

TEST REPORT

Application No. : KSCR2407001449AT
FCC ID: ROR2002
Applicant: Blinq Networks Inc.
Address of Applicant: 140 Renfrew Drive, Suite 200, Markham, L3R 6B3, Canada
Manufacturer: Blinq Networks Inc.
Address of Manufacturer: 140 Renfrew Drive, Suite 200, Markham, L3R 6B3, Canada
Factory: VVDN Technologies Private Limited
Address of Factory: Plot No: CP-07, Sector 8, IMT Manesar, Gurugram, Haryana
Equipment Under Test (EUT):
EUT Name: PCW-400i
Model No.: PCW-400i
Standards: FCC 47 CFR Part 15, Subpart E 15.407
Date of Receipt: 2024-07-31
Date of Test: 2024-12-05 to 2024-12-26
Date of Issue: 2025-02-12

Test Result :**Pass***

*In the configuration tested, the EUT complied with the standards specified above.

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Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Revision Record			
Version	Description	Date	Remark
00	Original	2025-02-12	/

Authorized for issue by:			
Tested By		 Eric Liu /Project Engineer	
Approved By		 Terry Hou /Reviewer	

2 Test Summary

Test Item	FCC Rule No.	Test Requirements	Test Result	Result	Test Lab*
Antenna Requirement	15.203/15.407(a)	--	Clause 5.1	PASS	N/A
AC Power Line Conducted Emissions	15.407(b)(8)	< FCC 15.207 limits	Clause 5.2	PASS	A
Duty Cycle	--	No limit.	Clause 5.3	For Report Purpose	A
Maximum e.i.r.p.	15.407(a)(5)	< 30dBm over the frequency band of Operation, e.i.r.p.(Controlled by indoor AP)	Clause 5.4	PASS	A
26dB Emission Bandwidth	15.407(a)(10)	The maximum transmitter channel bandwidth for U-NII devices in the 5.925-7.125 GHz band is 320 megahertz.	Clause 5.5	PASS	A
99% Occupied Bandwidth	-	No limit.	Clause 5.6	For Report Purpose	A
Maximum Power Spectral Density	15.407(a)(5)	< 5dBm/MHz e.i.r.p.	Clause 5.7	PASS	A
In-Band Emissions	15.407(b)(5)	EUT must meet the limits detailed in 15.407(b)(6)	Clause 5.8	PASS	A
Contention Based Protocol	15.407(d)(6)	EUT must detect AWGN signal with 90% (or better) certainty	Clause 5.9	Note	A
Unwanted Emissions that fall Out of the Restricted Bands (Radiated)	15.407(b)(6) 15.205, 15.209	< -27dBm/MHz e.i.r.p. outside of the 5.925 - 7.125GHz band	Clause 5.10	PASS	B
Unwanted Emissions in the Restricted Bands (Radiated)	15.407(b)(6) 15.205, 15.209	Emissions in restricted bands must meet the radiated limits detailed in 15.209	Clause 5.11	PASS	B

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4 General Information

4.1 Details of E.U.T.

Power Supply:	DC 3.3-4.8V,Typ: 3.85V		
IEEE 802.11 WLAN Mode Supported:	☒ 802.11a (20 MHz channel bandwidth) ☒ 802.11ax/be (20 MHz channel bandwidth) ☒ 802.11ax/be (40 MHz channel bandwidth) ☒ 802.11ax/be (80 MHz channel bandwidth) ☒ 802.11ax/be (160 MHz channel bandwidth) ☒ 802.11be (320 MHz channel bandwidth)		
Operation Frequency:	IEEE 802.11 a/ax/be(HE20/40/80/160/320): 5925 MHz ~ 6425 MHz IEEE 802.11 a/ax/be(HE20/40/80/160/320): 6425 MHz ~ 6525 MHz IEEE 802.11 a/ax/be(HE20/40/80/160/320): 6525 MHz ~ 6875 MHz IEEE 802.11 a/ax/be(HE20/40/80/160/320): 6875 MHz ~ 7115 MHz		
Type of Modulation:	OFDM/OFDMA		
Antenna Type:	Metal Antenna		
Antenna Ports:	☒ Ant 1, ☒ Ant 2		
Smart System:	☒ SISO	802.11a/ax/be	
	☒ MIMO	802.11ax: 2Tx & 2Rx	
Antenna Gain:	ANT1: 6.8dBi, ANT2: 6.8dBi(Provided by the manufacturer) Directional Gain: Directional Gain=6.8dBi		
Remark: 1. As above information is provided and confirmed by the applicant. SGS is not liable to the accuracy, suitability, reliability or/and integrity of the information.			

4.2 Description of Support Units

Description	Manufacturer	Model No.	Serial No.
Notebook	ThinkPad	K27	EB24537645
POE	PROCET	PT-PSE106GBR-10	--

4.3 Power level setting using in test

Channel	802.11a		802.11ax(VHT20)		Channel	802.11ax(VHT40)	
	Ant 1	Ant 2	Ant 1	Ant 2		Ant 1	Ant 2
5955	11	11	7	7	5965	9	9
6175	11	11	7	7	6165	8	8
6415	12	12	9	9	6405	7	7
6435	12	12	8	8	6445	6	6
6475	12	12	8	8	6485	6	6
6515	12	12	8	8	6565	6	6
6535	11	11	7	7	6685	6	6
6695	11	11	7	7	6845	6	6
6855	12	12	8	8	6925	8	8
6895	11	11	7	7	7005	8	8
6995	11	11	7	7	7085	9	9
6875	12	12	7	7	6525	6	6
7095	11	11	7	7	6885	8	8
Channel	802.11ax(VHT80)		Channel	802.11ax(VHT160)			
	Ant 1	Ant 2		Ant 1	Ant 2		
5985	11	11	6025	15	15		
6145	11	11	6185	15	15		
6385	9	9	6345	15	15		
6465	8	8	6665	15	15		
6625	9	9	6985	15	15		
6705	9	9	6505	15	15		
6785	10	10	6825	15	15		
6945	12	12					
7025	13	13					
6545	10	10					
6865	10	10					

Channel	802.11be (EHT20)		Channel	802.11be (EHT40)		Channel	802.11be (EHT80)		Channel	802.11be (EHT160)	
	Ant 1	Ant 2		Ant 1	Ant 2		Ant 1	Ant 2		Ant 1	Ant 2
5955	8	8	5965	10	10	5985	13	13	6025	17	17
6175	8	8	6165	10	10	6145	13	13	6185	17	17
6415	10	10	6405	12	12	6385	13	13	6345	18	18
6475	10	10	6445	12	12	6465	13	13	6665	18	18
6515	10	10	6485	13	13	6625	14	14	6985	18	18
6535	9	9	6565	12	12	6705	14	14	6505	14	14
6695	8	8	6685	11	11	6785	16	16	6825	18	18
6855	9	9	6845	11	11	6945	12	12			
6895	8	8	6925	11	11	7025	13	13			
6995	8	8	7005	11	11	6545	15	15			
6875	9	9	7085	12	12	6865	15	15			
			6525	12	12						
			6885	12	12						
Channel	802.11be (EHT320)										
	Ant 1	Ant 2									
6105	18	18									
6265	18	18									
6585	12	12									
6745	18	18									
6905	16	16									

