TCT 通测检测 TESTING CENTRE TECHNOLOGY

TEST REPORT

FCC ID: 2AG86-SAU40T1

Product: WiFi Gateway Thermostat

Model No.: SAU40T1

Additional Model No.: ST910WZ, HHT10WZ, SAU41T1

Trade Mark: N/A

Report No.: TCT171017E040

Issued Date: Oct. 20, 2017

Issued for:

Salus North America, Inc.

850 Main Street, Redwood City, California 94063

Issued By:

Shenzhen Tongce Testing Lab.

1B/F., Building 1, Yibaolai Industrial Park, Qiaotou, Fuyong, Baoan District, Shenzhen, Guangdong, China

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Hotline: 400-6611-140 Tel: 86-755-27673339 Fax: 86-755-27673332 http://www.tct-lab.com

1. Test Certification

Product:	WiFi Gateway Thermostat
Model No.:	SAU40T1
Additional Model No.:	ST910WZ, HHT10WZ, SAU41T1
Trade Mark:	**N/A**
Applicant:	Salus North America, Inc.
Address:	850 Main Street, Redwood City, California 94063
Manufacturer:	Salus North America, Inc.
Address:	850 Main Street, Redwood City, California 94063
Factory 1:	Computime Electronics(shenzhen) Company Limited
Address of Factory 1:	Yuekenguangyu Industrial Park, kangqiao Road 88#, Danzhutou Community, Nanwan Street Office, Longgang District, Shenzhen 518114
Factory 2:	Asia Electronic Dongguan
Address of Factory 2:	Zhen'an Science and Technology Industrial Park, Chang'an Dongguan Guangdong, PRC
Date of Test:	Sep. 15, 2017 – Sep. 28, 2017
Applicable Standards:	FCC CFR Title 47 Part 15 Subpart C Section 15.247 KDB 558074 D01 DTS Meas Guidance v04

The above equipment has been tested by Shenzhen Tongce Testing Lab. and found compliance with the requirements set forth in the technical standards mentioned above. The results of testing in this report apply only to the product/system, which was tested. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.

Tested By:	Beryl Zhao	***Date:***	***Sep. 28, 2017***
	Beryl Zhao		
Reviewed By:	Joe Zhou	***Date:***	***Oct. 20, 2017***
	Joe Zhou		
Approved By:	Tomsin	***Date:***	***Oct. 20, 2017***
	Tomsin		

SHENZHEN TONGCE TESTING LAB TCT

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2. Test Result Summary

Requirement	CFR 47 Section	Result
Antenna requirement	§15.203/§15.247 (c)	PASS
AC Power Line Conducted Emission	§15.207	PASS
Conducted Peak Output Power	§15.247 (b)(3) §2.1046	PASS
6dB Emission Bandwidth	§15.247 (a)(2) §2.1049	PASS
Power Spectral Density	§15.247 (e)	PASS
Band Edge	1§5.247(d) §2.1051, §2.1057	PASS
Spurious Emission	§15.205/§15.209 §2.1053, §2.1057	PASS

Note:

1. PASS: Test item meets the requirement.

2. Fail: Test item does not meet the requirement.

3. N/A: Test case does not apply to the test object.

4. The test result judgment is decided by the limit of test standard.

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3. EUT Description

Product:	WiFi Gateway Thermostat
Model No.:	SAU40T1
Additional Model No.:	ST910WZ, HHT10WZ, SAU41T1
Trade Mark:	**N/A**
Operation Frequency:	2412MHz~2462MHz (802.11b/802.11g/802.11n(HT20))
Channel Separation:	5MHz
Number of Channel:	11 for 802.11b/802.11g/802.11n(HT20)
Modulation Technology: (IEEE 802.11b)	Direct Sequence Spread Spectrum (DSSS)
Modulation Technology: (IEEE 802.11g/802.11n)	Orthogonal Frequency Division Multiplexing(OFDM)
Data speed (IEEE 802.11b):	1Mbps, 2Mbps, 5.5Mbps, 11Mbps
Data speed (IEEE 802.11g):	6Mbps, 9Mbps, 12Mbps, 18Mbps, 24Mbps, 36Mbps, 48Mbps, 54Mbps
Data speed (IEEE 802.11n):	Up to 65Mbps
Antenna Type:	Integral Antenna
Antenna Gain:	5.2dBi
Power Supply:	AC 24V
Remark:	All above models are identical in the same PCB layout, interior structure and electrical circuits. The only differences are the model name and color for commercial purpose.

