

TEST REPORT

Applicant : Shenzhen Zhimei Lihe Industrial Development Co., Ltd.
Address : Floor 5, Building C, Hengshunyuan Industrial Park, 6th Road, Building 1, Loucun Community, Xinhua Street, Shenzhen City, Guangdong Province, China
Manufacturer : Shenzhen Zhimei Lihe Industrial Development Co., Ltd.
Address : Floor 5, Building C, Hengshunyuan Industrial Park, 6th Road, Building 1, Loucun Community, Xinhua Street, Shenzhen City, Guangdong Province, China
Product Name : AI Intelligent skin analyzer (K33)
Model Number : ZMLH-K33
Trademark : N/A
FCC ID : 2BGPD-ZMLH-K33
Test Date : Apr. 01, 2026 to Apr. 10, 2026
Date of Report : Apr. 10, 2026
Test Result : This device described above has been tested by BKC, and the test results show that the equipment under test (EUT) is in compliance with the Standard requirements. And it is applicable only to the tested sample identified in the report.
Test Procedure Used:
Standards : FCC CFR47 Part 15 Section 15.407
ANSI C63.10:2020

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Approved (Manager):
Jerry Liao



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[illegible]

1. General Information

1.1. Description of Device (EUT)

EUT Name	: AI Intelligent skin analyzer (K33)
Model No.	: ZMLH-K33
Model Difference	: N/A
Power supply	: Input:AC 100-240V
Wi-Fi Specification	: IEEE 802.11a/n(20M)/n(40M)
Operation frequency	: IEEE 802.11a/n(20M): 5725MHz ~5850MHz/ 5 channel IEEE 802.11n(40M): 5755MHz ~5795MHz/ 2 channel
Max. RF output power:	: 4.82dBm
Modulation	: Orthogonal Frequency Division Multiplexing(OFDM)
Antenna Type	: FPC antenna, Maximum Gain is 3.03dBi
Device type	: Slave Device(without Radar Detection)

1.2. Channel List

U-NII-3 (5.725-5.85GHz)			
channel	Frequency(MHz)	channel	Frequency(MHz)
149	5745	151	5755
153	5765	155	5775
157	5785	159	5795
161	5805	165	5825

1.3. Summary of test result

RF PART		
Test Items	Test Requirement	Result
15.407(b), 15.209	Radiated Spurious Emission	PASS
15.207	Conducted Emission	PASS
15.407 (e)	99% and 6dB Bandwidth	PASS
15.407 (a)	Maximum Conducted Output Power	PASS
15.407(b), 15.205	Band Edge	PASS
15.407 (a)	Power Spectral Density	PASS
15.203	Antenna Requirement	PASS
Remark: N/A is an abbreviation for Not Applicable. Measurement Uncertainty is not taken into account for conformity statement Measurement-method usage KDB 789033 D02 General UNII Test Procedures New Rules v02r01		

1.4.Special Accessories and Auxiliary Equipment

Description	Manufacturer	Model No.	Hardware Version	Software Version
/	/	/	/	/

1.5.Test mode

The special RF test software was used to control EUT work in Continuous WIFI TX mode, and select test channel, wireless mode.

For 802.11a/n(HT20):

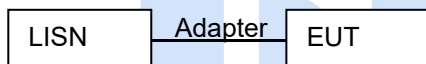
channel	Frequency(MHz)	channel	Frequency(MHz)
149	5745	157	5785
165	5825		

For 802.11n(HT40):

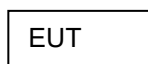
channel	Frequency(MHz)	channel	Frequency(MHz)
151	5755	159	5795

1.6.Block Diagram

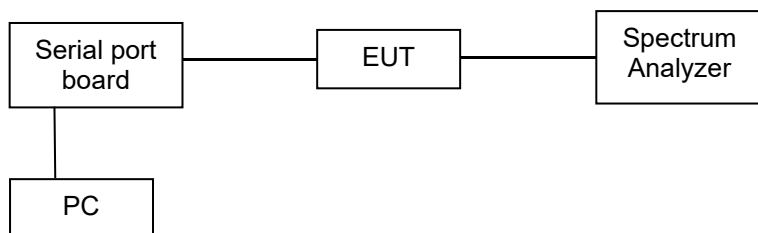
AC Power Line Conducted Emission



Radiated Emission



RF Conducted Test



1.7.Test Conditions

Category	Normal Conditions	Extreme Conditions
Temperature range	15-35℃	N/A
Humidity range	20-75%	N/A
Pressure range	86-106kPa	N/A

Power supply	AC 100-240V	N/A
Note: N/A is an abbreviation for Not Applicable.		

1.8.Measurement Uncertainty (95% confidence levels, k=2)

Item	MU	Remark
Uncertainty for radio frequency	$\pm 7 \times 10^{-8}$	
Conducted Emissions (150kHz~30MHz)	$\pm 2.54\text{dB}$	
Radiated Emission(9KHz~30MHz)	$\pm 1.6 \text{ dB}$	
Radiated Emission(30MHz~1GHz)	Vertical: $\pm 4.14\text{dB}$ Horizontal: $\pm 4.25\text{dB}$	
Radiated Emission(1GHz~6GHz)	$\pm 3.9\text{dB}$	
Radiated Emission(6GHz~18GHz)	$\pm 4.3\text{dB}$	
Radiated Emission(18GHz~40GHz)	$\pm 3.38\text{dB}$	
Uncertainty for conducted RF Power	$\pm 0.20\text{dB}$	
Conducted spurious emissions	$\pm 0.24\text{dB}$	
Uncertainty for temperature	0.6°C	
Uncertainty for humidity	1%	
Bandwidth	$\pm 1.5 \times 10^{-6}$	
Time	$\pm 2\%$	
Duty Cycle	$\pm 2\%$	
Remark: The coverage Factor (k=2), and measurement Uncertainty for a level of Confidence of 95%		

1.9.Test Facility

Site Description	
Name of Firm	: Shenzhen BKC Testing Co., Ltd.
Site Location	: Room 103, 1/F, Huaya Building, Huaya Industrial Park, Longhua Community, Longhua District, Shenzhen, Guangdong, China.
ISED CAB identifier	: CN0188
ISED Company Number	: 34333
FCC Designation Number	: CN1416
FCC Test Firm Registration Number	: 701543

1.10.Test Equipment

Conducted Test Site

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
1	LISN	R&S	ENV216	102762	Mar. 10. 2026	Mar. 09. 2027
2	EMI Test Receiver	R&S	ESCI	101424	Mar. 10. 2026	Mar. 09. 2027