4.4 Test Frequency

For UNII-5:		
Mode	Channel	Frequency(MHz)
IEEE 802.11a/ax/be 20MHz	The Lowest channel	5955
	The Middle channel	6175
	The Highest channel	6415
IEEE 802.11ax/be 40MHz	The Lowest channel	5965
	The Middle channel	6165
	The Highest channel	6405
IEEE 802.11ax/be 80MHz	The Lowest channel	5985
	The Middle channel	6145
	The Highest channel	6385
IEEE 802.11ax/be160MHz	The Lowest channel	6025
	The Middle channel	6185
	The Highest channel	6345
IEEE 802.11be320MHz	The Lowest channel	6105
	The Highest channel	6265

For UNII-6:		
Mode	Channel	Frequency(MHz)
IEEE 802.11a/ax/be 20MHz	The Lowest channel	6435
	The Middle channel	6475
	The Highest channel	6515
IEEE 802.11ax/be 40MHz	The Lowest channel	6445
	The Highest channel	6485
	Straddle	6525
IEEE 802.11ax/be 80MHz	The Middle channel	6465
IEEE 802.11ax/be160MHz	Straddle	6505

For UNII-7:		
Mode	Channel	Frequency(MHz)
IEEE 802.11a/ax/be 20MHz	The Lowest channel	6535
	The Middle channel	6695
	The Highest channel	6855
IEEE 802.11ax/be 40MHz	The Lowest channel	6565
	The Middle channel	6685
	The Highest channel	6845
IEEE 802.11ax/be 80MHz	Straddle	6545
	The Lowest channel	6625
	The Middle channel	6705
	The Highest channel	6785
	Straddle	6865
IEEE 802.11ax/be160MHz	The Middle channel	6665
	Straddle	6825
IEEE 802.11be 320MHz	Straddle	6585
	Straddle	6745

For UNII-8:		
Mode	Channel	Frequency(MHz)
IEEE 802.11a/ax/be 20MHz	The Lowest channel	6895
	The Middle channel	6995
	The Highest channel	7095
IEEE 802.11ax/be 40MHz	Straddle	6885
	The Lowest channel	6925
	The Middle channel	7005
	The Highest channel	7085
IEEE 802.11ax/be 80MHz	The Lowest channel	6945
	The Highest channel	7025
IEEE 802.11ax/be160MHz	The Middle channel	6985
IEEE 802.11be 320MHz	The Middle channel	6905

4.5 Measurement Uncertainty

No.	Item	Measurement Uncertainty
1	Radio Frequency	8.4 x 10 ⁻⁸
2	Timeout	2s
3	Duty Cycle	0.37%
4	Occupied Bandwidth	3%
5	RF Conducted Power	0.6dB
6	RF Power Density	2.9dB
7	Conducted Spurious Emissions	0.75dB
8	RF Radiated Power	5.2dB (Below 1GHz)
		5.9dB (Above 1GHz)
9	Radiated Spurious Emission Test	4.2dB (Below 30MHz)
		4.5dB (30MHz-1GHz)
		5.1dB (1GHz-18GHz)
		5.4dB (Above 18GHz)
10	Temperature Test	1°C
11	Humidity Test	3%
12	Supply Voltages	1.5%
13	Time	3%

Note: The measurement uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

4.6 Test Location

Lab A:

Compliance Certification Services (Kunshan) Inc.
No.10 Weiye Rd, Innovation park, Eco&Tec, Development Zone, Kunshan City, Jiangsu, China.
Tel: +86 512 5735 5888 Fax: +86 512 5737 0818

Lab B:

Radiated Emissions; Radiated Emissions which fall in the restricted bands test at:

SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.
No.2, Tongsheng Road, Wuzhong District, Suzhou, Jiangsu, China

Note:

1. SGS is not responsible for wrong test results due to incorrect information (e.g., max. internal working frequency, antenna gain, cable loss, etc) is provided by the applicant. (If applicable).
2. SGS is not responsible for the authenticity, integrity and the validity of the conclusion based on results of the data provided by applicant. (If applicable).
3. Sample source: sent by customer.

4.7 Test Facility

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

Lab A:

• A2LA

Compliance Certification Services (Kunshan) Inc. is accredited by the American Association for Laboratory Accreditation (A2LA). Certificate No. 2541.01.

• FCC

Compliance Certification Services (Kunshan) Inc. has been recognized as an accredited testing laboratory. Designation Number: CN1172.

• ISED

Compliance Certification Services (Kunshan) Inc. has been recognized by Innovation, Science and Economic Development Canada (ISED) as an accredited testing laboratory. Company Number: 2324E

• VCCI

The 3m and 10m Semi-anechoic chamber and Shielded Room of Compliance Certification Services (Kunshan) Inc. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-20134, R-11600, C-11707, T-11499, G-10216 respectively.

Lab B:

- A2LA (Certificate No. 6336.01)

SGS-CSTC STANDARDS TECHNICAL SERVICES (SUZHOU) CO., LTD. is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 6336.01.

• **Innovation, Science and Economic Development Canada**

SGS-CSTC STANDARDS TECHNICAL SERVICES (SUZHOU) CO., LTD. has been recognized by ISED as an accredited testing laboratory.

CAB identifier: CN0120.

IC#: 27594.

• **FCC –Designation Number: CN1312**

SGS-CSTC STANDARDS TECHNICAL SERVICES (SUZHOU) CO., LTD. has been recognized as an accredited testing laboratory.

Designation Number: CN1312.

Test Firm Registration Number: 717327

4.8 Deviation from Standards

None

4.9 Abnormalities from Standard Conditions

None

4.10 Worst-case configuration and mode

Pre-scan / Final test	Mode Code	Description
Final test	12	TX mode (U-NII-5) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11ax/be 20/40/80/160/320, Only the data of worst case is recorded in the report.
Final test	13	TX mode (U-NII-6) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11ax/be 20/40/80/160, Only the data of worst case is recorded in the report.
Final test	14	TX mode (U-NII-7) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11ax/be 20/40/80/160/320, Only the data of worst case is recorded in the report.
Final test	15	TX mode (U-NII-8) _Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of 802.11ax/be 20/40/80/160/320, Only the data of worst case is recorded in the report.