Operation Frequency each of channel For 802.11b/g/n(HT20)

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
1	2412MHz	4	2427MHz	7	2442MHz	10	2457MHz
2	2417MHz	5	2432MHz	8	2447MHz	11	2462MHz
3	2422MHz	6	2437MHz	9	2452MHz		

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:

802.11b/802.11g/802.11n (HT20)

Channel	Frequency
The lowest channel	2412MHz
The middle channel	2437MHz
The Highest channel	2462MHz

4. Genera Information

4.1. Test environment and mode

Operating Environment:	
Temperature:	25.0 °C
Humidity:	56 % RH
Atmospheric Pressure:	1010 mbar
Test Mode:	
Engineering mode:	Keep the EUT in continuous transmitting by select channel and modulations(The value of duty cycle is 98.46%)
The sample was placed (0.8m below 1GHz, 1.5m above 1GHz) above the ground plane of 3m chamber. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating the turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The emissions worst-case are shown in Test Results of the following pages. For the full battery state and The output power to the maximum state.	

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
802.11b	1Mbps
802.11g	6Mbps
802.11n(H20)	6.5Mbps
Final Test Mode:	
Operation mode:	Keep the EUT in continuous transmitting with modulation

1. For WIFI function, the engineering test program was provided and enabled to make EUT continuous transmit/receive.

2.According to ANSI C63.10 standards, the test results are both the “worst case” and “worst setup” 1Mbps for 802.11b, 6Mbps for 802.11g, 6.5Mbps for 802.11n(H20). Duty cycle setting during the transmission is 98.5% with maximum power setting for all

modulations.

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4.2. Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Equipment	Model No.	Serial No.	FCC ID	Trade Name
AC Adapter	AH66-2403AC	/	/	/

Note:

1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.

2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

3. For conducted measurements (Output Power, 6dB Emission Bandwidth, Power Spectral Density, Spurious Emissions), the antenna of EUT is connected to the test equipment via temporary antenna connector, the antenna connector is soldered on the antenna port of EUT, and the temporary antenna connector is listed in the Test Instruments.

5. Facilities and Accreditations

5.1. Facilities

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

- FCC - Registration No.: 645098

  Shenzhen Tongce Testing Lab

  The 3m Semi-anechoic chamber has been registered and fully described in a report with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files.

- IC - Registration No.: 10668A-1

  The 3m Semi-anechoic chamber of Shenzhen TCT Testing Technology Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing

5.2. Location

Shenzhen Tongce Testing Lab

Address: 1B/F., Building 1, Yibaolai Industrial Park, Qiaotou, Fuyong, Baoan District, Shenzhen, Guangdong, China