3	Rf cables	HTEC	HCE 2M-CE	N/A	Mar. 10. 2026	Mar. 09. 2027
4	Coupling/ Decoupling Network	Diamond	CX210	N/A	Mar. 10. 2026	Mar. 09. 2027
5	CE Testing software	EZ	EZ-EMC	/	/	/

Radiated Test Site(Below 1G and Above 1G)

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
1	Antenna	Schwarzbeck	VULB 9168	01321	Mar. 20. 2025	Mar. 19. 2028
2	EMI Test Receiver	R&S	ESRP	101478	Mar. 10. 2026	Mar. 09. 2027
3	Preamplifier	HP	8447D	2727A05345	Mar. 10. 2026	Mar. 09. 2027
4	Double Ridged Broadband	SCHWARZBEC K	BBHA 9120D	02621	Mar. 10. 2025	Mar. 19. 2028
5	Preamplifier	Schwarzbeck	BBV 9718D	00041	Mar. 10. 2026	Mar. 09. 2027
6	Rf cables	HUBER+SUHNE R	8M-RE	N/A	Mar. 10. 2026	Mar. 09. 2027
7	Rf cables	HUBER+SUHNE R	1.5M-RE	N/A	Mar. 10. 2026	Mar. 09. 2027
8	Rf cables	HUBER+SUHNE R	1.5M-AP-RE	N/A	Mar. 10. 2026	Mar. 09. 2027
9	Loop antenna	TESEQ	HLA6121	58357	Mar. 09. 2026	Mar. 10. 2027
10	Spectrum analyzer	R&S	FSP40	200061	Mar. 09. 2026	Mar. 10. 2027
11	Double Ridged Broadband Horn Antenna	COM-POWER	AH-1840	10100009	Mar. 10. 2026	Mar. 09. 2027
12	Spectrum	Agilent	N9020A	MY50510311	Mar. 10. 2026	Mar. 09. 2027
13	RE Testing software	EZ	EZ-EMC	/		/

RF Test Site

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
1	Spectrum	Agilent	N9020A	MY50510311	Mar. 10. 2026	Mar. 09. 2027
2	Vector source	Agilent	N5182A	MY47420223	Mar. 10. 2026	Mar. 09. 2027
3	All instrument	Rohde & Schwarz	CMW 500	101131	Mar. 10. 2026	Mar. 09. 2027
4	RF Automatic Test System	TST	TSTRF562	MW200411BK -34	Mar. 09. 2026	Mar. 10. 2027
5	Spectrum analyzer	R&S	FSP40	200061	Mar. 10. 2026	Mar. 09. 2027

Test software

Software name	RF Testing software
Software version	2.0.0.0
Software name	RE Testing software
Software version	EMEC-03A2 RE+
Software name	CE Testing software
Software version	EMEC-3A1+



Software Configuration Version

Software name	sscom
Software version	5.3.1

Power setting

Channel	Power Level
Lowest	Default
Middle	Default
Highest	Default



2. Conducted emission at the mains terminals test

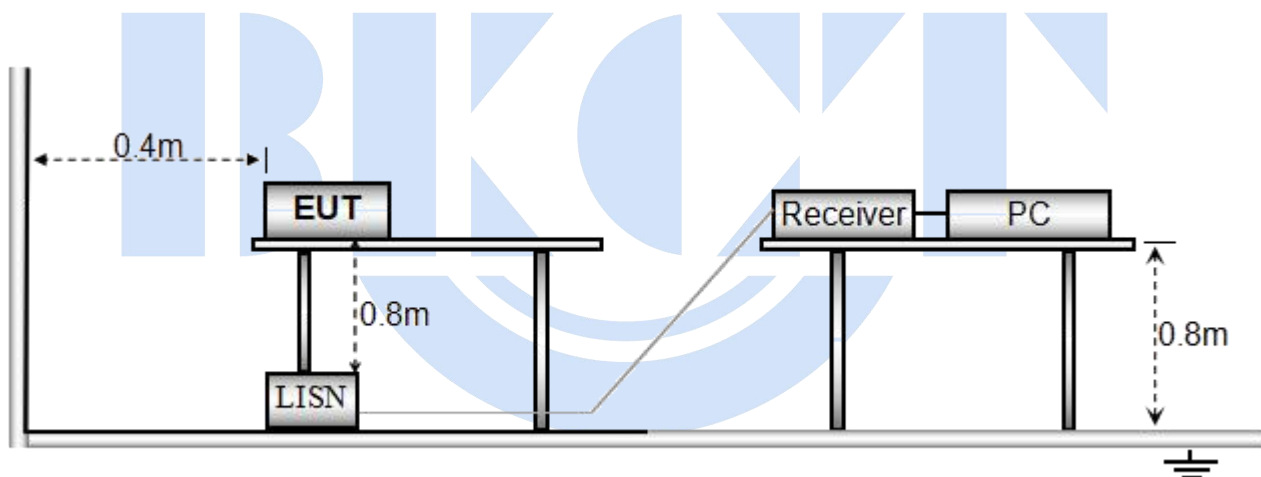
2.1.Limit

Test Requirement:	FCC Part15 C Section 15.207
Test Method:	ANSI C63.10:2020
Test Frequency Range:	150KHz to 30MHz
Receiver setup:	RBW=9KHz, VBW=30KHz, Sweep time=auto

Frequency MHz	Limits dB(μ V)	
	Quasi-peak Level	Average Level
0.15 ~ 0.50	66 ~ 56*	56 ~ 46*
0.50 ~ 5.00	56	46
5.00 ~ 30.00	60	50

Notes: 1. *Decreasing linearly with logarithm of frequency.
2. The lower limit shall apply at the transition frequencies.

