

TEST REPORT

Product : Desktop PC
Trade mark : COMPAQ
Model/Type reference : QD15I5GW8512, QD15I3GW8512
Serial Number : N/A
Report Number : EED32R80383904
FCC ID : 2BLU9-QD15GW
Date of Issue : Apr. 24, 2025
Test Standards : 47 CFR Part 15 Subpart E
Test result : PASS

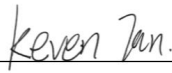
Prepared for:

M&M Electronics, S.A.
Cocosolito, Colon Free Zone, Main Entrance Warehouse
10D and 11D, Panama

Prepared by:

Centre Testing International Group Co., Ltd.
Hongwei Industrial Zone, Bao'an 70 District,
Shenzhen, Guangdong, China
TEL: +86-755-3368 3668
FAX: +86-755-3368 3385

Compiled by:



Keven Tan

Reviewed by:



Frazer Li

Approved by:



Aaron Ma

Date:

Apr. 24, 2025



Check No.:1637210325

1 Content

1 CONTENT	2
2 VERSION	3
3 TEST SUMMARY	4
4 GENERAL INFORMATION	5
4.1 CLIENT INFORMATION	5
4.2 GENERAL DESCRIPTION OF EUT	5
4.3 TEST CONFIGURATION	7
4.4 TEST ENVIRONMENT	7
4.5 DESCRIPTION OF SUPPORT UNITS	8
4.6 TEST LOCATION	8
4.7 DEVIATION FROM STANDARDS	8
4.8 ABNORMALITIES FROM STANDARD CONDITIONS	8
4.9 OTHER INFORMATION REQUESTED BY THE CUSTOMER	8
4.10 MEASUREMENT UNCERTAINTY (95% CONFIDENCE LEVELS, K=2)	9
5 EQUIPMENT LIST	10
6 RADIO TECHNICAL REQUIREMENTS SPECIFICATION	13
6.1 ANTENNA REQUIREMENT	13
6.2 AC POWER LINE CONDUCTED EMISSIONS	14
6.3 RADIATED EMISSION	18
PHOTOGRAPHS OF TEST SETUP	29
PHOTOGRAPHS OF EUT CONSTRUCTIONAL DETAILS	32

2 Version

Version No.	Date	Description
00	Apr. 24, 2025	Original

3 Test Summary

Test Item	Test Requirement	Result
Antenna Requirement	47 CFR Part 15 Subpart C Section 15.203	PASS
AC Power Line Conducted Emission	47 CFR Part 15 Subpart E Section 15.407 (b)(6)	PASS
Duty Cycle	47 CFR Part 15 Subpart E Section 15.407	NOTE
Maximum Conducted Output Power	47 CFR Part 15 Subpart E Section 15.407 (a)	NOTE
26dB Emission Bandwidth	47 CFR Part 15 Subpart E Section 15.407 (a)	NOTE
99% Occupied Bandwidth	\	NOTE
6dB Emission Bandwidth	47 CFR Part 15 Subpart E Section 15.407 (e)	NOTE
Maximum Power Spectral Density	47 CFR Part 15 Subpart E Section 15.407 (a)	NOTE
Frequency stability	47 CFR Part 15 Subpart E Section 15.407 (g)	NOTE
Radiated Emissions	47 CFR Part 15 Subpart E Section 15.407 (b)	PASS
Radiated Emissions which fall in the restricted bands	47 CFR Part 15 Subpart E Section 15.407 (b)	PASS
Remark: NOTE: The test data refer to the report of No.180717-02.TR01, 180717-02.TR03 (FCC ID: PD9AX201NG). Model No.: QD15I5GW8512, QD15I3GW8512 Only the model QD15I5GW8512 was tested. The They have same electrical, PCB and layout, only the model name, QD15I5GW8512andQD15I3GW8512 are different for marketing requirements.		

4 General Information

4.1 Client Information

Applicant:	M&M Electronics, S.A.
Address of Applicant:	Cocosolito, Colon Free Zone, Main Entrance Warehouse 10D and 11D, Panama
Manufacturer:	M&M Electronics, S.A.
Address of Manufacturer:	Cocosolito, Colon Free Zone, Main Entrance Warehouse 10D and 11D, Panama
Factory :	Hunan Greatwall Computer System Co.,Ltd
Address of Factory :	Hunan Greatwall Industrial Park, Tianyi Science and Technology City, Xiangyun Middle Road, Tianyuan District, Zhuzhou, Hunan Province

4.2 General Description of EUT

Product Name:	Desktop PC
Model No.:	QD15I5GW8512, QD15I3GW8512
Test Model No.:	QD15I5GW8512
Trade mark:	COMPAQ
Product Type:	☐ Mobile ☐ Portable ☒ Fixed Location
Type of Modulation:	IEEE 802.11a: OFDM (BPSK, QPSK, 16QAM, 64QAM) IEEE 802.11n(HT20/HT40): OFDM (BPSK, QPSK, 16QAM, 64QAM) IEEE 802.11ac(VHT20/VHT40/VHT80): OFDM (BPSK, QPSK, 16QAM, 64QAM, 256QAM) IEEE 802.11ax(HE20/HE40/HE80): OFDMA (BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM)
Operating Frequency	U-NII-1: 5150-5250MHz U-NII-3: 5745-5825MHz
Antenna Type:	PIFA Antenna
Antenna Gain:	U-NII-1: ANT0: 2.82dBi, ANT1: 1.62dBi U-NII-3: ANT0: 0.13dBi, ANT1: 2.49dBi
Power Supply:	Adapter: AC 100~240V
Test voltage:	AC 120V
Sample Received Date:	Apr. 09, 2025
Sample tested Date:	Apr. 09, 2025 to Apr. 22, 2025

Operation Frequency each of channel

802.11a/802.11n/802.11ac/802.11ax (20MHz) Frequency/Channel Operations:

U-NII-1		U-NII-3	
Channel	Frequency(MHz)	Channel	Frequency(MHz)
36	5180	149	5745
40	5200	153	5765
44	5220	157	5785
48	5240	161	5805
-	-	165	5825

802.11n/802.11ac/802.11ax (40MHz) Frequency/Channel Operations:

U-NII-1		U-NII-3	
Channel	Frequency(MHz)	Channel	Frequency(MHz)
38	5190	151	5755
46	5230	159	5795

802.11ac/802.11ax (80MHz) Frequency/Channel Operations:

U-NII-1		U-NII-3	
Channel	Frequency(MHz)	Channel	Frequency(MHz)
42	5210	155	5775

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:

4.3 Test Configuration

EUT Test Software Settings:	
Software:	DRTU.exe
EUT Power Grade:	Default
Use test software to set the lowest frequency, the middle frequency and the highest frequency keep transmitting of the EUT.	
Test Mode:	
We have verified the construction and function in typical operation. All the test modes were carried out with the EUT in transmitting operation, which was shown in this test report and defined as follows:	
Per-scan all kind of data rate in lowest channel, and found the follow list which it was worst case.	
Mode	Data rate
802.11a	6 Mbps
802.11n(HT20)	MCS0
802.11n(HT40)	MCS0
802.11ac(VHT20)	MCS0
802.11ac(VHT40)	MCS0
802.11ac(VHT80)	MCS0
802.11ax(VHT20)	MCS0
802.11ax(VHT40)	MCS0
802.11ax(VHT80)	MCS0

4.4 Test Environment

Operating Environment:		
Radiated Spurious Emissions:		
Temperature:	22~25.0 °C	
Humidity:	50~55 % RH	
Atmospheric Pressure:	1010mbar	
Conducted Emissions:		
Temperature:	22~25.0 °C	
Humidity:	50~55 % RH	
Atmospheric Pressure:	1010mbar	
RF Conducted:		
Humidity:	50~55 % RH	
Atmospheric Pressure:	1010mbar	
Temperature:	NT (Normal Temperature)	22~25.0 °C
	LT (Low Temperature)	0 °C
	HT (High Temperature)	55.0 °C
Working Voltage of the EUT:	NV (Normal Voltage)	120 V
	LV (Low Voltage)	132 V
	HV (High Voltage)	108 V

4.5 Description of Support Units

The EUT has been tested with associated equipment below.

1) Support equipment

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

4.6 Test Location

All tests were performed at:

Centre Testing International Group Co., Ltd

Building C, Hongwei Industrial Park Block 70, Bao'an District, Shenzhen, China

Telephone: +86 (0) 755 33683668 Fax: +86 (0) 755 33683385

No tests were sub-contracted.

FCC Designation No.: CN1164

4.7 Deviation from Standards

None.

4.8 Abnormalities from Standard Conditions

None.

4.9 Other Information Requested by the Customer

None.

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

No.	Item	Measurement Uncertainty
1	Radio Frequency	7.9×10^{-8}
2	RF power, conducted	0.46dB (30MHz-1GHz)
		0.55dB (1GHz-18GHz)
3	Radiated Spurious emission test	3.3dB (9kHz-30MHz)
		4.5dB (30MHz-1GHz)
		4.8dB (1GHz-18GHz)
		3.4dB (18GHz-40GHz)
4	Conduction emission	3.5dB (9kHz to 150kHz)
		3.1dB (150kHz to 30MHz)
5	Temperature test	0.64°C
6	Humidity test	3.8%
7	DC power voltages	0.026%

5 Equipment List

Conducted disturbance Test					
Equipment	Manufacturer	Model No.	Serial Number	Cal. date	Cal. Due date
				(mm-dd-yyyy)	(mm-dd-yyyy)
Receiver	R&S	ESCI	100435	04-08-2025	04-07-2026
Temperature/ Humidity Indicator	Defu	TH128	/	04-25-2024	04-24-2025
LISN	R&S	ENV216	100098	09-19-2024	09-18-2025
Barometer	changchun	DYM3	1188	---	---
Test software	Fara	EZ-EMC	EMC-CON 3A1.1	---	---
Capacitive voltage probe	Schwarzbeck	CVP 9222C	00124	06-18-2024	06-17-2025
ISN	TESEQ	ISN T800	30297	12-05-2024	12-04-2025

3M Semi-anechoic Chamber (2)- Radiated disturbance Test					
Equipment	Manufacturer	Model No.	Serial Number	Cal. date	Cal. Due date
				(mm-dd-yyyy)	(mm-dd-yyyy)
3M Chamber & Accessory Equipment	TDK	SAC-3	---	05/22/2022	05/21/2025
Receiver	R&S	ESCI7	100938-003	09/07/2024	09/06/2025
Spectrum Analyzer	R&S	FSV40	101200	07/18/2024	07/17/2025
TRILOG Broadband Antenna	schwarzbeck	VULB 9163	9163-618	05/22/2022	05/21/2025
Loop Antenna	Schwarzbeck	FMZB 1519B	1519B-076	04/07/2025	04/06/2026
Microwave Preamplifier	Tonscend	EMC051845SE	980380	12/05/2024	12/04/2025
Horn Antenna	A.H.SYSTEMS	SAS-574	374	07/02/2023	07/01/2026
Horn Antenna	ETS-LINGREN	BBHA 9120D	9120D-1869	04/07/2025	04/06/2026
Preamplifier	Agilent	11909A	12-1	03/03/2025	03/02/2026
Preamplifier	CD	PAP-1840-60	6041.6042	06/19/2024	06/18/2025
Test software	Fara	EZ-EMC	EMEC-3A1-Pre	---	---

Cable line	Fulai(7M)	SF106	5219/6A	05/22/2022	05/21/2025
Cable line	Fulai(6M)	SF106	5220/6A	05/22/2022	05/21/2025
Cable line	Fulai(3M)	SF106	5216/6A	05/22/2022	05/21/2025
Cable line	Fulai(3M)	SF106	5217/6A	05/22/2022	05/21/2025

3M full-anechoic Chamber					
Equipment	Manufacturer	Model No.	Serial Number	Cal. Date (mm-dd-yyyy)	Cal. Due date (mm-dd-yyyy)
Fully Anechoic Chamber	TDK	FAC-3	---	01-09-2024	01-08-2027
Receiver	Keysight	N9038A	MY57290136	01-04-2025	01-03-2026
Spectrum Analyzer	Keysight	N9020B	MY57111112	01-14-2025	01-13-2026
Spectrum Analyzer	Keysight	N9030B	MY57140871	01-14-2025	01-13-2026
TRILOG Broadband Antenna	Schwarzbeck	VULB 9163	9163-1148	04-28-2024	04-27-2025
Horn Antenna	Schwarzbeck	BBHA 9170	9170-832	04-16-2024 04-12-2025	04-15-2025 04-11-2026
Horn Antenna	ETS-LINDGREN	3117	57407	07-03-2024	07-02-2025
Preamplifier	EMCI	EMC001330	980563	03-03-2025	03-02-2026
Preamplifier	Tonscend	TAP-011858	AP21B806112	07-18-2024	07-17-2025
Preamplifier	Tonscend	EMC051845SE	980380	12-05-2024	12-04-2025
Communication test set	R&S	CMW500	102898	01-04-2025	01-03-2026
Temperature/ Humidity Indicator	biaozhi	GM1360	EE1186631	03-31-2025	03-30-2026
RSE Automatic test software	JS Tonscend	JS36-RSE	V4.0.0.0	---	---
Cable line	Times	SFT205-NMSM-2.50M	394812-0001	01-09-2024	01-08-2027
Cable line	Times	SFT205-NMSM-2.50M	394812-0002	01-09-2024	01-08-2027
Cable line	Times	SFT205-NMSM-2.50M	394812-0003	01-09-2024	01-08-2027
Cable line	Times	SFT205-NMSM-2.50M	393495-0001	01-09-2024	01-08-2027

