FCC REPORT

Applicant:	Quantum Creations LLC.
Address of Applicant:	16410 NE 19th Avenue Suite 102 North, Miami Beach, Florida United States 33162

Equipment Under Test (EUT)

Product Name:	Mini PC
Model No.:	A-1062-ABP, A-1062-ABP-1, A-1062-ABP-2, A-1062-ABP-3, A-1062-ABP-4, A-1062-ABP-5, A-1062-ABP-6, A-1062-ABP-7, A-1062-ABP-8
Trade Mark:	Azulle
FCC ID:	2AFJI20161062
Applicable standards:	FCC CFR Title 47 Part 15 Subpart C Section 15.407:2015
Date of sample receipt:	July 11, 2016
Date of Test:	July 12-21, 2016
Date of report issued:	July 22, 2016
Test Result :	PASS *

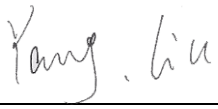
* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:

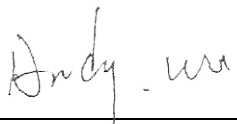
Robinson Lo
Laboratory Manager

2 Version

Version No.	Date	Description
00	*July 22, 2016*	*Original*

Prepared By:  ***Date:*** *July 22, 2016*

Project Engineer

Check By:  ***Date:*** *July 22, 2016*

Reviewer

3 Contents

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4 Test Summary

Test Item	Section in CFR 47	Result
Antenna requirement	15.203	Pass
AC Power Line Conducted Emission	15.207	Pass
Conducted Peak Output Power	15.407(a)(3)	Pass
Channel Bandwidth	15.407(e)	Pass
Power Spectral Density	15.407(a)(3)	Pass
Band Edge	15.407(b)(4)	Pass
Spurious Emission	15.205/15.209/15.407(b)(4)	Pass

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

Remark: Test according to ANSI C63.10:2013 and ANSI C63.4:2014.

4.1 Measurement Uncertainty

Test Item	Frequency Range	Measurement Uncertainty	Notes
Radiated Emission	9kHz ~ 30MHz	± 4.34dB	(1)
Radiated Emission	30MHz ~ 1000MHz	± 4.24dB	(1)
Radiated Emission	1GHz ~ 40GHz	± 4.68dB	(1)
AC Power Line Conducted Emission	0.15MHz ~ 30MHz	± 3.45dB	(1)
Note (1): The measurement uncertainty is for coverage factor of k=2 and a level of confidence of 95%.			

5 General Information

5.1 Client Information

Applicant:	Quantum Creations LLC.
Address of Applicant:	16410 NE 19th Avenue Suite 102 North, Miami Beach, Florida United States 33162
Manufacturer:	SHENZHEN MELE STAR TECHNOLOGY LIMITED
Address of Manufacturer:	3F,Bldg#1,28 Cuijing Road, Pingshan New District，Shenzhen, PR China.
Factory:	Shenzhen MeLE Precision Technology Limited
Address of Factory:	3F East,Bldg#1,28 Cuijing Road, Pingshan New District，Shenzhen, PR China.

5.2 General Description of EUT

Product Name:	Mini PC
Model No.:	A-1062-ABP, A-1062-ABP-1, A-1062-ABP-2, A-1062-ABP-3, A-1062-ABP-4, A-1062-ABP-5, A-1062-ABP-6, A-1062-ABP-7, A-1062-ABP-8
Operation Frequency:	802.11a/802.11n(HT20)/802.11ac(HT20) @5.8G Band: 5745MHz ~ 5825MHz 802.11n(HT40)/ 802.11ac(HT40) @ 5.8G Band: 5755MHz ~ 5795MHz 802.11ac(HT80): 5775MHz
Channel numbers:	802.11a/802.11n(HT20)/802.11ac(HT20) @5.8G Band: 6 802.11n(HT40)/ 802.11ac(HT40) @ 5.8G Band: 2 802.11ac(HT80): 1
Channel bandwidth:	802.11a/802.11n(HT20)/802.11ac(HT20) : 20MHz 802.11n(HT40)/802.11ac(HT40) : 40MHz 802.11ac(HT80): 80MHz
Modulation technology:	802.11a/802.11n(H20)/802.11n(H40)/802.11ac(HT20)/802.11ac(HT40) /802.11ac(HT80): Orthogonal Frequency Division Multiplexing (OFDM)
Antenna Type:	Integral Antenna
Antenna gain:	2.0dBi (declare by Applicant)
Power supply:	SWITCHING ADAPTER: Model No.:S12B22-120A100-04 Input: AC 100~240V~50/60Hz 0.5A Output: DC 12V 1A

Operation Frequency each of channel @ 5.8G Band							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
149	5745MHz	153	5765MHz	155	5775MHz	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:

Test channel	**Frequency (MHz)**		
	5.8G Band		
	802.11a 802.11n(HT20) 802.11ac(HT20)	802.11n(HT40) 802.11ac(HT40)	802.11ac(HT80)
Lowest channel	5745	5755	
Middle channel	5785		5775
Highest channel	5825	5795	

5.3 Test mode

Transmitting mode	Keep the EUT in continuously transmitting mode

Remark: During the test, the test voltage was tuned from 85% to 115% of the nominal rated supply voltage, and found that the worst case was under the nominal rated supply condition. So the report just shows that condition's data.

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	6Mbps
802.11n(HT20)	6.5Mbps
802.11n(HT40)	13Mbps
802.11ac(HT20)	6.5Mbps
802.11ac(HT40)	13.5Mbps
802.11ac(HT80)	29.3Mbps

5.4 Description of Support Units

None.

5.5 Test Facility

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

● **FCC —Registration No.: 600491**

Global United Technology Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fuly described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in files. Registration 600491, June 22, 2016.

● **Industry Canada (IC) —Registration No.: 9079A-2**

The 3m Semi-anechoic chamber of Global United Technology Services Co., Ltd. Has been

Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 9079A-2, June 26, 2013.

5.6 Test Location

All tests were performed at:

Global United Technology Services Co., Ltd.

No. 301-309, 3/F., Jinyuan Business Building, No.2, Laodong Industrial Zone,

Xixiang Road, Baoan District, Shenzhen, Guangdong, China

Tel: 0755-27798480

Fax: 0755-27798960

6 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 Semi- Anechoic Chamber	ZhongYu Electron	9.2(L)*6.2(W)* 6.4(H)	GTS250	Mar. 27 2016	Mar. 26 2017
2	Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	GTS251	N/A	N/A
3	EMI Test Receiver	Rohde & Schwarz	ESU26	GTS203	June 29 2016	June 28 2017
4	Spectrum analyzer	Agilent	E4447A	GTS516	June 29 2016	June 28 2017
5	Spectrum Analyzer	Agilent	E4440A	GTS533	Nov. 18 2015	Nov. 17 2016
6	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	GTS214	Feb. 21 2016	Feb. 20 2017
7	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	9120D-829	GTS208	June 29 2016	June 28 2017
8	Horn Antenna	ETS-LINDGREN	3160	GTS217	Mar. 27 2016	Mar. 26 2017
9	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
10	Coaxial Cable	GTS	N/A	GTS213	Mar. 27 2016	Mar. 26 2017
11	Coaxial Cable	GTS	N/A	GTS211	Mar. 27 2016	Mar. 26 2017
12	Coaxial cable	GTS	N/A	GTS210	Mar. 27 2016	Mar. 26 2017
13	Coaxial Cable	GTS	N/A	GTS212	Mar. 27 2016	Mar. 26 2017
14	Amplifier(100kHz-3GHz)	HP	8347A	GTS204	June 29 2016	June 28 2017
15	Amplifier(2GHz-20GHz)	HP	8349B	GTS206	June 29 2016	June 28 2017
16	Amplifier (18-40GHz)	MITEQ	AMF-6F-18004000-29-8P	GTS534	June 29 2016	June 28 2017
17	Band filter	Amindeon	82346	GTS219	Mar. 27 2016	Mar. 26 2017
18	Constant temperature and humidity box	Oregon Scientific	BA-888	GTS248	Mar. 27 2016	Mar. 26 2017
19	D.C. Power Supply	Instek	PS-3030	GTS232	Mar. 27 2016	Mar. 26 2017
20	Universal radio communication tester	Rohde & Schwarz	CMU200	GTS235	Mar. 27 2016	Mar. 26 2017
21	Splitter	Agilent	11636B	GTS237	Mar. 27 2016	Mar. 26 2017
22	Power Meter	Anritsu	ML2495A	GTS540	June 29 2016	June 28 2017
23	Power Sensor	Anritsu	MA2411B	GTS541	June 29 2016	June 28 2017

Conducted Emission:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	Shielding Room	ZhongYu Electron	7.0(L)x3.0(W)x3.0(H)	GTS264	June 29 2016	June 28 2017
2	EMI Test Receiver	Rohde & Schwarz	ESCS30	GTS223	June 29 2016	June 28 2017
3	10dB Pulse Limita	Rohde & Schwarz	N/A	GTS224	June 29 2016	June 28 2017
4	Coaxial Switch	ANRITSU CORP	MP59B	GTS225	June 29 2016	June 28 2017
5	LISN	SCHWARZBECK MESS-ELEKTRONIK	NSLK 8127	GTS226	June 29 2016	June 28 2017
6	Coaxial Cable	GTS	N/A	GTS227	June 29 2016	June 28 2017
7	EMI Test Software	AUDIX	E3	N/A	N/A	N/A

General used equipment:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	Barometer	ChangChun	DYM3	GTS257	July 06 2016	July 05 2017

7 Test results and Measurement Data

7.1 Antenna requirement

Standard requirement:	FCC Part15 C 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.

E.U.T Antenna:	

The antenna is integral antenna. The best case gain of the antenna is 2dBi.

