

# Spectrum REPORT

**Applicant:** DEMOPAD SOFTWARE LIMITED

**Address of Applicant:** INFOLAB21 BAILRIGG ROAD LANCASTER LA1 4WA  
UNITED KINGDOM

**Manufacturer/Factory:** DEMOPAD SOFTWARE LIMITED

**Address of  
Manufacturer/Factory:** INFOLAB21 BAILRIGG ROAD LANCASTER LA1 4WA  
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**Equipment Under Test (EUT)**

Product Name: Control and automation

Model No.: Centro-8M

Trade Mark DEMOPAD

**FCC ID:** 2ATJUCENTRO-8M

**Applicable standards:** FCC CFR Title 47 Part 15 Subpart E Section 15.407

**Date of sample receipt:** May 10, 2019

**Date of Test:** May 11-May 31, 2019

**Date of report issued:** June 03, 2019

**Test Result :** PASS \*

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

Authorized Signature:



**Robinson Lo**


**Laboratory Manager**

This results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

## 2 Version

Version No.	Date	Description
00	June 03, 2019	Original

Prepared By:



Date:

June 03, 2019

Project Engineer

Check By:



Reviewer

Date:

June 03, 2019

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## 4 Test Summary

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

*Remarks:*

1. Pass: The EUT complies with the essential requirements in the standard.
2. Test according to ANSI C63.10:2013.

### 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 General Description of EUT

Product Name:	Control and automation
Model No.:	Centro-8M
Serial No.:	#00000001
Hardware Version:	2.0
Software Version:	2.6.5
Test sample(s) ID:	GTS201905000044-1
Sample(s) Status:	Engineer sample
Operation Frequency:	802.11a/802.11n(HT20)/802.11ac(HT20): 5745MHz ~ 5825MHz 802.11n(HT40)/ 802.11ac(HT40): 5755MHz ~ 5795MHz 802.11ac(HT80): 5775MHz
Channel numbers:	802.11a/802.11n(HT20)/802.11ac(HT20): 5 802.11n(HT40)/ 802.11ac(HT40): 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:	Orthogonal Frequency Division Multiplexing (OFDM)
Antenna Type:	Integral Antenna
Antenna gain:	0dBi
Power supply:	DC 5V, 2A

Operation Frequency each of channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
149	5745MHz	151	5755MHz	153	5765MHz	155	5775MHz
157	5785MHz	159	5795MHz	161	5805MHz	163	5815MHz
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)		
	802.11 a/n/ac(HT20)	802.11 n/ac(HT40)	802.11ac(HT80)
Lowest channel	5745	5755	<del>5765</del>
Middle channel	5785	<del>5795</del>	5775
Highest channel	5825	5795	<del>5805</del>

## 5.2 Test mode

Transmitting mode	Keep the EUT in continuously transmitting mode
<i>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.</i>	

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

## 5.3 Description of Support Units

Manufacturer	Description	Model	Serial Number
KKTV	LCD TV	U40	MSM1740W0008478
DYS	POWER SUPPLY	DYS152-050200W-K	N/A

## 5.4 Test Facility

<p>The test facility is recognized, certified, or accredited by the following organizations:</p> <ul style="list-style-type: none"> <li>● <b>FCC —Registration No.: 381383</b> Global United Technology Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in files. Registration 381383.</li> <li>● <b>Industry Canada (IC) —Registration No.: 9079A-2</b> 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.</li> <li>● <b>NVLAP (LAB CODE:600179-0)</b> Global United Technology Services Co., Ltd., is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP). LAB CODE:600179-0</li> </ul>
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## 5.5 Test Location

All tests were performed at:
<p>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</p>

## 5.6 Additional Instructions

Test Software	Special test command provided by manufacturer, version 1.0
Power level setup	Default

## 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	July. 03 2015	July. 02 2020
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. 27 2018	June. 26 2019
4	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	GTS214	June. 27 2018	June. 26 2019
5	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	BBHA 9120 D	GTS208	June. 27 2018	June. 26 2019
6	Horn Antenna	ETS-LINDGREN	3160	GTS217	June. 27 2018	June. 26 2019
7	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
8	Coaxial Cable	GTS	N/A	GTS213	June. 27 2018	June. 26 2019
9	Coaxial Cable	GTS	N/A	GTS211	June. 27 2018	June. 26 2019
10	Coaxial cable	GTS	N/A	GTS210	June. 27 2018	June. 26 2019
11	Coaxial Cable	GTS	N/A	GTS212	June. 27 2018	June. 26 2019
12	Amplifier(100kHz-3GHz)	HP	8347A	GTS204	June. 27 2018	June. 26 2019
13	Amplifier(2GHz-20GHz)	HP	84722A	GTS206	June. 27 2018	June. 26 2019
14	Amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	June. 27 2018	June. 26 2019
15	Band filter	Amindeon	82346	GTS219	June. 27 2018	June. 26 2019
16	Power Meter	Anritsu	ML2495A	GTS540	June. 27 2018	June. 26 2019
17	Power Sensor	Anritsu	MA2411B	GTS541	June. 27 2018	June. 26 2019
18	Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	GTS575	June. 27 2018	June. 26 2019
19	Splitter	Agilent	11636B	GTS237	June. 27 2018	June. 26 2019
20	Loop Antenna	ZHINAN	ZN30900A	GTS534	June. 27 2018	June. 26 2019
21	Breitband hornantenne	SCHWARZBECK	BBHA 9170	GTS579	Oct. 20 2018	Oct. 19 2019
22	Amplifier	TDK	PA-02-02	GTS574	Oct. 20 2018	Oct. 19 2019
23	Amplifier	TDK	PA-02-03	GTS576	Oct. 20 2018	Oct. 19 2019
24	PSA Series Spectrum Analyzer	Rohde & Schwarz	FSP	GTS578	June. 27 2018	June. 26 2019



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	7.3(L)x3.1(W)x2.9(H)	GTS252	May.15 2019	May.14 2022
2	EMI Test Receiver	R&S	ESCI 7	GTS552	June. 27 2018	June. 26 2019
3	Coaxial Switch	ANRITSU CORP	MP59B	GTS225	June. 27 2018	June. 26 2019
4	Artificial Mains Network	SCHWARZBECK MESS	NSLK8127	GTS226	June. 27 2018	June. 26 2019
5	Coaxial Cable	GTS	N/A	GTS227	N/A	N/A
6	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
7	Thermo meter	KTJ	TA328	GTS233	June. 27 2018	June. 26 2019
8	Absorbing clamp	Elektronik-Feinmechanik	MDS21	GTS229	June. 27 2018	June. 26 2019

RF Conducted:						
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	MXA Signal Analyzer	Agilent	N9020A	GTS566	June. 27 2018	June. 26 2019
2	EMI Test Receiver	R&S	ESCI 7	GTS552	June. 27 2018	June. 26 2019
3	Spectrum Analyzer	Agilent	E4440A	GTS533	June. 27 2018	June. 26 2019
4	MXG vector Signal Generator	Agilent	N5182A	GTS567	June. 27 2018	June. 26 2019
5	ESG Analog Signal Generator	Agilent	E4428C	GTS568	June. 27 2018	June. 26 2019
6	USB RF Power Sensor	DARE	RPR3006W	GTS569	June. 27 2018	June. 26 2019
7	RF Switch Box	Shongyi	RFSW3003328	GTS571	June. 27 2018	June. 26 2019
8	Programmable Constant Temp & Humi Test Chamber	WEWON	WHTH-150L-40-880	GTS572	June. 27 2018	June. 26 2019

General used equipment:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	Humidity/ Temperature Indicator	KTJ	TA328	GTS243	June. 27 2018	June. 26 2019
2	Barometer	ChangChun	DYM3	GTS255	June. 27 2018	June. 26 2019

## 7 Test results and Measurement Data

### 7.1 Antenna requirement

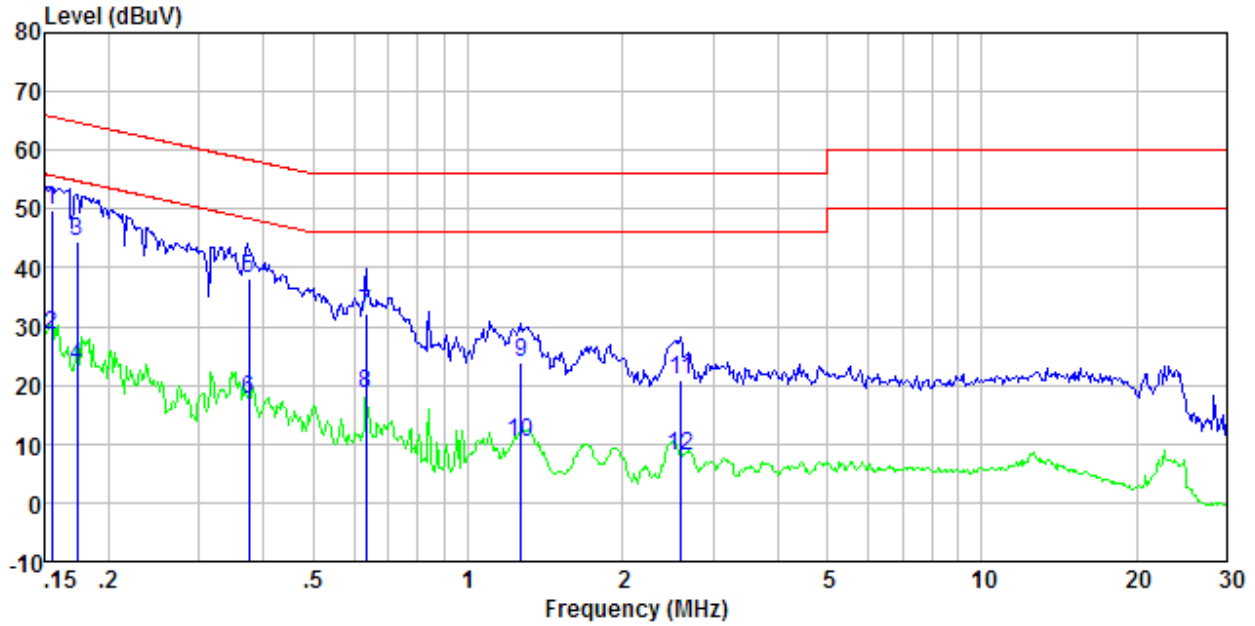
<b>Standard requirement:</b>	FCC Part15 C Section 15.203
<p><b>15.203 requirement:</b></p> <p>An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna 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.</p> <p><b>15.247(c) (1)(i) requirement:</b></p> <p>(i) Systems operating in the 2400-2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6dBi.</p>	
<b>E.U.T Antenna:</b>	
<p><i>The antenna is integral antenna, the best case gain of the antenna is 0dBi, reference to the appendix II for details</i></p>	