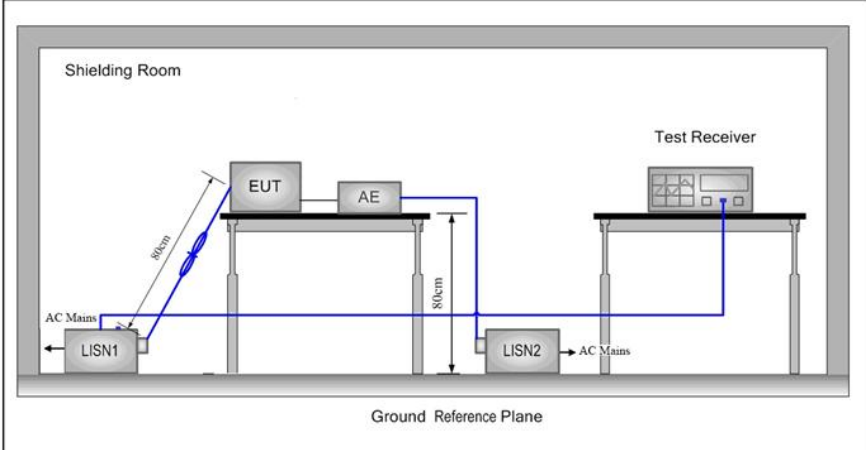
Cable line	Times	EMC104-NMNM-1000	SN160710	01-09-2024	01-08-2027
Cable line	Times	SFT205-NMSM-3.00M	394813-0001	01-09-2024	01-08-2027
Cable line	Times	SFT205-NMNM-1.50M	381964-0001	01-09-2024	01-08-2027
Cable line	Times	SFT205-NMSM-7.00M	394815-0001	01-09-2024	01-08-2027
Cable line	Times	HF160-KMKM-3.00M	393493-0001	01-09-2024	01-08-2027

6 Radio Technical Requirements Specification

6.1 Antenna Requirement

Standard requirement:	47 CFR Part 15C Section 15.203
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.	
EUT Antenna:	Please see Internal photos
The antenna is PIFA antenna. The best case gain of the antenna 0 is 2.1dBi. The best case gain of the antenna 1 is 2.6dBi.	

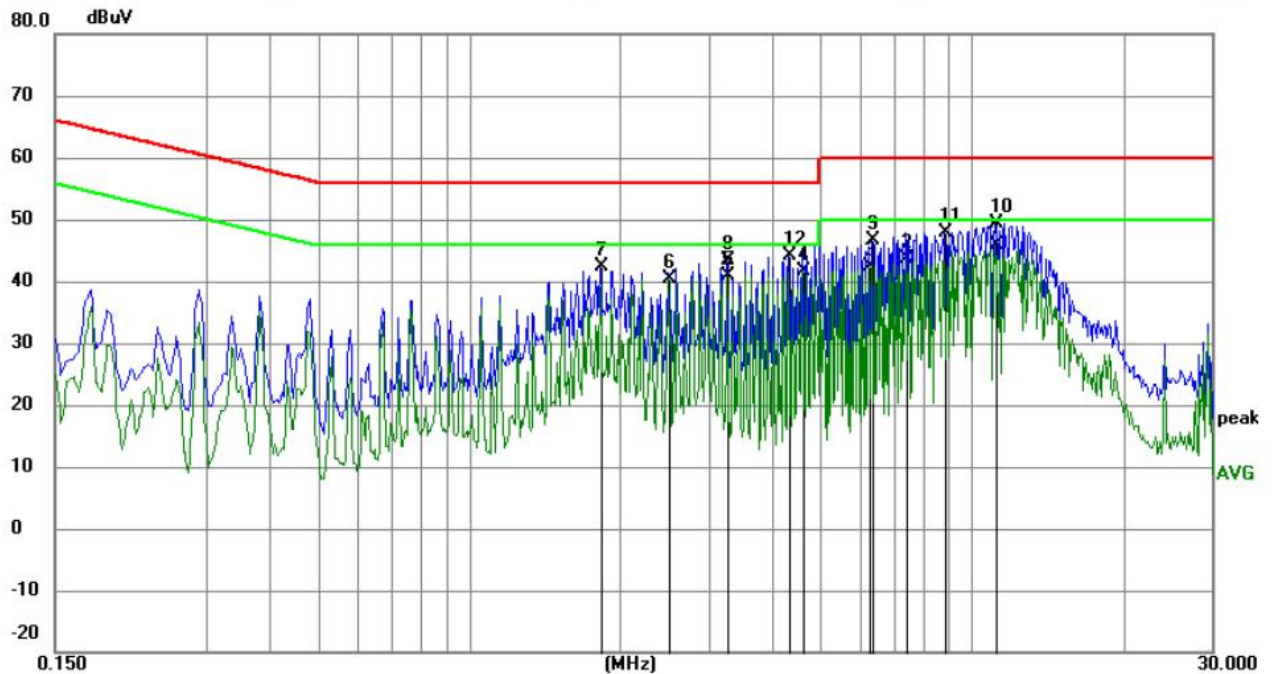
6.2 AC Power Line Conducted Emissions

Test Requirement:	47 CFR Part 15C Section 15.207		
Test Method:	ANSI C63.10: 2013		
Test Frequency Range:	150kHz to 30MHz		
Receiver setup:	RBW=9 kHz, VBW=30 kHz, Sweep time=auto		
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 Setup:			
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 Mode:	All modes were tested, only the worst case was recorded in the report.
Test Results:	Pass