2.2.Test Setup

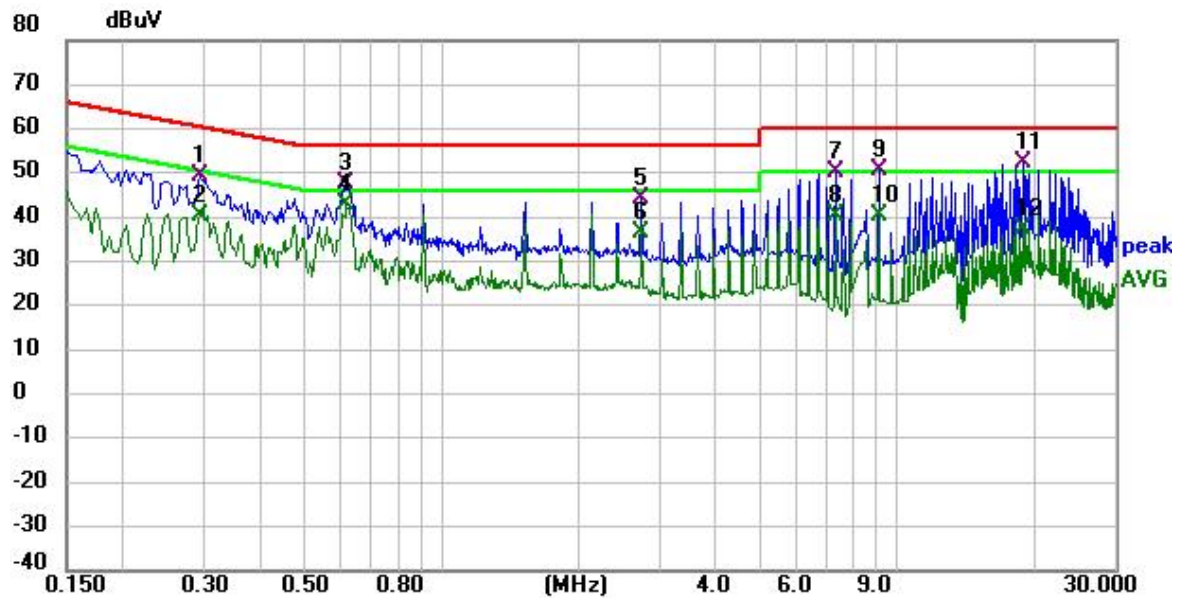


2.3.Test Procedure

1. The EUT was placed 0.1 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
2. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
3. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
4. LISN at least 80 cm from nearest part of EUT chassis.
5. For the actual test configuration, please refer to the related Item - EUT Test Photos.

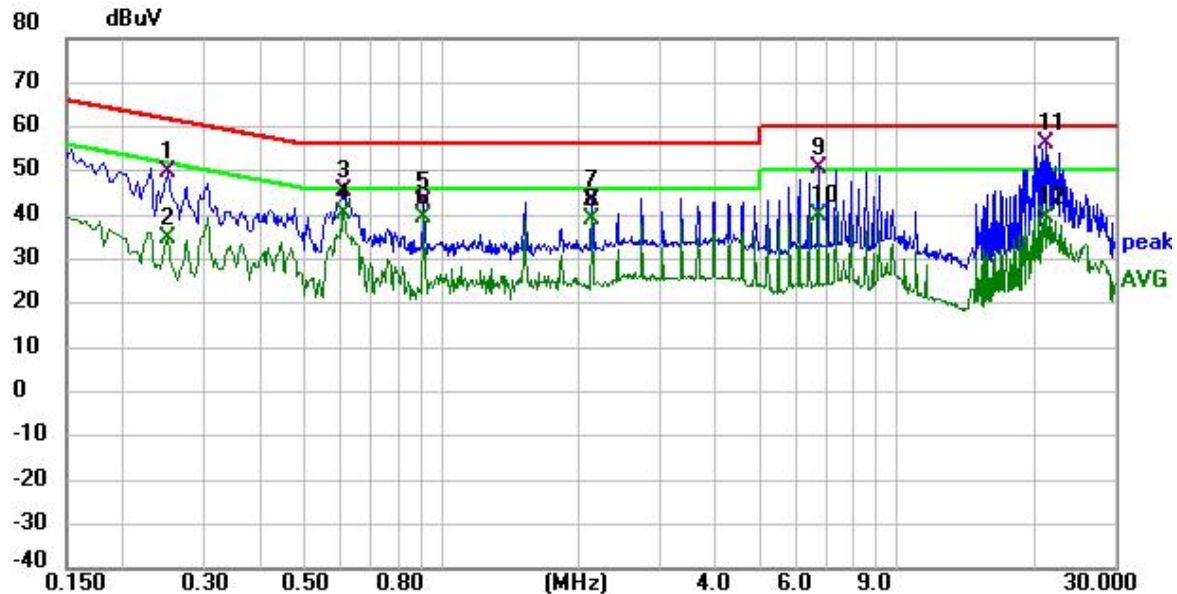
2.4.Test Result

Conducted Emission Test Data			
Temperature:	25.3℃	Relative Humidity:	55%
Pressure:	1008hPa	Phase :	L
Test Voltage :	AC 120V	Test Mode	Charging



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.2940	29.65	19.68	49.33	60.41	-11.08	QP
2	0.2940	20.78	19.68	40.46	50.41	-9.95	AVG
3	0.6180	27.75	19.80	47.55	56.00	-8.45	QP
4 *	0.6180	23.04	19.80	42.84	46.00	-3.16	AVG
5	2.7420	24.60	19.73	44.33	56.00	-11.67	QP
6	2.7420	16.64	19.73	36.37	46.00	-9.63	AVG
7	7.3100	30.35	19.77	50.12	60.00	-9.88	QP
8	7.3100	20.41	19.77	40.18	50.00	-9.82	AVG
9	9.1380	30.62	19.86	50.48	60.00	-9.52	QP
10	9.1380	20.62	19.86	40.48	50.00	-9.52	AVG
11	18.8940	32.64	19.89	52.53	60.00	-7.47	QP
12	18.8940	17.44	19.89	37.33	50.00	-12.67	AVG

Conducted Emission Test Data			
Temperature:	25.3°C	Relative Humidity:	55%
Pressure:	1008hPa	Phase :	N
Test Voltage :	AC 120V	Test Mode	Charging



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.2500	30.25	19.70	49.95	61.76	-11.81	QP
2	0.2500	15.00	19.70	34.70	51.76	-17.06	AVG
3	0.6100	25.84	19.78	45.62	56.00	-10.38	QP
4	0.6100	20.45	19.78	40.23	46.00	-5.77	AVG
5	0.9140	23.14	19.82	42.96	56.00	-13.04	QP
6	0.9140	19.75	19.82	39.57	46.00	-6.43	AVG
7	2.1340	23.56	19.91	43.47	56.00	-12.53	QP
8	2.1340	18.96	19.91	38.87	46.00	-7.13	AVG
9	6.7100	30.63	19.84	50.47	60.00	-9.53	QP
10	6.7100	19.89	19.84	39.73	50.00	-10.27	AVG
11 *	21.3580	36.59	19.77	56.36	60.00	-3.64	QP
12	21.3580	19.77	19.77	39.54	50.00	-10.46	AVG

Note: 1. Level = Reading + factor; Margin = Level - Limit

2. Have pre-scan all test channel, found CH149(802.11a) which it was worst case, so only show the worst case' s data on this report.

