FCC REPORT

(UNII)

Applicant:	HUNG WAI PRODUCTS LIMITED
Address of Applicant:	Unit 11, 12/F., New Commerce Centre, 19 On Sum Street, Shatin, Hong Kong

Equipment Under Test (EUT)

Product Name:	17.3 inches Quad Core Media Player Slim Housing
Model No.:	DT173-AS4-1080-SL, 502-1739ATM-00
FCC ID:	2AB6Z-DT173-AS4-SL
Applicable standards:	FCC CFR Title 47 Part 15 Subpart E Section 15.407
Date of sample receipt:	12 Jun.,2016
Date of Test:	12 Jun., to 23 Jun., 2016
Date of report issued:	23 Jun., 2016
Test Result:	PASS*

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

Authorized Signature:

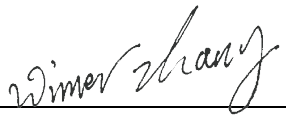
Bruce Zhang
Laboratory Manager

2 Version

Version No.	Date	Description
00	*23 Jun., 2016*	*Android player Main board with wireless module (FCC ID: 2AB6Z-1859ATMBA-V2) and same antenna were used by the device, only conducted emission and Radiated emission were re-tested.*

Tested by:  ***Date:*** *23 Jun., 2016*

Test Engineer

Reviewed by:  ***Date:*** *23 Jun., 2016*

Project Engineer

3 Contents

4 Test Summary

Test Item	Section in CFR 47	Result
Antenna requirement	15.203/15.407 (g)	Pass
AC Power Line Conducted Emission	15.207	Pass
Conducted Peak Output Power	15.407(a) (1) (iv) & (a) (3)	Pass*
26dB Occupied Bandwidth	15.407(a) (5)	Pass*
6dB Emission Bandwidth	15.407(e)	Pass*
Power Spectral Density	15.407(a) (1) (iv) &(a) (3)	Pass*
Band Edge	15.407(b)	Pass
Spurious Emission	15.205/15.209	Pass
Frequency Stability	15.407(g)	Pass*

Pass: The EUT complies with the essential requirements in the standard.

Pass: The test data refer to FCC ID: 2AB6Z-1859ATMBA-V2.*

5 General Information

5.1 Client Information

Applicant:	HUNG WAI PRODUCTS LIMITED
Address of Applicant:	Unit 11, 12/F., New Commerce Centre, 19 On Sum Street, Shatin, Hong Kong
Manufacturer/Factory:	HUNG WAI ELECTRONICS (HUIZHOU) LTD
Address of Manufacturer/Factory:	3rd floor, NO. 3, Minfeng Road, Huinan High and New Technology Industry Park, Huiao Avenue, Huizhou City, Guangdong

5.2 General Description of E.U.T.

Product Name:	17.3 inches Quad Core Media Player Slim Housing
Model No.:	DT173-AS4-1080-SL, 502-1739ATM-00
Operation Frequency:	Band 1: 5180MHz-5240MHz Band 4: 5745MHz-5825MHz
Channel numbers:	Band 1: 802.11a/802.11n20: 4,802.11n40: 2,802.11ac:1 Band 4: 802.11a/802.11n20: 5,802.11n40: 2,802.11ac:1
Channel separation:	802.11a/802.11n20:20MHz, 802.11n40:40MHz, 802.11ac : 80MHz
Modulation technology: (IEEE 802.11a)	BPSK,QPSK,16-QAM,64-QAM
Modulation technology: (IEEE 802.11n)	BPSK,QPSK,16-QAM,64-QAM
Modulation technology: (IEEE 802.11ac)	BPSK,QPSK,16-QAM,64-QAM, 256-QAM
Data speed(IEEE 802.11a)	6Mbps, 9Mbps,12Mbps,18Mbps,24Mbps,36Mbps,48Mbps,54Mbps
Data speed (IEEE 802.11n20):	MCS0: 6.5Mbps,MCS1:13Mbps,MCS2:19.5Mbps,MCS3:26Mbps, MCS4:39Mbps,MCS5:52Mbps,MCS6:58.5Mbps,MCS7:65Mbps
Data speed (IEEE 802.11n40):	MCS0:15Mbps,MCS1:30Mbps,MCS2:45Mbps,MCS3:60Mbps, MCS4:90Mbps,MCS5:120Mbps,MCS6:135Mbps,MCS7:150Mbps
Data speed (IEEE 802.11ac):	Up to 433.3Mbps
Antenna Type:	Omni-directional
Antenna gain:	2.0 dBi
AC Adapter:	Model: PS24A120K2000UD Input: 100-240V ac, 50/60Hz, 1A Output: 12V dc, 2A
Remark:	Model No.: DT173-AS4-1080-SL, 502-1739ATM-00were identical inside, the electrical circuit design, layout, components used and internal wiring, with only difference being different Model Numberfor customer and for HUNG WAI.

Operation Frequency each of channel

Band 1					
802.11a/802.11n20		802.11n40		802.11ac	
Channel	Frequency	Channel	Frequency	Channel	Frequency
36	5180MHz	38	5190MHz	42	5210MHz
40	5200MHz	46	5230MHz		
44	5220MHz				
48	5240MHz				
Band 4					
802.11a/802.11n20		802.11n40		802.11ac	
Channel	Frequency	Channel	Frequency	Channel	Frequency
149	5745MHz	151	5755MHz	155	5775MHz
153	5765MHz	159	5795MHz		
157	5785MHz				
161	5805MHz				
165	5825MHz				

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:

Band 1					
802.11a/802.11n20		802.11n40		802.11ac	
Channel	Frequency	Channel	Frequency	Channel	Frequency
Lowest channel	5180MHz	Lowest channel	5190MHz	Middle channel	5210MHz
Middle channel	5200MHz	Highest channel	5230MHz		
Highest channel	5240MHz				
Band 4					
802.11a/802.11n20		802.11n40		802.11ac	
Channel	Frequency	Channel	Frequency	Channel	Frequency
Lowest channel	5745MHz	Lowest channel	5755MHz	Middle channel	5775MHz
Middle channel	5785MHz	Highest channel	5795MHz		
Highest channel	5825MHz				

5.3 Test environment andmode

Operating Environment:	
Temperature:	24.0 °C
Humidity:	54 % RH
Atmospheric Pressure:	1010 mbar
Test mode:	
Continuously transmitting mode	Keep the EUT in 100% duty cycle transmitting with modulation.

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
802.11n20	6.5 Mbps
802.11n40	13 Mbps
802.11ac	23.9 Mbps

Final Test Mode:

According to ANSI C63.4 standards, the test results are both the “worst case” and “worst setup” 6Mbps for 802.11a,6.5 Mbps for 802.11n20, 13 Mbps for 802.11n40 and 29.3Mbps for 802.11ac. All test items for 802.11a, 802.11ac and 802.11n were performed with duty cycle above 98%, meet the requirements of KDB789033.

5.4 Measurement Uncertainty

Items	Expanded Uncertainty (Confidence of 95%)
Conducted Emission (9kHz ~ 30MHz)	2.14 dB (k=2)
Radiated Emission (9kHz ~ 30MHz)	4.24 dB (k=2)
Radiated Emission (30MHz ~ 1000MHz)	4.35 dB (k=2)
Radiated Emission (1GHz ~ 18GHz)	4.44 dB (k=2)
Radiated Emission (18GHz ~ 26.5GHz)	4.56 dB (k=2)

5.5 Laboratory Facility

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

●**FCC- Registration No.: 817957**

Shenzhen Zhongjian Nanfang Testing Co., Ltd. EMC Laboratory has been registered andfully describedin a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in out files. Registration 817957, February 27, 2012.

●**IC - Registration No.: 10106A-1**

The 3m Semi-anechoic chamber of Shenzhen Zhongjian Nanfang Testing Co., Ltd. has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 10106A-1.

●**CNAS - Registration No.: CNAS L6048**

Shenzhen Zhongjian Nanfang Testing Co., Ltd. is accredited to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration laboratories for the competence of testing. The Registration No. is CNAS L6048.