Measurement Data

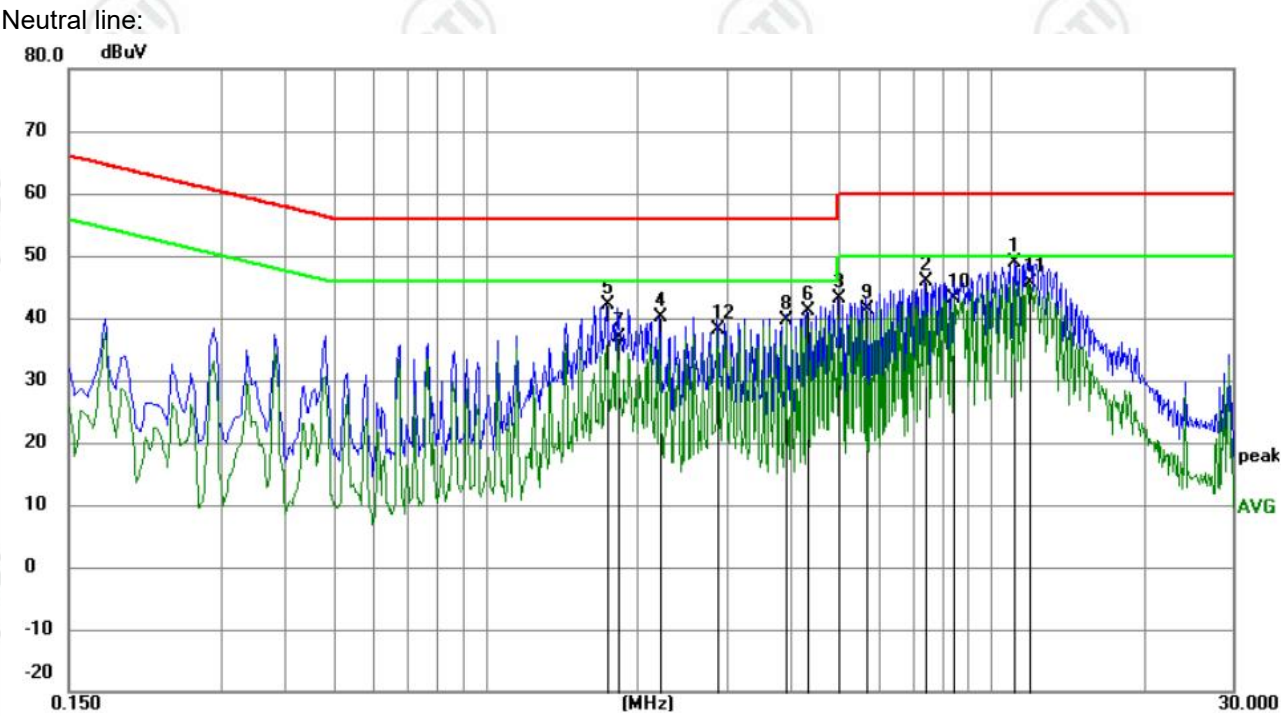
Live line:



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1	*	11.1390	35.84	9.93	45.77	50.00	-4.23	AVG	
2		7.3905	33.49	10.02	43.51	50.00	-6.49	AVG	
3		6.2385	32.34	10.04	42.38	50.00	-7.62	AVG	
4		4.6050	31.45	10.07	41.52	46.00	-4.48	AVG	
5		3.2640	30.73	10.12	40.85	46.00	-5.15	AVG	
6		2.4945	30.21	10.15	40.36	46.00	-5.64	AVG	
7		1.8240	32.28	10.17	42.45	56.00	-13.55	QP	
8		3.2640	33.30	10.12	43.42	56.00	-12.58	QP	
9		6.3375	36.55	10.04	46.59	60.00	-13.41	QP	
10		11.1390	39.45	9.93	49.38	60.00	-10.62	QP	
11		8.8305	37.81	9.98	47.79	60.00	-12.21	QP	
12		4.3215	34.15	10.08	44.23	56.00	-11.77	QP	

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.



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Margin		
		MHz	Level	Factor	ment			Detector	Comment
			dBuV	dB	dBuV	dBuV	dB		
1		11.1254	38.90	9.93	48.83	60.00	-11.17	QP	
2		7.3905	35.88	10.02	45.90	60.00	-14.10	QP	
3		4.9875	33.17	10.06	43.23	56.00	-12.77	QP	
4		2.2110	30.01	10.16	40.17	56.00	-15.83	QP	
5		1.7430	31.95	10.17	42.12	56.00	-13.88	QP	
6		4.3215	31.13	10.08	41.21	56.00	-14.79	QP	
7		1.8240	26.68	10.17	36.85	46.00	-9.15	AVG	
8		3.9345	29.42	10.10	39.52	46.00	-6.48	AVG	
9		5.6625	31.37	10.05	41.42	50.00	-8.58	AVG	
10		8.4525	33.20	9.99	43.19	50.00	-6.81	AVG	
11	*	11.8995	35.82	9.92	45.74	50.00	-4.26	AVG	
12		2.8815	28.08	10.14	38.22	46.00	-7.78	AVG	

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.

6.3 Radiated Emission

Test Requirement:	47 CFR Part 15C Section 15.209 and 15.407 (b)				
Test Method:	ANSI C63.10 2013				
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	10kHz	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
	*(1) For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz. (2) For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz. (3) For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz. (4) For transmitters operating in the 5.725-5.85 GHz band: (i) All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge. Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the				

	frequency bands 9-90kHz, 110-490kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. Note: (i) $EIRP = ((E*d)^2) / 30$ where: • E is the field strength in V/m; • d is the measurement distance in meters; • EIRP is the equivalent isotropically radiated power in watts. (ii) Working in dB units, the above equation is equivalent to: $EIRP[dBm] = E[dB\mu V/m] + 20 \log(d[meters]) - 104.77$ (iii) Or, if d is 3 meters: $EIRP[dBm] = E[dB\mu V/m] - 95.2$
--	--