## 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:	<p>Remark  E.U.T: Equipment Under Test  LISN: Line Impedance Stabilization Network  Test table height=0.8m</p>					
Test Instruments:	Refer to section 6.0 for details					
Test mode:	Refer to section 5.2 for details					
Test environment:	Temp.:	25 °C	Humid.:	52%	Press.:	1012mbar
Test voltage:	AC 120V, 60Hz					
Test results:	Pass					

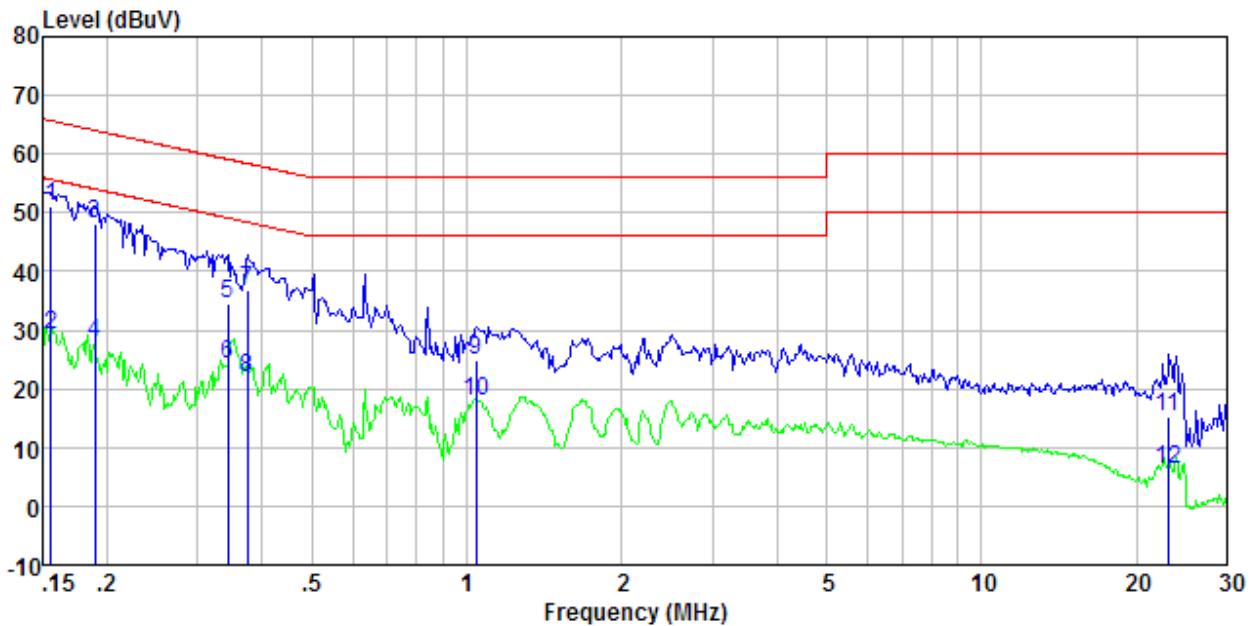
**Measurement data**

Line:



Freq MHz	Reading level dBuV	LISN/ISN factor dB/m	Cable loss dB	Level dBuV	Limit level dBuV	Over limit dB	Remark
0.15	49.43	0.40	0.07	49.90	65.74	-15.84	QP
0.15	28.22	0.40	0.07	28.69	55.74	-27.05	Average
0.17	43.96	0.40	0.09	44.45	64.77	-20.32	QP
0.17	22.68	0.40	0.09	23.17	54.77	-31.60	Average
0.38	37.57	0.36	0.10	38.03	58.39	-20.36	QP
0.38	17.20	0.36	0.10	17.66	48.39	-30.73	Average
0.63	31.67	0.28	0.12	32.07	56.00	-23.93	QP
0.63	18.00	0.28	0.12	18.40	46.00	-27.60	Average
1.27	23.56	0.20	0.16	23.92	56.00	-32.08	QP
1.27	9.88	0.20	0.16	10.24	46.00	-35.76	Average
2.59	20.60	0.20	0.18	20.98	56.00	-35.02	QP
2.59	7.52	0.20	0.18	7.90	46.00	-38.10	Average

**Neutral:**

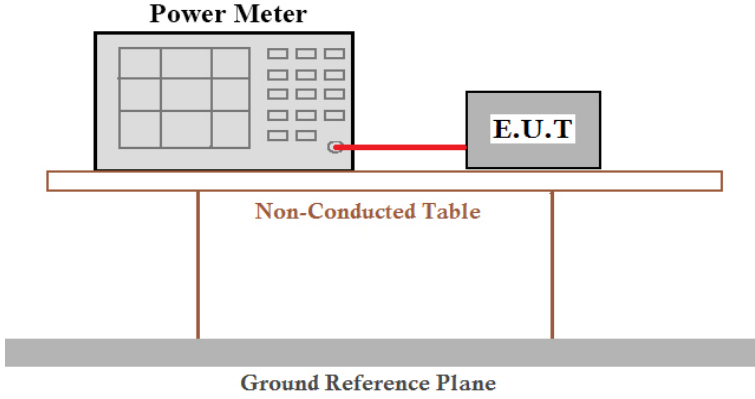


Freq MHz	Reading level dBuV	LISN/ISN factor dB/m	Cable loss dB	Level dBuV	Limit level dBuV	Over limit dB	Remark
0.16	50.78	0.40	0.07	51.25	65.69	-14.44	QP
0.16	28.58	0.40	0.07	29.05	55.69	-26.64	Average
0.19	47.54	0.40	0.10	48.04	64.06	-16.02	QP
0.19	27.23	0.40	0.10	27.73	54.06	-26.33	Average
0.34	34.01	0.38	0.10	34.49	59.13	-24.64	QP
0.34	23.72	0.38	0.10	24.20	49.13	-24.93	Average
0.38	36.22	0.36	0.10	36.68	58.39	-21.71	QP
0.38	21.40	0.36	0.10	21.86	48.39	-26.53	Average
1.04	24.67	0.20	0.15	25.02	56.00	-30.98	QP
1.04	17.65	0.20	0.15	18.00	46.00	-28.00	Average
23.02	14.57	0.33	0.23	15.13	60.00	-44.87	QP
23.02	5.82	0.33	0.23	6.38	50.00	-43.62	Average

**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 Peak Output Power

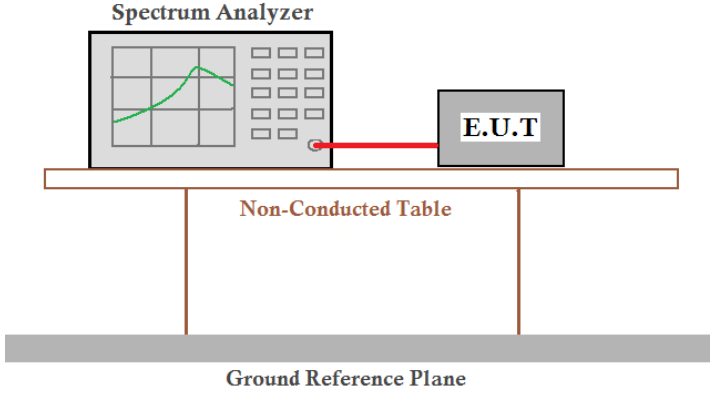
Test Requirement:	FCC Part15 E Section 15.407(a)(3)
Test Method:	ANSI C63.10:2013 and KDB 789033 D02 General U-NII Test Procedures New Rules v02r01
Limit:	30dBm
Test setup:	
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

### Measurement Data

Test CH	Peak Output Power (dBm)						Limit(dBm)	Result
	802.11a	802.11n (HT20)	802.11ac (HT20)	802.11n (HT40)	802.11ac (HT40)	802.11ac (HT80)		
Lowest	11.96	11.66	11.70	11.55	11.85	---	30.00	Pass
Middle	11.48	11.35	11.11	---	---	10.71		
Highest	11.42	11.41	11.26	11.62	11.20	---		

Remark: "---" is not applicable

## 7.4 Channel Bandwidth

Test Requirement:	FCC Part15 E Section 15.407(e)
Test Method:	ANSI C63.10:2013 and KDB 789033 D02 General U-NII Test Procedures New Rules v02r01 & RSS-Gen
Limit:	>500KHz
Test setup:	 <p>The diagram shows a Spectrum Analyzer on the left and an E.U.T. on the right, connected by a red cable. They are both on a table labeled 'Non-Conducted Table'. Below the table is a 'Ground Reference Plane'.</p>
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