5.6 Laboratory Location

Shenzhen Zhongjian Nanfang Testing Co., Ltd.
Address: No.B-C, 1/F., Building 2, Laodong No.2 Industrial Park, Xixiang Road,
Bao'an District, Shenzhen, Guangdong, China
Tel: +86-755-23118282
Fax: +86-755-23116366

5.7 Description of Support Units

N/A

5.8 Test Instruments list

Radiated Emission:

Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. Date (mm-dd-yy)	Cal. Due date (mm-dd-yy)
1	3m SAC	SAEMC	9(L)*6(W)* 6(H)	CCIS0001	08-23-2014	08-22-2017
2	BiConiLog Antenna	SCHWARZBECK	VULB9163	CCIS0005	03-25-2016	03-25-2017
3	Horn Antenna	SCHWARZBECK	BBHA9120D	CCIS0006	03-25-2016	03-25-2017
4	Pre-amplifier (10kHz-1.3GHz)	HP	8447D	CCIS0003	04-01-2016	03-31-2017
5	Pre-amplifier (1GHz-18GHz)	Compliance Direction Systems Inc.	PAP-1G18	CCIS0011	04-01-2016	03-31-2017
6	Pre-amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	04-01-2016	03-31-2017
7	Horn Antenna	ETS-LINDGREN	3160	GTS217	04-01-2016	03-31-2017
8	Spectrum analyzer 9k-30GHz	Rohde & Schwarz	FSP30	CCIS0023	03-28-2016	03-28-2017
9	EMI Test Receiver	Rohde & Schwarz	ESRP7	CCIS0167	03-28-2016	03-28-2017
10	Loop antenna	Laplace instrument	RF300	EMC0701	04-01-2016	03-31-2017
11	EMI Test Software	AUDIX	E3	N/A	N/A	N/A

Conducted Emission:

Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. Date (mm-dd-yy)	Cal. Due date (mm-dd-yy)
1	Shielding Room	ZhongShuo Electron	11.0(L)x4.0(W)x3.0(H)	CCIS0061	08-23-2014	08-22-2017
2	EMI Test Receiver	Rohde & Schwarz	ESCI	CCIS0002	03-24-2016	03-24-2017
3	LISN	CHASE	MN2050D	CCIS0074	03-26-2016	03-26-2017
4	Coaxial Cable	CCIS	N/A	CCIS0086	04-01-2016	03-31-2017
5	EMI Test Software	AUDIX	E3	N/A	N/A	N/A

6 Test results andMeasurement Data

6.1 Antenna requirement

Standard requirement:	FCC Part15 E Section 15.203 /407(a)

15.203 requirement:

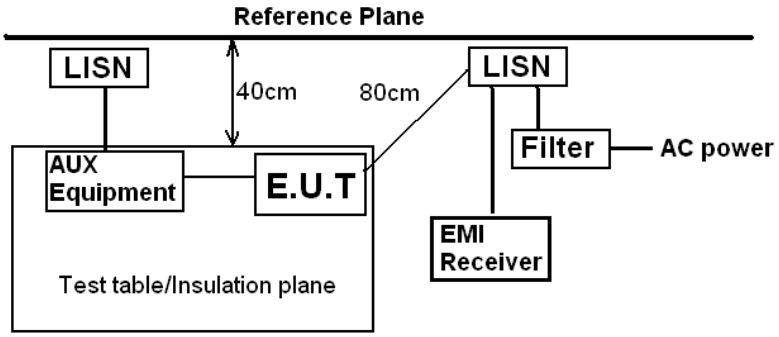
An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit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

This requirementdoes not apply to carrier currentdevices or to devices operated underthe provisions of §15.211, § 15.213,§ 15.217, § 15.219, or § 15.221. Further, thisrequirement does not apply to intentionalradiators that must be professionallyinstalled, such as perimeterprotection systems and some field disturbancesensors, or to other intentionalradiators which, in accordancewith § 15.31(d), must be measured at theinstallation site. However, the installershall be responsible for ensuring thatthe proper antenna is employed so thatthe limits in this part are not exceeded.

E.U.T Antenna:	

The WiFi antenna isaReverse-SMA antenna which cannot replace by end-user, the best case gain of the antenna is 2.0dBi.

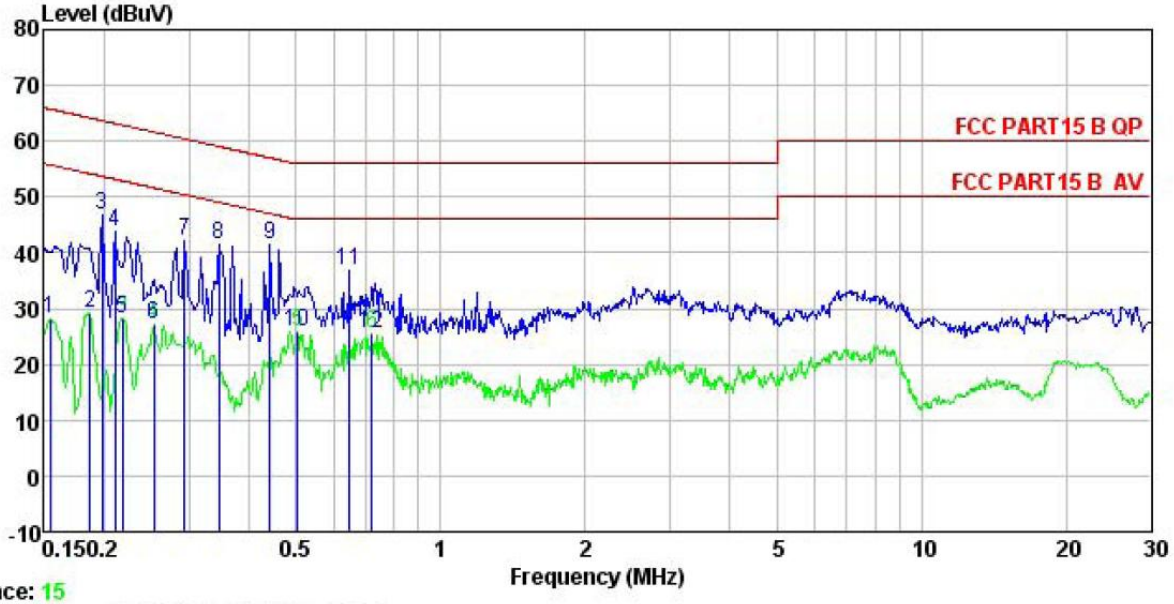
6.2 Conducted Emission

<table>
<tr><td>Test Requirement:</td><td colspan="3">FCC Part15 C Section 15.207</td></tr>
<tr><td>Test Method:</td><td colspan="3">ANSI C63.4: 2014</td></tr>
<tr><td>TestFrequencyRange:</td><td colspan="3">150kHz to 30MHz</td></tr>
<tr><td>Class / Severity:</td><td colspan="3">Class B</td></tr>
<tr><td>Receiver setup:</td><td colspan="3">RBW=9kHz, VBW=30kHz</td></tr>
<tr><td>Limit:</td><td>Frequency range (MHz)</td><td colspan="2">Limit (dBuV)</td></tr>
<tr><td></td><td></td><td>Quasi-peak</td><td></td></tr>
<tr><td></td><td>0.15-0.5</td><td>66 to 56*</td><td>0.15-0.5</td></tr>
<tr><td></td><td>0.5-5</td><td>56</td><td>0.5-5</td></tr>
<tr><td></td><td>5-30</td><td>60</td><td>5-30</td></tr>
<tr><td></td><td colspan="3">* Decreases with the logarithm of the frequency.</td></tr>
<tr><td>Test procedure</td><td colspan="3">1. The E.U.T and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). Itprovides a 50ohm/50uH coupling impedance for the measuring equipment.
2. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs).
3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4: 2014 on conducted measurement.</td></tr>
<tr><td>Test setup:</td><td colspan="3"> 

Remark:
E.U.T: Equipment Under Test
LISN: Line Impedence Stabilization Network
Test table height=0.8m</td></tr>
<tr><td>Test Instruments:</td><td colspan="3">Refer to section 5.7 for details</td></tr>
<tr><td>Test mode:</td><td colspan="3">Refer to section 5.3 for details.</td></tr>
<tr><td>Test results:</td><td colspan="3">Passed</td></tr>
</table>

Measurement Data:

Line:



Trace: 15

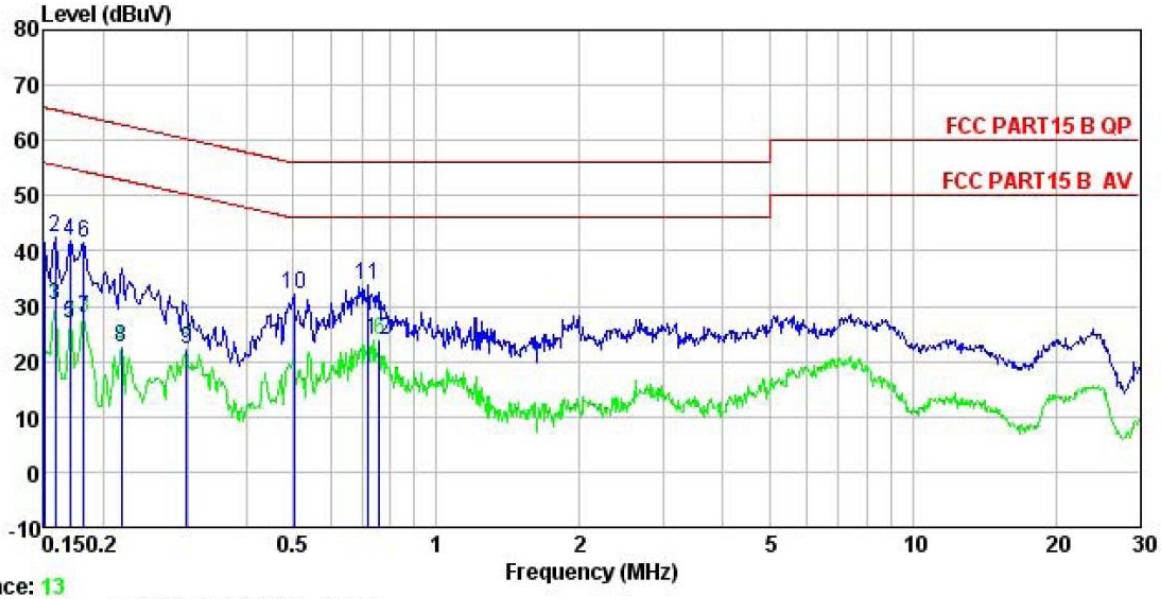
Site : CCIS Shielding Room
Condition : FCC PART15 B QP LISN LINE
EUT : 17.3"Quad Core Media Player Slim Housing
Model : DT173-AS4-1080-SL
Test Mode : 5G Wifi mode
Power Rating : AC 120/60Hz
Environment : Temp: 23 'C Huni:56% Atmos:101KPa
Test Engineer: MT
Remark :