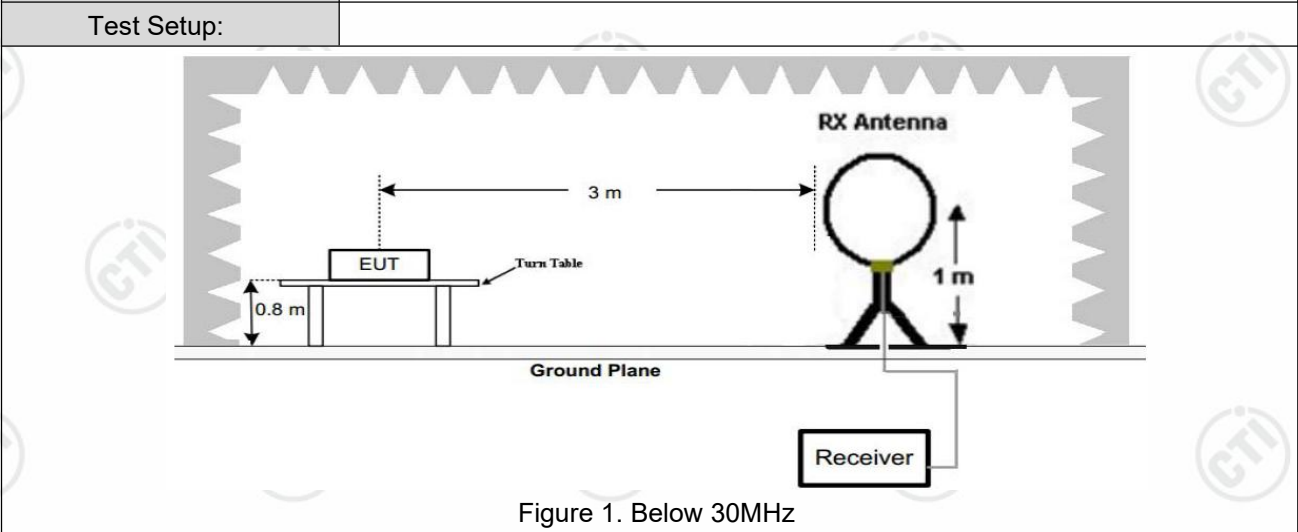


Figure 1. Below 30MHz

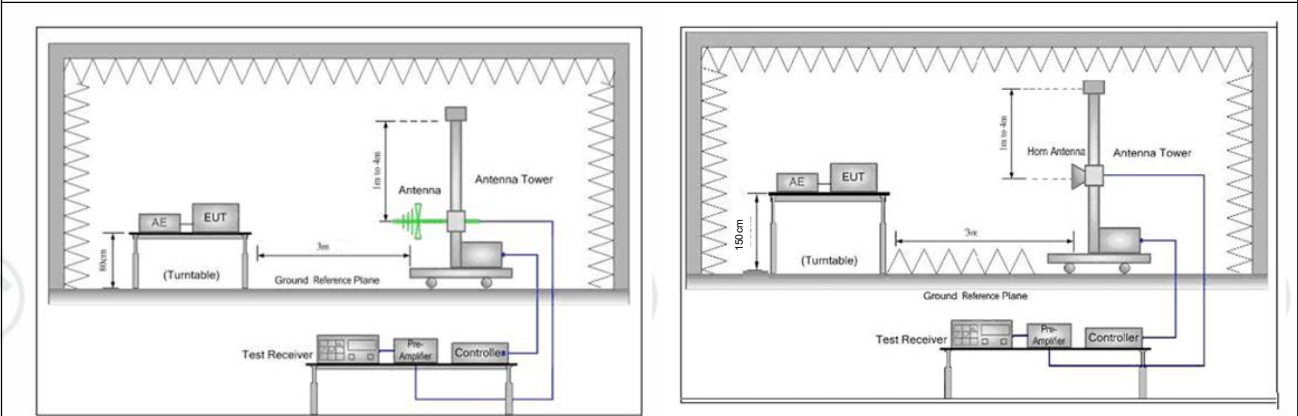


Figure 2. 30MHz to 1GHz

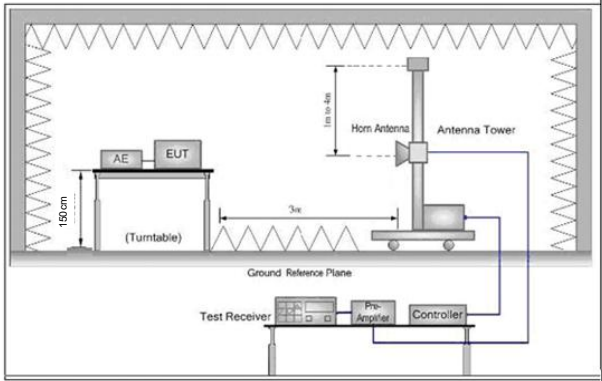


Figure 3. Above 1 GHz

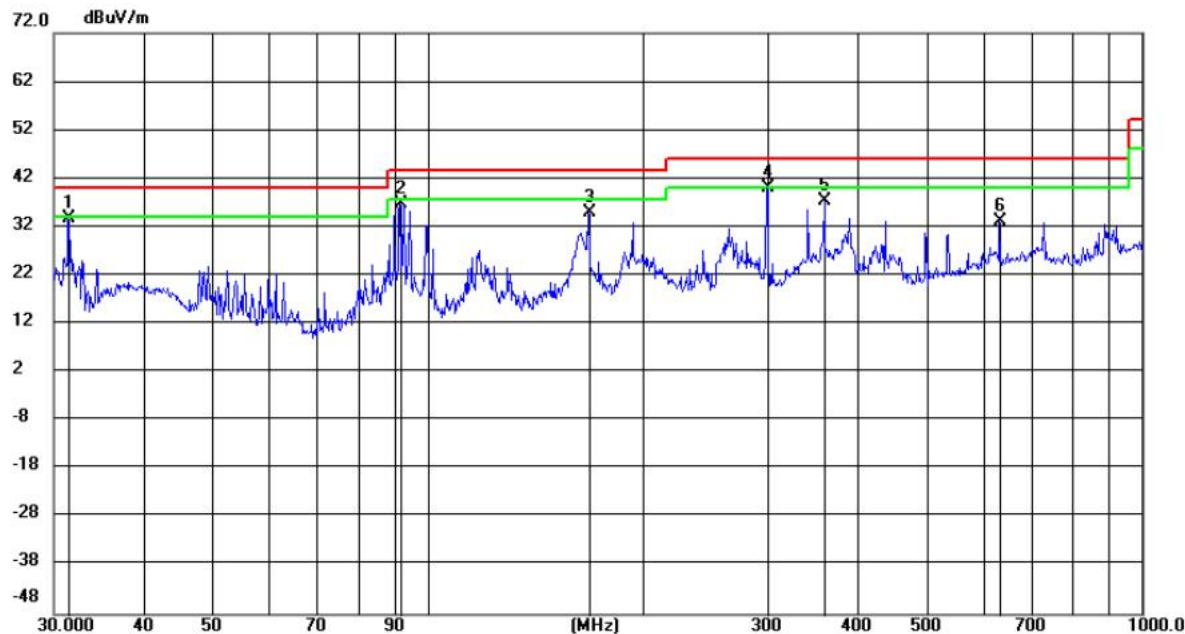
Test Procedure:	a. 1) Below 1G: The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation. 2) Above 1G: The EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter semi-anechoic camber. 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 (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. - The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. - If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet. - Test the EUT in the lowest channel, the middle channel and the highest channel - The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case. - Repeat above procedures until all frequencies measured was complete.
Test Mode:	Transmitting mode with modulation
Test Results:	Pass