5 Equipment List

Lab A:

Item	Equipment	Manufacturer	Model	Inventory No	Cal Date	Cal. Due Date
Conducted Emission at Mains Terminals						
1	EMI Test Receive	R&S	ESCI	KS301101	01/15/2024	01/14/2025
2	LISN	R&S	ENV216	KS301197	01/15/2024	01/14/2025
3	LISN	Schwarzbeck	NNLK 8129	KS301091	01/15/2024	01/14/2025
4	Pulse Limiter	R&S	ESH3-Z2	KUS1902E001	01/15/2024	01/14/2025
5	CE test Cable	Thermax	/	CZ301102	01/15/2024	01/14/2025
6	Test Software	ESE	E3_V 6.111221a	/	N.C.R	N.C.R
RF Conducted Test						
1	Spectrum Analyzer	Keysight	N9020A	KUS1911E004-2	08/01/2024	07/31/2025
2	Spectrum Analyzer	Keysight	N9020A	KUS2001M001-2	08/01/2024	07/31/2025
3	Spectrum Analyzer	Keysight	N9030B	KSEM021-1	01/15/2024	01/14/2025
4	Signal Generator	R&S	SMBV100B	KSEM032	03/19/2024	03/18/2025
5	Signal Generator	R&S	SMW200A	KSEM020-1	08/02/2024	08/01/2025
6	Signal Generator	Agilent	N5182A	KUS2001M001-1	08/01/2024	07/31/2025
7	Signal Generator	Agilent	E8257C	KS301066	08/06/2024	08/05/2025
8	Radio Communication Test Station	Anritsu	MT8000A	KSEM001-1	08/01/2024	07/31/2025
9	Radio Communication Analyzer	Anritsu	MT8821C	KSEM002-1	03/19/2024	03/18/2025
10	Universal Radio Communication Tester	R&S	CMW500	KUS1911E004-1	08/12/2024	08/11/2025
11	Switcher	TST	FY562	KUS2001M001-4	01/15/2024	01/14/2025
12	Conducted Test Cable	Thermax	RF01-RF04	CZ301111- CZ301120	01/15/2024	01/14/2025
13	Temp. / Humidity Chamber	TERCHY	MHK-120AK	KS301190	08/26/2024	08/25/2025
14	Temperature & Humidity Recorder	Renke Control	RS-WS-N01-6J	KSEM024-5	03/19/2024	03/18/2025
15	Software	BST	TST-PASS	/	NCR	NCR

Lab B:

Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Semi-Anechoic Chamber	Brilliant-emc	N/A	SUWI-04-02-02	11/25/2023	11/24/2025
Temperature and humidity meter	MingGao	TH101B	SUWI-01-01-13	2/8/2024	2/7/2025
Signal Analyzer	ROHDE&SCHWARZ	FSW43	SUWI-01-02-04	5/8/2024	5/7/2025
Signal Analyzer	KEYSIGHT	N9020A	SUWI-01-02-06	11/21/2024	11/20/2025
Test receiver	ROHDE&SCHWARZ	ESR7	SUWI-01-10-01	2/1/2024	1/31/2025
Receiving antenna	SCHWRZBECK MESS- ELEKTRONIK	VULB 9168	SUWI-01-11-04	11/25/2023	11/24/2025
Receiving antenna	SCHWRZBECK MESS- ELEKTRONIK	BBHA 9120D	SUWI-01-11-05	11/25/2023	11/24/2025
Receiving antenna	SCHWRZBECK MESS- ELEKTRONIK	BBHA 9170	SUWI-01-11-03	5/12/2023	5/11/2025
Active Loop Antenna	SCHWRZBECK MESS- ELEKTRONIK	FMZB 1519B	SUWI-01-21-01	5/13/2023	5/12/2025
Amplifier	Tonscend	TAP9K3G32	SUWI-01-14-06	11/19/2024	11/24/2025
Amplifier	Tonscend	TAP01018050	SUWI-01-14-04	11/19/2024	11/24/2025
Amplifier	Tonscend	TAP30M7G30	SUWI-01-14-05	11/19/2024	11/24/2025
Measurement Software	Tonscend	JS32-RE	SUWI-02-09-04	NCR	NCR
		V4.0.0.0			
Measurement Software	Tonscend	JS32-RSE	SUWI-02-09-06	NCR	NCR
		4.0.0.1			

6 Test results and Measurement Data

6.1 Antenna Requirement

5.1.1 Test Requirement:

47 CFR Part 15, Subpart C 15.203

5.1.2 Conclusion

Standard 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 antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit permanently attached antenna or of an so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

EUT Antenna:

The antenna is Metal antenna and no consideration of replacement. The best case gain of the antenna is:

Antenna 1: 6.8dBi, Antenna 2: 6.8dBi

Antenna location: Refer to internal photo.

Directional Gain Calculations for MIMO:

FCC KDB 662911 D01 Multiple Transmitter Output v02r01

Basic methodology with NANT transmit antennas, each with the same directional gain GANT dBi, being driven by NANT transmitter outputs of equal power. Directional gain is to be computed as follows:

- If any transmit signals are correlated with each other,
Directional gain = $G_{ANT} + 10 \log(N_{ANT})$ dBi
- If all transmit signals are completely uncorrelated with each other,
Directional gain = GANT

Unequal antenna gains, with equal transmit powers. For antenna gains given by G1, G2, ..., GN dBi

- If transmit signals are correlated, then
Directional gain = $10 \log[(10G_1/20 + 10G_2/20 + \dots + 10G_N/20)^2 / N_{ANT}]$ 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.]
- If all transmit signals are completely uncorrelated, then
Directional gain = $10 \log[(10G_1/10 + 10G_2/10 + \dots + 10G_N/10)/N_{ANT}]$ dBi

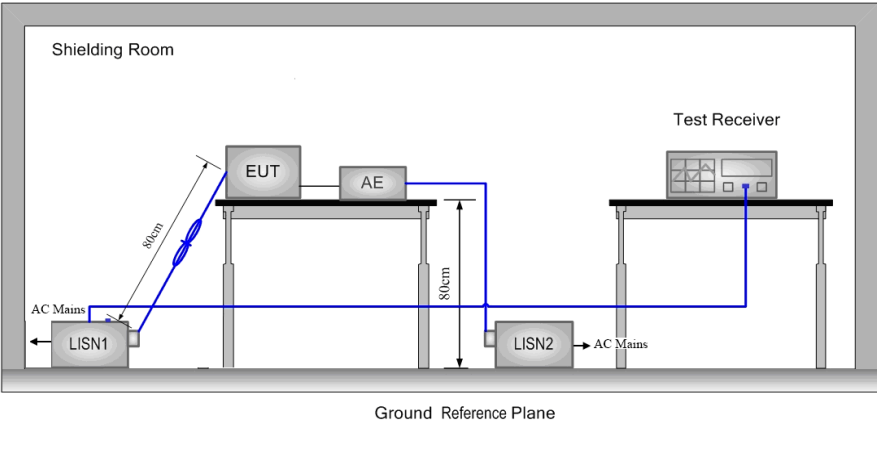
Directional gain may be calculated by using the formulas applicable to equal gain antennas with GANT set equal to the gain of the antenna having the highest gain.