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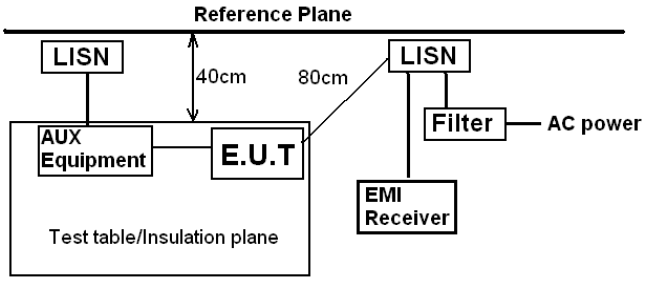
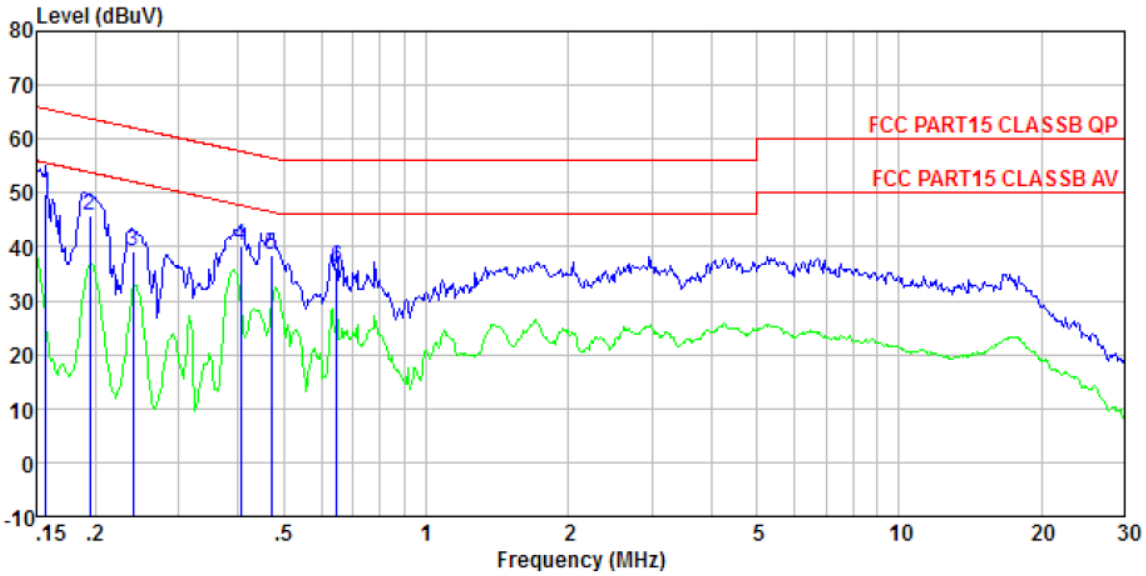
7.2 Conducted Emissions

Test Requirement:	FCC Part15 C Section 15.207
Test Method:	ANSI C63.10:2013
Test Frequency Range:	150KHz to 30MHz
Class / Severity:	Class B
Receiver setup:	RBW=9KHz, VBW=30KHz, 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:	 *Remark:* *E.U.T: Equipment Under Test* *LISN: Line Impedence Stabilization Network* *Test table height=0.8m*
Test procedure:	1. The E.U.T and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides 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 C63.10:2013 on conducted measurement.
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass

Measurement data

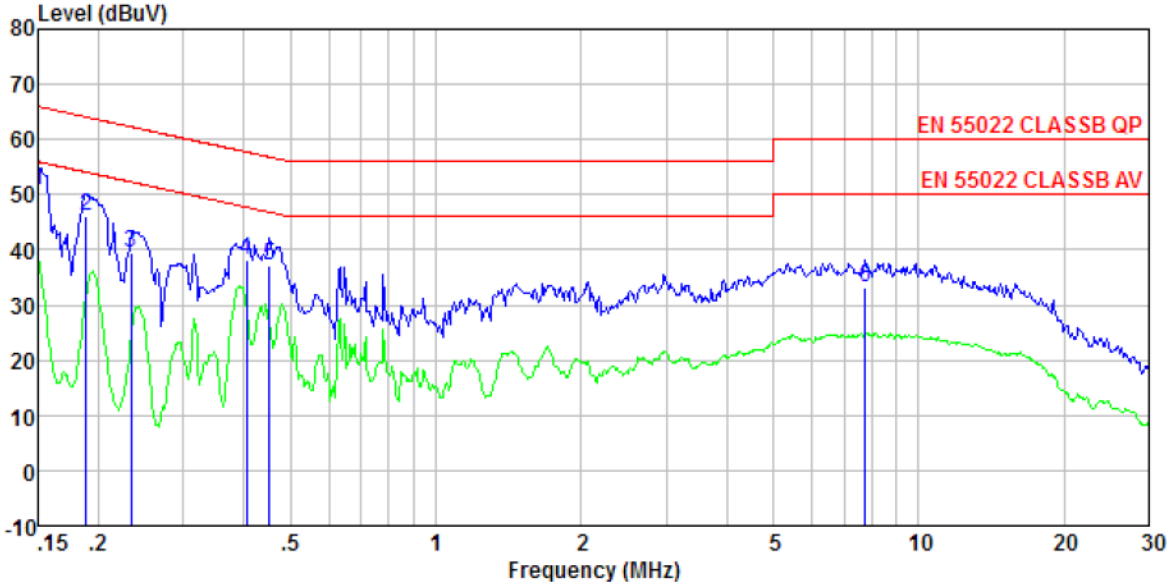
Line:



Site : Shielded room
Condition : FCC PART15 CLASSB QP LISN-2013 LINE
Job No. : 0010
Test Mode : WiFi mode
Test Engineer: Boy

	Freq	Read Level	LISN Level	Factor	Cable Loss	Limit Line	Over Limit	Remark
	MHz	dBuV	dBuV	dB	dB	dBuV	dB	
1	0.157	49.66	49.93	0.15	0.12	65.60	-15.67	QP
2	0.194	45.44	45.71	0.14	0.13	63.84	-18.13	QP
3	0.240	38.92	39.16	0.12	0.12	62.08	-22.92	QP
4	0.406	39.84	40.06	0.11	0.11	57.73	-17.67	QP
5	0.471	38.14	38.37	0.12	0.11	56.49	-18.12	QP
6	0.647	35.85	36.11	0.13	0.13	56.00	-19.89	QP

Neutral:



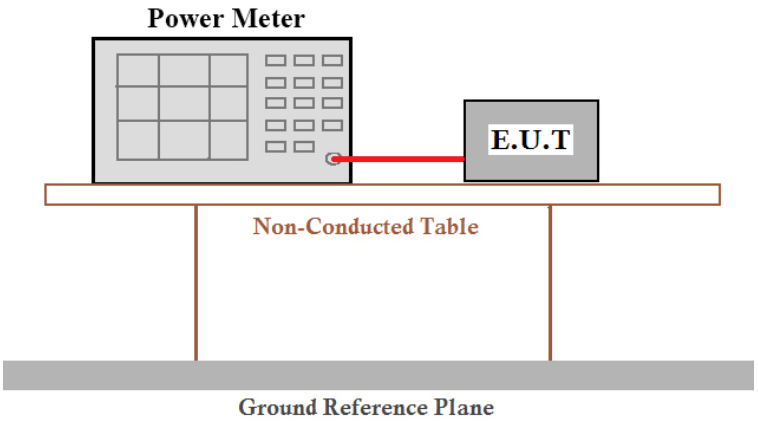
Site : Shielded room
Condition : EN 55022 CLASSB QP LISN-2013 NEUTRAL
Job No. : 0010
Test Mode : WiFi mode
Test Engineer: Boy

	Freq	Read Level	Level	LISN Factor	Cable Loss	Limit Line	Over Limit	Remark
	MHz	dBuV	dBuV	dB	dB	dBuV	dB	
1	0.150	50.75	50.94	0.07	0.12	66.00	-15.06	QP
2	0.188	45.86	46.06	0.07	0.13	64.11	-18.05	QP
3	0.234	39.44	39.62	0.06	0.12	62.30	-22.68	QP
4	0.406	37.83	38.00	0.06	0.11	57.73	-19.73	QP
5	0.452	36.86	37.03	0.06	0.11	56.85	-19.82	QP
6	7.769	32.81	33.18	0.19	0.18	60.00	-26.82	QP

Notes:

1. An initial pre-scan was performed on the line 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
4. *If the average limit is met when using a quasi-peak detector receiver, the EUT shall be deemed to meet both limits and measurement with the average detector receiver is unnecessary.*

7.3 Conducted Output Power

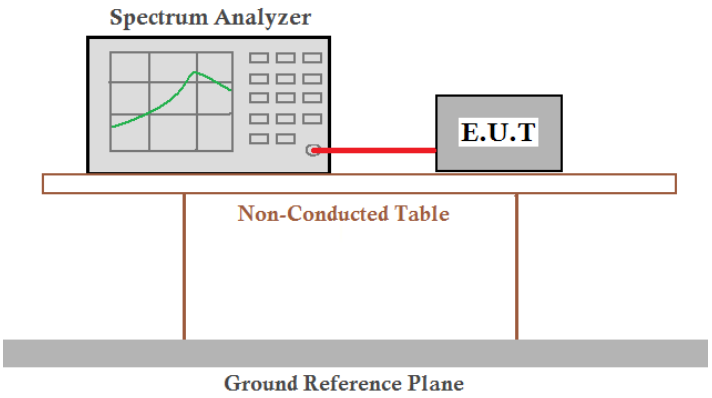
Test Requirement:	FCC Part15 E Section 15.407(a)(3)
Test Method:	ANSI C63.10:2013 and KDB789033 D02 General UNII Test Procedures New Rules v01
Limit:	30dBm
Test setup:	
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass

Measurement Data

Test CH	Conducted Output Power (dBm)						Limit(dBm)	Result
	802.11a	802.11n (HT20)	802.11ac (HT20)	802.11n (HT40)	802.11ac (HT40)	802.11ac (HT80)		
Lowest	14.17	12.41	12.19	12.88	7.91	---	30.00	Pass
Middle	14.15	12.77	11.80	---	---	7.85		
Highest	14.19	12.96	11.16	12.26	7.87	---		

Remark: “---“ is not applicable

7.4 Channel Bandwidth

Test Requirement:	FCC Part15 E Section 15.407(e)
Test Method:	ANSI C63.10:2013 and KDB789033 D02 General UNII Test Procedures New Rules v01
Limit:	>500KHz
Test setup:	
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass

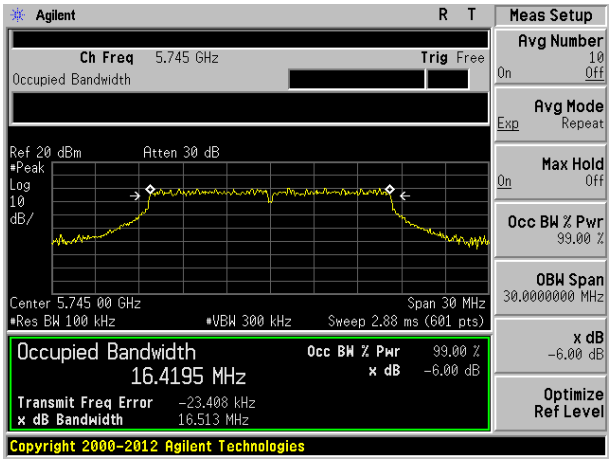
Measurement Data

5.8G Band								
Test CH	Channel Bandwidth (MHz)						Limit (KHz)	Result
	802.11a	802.11n(HT20)	802.11ac(HT20)	802.11n(HT40)	802.11ac(HT40)	802.11ac(HT80)		
Lowest	16.513	17.770	17.759	35.205	35.190	---	>500	Pass
Middle	16.475	17.732	17.736	---	---	75.064		
Highest	16.513	17.740	17.717	35.182	35.187	---		

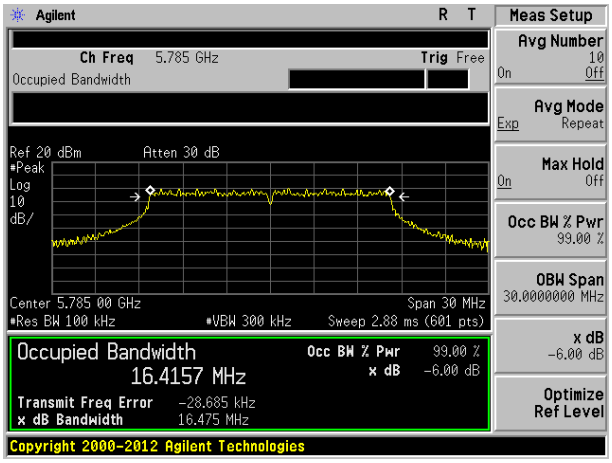
Remark: "---" is not applicable

Test plot as follows:

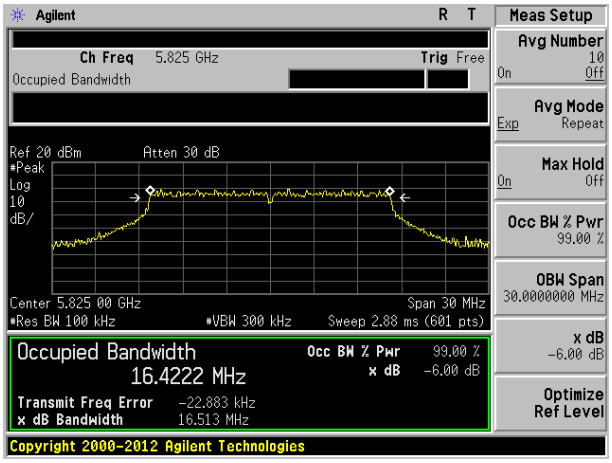
Test mode: 802.11a



Lowest channel

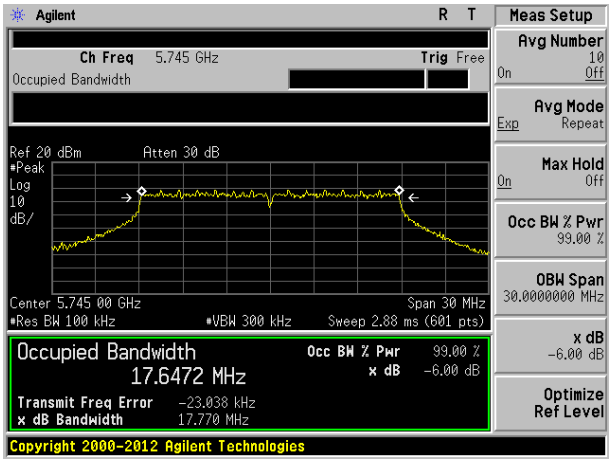


Middle channel

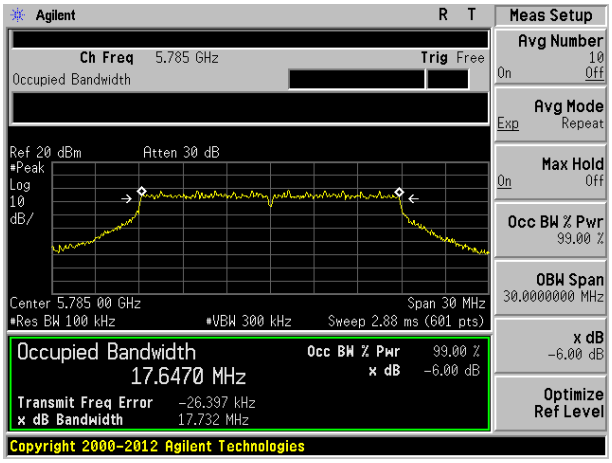


Highest channel

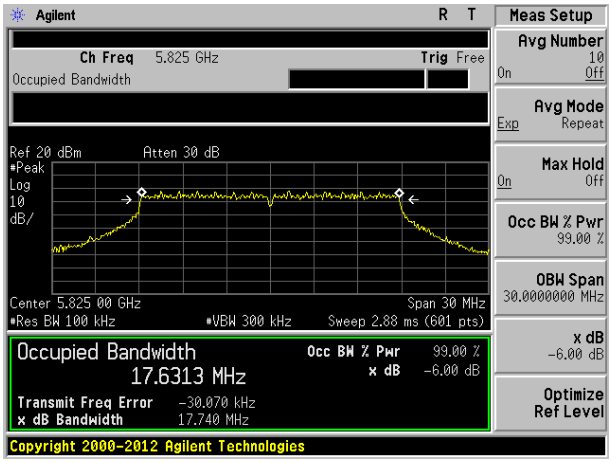
Test mode: 802.11n(HT20) @ 5.8G Band



Lowest channel

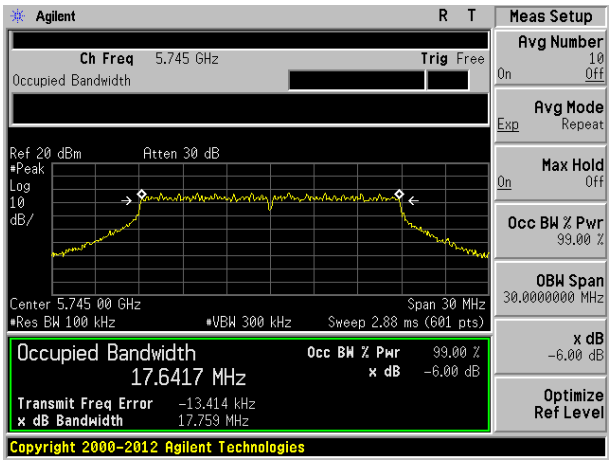


Middle channel

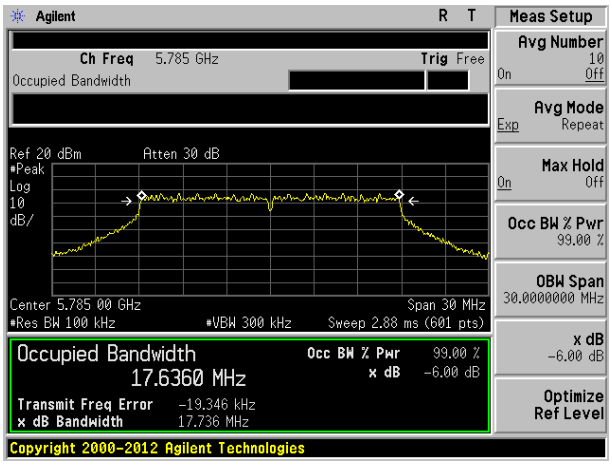


Highest channel

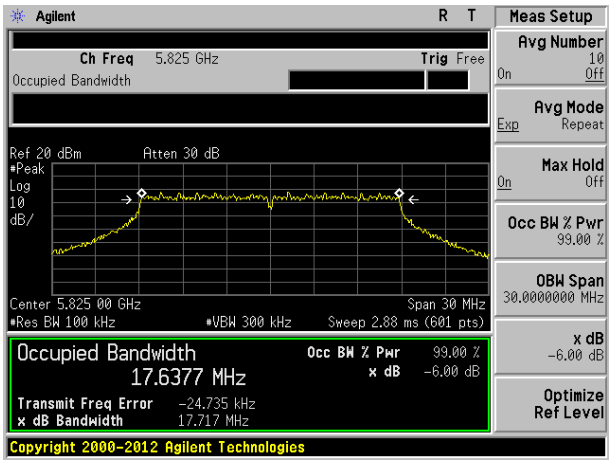
Test mode: 802.11ac(HT20)