	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.154	17.29	0.14	10.78	28.21	55.78	-27.57	Average
2	0.186	18.35	0.15	10.76	29.26	54.20	-24.94	Average
3	0.198	36.00	0.15	10.76	46.91	63.71	-16.80	QP
4	0.211	33.05	0.15	10.76	43.96	63.18	-19.22	QP
5	0.219	17.34	0.15	10.76	28.25	52.88	-24.63	Average
6	0.253	16.18	0.16	10.75	27.09	51.64	-24.55	Average
7	0.294	31.41	0.16	10.74	42.31	60.41	-18.10	QP
8	0.346	30.69	0.20	10.73	41.62	59.05	-17.43	QP
9	0.442	30.33	0.24	10.74	41.31	57.02	-15.71	QP
10	0.505	15.03	0.24	10.76	26.03	46.00	-19.97	Average
11	0.647	25.63	0.30	10.77	36.70	56.00	-19.30	QP
12	0.720	14.57	0.32	10.78	25.67	46.00	-20.33	Average

Notes:

1. *An initial pre-scan was performed on the live and neutral lines with peak detector.*
2. *Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.*
3. *Final Level =Receiver Read level + LISN Factor + Cable Loss.*

Neutral:



Trace: 13

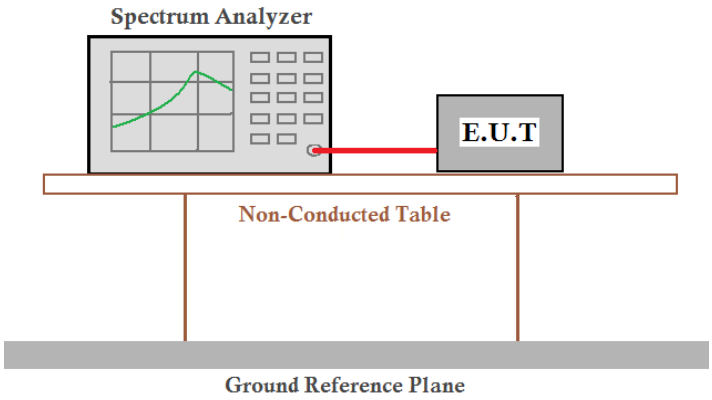
Site : CCIS Shielding Room
Condition : FCC PART15 B QP LISN NEUTRAL
EUT : 17.3"Quad Core Media Player Slim Housing
Model : DT173-AS4-1080-SL
Test Mode : 5G Wifi mode
Power Rating : AC 120/60Hz
Environment : Temp: 23 ℃ Huni:56% Atmos:101KPa
Test Engineer: MT
Remark :

	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.150	30.54	0.12	10.78	41.44	66.00	-24.56	QP
2	0.158	31.68	0.13	10.78	42.59	65.56	-22.97	QP
3	0.158	19.13	0.13	10.78	30.04	55.56	-25.52	Average
4	0.170	30.85	0.13	10.77	41.75	64.94	-23.19	QP
5	0.170	16.07	0.13	10.77	26.97	54.94	-27.97	Average
6	0.182	30.56	0.14	10.77	41.47	64.42	-22.95	QP
7	0.182	17.10	0.14	10.77	28.01	54.42	-26.41	Average
8	0.219	11.74	0.16	10.76	22.66	52.88	-30.22	Average
9	0.299	11.29	0.19	10.74	22.22	50.28	-28.06	Average
10	0.502	21.04	0.24	10.76	32.04	56.00	-23.96	QP
11	0.720	22.79	0.33	10.78	33.90	56.00	-22.10	QP
12	0.759	12.70	0.31	10.80	23.81	46.00	-22.19	Average

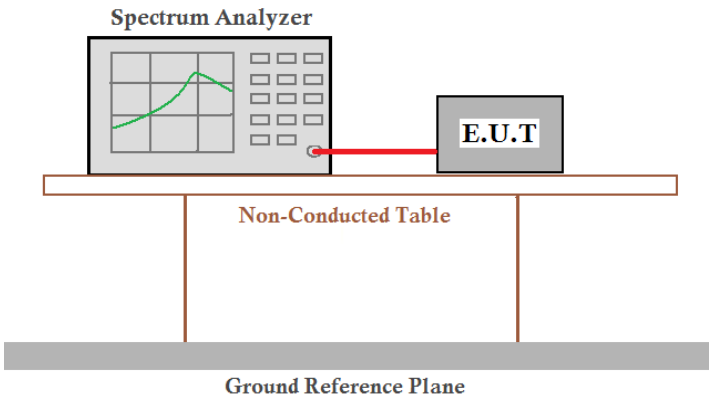
Notes:

1. *An initial pre-scan was performed on the live and neutral lines with peak detector.*
2. *Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.*
3. *Final Level =Receiver Read level + LISN Factor + Cable Loss.*

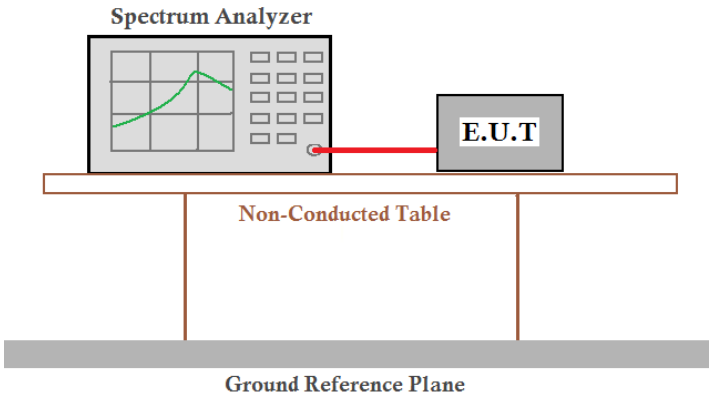
6.3 Conducted Output Power

Test Requirement:	FCC Part15 E Section 15.407 (a) (1) (ii) & (a) (3)
Test Method:	ANSI C63.10: 2013, KDB789033
Limit:	Band 1: 24dBm Band 4:30dBm
Test setup:	
Test Instruments:	Refer to section 5.7 for details
Test mode:	Refer to section 5.3 for details
Test results:	Refer to FCC ID: 2AB6Z-1859ATMBA-V2

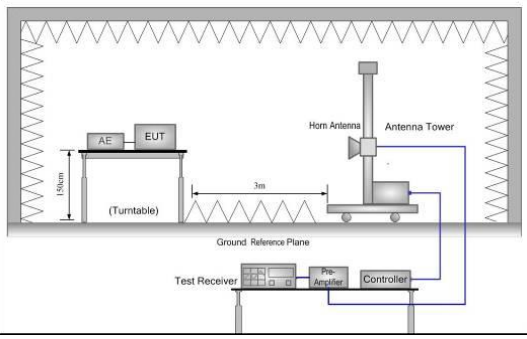
6.4 Occupy Bandwidth

Test Requirement:	FCC Part15 E Section 15.407 (a) (5) and Section 15.407 (e)
Test Method:	ANSI C63.10:2013 and KDB 789033
Limit:	Band 1: N/A(26dB Emission Bandwidth and 99% Occupy Bandwidth) Band 4: N/A(26dB Emission Bandwidth and 99% Occupy Bandwidth) Band 4: >500kHz(6dB Bandwidth)
Test setup:	
Test Instruments:	Refer to section 5.7 for details
Test mode:	Refer to section 5.3 for details
Test results:	Refer to FCC ID: 2AB6Z-1859ATMBA-V2