All antennas have the same gain:

Operation Frequency	ANT1 (dBi)	ANT2 (dBi)	Directional gain For Power (dBi)	Directional gain For PSD (dBi)
5925 MHz to 7115 MHz	6.8	6.8	6.8	6.8

6.2 AC Power Line Conducted Emissions

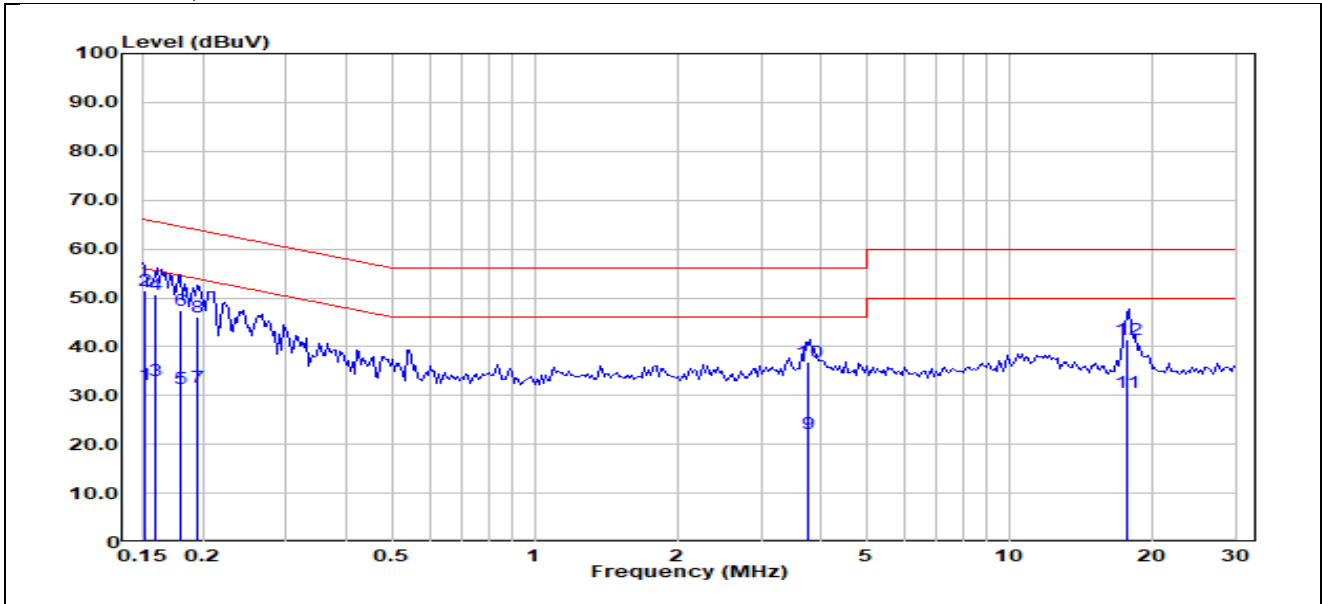
Test Requirement:	47 CFR Part 15 Section 15.407(b)		
Test Method:	ANSI C63.10: 2013 Section 6.2		
Test Frequency Range:	150kHz to 30MHz		
Receiver Setup:	RBW = 9kHz, VBW = 30kHz		
Limit:	Frequency range (MHz)	Limit (dBuV)	
		Quasi-peak	Average
	0.15-0.5	66 to 56*	56 to 46*
	0.5-5	56	46
	5-30	60	50
* Decreases with the logarithm of the frequency.			
Test Procedure:	1) The mains terminal disturbance voltage test was conducted in a shielded room. 2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a $50\Omega/50\mu\text{H} + 5\Omega$ linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded. 3) The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane, 4) The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the LISN 2. 5) In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10: 2013 on conducted measurement.		

Test Setup:	
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates at lowest, middle and highest channel.
Final Test Mode:	Refer to section 2.7 for details. Only the worst case is recorded in the report.
Instruments Used:	Refer to section 4 for details
Test Results:	Pass

Measurement Data

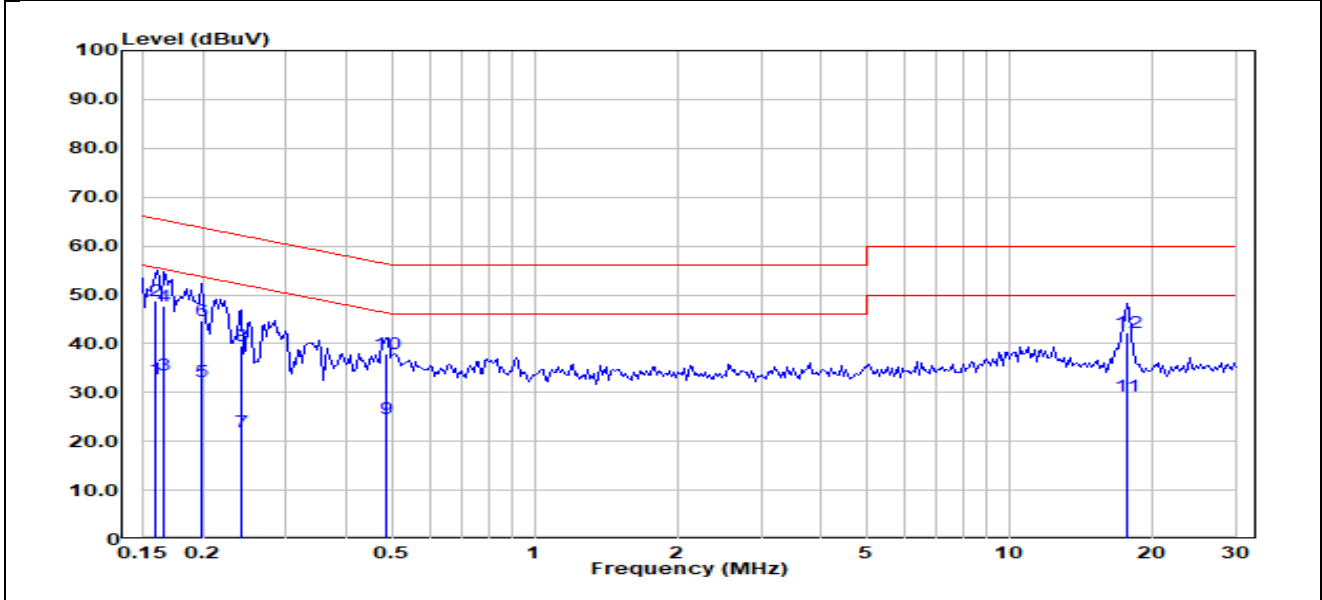
An initial pre-scan was performed on the live and neutral lines with peak detector. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission were detected.