Lowest channel

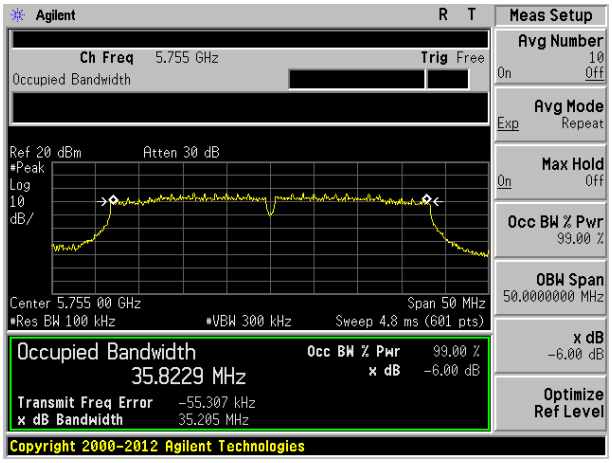


Middle channel

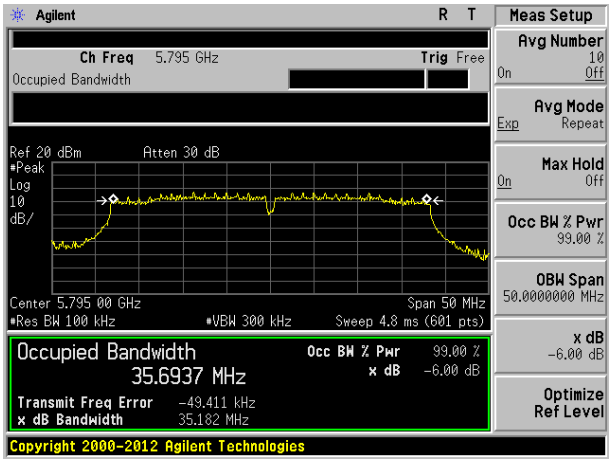


Highest channel

Test mode: 802.11n(HT40) @ 5.8G Band

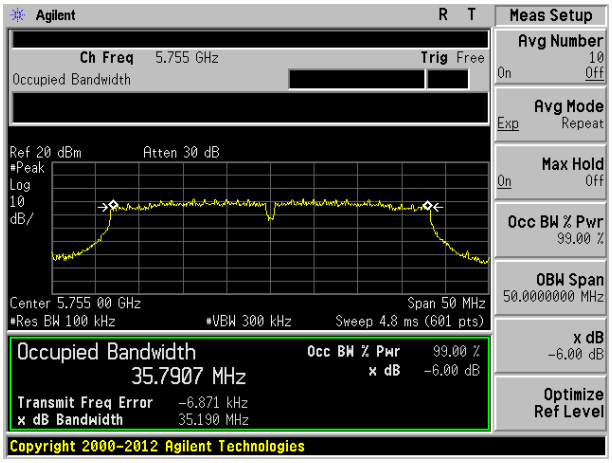


Lowest channel

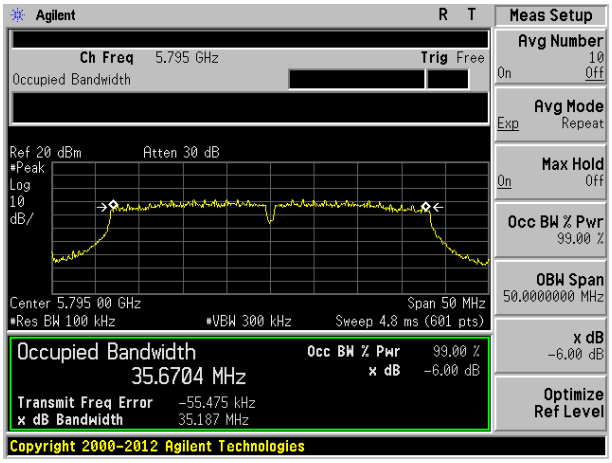


Highest channel

Test mode: 802.11ac(HT40)

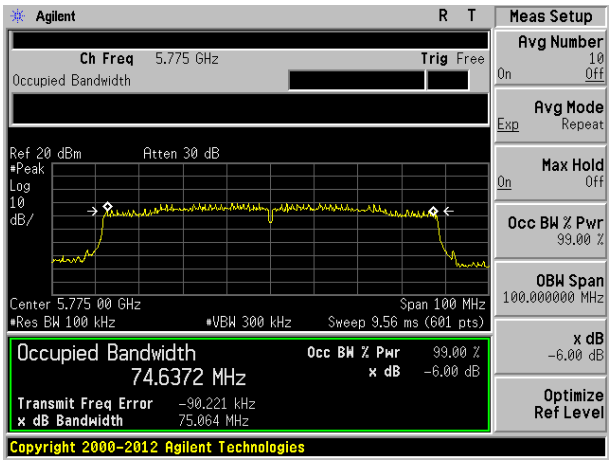


Lowest channel



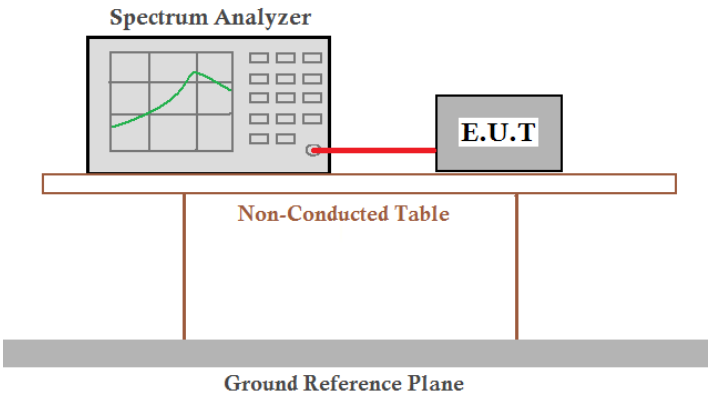
Highest channel

Test mode: 802.11ac(HT80)



Middle channel

7.5 Power Spectral Density

Test Requirement:	FCC Part15 E Section 15.407(a)(3)
Test Method:	ANSI C63.10:2013 and KDB789033 D02 General UNII Test Procedures New Rules v01
Limit:	30dBm
Test setup:	
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass

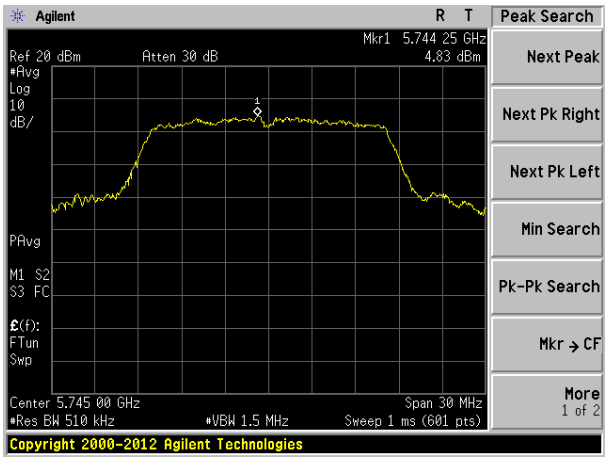
Measurement Data

5.8G Band								
Test CH	Power Spectral Density (dBm)						Limit (dBm/500kHz)	Result
	802.11a	802.11n(HT20)	802.11ac(HT20)	802.11n(HT40)	802.11ac(HT40)	802.11ac(HT80)		
Lowest	4.83	1.30	2.00	-0.03	-3.77	---	30.00	Pass
Middle	4.37	2.16	1.38	---	---	-7.08		
Highest	3.92	1.36	2.57	-0.54	-4.36	---		

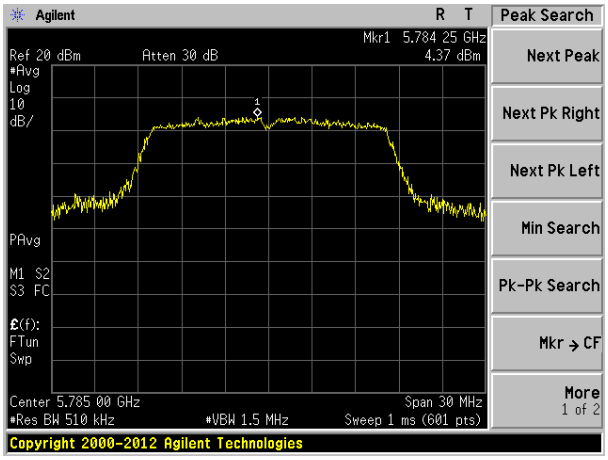
Remark: “---“ is not applicable

Test plot as follows:

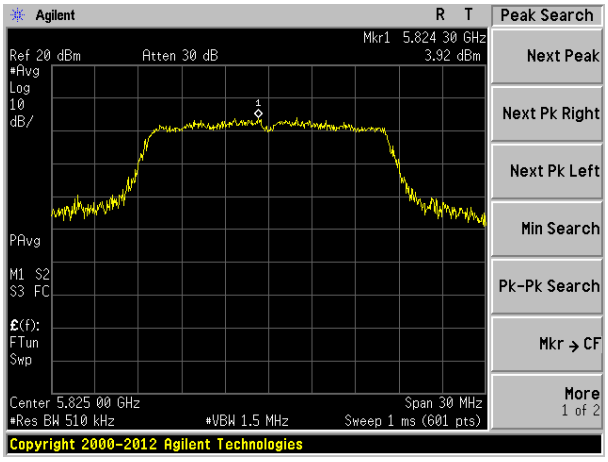
Test mode: 802.11a



Lowest channel

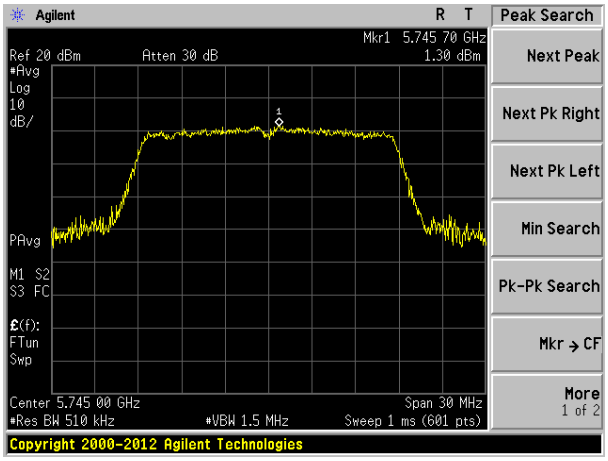


Middle channel

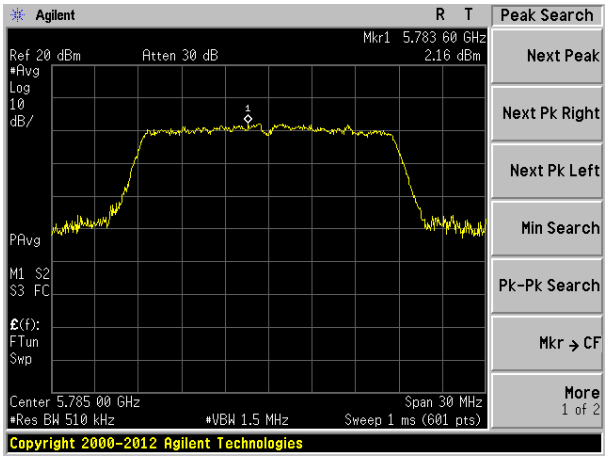


Highest channel

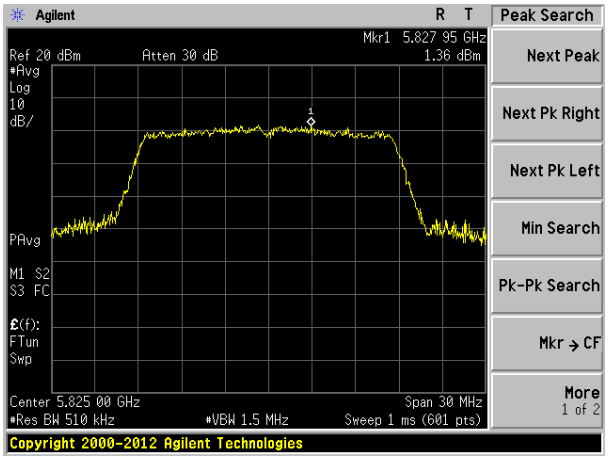
Test mode: 802.11n(HT20) @ 5.8G Band



Lowest channel

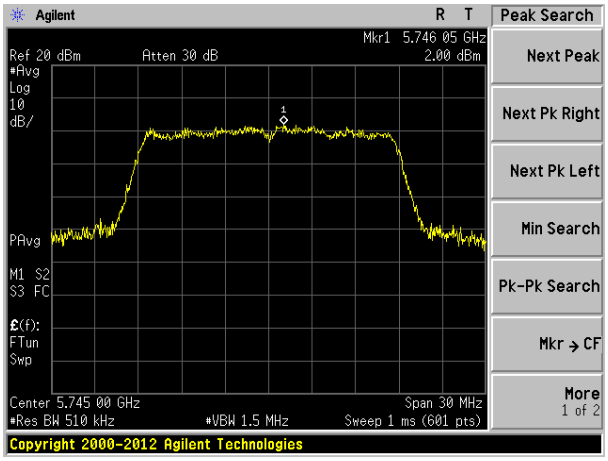


Middle channel

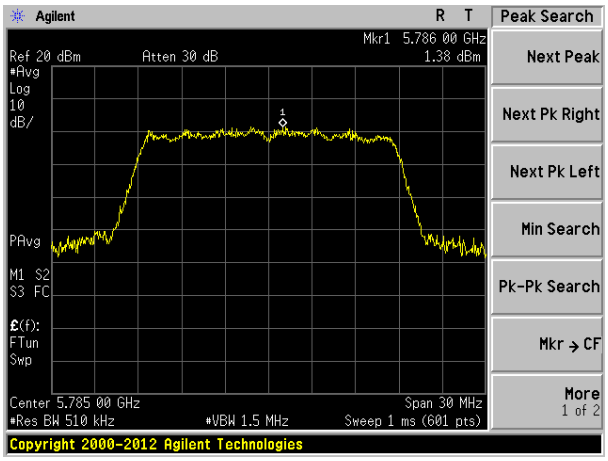


Highest channel

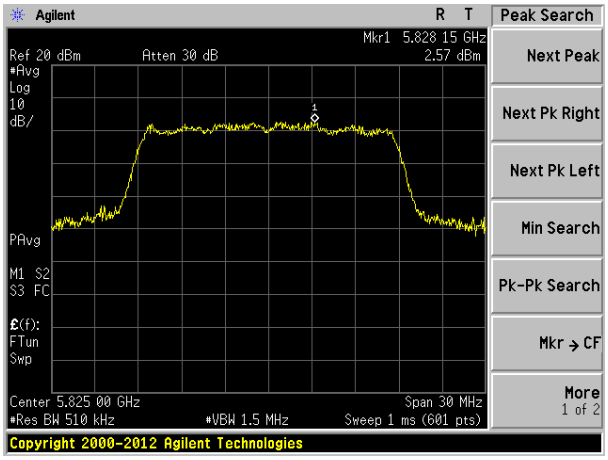
Test mode: 802.11ac(HT20)



Lowest channel

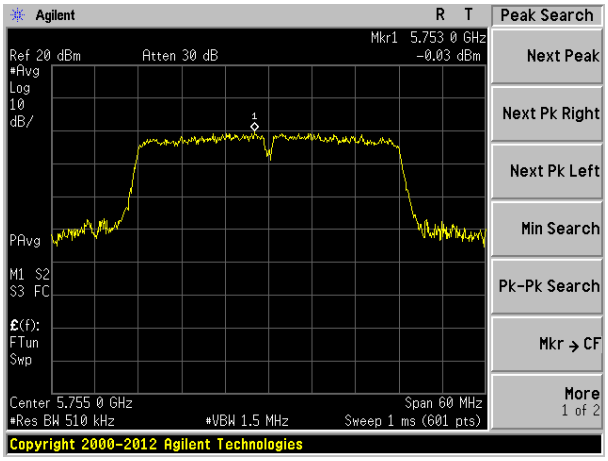


Middle channel

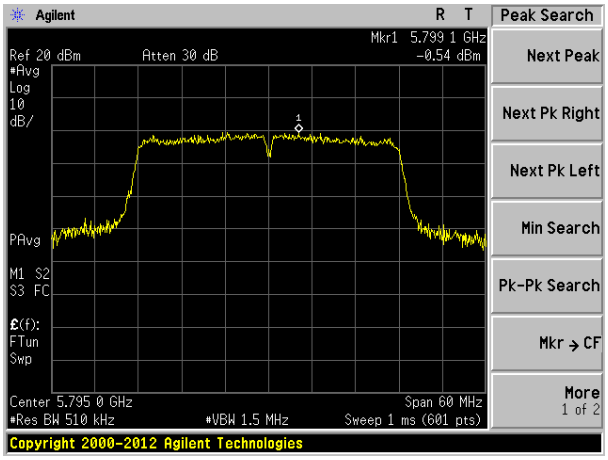


Highest channel

Test mode: 802.11n(HT40) @ 5.8G Band

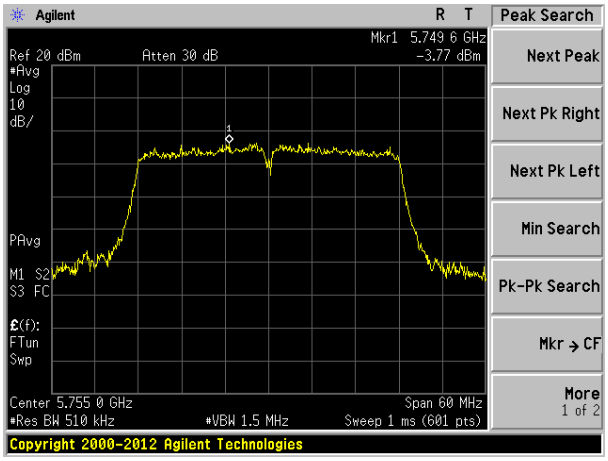


Lowest channel

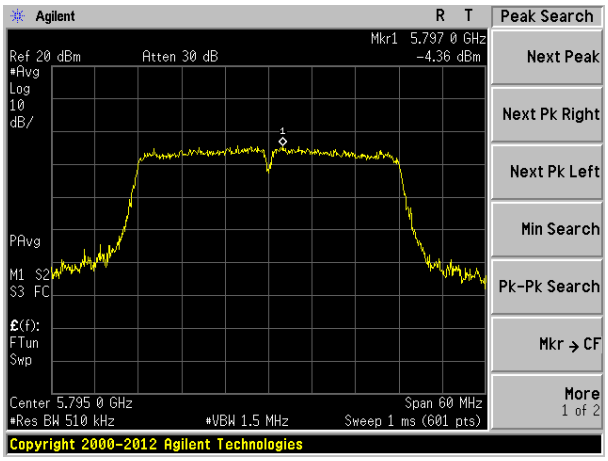


Highest channel

Test mode: 802.11ac(HT40)

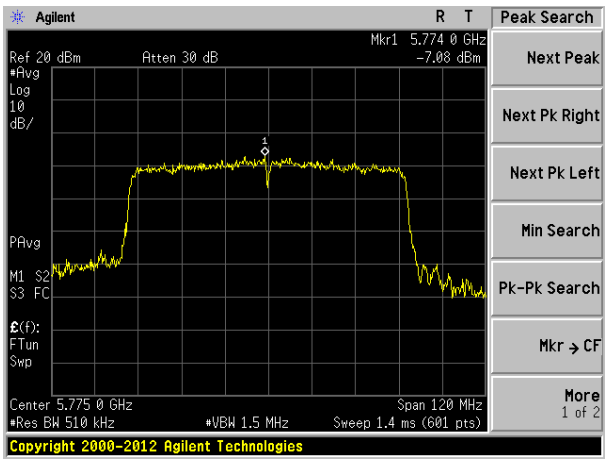


Lowest channel



Highest channel

Test mode: 802.11ac(HT80)



Middle channel

7.6 Band edges

7.6.1 Radiated Emission Method

Test Requirement:	FCC Part15 C Section 15.209 and 15.205
Test Method:	ANSI C63.10: 2013
Test Frequency Range:	30MHz to 40GHz, only worse case is reported
Test site:	Measurement Distance: 3m

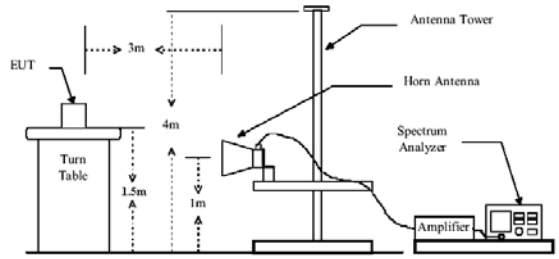
Receiver setup:

Frequency	Detector	RBW	VBW	Value
Above 1GHz	Peak	1MHz	3MHz	Peak
	RMS	1MHz	3MHz	AV

Limit:

Frequency	Limit (dBuV/m @3m)	Value
Above 1GHz	54.00	AV
	74.00	Peak

Test setup:



Test Procedure:

1. The EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.
2. The EUT was set 3 meters away from the interference-receiving antenna, which was 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 then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading.
5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth 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.
7. The radiation measurements are performed in X, Y, Z axis positioning. And found the X axis positioning which it is worse case, only the test worst case mode is recorded in the report.

Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass

Measurement data:

Remark: The pre-test were performed on lowest, middle and highest frequencies, only the worst case's (lowest and highest frequencies) data was showed.