3. Radiated Spurious Emissions

3.1.Limit

Test Requirement: FCC CFR47 Part 15 Section 15.209 & 15.407
Test Method: KDB 558074 D01 15.247 Meas Guidance v05 August 24, 2018;
ANSI C63.10:2020
Test Result: PASS
Measurement Distance: 3m

Frequency	Detector	RBW	VBW	Value
9KHz-150KHz	Quasi-peak	200Hz	600Hz	Quasi-peak
150KHz-30MHz	Quasi-peak	9KHz	30KHz	Quasi-peak
30MHz-1GHz	Quasi-peak	100KHz	300KHz	Quasi-peak
Above 1GHz	Peak	1MHz	3MHz	Peak
	Peak	1MHz	10Hz	Average

Limit:

Frequency (MHz)	Field Strength		Field Strength Limit at 3m Measurement Dist	
	uV/m	Distance (m)	uV/m	dBuV/m
0.009 ~ 0.490	2400/F(kHz)	300	10000 * 2400/F(kHz)	20log(2400/F(kHz)) + 80
0.490 ~ 1.705	24000/F(kHz)	30	100 * 24000/F(kHz)	20log(24000/F(kHz)) + 40
1.705 ~ 30	30	30	100 * 30	20log(30) + 40
30 ~ 88	100	3	100	20log(100)
88 ~ 216	150	3	150	20log(150)
216 ~ 960	200	3	200	20log(200)
Above 960	500	3	500	20log(500)

Undesirable emission limits

The maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

- (1) 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.
- (2) 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.
- (3) 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.
- (4) For transmitters operating in the 5.725-5.85 GHz 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

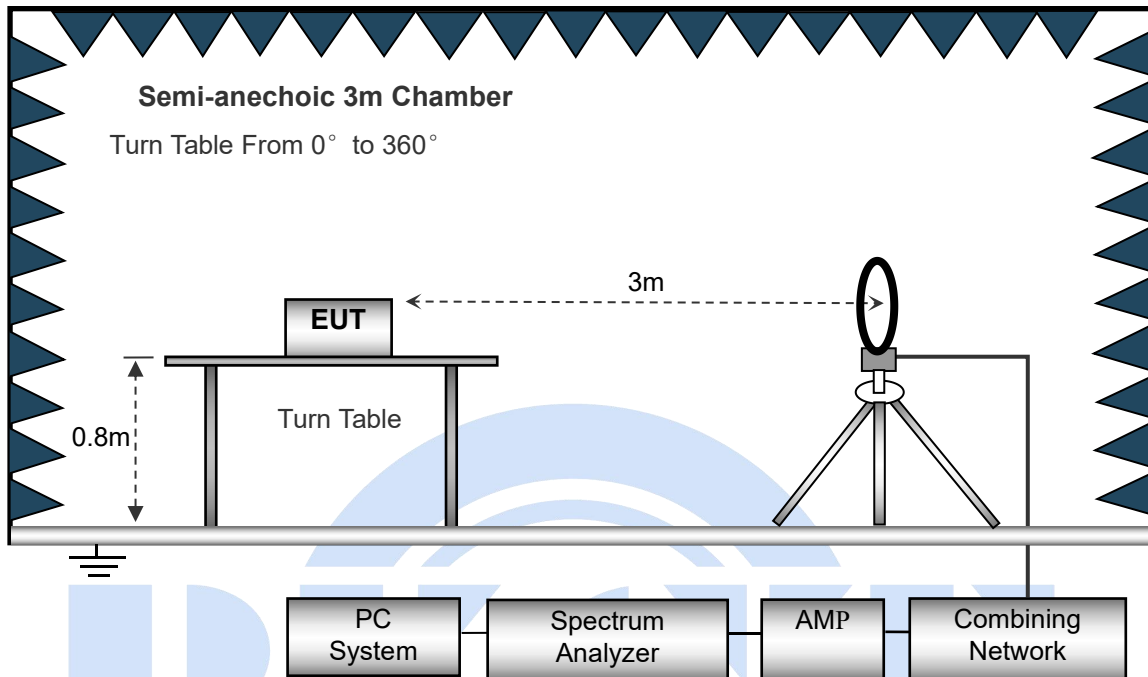
Requirement	Limit(EIRP)	Limit (Field strength at 3m)
15.407(b)(1)	PK:-27(dBm/MHz)	PK:68.2(dB μ V/m)
15.407(b)(2)		
15.407(b)(3)		
15.407(b)(4)		



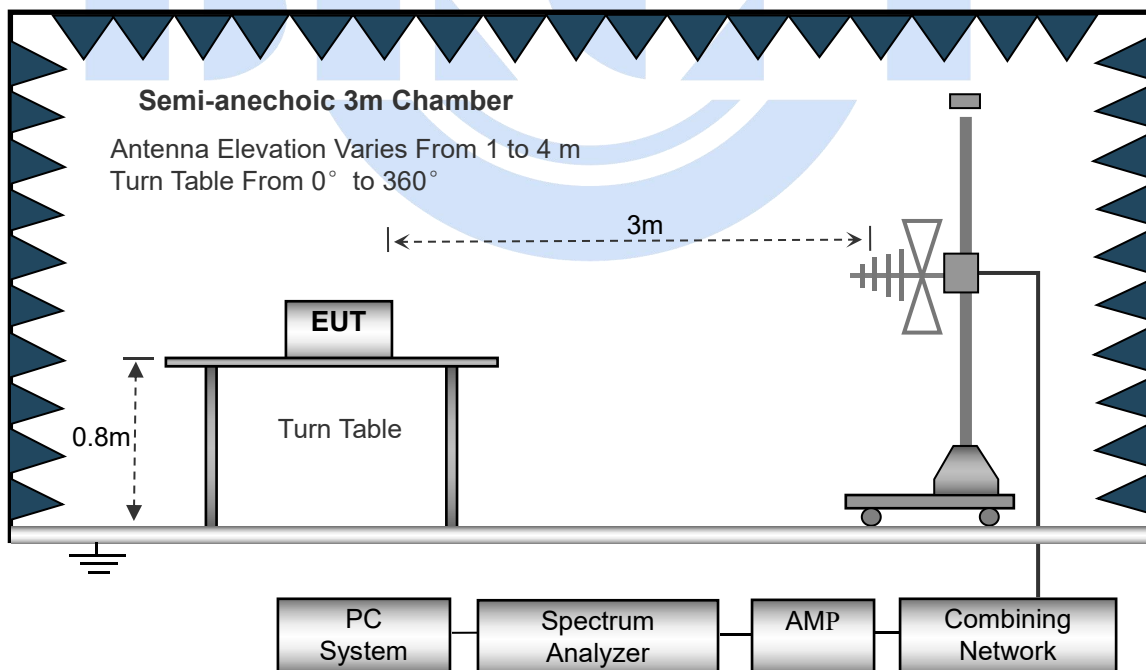
3.2. Test Setup

The radiated emission tests were performed in the 3m Semi- Anechoic Chamber test site, using the setup accordance with the ANSI C63.10.