Test Mode: 12; Line: Live line



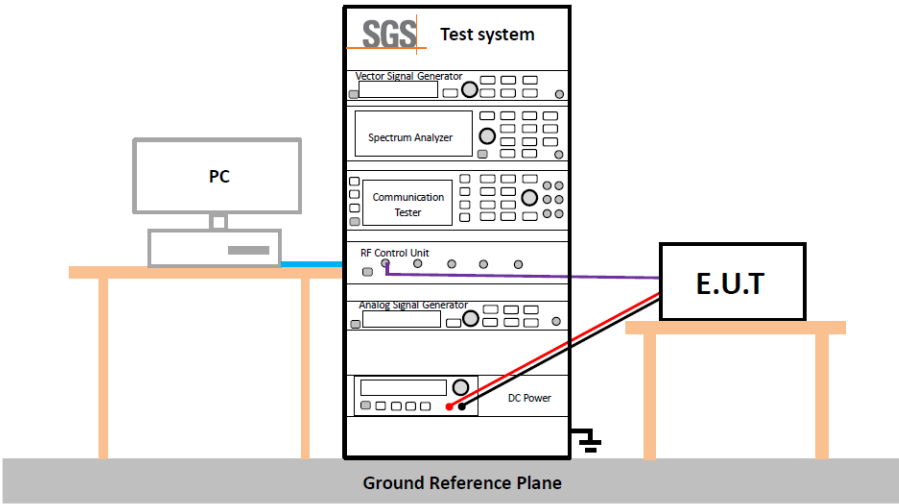
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB)	(dBuV)	(dBuV)	(dB)	
1	0.1509	11.89	20.25	32.14	55.95	-23.81	Average
2	0.1509	31.18	20.25	51.43	65.95	-14.52	QP
3	0.1584	12.85	20.22	33.07	55.55	-22.48	Average
4	0.1584	30.43	20.22	50.65	65.55	-14.90	QP
5	0.1795	11.43	20.13	31.56	54.51	-22.95	Average
6	0.1795	27.28	20.13	47.41	64.51	-17.10	QP
7	0.1944	11.57	20.07	31.64	53.85	-22.21	Average
8	0.1944	26.07	20.07	46.14	63.85	-17.71	QP
9	3.7750	2.42	19.89	22.31	46.00	-23.69	Average
10	3.7750	17.01	19.89	36.90	56.00	-19.10	QP
11	17.7170	10.84	19.76	30.60	50.00	-19.40	Average
12	17.7170	21.80	19.76	41.56	60.00	-18.44	QP

Test Mode: 12; Line: Neutral Line

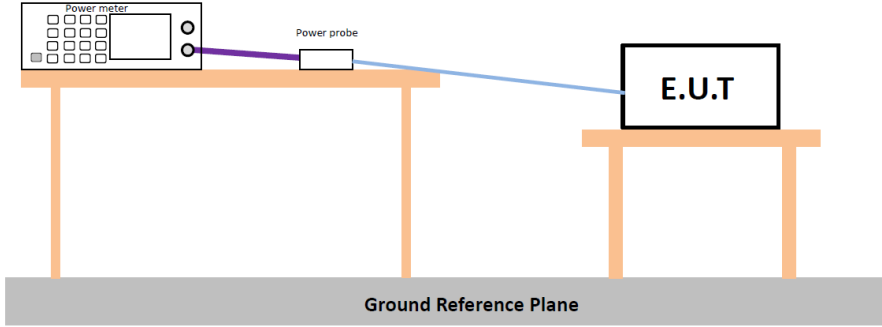


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB)	(dBuV)	(dBuV)	(dB)	
1	0.1593	12.63	20.17	32.80	55.50	-22.70	Average
2	0.1593	28.68	20.17	48.85	65.50	-16.65	QP
3	0.1661	13.46	20.16	33.62	55.16	-21.54	Average
4	0.1661	27.66	20.16	47.82	65.16	-17.34	QP
5	0.1978	12.21	20.12	32.33	53.70	-21.37	Average
6	0.1978	24.65	20.12	44.77	63.70	-18.93	QP
7	0.2421	1.94	20.10	22.04	52.02	-29.98	Average
8	0.2421	19.42	20.10	39.52	62.02	-22.50	QP
9	0.4892	4.60	19.95	24.55	46.18	-21.63	Average
10	0.4892	17.97	19.95	37.92	56.18	-18.26	QP
11	17.7040	9.38	19.83	29.21	50.00	-20.79	Average
12	17.7040	22.40	19.83	42.23	60.00	-17.77	QP

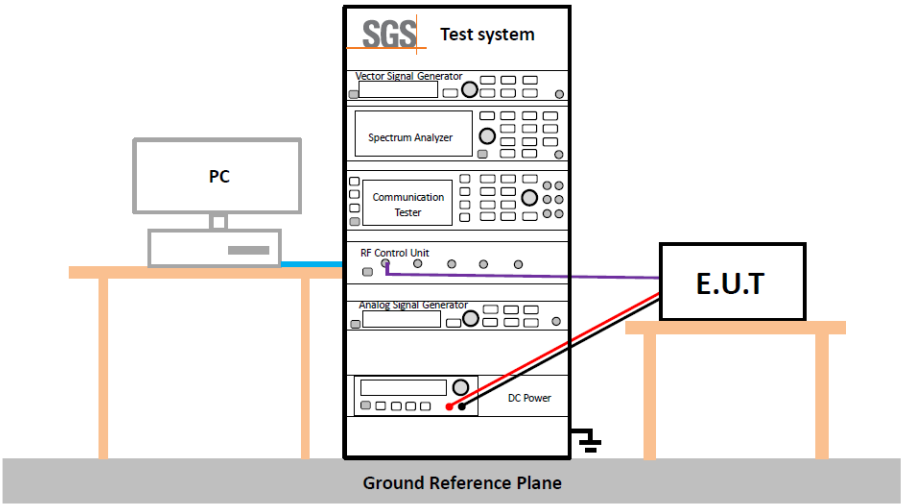
6.3 Duty Cycle

Test Requirement:	ANSI C63.10 :2013 Section 12.2
Test Method:	ANSI C63.10 :2013 Section 12.2
Test Setup:	 The diagram illustrates the test setup for Duty Cycle testing. A PC is connected to a Test system. The Test system consists of several modules: Vector Signal Generator, Spectrum Analyzer, Communication Tester, RF Control Unit, Analog Signal Generator, and DC Power. The RF Control Unit is connected to the E.U.T. (Equipment Under Test). The entire setup is on a Ground Reference Plane.
Instruments Used:	Refer to section 4 for details
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates
Final Test Mode:	Refer to section 2.7 for details.
Limit:	No restriction limits
Test Results:	For report purpose
The detailed test data see: Appendix	

