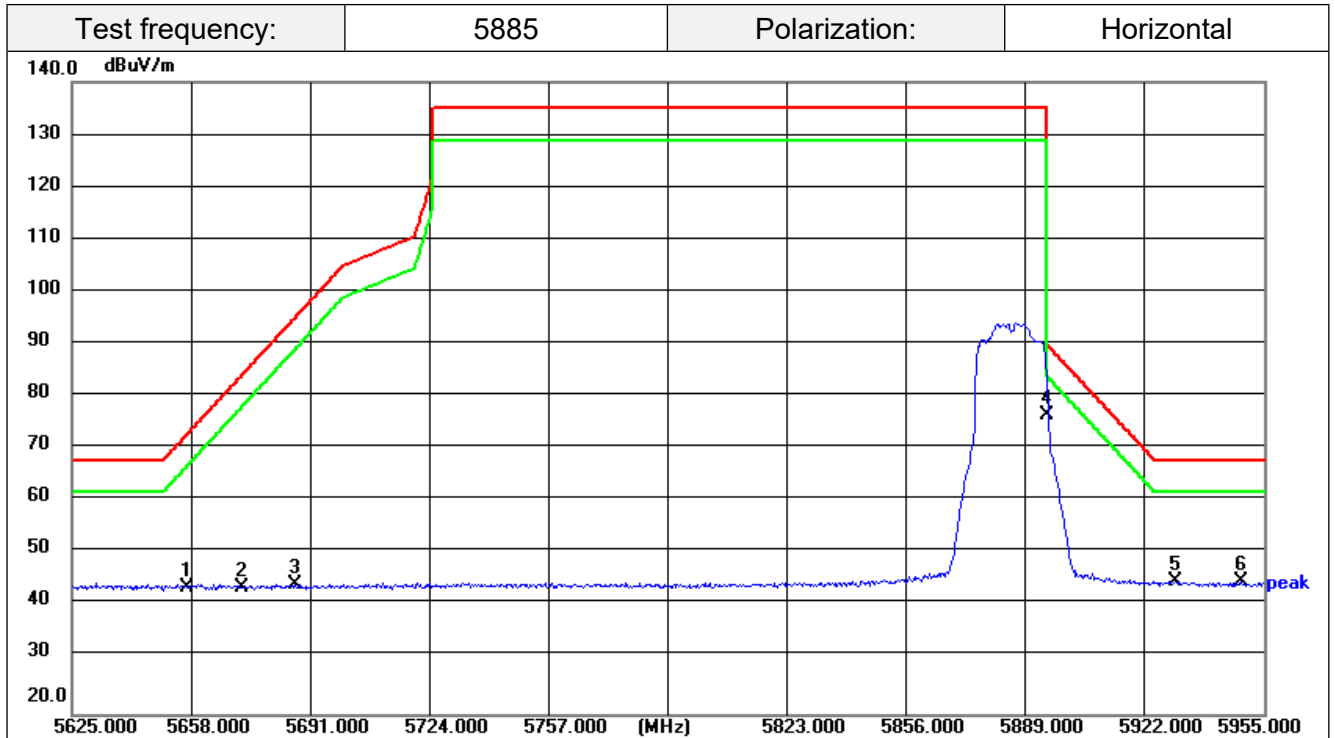
Factor = Antenna Factor + Cable Loss – Pre-amplifier;

Margin= Emission Level - Limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	5680.110	58.98	-2.05	56.93	90.48	-33.55	peak
2	5703.540	58.22	-2.03	56.19	106.19	-50.00	peak
3	5725.000	57.32	-1.99	55.33	122.20	-66.87	peak
4	5903.520	58.23	-1.78	56.45	83.95	-27.50	peak
5	5910.780	58.48	-1.76	56.72	78.63	-21.91	peak
6	5925.630	58.71	-1.74	56.97	68.20	-11.23	peak