Test mode:	802.11a	Test channel:	Lowest

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
5725.00	40.52	32.68	9.97	23.86	59.31	74.00	-14.69	Horizontal
5725.00	41.08	32.68	9.97	23.86	59.87	74.00	-14.13	Vertical

RMS 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
5725.00	30.15	32.68	9.97	23.86	48.94	54.00	-5.06	Horizontal
5725.00	30.56	32.68	9.97	23.86	49.35	54.00	-4.65	Vertical

Test mode:	802.11a	Test channel:	Highest

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
5850.00	38.21	32.7	9.99	23.87	57.03	74.00	-16.97	Horizontal
5850.00	40.04	32.7	9.99	23.87	58.86	74.00	-15.14	Vertical

RMS 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
5850.00	28.77	32.7	9.99	23.87	47.59	54.00	-6.41	Horizontal
5850.00	28.86	32.7	9.99	23.87	47.68	54.00	-6.32	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.*

Test mode:	802.11n(HT20) @ 5.8G Band	Test channel:	Lowest

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
5725.00	37.77	32.68	9.97	23.86	56.56	74.00	-17.44	Horizontal
5725.00	40.03	32.68	9.97	23.86	58.82	74.00	-15.18	Vertical

RMS 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
5725.00	28.25	32.68	9.97	23.86	47.04	54.00	-6.96	Horizontal
5725.00	29.57	32.68	9.97	23.86	48.36	54.00	-5.64	Vertical

Test mode:	802.11n(HT20) @ 5.8G Band	Test channel:	Highest

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
5850.00	38.48	32.70	9.99	23.87	57.30	74.00	-16.70	Horizontal
5850.00	40.25	32.70	9.99	23.87	59.07	74.00	-14.93	Vertical

RMS 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
5850.00	28.06	32.7	9.99	23.87	46.88	54.00	-7.12	Horizontal
5850.00	29.15	32.7	9.99	23.87	47.97	54.00	-6.03	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.*

Test mode:	802.11ac(HT20)	Test channel:	Lowest

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
5725.00	37.98	32.68	9.97	23.86	56.77	74.00	-17.23	Horizontal
5725.00	39.32	32.68	9.97	23.86	58.11	74.00	-15.89	Vertical

RMS 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
5725.00	27.23	32.68	9.97	23.86	46.02	54.00	-7.98	Horizontal
5725.00	28.34	32.68	9.97	23.86	47.13	54.00	-6.89	Vertical

Test mode:	802.11ac(HT20)	Test channel:	Highest

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
5850.00	37.34	32.74	10.04	23.87	56.25	74.00	-17.75	Horizontal
5850.00	39.15	32.74	10.04	23.87	58.06	74.00	-15.94	Vertical

RMS 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
5850.00	27.68	32.74	10.04	23.87	46.59	54.00	-7.41	Horizontal
5850.00	28.34	32.74	10.04	23.87	47.25	54.00	-6.75	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.*

Test mode:	802.11n(HT40) @ 5.8G Band	Test channel:	Lowest

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
5725.00	38.79	32.53	9.83	23.84	57.31	74.00	-16.69	Horizontal
5725.00	37.86	32.53	9.83	23.84	56.38	74.00	-17.62	Vertical

RMS 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
5725.00	30.25	32.53	9.83	23.84	48.77	54.00	-5.23	Horizontal
5725.00	28.33	32.53	9.83	23.84	46.85	54.00	-7.15	Vertical

Test mode:	802.11n(HT40) @ 5.8G Band	Test channel:	Highest

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
5850.00	38.96	32.70	9.99	23.87	57.78	74.00	-16.22	Horizontal
5850.00	42.65	32.70	9.99	23.87	61.47	74.00	-12.53	Vertical

RMS 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
5850.00	28.15	32.70	9.99	23.87	46.97	54.00	-7.03	Horizontal
5850.00	27.64	32.70	9.99	23.87	46.46	54.00	-7.54	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.*

Test mode:	802.11ac(HT40)	Test channel:	Lowest

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
5725.00	36.27	32.53	9.83	23.84	54.79	74.00	-19.21	Horizontal
5725.00	38.28	32.53	9.83	23.84	56.80	74.00	-17.20	Vertical

RMS 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
5725.00	27.84	32.53	9.83	23.84	46.36	54.00	-7.64	Horizontal
5725.00	29.05	32.53	9.83	23.84	47.57	54.00	-6.43	Vertical

Test mode:	802.11ac(HT40)	Test channel:	Highest

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
5850.00	37.28	32.70	9.99	23.87	56.10	74.00	-17.90	Horizontal
5850.00	40.45	32.70	9.99	23.87	59.27	74.00	-14.73	Vertical

RMS 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
5850.00	28.41	32.70	9.99	23.87	47.23	54.00	-6.77	Horizontal
5850.00	29.38	32.70	9.99	23.87	48.20	54.00	-5.80	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.*

Test mode:	802.11ac(HT80)	Test channel:	Middle

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
5725.00	36.72	32.53	9.83	23.84	55.24	74.00	-18.76	Horizontal
5850.00	36.48	32.70	9.99	23.87	55.30	74.00	-18.70	Horizontal
5725.00	37.59	32.53	9.83	23.84	56.11	74.00	-17.89	Vertical
5850.00	37.06	32.70	9.99	23.87	55.88	74.00	-18.12	Vertical

RMS value:

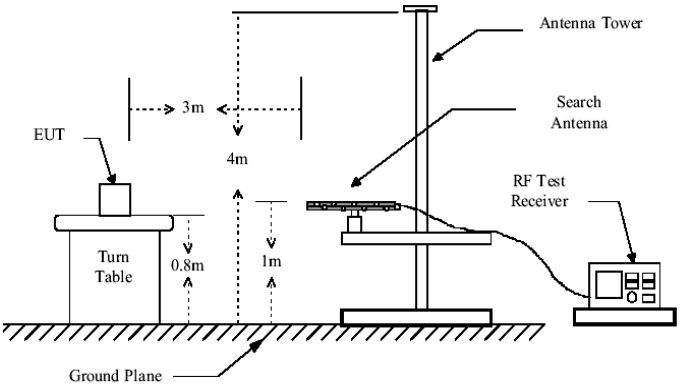
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5725.00	27.51	32.53	9.83	23.84	46.03	54.00	-7.97	Horizontal
5850.00	26.74	32.70	9.99	23.87	45.56	54.00	-8.44	Horizontal
5725.00	27.55	32.53	9.83	23.84	46.07	54.00	-7.93	Vertical
5850.00	28.07	32.70	9.99	23.87	46.89	54.00	-7.11	Vertical

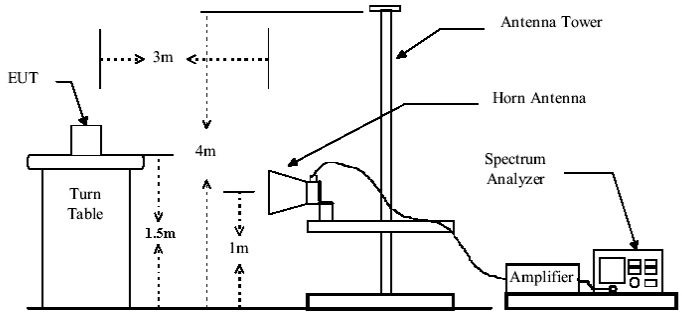
Remark:

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.*

7.7 Spurious Emission

7.7.1 Radiated Emission Method

<table>
<tr><td>Test Requirement:</td><td>FCC Part15 C Section 15.209, Part 15E Section 15.407(b)(4)</td></tr>
<tr><td>Test Method:</td><td>ANSI C63.10:2013</td></tr>
<tr><td>Test Frequency Range:</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>Value</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>AV 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>
<tr><td>Frequency</td><td>Limit (dBm/MHz)</td><td>Remark</td></tr>
<tr><td>Above 1GHz</td><td>-27.0</td><td>Peak Value</td></tr>
</table>
</td></tr>
<tr><td>Test setup:</td><td>Below 1GHz
 

Above 1GHz
 
</td></tr>
<tr><td>Test Procedure:</td><td>1. The EUT was placed on the top of a rotating table (0.8m for below</td></tr>
</table>

	1GHz and 1.5 meters for above 1GHz) above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation. 2. The EUT was set 3 meters away from the interference-receiving antenna, which was 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 then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading. 5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth 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. 7. The radiation measurements are performed in X, Y, Z axis positioning. And found the X axis positioning which it is worse case, only the test worst case mode is recorded in the report.
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass

Remark:
According to KDB 789033 D02V01 section G) 1) (d), for For measurements above 1000 MHz @ 3m distance, the limit of field strength is computed as follows:
E[dBuV/m] = EIRP[dBm] + 95.2;
For example, if EIRP = -27dBm
E[dBuV/m] = -27 + 95.2 = 68.2dBuV/m.

Measurement Data

■ **Below 1GHz**

Only the data of worst case at each channel plan (nominal bandwidth =20MHz, 40MHz, 80MHz) is reported.

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
36.77	38.36	14.77	0.63	30.06	23.70	40.00	-16.30	Vertical
84.41	35.67	12.16	1.07	29.77	19.13	40.00	-20.87	Vertical
137.42	56.68	10.35	1.49	29.47	39.05	43.50	-4.45	Vertical
325.60	50.98	15.59	2.49	29.85	39.21	46.00	-6.79	Vertical
340.78	45.10	16.15	2.57	29.77	34.05	46.00	-11.95	Vertical
962.16	36.23	23.49	5.09	29.10	35.71	54.00	-18.29	Vertical
38.21	25.54	15.15	0.64	30.05	11.28	40.00	-28.72	Horizontal
78.14	30.23	10.31	1.01	29.81	11.74	40.00	-28.26	Horizontal
135.51	56.51	10.51	1.47	29.48	39.01	43.50	-4.49	Horizontal
143.83	54.76	10.22	1.53	29.44	37.07	43.50	-6.43	Horizontal
337.22	43.37	16.05	2.56	29.79	32.19	46.00	-13.81	Horizontal
958.79	30.08	23.49	5.08	29.10	29.55	46.00	-16.45	Horizontal

■ **Above 1GHz**

802.11a,11nH20,11acH20,11nH40,11acH40,11acH80 all have been tested ,Only the data of worst case at each channel plan (nominal bandwidth =20MHz, 40MHz, 80MHz) is reported.