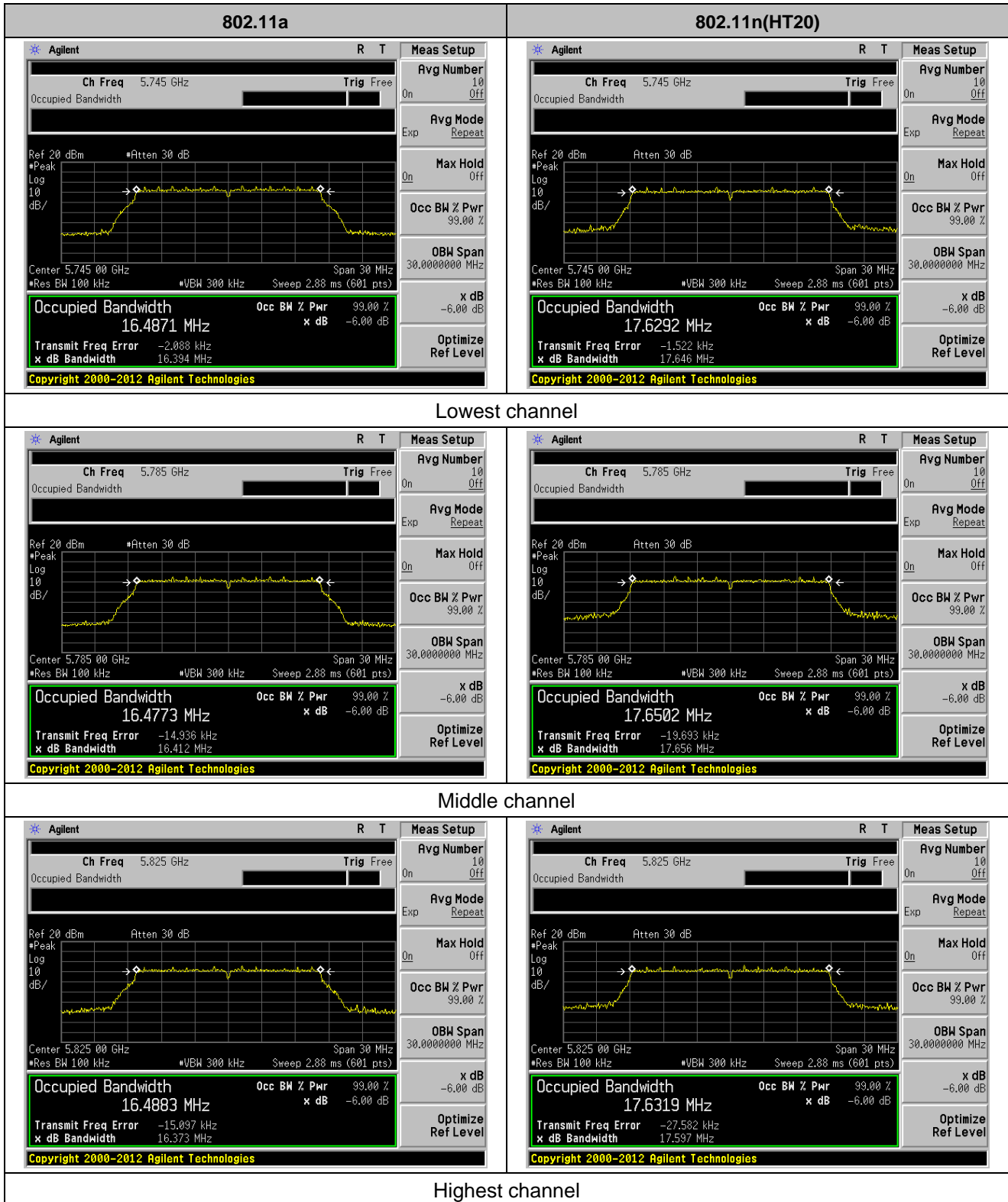
### Measurement Data

Test CH	-6dB Channel Bandwidth (MHz)						Limit (KHz)	Result
	802.11a	802.11n (HT20)	802.11ac (HT20)	802.11n (HT40)	802.11ac (HT40)	802.11ac (HT80)		
Lowest	16.394	17.646	17.629	36.079	35.213	---	>500	Pass
Middle	16.412	17.656	17.633	---	---	75.845		
Highest	16.373	17.597	17.637	36.153	36.167	---		

Test CH	99% Channel Bandwidth (MHz)						Limit (KHz)	Result
	802.11a	802.11n (HT20)	802.11ac (HT20)	802.11n (HT40)	802.11ac (HT40)	802.11ac (HT80)		
Lowest	16.4871	17.6292	17.6175	36.0507	35.7314	---	>500	Pass
Middle	16.4773	17.6502	17.6343	---	---	75.3746		
Highest	16.4883	17.6319	17.6285	36.0652	36.0351	---		

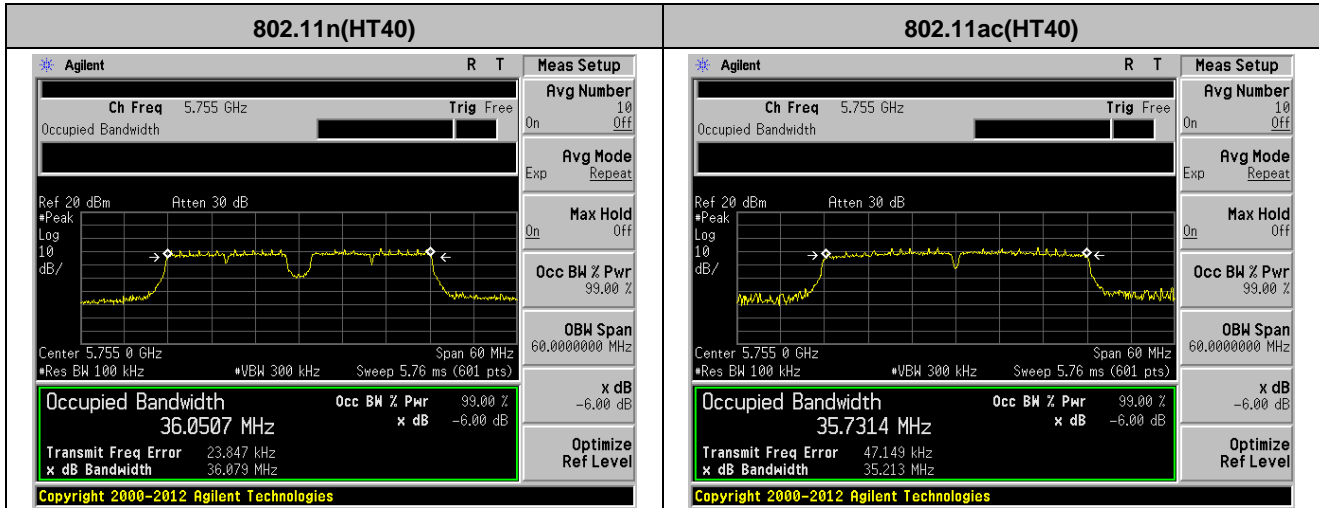
Remark: "---" is not applicable

Test plot as follows:

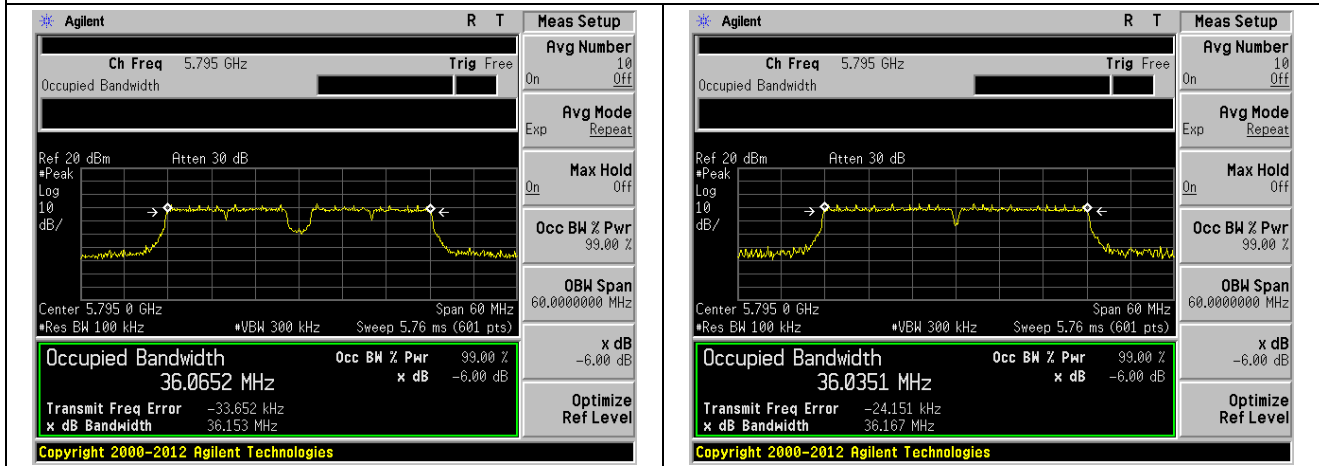




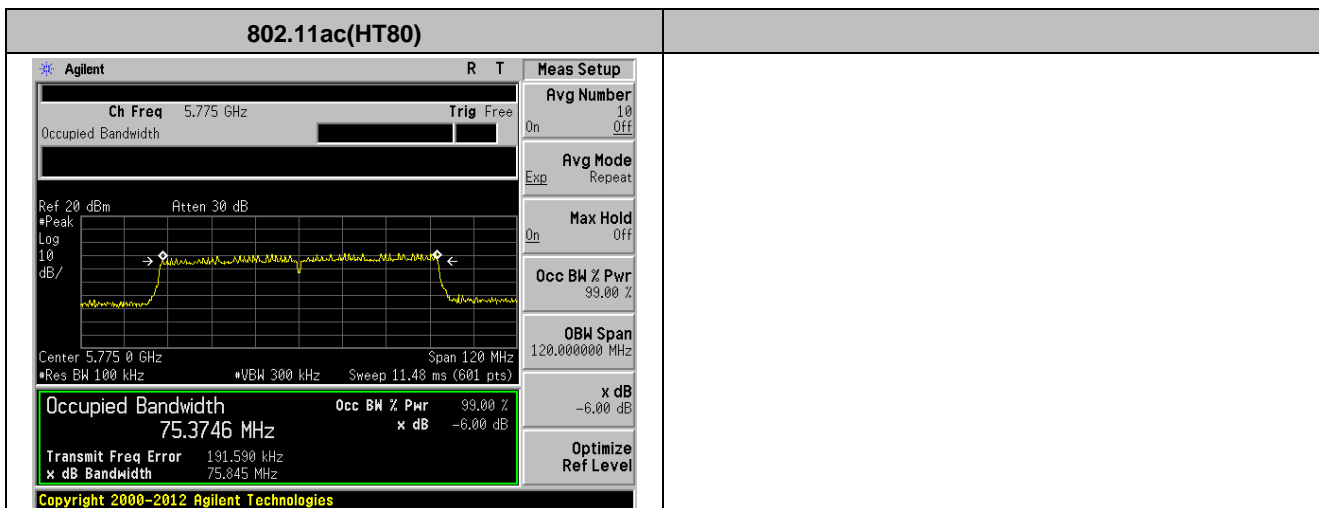
802.11ac(HT20)	
<p>Agilent R T</p> <p>Ch Freq 5.745 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak</p> <p>Log 10 dB/</p> <p>Center 5.745 00 GHz Span 30 MHz</p> <p>#Res BW 100 kHz #VBW 300 kHz Sweep 2.88 ms (601 pts)</p> <p><b>Occupied Bandwidth 17.6175 MHz</b></p> <p>Occ BW % Pwr 99.00 %</p> <p>Transmit Freq Error 2.504 kHz</p> <p>x dB Bandwidth 17.629 MHz</p> <p>Copyright 2000-2012 Agilent Technologies</p>	<p><b>Meas Setup</b></p> <p>Avg Number 10</p> <p>On Off</p> <p>Avg Mode Repeat</p> <p>Exp</p> <p>Max Hold Off</p> <p>On</p> <p>Occ BW % Pwr 99.00 %</p> <p>OBW Span 30.0000000 MHz</p> <p>x dB -6.00 dB</p> <p>Optimize Ref Level</p>
Lowest channel	
<p>Agilent R T</p> <p>Ch Freq 5.785 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak</p> <p>Log 10 dB/</p> <p>Center 5.785 00 GHz Span 30 MHz</p> <p>#Res BW 100 kHz #VBW 300 kHz Sweep 2.88 ms (601 pts)</p> <p><b>Occupied Bandwidth 17.6343 MHz</b></p> <p>Occ BW % Pwr 99.00 %</p> <p>Transmit Freq Error -20.522 kHz</p> <p>x dB Bandwidth 17.633 MHz</p> <p>Copyright 2000-2012 Agilent Technologies</p>	<p><b>Meas Setup</b></p> <p>Avg Number 10</p> <p>On Off</p> <p>Avg Mode Repeat</p> <p>Exp</p> <p>Max Hold Off</p> <p>On</p> <p>Occ BW % Pwr 99.00 %</p> <p>OBW Span 30.0000000 MHz</p> <p>x dB -6.00 dB</p> <p>Optimize Ref Level</p>
Middle channel	
<p>Agilent R T</p> <p>Ch Freq 5.825 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 20 dBm Atten 30 dB</p> <p>#Peak</p> <p>Log 10 dB/</p> <p>Center 5.825 00 GHz Span 30 MHz</p> <p>#Res BW 100 kHz #VBW 300 kHz Sweep 2.88 ms (601 pts)</p> <p><b>Occupied Bandwidth 17.6285 MHz</b></p> <p>Occ BW % Pwr 99.00 %</p> <p>Transmit Freq Error -22.442 kHz</p> <p>x dB Bandwidth 17.637 MHz</p> <p>Copyright 2000-2012 Agilent Technologies</p>	<p><b>Meas Setup</b></p> <p>Avg Number 10</p> <p>On Off</p> <p>Avg Mode Repeat</p> <p>Exp</p> <p>Max Hold Off</p> <p>On</p> <p>Occ BW % Pwr 99.00 %</p> <p>OBW Span 30.0000000 MHz</p> <p>x dB -6.00 dB</p> <p>Optimize Ref Level</p>
Highest channel	



Lowest channel

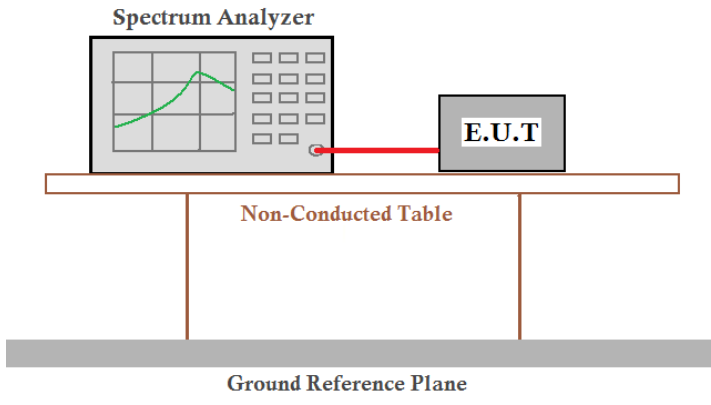


Highest channel



Middle channel

## 7.5 Power Spectral Density

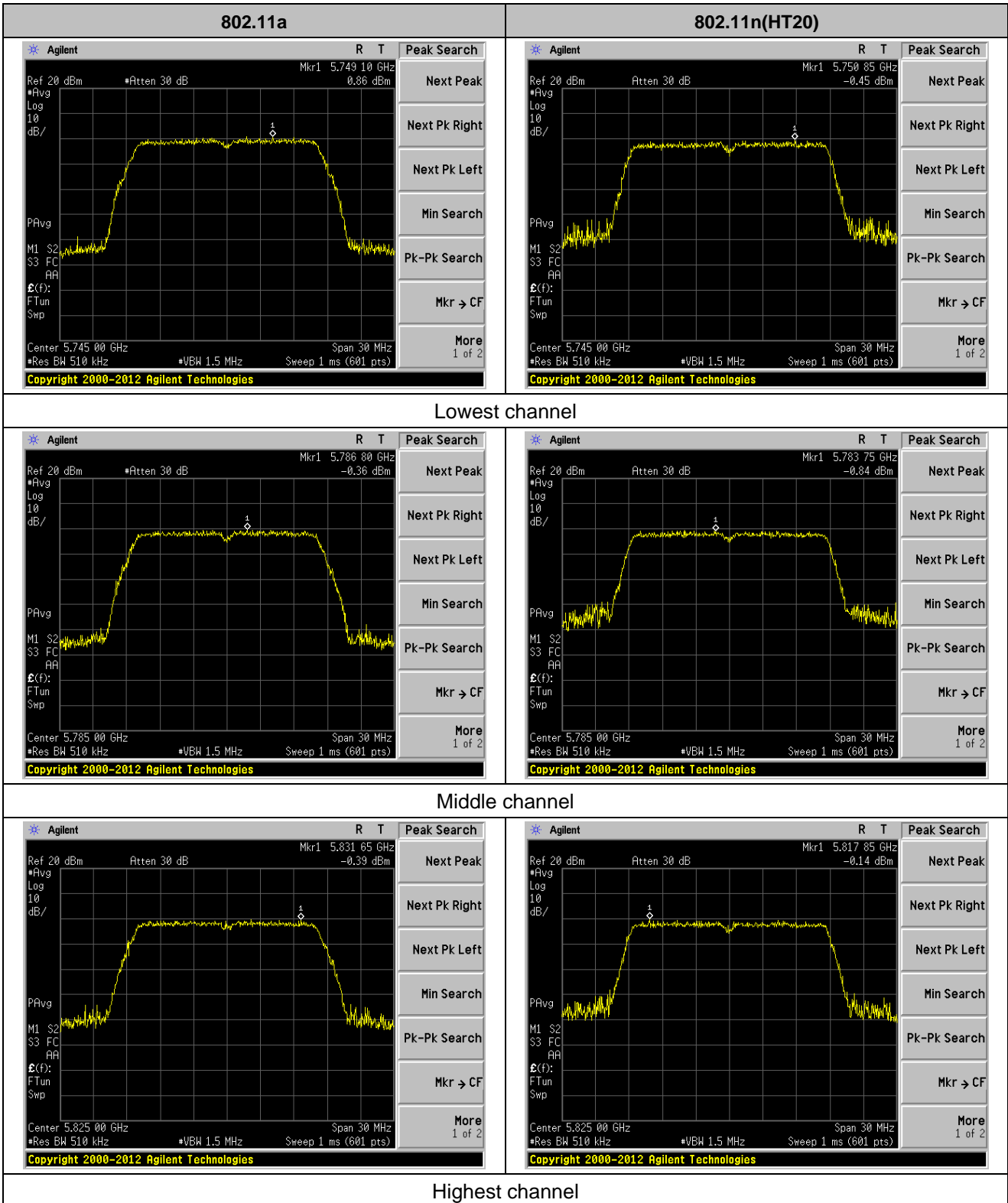
Test Requirement:	FCC Part15 E Section 15.407(a)(3)
Test Method:	ANSI C63.10:2013 and KDB 789033 D02 General U-NII Test Procedures New Rules v02r01
Limit:	30dBm/500kHz
Test setup:	
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

