



SHENZHEN HUAXIA TESTING TECHNOLOGY CO., LTD

102A, 102B, Building 2, Shanghenglang New Industrial Zone, Shanghenglang Community, Dalang Street, Longhua District, Shenzhen, Guangdong, People's Republic of China, 518000

Telephone: +86-755-26648640
Fax: +86-755-26648637
Website: www.cqa-cert.com

Report Template Version: V06
Report Template Revision Date: 2026-01-30

Test Report

Report No.: CQASZ20260601224E-02
Applicant: Shenzhen Kean Digital Co., Ltd.
Address of Applicant: Room 1001, Rujun Building, No. 105, Zhongxing Road, Ma'antang Community, Bantian Street, Longgang District, Shenzhen, 518129, China
Equipment Under Test (EUT):
Product: Wireless Camera
Model No.: I81BM, I81BU, I81GV, I81GW, I81GX, I81GY, I81GZ, I81DK, I81DM, I81DN, I81DL, I81GU, I81GV, I81GW, I81GX, I81GY, I81GL, I81DU, I81DV, I81BV, I91CU, I91CV, I91CW, I91CX, I91CY, I91CZ, I91EH, I91EF, I91EG, I91RE, I91RF, I91RG, I91RH, I91RK, I71CW, I71CX, I71CY, I51GV, I51GX, I51GY, I51GZ, I51GR, I51GS
Test Model No.: I81BM
Brand Name:   
FCC ID: 2AKL2I81BM
Standards: 47 CFR Part 15, Subpart C
KDB558074 D01 15.247 Meas Guidance v05r02
ANSI C63.10:2020
Date of Receipt: 2026-06-11
Date of Test: 2026-06-11 to 2026-07-14
Date of Issue: 2026-07-28
Test Result : **PASS***

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

Tested By: Lewis Zhou
(Lewis Zhou)

Reviewed By: Timo Lei
(Timo Lei)

Approved By: Jack Ai
(Jack Ai)



Version

Revision History Of Report

Report No.	Version	Description	Issue Date
CQASZ20260601224E-02	Rev.01	Initial report	2026-07-28

We, Shenzhen Kean Digital Co., Ltd. certify the product:

Model No.:

I81BM, I81BU, I81GV, I81GW, I81GX, I81GY, I81GZ, I81DK, I81DM, I81DN, I81DL, I81GU, I81GV, I81GW, I81GX, I81GY, I81GL, I81DU, I81DV, I81BV, I91CU, I91CV, I91CW, I91CX, I91CY, I91CZ, I91EH, I91EF, I91EG, I91RE, I91RF, I91RG, I91RH, I91RK, I71CW, I71CX, I71CY, I51GV, I51GX, I51GY, I51GZ, I51GR, I51GS

Their electrical circuit design, layout, components used and internal wiring are identical,
Only the Model No. is different.

1 Test Summary

Test Item	Test Requirement	Test method	Result
Antenna Requirement	47 CFR Part 15.203	N/A	PASS
AC Power Line Conducted Emission	47 CFR Part 15.207	ANSI C63.10- 2020+Cor. 1- 2023+C63.10a-2024 + Errata to C63.10a- 2024	PASS
Conducted Peak & Average Output Power	47 CFR Part 15.247	ANSI C63.10- 2020+Cor. 1- 2023+C63.10a-2024 + Errata to C63.10a- 2024	PASS
6dB Occupied Bandwidth	47 CFR Part 15.247	ANSI C63.10- 2020+Cor. 1- 2023+C63.10a-2024 + Errata to C63.10a- 2024	PASS
Power Spectral Density	47 CFR Part 15.247	ANSI C63.10- 2020+Cor. 1- 2023+C63.10a-2024 + Errata to C63.10a- 2024	PASS
Band-edge for RF Conducted Emissions	47 CFR Part 15.247	ANSI C63.10- 2020+Cor. 1- 2023+C63.10a-2024 + Errata to C63.10a- 2024	PASS
RF Conducted Spurious Emissions	47 CFR Part 15.247	ANSI C63.10- 2020+Cor. 1- 2023+C63.10a-2024 + Errata to C63.10a- 2024	PASS
Radiated Spurious Emissions	47 CFR Part 15.209	ANSI C63.10- 2020+Cor. 1- 2023+C63.10a-2024 + Errata to C63.10a- 2024	PASS
Restricted bands around fundamental frequency (Radiated Emission)	47 CFR Part 15.205/15.209	ANSI C63.10- 2020+Cor. 1- 2023+C63.10a-2024 + Errata to C63.10a- 2024	PASS

Remark:

The tested sample(s) and the sample information are provided by the client.

Tx: In this whole report Tx (or tx) means Transmitter.

Rx: In this whole report Rx (or rx) means Receiver.

RF: In this whole report RF means Radiated Frequency.

CH: In this whole report CH means channel.

Volt: In this whole report Volt means Voltage.

Temp: In this whole report Temp means Temperature.

Humid: In this whole report Humid means humidity.

Press: In this whole report Press means Pressure.

N/A: In this whole report not application

2 Contents

	Page
VERSION	2
1 TEST SUMMARY	3
2 CONTENTS	5
3 GENERAL INFORMATION	6
3.1 CLIENT INFORMATION	6
3.2 GENERAL DESCRIPTION OF EUT	6
3.3 PRODUCT SPECIFICATION SUBJECTIVE TO THIS STANDARD	6
3.4 TEST ENVIRONMENT AND MODE	9
3.5 DESCRIPTION OF SUPPORT UNITS	10
3.6 TEST LOCATION	10
3.7 TEST FACILITY	10
3.8 TEST CONFIGURATION	10
3.9 STATEMENT OF THE MEASUREMENT UNCERTAINTY	11
3.10 DEVIATION FROM STANDARDS	11
3.11 ABNORMALITIES FROM STANDARD CONDITIONS	11
3.12 OTHER INFORMATION REQUESTED BY THE CUSTOMER	11
3.13 EQUIPMENT LIST	12
4 TEST RESULTS AND MEASUREMENT DATA	13
4.1 ANTENNA REQUIREMENT	13
4.2 CONDUCTED EMISSIONS	14
4.3 CONDUCTED PEAK & AVERAGE OUTPUT POWER	18
4.4 99% OCCUPIED BANDWIDTH	19
4.5 6dB OCCUPIED BANDWIDTH	20
4.6 POWER SPECTRAL DENSITY	21
4.7 BAND-EDGE FOR RF CONDUCTED EMISSIONS	22
4.8 RF CONDUCTED SPURIOUS EMISSIONS	23
4.9 RADIATED SPURIOUS EMISSIONS	24
4.9.1 Radiated emission below 1GHz	27
4.9.2 Transmitter emission above 1GHz	29
4.10 RESTRICTED BANDS AROUND FUNDAMENTAL FREQUENCY	41
5 PHOTOGRAPHS - EUT TEST SETUP	49
6 PHOTOGRAPHS - EUT CONSTRUCTIONAL DETAILS	50

3 General Information

3.1 Client Information

Applicant:	Shenzhen Kean Digital Co., Ltd.
Address of Applicant:	Room 1001, Rujun Building, No. 105, Zhongxing Road, Ma'antangCommunity, Bantian Street, Longgang District, Shenzhen, 518129, China
Manufacturer:	Shenzhen Kean Digital Co., Ltd.
Address of Manufacturer:	Room 1001, Rujun Building, No. 105, Zhongxing Road, Ma'antangCommunity, Bantian Street, Longgang District, Shenzhen, 518129, China
Factory:	Shenzhen Kean Digital Co., Ltd.
Address of Factory:	Room 1001, Rujun Building, No. 105, Zhongxing Road, Ma'antangCommunity, Bantian Street, Longgang District, Shenzhen, 518129, China

3.2 General Description of EUT

Product Name:	Wireless Camera
Model No.:	I81BM, I81BU, I81GV, I81GW, I81GX, I81GY, I81GZ, I81DK, I81DM, I81DN, I81DL, I81GU, I81GV, I81GW, I81GX, I81GY, I81GL, I81DU, I81DV, I81BV, I91CU, I91CV, I91CW, I91CX, I91CY, I91CZ, I91EH, I91EF, I91EG, I91RE, I91RF, I91RG, I91RH, I91RK, I71CW, I71CX, I71CY, I51GV, I51GX, I51GY, I51GZ, I51GR, I51GS
Test Model No.:	I81BM
Trade Mark:	  
Software Version:	5.10.6.0
Hardware Version:	V300PD
Power Supply:	Li-ion battery DC 3.7V 9000mAh, Charge by DC 5V for adapter
EUT Supports Radios application:	2.4GHz: Wi-Fi: 802.11b/g/n(HT20)/ax(HE20): 2412MHz~2462MHz; 802.11n(HT40)/ax(HE40): 2422MHz~2452MHz
Simultaneous Transmission	☐ Simultaneous TX is supported and evaluated in this report. ☒ Simultaneous TX is not supported.