Test mode:		802.11a		Test channel:		lowest	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dBuV/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
V	11510.00	26.52	21.64	48.16	54(Note3)	-5.84	PK
V	17265.00	24.25	21.80	46.05	54(Note3)	-7.95	PK
H	11510.00	24.32	21.83	46.15	54(Note3)	-7.85	PK
H	17265.00	23.20	21.67	44.87	54(Note3)	-9.13	PK

Test mode:		802.11a		Test channel:		Middle	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dBuV/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
V	11570.00	25.68	21.64	47.32	54(Note3)	-6.68	PK
V	17355.00	24.05	21.80	45.85	54(Note3)	-8.15	PK
H	11570.00	22.71	21.83	44.54	54(Note3)	-9.46	PK
H	17355.00	23.45	21.67	45.12	54(Note3)	-8.88	PK

Test mode:		802.11a		Test channel:		Highest	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dBuV/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
V	11650.00	25.92	21.64	47.56	54(Note3)	-6.44	PK
V	17475.00	23.60	21.80	45.40	54(Note3)	-8.60	PK
H	11650.00	23.47	21.83	45.30	54(Note3)	-8.70	PK
H	17475.00	22.05	21.67	43.72	54(Note3)	-10.28	PK

Test mode:	802.11ac(HT40)			Test channel:		Lowest	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dBuV/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
V	11510.00	26.98	21.67	48.65	54(Note3)	-5.35	PK
V	17265.00	25.72	21.83	47.55	54(Note3)	-6.45	PK
H	11510.00	25.06	21.67	46.73	54(Note3)	-7.27	PK
H	17265.00	24.33	21.83	46.16	54(Note3)	-7.84	PK

Test mode:	802.11ac(HT40)			Test channel:		Highest	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dBuV/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
V	11590.00	27.93	21.67	49.6	54(Note3)	-4.40	PK
V	17385.00	24.75	21.83	46.58	54(Note3)	-7.42	PK
H	11590.00	25.78	21.67	47.45	54(Note3)	-6.55	PK
H	17385.00	26.35	21.83	48.18	54(Note3)	-5.82	PK

Test mode:	802.11ac(HT80)			Test channel:		Middle	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dBuV/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
V	11550.00	26.25	21.65	47.9	54(Note3)	-6.10	PK
V	17325.00	24.38	21.81	46.19	54(Note3)	-7.81	PK
H	11550.00	23.72	21.65	45.37	54(Note3)	-8.63	PK
H	17325.00	23.18	21.81	44.99	54(Note3)	-9.01	PK

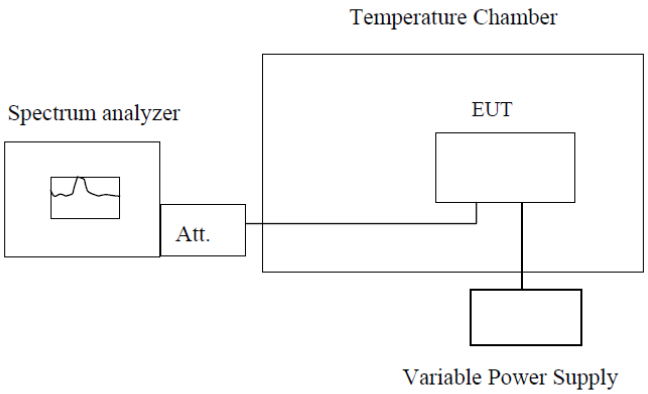
Note:

1. Measure Level = Reading Level + Factor.

2. The test trace is same as the ambient noise (the test frequency range: 18GHz~40GHz), therefore no data appear in the report.

3. This limit applies for using average detector, if the test result on peak is lower than average limit, then average measurement needn't be performed.

7.8 Frequency stability

Test Requirement:	FCC Part15 C Section 15.407(g)
Test Method:	ANSI C63.10:2013, FCC Part 2.1055
Limit:	Manufactures of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified
Test Procedure:	The EUT was setup to ANSI C63.4, 2003; tested to 2.1055 for compliance to FCC Part 15.407(g) requirements.
Test setup:	 **Note :** Measurement setup for testing on Antenna connector
Test Instruments:	Refer to section 5.10 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass

Measurement data:

802.11a					
Frequency stability versus Temp.					
Power Supply: AC 120V/60Hz					
Temp. (°C)	Operating Frequency (MHz)	0 minute	2 minute	5 minute	10 minute
		Measured Frequency (MHz)	Measured Frequency (MHz)	Measured Frequency (MHz)	Measured Frequency (MHz)
-30	5745	5744.9831	5744.9839	5744.9852	5744.9859
	5785	5784.9836	5784.9844	5784.9856	5784.9864
	5825	5824.9841	5824.9849	5824.9860	5824.9868
-20	5745	5744.9850	5744.9857	5744.9868	5744.9875
	5785	5784.9854	5784.9861	5784.9872	5784.9879
	5825	5824.9859	5824.9865	5824.9876	5824.9882
-10	5745	5744.9867	5744.9873	5744.9883	5744.9889
	5785	5784.9871	5784.9877	5784.9887	5784.9892
	5825	5824.9874	5824.9880	5824.9890	5824.9895
0	5745	5744.9836	5744.9844	5744.9856	5744.9863
	5785	5784.9841	5784.9848	5784.9860	5784.9867
	5825	5824.9845	5824.9853	5824.9864	5824.9871
10	5745	5744.9854	5744.9861	5744.9872	5744.9879
	5785	5784.9859	5784.9865	5784.9876	5784.9882
	5825	5824.9863	5824.9869	5824.9880	5824.9886
20	5745	5744.9871	5744.9877	5744.9886	5744.9892
	5785	5784.9874	5784.9880	5784.9890	5784.9895
	5825	5824.9878	5824.9884	5824.9893	5824.9898
30	5745	5744.9830	5744.9838	5744.9851	5744.9858
	5785	5784.9835	5784.9842	5784.9855	5784.9862
	5825	5824.9839	5824.9847	5824.9859	5824.9866
40	5745	5744.9849	5744.9856	5744.9867	5744.9874
	5785	5784.9853	5784.9860	5784.9871	5784.9878
	5825	5824.9857	5824.9864	5824.9875	5824.9881
50	5745	5744.9865	5744.9872	5744.9882	5744.9888
	5785	5784.9869	5784.9876	5784.9885	5784.9891
	5825	5824.9873	5824.9879	5824.9889	5824.9894
The worst case					
Temp. (°C)		Operating Frequency (MHz)	Measured Frequency (MHz)	Frequency Tolerance(PPM)	
30		5745	5744.9830	2.96	

Frequency stability versus Voltage					
Temperature: 25°C					
Power Supply (VAC)	Operating Frequency (MHz)	0 minute	2 minute	5 minute	10 minute
		Measured Frequency (MHz)	Measured Frequency (MHz)	Measured Frequency (MHz)	Measured Frequency (MHz)
102	5745	5744.9849	5744.9856	5744.9868	5744.9874
	5785	5784.9854	5784.9861	5784.9872	5784.9878
	5825	5824.9858	5824.9865	5824.9875	5824.9882
120	5745	5744.9866	5744.9872	5744.9882	5744.9888
	5785	5784.9870	5784.9876	5784.9886	5784.9892
	5825	5824.9874	5824.9880	5824.9889	5824.9895
138	5745	5744.9881	5744.9887	5744.9896	5744.9901
	5785	5784.9884	5784.9890	5784.9899	5784.9904
	5825	5824.9888	5824.9893	5824.9902	5824.9907
The worst case					
Power Supply (VAC)		Operating Frequency (MHz)	Measured Frequency (MHz)	Frequency Tolerance(PPM)	
102		5745	5744.9849	2.63	

802.11n(HT20)					
Frequency stability versus Temp.					
Power Supply: AC 120V/60Hz					
Temp. (°C)	Operating Frequency (MHz)	0 minute	2 minute	5 minute	10 minute
		Measured Frequency (MHz)	Measured Frequency (MHz)	Measured Frequency (MHz)	Measured Frequency (MHz)
-30	5745	5744.9864	5744.9871	5744.9881	5744.9887
	5785	5784.9868	5784.9875	5784.9884	5784.9890
	5825	5824.9872	5824.9878	5824.9888	5824.9893
-20	5745	5744.9879	5744.9885	5744.9894	5744.9900
	5785	5784.9883	5784.9889	5784.9897	5784.9903
	5825	5824.9886	5824.9892	5824.9900	5824.9905
-10	5745	5744.9893	5744.9898	5744.9906	5744.9911
	5785	5784.9896	5784.9901	5784.9909	5784.9913
	5825	5824.9899	5824.9904	5824.9911	5824.9916
0	5745	5744.9868	5744.9874	5744.9884	5744.9890
	5785	5784.9872	5784.9878	5784.9888	5784.9893
	5825	5824.9876	5824.9882	5824.9891	5824.9896
10	5745	5744.9883	5744.9888	5744.9897	5744.9902
	5785	5784.9886	5784.9892	5784.9900	5784.9905
	5825	5824.9890	5824.9895	5824.9903	5824.9908
20	5745	5744.9896	5744.9901	5744.9909	5744.9913
	5785	5784.9899	5784.9904	5784.9911	5784.9916
	5825	5824.9902	5824.9907	5824.9914	5824.9918
30	5745	5744.9863	5744.9870	5744.9880	5744.9886
	5785	5784.9867	5784.9873	5784.9883	5784.9889
	5825	5824.9871	5824.9877	5824.9887	5824.9892
40	5745	5744.9878	5744.9884	5744.9893	5744.9899
	5785	5784.9882	5784.9887	5784.9896	5784.9902
	5825	5824.9885	5824.9891	5824.9899	5824.9904
50	5745	5744.9892	5744.9897	5744.9905	5744.9910
	5785	5784.9895	5784.9900	5784.9908	5784.9913
	5825	5824.9898	5824.9903	5824.9911	5824.9915
The worst case					
Temp. (°C)		Operating Frequency (MHz)	Measured Frequency (MHz)	Frequency Tolerance(PPM)	
30		5745	5744.9863	2.38	

Frequency stability versus Voltage					
Temperature: 25°C					
Power Supply (VAC)	Operating Frequency (MHz)	0 minute	2 minute	5 minute	10 minute
		Measured Frequency (MHz)	Measured Frequency (MHz)	Measured Frequency (MHz)	Measured Frequency (MHz)
102	5745	5744.9853	5744.9860	5744.9871	5744.9878
	5785	5784.9858	5784.9865	5784.9875	5784.9882
	5825	5824.9862	5824.9868	5824.9879	5824.9885
120	5745	5744.9870	5744.9876	5744.9886	5744.9892
	5785	5784.9874	5784.9880	5784.9889	5784.9895
	5825	5824.9877	5824.9883	5824.9892	5824.9898
138	5745	5744.9884	5744.9890	5744.9899	5744.9904
	5785	5784.9888	5784.9893	5784.9901	5784.9906
	5825	5824.9891	5824.9896	5824.9904	5824.9909
The worst case					
Power Supply (VAC)		Operating Frequency (MHz)	Measured Frequency (MHz)	Frequency Tolerance(PPM)	
102		5745	5744.9853	2.56	