### Measurement Data

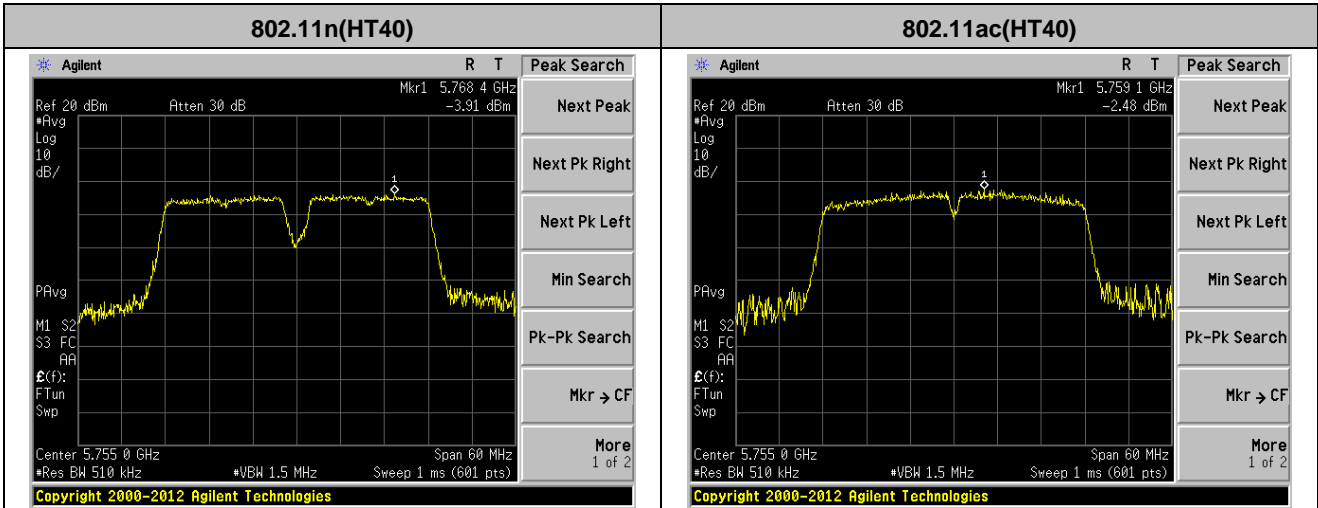
Test CH	Power Spectral Density (dBm/500kHz)						Limit (dBm/500k Hz)	Result
	802.11a	802.11n (HT20)	802.11ac (HT20)	802.11n (HT40)	802.11ac (HT40)	802.11ac (HT80)		
Lowest	0.86	-0.45	-0.28	-3.91	-2.48	---	30.00	Pass
Middle	-0.36	-0.84	-0.56	---	---	-5.47		
Highest	-0.39	-0.14	-0.23	-2.68	-3.47	---		

Remark: "---"is not applicable

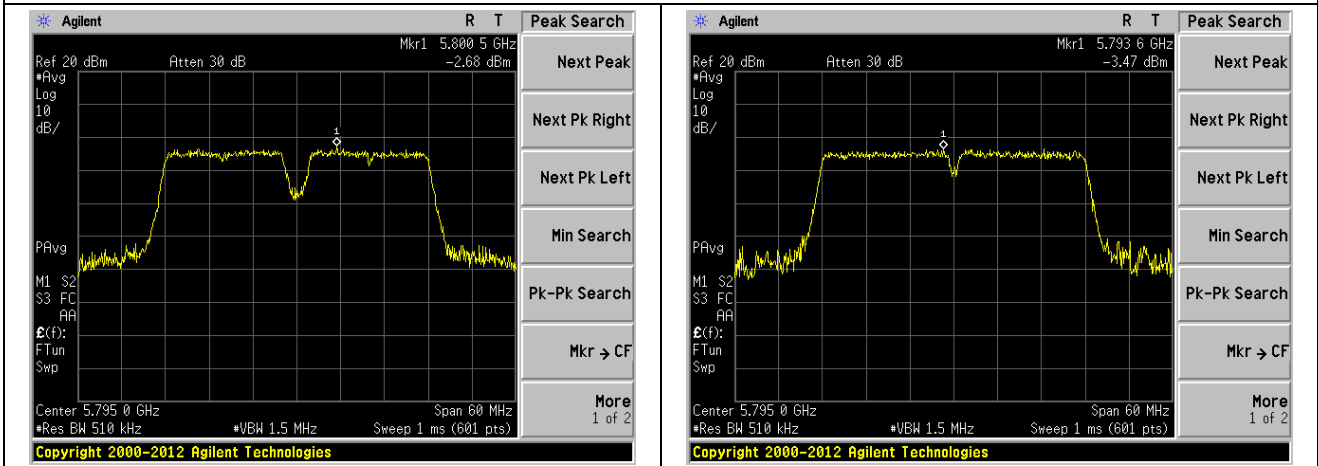
Test plot as follows:



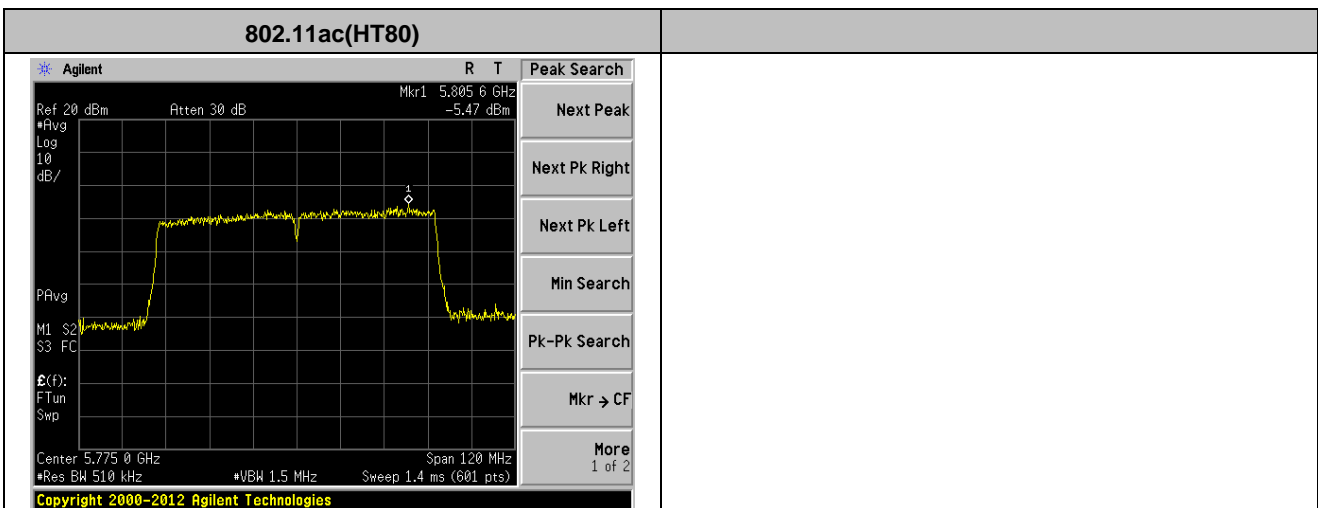
802.11ac(HT20)	
<p>Agilent R T Peak Search          Ref 20 dBm Atten 30 dB Mkr1 5.74730 GHz -0.28 dBm          #Avg Log 10 dB/ PAVg          M1 S2 S3 FC AR          E(f): FTun Swp          Center 5.74500 GHz Span 30 MHz          #Res BW 510 kHz #VBW 1.5 MHz Sweep 1 ms (601 pts)          Copyright 2000-2012 Agilent Technologies</p>	Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search Mkr → CF More 1 of 2
Lowest channel	
<p>Agilent R T Peak Search          Ref 20 dBm Atten 30 dB Mkr1 5.79165 GHz -0.56 dBm          #Avg Log 10 dB/ PAVg          M1 S2 S3 FC AR          E(f): FTun Swp          Center 5.78500 GHz Span 30 MHz          #Res BW 510 kHz #VBW 1.5 MHz Sweep 1 ms (601 pts)          Copyright 2000-2012 Agilent Technologies</p>	Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search Mkr → CF More 1 of 2
Middle channel	
<p>Agilent R T Peak Search          Ref 20 dBm Atten 30 dB Mkr1 5.82520 GHz -0.23 dBm          #Avg Log 10 dB/ PAVg          M1 S2 S3 FC AR          E(f): FTun Swp          Center 5.82500 GHz Span 30 MHz          #Res BW 510 kHz #VBW 1.5 MHz Sweep 1 ms (601 pts)          Copyright 2000-2012 Agilent Technologies</p>	Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search Mkr → CF More 1 of 2
Highest channel	



Lowest channel



Highest channel



Middle channel

## 7.6 Band edge

### 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:	9kHz 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	RMS
Limit:	All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.				
Test setup:					
Test Instruments:	Refer to section 6.0 for details				
Test mode:	Refer to section 5.2 for details				
Test results:	Pass				

#### Remarks:

1. Only the worst case Main Antenna test data..
2. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
3. The emission levels of other frequencies are very lower than the limit and not show in test report.
4. The pre-test were performed on lowest, middle and highest frequencies, only the worst case's (lowest and highest frequencies) data was showed.
5. According to KDB 789033 D02v02r01 section G) 1) d), for measurements above 1000 MHz @3m distance, the limit of field strength is computed as follows:

$$E[\text{dBuV/m}] = \text{EIRP}[\text{dBm}] + 95.2;$$

$$E[\text{dBuV/m}] = -27 + 95.2 = 68.2\text{dBuV/m.}$$

$$E[\text{dBuV/m}] = 10 + 95.2 = 105.2\text{dBuV/m.}$$

$$E[\text{dBuV/m}] = 15.6 + 95.2 = 110.8\text{dBuV/m.}$$

$$E[\text{dBuV/m}] = 27 + 95.2 = 122.2\text{dBuV/m}$$

**Measurement data:**

<b>IEEE 802.11a</b>								
<b>Peak value:</b>								
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
5650.00	32.36	32.36	9.72	23.83	50.61	68.2	-17.59	Horizontal
5700.00	31.94	32.5	9.79	23.84	50.39	105.2	-54.81	Horizontal
5720.00	29.18	32.53	9.81	23.85	47.67	110.8	-63.13	Horizontal
5725.00	30.17	32.53	9.83	23.86	48.67	122.2	-73.53	Horizontal
5850.00	29.99	32.7	9.99	23.87	48.81	122.2	-73.39	Horizontal
5855.00	28.24	32.72	9.99	23.88	47.07	110.8	-63.73	Horizontal
5875.00	32.18	32.74	10.04	23.89	51.07	105.2	-54.13	Horizontal
5925.00	32.31	32.8	10.11	23.9	51.32	68.2	-16.88	Horizontal
5650.00	28.85	32.36	9.72	23.83	47.1	68.2	-21.1	Vertical
5700.00	30.1	32.5	9.79	23.84	48.55	105.2	-56.65	Vertical
5720.00	32	32.53	9.81	23.85	50.49	110.8	-60.31	Vertical
5725.00	29.71	32.53	9.83	23.86	48.21	122.2	-73.99	Vertical
5850.00	32.48	32.7	9.99	23.87	51.3	122.2	-70.9	Vertical
5855.00	30.89	32.72	9.99	23.88	49.72	110.8	-61.08	Vertical
5875.00	29.88	32.74	10.04	23.89	48.77	105.2	-56.43	Vertical
5925.00	29.06	32.8	10.11	23.9	48.07	68.2	-20.13	Vertical