3.3 Product Specification subjective to this standard

Operation Frequency:	IEEE 802.11b/g/n(HT20)/ax(HE20): 2412MHz to 2462MHz IEEE 802.11n(HT40)/ax(HE40): 2422MHz to 2452MHz
Channel Numbers:	IEEE 802.11b/g, IEEE 802.11n HT20/ax HE20: 11 Channels IEEE 802.11n HT40/ax HE40: 7 Channels
Channel Separation:	5MHz
Type of Modulation:	IEEE for 802.11b: DSSS(CCK,DQPSK,DBPSK) IEEE for 802.11g : OFDM(64QAM, 16QAM, QPSK, BPSK) IEEE for 802.11n(HT20 and HT40) : OFDM (64QAM, 16QAM, QPSK, BPSK)

	IEEE for 802.11ax(HE20 and HE40): OFDMA (1024QAM, 256QAM, 64QAM, 16QAM, QPSK, BPSK)
Transfer Rate:	IEEE for 802.11b: 1Mbps/2Mbps/5.5Mbps/11Mbps IEEE for 802.11g : 6Mbps/9Mbps/12Mbps/18Mbps/24Mbps/36Mbps/48Mbps/54Mbps IEEE for 802.11n(HT20) : 6.5Mbps/13Mbps/19.5Mbps/26Mbps/39Mbps/52Mbps/58.5Mbps/65Mbps IEEE for 802.11n(HT40) : 13.5Mbps/27Mbps/40.5Mbps/54Mbps/81Mbps/108Mbps/121.5Mbps/135Mbps IEEE for 802.11ax(HE20): 8.6Mbps/17.2Mbps/25.8Mbps/34.4Mbps/51.6Mbps/68.8Mbps/77.4Mbps /86.7Mbps/103.3Mbps/114.7Mbps/129.0Mbps/143.4Mbps IEEE for 802.11ax(HE40): 17.2Mbps/34.4Mbps/51.6Mbps/68.8Mbps/103.2Mbps/137.6Mbps/154.9Mbps /173.3Mbps/206.5Mbps/229.4Mbps/258.1Mbps/286.8Mbps
Product Type:	☒ Mobile ☐ Portable
Test Software of EUT:	SecureCRT
Antenna Type:	PCB antenna
Antenna Gain:	2.4dBi

Operation Frequency each of channel(802.11b/g/n HT20/ax HE20)							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
1	2412MHz	4	2427MHz	7	2442MHz	10	2457MHz
2	2417MHz	5	2432MHz	8	2447MHz	11	2462MHz
3	2422MHz	6	2437MHz	9	2452MHz		
Operation Frequency each of channel(802.11n HT40/ax HE40)							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
3	2422MHz	6	2437MHz	9	2452MHz		
4	2427MHz	7	2442MHz				
5	2432MHz	8	2447MHz				

Note:

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

For 802.11b/g/n (HT20)/ax (HE20):

Channel	Frequency
The Lowest channel	2412MHz
The Middle channel	2437MHz
The Highest channel	2462MHz

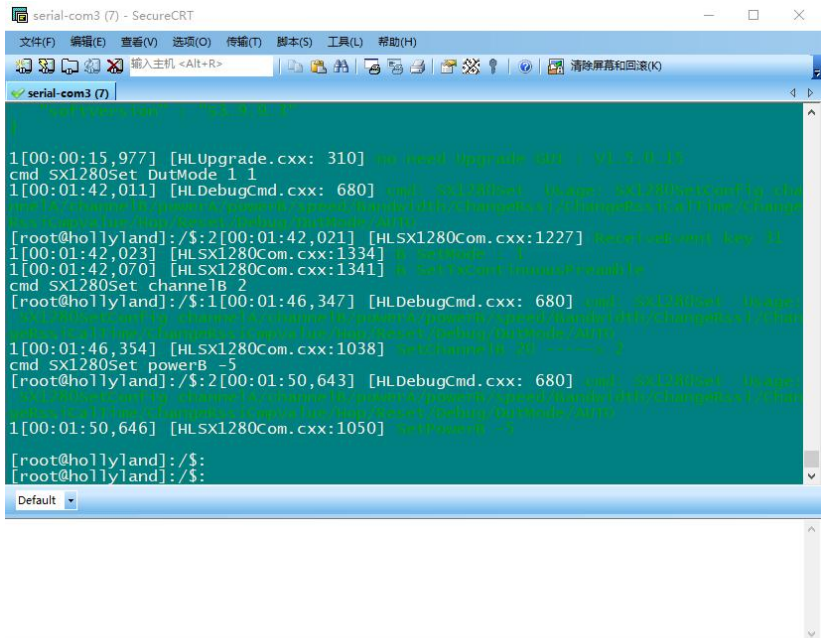
For 802.11n (HT40)/ax (HE40):

Channel	Frequency
The Lowest channel	2422MHz
The Middle channel	2437MHz
The Highest channel	2452MHz

Note:

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

3.4 Test Environment and Mode

Operating Environment:	
Radiated Emissions:	
Temperature:	25.3 °C
Humidity:	55 % RH
Atmospheric Pressure:	1009 mbar
Conducted Emissions:	
Temperature:	25.6 °C
Humidity:	60 % RH
Atmospheric Pressure:	1009 mbar
Radio conducted item test (RF Conducted test room):	
Temperature:	25.5 °C
Humidity:	52 % RH
Atmospheric Pressure:	1009 mbar
Test mode:	
Transmitting mode:	EUT is set in RF test mode in all supported modulation types, bandwidth and data rate, etc.
EUT Power level:	Class0
Run Software:	
	

3.5 Description of Support Units

The EUT has been tested with associated equipment below.

1) Support equipment

Description	Manufacturer	Model No.	Certification	Supplied by
/	/	/	/	/

2) Cable

Cable No.	Description	Manufacturer	Cable Type/Length	Supplied by
/	/	/	/	/

3.6 Test Location

All tests were performed at:

SHENZHEN HUAXIA TESTING TECHNOLOGY CO., LTD

102A, 102B, Building 2, Shanghenglang New Industrial Zone, Shanghenglang Community, Dalang Street, Longhua District, Shenzhen, Guangdong, People's Republic of China, 518000

3.7 Test Facility

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

• **A2LA (Certificate No. 4742.01)**

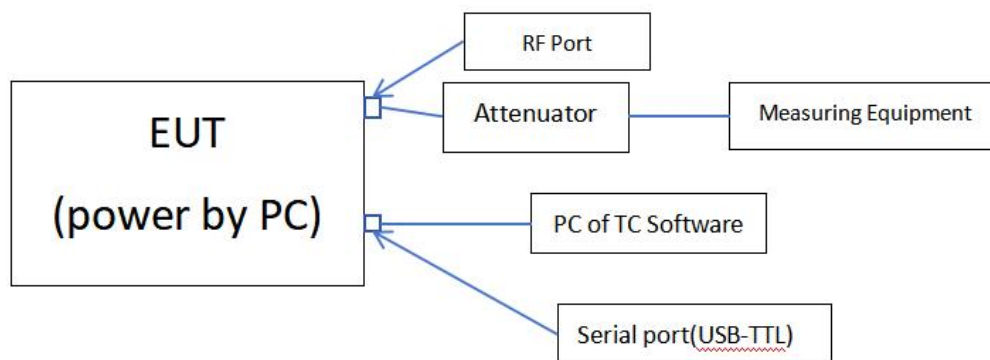
SHENZHEN HUAXIA TESTING TECHNOLOGY CO., LTD, Shenzhen EMC Laboratory is accredited by the

American Association for Laboratory Accreditation(A2LA). Certificate No. 4742.01.

• **FCC Registration No.: 522263**

SHENZHEN HUAXIA TESTING TECHNOLOGY CO., LTD, Shenzhen EMC Laboratory 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. Registration No.:522263

3.8 Test configuration



3.9 Statement of the 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 acc. 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 **SHENZHEN HUAXIA TESTING TECHNOLOGY CO., LTD** quality system acc. 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 CQA laboratory is reported:

No.	Item	Uncertainty	Notes
1	Radiated Emission (Below 1GHz)	5.12dB	(1)
2	Radiated Emission (Above 1GHz)	4.60dB	(1)
3	Conducted Disturbance (0.15~30MHz)	3.34dB	(1)
4	Radio Frequency	3×10^{-8}	(1)
5	Duty cycle	0.6 %.	(1)
6	Occupied Bandwidth	1.1%	(1)
7	RF conducted power	0.86dB	(1)
8	RF power density	0.74	(1)
9	Conducted Spurious emissions	0.86dB	(1)
10	Temperature test	0.8℃	(1)
11	Humidity test	2.0%	(1)
12	Supply voltages	0.5 %.	(1)
13	Frequency Error	5.5 Hz	(1)

(1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$.

3.10 Deviation from Standards

None.

3.11 Abnormalities from Standard Conditions

None.

3.12 Other Information Requested by the Customer

None.