6.5 Power Spectral Density

Test Requirement:	FCC Part15 E Section 15.407 (a) (1) (ii) &(a) (3)
Test Method:	ANSI C63.10:2013, KDB 789033
Limit:	Band 1:11 dBm/MHz Band 4: 30dBm/500kHz
Test setup:	
Test Instruments:	Refer to section 5.7 for details
Test mode:	Refer to section 5.3 for details
Test results:	Refer to FCC ID: 2AB6Z-1859ATMBA-V2

6.6 Band Edge

<table>
<tr><td>Test Requirement:</td><td>FCC Part15 E Section 15.407 (b)</td></tr>
<tr><td>Test Method:</td><td>ANSI C63.10:2013 , KDB 789033</td></tr>
<tr><td>Receiver setup:</td><td>
<table>
<tr><td>Detector</td><td>RBW</td><td>VBW</td><td>Remark</td></tr>
<tr><td>Quasi-peak</td><td>120kHz</td><td>300kHz</td><td>Quasi-peak Value</td></tr>
<tr><td>RMS</td><td>1MHz</td><td>3MHz</td><td>Average Value</td></tr>
</table>
</td></tr>
<tr><td>Limit:</td><td>
<table>
<tr><td>Band</td><td>Limit (dBuV/m @3m)</td><td>Remark</td></tr>
<tr><td rowspan="2">Band 1</td><td>68.20</td><td>Peak Value</td></tr>
<tr><td>54.00</td><td>Average Value</td></tr>
<tr><td rowspan="2">Band 4</td><td>78.20</td><td>Peak Value</td></tr>
<tr><td>54.00</td><td>Average Value</td></tr>
<tr><td colspan="3">Remark:
1. Band 1 limit:
E[dBμV/m] = EIRP[dBm] + 95.2=68.2 dBuV/m,for EIPR[dBm]=-27dBm.
2. Band 4 limit:
E[dBμV/m] = EIRP[dBm] + 95.2=78.2 dBuV/m,for EIPR[dBm]=-17dBm.</td></tr>
</table>
</td></tr>
<tr><td>Test Procedure:</td><td>1. The EUT was placed on the top of a rotating table 1.5 meters above the groundat a 3 meter camber. The table was rotated 360 degrees todetermine the position of the highest radiation.
2. The EUT was set 3 meters away from the interference-receiving antenna, whichwas mounted on the top of a variable-height antenna tower.
3. 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.
4. For each suspected emission, the EUT was arranged to its worst case and thenthe antenna was tuned to heights from 1 meter to 4 meters and the rotatablewas turned from 0 degrees to 360 degrees to find the maximum reading.
5. The test-receiver system was set to Peak Detect Function and SpecifiedBandwidth with Maximum Hold Mode.
6. 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.</td></tr>
<tr><td>Test setup:</td><td> 
</td></tr>
<tr><td>Test Instruments:</td><td>Refer to section 5.7 for details</td></tr>
<tr><td>Test mode:</td><td>Refer to section 5.3 for details</td></tr>
<tr><td>Test results:</td><td>Passed</td></tr>
</table>

Band 1:

802.11a								
Test channel		Lowest			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5150.00	42.03	36.23	10.96	40.06	49.16	68.20	-19.04	Horizontal
5150.00	41.99	36.23	10.96	40.06	49.12	68.20	-19.08	Vertical
802.11a								
Test channel		Lowest			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5150.00	32.54	36.23	10.96	40.06	39.67	54.00	-14.33	Horizontal
5150.00	31.56	36.23	10.96	40.06	38.69	54.00	-15.31	Vertical
802.11a								
Test channel		Highest			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5350.00	41.78	35.37	11.19	40.18	48.16	68.20	-20.04	Horizontal
5350.00	42.36	35.37	11.19	40.18	48.74	68.20	-19.46	Vertical
802.11a								
Test channel		Highest			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5350.00	31.69	35.37	11.19	40.18	38.07	54.00	-15.93	Horizontal
5350.00	32.15	35.37	11.19	40.18	38.53	54.00	-15.47	Vertical

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor.*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

802.11n-HT20								
Test channel		Lowest			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5150.00	41.87	36.23	10.96	40.06	49.00	68.20	-19.20	Horizontal
5150.00	41.56	36.23	10.96	40.06	48.69	68.20	-19.51	Vertical
802.11n-HT20								
Test channel		Lowest			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5150.00	32.61	36.23	10.96	40.06	39.74	54.00	-14.26	Horizontal
5150.00	31.74	36.23	10.96	40.06	38.87	54.00	-15.13	Vertical
802.11n-HT20								
Test channel		Highest			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5350.00	42.30	35.37	11.19	40.18	48.68	68.20	-19.52	Horizontal
5350.00	41.85	35.37	11.19	40.18	48.23	68.20	-19.97	Vertical
802.11n-HT20								
Test channel		Highest			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5350.00	32.72	35.37	11.19	40.18	39.10	54.00	-14.90	Horizontal
5350.00	31.86	35.37	11.19	40.18	38.24	54.00	-15.76	Vertical

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor.*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

802.11n-HT40								
Test channel		Lowest			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5150.00	42.33	36.23	10.96	40.06	49.46	68.20	-18.74	Horizontal
5150.00	43.56	36.23	10.96	40.06	50.69	68.20	-17.51	Vertical
802.11n-HT40								
Test channel		Lowest			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5150.00	32.26	36.23	10.96	40.06	39.39	54.00	-14.61	Horizontal
5150.00	33.45	36.23	10.96	40.06	40.58	54.00	-13.42	Vertical
802.11n-HT40								
Test channel		Highest			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5350.00	42.58	35.37	11.19	40.18	48.96	68.20	-19.24	Horizontal
5350.00	42.71	35.37	11.19	40.18	49.09	68.20	-19.11	Vertical
802.11n-HT40								
Test channel		Highest			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5350.00	32.49	35.37	11.19	40.18	38.87	54.00	-15.13	Horizontal
5350.00	32.70	35.37	11.19	40.18	39.08	54.00	-14.92	Vertical

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor.*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

802.11ac-HT80								
Test channel		Lowest			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5150.00	42.08	36.23	10.96	40.06	49.21	68.20	-18.99	Horizontal
5150.00	42.62	36.23	10.96	40.06	49.75	68.20	-18.45	Vertical
802.11ac-HT80								
Test channel		Lowest			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5150.00	31.14	36.23	10.96	40.06	38.27	54.00	-15.73	Horizontal
5150.00	31.82	36.23	10.96	40.06	38.95	54.00	-15.05	Vertical
802.11ac-HT80								
Test channel		Highest			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5350.00	42.33	35.37	11.19	40.18	48.71	68.20	-19.49	Horizontal
5350.00	41.96	35.37	11.19	40.18	48.34	68.20	-19.86	Vertical
802.11ac-HT80								
Test channel		Highest			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5350.00	31.77	35.37	11.19	40.18	38.15	54.00	-15.85	Horizontal
5350.00	32.35	35.37	11.19	40.18	38.73	54.00	-15.27	Vertical

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor.*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

Band 4:

802.11a								
Test channel		Lowest			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5725.00	41.62	34.65	11.62	40.54	47.35	78.20	-30.85	Horizontal
5725.00	42.15	34.65	11.62	40.54	47.88	78.20	-30.32	Vertical
802.11a								
Test channel		Lowest			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5725.00	31.77	34.65	11.62	40.54	37.50	54.00	-16.50	Horizontal
5725.00	32.59	34.65	11.62	40.54	38.32	54.00	-15.68	Vertical
802.11a								
Test channel		Highest			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5850.00	41.26	34.63	11.75	40.69	46.95	78.20	-31.25	Horizontal
5850.00	40.82	34.63	11.75	40.69	46.51	78.20	-31.69	Vertical
802.11a								
Test channel		Highest			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5850.00	31.42	34.63	11.75	40.69	37.11	54.00	-16.89	Horizontal
5850.00	31.05	34.63	11.75	40.69	36.74	54.00	-17.26	Vertical

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor.*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

802.11n-HT20								
Test channel		Lowest			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5725.00	42.16	34.65	11.62	40.54	47.89	78.20	-30.31	Horizontal
5725.00	41.92	34.65	11.62	40.54	47.65	78.20	-30.55	Vertical
802.11n-HT20								
Test channel		Lowest			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5725.00	32.17	34.65	11.62	40.54	37.90	54.00	-16.10	Horizontal
5725.00	31.69	34.65	11.62	40.54	37.42	54.00	-16.58	Vertical
802.11n-HT20								
Test channel		Highest			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5850.00	42.26	34.63	11.75	40.69	47.95	78.20	-30.25	Horizontal
5850.00	41.39	34.63	11.75	40.69	47.08	78.20	-31.12	Vertical
802.11n-HT20								
Test channel		Highest			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5850.00	32.18	34.63	11.75	40.69	37.87	54.00	-16.13	Horizontal
5850.00	31.25	34.63	11.75	40.69	36.94	54.00	-17.06	Vertical

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor.*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