IEEE 802.11n HT20								
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
5650.00	28.94	32.36	9.72	23.83	47.19	68.2	-21.01	Horizontal
5700.00	32.71	32.5	9.79	23.84	51.16	105.2	-54.04	Horizontal
5720.00	28.97	32.53	9.81	23.85	47.46	110.8	-63.34	Horizontal
5725.00	32.52	32.53	9.83	23.86	51.02	122.2	-71.18	Horizontal
5850.00	28.72	32.7	9.99	23.87	47.54	122.2	-74.66	Horizontal
5855.00	29.8	32.72	9.99	23.88	48.63	110.8	-62.17	Horizontal
5875.00	28.96	32.74	10.04	23.89	47.85	105.2	-57.35	Horizontal
5925.00	32.92	32.8	10.11	23.9	51.93	68.2	-16.27	Horizontal
5650.00	28.07	32.36	9.72	23.83	46.32	68.2	-21.88	Vertical
5700.00	32.74	32.5	9.79	23.84	51.19	105.2	-54.01	Vertical
5720.00	29.54	32.53	9.81	23.85	48.03	110.8	-62.77	Vertical
5725.00	30.17	32.53	9.83	23.86	48.67	122.2	-73.53	Vertical
5850.00	29.46	32.7	9.99	23.87	48.28	122.2	-73.92	Vertical
5855.00	28.07	32.72	9.99	23.88	46.9	110.8	-63.9	Vertical
5875.00	31.41	32.74	10.04	23.89	50.3	105.2	-54.9	Vertical
5925.00	31.41	32.8	10.11	23.9	50.42	68.2	-17.78	Vertical

<b>IEEE 802.11ac HT20</b>								
<b>Peak value:</b>								
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
5650.00	29.58	32.36	9.72	23.83	47.83	68.2	-20.37	Horizontal
5700.00	30.2	32.5	9.79	23.84	48.65	105.2	-56.55	Horizontal
5720.00	32.02	32.53	9.81	23.85	50.51	110.8	-60.29	Horizontal
5725.00	32.22	32.53	9.83	23.86	50.72	122.2	-71.48	Horizontal
5850.00	31.93	32.7	9.99	23.87	50.75	122.2	-71.45	Horizontal
5855.00	31.33	32.72	9.99	23.88	50.16	110.8	-60.64	Horizontal
5875.00	31.28	32.74	10.04	23.89	50.17	105.2	-55.03	Horizontal
5925.00	29.56	32.8	10.11	23.9	48.57	68.2	-19.63	Horizontal
5650.00	30.47	32.36	9.72	23.83	48.72	68.2	-19.48	Vertical
5700.00	30.13	32.5	9.79	23.84	48.58	105.2	-56.62	Vertical
5720.00	32.28	32.53	9.81	23.85	50.77	110.8	-60.03	Vertical
5725.00	29.77	32.53	9.83	23.86	48.27	122.2	-73.93	Vertical
5850.00	29.37	32.7	9.99	23.87	48.19	122.2	-74.01	Vertical
5855.00	29.92	32.72	9.99	23.88	48.75	110.8	-62.05	Vertical
5875.00	30.03	32.74	10.04	23.89	48.92	105.2	-56.28	Vertical
5925.00	28.34	32.8	10.11	23.9	47.35	68.2	-20.85	Vertical

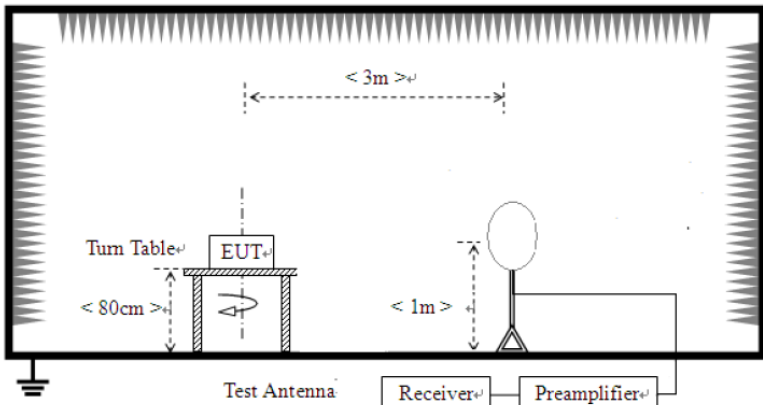
<b>IEEE 802.11n HT40</b>								
<b>Peak value:</b>								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5650.00	29.62	32.36	9.72	23.83	47.87	68.2	-20.33	Horizontal
5700.00	32.99	32.5	9.79	23.84	51.44	105.2	-53.76	Horizontal
5720.00	31.18	32.53	9.81	23.85	49.67	110.8	-61.13	Horizontal
5725.00	29.9	32.53	9.83	23.86	48.4	122.2	-73.8	Horizontal
5850.00	30.29	32.7	9.99	23.87	49.11	122.2	-73.09	Horizontal
5855.00	32.87	32.72	9.99	23.88	51.7	110.8	-59.1	Horizontal
5875.00	30.46	32.74	10.04	23.89	49.35	105.2	-55.85	Horizontal
5925.00	32.67	32.8	10.11	23.9	51.68	68.2	-16.52	Horizontal
5650.00	28.32	32.36	9.72	23.83	46.57	68.2	-21.63	Vertical
5700.00	29.75	32.5	9.79	23.84	48.2	105.2	-57	Vertical
5720.00	30.14	32.53	9.81	23.85	48.63	110.8	-62.17	Vertical
5725.00	32.36	32.53	9.83	23.86	50.86	122.2	-71.34	Vertical
5850.00	28.83	32.7	9.99	23.87	47.65	122.2	-74.55	Vertical
5855.00	31.3	32.72	9.99	23.88	50.13	110.8	-60.67	Vertical
5875.00	28.38	32.74	10.04	23.89	47.27	105.2	-57.93	Vertical
5925.00	31.53	32.8	10.11	23.9	50.54	68.2	-17.66	Vertical

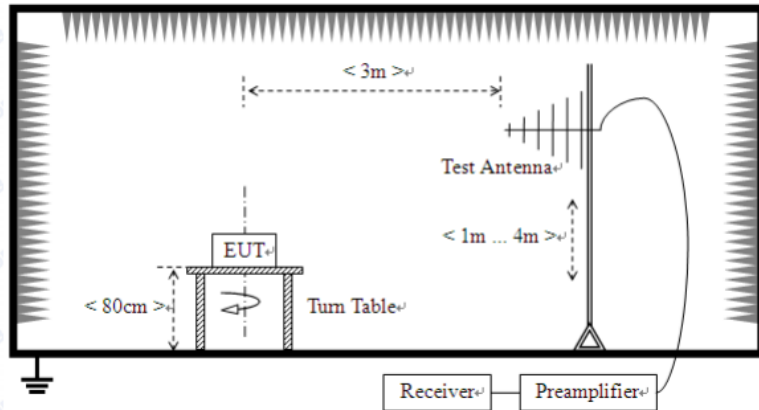
IEEE 802.11ac HT40								
Peak value:								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5650.00	29.69	32.36	9.72	23.83	47.94	68.2	-20.26	Horizontal
5700.00	32.16	32.5	9.79	23.84	50.61	105.2	-54.59	Horizontal
5720.00	30.63	32.53	9.81	23.85	49.12	110.8	-61.68	Horizontal
5725.00	29.27	32.53	9.83	23.86	47.77	122.2	-74.43	Horizontal
5850.00	31.26	32.7	9.99	23.87	50.08	122.2	-72.12	Horizontal
5855.00	29.2	32.72	9.99	23.88	48.03	110.8	-62.77	Horizontal
5875.00	30.8	32.74	10.04	23.89	49.69	105.2	-55.51	Horizontal
5925.00	28.85	32.8	10.11	23.9	47.86	68.2	-20.34	Horizontal
5650.00	28.84	32.36	9.72	23.83	47.09	68.2	-21.11	Vertical
5700.00	31.26	32.5	9.79	23.84	49.71	105.2	-55.49	Vertical
5720.00	30.2	32.53	9.81	23.85	48.69	110.8	-62.11	Vertical
5725.00	30.27	32.53	9.83	23.86	48.77	122.2	-73.43	Vertical
5850.00	29.76	32.7	9.99	23.87	48.58	122.2	-73.62	Vertical
5855.00	32.78	32.72	9.99	23.88	51.61	110.8	-59.19	Vertical
5875.00	32.54	32.74	10.04	23.89	51.43	105.2	-53.77	Vertical
5925.00	30.37	32.8	10.11	23.9	49.38	68.2	-18.82	Vertical

<b>IEEE 802.11ac HT80</b>								
<b>Peak value:</b>								
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
5650.00	30.12	32.36	9.72	23.83	48.37	68.2	-19.83	Horizontal
5700.00	31.59	32.5	9.79	23.84	50.04	105.2	-55.16	Horizontal
5720.00	32.6	32.53	9.81	23.85	51.09	110.8	-59.71	Horizontal
5725.00	29.72	32.53	9.83	23.86	48.22	122.2	-73.98	Horizontal
5850.00	30.92	32.7	9.99	23.87	49.74	122.2	-72.46	Horizontal
5855.00	28.87	32.72	9.99	23.88	47.7	110.8	-63.1	Horizontal
5875.00	30.37	32.74	10.04	23.89	49.26	105.2	-55.94	Horizontal
5925.00	29.77	32.8	10.11	23.9	48.78	68.2	-19.42	Horizontal
5650.00	28.51	32.36	9.72	23.83	46.76	68.2	-21.44	Vertical
5700.00	29.74	32.5	9.79	23.84	48.19	105.2	-57.01	Vertical
5720.00	30.11	32.53	9.81	23.85	48.6	110.8	-62.2	Vertical
5725.00	28.69	32.53	9.83	23.86	47.19	122.2	-75.01	Vertical
5850.00	31.61	32.7	9.99	23.87	50.43	122.2	-71.77	Vertical
5855.00	28.11	32.72	9.99	23.88	46.94	110.8	-63.86	Vertical
5875.00	30.11	32.74	10.04	23.89	49	105.2	-56.2	Vertical
5925.00	30.41	32.8	10.11	23.9	49.42	68.2	-18.78	Vertical