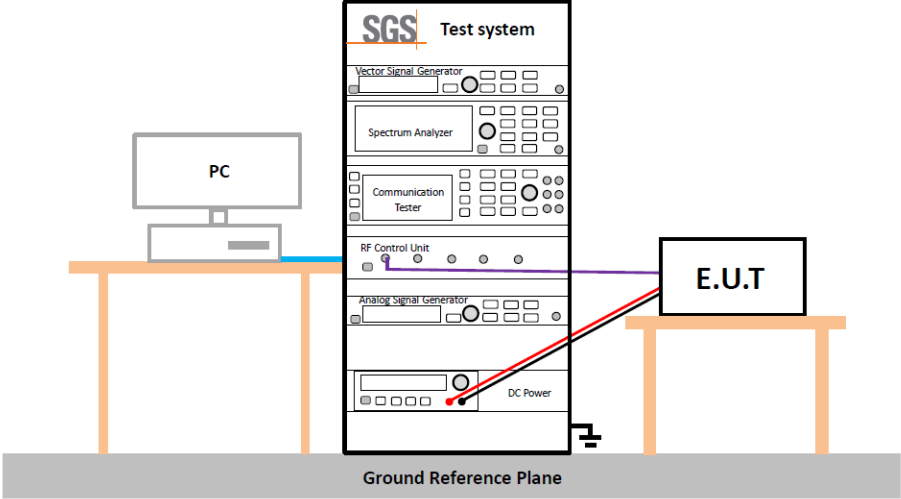
6.4 Maximum e.i.r.p.

Test Requirement:	47 CFR Part 15 Section 15.407(a) 15.407(a)(5)
Test Method:	ANSI C63.10 :2013 Section11.9.2.3
Test Setup:	 * Test with power meter (Detector function: Average)
Test Instruments:	Refer to section 4 for details
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates
Final Test Mode:	Refer to section 2.7 for details.
Limit:	For client devices operating under the control of an indoor access point in the 5.925-7.125GHz bands, the maximum e.i.r.p. over the frequency band of operation must not exceed 30 dBm.
Test Results:	Pass
The detailed test data see: Appendix	

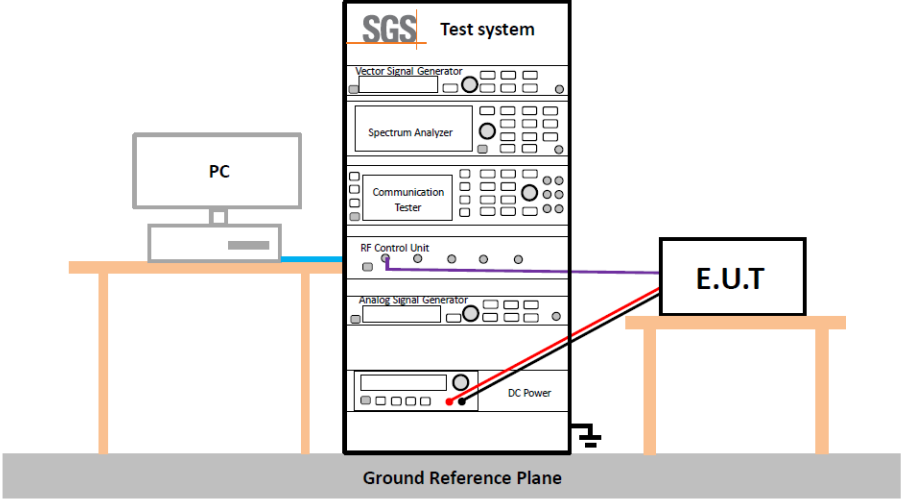
6.5 26dB Emission Bandwidth

Test Requirement:	47 CFR Part 15 Section 15.407(a), KDB 789033 D02
Test Method:	ANSI C63.10: 2013 Section 11.8 Option 2
Test Setup:	 The diagram illustrates the test setup for 26dB Emission Bandwidth. A PC is connected to a Test system. The Test system consists of several modules: Vector Signal Generator, Spectrum Analyzer, Communication Tester, RF Control Unit, Analog Signal Generator, and DC Power. The RF Control Unit is connected to the E.U.T. (Equipment Under Test). The entire setup is on a Ground Reference Plane.
Instruments Used:	Refer to section 4 for details
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates
Final Test Mode:	Refer to section 2.7 for details.
Limit:	The maximum transmitter channel bandwidth for U-NII devices in the 5.925-7.125 GHz band is 320 megahertz.
Test Results:	Pass
The detailed test data see: Appendix	

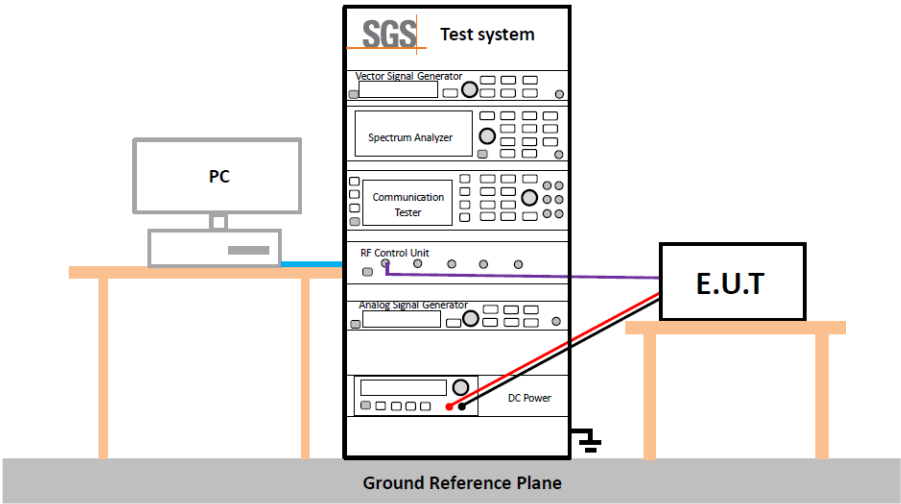
6.6 99% Occupied Bandwidth

Test Requirement:	KDB 789033 D02§ D
Test Method:	ANSI C63.10: 2013 Section 6.9.3
Test Setup:	 The diagram illustrates the test setup for 99% Occupied Bandwidth testing. A PC is connected to a Test system. The Test system consists of a Vector Signal Generator, Spectrum Analyzer, Communication Tester, RF Control Unit, Analog Signal Generator, and DC Power. The RF Control Unit is connected to the E.U.T. (Equipment Under Test). The entire setup is on a Ground Reference Plane.
Instruments Used:	Refer to section 4 for details
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates
Final Test Mode:	Refer to section 2.7 for details.
Limit:	No restriction limits
Test Results:	For report purpose
The detailed test data see: Appendix	