Radiated Spurious Emissions test Data:
Radiated Emission below 1GHz

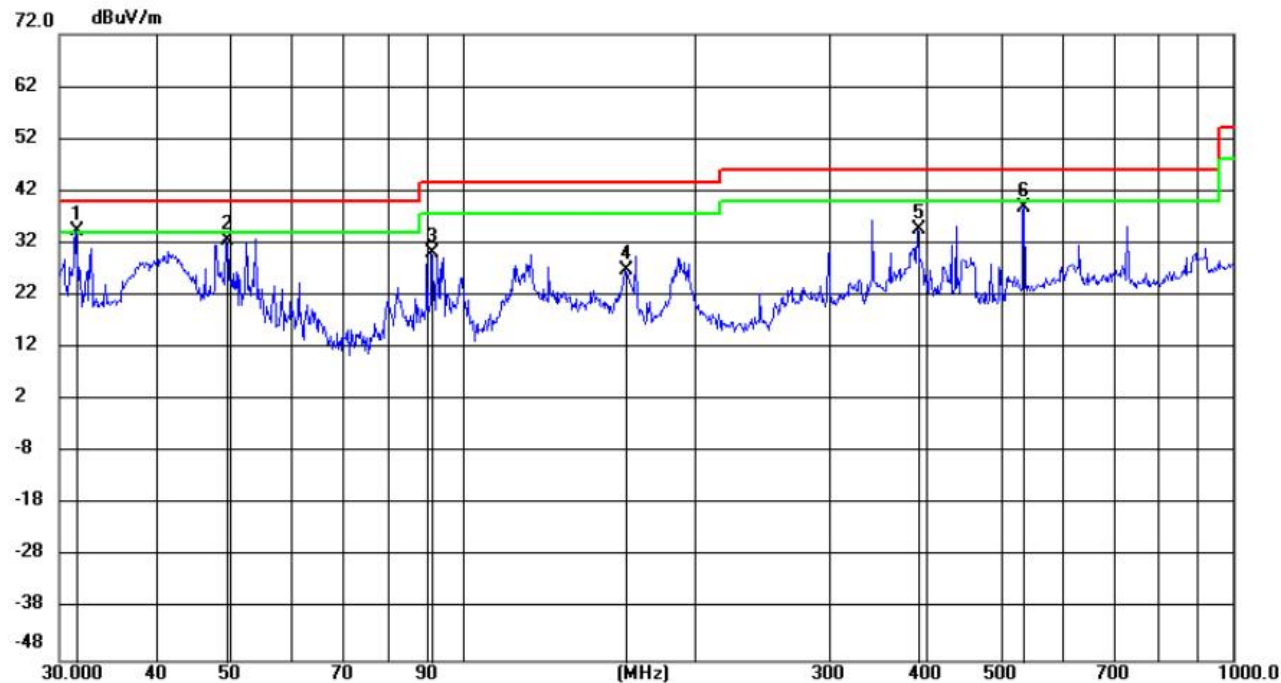
Remark: During the test, the Radiates Emission from 30MHz to 1GHz was performed in all modes, only the worst case lowest channel of 6Mbps for 802.11 a was recorded in the report.

Horizontal:
Test Graph



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Margin	Antenna	Table	
		MHz	Level	Factor	ment			Height	Degree	Comment
			dBuV	dB/m	dBuV/m	dBuV/m	dB	cm	degree	
1		31.5095	21.30	12.44	33.74	40.00	-6.26	QP	199	352
2		91.5109	25.02	11.73	36.75	43.50	-6.75	QP	199	55
3		168.0008	23.76	11.28	35.04	43.50	-8.46	QP	199	66
4	*	298.9486	23.55	16.54	40.09	46.00	-5.91	QP	100	238
5		360.0056	18.91	18.39	37.30	46.00	-8.70	QP	100	101
6		633.0188	9.43	23.64	33.07	46.00	-12.93	QP	100	70

Vertical:
Test Graph



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Margin	Antenna	Table	
		MHz	Level	Factor	ment			Height	Degree	Comment
			dBuV	dB/m	dBuV/m	dBuV/m	dB	cm	degree	
1	*	31.5371	22.01	12.44	34.45	40.00	-5.55	QP	100	87
2		49.5154	18.14	14.49	32.63	40.00	-7.37	QP	100	34
3		91.4628	18.39	11.72	30.11	43.50	-13.39	QP	100	171
4		163.0960	15.82	10.92	26.74	43.50	-16.76	QP	100	267
5		389.5597	15.28	19.28	34.56	46.00	-11.44	QP	100	45
6		535.7073	17.19	21.72	38.91	46.00	-7.09	QP	100	352

Transmitter Emission above 1GHz

Remark: During the test, the Radiates Emission above 1G was performed in all modes, only the worst case ant0 and ant1 transmit simultaneously was recorded in the report.

MIMO

Mode:			802.11 n(HT20) Transmitting			Channel:		5180MHz	
NO	Freq. [MHz]	Factor [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	1318.5727	12.41	36.24	48.65	74.00	25.35	PASS	Horizontal	PK
2	1919.8568	14.92	35.39	50.31	74.00	23.69	PASS	Horizontal	PK
3	2708.5883	17.24	35.69	52.93	74.00	21.07	PASS	Horizontal	PK
4	6963.4732	-2.95	49.40	46.45	74.00	27.55	PASS	Horizontal	PK
5	9727.6364	1.12	47.12	48.24	74.00	25.76	PASS	Horizontal	PK
6	13130.6565	6.16	44.66	50.82	74.00	23.18	PASS	Horizontal	PK
7	1373.5749	12.79	36.08	48.87	74.00	25.13	PASS	Vertical	PK
8	1782.1313	14.43	35.79	50.22	74.00	23.78	PASS	Vertical	PK
9	2299.152	15.88	35.60	51.48	74.00	22.52	PASS	Vertical	PK
10	6990.4995	-3.29	48.57	45.28	74.00	28.72	PASS	Vertical	PK
11	9665.5333	1.16	46.81	47.97	74.00	26.03	PASS	Vertical	PK
12	11180.159	2.55	47.06	49.61	74.00	24.39	PASS	Vertical	PK

Mode:			802.11 n(HT20) Transmitting			Channel:		5200MHz	
NO	Freq. [MHz]	Factor [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	1487.3195	13.45	35.26	48.71	74.00	25.29	PASS	Horizontal	PK
2	1919.4168	14.92	35.11	50.03	74.00	23.97	PASS	Horizontal	PK
3	2820.5728	17.32	35.37	52.69	74.00	21.31	PASS	Horizontal	PK
4	7439.597	-2.51	48.63	46.12	74.00	27.88	PASS	Horizontal	PK
5	10660.908	2.57	45.32	47.89	74.00	26.11	PASS	Horizontal	PK
6	15407.1954	10.22	40.97	51.19	74.00	22.81	PASS	Horizontal	PK
7	1594.6838	13.88	35.98	49.86	74.00	24.14	PASS	Vertical	PK
8	2201.4681	15.58	35.35	50.93	74.00	23.07	PASS	Vertical	PK
9	3271.3709	18.80	33.90	52.70	74.00	21.30	PASS	Vertical	PK
10	6984.7492	-3.22	50.45	47.23	74.00	26.77	PASS	Vertical	PK
11	9680.484	1.17	46.86	48.03	74.00	25.97	PASS	Vertical	PK
12	13732.1366	7.23	43.79	51.02	74.00	22.98	PASS	Vertical	PK