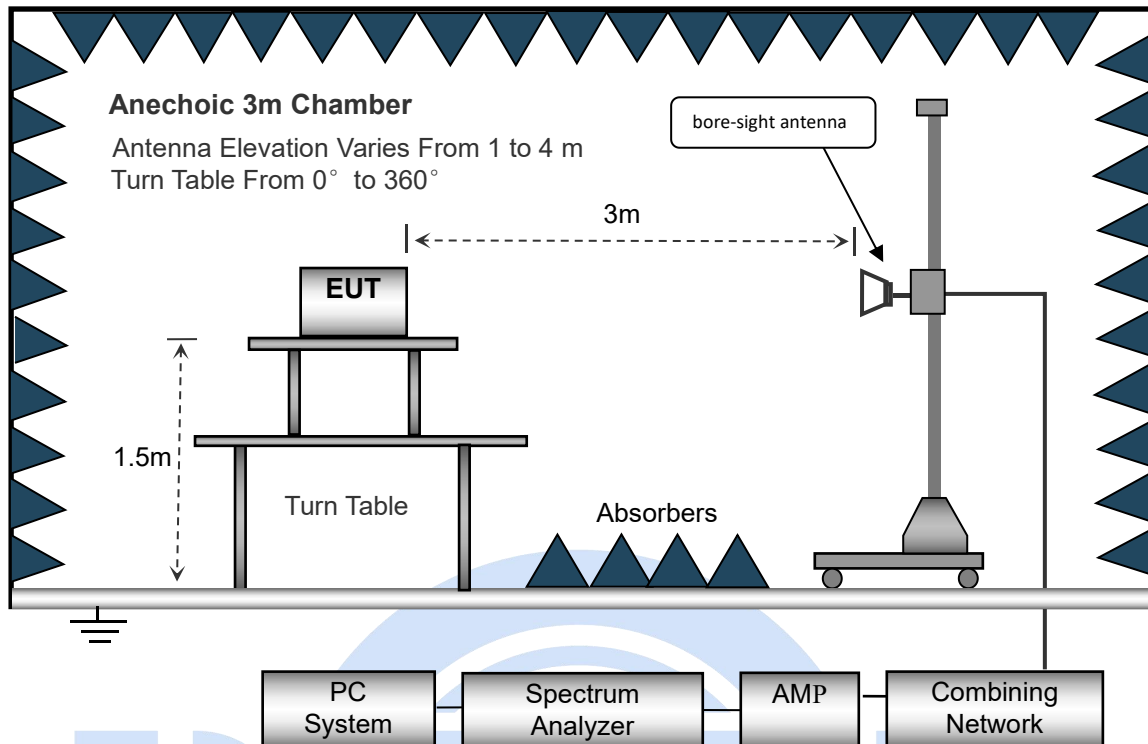
The test setup for emission measurement below 30MHz.



The test setup for emission measurement from 30 MHz to 1 GHz.



The test setup for emission measurement above 1 GHz.



3.3. Test Procedure

1. The EUT is placed on a turntable, which is 0.8m above ground plane for below 1GHz and 1.5m for above 1GHz.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is moved from 1m to 4m to find out the maximum emissions.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
6. Repeat above procedures until the measurements for all frequencies are complete.
7. The radiation measurements are performed in X,Y and Z axis positioning(X denotes lying on the table, Y denotes side stand and Z denotes vertical stand),the worst condition was tested putting the eut in Z axis,so the worst data were shown as follow.

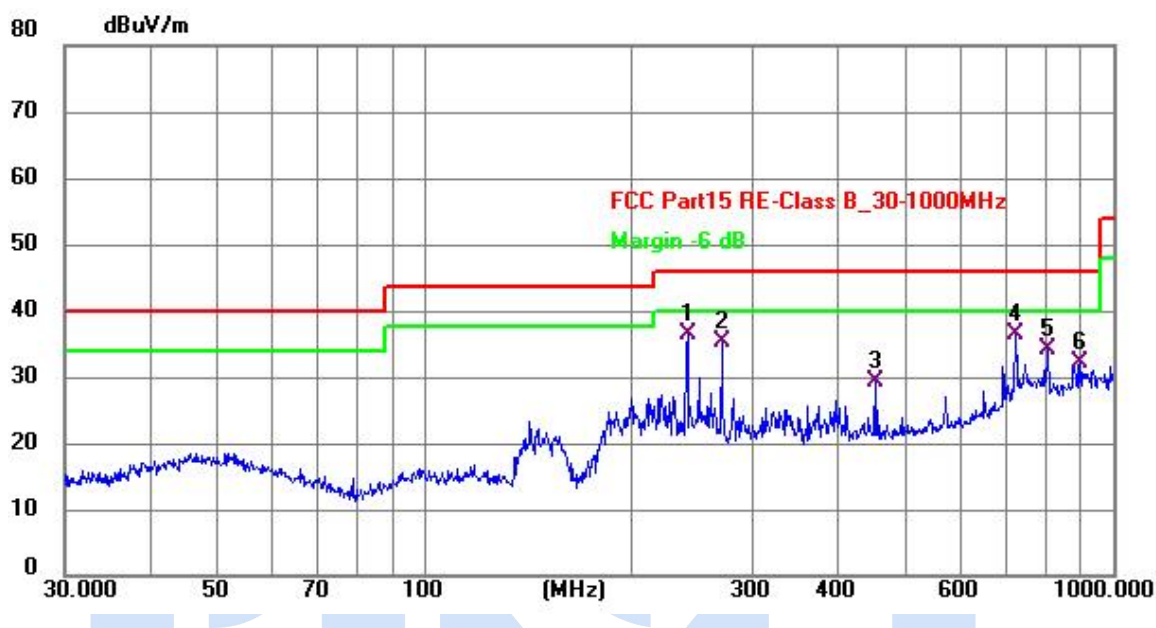
3.4. Test Result

Test Frequency: 9KHz~30MHz

The measurements were more than 20 dB below the limit and not reported.