3.13 Equipment List

Test Equipment	Manufacturer	Model No.	Instrument No.	Calibration Date	Calibration Due Date
EMI Test Receiver	R&S	ESR7	CQA-005	2025/9/1	2026/8/31
Spectrum analyzer	R&S	FSU26	CQA-038	2025/9/1	2026/8/31
Spectrum analyzer	R&S	FSU40	CQA-075	2025/9/1	2026/8/31
Preamplifier	MITEQ	AFS4-00010300-18-10P-4	CQA-035	2025/9/1	2026/8/31
Preamplifier	MITEQ	AMF-6D-02001800-29-20P	CQA-036	2025/9/1	2026/8/31
Preamplifier	EMCI	EMC184055SE	CQA-089	2025/9/1	2026/8/31
Loop antenna	Schwarzbeck	FMZB1516	CQA-060	2023/9/8	2026/9/7
Bilog Antenna	R&S	HL562	CQA-011	2023/11/01	2026/10/31
Horn Antenna	R&S	HF906	CQA-012	2023/11/01	2026/10/31
Horn Antenna	Schwarzbeck	BBHA 9170	CQA-088	2023/9/7	2026/9/6
Coaxial Cable (Above 1GHz)	CQA	N/A	C007	2025/9/1	2026/8/31
Coaxial Cable (Below 1GHz)	CQA	N/A	C013	2025/9/1	2026/8/31
Antenna Connector	CQA	RFC-01	CQA-080	2025/9/1	2026/8/31
RF cable(9KHz~40GHz)	CQA	RF-01	CQA-079	2025/9/1	2026/8/31
Power meter	R&S	NRVD	CQA-029	2025/9/1	2026/8/31
Power divider	MIDWEST	PWD-2533-02-SMA-79	CQA-067	2025/9/1	2026/8/31
EMI Test Receiver	R&S	ESR7	CQA-005	2025/9/1	2026/8/31
LISN	R&S	ENV216	CQA-003	2025/9/1	2026/8/31
Coaxial cable	CQA	N/A	CQA-C009	2025/9/1	2026/8/31
DC power	KEYSIGHT	E3631A	CQA-028	2025/9/1	2026/8/31
Band Reject Filter	Wainwright instrument gmbh	WRCG2400/2483-2390/2493-35/10SS	CQA-037	2025/9/1	2026/8/31

Test software:

	Manufacturer	Software brand	Software version
Radiated Emissions test software	Tonscend	JS1120-3	Version:8
Conducted Emissions test software	Audix	e3	Version:9
RF Conducted test software	Audix	e3	V3.5.39

Note:

The temporary antenna connector is soldered on the PCB board in order to perform conducted tests and this temporary antenna connector is listed in the equipment list.

4 Test results and Measurement Data

4.1 Antenna Requirement

Standard requirement:	47 CFR Part 15C Section 15.203 /247(c)
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. 15.247(b) (4) requirement: The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.	
EUT Antenna:	
The antenna is PCB antenna. The connection/connection type between the antenna to the EUT's antenna port is: permanently attachmen. This is either permanently attachment or a unique coupling that satisfies the requirement.	

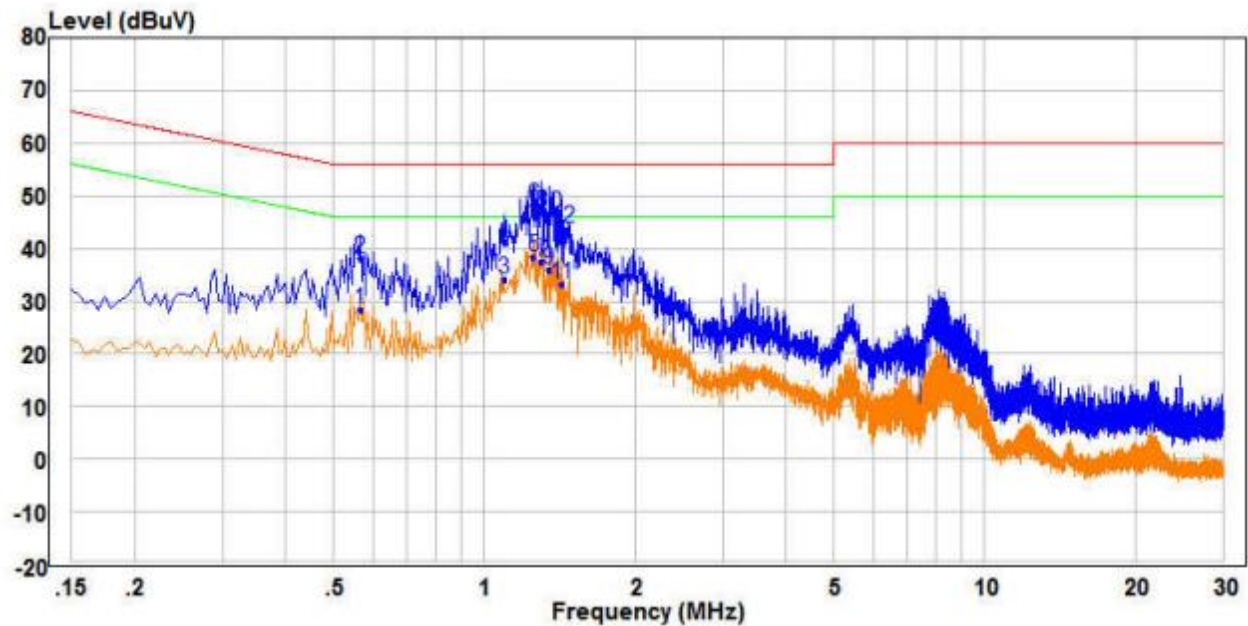
4.2 Conducted Emissions

Test Requirement:	47 CFR Part 15C Section 15.207		
Test Method:	ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024		
Test Frequency Range:	150kHz to 30MHz		
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 50Ω/50μH + 5Ω 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: 2020 on conducted measurement.		
Test Setup:	Shielding Room EUT AE 80cm 80cm AC Mains LISN1 LISN2 AC Mains Test Receiver Ground Reference Plane		

Exploratory Test Mode:	Transmitting with all kind of modulations, data rates at lowest, middle and highest channel.
Final Test Mode:	Through Pre-scan, find the 1Mbps of rate of 802.11b at middle channel is the worst case. Only the worst case is recorded in the report.
Test Voltage:	AC120V/60Hz
Test Results:	Pass

Measurement Data

Live Line:

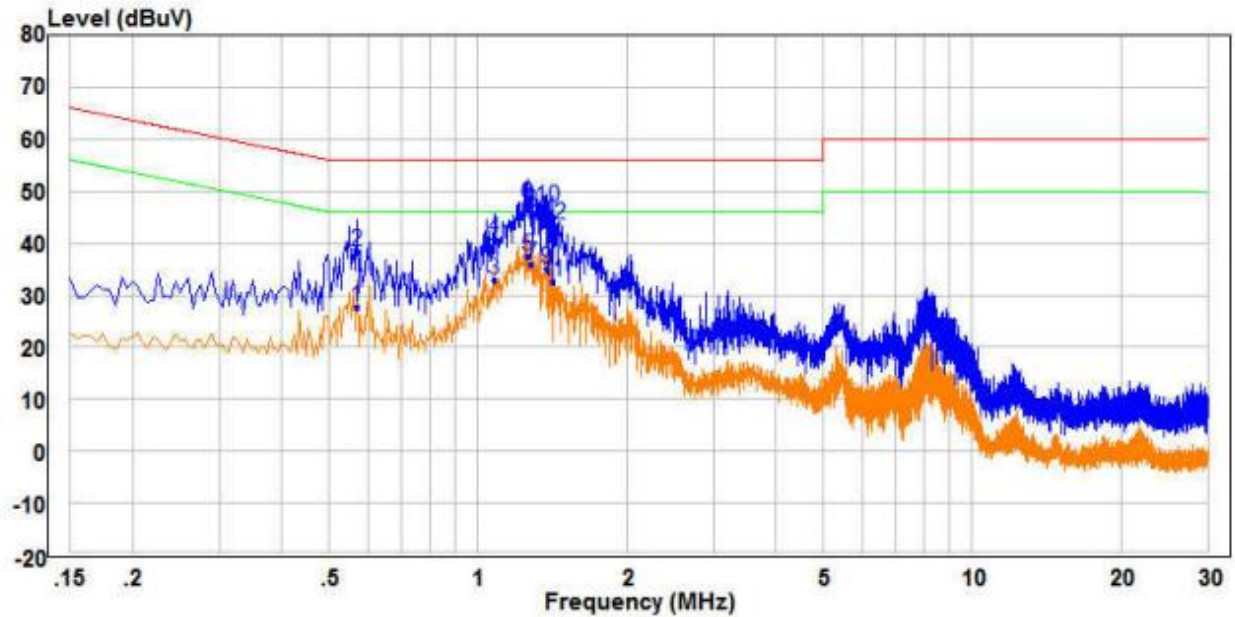


	Freq	Read Level	Factor	Level	Limit	Over Limit	Remark	Pol/Phase
	MHz	dBuV	dB	dBuV	dBuV	dB		
1	0.565	18.46	9.77	28.23	46.00	-17.77	Average	Line
2	0.565	28.25	9.77	38.02	56.00	-17.98	QP	Line
3	1.095	24.19	9.95	34.14	46.00	-11.86	Average	Line
4	1.095	31.02	9.95	40.97	56.00	-15.03	QP	Line
5 PP	1.255	28.15	10.33	38.48	46.00	-7.52	Average	Line
6 QP	1.255	37.69	10.33	48.02	56.00	-7.98	QP	Line
7	1.300	27.02	10.44	37.46	46.00	-8.54	Average	Line
8	1.300	36.51	10.44	46.95	56.00	-9.05	QP	Line
9	1.345	25.31	10.53	35.84	46.00	-10.16	Average	Line
10	1.345	36.07	10.53	46.60	56.00	-9.40	QP	Line
11	1.430	22.61	10.70	33.31	46.00	-12.69	Average	Line
12	1.430	33.24	10.70	43.94	56.00	-12.06	QP	Line

Remark:

1. The following Quasi-Peak and Average measurements were performed on the EUT:
2. Final Test Level = Receiver Reading + LISN Factor + Cable Loss.
3. If the Peak value under Average limit, the Average value is not recorded in the report.