Mode:			802.11 n(HT20) Transmitting			Channel:		5240MHz	
NO	Freq. [MHz]	Factor [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	1395.7958	12.84	35.96	48.80	74.00	25.20	PASS	Horizontal	PK
2	1917.6567	14.94	35.74	50.68	74.00	23.32	PASS	Horizontal	PK
3	2939.8176	17.79	35.06	52.85	74.00	21.15	PASS	Horizontal	PK
4	7391.2946	-3.12	49.34	46.22	74.00	27.78	PASS	Horizontal	PK
5	9640.807	1.18	46.74	47.92	74.00	26.08	PASS	Horizontal	PK
6	14405.4953	9.13	42.42	51.55	74.00	22.45	PASS	Horizontal	PK
7	1448.3779	13.06	36.56	49.62	74.00	24.38	PASS	Vertical	PK
8	2141.6257	15.45	36.25	51.70	74.00	22.30	PASS	Vertical	PK
9	2929.2572	17.89	34.38	52.27	74.00	21.73	PASS	Vertical	PK
10	7996.2248	-1.17	51.93	50.76	74.00	23.24	PASS	Vertical	PK
11	11015.7008	2.27	45.69	47.96	74.00	26.04	PASS	Vertical	PK
12	13081.2041	6.42	44.59	51.01	74.00	22.99	PASS	Vertical	PK

Mode:			802.11 n(HT40) Transmitting			Channel:		5190MHz	
NO	Freq. [MHz]	Factor [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	1439.3576	13.14	35.70	48.84	74.00	25.16	PASS	Horizontal	PK
2	2101.8041	15.26	34.80	50.06	74.00	23.94	PASS	Horizontal	PK
3	2792.1917	17.39	34.62	52.01	74.00	21.99	PASS	Horizontal	PK
4	7481.5741	-2.40	47.89	45.49	74.00	28.51	PASS	Horizontal	PK
5	9755.8128	1.10	46.56	47.66	74.00	26.34	PASS	Horizontal	PK
6	14998.9249	9.62	42.44	52.06	74.00	21.94	PASS	Horizontal	PK
7	1594.2438	13.88	37.25	51.13	74.00	22.87	PASS	Vertical	PK
8	2430.9372	16.37	35.67	52.04	74.00	21.96	PASS	Vertical	PK
9	3132.9853	18.29	34.60	52.89	74.00	21.11	PASS	Vertical	PK
10	7357.3679	-2.88	48.91	46.03	74.00	27.97	PASS	Vertical	PK
11	10659.758	2.57	45.02	47.59	74.00	26.41	PASS	Vertical	PK
12	14962.6981	9.32	42.42	51.74	74.00	22.26	PASS	Vertical	PK

Mode:			802.11 n(HT40) Transmitting			Channel:		5230MHz	
NO	Freq. [MHz]	Factor [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	1403.0561	12.91	36.27	49.18	74.00	24.82	PASS	Horizontal	PK
2	1952.8581	14.90	34.90	49.80	74.00	24.20	PASS	Horizontal	PK
3	2899.336	17.81	34.70	52.51	74.00	21.49	PASS	Horizontal	PK
4	6911.7206	-3.25	49.74	46.49	74.00	27.51	PASS	Horizontal	PK
5	10302.6651	1.97	45.89	47.86	74.00	26.14	PASS	Horizontal	PK
6	15427.3214	10.02	41.76	51.78	74.00	22.22	PASS	Horizontal	PK
7	1596.2238	13.90	35.92	49.82	74.00	24.18	PASS	Vertical	PK
8	2435.7774	16.42	35.58	52.00	74.00	22.00	PASS	Vertical	PK
9	3468.7187	19.47	33.50	52.97	74.00	21.03	PASS	Vertical	PK
10	8513.1757	-0.59	48.12	47.53	74.00	26.47	PASS	Vertical	PK
11	10295.1898	1.97	45.94	47.91	74.00	26.09	PASS	Vertical	PK
12	14954.0727	9.26	41.88	51.14	74.00	22.86	PASS	Vertical	PK

Mode:			802.11 ac(VHT80) Transmitting			Channel:		5210MHz	
NO	Freq. [MHz]	Factor [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	1596.2238	13.90	36.99	50.89	74.00	23.11	PASS	Horizontal	PK
2	2035.5814	14.77	35.38	50.15	74.00	23.85	PASS	Horizontal	PK
3	3308.5523	18.48	34.23	52.71	74.00	21.29	PASS	Horizontal	PK
4	6968.0734	-3.01	49.06	46.05	74.00	27.95	PASS	Horizontal	PK
5	9647.7074	1.17	46.34	47.51	74.00	26.49	PASS	Horizontal	PK
6	14303.7152	8.45	43.21	51.66	74.00	22.34	PASS	Horizontal	PK
7	1597.5439	13.92	36.29	50.21	74.00	23.79	PASS	Vertical	PK
8	2037.5615	14.79	35.38	50.17	74.00	23.83	PASS	Vertical	PK
9	2990.1996	18.05	34.37	52.42	74.00	21.58	PASS	Vertical	PK
10	6979.574	-3.16	49.32	46.16	74.00	27.84	PASS	Vertical	PK
11	9691.9846	1.17	47.09	48.26	74.00	25.74	PASS	Vertical	PK
12	13739.037	7.23	43.90	51.13	74.00	22.87	PASS	Vertical	PK

Mode:			802.11 n(HT20) Transmitting			Channel:		5745MHz	
NO	Freq. [MHz]	Factor [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	1542.9043	13.65	36.26	49.91	74.00	24.09	PASS	Horizontal	PK
2	2424.6425	16.24	35.95	52.19	74.00	21.81	PASS	Horizontal	PK
3	3167.7668	18.12	34.96	53.08	74.00	20.92	PASS	Horizontal	PK
4	7991.2661	-1.21	52.34	51.13	74.00	22.87	PASS	Horizontal	PK
5	9665.7777	1.16	46.87	48.03	74.00	25.97	PASS	Horizontal	PK
6	14289.8527	8.49	42.75	51.24	74.00	22.76	PASS	Horizontal	PK
7	1530.8031	13.56	34.92	48.48	74.00	25.52	PASS	Vertical	PK
8	1918.0418	15.11	34.54	49.65	74.00	24.35	PASS	Vertical	PK
9	2449.945	16.40	35.10	51.50	74.00	22.50	PASS	Vertical	PK
10	7305.8204	-2.51	48.21	45.70	74.00	28.30	PASS	Vertical	PK
11	9786.9191	1.12	46.86	47.98	74.00	26.02	PASS	Vertical	PK
12	14323.5882	8.67	41.55	50.22	74.00	23.78	PASS	Vertical	PK

Mode:			802.11 n(HT20) Transmitting			Channel:		5785MHz	
NO	Freq. [MHz]	Factor [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	1300.33	12.22	35.93	48.15	74.00	25.85	PASS	Horizontal	PK
2	1804.7305	14.27	35.10	49.37	74.00	24.63	PASS	Horizontal	PK
3	2704.0704	17.19	35.99	53.18	74.00	20.82	PASS	Horizontal	PK
4	8384.5923	-0.78	47.05	46.27	74.00	27.73	PASS	Horizontal	PK
5	11234.4823	2.53	46.06	48.59	74.00	25.41	PASS	Horizontal	PK
6	15369.3913	9.75	41.80	51.55	74.00	22.45	PASS	Horizontal	PK
7	1432.3432	12.89	36.56	49.45	74.00	24.55	PASS	Vertical	PK
8	2040.7041	14.78	35.68	50.46	74.00	23.54	PASS	Vertical	PK
9	2801.4301	17.29	35.64	52.93	74.00	21.07	PASS	Vertical	PK
10	7975.165	-1.31	48.45	47.14	74.00	26.86	PASS	Vertical	PK
11	9692.6128	1.17	45.95	47.12	74.00	26.88	PASS	Vertical	PK
12	15021.3014	9.26	42.22	51.48	74.00	22.52	PASS	Vertical	PK