U-NII 4 @ 802.11ax20 MIMO mode



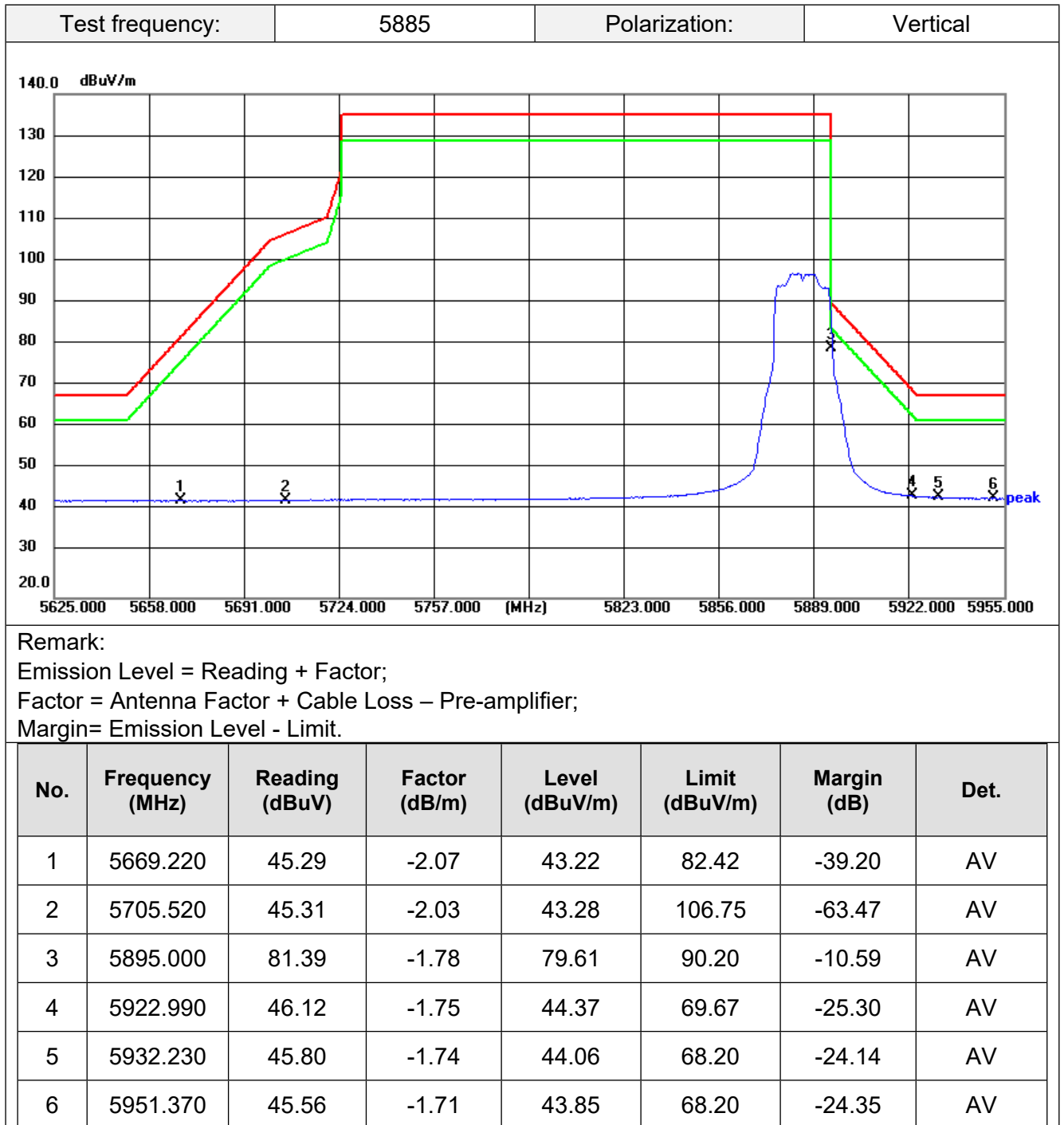
Remark:

Emission Level = Reading + Factor;

Factor = Antenna Factor + Cable Loss – Pre-amplifier;