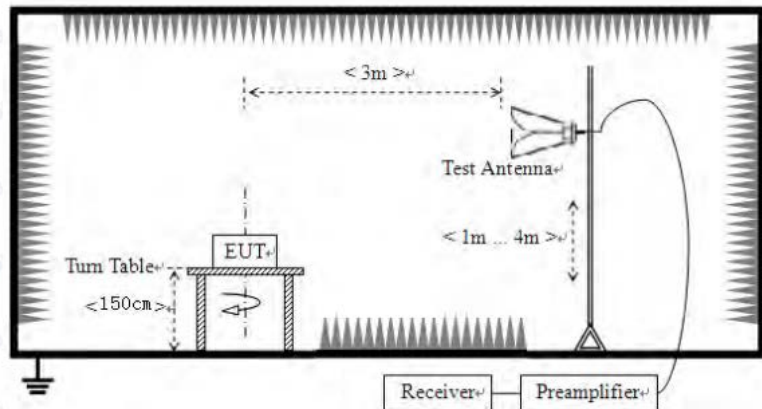
## 7.7 Spurious Emission

### 7.7.1 Radiated Emission Method

Test Requirement:	FCC Part15 C Section 15.209, Part 15E Section 15.407(b)(4)				
Test Method:	ANSI C63.10:2013				
Test Frequency Range:	9kHz to 40GHz				
Test site:	Measurement Distance: 3m				
Receiver setup:	Frequency	Detector	RBW	VBW	Value
	9kHz-150KHz	Quasi-peak	200Hz	1kHz	Quasi-peak Value
	150kHz-30MHz	Quasi-peak	9kHz	30kHz	Quasi-peak Value
	30MHz-1GHz	Quasi-peak	120KHz	300KHz	Quasi-peak Value
	Above 1GHz	Peak	1MHz	3MHz	Peak Value
AV		1MHz	3MHz	Average Value	
Limit:	Frequency	Limit (uV/m)	Value	Measurement Distance	
	0.009MHz-0.490MHz	2400/F(KHz)	QP	300m	
	0.490MHz-1.705MHz	24000/F(KHz)	QP	30m	
	1.705MHz-30MHz	30	QP	30m	
	30MHz-88MHz	100	QP	3m	
	88MHz-216MHz	150	QP		
	216MHz-960MHz	200	QP		
	960MHz-1GHz	500	QP		
		Frequency	Limit (dBm/MHz)	Remark	
	Above 1GHz	-27.0	Peak Value		
Test setup:	For radiated emissions from 9kHz to 30MHz				
	 <p>The diagram illustrates the test setup for radiated emissions from 9kHz to 30MHz. It shows an Equipment Under Test (EUT) placed on a turn table at a height of less than 80cm. A test antenna is positioned 3m away from the EUT. The antenna is connected to a receiver and a preamplifier. The antenna is at a height of less than 1m. The entire setup is within a shielded chamber.</p>				
	For radiated emissions from 30MHz to 1GHz				



For radiated emissions above 1GHz



Test Instruments:	Refer to section 6.0 for details					
Test mode:	Refer to section 5.2 for details					
Test environment:	Temp.:	25 °C	Humid.:	52%	Press.:	1012mbar
Test voltage:	AC 120V, 60Hz					
Test results:	Pass					

**Remarks:**

1. Only the worst case Main Antenna test data.
2. Pre-scan all kind of the place mode (X-axis, Y-axis, Z-axis), and found the Y-axis which it is worse case.

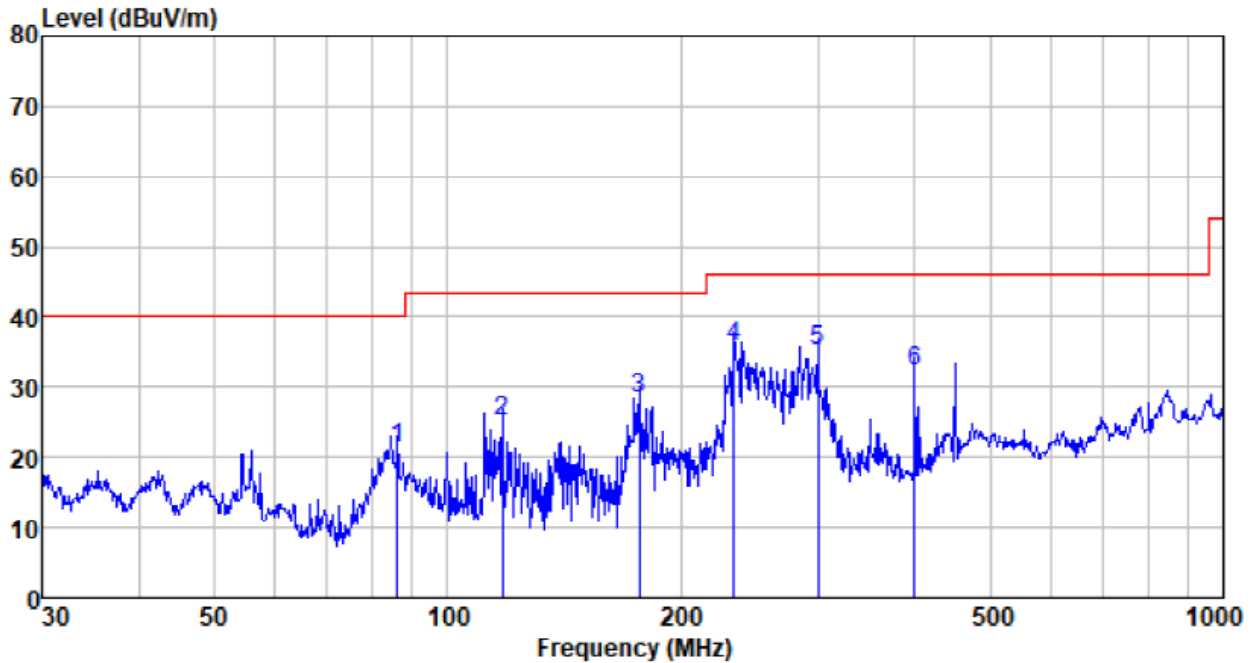
**Measurement Data:**

**9 kHz ~ 30 MHz**

The low frequency, which started from 9 kHz to 30 MHz, was pre-scanned and the result which was 20 dB lower than the limit line per 15.31(o) was not reported.

**Below 1GHz**

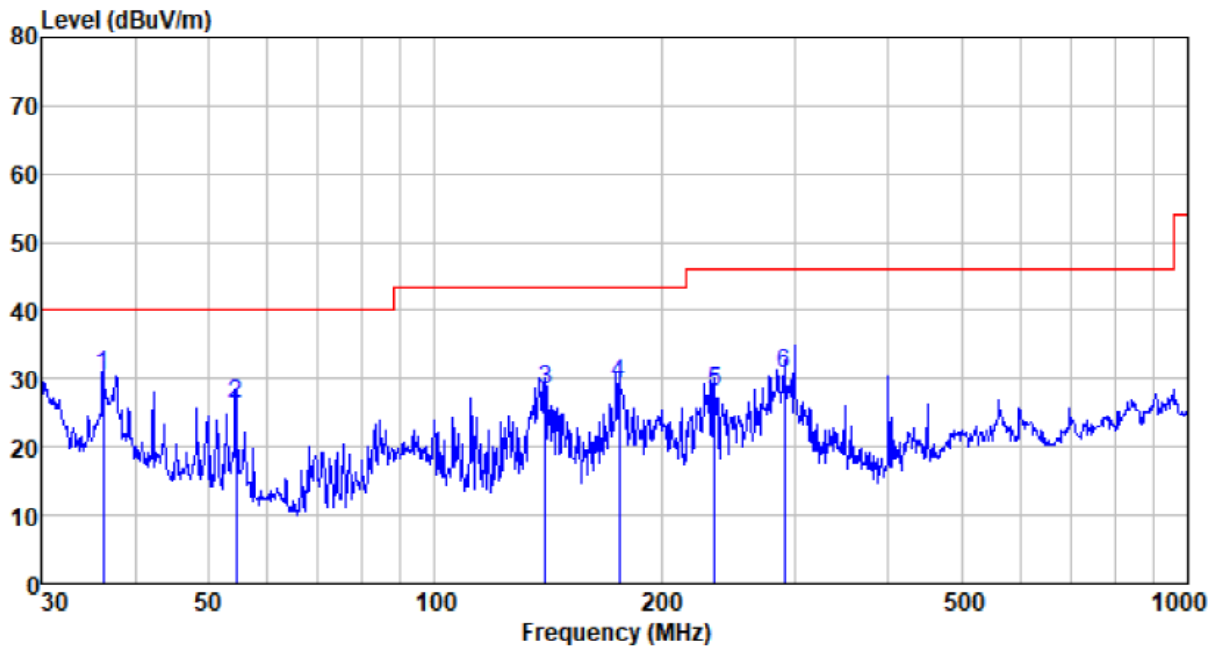
Horizontal:



Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV	Limit level dBuV/m	Over limit dB	Remark
86.200	47.20	9.43	1.08	36.60	21.11	40.00	-18.89	QP
117.773	50.67	9.84	1.34	36.86	24.99	43.50	-18.51	QP
176.888	54.94	8.77	1.72	37.22	28.21	43.50	-15.29	QP
234.168	59.37	11.64	2.04	37.37	35.68	46.00	-10.32	QP
300.367	56.47	13.60	2.36	37.42	35.01	46.00	-10.99	QP
400.432	51.62	15.34	2.85	37.52	32.29	46.00	-13.71	QP