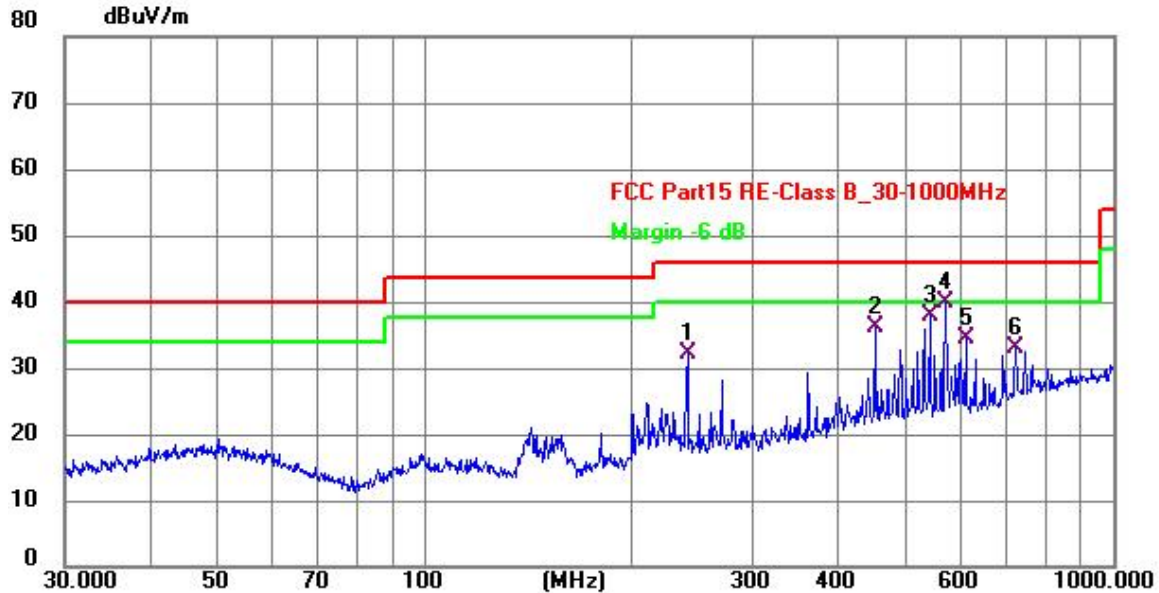
Test Frequency : 30MHz ~ 1GHz

Radiation Emission Test Data			
Temperature:	23.4℃	Relative Humidity:	58%
Pressure:	1008hPa	Phase :	Horizontal
Test Voltage :	AC 120V	Test Mode	802.11a CH149



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	240.8304	46.98	-10.60	36.38	46.00	-9.62	QP
2	270.3748	45.49	-10.14	35.35	46.00	-10.65	QP
3	451.1350	36.53	-7.35	29.18	46.00	-16.82	QP
4	721.7259	39.94	-3.44	36.50	46.00	-9.50	QP
5	804.6028	35.90	-1.70	34.20	46.00	-11.80	QP
6	896.9965	32.67	-0.50	32.17	46.00	-13.83	QP

Radiation Emission Test Data			
Temperature:	25.1°C	Relative Humidity:	56%
Pressure:	1008hPa	Phase :	Vertical
Test Voltage :	AC 120V	Test Mode	802.11a CH149



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	240.8304	42.84	-10.60	32.24	46.00	-13.76	QP
2	451.1350	43.50	-7.35	36.15	46.00	-9.85	QP
3	541.3725	44.43	-6.43	38.00	46.00	-8.00	QP
4	572.6144	45.90	-6.00	39.90	46.00	-6.10	QP
5	612.0642	39.16	-4.80	34.36	46.00	-11.64	QP
6	721.7259	36.31	-3.44	32.87	46.00	-13.13	QP

Note:

- 1.Level = Reading + factor; Margin = Level - Limit, Factor = Cable Loss+Amplifier Factor + Antenna Factor
- 2.Have pre-scan all test channel, found 802.11a CH149 which it was worst case, so only show the worst case' s data on this report.

U-NII-3 802.11a

Polar (H/V)	Frequency	Meter Reading	Pre-ampl ifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/ m)	(dB)	
Low Channel:5745MHz									
V	11490.00	51.45	30.55	5.77	24.66	51.33	68.2	-16.87	PK
V	17235.00	52.48	30.33	6.32	24.55	53.02	68.2	-15.18	PK
V	22980.00	52.91	30.85	7.45	24.69	54.20	68.2	-14.00	PK
V	28725.00	52.66	31.02	8.99	25.57	56.20	68.2	-12.00	PK
H	11490.00	51.78	30.55	5.77	24.66	51.66	68.2	-16.54	PK
H	17235.00	52.41	30.33	6.32	24.55	52.95	68.2	-15.25	PK
H	45960.00	53.88	30.85	7.45	24.69	55.17	68.2	-13.03	PK
H	28725.00	51.56	31.02	8.99	25.57	55.10	68.2	-13.10	PK

Polar (H/V)	Frequency	Meter Reading	Pre-ampl ifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/ m)	(dB)	
Middle Channel:5785MHz									
V	11570.00	51.49	30.55	5.77	24.66	51.37	68.2	-16.83	PK
V	17355.00	53.08	30.33	6.32	24.55	53.62	68.2	-14.58	PK
V	23140.00	52.47	30.85	7.45	24.69	53.76	68.2	-14.44	PK
V	28925.00	52.59	31.02	8.99	25.57	56.13	68.2	-12.07	PK
H	11570.00	54.43	30.55	5.77	24.66	54.31	68.2	-13.89	PK
H	17355.00	51.67	30.33	6.32	24.55	52.21	68.2	-15.99	PK
H	46280.00	52.81	30.85	7.45	24.69	54.10	68.2	-14.10	PK
H	28925.00	50.46	31.02	8.99	25.57	54.00	68.2	-14.20	PK

Polar (H/V)	Frequency	Meter Reading	Pre-ampli fier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detect or Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/ m)	(dB)	
High Channel:5825MHz									
V	11650.00	50.69	30.55	5.77	24.66	50.57	68.2	-17.63	PK
V	17475.00	50.73	30.33	6.32	24.55	51.27	68.2	-16.93	PK
V	23300.00	52.47	30.85	7.45	24.69	53.76	68.2	-14.44	PK
V	29125.00	52.60	31.02	8.99	25.57	56.14	68.2	-12.06	PK
H	11650.00	52.05	30.55	5.77	24.66	51.93	68.2	-16.27	PK
H	17475.00	53.58	30.33	6.32	24.55	54.12	68.2	-14.08	PK
H	46600.00	51.72	30.85	7.45	24.69	53.01	68.2	-15.19	PK
H	29125.00	50.50	31.02	8.99	25.57	54.04	68.2	-14.16	PK

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss - Pre-amplifier,
Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.
4. The worst mode is 802.11a, only the worst data is recorded.