802.11n-HT40								
Test channel		Lowest			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5725.00	41.52	34.65	11.62	40.54	47.25	78.20	-30.95	Horizontal
5725.00	42.66	34.65	11.62	40.54	48.39	78.20	-29.81	Vertical
802.11n-HT40								
Test channel		Lowest			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5725.00	32.76	34.65	11.62	40.54	38.49	54.00	-15.51	Horizontal
5725.00	31.22	34.65	11.62	40.54	36.95	54.00	-17.05	Vertical
802.11n-HT40								
Test channel		Highest			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5850.00	41.83	34.63	11.75	40.69	47.52	78.20	-30.68	Horizontal
5850.00	40.70	34.63	11.75	40.69	46.39	78.20	-31.81	Vertical
802.11n-HT40								
Test channel		Highest			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5850.00	31.48	34.63	11.75	40.69	37.17	54.00	-16.83	Horizontal
5850.00	31.29	34.63	11.75	40.69	36.98	54.00	-17.02	Vertical

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor.*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

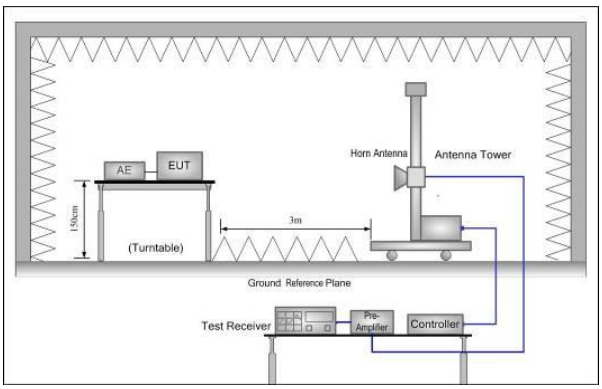
802.11ac-HT80								
Test channel		Lowest			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5725.00	41.60	34.65	11.62	40.54	47.33	78.20	-30.87	Horizontal
5725.00	42.38	34.65	11.62	40.54	48.11	78.20	-30.09	Vertical
802.11ac-HT80								
Test channel		Lowest			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5725.00	32.54	34.65	11.62	40.54	38.27	54.00	-15.73	Horizontal
5725.00	31.21	34.65	11.62	40.54	36.94	54.00	-17.06	Vertical
802.11ac-HT80								
Test channel		Highest			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5850.00	41.75	34.63	11.75	40.69	47.44	78.20	-30.76	Horizontal
5850.00	40.62	34.63	11.75	40.69	46.31	78.20	-31.89	Vertical
802.11ac-HT80								
Test channel		Highest			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5850.00	31.33	34.63	11.75	40.69	37.02	54.00	-16.98	Horizontal
5850.00	30.85	34.63	11.75	40.69	36.54	54.00	-17.46	Vertical

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor.*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

6.7 Spurious Emission

6.7.1 Restricted Band

<table>
<tr><td>Test Requirement:</td><td>FCC Part15 E Section 15.407(b)</td></tr>
<tr><td>Test Method:</td><td>ANSI C63.10: 2013</td></tr>
<tr><td>TestFrequencyRange:</td><td>Band 1: 4.5 GHz to 5.15 GHz and 5.35GHz to 5.46GHz
Band 4: 5.35 GHz to 5.46 GHz</td></tr>
<tr><td>Test site:</td><td>Measurement Distance: 3m</td></tr>
<tr><td>Receiver setup:</td><td>
<table>
<tr><td>Frequency</td><td>Detector</td><td>RBW</td><td>VBW</td><td>Remark</td></tr>
<tr><td rowspan="2">Above 1GHz</td><td>Peak</td><td>1MHz</td><td>3MHz</td><td>Peak Value</td></tr>
<tr><td>RMS</td><td>1MHz</td><td>3MHz</td><td>Average Value</td></tr>
</table>
</td></tr>
<tr><td>Limit:</td><td>
<table>
<tr><td>Frequency</td><td>Limit (dBuV/m @3m)</td><td>Remark</td></tr>
<tr><td rowspan="2">Above 1GHz</td><td>74.00</td><td>Peak Value</td></tr>
<tr><td>54.00</td><td>Average Value</td></tr>
</table>
</td></tr>
<tr><td>Test Procedure:</td><td>1. The EUT was placed on the top of a rotating table 1.5 meters above the groundat a 3 meter camber. The table was rotated 360 degrees todetermine the position of the highest radiation.
2. The EUT was set 3 meters away from the interference-receiving antenna, whichwas mounted on the top of a variable-height antenna tower.
3. 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.
4. For each suspected emission, the EUT was arranged to its worst case and thenthe antenna was tuned to heights from 1 meter to 4 meters and the rotatablewas turned from 0 degrees to 360 degrees to find the maximum reading.
5. The test-receiver system was set to Peak Detect Function and SpecifiedBandwidth with Maximum Hold Mode.
6. If the emission level of the EUT in peak mode was 10dB lower than the limitspecified, then testing could be stopped and the peak values of the EUT wouldbe reported. Otherwise the emissions that did not have 10dB margin would bere-tested one by one using peak, quasi-peak or average method as specified andthen reported in a data sheet.</td></tr>
<tr><td>Test setup:</td><td> 
</td></tr>
<tr><td>Test Instruments:</td><td>Refer to section 5.7 for details</td></tr>
<tr><td>Test mode:</td><td>Refer to section 5.3 for details</td></tr>
<tr><td>Test results:</td><td>Passed</td></tr>
</table>

Band 1:

802.11a

Test channel		Lowest			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4500.00	42.15	34.50	10.22	40.67	46.20	74.00	-27.80	Horizontal
4500.00	43.62	34.50	10.22	40.67	47.67	74.00	-26.33	Vertical
Test channel		Lowest			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4500.00	32.54	34.50	10.22	40.67	36.59	54.00	-17.41	Horizontal
4500.00	33.78	34.50	10.22	40.67	37.83	54.00	-16.17	Vertical
Test channel		Highest			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5460.00	42.15	34.90	11.32	40.23	48.14	74.00	-25.86	Horizontal
5460.00	41.32	34.90	11.32	40.23	47.31	74.00	-26.69	Vertical
Test channel		Highest			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5460.00	32.14	34.90	11.32	40.23	38.13	54.00	-15.87	Horizontal
5460.00	31.59	34.90	11.32	40.23	37.58	54.00	-16.42	Vertical

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor.*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

802.11n-HT20

Test channel		Lowest			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4500.00	41.56	34.50	10.22	40.67	45.61	74.00	-28.39	Horizontal
4500.00	42.20	34.50	10.22	40.67	46.25	74.00	-27.75	Vertical
Test channel		Lowest			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4500.00	31.45	34.50	10.22	40.67	35.50	54.00	-18.50	Horizontal
4500.00	32.16	34.50	10.22	40.67	36.21	54.00	-17.79	Vertical
Test channel		Highest			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5460.00	42.78	34.90	11.32	40.23	48.77	74.00	-25.23	Horizontal
5460.00	42.66	34.90	11.32	40.23	48.65	74.00	-25.35	Vertical
Test channel		Highest			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5460.00	31.28	34.90	11.32	40.23	37.27	54.00	-16.73	Horizontal
5460.00	32.73	34.90	11.32	40.23	38.72	54.00	-15.28	Vertical

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor.*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

802.11n-HT40

Test channel		Lowest			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4500.00	42.55	34.50	10.22	40.67	46.60	74.00	-27.40	Horizontal
4500.00	41.71	34.50	10.22	40.67	45.76	74.00	-28.24	Vertical
Test channel		Lowest			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4500.00	32.19	34.50	10.22	40.67	36.24	54.00	-17.76	Horizontal
4500.00	31.82	34.50	10.22	40.67	35.87	54.00	-18.13	Vertical
Test channel		Highest			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5460.00	42.33	34.90	11.32	40.23	48.32	74.00	-25.68	Horizontal
5460.00	42.37	34.90	11.32	40.23	48.36	74.00	-25.64	Vertical
Test channel		Highest			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5460.00	31.50	34.90	11.32	40.23	37.49	54.00	-16.51	Horizontal
5460.00	33.41	34.90	11.32	40.23	39.40	54.00	-14.60	Vertical

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor.*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

802.11ac-HT80

Test channel		Lowest			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4500.00	42.65	34.50	10.22	40.67	46.70	74.00	-27.30	Horizontal
4500.00	41.99	34.50	10.22	40.67	46.04	74.00	-27.96	Vertical
Test channel		Lowest			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4500.00	32.89	34.50	10.22	40.67	36.94	54.00	-17.06	Horizontal
4500.00	32.01	34.50	10.22	40.67	36.06	54.00	-17.94	Vertical
Test channel		Highest			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5460.00	42.14	34.90	11.32	40.23	48.13	74.00	-25.87	Horizontal
5460.00	41.03	34.90	11.32	40.23	47.02	74.00	-26.98	Vertical
Test channel		Highest			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5460.00	32.95	34.90	11.32	40.23	38.94	54.00	-15.06	Horizontal
5460.00	32.21	34.90	11.32	40.23	38.20	54.00	-15.80	Vertical