Mode:			802.11 n(HT20) Transmitting			Channel:		5825MHz	
NO	Freq. [MHz]	Factor [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	1480.198	13.13	35.53	48.66	74.00	25.34	PASS	Horizontal	PK
2	2024.2024	14.70	35.53	50.23	74.00	23.77	PASS	Horizontal	PK
3	2713.9714	17.20	35.25	52.45	74.00	21.55	PASS	Horizontal	PK
4	8744.1829	-0.37	45.83	45.46	74.00	28.54	PASS	Horizontal	PK
5	11781.1521	2.28	46.90	49.18	74.00	24.82	PASS	Horizontal	PK
6	14931.5954	9.27	42.60	51.87	74.00	22.13	PASS	Horizontal	PK
7	1470.297	13.11	35.32	48.43	74.00	25.57	PASS	Vertical	PK
8	1943.3443	14.88	35.27	50.15	74.00	23.85	PASS	Vertical	PK
9	2687.5688	17.33	35.50	52.83	74.00	21.17	PASS	Vertical	PK
10	7486.7658	-2.42	48.21	45.79	74.00	28.21	PASS	Vertical	PK
11	9290.086	1.12	46.31	47.43	74.00	26.57	PASS	Vertical	PK
12	11640.8427	2.47	45.34	47.81	74.00	26.19	PASS	Vertical	PK

Mode:			802.11 n(HT40) Transmitting			Channel:		5755MHz	
NO	Freq. [MHz]	Factor [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	1487.3487	13.33	35.43	48.76	74.00	25.24	PASS	Horizontal	PK
2	2193.0693	15.62	35.27	50.89	74.00	23.11	PASS	Horizontal	PK
3	2911.4411	17.82	35.63	53.45	74.00	20.55	PASS	Horizontal	PK
4	7993.5662	-1.20	52.28	51.08	74.00	22.92	PASS	Horizontal	PK
5	9698.7466	1.17	46.84	48.01	74.00	25.99	PASS	Horizontal	PK
6	14364.2243	9.02	42.08	51.10	74.00	22.90	PASS	Horizontal	PK
7	1618.8119	14.04	36.36	50.40	74.00	23.60	PASS	Vertical	PK
8	2362.4862	16.20	35.95	52.15	74.00	21.85	PASS	Vertical	PK
9	3324.5325	18.62	34.65	53.27	74.00	20.73	PASS	Vertical	PK
10	7637.0425	-1.79	48.46	46.67	74.00	27.33	PASS	Vertical	PK
11	11293.5196	2.40	46.81	49.21	74.00	24.79	PASS	Vertical	PK
12	15281.2187	10.67	41.80	52.47	74.00	21.53	PASS	Vertical	PK

Mode:			802.11 n(HT40) Transmitting			Channel:		5795MHz	
NO	Freq. [MHz]	Factor [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	1320.132	12.56	36.38	48.94	74.00	25.06	PASS	Horizontal	PK
2	1927.9428	14.93	34.76	49.69	74.00	24.31	PASS	Horizontal	PK
3	2684.2684	17.30	35.37	52.67	74.00	21.33	PASS	Horizontal	PK
4	7288.9526	-2.53	48.27	45.74	74.00	28.26	PASS	Horizontal	PK
5	9628.2085	1.20	47.06	48.26	74.00	25.74	PASS	Horizontal	PK
6	11792.6528	2.25	46.75	49.00	74.00	25.00	PASS	Horizontal	PK
7	1514.8515	13.40	35.54	48.94	74.00	25.06	PASS	Vertical	PK
8	2065.4565	14.83	35.82	50.65	74.00	23.35	PASS	Vertical	PK
9	2561.0561	16.84	35.51	52.35	74.00	21.65	PASS	Vertical	PK
10	8000.4667	-1.15	51.40	50.25	74.00	23.75	PASS	Vertical	PK
11	10659.444	2.57	45.20	47.77	74.00	26.23	PASS	Vertical	PK
12	12849.1899	5.66	44.47	50.13	74.00	23.87	PASS	Vertical	PK

Mode:			802.11 ac(VHT80) Transmitting			Channel:		5775MHz	
NO	Freq. [MHz]	Factor [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	1367.9868	12.73	35.93	48.66	74.00	25.34	PASS	Horizontal	PK
2	1889.4389	14.52	35.65	50.17	74.00	23.83	PASS	Horizontal	PK
3	3409.2409	19.10	33.59	52.69	74.00	21.31	PASS	Horizontal	PK
4	7471.4314	-2.38	48.61	46.23	74.00	27.77	PASS	Horizontal	PK
5	9706.4138	1.16	47.01	48.17	74.00	25.83	PASS	Horizontal	PK
6	14880.9921	9.53	41.61	51.14	74.00	22.86	PASS	Horizontal	PK
7	1438.3938	13.03	36.04	49.07	74.00	24.93	PASS	Vertical	PK
8	2325.6326	16.03	35.37	51.40	74.00	22.60	PASS	Vertical	PK
9	3384.4884	18.96	33.98	52.94	74.00	21.06	PASS	Vertical	PK
10	8000.4667	-1.15	51.75	50.60	74.00	23.40	PASS	Vertical	PK
11	9648.1432	1.16	46.21	47.37	74.00	26.63	PASS	Vertical	PK
12	14362.6908	9.02	41.64	50.66	74.00	23.34	PASS	Vertical	PK

Note:

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

Final Test Level =Receiver Reading - Correct Factor

Correct Factor = Preamplifier Factor- Antenna Factor-Cable Factor

2) Scan from 9kHz to 40GHz, the disturbance above 18GHz 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.

PHOTOGRAPHS OF EUT Constructional Details

Refer to Report No.EED32R80383901 for EUT external and internal photos.

Statement

1. This report is considered invalid without approved signature, special seal and the seal on the perforation;
2. The Company Name shown on Report and Address, the sample(s) and sample information was/were provided by the applicant who should be responsible for the authenticity which CTI hasn't verified;
3. The result(s) shown in this report refer(s) only to the sample(s) tested;
4. Unless otherwise stated, the decision rule for conformity reporting is based on Binary Statement for Simple Acceptance Rule stated in ILAC-G8:09/2019/CNAS-GL015:2022;
5. Without written approval of CTI, this report can't be reproduced except in full;

*** End of Report ***