Margin= Emission Level - Limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	5657.010	46.23	-2.09	44.14	73.39	-29.25	AV
2	5671.860	46.42	-2.07	44.35	84.38	-40.03	AV
3	5686.710	46.78	-2.05	44.73	95.37	-50.64	AV
4	5895.000	78.58	-1.78	76.80	90.20	-13.40	AV
5	5930.580	47.16	-1.74	45.42	68.20	-22.78	AV
6	5948.730	46.99	-1.71	45.28	68.20	-22.92	AV



3.3 Maximum Conducted Average Output Power

Limit

CFR 47 FCC Part15, Subpart E	
Test Item	Limit
Conducted Output Power	☐ For an indoor access point operating in the 5.850-5.895 GHz band, the maximum e.i.r.p. over the frequency band of operation must not exceed 36 dBm. Indoor access points operating on a channel that spans the 5.725-5.850 GHz and 5.850-5.895 GHz bands must not exceed an e.i.r.p. of 36 dBm.
	☒ For client devices operating under the control of an indoor access point in the 5.850-5.895 GHz band, the maximum e.i.r.p. over the frequency band of operation must not exceed 30 dBm. Client devices operating on a channel that spans the 5.725-5.850 GHz and 5.850-5.895 GHz bands must not exceed an e.i.r.p. of 30 dBm.
	☐ For a subordinate device operating under the control of an indoor access point in the 5.850-5.895 GHz band, the maximum e.i.r.p. over the frequency band of operation must not exceed 36 dBm.

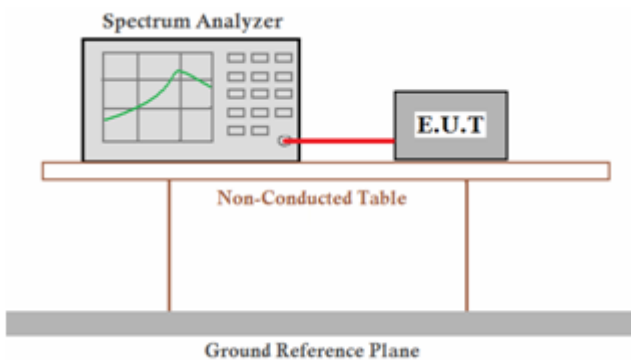
Test Procedure

Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the Spectrum Analyzer. Place the EUT on the table and set it in transmitting mode.

Method AVGSA-2 description in ANSI C63.10-2020 12.4.2.4 is used for Duty cycle constant (variations are less than $\pm 2\%$) condition.

Method AVGSA-3 description in ANSI C63.10-2020 12.4.2.6 is used for Duty cycle nonconstant (variations are greater than $\pm 2\%$) condition.

Test Configuration



Test Results

☒ Pass ☐ Not Applicable

Note:

For test data, please refer to Appendix RF test data for 5G WIFI.

3.4 Power Spectral Density

Limit

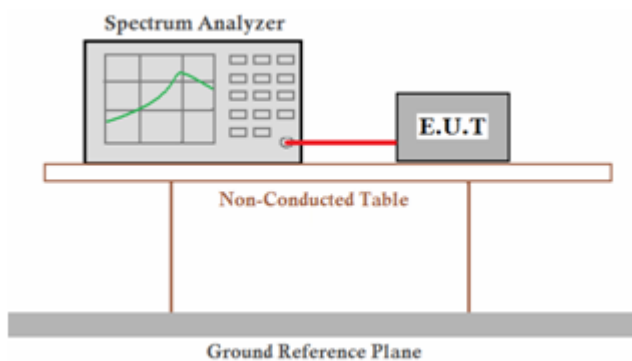
CFR 47 FCC Part15, Subpart E		
Test Item	Limit	Frequency Range (MHz)
Power Spectral Density	☐ For an indoor access point operating in the 5.850-5.895 GHz band, the maximum power spectral density must not exceed 20 dBm e.i.r.p. in any 1-megahertz band.	
	☒ For client devices operating under the control of an indoor access point in the 5.850-5.895 GHz band, the maximum power spectral density must not exceed 14 dBm e.i.r.p. in any 1-megahertz band.	
	☐ For a subordinate device operating under the control of an indoor access point in the 5.850-5.895 GHz band, the maximum power spectral density must not exceed 20 dBm e.i.r.p in any 1-megahertz band.	