Restrict Band EMISSION MEASUREMENT

U-NII-3

	Polar (H/V)	Frequenc y (MHz)	Meter Reading (dBuV)	Pre- amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB/m)	Emission level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det ect or Typ e	Result
802.11a	Low Channel: 5745MHz										
	H	5725	54.47	30.22	4.85	23.98	53.08	125.26	-72.18	PK	PASS
	H	5725	44.68	30.22	4.85	23.98	43.29	125.26	-81.97	AV	PASS
	H	5720	53.81	30.22	4.85	23.98	52.42	110.86	-58.44	PK	PASS
	H	5720	44.34	30.22	4.85	23.98	42.95	110.86	-67.91	AV	PASS
	V	5725	54.36	30.22	4.85	23.98	52.97	125.26	-72.29	PK	PASS
	V	5725	44.14	30.22	4.85	23.98	42.75	125.26	-82.51	AV	PASS
	V	5720	53.16	30.22	4.85	23.98	51.77	110.86	-59.09	PK	PASS
	V	5720	44.17	30.22	4.85	23.98	42.78	110.86	-68.08	AV	PASS
	High Channel: 5825MHz										
	H	5855	54.03	30.22	4.85	23.98	52.64	110.86	-58.22	PK	PASS
	H	5855	44.41	30.22	4.85	23.98	43.02	110.86	-67.84	AV	PASS
	H	5850	54.52	30.22	4.85	23.98	53.13	125.26	-72.13	PK	PASS
	H	5850	44.29	30.22	4.85	23.98	42.90	125.26	-82.36	AV	PASS
	V	5855	53.27	30.22	4.85	23.98	51.88	110.86	-58.98	PK	PASS
	V	5855	43.97	30.22	4.85	23.98	42.58	110.86	-68.28	AV	PASS
	V	5850	53.66	30.22	4.85	23.98	52.27	125.26	-72.99	PK	PASS
	V	5850	44.12	30.22	4.85	23.98	42.73	125.26	-82.53	AV	PASS

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier, Margin= Emission Level - Limit
2. . The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.
3. All the modes have tested and recorded the worst mode(802.11a) in the report

4. Maximum Output Power

4.1. Limit

According to FCC §15.407, KDB 789033 D02 General UNII Test Procedures New Rules v02r01

For an outdoor access point operating in the band 5.15–5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 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. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).

For the band 5.725–5.850 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W.

For Straddle Channel, According to KDB 789033 D02 General UNII Test Procedures New Rules v02r01, If the power and PSD of the devices are uniform and comply with the lower limits specified for the U-NII-2 bands, a single measurement over the entire emission bandwidth can be performed to show compliance.

4.2. Test Setup



4.3. Test Procedure

ANSI C63.10:2020

Method SA-1 uses trace averaging with the EUT transmitting at full power throughout each sweep. The procedure for this method is as follows:

- Set span to encompass the entire 99% OBW of the signal.
- Set RBW = 1 MHz.
- Set VBW ≥ 3 MHz.
- Number of points in sweep ≥ $[2 \times \text{span} / \text{RBW}]$. (This gives bin-to-bin spacing ≤ RBW / 2, so that narrowband signals are not lost between frequency bins.)
- Sweep time = auto.
- Detector = Power averaging (rms), if available. Otherwise, use sample detector mode.
- If transmit duty cycle < 98%, use a video trigger with the trigger level set to enable triggering only on full power pulses. The transmitter shall operate at maximum power control level for the entire duration of every sweep. If the EUT transmits continuously (i.e., with no OFF intervals) or at duty cycle ≥ 98%, and if each transmission is entirely at the maximum power control level, then the trigger shall be set to "free run."
- Trace average at least 100 traces in power averaging (rms) mode.
- Compute power by integrating the spectrum across the 99% OBW of the signal using the instrument's band-power measurement function, with band limits set equal to the OBW band-edges. If the instrument does not have a band-power function, then sum the spectrum levels (in power units) at 1 MHz intervals extending across the 99% OBW of the spectrum.

Method SA-2 uses trace averaging across ON and OFF times of the EUT transmissions, followed by duty cycle correction. The procedure for this method is as follows:

- Measure the duty cycle D of the transmitter output signal as described in 12.2.
- Set span to encompass the entire 99% OBW of the signal.
- Set RBW = 1 MHz.
- Set VBW ≥ 3 MHz.
- Number of points in sweep ≥ $[2 \times \text{span} / \text{RBW}]$. (This gives bin-to-bin spacing ≤ RBW / 2, so that narrowband signals are not lost between frequency bins.)

- f) Sweep time = auto.
- g) Detector = Power averaging (rms), if available. Otherwise, use sample detector mode.
- h) Do not use sweep triggering. Allow the sweep to "free run."
- i) Trace average at least 100 traces in power averaging (rms) mode; however, the number of traces to be averaged shall be increased above 100 as needed such that the average accurately represents the true average over the ON and OFF periods of the transmitter.
- j) Compute power by integrating the spectrum across the 99% OBW of the signal using the instrument's band-power measurement function with band limits set equal to the EBW or OBW band-edges. If the instrument does not have a band-power function, then sum the spectrum levels (in power units) at 1 MHz intervals extending across the 99% OBW of the spectrum.
- k) Add $[10 \log (1 / D)]$, where D is the duty cycle, to the measured power to compute the average power during the actual transmission times (because the measurement represents an average over both the ON and OFF times of the transmission). For example, add $[10 \log (1 / 0.25)] = 6 \text{ dB}$ if the duty cycle is 25%.

4.4. Test Result

Please see the attachment for WIFI 5G data.