Neutral Line:

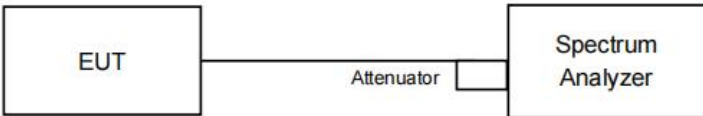


	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark	Pol/Phase
	MHz	dBuV	dB	dBuV	dBuV	dB		
1	0.570	18.09	9.77	27.86	46.00	-18.14	Average	Neutral
2	0.570	28.57	9.77	38.34	56.00	-17.66	QP	Neutral
3	1.080	23.18	9.70	32.88	46.00	-13.12	Average	Neutral
4	1.080	30.98	9.70	40.68	56.00	-15.32	QP	Neutral
5 AV	1.260	27.75	9.71	37.46	46.00	-8.54	Average	Neutral
6 PP	1.260	37.83	9.71	47.54	56.00	-8.46	QP	Neutral
7	1.285	26.28	9.71	35.99	46.00	-10.01	Average	Neutral
8	1.285	36.14	9.71	45.85	56.00	-10.15	QP	Neutral
9	1.375	25.41	9.72	35.13	46.00	-10.87	Average	Neutral
10	1.375	37.07	9.72	46.79	56.00	-9.21	QP	Neutral
11	1.420	22.94	9.72	32.66	46.00	-13.34	Average	Neutral
12	1.420	33.72	9.72	43.44	56.00	-12.56	QP	Neutral

Remark:

1. The following Quasi-Peak and Average measurements were performed on the EUT:
2. Final Test Level = Receiver Reading + LISN Factor + Cable Loss.
3. If the Peak value under Average limit, the Average value is not recorded in the report.

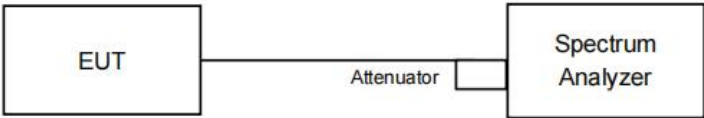
4.3 Conducted Peak & Average Output Power

Test Requirement:	47 CFR Part 15C Section 15.247 (b)(3)
Test Method:	ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024
Test Setup:	<i>Setup for Power meter measurement method</i>  <i>Setup for Spectrum analyser measurement method</i> 
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates
Final Test Mode:	Only the worst case is recorded in the report.
Limit:	30dBm
Test Results:	Pass

Measurement Data

Please Refer to Appendix for Details

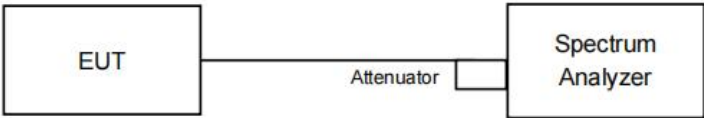
4.4 99% Occupied Bandwidth

Test Requirement:	47 CFR Part 15C
Test Method:	ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024
Test Setup:	 $\text{Offset} = \text{cable loss} + \text{attenuation factor}$
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates
Final Test Mode:	Only the worst case is recorded in the report.
Test Results:	Pass

Measurement Data

Please Refer to Appendix for Details

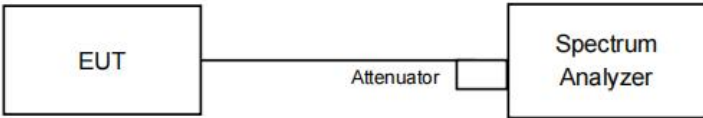
4.5 6dB Occupied Bandwidth

Test Requirement:	47 CFR Part 15C Section 15.247 (a)(2)
Test Method:	ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024
Test Setup:	 Offset=cable loss+ attenuation factor
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates
Final Test Mode:	Only the worst case is recorded in the report.
Limit:	≥ 500 kHz
Test Results:	Pass

Measurement Data

Please Refer to Appendix for Details

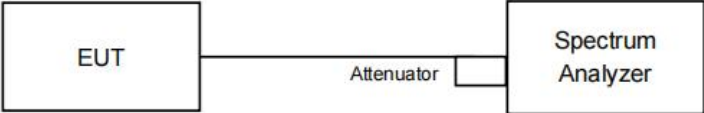
4.6 Power Spectral Density

Test Requirement:	47 CFR Part 15C Section 15.247 (e)
Test Method:	ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024
Test Setup:	 Offset=cable loss+ attenuation factor
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates
Final Test Mode:	Only the worst case is recorded in the report.
Limit:	≤8.00dBm/3kHz
Test Results:	Pass

Measurement Data

Please Refer to Appendix for Details

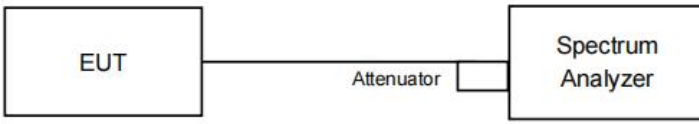
4.7 Band-edge for RF Conducted Emissions

Test Requirement:	47 CFR Part 15C Section 15.247 (d)
Test Method:	ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024
Test Setup:	 Offset=cable loss+ attenuation factor
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates
Final Test Mode:	Only the worst case is recorded in the report.
Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 30 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.
Test Results:	Pass

Measurement Data

Please Refer to Appendix for Details

4.8 RF Conducted Spurious Emissions

Test Requirement:	47 CFR Part 15C Section 15.247 (d)
Test Method:	ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024
Test Setup:	 Offset=cable loss+ attenuation factor
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates
Final Test Mode:	Only the worst case is recorded in the report.
Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 30 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.
Test Results:	Pass

Measurement Data

Please Refer to Appendix for Details

4.9 Radiated Spurious Emissions

Test Requirement:	47 CFR Part 15C Section 15.209 and 15.205				
Test Method:	ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024				
Test Site:	Measurement Distance: 3m (Semi-Anechoic Chamber)				
Receiver Setup:	Frequency	Detector	RBW	VBW	Remark
	0.009MHz-0.090MHz	Peak	10kHz	30kHz	Peak
	0.009MHz-0.090MHz	Average	10kHz	30kHz	Average
	0.090MHz-0.110MHz	Quasi-peak	10kHz	30kHz	Quasi-peak
	0.110MHz-0.490MHz	Peak	10kHz	30kHz	Peak
	0.110MHz-0.490MHz	Average	10kHz	30kHz	Average
	0.490MHz -30MHz	Quasi-peak	10kHz	30kHz	Quasi-peak
	30MHz-1GHz	Quasi-peak	100 kHz	300kHz	Quasi-peak
	Above 1GHz	Peak	1MHz	3MHz	Peak
		Peak	1MHz	10Hz	Average
Limit:	Frequency	Field strength (microvolt/meter)	Limit (dBuV/m)	Remark	Measurement distance (m)
	0.009MHz-0.490MHz	2400/F(kHz)	-	-	300
	0.490MHz-1.705MHz	24000/F(kHz)	-	-	30
	1.705MHz-30MHz	30	-	-	30
	30MHz-88MHz	100	40.0	Quasi-peak	3
	88MHz-216MHz	150	43.5	Quasi-peak	3
	216MHz-960MHz	200	46.0	Quasi-peak	3
	960MHz-1GHz	500	54.0	Quasi-peak	3
	Above 1GHz	500	54.0	Average	3
	Note: 15.35(b), Unless otherwise specified, the limit on peak radio frequency emissions is 20dB above the maximum permitted average emission limit applicable to the equipment under test. This peak limit applies to the total peak emission level radiated by the device.				

Test Setup:

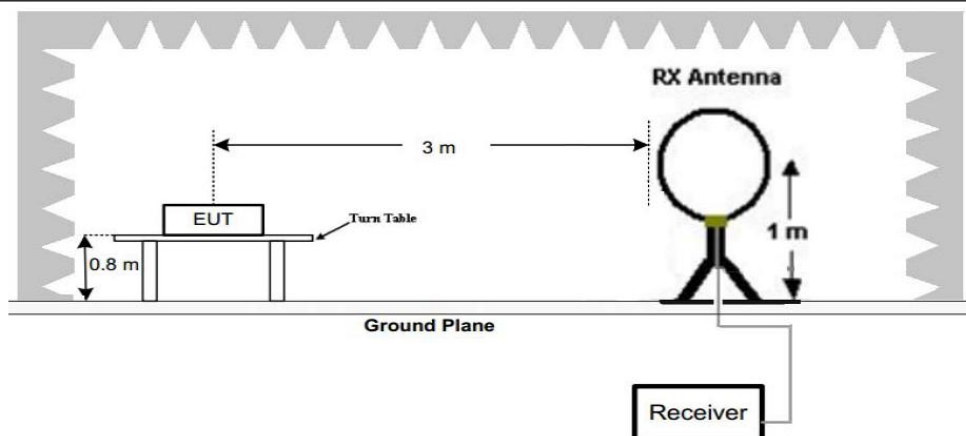


Figure 1. Below 30MHz

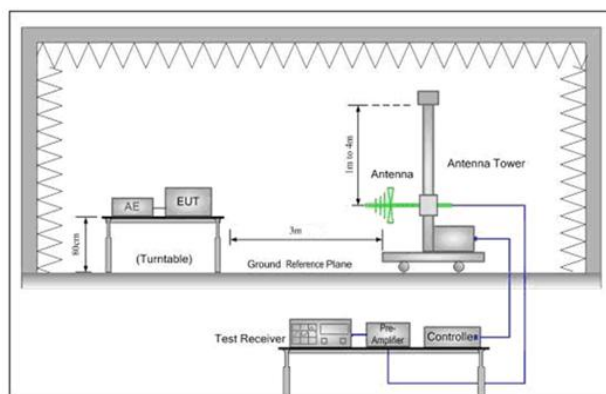


Figure 2. 30MHz to 1GHz

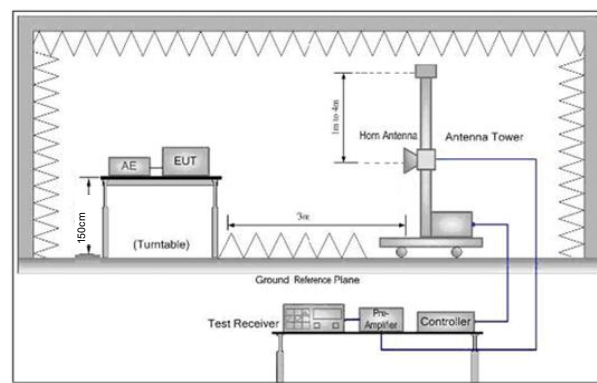


Figure 3. Above 1 GHz

Test Procedure:

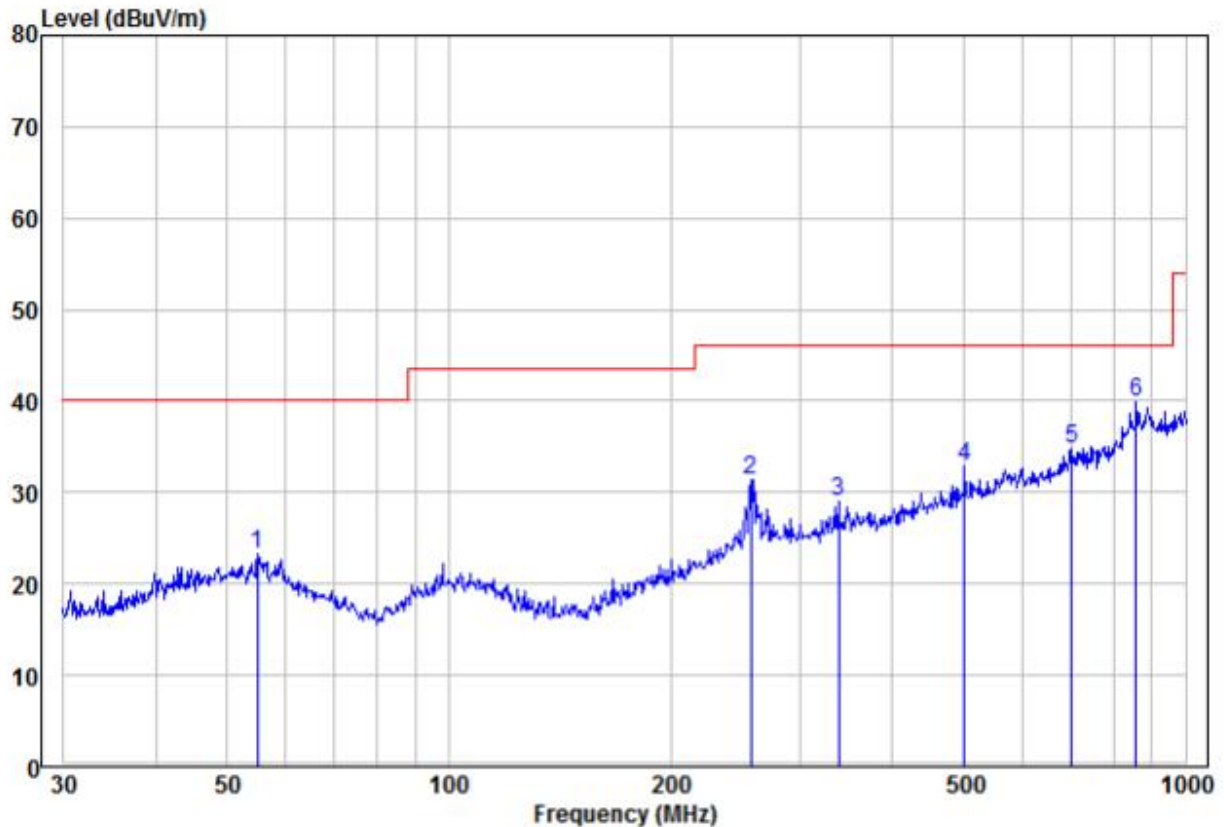
- a. 1) Below 1G: The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
2) Above 1G: The EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
Note: For the radiated emission test above 1GHz: Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. 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.

	d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading. e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet. g. Test the EUT in the lowest channel, the middle channel, the Highest channel. 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.
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates at lowest, middle and highest channel.
Final Test Mode:	Only the worst case is recorded in the report.
Test Results:	Pass

4.9.1 Radiated emission below 1GHz

30MHz~1GHz

Vertical



	Read			Limit	Over		
Freq	Level	Factor	Level	Line	Limit	Remark	Pol/Phase
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
1	55.03	10.51	12.83	23.34	40.00	-16.66 Peak	VERTICAL
2	257.42	15.53	15.89	31.42	46.00	-14.58 Peak	VERTICAL
3	338.40	11.07	17.84	28.91	46.00	-17.09 Peak	VERTICAL
4	501.18	12.01	20.94	32.95	46.00	-13.05 Peak	VERTICAL
5	701.76	10.99	23.77	34.76	46.00	-11.24 Peak	VERTICAL
6 pp	857.02	11.22	28.57	39.79	46.00	-6.21 Peak	VERTICAL

Remark:

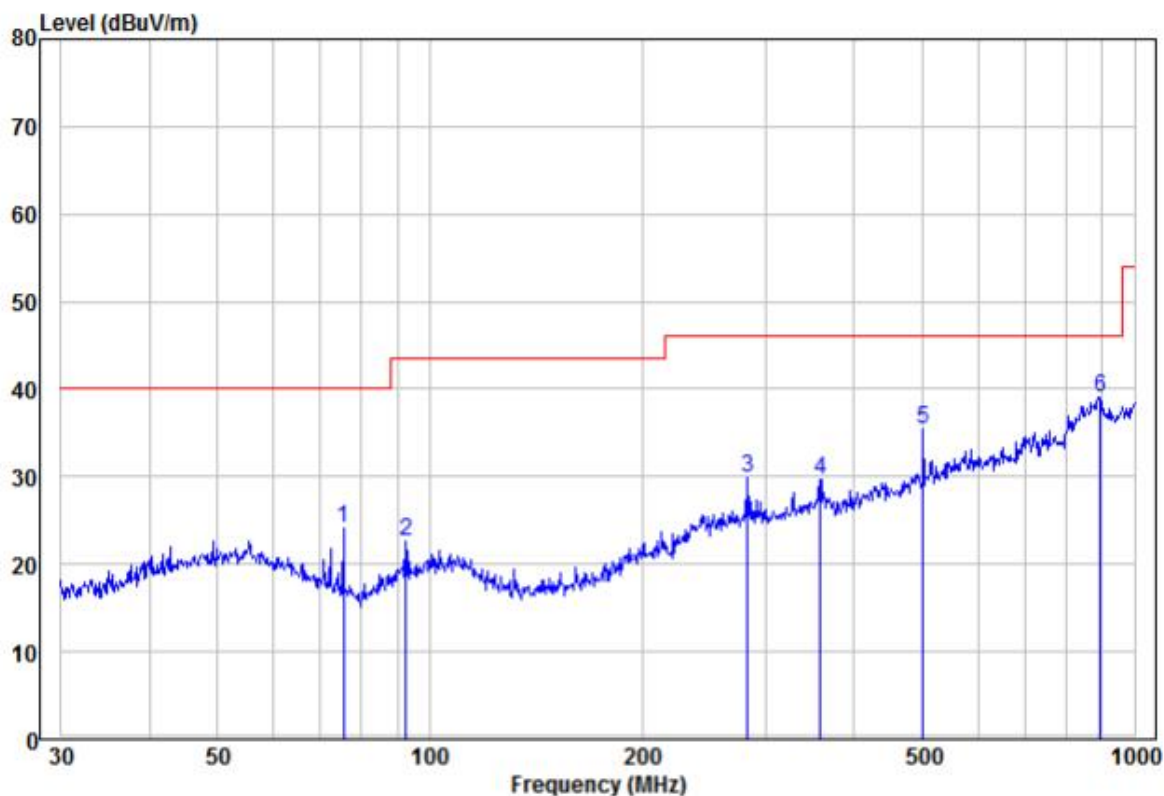
The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Factor= Antenna Factor + Cable Factor – Preamplifier Factor,

Level = Read Level + Factor,

Over Limit=Level-Limit Line.

Horizontal



	Read		Limit	Over			
Freq	Level	Factor	Level	Line	Limit	Remark	Pol/Phase
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
1	75.45	15.49	8.60	24.09	40.00	-15.91 Peak	HORIZONTAL
2	92.46	12.01	10.62	22.63	43.50	-20.87 Peak	HORIZONTAL
3	282.99	13.43	16.48	29.91	46.00	-16.09 Peak	HORIZONTAL
4	357.93	11.33	18.33	29.66	46.00	-16.34 Peak	HORIZONTAL
5	501.18	14.58	20.94	35.52	46.00	-10.48 Peak	HORIZONTAL
6 pp	893.86	9.91	29.20	39.11	46.00	-6.89 Peak	HORIZONTAL

Remark:

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

Factor= Antenna Factor + Cable Factor – Preamplifier Factor,

Level = Read Level + Factor,

Over Limit=Level-Limit Line.