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor.*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

Band 4:

802.11a

Test channel		Lowest			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5350.00	42.13	35.37	11.19	40.18	48.51	74.00	-25.49	Horizontal
5350.00	41.78	35.37	11.19	40.18	48.16	74.00	-25.84	Vertical
Test channel		Lowest			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5350.00	31.88	35.37	11.19	40.18	38.26	54.00	-15.74	Horizontal
5350.00	31.45	35.37	11.19	40.18	37.83	54.00	-16.17	Vertical
Test channel		Lowest			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5460.00	42.55	34.90	11.32	40.23	48.54	74.00	-25.46	Horizontal
5460.00	41.76	34.90	11.32	40.23	47.75	74.00	-26.25	Vertical
Test channel		Lowest			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5460.00	33.58	34.90	11.32	40.23	39.57	54.00	-14.43	Horizontal
5460.00	32.16	34.90	11.32	40.23	38.15	54.00	-15.85	Vertical

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor.*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

802.11n-HT20

Test channel		Lowest			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5350.00	42.15	35.37	11.19	40.18	48.53	74.00	-25.47	Horizontal
5350.00	41.78	35.37	11.19	40.18	48.16	74.00	-25.84	Vertical
Test channel		Lowest			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5350.00	32.69	35.37	11.19	40.18	39.07	54.00	-14.93	Horizontal
5350.00	31.75	35.37	11.19	40.18	38.13	54.00	-15.87	Vertical
Test channel		Lowest			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5460.00	42.13	34.90	11.32	40.23	48.12	74.00	-25.88	Horizontal
5460.00	42.58	34.90	11.32	40.23	48.57	74.00	-25.43	Vertical
Test channel		Lowest			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5460.00	32.47	34.90	11.32	40.23	38.46	54.00	-15.54	Horizontal
5460.00	32.16	34.90	11.32	40.23	38.15	54.00	-15.85	Vertical

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor.*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

802.11n-HT40

Test channel		Lowest			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5350.00	42.56	35.37	11.19	40.18	48.94	74.00	-25.06	Horizontal
5350.00	42.36	35.37	11.19	40.18	48.74	74.00	-25.26	Vertical
Test channel		Lowest			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5350.00	32.81	35.37	11.19	40.18	39.19	54.00	-14.81	Horizontal
5350.00	33.19	35.37	11.19	40.18	39.57	54.00	-14.43	Vertical
Test channel		Lowest			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5460.00	42.66	34.90	11.32	40.23	48.65	74.00	-25.35	Horizontal
5460.00	42.38	34.90	11.32	40.23	48.37	74.00	-25.63	Vertical
Test channel		Lowest			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5460.00	32.57	34.90	11.32	40.23	38.56	54.00	-15.44	Horizontal
5460.00	31.46	34.90	11.32	40.23	37.45	54.00	-16.55	Vertical

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor .*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

802.11ac-HT80

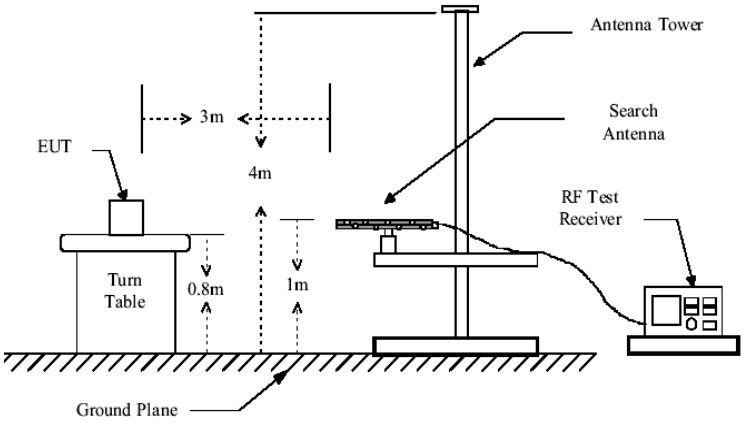
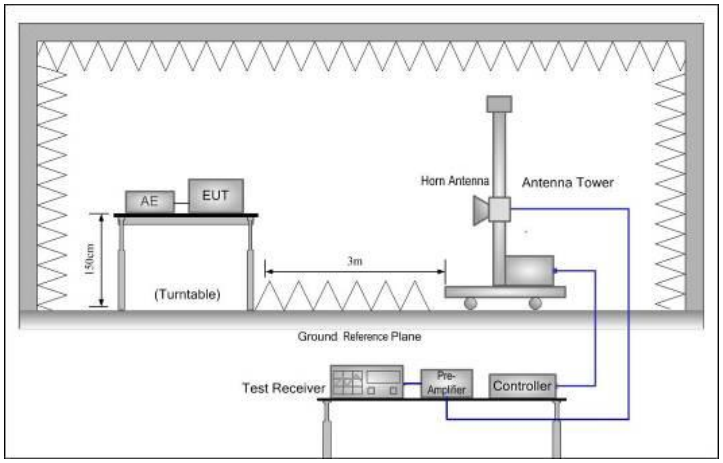
Test channel		Lowest			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5350.00	41.22	35.37	11.19	40.18	47.60	74.00	-26.40	Horizontal
5350.00	41.71	35.37	11.19	40.18	48.09	74.00	-25.91	Vertical
Test channel		Lowest			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5350.00	31.49	35.37	11.19	40.18	37.87	54.00	-16.13	Horizontal
5350.00	31.44	35.37	11.19	40.18	37.82	54.00	-16.18	Vertical
Test channel		Lowest			Level		Peak	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5460.00	41.26	34.90	11.32	40.23	47.25	74.00	-26.75	Horizontal
5460.00	41.77	34.90	11.32	40.23	47.76	74.00	-26.24	Vertical
Test channel		Lowest			Level		Average	
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5460.00	32.05	34.90	11.32	40.23	38.04	54.00	-15.96	Horizontal
5460.00	31.93	34.90	11.32	40.23	37.92	54.00	-16.08	Vertical

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

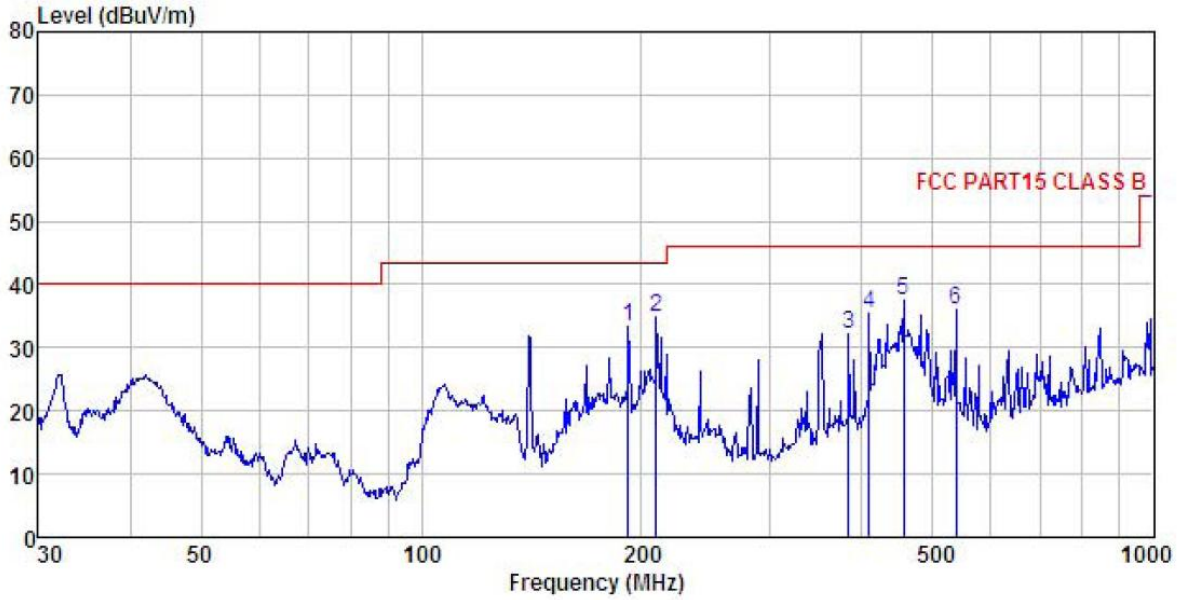
6.7.2 Unwanted Emissions out of the Restricted Bands