5. -6dB Bandwidth and 99% Bandwidth Measurement

5.1.Limit

Test Standard	FCC Part15 C Section 15.407, KDB 789033 D02 General UNII Test Procedures New Rules v02r01
	The maximum power spectral density is measured as a conducted emission by direct connection of a calibrated test instrument to the equipment under test. If the device cannot be connected directly, alternative techniques acceptable to the Commission may be used. Measurements in the 5.725-5.85 GHz band, the minimum bandwidth 6 dB bandwidth of U-NII devices shall be at least 500KHz. Measurements in the 5.15-5.25 GHz, 5.25-5.35 GHz, and the 5.47-5.725 GHz bands are made over a bandwidth of 1 MHz or the 26 dB emission bandwidth of the device, whichever is less. A narrower resolution bandwidth can be used, provided that the measured power is integrated over the full reference bandwidth.

5.2.Test Setup



5.3.Test Procedure

-6dB Bandwidth

Set RBW = shall be in the range of 1% to 5% of the OBW but not less than 100 kHz

Set the VBW $\geq [3 \times \text{RBW}]$.

Detector = peak.

Trace mode = max hold.

Sweep= No faster than coupled (auto) time.

Allow the trace to stabilize.

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.

The following procedure shall be used for measuring (99 %) power bandwidth:

1. Set center frequency to the nominal EUT channel center frequency.
2. Set span = 1.5 times to 5 times the OBW.
3. Set RBW = 1 % to 5 % of the OBW
4. Set VBW $\geq 3 \cdot \text{RBW}$
5. Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max hold mode (until the trace stabilizes) shall be used.
6. Use the 99 % power bandwidth function of the instrument (if available).
7. If the instrument does not have a 99 % power bandwidth function, the trace data points are recovered and directly summed in power units. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5 % of the total is reached; that frequency is recorded as the lower frequency. The process is repeated until 99.5 % of the total is reached; that frequency is recorded as the upper frequency. The 99% occupied bandwidth is the difference between these two frequencies.

5.4. Test Result

Please see the attachment for WIFI 5G data.



6. Power Spectral density

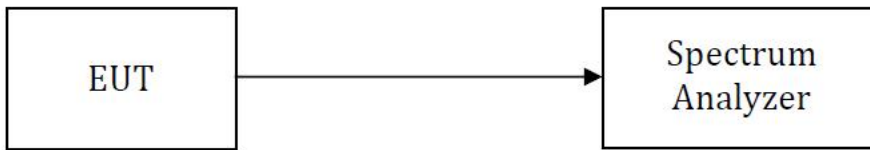
6.1.Limit

According to FCC § 15.407(3), KDB 789033 D02 General UNII Test Procedures New Rules v02r01

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. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.



6.2. Test Setup



6.3. Test Procedure

1. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above,
2. The testing follows FCC KDB 789033 D02.
3. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to Spectrum.
4. For U-NII1, U-NII-2A, U-NII-2C Band:
Set RBW=1MHz, VBW=3MHz, where span is enough to capture the entire bandwidth, Sweep time = Auto (601 pts), detector = sample, traces 100 sweeps of video averaging. (SA-2 with the omission of procedure x, the integration with 26dB EBW bandwidth)
For U-NII-3 Band:
Set RBW=300 kHz, $VBW \geq 3 \times RBW$, where span is enough to capture the entire bandwidth, Sweep time = Auto, detector = detector(rms) or sample, traces 100 sweeps of video averaging. (SA-2 with the omission of procedure x, the integration with 26dB EBW bandwidth)
5. Use the cursor on spectrum to peak search the highest level of trace
6. Record the max. reading and add $10 \log(1/\text{duty cycle})$.

6.4. Test Result

Please see the attachment for WIFI 5G data.

7. Unwanted Emissions In Restricted Frequency Bands and Spurious Emission

7.1.Limit

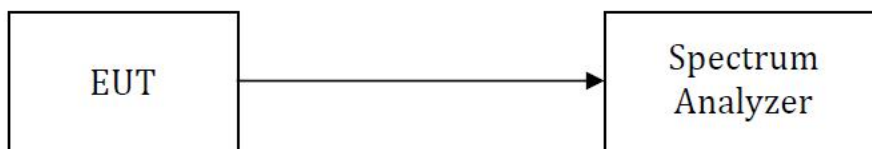
According to FCC §15.407(b)

Undesirable emission limits. Except as shown in paragraph (b)(7) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

(1) 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.

(2) For transmitters operating in the 5.725-5.85 GHz band: All emissions within the frequency range from the band edge to 10 MHz above or below the band edge shall not exceed an e.i.r.p. of -17 dBm/MHz; for frequencies 10 MHz or greater above or below the band edge, emissions shall not exceed an e.i.r.p. of -27 dBm/MHz.

7.2.Test Setup



7.3.Test Procedure

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range.
3. Set RBW of spectrum analyzer to 1 MHz with a convenient frequency span.
4. Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.
5. Repeat above procedures until all measured frequencies were complete.

7.4.Test Result

Please see the attachment for WIFI 5G data.

8. Antenna Requirement

Test Standard	FCC Part15 Section 15.203
Requirement	1) 15.203 requirement: An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of 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. For expediting the testing, measurements may be performed using only the antenna with highest gain of each combination of transmitter and antenna type, with the transmitter output power set at the maximum level. However, the transmitter shall comply with the applicable requirements under all operational conditions and when in combination with any type of antenna from the list provided in the test report (and in the notice to be included in the user manual, provided below). When measurements at the antenna port are used to determine the RF output power, the effective gain of the device's antenna shall be stated, based on a measurement or on data from the antenna's manufacturer. The test report shall state the RF power, output power setting and spurious emission measurements with each antenna type that is used with the transmitter being tested. For licence-exempt equipment with detachable antennas, the user manual shall also contain the following notice in a conspicuous location: This radio transmitter [enter the device's ISSED certification number] has been approved by Innovation, Science and Economic Development Canada to operate with the antenna types listed below, with the maximum permissible gain indicated. Antenna types not included in this list that have a gain greater than the maximum gain indicated for any type listed are strictly prohibited for use with this device. Immediately following the above notice, the manufacturer shall provide a list of all antenna types which can be used with the transmitter, indicating the maximum permissible antenna gain (in dBi) and the required impedance for each antenna type.
Antenna Connected Construction	The antenna is FPC Antenna which permanently attached, and the best case gain of the antenna is 3.03 dBi(WIFI 5.8G). It complies with the standard requirement.

Test Photographs

Please see the attachment for Test Photographs.

Appendix I: Photos of the EUT

Please see the attachment for External Photographs and Internal Photographs