4.9.2 Transmitter emission above 1GHz

Test mode:		802.11b(1Mbps)		Test channel:		Lowest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
4824.000	53.10	-4.26	48.84	74	-25.16	peak	H	1.5	207
4824.000	37.30	-4.26	33.04	54	-20.96	AVG	H	1.5	356
7236.000	51.57	1.18	52.75	74	-21.25	peak	H	1.5	162
7236.000	37.98	1.18	39.16	54	-14.84	AVG	H	1.5	88
4824.000	54.38	-4.26	50.12	74	-23.88	peak	V	1.5	104
4824.000	38.42	-4.26	34.16	54	-19.84	AVG	V	1.5	284
7236.000	51.28	1.18	52.46	74	-21.54	peak	V	1.5	251
7236.000	35.66	1.18	36.84	54	-17.16	AVG	V	1.5	338

Test mode:		802.11b(1Mbps)		Test channel:		Middle			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detect or Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
4874.000	52.50	-4.12	48.38	74	-25.62	peak	H	1.5	309
4874.000	36.98	-4.12	32.86	54	-21.14	AVG	H	1.5	114
7311.000	49.51	1.46	50.97	74	-23.03	peak	H	1.5	184
7311.000	35.65	1.46	37.11	54	-16.89	AVG	H	1.5	272
4874.000	52.99	-4.12	48.87	74	-25.13	peak	V	1.5	242
4874.000	36.23	-4.12	32.11	54	-21.89	AVG	V	1.5	77
7311.000	49.06	1.46	50.52	74	-23.48	peak	V	1.5	195
7311.000	36.67	1.46	38.13	54	-15.87	AVG	V	1.5	174

Test mode:		802.11b(1Mbps)		Test channel:		Highest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detect or Type	Ant. Pol. H/V	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)			(m)	(Degree)
4924.000	52.30	-4.03	48.27	74	-25.73	peak	H	1.5	59
4924.000	37.75	-4.03	33.72	54	-20.28	AVG	H	1.5	14
7386.000	50.17	1.66	51.83	74	-22.17	peak	H	1.5	212
7386.000	37.13	1.66	38.79	54	-15.21	AVG	H	1.5	287
4924.000	53.78	-4.03	49.75	74	-24.25	peak	V	1.5	5
4924.000	37.75	-4.03	33.72	54	-20.28	AVG	V	1.5	47
7386.000	50.39	1.66	52.05	74	-21.95	peak	V	1.5	51
7386.000	36.44	1.66	38.10	54	-15.90	AVG	V	1.5	320

Remark:

- 1) The 1Mbps of rate of 802.11b is the worst case.
- 2) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:
Final Test Level = Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor
- 3) Scan from 9kHz to 25GHz, The disturbance above 13GHz and below 30MHz was very low, and the above harmonics were the highest point could be found when testing, so only the above harmonics had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.

Test mode:		802.11g(6Mbps)		Test channel:		Lowest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detect or Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
4824.000	54.12	-4.26	49.86	74	-24.14	peak	H	1.5	339
4824.000	37.46	-4.26	33.20	54	-20.80	AVG	H	1.5	247
7236.000	52.15	1.18	53.33	74	-20.67	peak	H	1.5	182
7236.000	37.03	1.18	38.21	54	-15.79	AVG	H	1.5	73
4824.000	54.58	-4.26	50.32	74	-23.68	peak	V	1.5	145
4824.000	38.76	-4.26	34.50	54	-19.50	AVG	V	1.5	116
7236.000	50.78	1.18	51.96	74	-22.04	peak	V	1.5	105
7236.000	35.61	1.18	36.79	54	-17.21	AVG	V	1.5	67

Test mode:		802.11g(6Mbps)		Test channel:		Middle			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detect or Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
4874.000	51.37	-4.12	47.25	74	-26.75	peak	H	1.5	167
4874.000	36.42	-4.12	32.30	54	-21.70	AVG	H	1.5	330
7311.000	48.99	1.46	50.45	74	-23.55	peak	H	1.5	85
7311.000	36.30	1.46	37.76	54	-16.24	AVG	H	1.5	125
4874.000	54.01	-4.12	49.89	74	-24.11	peak	V	1.5	44
4874.000	36.34	-4.12	32.22	54	-21.78	AVG	V	1.5	26
7311.000	48.75	1.46	50.21	74	-23.79	peak	V	1.5	139
7311.000	35.07	1.46	36.53	54	-17.47	AVG	V	1.5	283

Test mode:		802.11g(6Mbps)		Test channel:		Highest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detect or Type	Ant. Pol. H/V	Antenna Height (m)	Table Angle (Degree)
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)				
4924.000	52.31	-4.03	48.28	74	-25.72	peak	H	1.5	11
4924.000	38.46	-4.03	34.43	54	-19.57	AVG	H	1.5	208
7386.000	50.98	1.66	52.64	74	-21.36	peak	H	1.5	17
7386.000	37.76	1.66	39.42	54	-14.58	AVG	H	1.5	65
4924.000	54.15	-4.03	50.12	74	-23.88	peak	V	1.5	320
4924.000	38.25	-4.03	34.22	54	-19.78	AVG	V	1.5	335
7386.000	49.33	1.66	50.99	74	-23.01	peak	V	1.5	348
7386.000	36.95	1.66	38.61	54	-15.39	AVG	V	1.5	50

Remark:

- 1) The 6Mbps of rate of 802.11g is the worst case.
- 2) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:
Final Test Level = Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor
- 3) Scan from 9kHz to 25GHz, The disturbance above 13GHz and below 30MHz was very low, and the above harmonics were the highest point could be found when testing, so only the above harmonics had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.

Test mode:		802.11n20(6.5Mbps)		Test channel:		Lowest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
4824.000	54.07	-4.26	49.81	74	-24.19	peak	H	1.5	105
4824.000	37.07	-4.26	32.81	54	-21.19	AVG	H	1.5	254
7236.000	51.14	1.18	52.32	74	-21.68	peak	H	1.5	306
7236.000	37.90	1.18	39.08	54	-14.92	AVG	H	1.5	313
4824.000	54.60	-4.26	50.34	74	-23.66	peak	V	1.5	86
4824.000	39.02	-4.26	34.76	54	-19.24	AVG	V	1.5	236
7236.000	51.85	1.18	53.03	74	-20.97	peak	V	1.5	6
7236.000	36.66	1.18	37.84	54	-16.16	AVG	V	1.5	192

Test mode:		802.11n20(6.5Mbps)		Test channel:		Middle			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
4874.000	51.64	-4.12	47.52	74	-26.48	peak	H	1.5	186
4874.000	37.00	-4.12	32.88	54	-21.12	AVG	H	1.5	145
7311.000	49.09	1.46	50.55	74	-23.45	peak	H	1.5	33
7311.000	36.81	1.46	38.27	54	-15.73	AVG	H	1.5	10
4874.000	53.10	-4.12	48.98	74	-25.02	peak	V	1.5	249
4874.000	37.90	-4.12	33.78	54	-20.22	AVG	V	1.5	300
7311.000	48.69	1.46	50.15	74	-23.85	peak	V	1.5	350
7311.000	36.82	1.46	38.28	54	-15.72	AVG	V	1.5	26

Test mode:		802.11n20(6.5Mbps)		Test channel:		Highest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detect or Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
4924.000	51.67	-4.03	47.64	74	-26.36	peak	H	1.5	149
4924.000	38.74	-4.03	34.71	54	-19.29	AVG	H	1.5	203
7386.000	49.41	1.66	51.07	74	-22.93	peak	H	1.5	24
7386.000	37.92	1.66	39.58	54	-14.42	AVG	H	1.5	154
4924.000	53.56	-4.03	49.53	74	-24.47	peak	V	1.5	190
4924.000	37.23	-4.03	33.20	54	-20.80	AVG	V	1.5	64
7386.000	49.91	1.66	51.57	74	-22.43	peak	V	1.5	1
7386.000	37.93	1.66	39.59	54	-14.41	AVG	V	1.5	323

Remark:

- 1) The MCS0 of rate of 802.11n20 is the worst case.
- 2) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:
Final Test Level = Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor
- 3) Scan from 9kHz to 25GHz, The disturbance above 13GHz and below 30MHz was very low, and the above harmonics were the highest point could be found when testing, so only the above harmonics had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.