<table>
<tr><td>Test Requirement:</td><td>FCC Part15 C Section 15.209 and 15.205</td></tr>
<tr><td>Test Method:</td><td>ANSI C63.10:2013</td></tr>
<tr><td>TestFrequencyRange:</td><td>30MHz to 40GHz</td></tr>
<tr><td>Test site:</td><td>Measurement Distance: 3m</td></tr>
<tr><td>Receiver setup:</td><td>
<table>
<tr><td>Frequency</td><td>Detector</td><td>RBW</td><td>VBW</td><td>Remark</td></tr>
<tr><td>30MHz-1GHz</td><td>Quasi-peak</td><td>120kHz</td><td>300kHz</td><td>Quasi-peak Value</td></tr>
<tr><td rowspan="2">Above 1GHz</td><td>Peak</td><td>1MHz</td><td>3MHz</td><td>Peak Value</td></tr>
<tr><td>RMS</td><td>1MHz</td><td>3MHz</td><td>Average Value</td></tr>
</table>
</td></tr>
<tr><td>Limit:</td><td>
<table>
<tr><td>Frequency</td><td>Limit (dBuV/m @3m)</td><td>Remark</td></tr>
<tr><td>30MHz-88MHz</td><td>40.0</td><td>Quasi-peak Value</td></tr>
<tr><td>88MHz-216MHz</td><td>43.5</td><td>Quasi-peak Value</td></tr>
<tr><td>216MHz-960MHz</td><td>46.0</td><td>Quasi-peak Value</td></tr>
<tr><td>960MHz-1GHz</td><td>54.0</td><td>Quasi-peak Value</td></tr>
</table>
<table>
<tr><td>Frequency</td><td>Limit (dBm/MHz)</td><td>Remark</td></tr>
<tr><td rowspan="2">Above 1GHz</td><td>68.20</td><td>Peak Value</td></tr>
<tr><td>54.00</td><td>Average Value</td></tr>
<tr><td colspan="3">Remark:
1. Above 1GHz limit:
E[dBμV/m] = EIRP[dBm] + 95.2=68.2 dBuV/m,for EIPR[dBm]=-27dBm.</td></tr>
</table>
</td></tr>
<tr><td>Test Procedure:</td><td>1. The EUT was placed on the top of a rotating table 0.8m(below 1GHz) /1.5m(above 1GHz) above the groundat a 3 meter camber. The table was rotated 360 degrees todetermine the position of the highest radiation.
2. The EUT was set 3 meters away from the interference-receiving antenna, whichwas mounted on the top of a variable-height antenna tower.
3. 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.
4. For each suspected emission, the EUT was arranged to its worst case and thenthe antenna was tuned to heights from 1 meter to 4 meters and the rotatablewas turned from 0 degrees to 360 degrees to find the maximum reading.
5. The test-receiver system was set to Peak Detect Function and SpecifiedBandwidth with Maximum Hold Mode.
6. If the emission level of the EUT in peak mode was 10dB lower than the limitspecified, then testing could be stopped and the peak values of the EUT wouldbe reported. Otherwise the emissions that did not have 10dB margin would bere-tested one by one using peak, quasi-peak or average method as specified andthen reported in a data sheet.</td></tr>
</table>

Test setup:	Below 1GHz  Above 1GHz 
Test Instruments:	Refer to section 5.7for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed

Below 1GHz

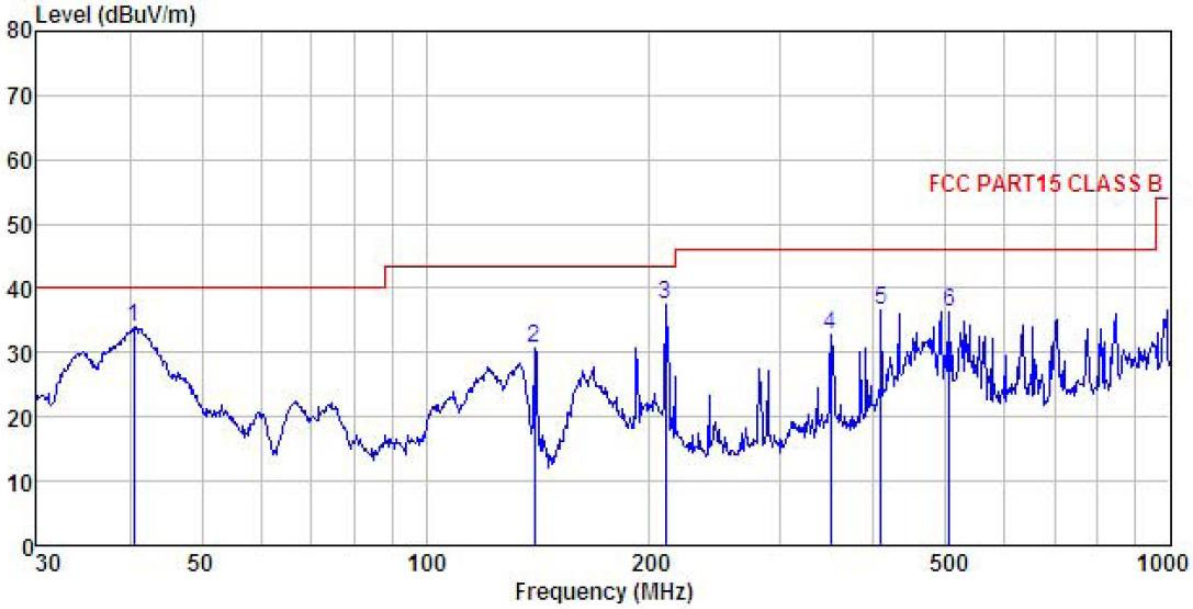
Horizontal:



Site : 3m chamber
Condition : FCC PART15 CLASS B 3m VULB9163(30M3G) HORIZONTAL
EUT : 17.3" Quad Core MediaPlayer Slim Housing
Model : DT173-AS4-1080SL
Test mode : 5G Wifi mode
Power Rating : AC120V/60Hz
Environment : Temp:25.5℃ Huni:55% 101KPa
Test Engineer: MT
REMARK :

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	191.745	49.62	9.79	2.81	28.89	33.33	43.50	-10.17	QP
2	209.313	49.95	10.65	2.86	28.77	34.69	43.50	-8.81	QP
3	383.932	42.40	15.40	3.09	28.71	32.18	46.00	-13.82	QP
4	408.946	45.23	15.96	3.10	28.80	35.49	46.00	-10.51	QP
5	455.906	46.92	16.28	3.25	28.88	37.57	46.00	-8.43	QP
6	537.589	43.40	17.79	3.82	29.06	35.95	46.00	-10.05	QP

Vertical:



Site : 3m chamber
Condition : FCC PART15 CLASS B 3m VULB9163(30M3G) VERTICAL
EUT : 17.3" Quad Core MediaPlayer Slim Housing
Model : DT173-AS4-1080SL
Test mode : 5G Wifi mode
Power Rating : AC120V/60Hz
Environment : Temp:25.5℃ Huni:55% 101KPa
Test Engineer: MT
REMARK :

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	40.559	45.78	16.98	1.22	29.90	34.08	40.00	-5.92	QP
2	139.851	45.98	11.74	2.39	29.27	30.84	43.50	-12.66	QP
3	210.048	52.66	10.70	2.86	28.77	37.45	43.50	-6.05	QP
4	350.477	44.15	14.16	3.10	28.56	32.85	46.00	-13.15	QP
5	408.946	46.35	15.96	3.10	28.80	36.61	46.00	-9.39	QP
6	504.706	44.75	16.92	3.65	28.97	36.35	46.00	-9.65	QP

Above 1GHz:

Band 1:

802.11a mode Lowest channel (Peak Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10360.00	42.83	40.10	15.37	41.34	56.96	68.20	-11.24	Vertical
10360.00	41.96	40.10	15.37	41.34	56.09	68.20	-12.11	Horizontal
802.11a mode Lowest channel (AverageValue)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10360.00	33.02	40.10	15.37	41.34	47.15	54.00	-6.85	Vertical
10360.00	32.56	40.10	15.37	41.34	46.69	54.00	-7.31	Horizontal

802.11a mode Middle channel (Peak Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10400.00	42.59	40.00	15.42	41.27	56.74	68.20	-11.46	Vertical
10400.00	43.02	40.00	15.42	41.27	57.17	68.20	-11.03	Horizontal
802.11a mode Middle channel (AverageValue)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10400.00	33.15	40.00	15.42	41.27	47.30	54.00	-6.70	Vertical
10400.00	34.23	40.00	15.42	41.27	48.38	54.00	-5.62	Horizontal

802.11a mode Highest channel (Peak Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10480.00	42.58	39.70	15.55	41.10	56.73	68.20	-11.47	Vertical
10480.00	41.66	39.70	15.55	41.10	55.81	68.20	-12.39	Horizontal
802.11a mode Highest channel (AverageValue)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10480.00	33.21	39.70	15.55	41.10	47.36	54.00	-6.64	Vertical
10480.00	32.06	39.70	15.55	41.10	46.21	54.00	-7.79	Horizontal