6.7 Power Spectral Density

Test Requirement:	47 CFR Part 15 Section 15.407(a) 15.407(a)(5)
Test Method:	ANSI C63.10: 2013 Section 11.10.2 KDB 789033 D02 v02r01, Section F.
Test Setup:	
Instruments Used:	Refer to section 4 for details
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates
Final Test Mode:	Refer to section 2.7 for details.
Limit:	For client devices operating under the control of an indoor access point in the 5.925-7.125GHz bands, the maximum power spectral density must not exceed 5 dBm e.i.r.p. in any 1-megahertz band.
Test Results:	Pass
The detailed test data see: Appendix	

6.8 In-Band Emissions

Test Requirement:	47 CFR Part 15 Section 15.407(b)(6)
Test Method:	KDB 987594 D02 U-NII 6GHz EMC Measurement v01
Test Setup:	
Instruments Used:	Refer to section 4 for details
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates
Final Test Mode:	Refer to section 2.7 for details. Only the worst case is recorded in the report.
Limit:	For transmitters operating within the 5.925-7.125 GHz bands: Power spectral density must be suppressed by 20 dB at 1 MHz outside of channel edge, by 28 dB at one channel bandwidth from the channel center, and by 40 dB at one- and one-half times the channel bandwidth away from channel center. At frequencies between one megahertz outside an unlicensed device's channel edge and one channel bandwidth from the center of the channel, the limits must be linearly interpolated between 20 dB and 28 dB suppression, and at frequencies between one and one- and one-half times an unlicensed device's channel bandwidth, the limits must be linearly interpolated between 28 dB and 40 dB suppression. Emissions removed from the channel center by more than one- and one-half times the channel bandwidth must be suppressed by at least 40 dB.
Test Results:	Pass
The detailed test data see: Appendix	

6.9 Contention Based Protocol

Test Requirement:	47 CFR Part 15 Section 15.407(d)
Test Method:	ANSI C63.10: 2013 KDB 987594 D02 U-NII 6GHz EMC Measurement v01
Test Setup:	
Instruments Used:	Refer to section 4 for details
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates
Test Procedure:	1) Configure the EUT to transmit with a constant duty cycle. 2) Set the operating parameters of the EUT including power level, operating frequency, modulation and bandwidth. 3) Set the signal analyzer center frequency to the nominal EUT channel center frequency. The span range of the signal analyzer shall be between two times and five times the OBW of the EUT. Connect the output port of the EUT to the signal analyzer 2, as shown in Figure 2. Ensure that the attenuator 2 provides enough attenuation to not overload the signal analyzer 2 receiver. 4) Monitoring the signal analyzer 2, verify the EUT is operating and transmitting with the parameters set at step two. 5) Using an AWGN signal source, generate (but do not transmit, i.e., RF OFF) a 10MHz-wide AWGN signal. Use Table 1 to determine the center frequency of the 10MHz AWGN signal relative to the EUT's channel bandwidth and center frequency. 6) Set the AWGN signal power to an extremely low level (more than 20 dB below the -62 dBm threshold). Connect the AWGN signal source, via a 3-dB splitter, to the signal analyzer 1 and the EUT as shown in Figure 2. 7) Transmit the AWGN signal (RF ON) and verify its characteristics on the signal analyzer 1. 8) Monitor the signal analyzer 2 to verify if the AWGN signal has been detected and the EUT has ceased transmission. If the EUT continues to transmit, then incrementally increase the AWGN signal power level until the EUT stops transmitting. 9) (Including all losses in the RF paths) Determine and record the AWGN signal power level (at the EUT's antenna port) at which the EUT ceased transmission. Repeat the procedure at least 10 times to verify the EUT can detect an AWGN signal with 90% (or better) level of certainty.

	10) Refer to Table 1 to determine number of times the detection threshold testing needs to be repeated. If testing is required more than once, then go back to step 5, choose a different center frequency for the AWGN signal and repeat the process.
Limit:	Unlicensed low-power indoor devices must detect co-channel radio frequency power that is at least -62 dBm or lower. Upon detection of energy in the band, unlicensed low power indoor devices must vacate the channel and stay off the channel as long as detected radio frequency power is equal to or greater than the threshold (-62 dBm). The -62 dBm (or lower) threshold is referenced to a 0 dBi antenna gain. To ensure incumbent operations are reliably detected in the band, low power indoor devices must detect RF energy throughout their intended operating channel. For example, an 802.11 device that plans to transmit a 40 MHz- wide signal (on a primary 20 MHz channel and a secondary 20 MHz channel) must detect energy throughout the entire 40 MHz channel. Additionally, low-power indoor devices must detect co-channel energy with 90% or greater certainty.
Test Results:	Pass
The detailed test data see: Appendix	

6.10 Radiated Spurious Emissions

Test Requirement:	47 CFR Part 15 Section 15.205 and 15.209
Test Method:	ANSI C63.10: 2013 Section 6.4 / 6.5 / 6.6
Test Site:	Measurement Distance: 3m (Semi-Anechoic Chamber)
Test frequency:	9kHz ~ 40GHz(or 10 Harmonic)

Test Setup:

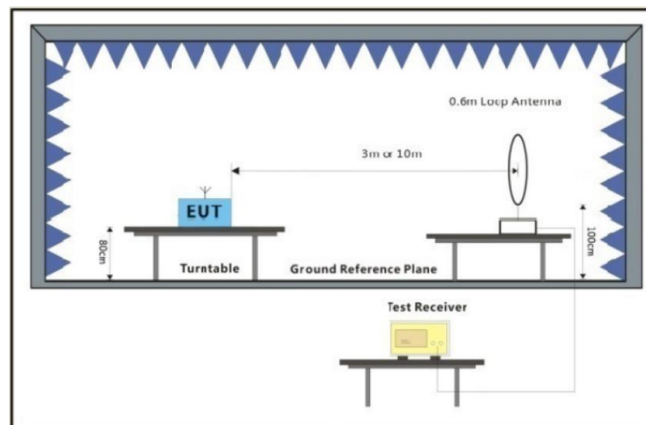


Figure 1. 9kHz to 30MHz

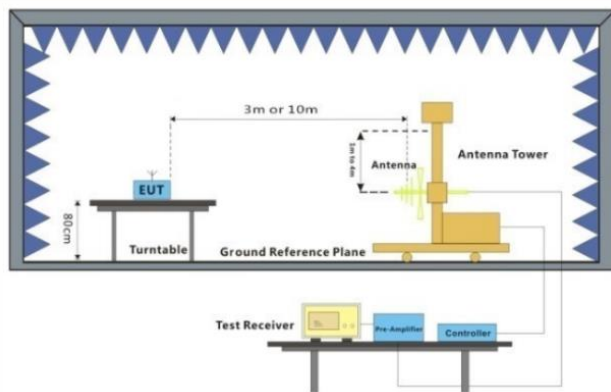


Figure 1. 30MHz to 1GHz

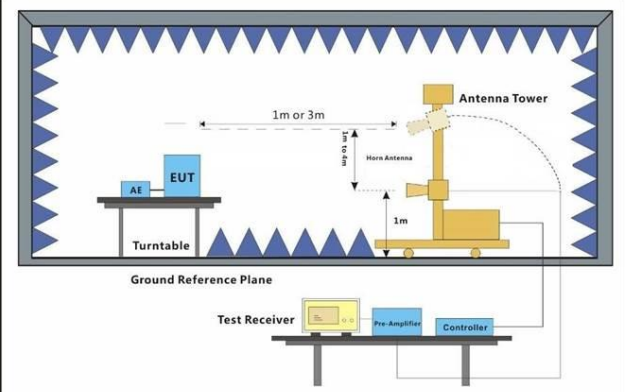


Figure 2. Above 1 GHz

Test Procedure:	a. For below 1GHz test, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation. b. For above 1GHz test, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation
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	(Distance from antenna to EUT is 1m for measurements >18GHz). c. The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. d. 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. e. 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 and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading. f. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. g. Test the EUT in the outermost channels. h. 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. i. Repeat above procedures until all frequencies measured was complete. j. The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line was not reported k. The disturbance above 18GHz was very low, and the harmonics were the highest point could be found when testing, so only the harmonics had been displayed. l. At a measurement distance of 1 meter the limit line was increased by $20 \cdot \text{LOG}(3/1) = 9.54 \text{ dB}$. Remark: 1. Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor 2. For emission below 1GHz, through the pre-scan found the worst case is the lowest channel of 802.11a. Only the worst case is recorded in the report. 3. Scan from 9kHz to 30MHz, the disturbance below 30MHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported. 4. The disturbance below 1GHz was very low and the harmonics were the highest point could be found when testing, so only the above harmonics had been displayed. 5. Scan from 18GHz to 40GHz, the disturbance above 18GHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported. 6. As shown in this section, for frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall
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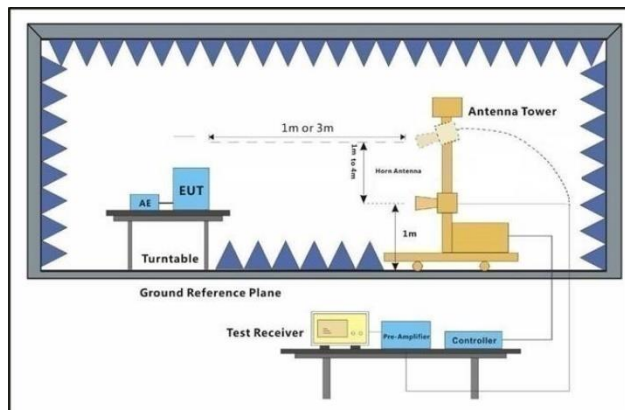
	not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report. 7. The disturbance above 18GHz were very low and the harmonics were the highest point could be found when testing, so only the above harmonics had been displayed. 8. For devices with multiple operating modes, measurements on the middle channel is used to determine the worst-case mode(s). Only the worst case mode with the highest output power and the mode with the highest output power spectral density for each modulation family (e.g., OFDM and direct sequence spread spectrum) is recorded in the test report. 9. This test item was investigated while operating in SISO and MIMO mode, however, it was determined that SISO antenna 1 operation for a modulation and MiMO antenna operation for ax modulation produced the worst emissions. So the emissions produced from other operation are not recorded in report.
Test Configuration:	Measurements below 30MHz • RBW = 10 kHz • VBW = 30 kHz • Detector = Peak & Average & Quasi-peak • Trace mode = max hold Measurements Below 1000MHz • RBW = 120 kHz • VBW = 300 kHz • Detector = Quasi-peak • Trace mode = max hold Peak Measurements Above 1000 MHz • RBW = 1 MHz • VBW $\geq$ 3 MHz • Detector = Peak • Sweep time = auto • Trace mode = max hold Average Measurements Above 1000MHz • RBW = 1 MHz • VBW = 10Hz, when duty cycle is no less than 98 percent. • VBW $\geq$ 1/T, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates.
Final Test Mode:	Refer to section 2.7 for details. For below 1GHz part, through pre-scan all channels, but only the worst case is recorded in the report.

Instruments Used:	Refer to section 4 for details
Test Results:	Pass
The detailed test data see: Appendix	

6.11 Restricted bands around fundamental frequency

Test Requirement:	47 CFR Part 15 Section 15.407(b)		
Test Method:	ANSI C63.10: 2013 Section 11.12		
Test Site:	Measurement Distance: 3m (Semi-Anechoic Chamber)		
Limit:	Frequency	Limit (dBuV/m)	Remark
	30MHz-88MHz	40.0	Quasi-peak
	88MHz-216MHz	43.5	Quasi-peak
	216MHz-960MHz	46.0	Quasi-peak
	960MHz-1GHz	54.0	Quasi-peak
	Above 1GHz	54.0	Average Value
		74.0	Peak Value

Test Setup:



Test Procedure:

- The EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter semi-anechoic chamber. 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 and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- The test-receiver system was set to Peak Detect Function and Specified

	Bandwidth with Maximum Hold Mode. f. Place a marker at the end of the restricted band closest to the transmit frequency to show compliance. Also measure any emissions in the restricted bands. Save the spectrum analyzer plot. Repeat for each power and modulation for lowest and highest channel g. Test the EUT in the outermost channels. h. 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. i. Repeat above procedures until all frequencies measured was complete. Remark: 1. Level = Read Level + Cable Loss + Antenna Factor - Preamp Factor 2. This test item was investigated while operating in SISO and MIMO mode, however, it was determined that SISO antenna 1 operation for a modulation and MiMO antenna operation for n/ac/ax modulation produced the worst emissions. So the emissions produced from other operation are not recorded in report.
Test Configuration:	Measurements Below 1000MHz • RBW = 120 kHz • VBW = 300 kHz • Detector = Quasi-peak • Trace mode = max hold Peak Measurements Above 1000 MHz • RBW = 1 MHz • VBW ≥ 3 MHz • Detector = Peak • Sweep time = auto • Trace mode = max hold Average Measurements Above 1000MHz • RBW = 1 MHz • VBW = 10Hz, when duty cycle is no less than 98 percent. • VBW ≥ 1/T, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates.
Final Test Mode:	Refer to section 2.7 for details.
Instruments Used:	Refer to section 4 for details
Test Results:	Pass
The detailed test data see: Appendix	

7 Test Setup Photo

Refer to Appendix - Test Setup Photo for KSCR2407001449AT

8 EUT Constructional Details (EUT Photos)

Refer to Appendix - Photographs of EUT Constructional Details for KSCR2407001449AT

- End of the Report -