Test mode:		802.11n40(13.5Mbps)		Test channel:		Lowest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
4824.000	52.99	-4.26	48.73	74	-25.27	peak	H	1.5	319
4824.000	36.50	-4.26	32.24	54	-21.76	AVG	H	1.5	33
7236.000	51.98	1.18	53.16	74	-20.84	peak	H	1.5	270
7236.000	38.32	1.18	39.50	54	-14.50	AVG	H	1.5	249
4824.000	55.46	-4.26	51.20	74	-22.80	peak	V	1.5	52
4824.000	39.37	-4.26	35.11	54	-18.89	AVG	V	1.5	65
7236.000	51.36	1.18	52.54	74	-21.46	peak	V	1.5	53
7236.000	36.15	1.18	37.33	54	-16.67	AVG	V	1.5	112

Test mode:		802.11n40(13.5Mbps)		Test channel:		Middle			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
4874.000	52.90	-4.12	48.78	74	-25.22	peak	H	1.5	300
4874.000	36.99	-4.12	32.87	54	-21.13	AVG	H	1.5	310
7311.000	49.78	1.46	51.24	74	-22.76	peak	H	1.5	237
7311.000	35.90	1.46	37.36	54	-16.64	AVG	H	1.5	153
4874.000	53.89	-4.12	49.77	74	-24.23	peak	V	1.5	190
4874.000	36.87	-4.12	32.75	54	-21.25	AVG	V	1.5	25
7311.000	49.35	1.46	50.81	74	-23.19	peak	V	1.5	159
7311.000	35.45	1.46	36.91	54	-17.09	AVG	V	1.5	62

Test mode:		802.11n40(13.5Mbps)		Test channel:		Highest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detect or Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
4924.000	52.49	-4.03	48.46	74	-25.54	peak	H	1.5	13
4924.000	38.83	-4.03	34.80	54	-19.20	AVG	H	1.5	353
7386.000	50.71	1.66	52.37	74	-21.63	peak	H	1.5	213
7386.000	36.46	1.66	38.12	54	-15.88	AVG	H	1.5	208
4924.000	54.51	-4.03	50.48	74	-23.52	peak	V	1.5	86
4924.000	37.67	-4.03	33.64	54	-20.36	AVG	V	1.5	29
7386.000	51.06	1.66	52.72	74	-21.28	peak	V	1.5	222
7386.000	36.06	1.66	37.72	54	-16.28	AVG	V	1.5	259

Remark:

- 1) The MCS0 of rate of 802.11n40 is the worst case.
- 2) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:
Final Test Level = Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor
- 3) Scan from 9kHz to 25GHz, The disturbance above 13GHz and below 30MHz was very low, and the above harmonics were the highest point could be found when testing, so only the above harmonics had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.

Test mode:		802.11ax20(17.2Mbps)		Test channel:		Lowest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
4824.000	52.51	-4.26	48.25	74	-25.75	peak	H	1.5	268
4824.000	36.72	-4.26	32.46	54	-21.54	AVG	H	1.5	119
7236.000	52.03	1.18	53.21	74	-20.79	peak	H	1.5	101
7236.000	38.02	1.18	39.20	54	-14.80	AVG	H	1.5	309
4824.000	55.18	-4.26	50.92	74	-23.08	peak	V	1.5	86
4824.000	39.05	-4.26	34.79	54	-19.21	AVG	V	1.5	31
7236.000	50.42	1.18	51.60	74	-22.40	peak	V	1.5	345
7236.000	36.84	1.18	38.02	54	-15.98	AVG	V	1.5	308

Test mode:		802.11ax20(17.2Mbps)		Test channel:		Middle			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
4874.000	52.16	-4.12	48.04	74	-25.96	peak	H	1.5	243
4874.000	36.40	-4.12	32.28	54	-21.72	AVG	H	1.5	265
7311.000	49.77	1.46	51.23	74	-22.77	peak	H	1.5	105
7311.000	36.65	1.46	38.11	54	-15.89	AVG	H	1.5	289
4874.000	53.71	-4.12	49.59	74	-24.41	peak	V	1.5	86
4874.000	37.65	-4.12	33.53	54	-20.47	AVG	V	1.5	99
7311.000	49.08	1.46	50.54	74	-23.46	peak	V	1.5	178
7311.000	35.56	1.46	37.02	54	-16.98	AVG	V	1.5	119

Test mode:		802.11ax20(17.2Mbps)		Test channel:		Highest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detect or Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
4924.000	52.71	-4.03	48.68	74	-25.32	peak	H	1.5	96
4924.000	37.20	-4.03	33.17	54	-20.83	AVG	H	1.5	145
7386.000	49.56	1.66	51.22	74	-22.78	peak	H	1.5	59
7386.000	37.49	1.66	39.15	54	-14.85	AVG	H	1.5	198
4924.000	55.22	-4.03	51.19	74	-22.81	peak	V	1.5	40
4924.000	37.63	-4.03	33.60	54	-20.40	AVG	V	1.5	342
7386.000	49.62	1.66	51.28	74	-22.72	peak	V	1.5	42
7386.000	37.38	1.66	39.04	54	-14.96	AVG	V	1.5	119

Remark:

- 1) The MCS0 of rate of 802.11n20 is the worst case.
- 2) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:
Final Test Level = Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor
- 3) Scan from 9kHz to 25GHz, The disturbance above 13GHz and below 30MHz was very low, and the above harmonics were the highest point could be found when testing, so only the above harmonics had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.

Test mode:		802.11ax40(34.4Mbps)		Test channel:		Lowest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
4824.000	53.66	-4.26	49.40	74	-24.60	peak	H	1.5	258
4824.000	36.20	-4.26	31.94	54	-22.06	AVG	H	1.5	264
7236.000	51.75	1.18	52.93	74	-21.07	peak	H	1.5	143
7236.000	38.89	1.18	40.07	54	-13.93	AVG	H	1.5	89
4824.000	55.34	-4.26	51.08	74	-22.92	peak	V	1.5	238
4824.000	38.07	-4.26	33.81	54	-20.19	AVG	V	1.5	32
7236.000	52.23	1.18	53.41	74	-20.59	peak	V	1.5	293
7236.000	36.13	1.18	37.31	54	-16.69	AVG	V	1.5	17

Test mode:		802.11ax40(34.4Mbps)		Test channel:		Middle			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
4874.000	52.70	-4.12	48.58	74	-25.42	peak	H	1.5	140
4874.000	36.25	-4.12	32.13	54	-21.87	AVG	H	1.5	335
7311.000	48.34	1.46	49.80	74	-24.20	peak	H	1.5	186
7311.000	36.75	1.46	38.21	54	-15.79	AVG	H	1.5	84
4874.000	53.11	-4.12	48.99	74	-25.01	peak	V	1.5	335
4874.000	36.46	-4.12	32.34	54	-21.66	AVG	V	1.5	37
7311.000	49.08	1.46	50.54	74	-23.46	peak	V	1.5	93
7311.000	35.44	1.46	36.90	54	-17.10	AVG	V	1.5	213

Test mode:		802.11ax40(34.4Mbps)		Test channel:		Highest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detect or Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
4924.000	52.07	-4.03	48.04	74	-25.96	peak	H	1.5	217
4924.000	37.47	-4.03	33.44	54	-20.56	AVG	H	1.5	37
7386.000	50.01	1.66	51.67	74	-22.33	peak	H	1.5	245
7386.000	36.19	1.66	37.85	54	-16.15	AVG	H	1.5	227
4924.000	54.87	-4.03	50.84	74	-23.16	peak	V	1.5	201
4924.000	37.00	-4.03	32.97	54	-21.03	AVG	V	1.5	250
7386.000	51.06	1.66	52.72	74	-21.28	peak	V	1.5	268
7386.000	36.99	1.66	38.65	54	-15.35	AVG	V	1.5	183

Remark:

- 1) The MCS0 of rate of 802.11n40 is the worst case.
- 2) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level = Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor

Scan from 9kHz to 25GHz, The disturbance above 13GHz and below 30MHz was very low, and the above harmonics were the highest point could be found when testing, so only the above harmonics had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.

4.10 Restricted bands around fundamental frequency

Test Requirement:	47 CFR Part 15C Section 15.209 and 15.205		
Test Method:	ANSI C63.10 2020		
Test Site:	Measurement Distance: 3m (Semi-Anechoic Chamber)		
Limit:	Frequency	Limit (dBuV/m @3m)	Remark
	30MHz-88MHz	40.0	Quasi-peak Value
	88MHz-216MHz	43.5	Quasi-peak Value
	216MHz-960MHz	46.0	Quasi-peak Value
	960MHz-1GHz	54.0	Quasi-peak Value
	Above 1GHz	54.0	Average Value
		74.0	Peak Value

Test Setup:

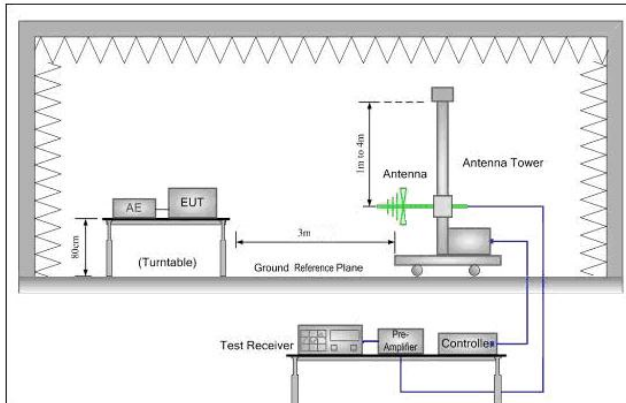


Figure 1. 30MHz to 1GHz

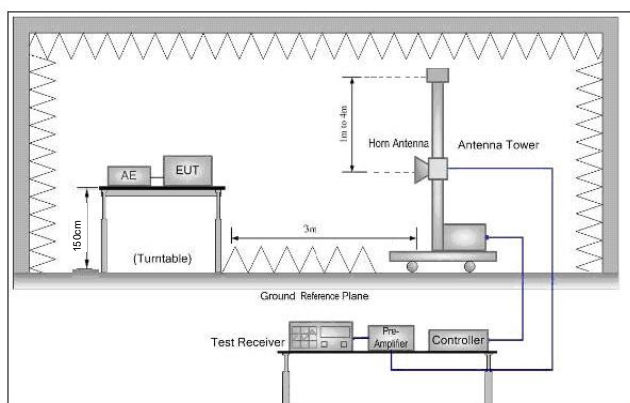


Figure 2. Above 1 GHz

Test Procedure:

- 1) Below 1G: The EUT was placed on the top of a rotating table 0.8 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.
 - 2) Above 1G: 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.
- Note: For the radiated emission test above 1GHz:
- Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.
- 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. e. 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 lowest channel, the middle channel, the Highest channel. 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.
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates. Transmitting mode.
Final Test Mode:	Pretest the EUT at Transmitting mode, found the Transmitting mode which it is worse case. Through Pre-scan, find the 1Mbps of rate is the worst case of 802.11b; 6Mbps of rate is the worst case of 802.11g; 6.5Mbps of rate is the worst case of 802.11n(HT20); 13.5Mbps of rate is the worst case of 802.11n(HT40). Only the worst case is recorded in the report.
Test Results:	Pass

Test data:

Worse case mode:		802.11b(1Mbps)		Test channel:		Lowest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
2390.000	58.67	-9.2	49.47	74	-24.53	peak	H	1.5	308
2390.000	44.00	-9.2	34.80	54	-19.20	AVG	H	1.5	118
2400.000	60.05	-9.39	50.66	74	-23.34	peak	H	1.5	20
2400.000	46.32	-9.39	36.93	54	-17.07	AVG	H	1.5	165
2390.000	58.99	-9.2	49.79	74	-24.21	peak	V	1.5	164
2390.000	44.04	-9.2	34.84	54	-19.16	AVG	V	1.5	48
2400.000	59.45	-9.39	50.06	74	-23.94	peak	V	1.5	198
2400.000	46.14	-9.39	36.75	54	-17.25	AVG	V	1.5	49

Worse case mode:		802.11b(1Mbps)		Test channel:		Highest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
2483.500	58.10	-9.29	48.81	74	-25.19	peak	H	1.5	57
2483.500	44.44	-9.29	35.15	54	-18.85	AVG	H	1.5	351
2483.500	57.80	-9.29	48.51	74	-25.49	peak	V	1.5	334
2483.500	45.89	-9.29	36.60	54	-17.40	AVG	V	1.5	314

Worse case mode:		802.11g(6Mbps)		Test channel:		Lowest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
2390.000	58.33	-9.2	49.13	74	-24.87	peak	H	1.5	279
2390.000	44.85	-9.2	35.65	54	-18.35	AVG	H	1.5	268
2400.000	59.94	-9.39	50.55	74	-23.45	peak	H	1.5	86
2400.000	46.88	-9.39	37.49	54	-16.51	AVG	H	1.5	42
2390.000	58.86	-9.2	49.66	74	-24.34	peak	V	1.5	330
2390.000	44.74	-9.2	35.54	54	-18.46	AVG	V	1.5	283
2400.000	60.10	-9.39	50.71	74	-23.29	peak	V	1.5	157
2400.000	46.62	-9.39	37.23	54	-16.77	AVG	V	1.5	99

Worse case mode:		802.11g(6Mbps)		Test channel:		Highest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
2483.500	57.78	-9.29	48.49	74	-25.51	peak	H	1.5	225
2483.500	44.45	-9.29	35.16	54	-18.84	AVG	H	1.5	44
2483.500	58.26	-9.29	48.97	74	-25.03	peak	V	1.5	282
2483.500	45.77	-9.29	36.48	54	-17.52	AVG	V	1.5	357

Worse case mode:		802.11n(HT20)(6.5Mbps)		Test channel:		Lowest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	Type	H/V	(m)	(Degree)
2390.000	59.02	-9.2	49.82	74	-24.18	peak	H	1.5	23
2390.000	44.64	-9.2	35.44	54	-18.56	AVG	H	1.5	5
2400.000	59.47	-9.39	50.08	74	-23.92	peak	H	1.5	60
2400.000	46.76	-9.39	37.37	54	-16.63	AVG	H	1.5	342
2390.000	59.22	-9.2	50.02	74	-23.98	peak	V	1.5	176
2390.000	44.92	-9.2	35.72	54	-18.28	AVG	V	1.5	277
2400.000	59.25	-9.39	49.86	74	-24.14	peak	V	1.5	9
2400.000	46.26	-9.39	36.87	54	-17.13	AVG	V	1.5	46

Worse case mode:		802.11n(HT20)(6.5Mbps)		Test channel:		Highest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	Type	H/V	(m)	(Degree)
2483.500	58.27	-9.29	48.98	74	-25.02	peak	H	1.5	197
2483.500	43.49	-9.29	34.20	54	-19.80	AVG	H	1.5	45
2483.500	57.70	-9.29	48.41	74	-25.59	peak	V	1.5	205
2483.500	45.75	-9.29	36.46	54	-17.54	AVG	V	1.5	322

Worse case mode:		802.11n(HT40)(13.5Mbps)		Test channel:		Lowest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	Type	H/V	(m)	(Degree)
2390.000	59.11	-9.2	49.91	74	-24.09	peak	H	1.5	211
2390.000	44.12	-9.2	34.92	54	-19.08	AVG	H	1.5	140
2400.000	59.63	-9.39	50.24	74	-23.76	peak	H	1.5	273
2400.000	46.37	-9.39	36.98	54	-17.02	AVG	H	1.5	247
2390.000	58.24	-9.2	49.04	74	-24.96	peak	V	1.5	59
2390.000	44.24	-9.2	35.04	54	-18.96	AVG	V	1.5	162
2400.000	59.86	-9.39	50.47	74	-23.53	peak	V	1.5	144
2400.000	46.34	-9.39	36.95	54	-17.05	AVG	V	1.5	346

Worse case mode:		802.11n(HT40)(13.5Mbps)		Test channel:		Highest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	Type	H/V	(m)	(Degree)
2483.500	57.51	-9.29	48.22	74	-25.78	peak	H	1.5	191
2483.500	43.98	-9.29	34.69	54	-19.31	AVG	H	1.5	1
2483.500	57.71	-9.29	48.42	74	-25.58	peak	V	1.5	336
2483.500	46.32	-9.29	37.03	54	-16.97	AVG	V	1.5	267

Note:

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

Final Test Level = Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor

Worse case mode:		802.11ax(HE20)(17.2Mbps)		Test channel:		Lowest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	Type	H/V	(m)	(Degree)
2390.000	58.62	-9.2	49.42	74	-24.58	peak	H	1.5	189
2390.000	44.89	-9.2	35.69	54	-18.31	AVG	H	1.5	31
2400.000	59.75	-9.39	50.36	74	-23.64	peak	H	1.5	204
2400.000	46.40	-9.39	37.01	54	-16.99	AVG	H	1.5	191
2390.000	58.89	-9.2	49.69	74	-24.31	peak	V	1.5	237
2390.000	44.16	-9.2	34.96	54	-19.04	AVG	V	1.5	152
2400.000	59.50	-9.39	50.11	74	-23.89	peak	V	1.5	225
2400.000	46.41	-9.39	37.02	54	-16.98	AVG	V	1.5	333

Worse case mode:		802.11ax(HE20)(17.2Mbps)		Test channel:		Highest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	Type	H/V	(m)	(Degree)
2483.500	57.99	-9.29	48.70	74	-25.30	peak	H	1.5	93
2483.500	44.25	-9.29	34.96	54	-19.04	AVG	H	1.5	35
2483.500	58.19	-9.29	48.90	74	-25.10	peak	V	1.5	69
2483.500	46.21	-9.29	36.92	54	-17.08	AVG	V	1.5	287

Worse case mode:		802.11ax(HE40)(34.4Mbps)		Test channel:		Lowest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	Type	H/V	(m)	(Degree)
2390.000	58.86	-9.2	49.66	74	-24.34	peak	H	1.5	228
2390.000	44.73	-9.2	35.53	54	-18.47	AVG	H	1.5	152
2400.000	60.09	-9.39	50.70	74	-23.30	peak	H	1.5	250
2400.000	46.70	-9.39	37.31	54	-16.69	AVG	H	1.5	23
2390.000	58.64	-9.2	49.44	74	-24.56	peak	V	1.5	186
2390.000	44.47	-9.2	35.27	54	-18.73	AVG	V	1.5	197
2400.000	59.66	-9.39	50.27	74	-23.73	peak	V	1.5	35
2400.000	46.96	-9.39	37.57	54	-16.43	AVG	V	1.5	350

Worse case mode:		802.11ax(HE40)(34.4Mbps)		Test channel:		Highest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	Type	H/V	(m)	(Degree)
2483.500	58.31	-9.29	49.02	74	-24.98	peak	H	1.5	46
2483.500	44.09	-9.29	34.80	54	-19.20	AVG	H	1.5	156
2483.500	57.61	-9.29	48.32	74	-25.68	peak	V	1.5	116
2483.500	45.93	-9.29	36.64	54	-17.36	AVG	V	1.5	305

Note:

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

Final Test Level = Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor

5 Photographs - EUT Test Setup

Detailed information is given in Appendix A

6 Photographs - EUT Constructional Details

Detailed information is given in Appendix B and Appendix C

*** END OF REPORT ***