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

802.11n20 mode Lowest channel (Peak Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10360.00	42.65	40.10	15.37	41.34	56.78	68.20	-11.42	Vertical
10360.00	41.32	40.10	15.37	41.34	55.45	68.20	-12.75	Horizontal
802.11n20 mode Lowest channel (AverageValue)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10360.00	33.05	40.10	15.37	41.34	47.18	54.00	-6.82	Vertical
10360.00	32.85	40.10	15.37	41.34	46.98	54.00	-7.02	Horizontal

802.11n20 mode Middle channel (Peak Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10400.00	42.69	40.00	15.42	41.27	56.84	68.20	-11.36	Vertical
10400.00	41.85	40.00	15.42	41.27	56.00	68.20	-12.20	Horizontal
802.11n20 mode Middle channel (AverageValue)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10400.00	33.54	40.00	15.42	41.27	47.69	54.00	-6.31	Vertical
10400.00	32.88	40.00	15.42	41.27	47.03	54.00	-6.97	Horizontal

802.11n20 mode Highest channel (Peak Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10480.00	42.78	39.70	15.55	41.10	56.93	68.20	-11.27	Vertical
10480.00	43.59	39.70	15.55	41.10	57.74	68.20	-10.46	Horizontal
802.11n20 mode Highest channel (AverageValue)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10480.00	33.77	39.70	15.55	41.10	47.92	54.00	-6.08	Vertical
10480.00	34.02	39.70	15.55	41.10	48.17	54.00	-5.83	Horizontal

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

802.11n40 mode Lowest channel (Peak Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10380.00	41.55	40.00	15.42	41.31	55.66	68.20	-12.54	Vertical
10380.00	40.73	40.00	15.42	41.31	54.84	68.20	-13.36	Horizontal
802.11n40 mode Lowest channel (AverageValue)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10380.00	31.63	40.00	15.42	41.31	45.74	54.00	-8.26	Vertical
10380.00	30.82	40.00	15.42	41.31	44.93	54.00	-9.07	Horizontal

802.11n40 mode Highest channel (Peak Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10460.00	40.22	39.80	15.51	41.17	54.36	68.20	-13.84	Vertical
10460.00	41.14	39.80	15.51	41.17	55.28	68.20	-12.92	Horizontal
802.11n40 mode Highest channel (AverageValue)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10460.00	30.88	39.80	15.51	41.17	45.02	54.00	-8.98	Vertical
10460.00	31.72	39.80	15.51	41.17	45.86	54.00	-8.14	Horizontal

802.11ac-HT80MHz mode Middle channel (Peak Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10420.00	42.18	39.90	15.46	41.24	56.30	68.20	-11.90	Vertical
10420.00	41.67	39.90	15.46	41.24	55.79	68.20	-12.41	Horizontal
802.11ac-HT80MHz mode Middle channel (AverageValue)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10420.00	32.44	39.90	15.46	41.24	46.56	54.00	-7.44	Vertical
10420.00	30.60	39.90	15.46	41.24	44.72	54.00	-9.28	Horizontal

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

Band 4:

802.11a mode Lowest channel (Peak Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11490.00	42.65	41.50	16.83	40.75	60.23	74.00	-13.77	Vertical
11490.00	42.01	41.50	16.83	40.75	59.59	74.00	-14.41	Horizontal
802.11a mode Lowest channel (AverageValue)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11490.00	33.69	41.50	16.83	40.75	51.27	54.00	-2.73	Vertical
11490.00	32.98	41.50	16.83	40.75	50.56	54.00	-3.44	Horizontal

802.11a mode Middle channel (Peak Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11570.00	41.69	41.38	16.90	40.91	59.06	74.00	-14.94	Vertical
11570.00	42.31	41.38	16.90	40.91	59.68	74.00	-14.32	Horizontal
802.11a mode Middle channel (Average Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11570.00	32.96	41.38	16.90	40.91	50.33	54.00	-3.67	Vertical
11570.00	33.04	41.38	16.90	40.91	50.41	54.00	-3.59	Horizontal

802.11a mode Highest channel (Peak Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11650.00	41.55	41.26	16.97	41.06	58.72	74.00	-15.28	Vertical
11650.00	41.98	41.26	16.97	41.06	59.15	74.00	-14.85	Horizontal
802.11a mode Highest channel (Average Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11650.00	32.59	41.26	16.97	41.06	49.76	54.00	-4.24	Vertical
11650.00	32.78	41.26	16.97	41.06	49.95	54.00	-4.05	Horizontal

Remark:
1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

802.11n20 mode Lowest channel (Peak Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11490.00	40.55	41.50	16.83	40.75	58.13	74.00	-15.87	Vertical
11490.00	40.26	41.50	16.83	40.75	57.84	74.00	-16.16	Horizontal
802.11n20 mode Lowest channel (Average Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11490.00	30.74	41.50	16.83	40.75	48.32	54.00	-5.68	Vertical
11490.00	30.98	41.50	16.83	40.75	48.56	54.00	-5.44	Horizontal

802.11n20 mode Middle channel (Peak Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11570.00	42.00	41.38	16.90	40.91	59.37	74.00	-14.63	Vertical
11570.00	42.63	41.38	16.90	40.91	60.00	74.00	-14.00	Horizontal
802.11n20 mode Middle channel (Average Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11570.00	31.82	41.38	16.90	40.91	49.19	54.00	-4.81	Vertical
11570.00	32.23	41.38	16.90	40.91	49.60	54.00	-4.40	Horizontal

802.11n20 mode Highest channel (Peak Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11650.00	40.86	41.26	16.97	41.06	58.03	74.00	-15.97	Vertical
11650.00	41.69	41.26	16.97	41.06	58.86	74.00	-15.14	Horizontal
802.11n20 mode Highest channel (Average Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11650.00	30.54	41.26	16.97	41.06	47.71	54.00	-6.29	Vertical
11650.00	31.61	41.26	16.97	41.06	48.78	54.00	-5.22	Horizontal

Remark:
1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

802.11n40 mode Lowest channel (Peak Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11510.00	40.10	41.50	16.83	40.77	57.66	74.00	-16.34	Vertical
11510.00	39.82	41.50	16.83	40.77	57.38	74.00	-16.62	Horizontal
802.11n40 mode Lowest channel (Average Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11510.00	30.44	41.50	16.83	40.77	48.00	54.00	-6.00	Vertical
11510.00	29.90	41.50	16.83	40.77	47.46	54.00	-6.54	Horizontal

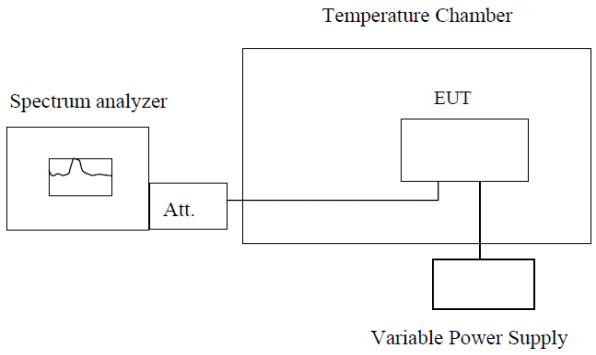
802.11n40 mode Highest channel (Peak Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11590.00	41.22	41.32	16.93	40.95	58.52	74.00	-15.48	Vertical
11590.00	40.53	41.32	16.93	40.95	57.83	74.00	-16.17	Horizontal
802.11n40 mode Highest channel (Average Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11590.00	31.78	41.32	16.93	40.95	49.08	54.00	-4.92	Vertical
11590.00	31.45	41.32	16.93	40.95	48.75	54.00	-5.25	Horizontal

802.11ac-HT80 mode Middle channel (Peak Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11550.00	42.19	41.44	16.86	40.88	59.61	74.00	-14.39	Vertical
11550.00	41.76	41.44	16.86	40.88	59.18	74.00	-14.82	Horizontal
802.11ac-HT80 mode Middle channel (Average Value)								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11550.00	32.88	41.44	16.86	40.88	50.30	54.00	-3.70	Vertical
11550.00	31.26	41.44	16.86	40.88	48.68	54.00	-5.32	Horizontal

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

6.8 Frequency stability

Test Requirement:	FCC Part15 E Section 15.407 (g)
Limit:	Manufacturers of U-NII devices are responsible for ensuringfrequency stability such that anemission is maintained within the band of operation under all conditions of normal operation asspecified in the user's manual.
Test setup:	 **Note :** Measurement setup for testing on Antenna connector
Test procedure:	1. The EUT is installed in an environment test chamber with external power source. 2. Set the chamber to operate at 50 centigrade and external power source to output at nominal voltage ofEUT. 3. A sufficient stabilization period at each temperature is used prior to each frequency measurement. 4. When temperature is stabled, measure the frequency stability. 5. The test shall be performed under -30 to 50 centigrade and 85 to 115 percent of the nominal voltage.Change setting of chamber and external power source to complete all conditions.
Test Instruments:	Refer to section 5.7 for details
Test mode:	Refer to section 5.3 for details, and all channels have been tested, only shows the worst channel data in this report.
Test results:	Refer to FCC ID: 2AB6Z-1859ATMBA-V2