Vertical:



Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV	Limit level dBuV/m	Over limit dB	Remark
36.254	53.75	11.55	0.62	35.44	30.48	40.00	-9.52	QP
54.452	49.97	11.85	0.81	36.25	26.38	40.00	-13.62	QP
140.342	56.32	7.40	1.51	37.02	28.21	43.50	-15.29	QP
175.652	55.87	8.73	1.72	37.22	29.10	43.50	-14.40	QP
234.991	51.81	11.67	2.05	37.37	28.16	46.00	-17.84	QP
291.036	52.36	13.35	2.32	37.41	30.62	46.00	-15.38	QP

**Above 1GHz:**

802.11a,11n(HT20),11ac(HT20),11n(HT40),11ac(HT40),11ac(HT80) all have been tested,

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	11490	20.11	21.64	41.75	54(Note3)	-12.25	PK
V	17235	22.54	21.8	44.34	54(Note3)	-9.66	PK
H	11490	20.89	21.83	42.72	54(Note3)	-11.28	PK
H	17235	19.41	21.67	41.08	54(Note3)	-12.92	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	22.37	21.64	44.01	54(Note3)	-9.99	PK
V	17355	20.54	21.8	42.34	54(Note3)	-11.66	PK
H	11570	21.73	21.83	43.56	54(Note3)	-10.44	PK
H	17355	19.39	21.67	41.06	54(Note3)	-12.94	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	21.84	21.64	43.48	54(Note3)	-10.52	PK
V	17475	20.67	21.8	42.47	54(Note3)	-11.53	PK
H	11650	20.01	21.83	41.84	54(Note3)	-12.16	PK
H	17475	22.46	21.67	44.13	54(Note3)	-9.87	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	20.99	21.67	42.66	54(Note3)	-11.34	PK
V	17265	20.35	21.83	42.18	54(Note3)	-11.82	PK
H	11510	21.54	21.67	43.21	54(Note3)	-10.79	PK
H	17265	19.74	21.83	41.57	54(Note3)	-12.43	PK

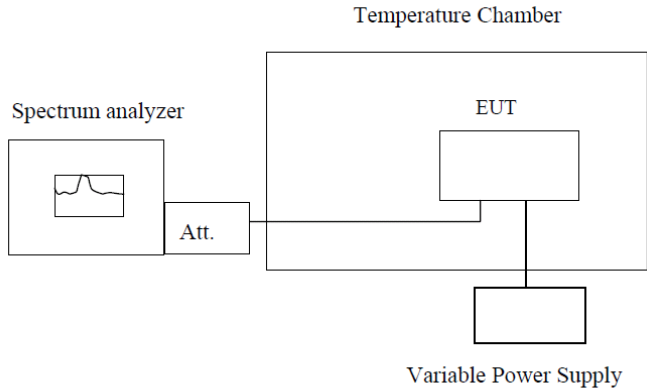
Test mode:		802.11ac(HT40)		Test channel:		Highest	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dBuV/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
V	11590	20.94	21.67	42.61	54(Note3)	-11.39	PK
V	17385	22.2	21.83	44.03	54(Note3)	-9.97	PK
H	11590	22	21.67	43.67	54(Note3)	-10.33	PK
H	17385	22.24	21.83	44.07	54(Note3)	-9.93	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	21.98	21.65	43.63	54(Note3)	-10.37	PK
V	17325	20.72	21.81	42.53	54(Note3)	-11.47	PK
H	11550	20.13	21.65	41.78	54(Note3)	-12.22	PK
H	17325	20.08	21.81	41.89	54(Note3)	-12.11	PK

Notes:

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:	 <p style="text-align: center;"><b>Note :</b> Measurement setup for testing on Antenna connector</p>
Test Instruments:	Refer to section 5.10 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

**Measurement data:**

HT 20MHz					
Frequency stability versus Temp.					
Power Supply: AC 120V					
Temp. (°C)	Operating Frequency (MHz)	0 minute Measured Frequency (MHz)	2 minute Measured Frequency (MHz)	5 minute Measured Frequency (MHz)	10 minute Measured Frequency (MHz)
-30	5745	5745.8203	5745.6377	5745.4549	5745.9742
	5785	5785.4679	5785.0587	5785.6631	5785.2763
	5825	5825.3275	5825.9774	5825.6728	5825.3662
-20	5745	5745.7109	5745.0610	5745.6381	5745.6686
	5785	5785.2856	5785.0291	5785.1346	5785.4486
	5825	5825.8479	5825.3877	5825.1454	5825.6197
-10	5745	5745.0095	5745.0974	5745.8281	5745.8998
	5785	5785.7973	5785.4256	5785.3564	5785.5291
	5825	5825.4077	5825.2958	5825.3167	5825.5366
0	5745	5745.7666	5745.1240	5745.1780	5745.9119
	5785	5785.0526	5785.4397	5785.9290	5785.8517
	5825	5825.8993	5825.8420	5825.2932	5825.8815
10	5745	5745.9794	5745.9180	5745.3866	5745.4388
	5785	5785.8038	5785.4889	5785.1210	5785.2653
	5825	5825.5778	5825.8429	5825.4146	5825.0132
20	5745	5745.4663	5745.0494	5745.4084	5745.5433
	5785	5785.1216	5785.7833	5785.7464	5785.6814
	5825	5825.8855	5825.3345	5825.7389	5825.1258
30	5745	5745.6771	5745.1868	5745.9230	5745.8981
	5785	5785.7020	5785.4385	5785.5827	5785.3206
	5825	5825.9828	5825.6846	5825.7259	5825.9141
40	5745	5745.8138	5745.9148	5745.1993	5745.7773
	5785	5785.3331	5785.0197	5785.2193	5785.6539
	5825	5825.2478	5825.9372	5825.6076	5825.1176
50	5745	5745.7089	5745.8737	5745.8606	5745.3196
	5785	5785.7578	5785.3546	5785.7448	5785.8372
	5825	5825.7423	5825.7185	5825.2556	5825.1900

Frequency stability versus Voltage					
Temperature: 25°C					
Power Supply (VAC)	Operating Frequency (MHz)	0 minute Measured Frequency (MHz)	2 minute Measured Frequency (MHz)	5 minute Measured Frequency (MHz)	10 minute Measured Frequency (MHz)
108	5745	5745.9495	5745.0500	5745.6216	5745.0124
	5785	5785.4235	5785.8333	5785.8943	5785.9098
	5825	5825.1798	5825.7231	5825.6813	5825.3704
120	5745	5745.8489	5745.6460	5745.4984	5745.1722
	5785	5785.6215	5785.5809	5785.1838	5785.7443
	5825	5825.4586	5825.1349	5825.3227	5825.0907
132	5745	5745.4763	5745.6191	5745.4471	5745.8550
	5785	5785.8535	5785.9803	5785.0090	5785.3440
	5825	5825.6024	5825.7916	5825.8055	5825.3939

HT40 MHz					
Frequency stability versus Temp.					
Power Supply: AC 120V					
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	5755.1946	5755.4961	5755.3129	5755.0317
	5795	5795.9486	5795.5747	5795.8226	5795.0020
-20	5755	5755.9046	5755.9174	5755.4528	5755.3597
	5795	5795.7675	5795.7644	5795.8564	5795.0421
-10	5755	5755.2885	5755.4394	5755.6202	5755.8285
	5795	5795.2911	5795.6536	5795.4569	5795.3328
0	5755	5755.2477	5755.1031	5755.0616	5755.4730
	5795	5795.4733	5795.8317	5795.8333	5795.1483
10	5755	5755.5492	5755.6291	5755.9572	5755.5141
	5795	5795.5678	5795.9418	5795.3540	5795.3237
20	5755	5755.8443	5755.0651	5755.3174	5755.7216
	5795	5795.4400	5795.2116	5795.1473	5795.2113
30	5755	5755.6890	5755.4438	5755.3807	5755.8174
	5795	5795.2033	5795.8573	5795.3079	5795.8534
40	5755	5755.3422	5755.0466	5755.3158	5755.4632
	5795	5795.4059	5795.5617	5795.1952	5795.8758
50	5755	5755.3789	5755.7863	5755.4049	5755.1409
	5795	5795.4451	5795.1708	5795.8880	5795.9541

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)
108	5755	5755.1536	5755.3021	5755.5527	5755.9178
	5795	5795.5754	5795.9519	5795.6310	5795.8759
120	5755	5755.7580	5755.8629	5755.8866	5755.0857
	5795	5795.7400	5795.9395	5795.3836	5795.4276
132	5755	5755.0264	5755.7780	5755.3803	5755.9090
	5795	5795.3962	5795.6399	5795.1468	5795.1679

<b>HT80 MHz</b>					
<b>Frequency stability versus Temp.</b>					
<b>Power Supply: AC 120V</b>					
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	5775.7172	5775.2855	5775.2801	5775.7666
-20	5775	5775.2179	5775.5497	5775.3453	5775.1968
-10	5775	5775.2648	5775.4985	5775.2557	5775.2255
0	5775	5775.2139	5775.8291	5775.7454	5775.8824
10	5775	5775.4328	5775.8100	5775.6456	5775.6037
20	5775	5775.4498	5775.8262	5775.2773	5775.0120
30	5775	5775.4822	5775.7777	5775.3039	5775.6226
40	5775	5775.6916	5775.6487	5775.0730	5775.1817
50	5775	5775.1504	5775.3781	5775.9677	5775.2752

<b>Frequency stability versus Voltage</b>					
<b>Temperature: 25°C</b>					
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)
108	5775	5775.9136	5775.1735	5775.0303	5775.0579
120	5775	5775.2574	5775.8137	5775.0161	5775.0370
132	5775	5775.9196	5775.9128	5775.2811	5775.0383

## 8 Test Setup Photo

Reference to the **appendix I** for details.

## 9 EUT Constructional Details

Reference to the **appendix II** for details.

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