Test Procedure

Use the same procedure used for Maximum Conducted Average Output Power measurement with follow setting change.

1. Set the RBW = 300KHz.
2. Set the VBW $\geq 3 \times$ RBW.
3. Use the peak search function on the instrument to find the peak of the spectrum.

Test Configuration



Test Results

☒ Pass ☐ Not Applicable

Note:

For test data, please refer to Appendix RF test data for 5G WIFI.

3.5 Minimum Emission Bandwidth (6dBm Bandwidth)

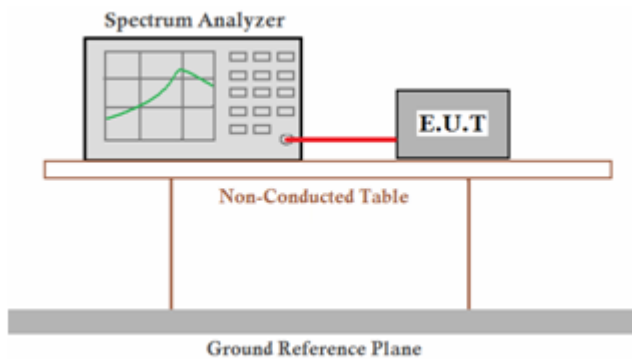
Limit

Within the 5.725-5.850 GHz and 5.850-5.895 GHz bands, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.

Test Procedure

1. Set resolution bandwidth (RBW) = 100 kHz
2. Set the video bandwidth 3 x RBW.
3. Detector = Peak.
4. Trace mode = Max hold.
5. Allow the trace to stabilize.
6. 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.

Test Configuration



Test Results

☒ Pass ☐ Not Applicable

Note:

For test data, please refer to Appendix RF test data for 5G WIFI.

3.6 Emission Bandwidth (26dBm Bandwidth)

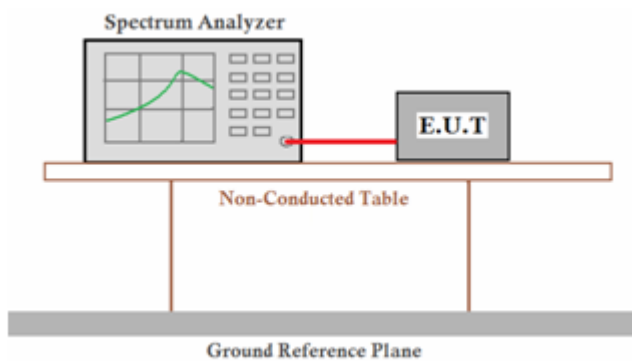
Limit

N/A

Test Procedure

1. Set resolution bandwidth (RBW) = approximately 1% to 5% of the EBW.
2. Set the video bandwidth (VBW) > RBW.
3. Detector = Peak.
4. Trace mode = Max hold.
5. Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW / EBW ratio is approximately 1% to 5%.

Test Configuration



Test Results

☐ Pass ☒ Not Applicable

3.7 Occupied Bandwidth

Limit

N/A

Test Procedure

The occupied bandwidth is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers are each equal to 0.5% of the total mean power of the given emission. The following procedure shall be used for measuring 99% power bandwidth:

RBW=1% to 5% of the OBW

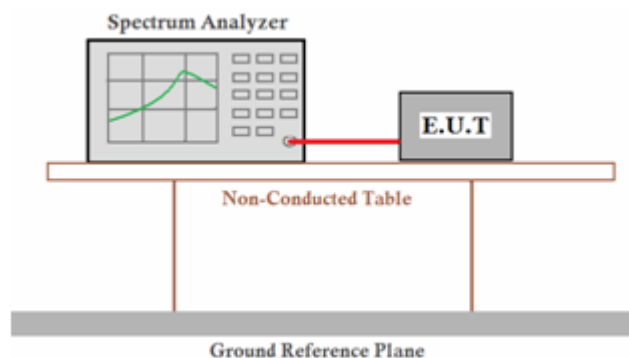
VBW=approximately 3 X RBW

Detector=Peak

Trace Mode: Max Hold

Use the 99% power bandwidth function of the instrument to measure the Occupied Bandwidth and recorded.