802.11ac(HT20)					
Frequency stability versus Temp.					
Power Supply: AC 120V/60Hz					
Temp. (°C)	Operating Frequency (MHz)	0 minute	2 minute	5 minute	10 minute
		Measured Frequency (MHz)	Measured Frequency (MHz)	Measured Frequency (MHz)	Measured Frequency (MHz)
-30	5745	5744.9856	5744.9863	5744.9874	5744.9880
	5785	5784.9860	5784.9867	5784.9877	5784.9884
	5825	5824.9864	5824.9871	5824.9881	5824.9887
-20	5745	5744.9872	5744.9878	5744.9888	5744.9893
	5785	5784.9876	5784.9882	5784.9891	5784.9897
	5825	5824.9879	5824.9885	5824.9894	5824.9900
-10	5745	5744.9886	5744.9892	5744.9900	5744.9905
	5785	5784.9890	5784.9895	5784.9903	5784.9908
	5825	5824.9893	5824.9898	5824.9906	5824.9911
0	5745	5744.9860	5744.9867	5744.9877	5744.9883
	5785	5784.9864	5784.9871	5784.9881	5784.9887
	5825	5824.9868	5824.9874	5824.9884	5824.9890
10	5745	5744.9876	5744.9882	5744.9891	5744.9896
	5785	5784.9879	5784.9885	5784.9894	5784.9899
	5825	5824.9883	5824.9888	5824.9897	5824.9902
20	5745	5744.9889	5744.9895	5744.9903	5744.9908
	5785	5784.9893	5784.9898	5784.9906	5784.9911
	5825	5824.9896	5824.9901	5824.9909	5824.9913
30	5745	5744.9855	5744.9861	5744.9872	5744.9879
	5785	5784.9859	5784.9866	5784.9876	5784.9882
	5825	5824.9863	5824.9869	5824.9880	5824.9886
40	5745	5744.9871	5744.9877	5744.9887	5744.9892
	5785	5784.9875	5784.9881	5784.9890	5784.9895
	5825	5824.9878	5824.9884	5824.9893	5824.9899
50	5745	5744.9885	5744.9891	5744.9899	5744.9904
	5785	5784.9889	5784.9894	5784.9902	5784.9907
	5825	5824.9892	5824.9897	5824.9905	5824.9910
The worst case					
Temp. (°C)		Operating Frequency (MHz)	Measured Frequency (MHz)	Frequency Tolerance(PPM)	
30		5745	5744.9855	2.52	

Frequency stability versus Voltage					
Temperature: 25°C					
Power Supply (VAC)	Operating Frequency (MHz)	0 minute	2 minute	5 minute	10 minute
		Measured Frequency (MHz)	Measured Frequency (MHz)	Measured Frequency (MHz)	Measured Frequency (MHz)
102	5745	5744.9848	5744.9855	5744.9866	5744.9905
	5785	5784.9852	5784.9859	5784.9870	5784.9906
	5825	5824.9856	5824.9863	5824.9874	5824.9908
120	5745	5744.9865	5744.9871	5744.9881	5744.9887
	5785	5784.9869	5784.9875	5784.9885	5784.9891
	5825	5824.9872	5824.9879	5824.9888	5824.9894
138	5745	5744.9880	5744.9886	5744.9895	5744.9900
	5785	5784.9883	5784.9889	5784.9898	5784.9903
	5825	5824.9887	5824.9892	5824.9901	5824.9906
The worst case					
Power Supply (VAC)		Operating Frequency (MHz)	Measured Frequency (MHz)	Frequency Tolerance(PPM)	
102		5745	5744.9848	2.65	

802.11n(HT40)					
Frequency stability versus Temp.					
Power Supply: AC 120V/60Hz					
Temp. (°C)	Operating Frequency (MHz)	0 minute	2 minute	5 minute	10 minute
		Measured Frequency (MHz)	Measured Frequency (MHz)	Measured Frequency (MHz)	Measured Frequency (MHz)
-30	5755	5754.9849	5754.9856	5754.9868	5754.9874
	5795	5794.9853	5794.9860	5794.9871	5794.9878
-20	5755	5754.9858	5754.9864	5754.9875	5754.9881
	5795	5794.9862	5794.9868	5794.9879	5794.9885
-10	5755	5754.9866	5754.9872	5754.9882	5754.9888
	5795	5794.9870	5794.9876	5794.9886	5794.9892
0	5755	5754.9874	5754.9880	5754.9889	5754.9895
	5795	5794.9877	5794.9883	5794.9892	5794.9898
10	5755	5754.9881	5754.9886	5754.9895	5754.9901
	5795	5794.9884	5794.9890	5794.9898	5794.9904
20	5755	5754.9888	5754.9893	5754.9901	5754.9906
	5795	5794.9891	5794.9896	5794.9904	5794.9909
30	5755	5754.9853	5754.9860	5754.9871	5754.9878
	5795	5794.9858	5794.9864	5794.9875	5794.9881
40	5755	5754.9862	5754.9868	5754.9879	5754.9885
	5795	5794.9866	5794.9872	5794.9882	5794.9888
50	5755	5754.9870	5754.9876	5754.9886	5754.9891
	5795	5794.9884	5794.9890	5794.9898	5794.9904
The worst case					
Temp. (°C)		Operating Frequency (MHz)	Measured Frequency (MHz)	Frequency Tolerance(PPM)	
-30		5755	5754.9849	2.62	

Frequency stability versus Voltage					
Temperature: 25°C					
Power Supply (VAC)	Operating Frequency (MHz)	0 minute	2 minute	5 minute	10 minute
		Measured Frequency (MHz)	Measured Frequency (MHz)	Measured Frequency (MHz)	Measured Frequency (MHz)
102	5755	5754.9894	5754.9899	5754.9907	5754.9912
	5795	5794.9847	5794.9855	5794.9866	5794.9873
120	5755	5754.9852	5754.9859	5754.9870	5754.9877
	5795	5794.9856	5794.9863	5794.9874	5794.9880
138	5755	5754.9860	5754.9867	5754.9878	5754.9884
	5795	5794.9864	5794.9871	5794.9881	5794.9887
The worst case					
Power Supply (VAC)		Operating Frequency (MHz)	Measured Frequency (MHz)	Frequency Tolerance(PPM)	
102		5795	5794.9847	2.64	

802.11ac(HT40)					
Frequency stability versus Temp.					
Power Supply: AC 120V/60Hz					
Temp. (°C)	Operating Frequency (MHz)	0 minute	2 minute	5 minute	10 minute
		Measured Frequency (MHz)	Measured Frequency (MHz)	Measured Frequency (MHz)	Measured Frequency (MHz)
-30	5755	5754.9857	5754.9864	5754.9874	5754.9881
	5795	5794.9861	5794.9868	5794.9878	5794.9884
-20	5755	5754.9865	5754.9871	5754.9882	5754.9888
	5795	5794.9869	5794.9875	5794.9885	5794.9891
-10	5755	5754.9873	5754.9879	5754.9888	5754.9894
	5795	5794.9876	5794.9882	5794.9892	5794.9897
0	5755	5754.9880	5754.9886	5754.9895	5754.9900
	5795	5794.9884	5794.9889	5794.9898	5794.9903
10	5755	5754.9887	5754.9892	5754.9901	5754.9906
	5795	5794.9890	5794.9895	5794.9904	5794.9909
20	5755	5754.9893	5754.9898	5754.9906	5754.9911
	5795	5794.9896	5794.9901	5794.9909	5794.9914
30	5755	5754.9861	5754.9867	5754.9878	5754.9884
	5795	5794.9865	5794.9871	5794.9881	5794.9887
40	5755	5754.9869	5754.9875	5754.9885	5754.9891
	5795	5794.9873	5794.9879	5794.9888	5794.9894
50	5755	5754.9876	5754.9882	5754.9891	5754.9897
	5795	5794.9880	5794.9886	5794.9895	5794.9900
The worst case					
Temp. (°C)		Operating Frequency (MHz)	Measured Frequency (MHz)	Frequency Tolerance(PPM)	
-30		5755	5754.9857	2.48	

Frequency stability versus Voltage					
Temperature: 25°C					
Power Supply (VAC)	Operating Frequency (MHz)	0 minute	2 minute	5 minute	10 minute
		Measured Frequency (MHz)	Measured Frequency (MHz)	Measured Frequency (MHz)	Measured Frequency (MHz)
102	5755	5754.9868	5754.9875	5754.9885	5754.9890
	5795	5794.9872	5794.9878	5794.9888	5794.9894
120	5755	5754.9876	5754.9882	5754.9891	5754.9897
	5795	5794.9880	5794.9885	5794.9894	5794.9900
138	5755	5754.9883	5754.9889	5754.9897	5754.9903
	5795	5794.9887	5794.9892	5794.9900	5794.9905
The worst case					
Power Supply (VAC)		Operating Frequency (MHz)	Measured Frequency (MHz)	Frequency Tolerance(PPM)	
102		5755	5754.9868	2.29	

802.11ac(HT80)					
Frequency stability versus Temp.					
Power Supply: AC 120V/60Hz					
Temp. (°C)	Operating Frequency (MHz)	0 minute	2 minute	5 minute	10 minute
		Measured Frequency (MHz)	Measured Frequency (MHz)	Measured Frequency (MHz)	Measured Frequency (MHz)
-30	5775	5774.9862	5774.9869	5774.9879	5774.9885
-20	5775	5774.9866	5774.9873	5774.9883	5774.9889
-10	5775	5774.9870	5774.9876	5774.9886	5774.9892
0	5775	5774.9874	5774.9880	5774.9889	5774.9895
10	5775	5774.9878	5774.9884	5774.9893	5774.9898
20	5775	5774.9881	5774.9887	5774.9896	5774.9901
30	5775	5774.9885	5774.9890	5774.9899	5774.9904
40	5775	5774.9888	5774.9893	5774.9902	5774.9907
50	5775	5774.9891	5774.9896	5774.9905	5774.9909
The worst case					
Temp. (°C)		Operating Frequency (MHz)	Measured Frequency (MHz)	Frequency Tolerance(PPM)	
-30		5775	5774.9862	2.39	

Frequency stability versus Voltage					
Temperature: 25°C					
Power Supply (VAC)	Operating Frequency (MHz)	0 minute	2 minute	5 minute	10 minute
		Measured Frequency (MHz)	Measured Frequency (MHz)	Measured Frequency (MHz)	Measured Frequency (MHz)
102	5775	5774.9870	5774.9876	5774.9886	5774.9892
120	5775	5774.9874	5774.9880	5774.9889	5774.9895
138	5775	5774.9878	5774.9883	5774.9893	5774.9898
The worst case					
Power Supply (VAC)		Operating Frequency (MHz)	Measured Frequency (MHz)	Frequency Tolerance(PPM)	
102		5775	5774.9870	2.25	