Test Configuration



Test Results

Passed

☒ Pass ☐ Not Applicable

Note:

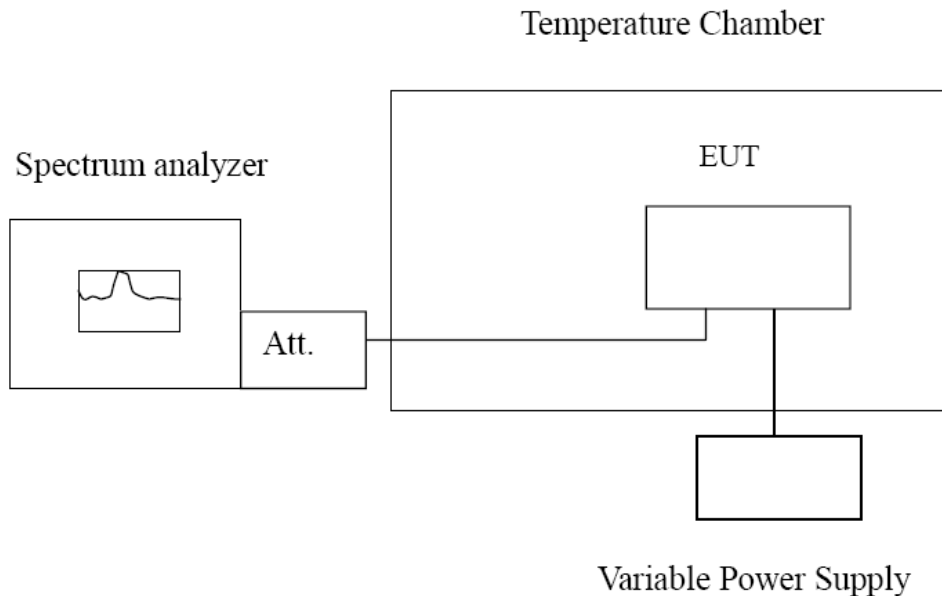
For test data, please refer to Appendix RF test data for 5G WIFI.

3.8 Frequency Stability

LIMIT

The frequency of the carrier signal shall be maintained within band of operation.

TEST CONFIGURATION



TEST PROCEDURE

Frequency Stability under Temperature Variations:

The equipment under test was connected to an external AC or DC power supply and input rated voltage. RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators. The EUT was placed inside the temperature chamber. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 20°C operating frequency as reference frequency. Turn EUT off and set the chamber temperature to -30°C. After the temperature stabilized for approximately 30 minutes recorded the frequency. Repeat step measure with 10°C increased per stage until the highest temperature of +50°C reached.

Frequency Stability under Voltage Variations:

Set chamber temperature to 20°C. Use a variable AC power supply / DC power source to power the EUT and set the voltage to rated voltage. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and recorded the frequency.

Reduce the input voltage to specify extreme voltage variation ($\pm 15\%$) and endpoint, record the maximum frequency change.

TEST RESULTS

☒ **Pass** ☐ **Not Applicable**

Note:

For test data, please refer to Appendix RF test data for 5G WIFI

3.9 Antenna Requirement

Standard Applicable

For intentional device, according to FCC 47 CFR Section 15.203:

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

Test Result:

The device used two 50Ω PIFA Antenna, the maximum gain of antenna 1 is 6.06dBi, antenna 2 is 3.67dBi and Directional gain 7.96dBi. There is no consideration of replacement the antenna.

4 Test Setup Photographs of EUT

Please refer to separated files for Test Setup Photos of the EUT.

5 External Photographs of EUT

Please refer to separated files for External Photos of the EUT.

6 Internal Photographs of EUT

Please refer to separated files for Internal Photos of the EUT.

***** **End of Report** *****