TEL: +86-755-27673339

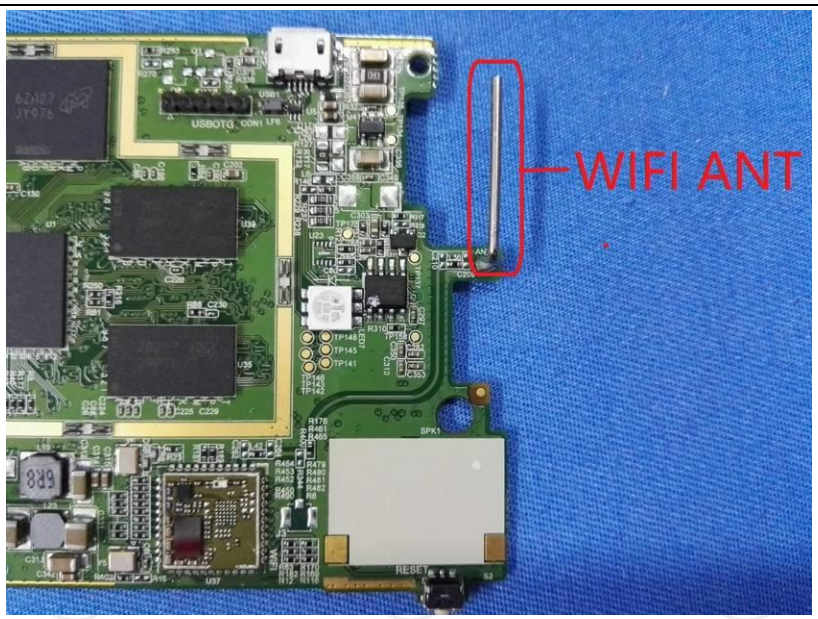
5.3. Measurement Uncertainty

The reported uncertainty of measurement y ± U, where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95 %.

No.	Item	MU
1	Conducted Emission	±2.56dB
2	RF power, conducted	±0.12dB
3	Spurious emissions, conducted	±0.11dB
4	All emissions, radiated(<1G)	±3.92dB
5	All emissions, radiated(>1G)	±4.28dB
6	Temperature	±0.1°C
7	Humidity	±1.0%

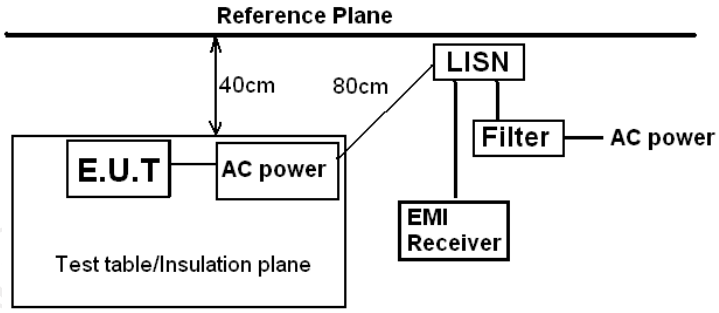
6. Test Results and Measurement Data

6.1. Antenna requirement

Standard requirement:	FCC Part15 C Section 15.203 /247(c)
15.203 requirement: An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. 15.247(c) (1)(i) requirement: (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.	
E.U.T Antenna:	
The WIFI antenna is an integral antenna which permanently attached, and the best case gain of the antenna is 5.2dBi.	
	

6.2. Conducted Emission

6.2.1. Test Specification

<table>
<tr><td>Test Requirement:</td><td>FCC Part15 C Section 15.207</td></tr>
<tr><td>Test Method:</td><td>ANSI C63.10:2013</td></tr>
<tr><td>Frequency Range:</td><td>150 kHz to 30 MHz</td></tr>
<tr><td>Receiver setup:</td><td>RBW=9 kHz, VBW=30 kHz, Sweep time=auto</td></tr>
<tr><td>Limits:</td><td>
<table>
<tr><td rowspan="2">Frequency range (MHz)</td><td colspan="2">Limit (dBuV)</td></tr>
<tr><td>Quasi-peak</td><td>Average</td></tr>
<tr><td>0.15-0.5</td><td>66 to 56*</td><td>56 to 46*</td></tr>
<tr><td>0.5-5</td><td>56</td><td>46</td></tr>
<tr><td>5-30</td><td>60</td><td>50</td></tr>
</table>
</td></tr>
<tr><td>Test Setup:</td><td>


Remark:
E.U.T: Equipment Under Test
LISN: Line Impedence Stabilization Network
Test table height=0.8m
</td></tr>
<tr><td>Test Mode:</td><td>Charging + transmitting with modulation</td></tr>
<tr><td>Test Procedure:</td><td>1. The E.U.T is 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.</td></tr>
<tr><td>Test Result:</td><td>PASS</td></tr>
</table>

6.2.2. Test Instruments

Conducted Emission Shielding Room Test Site (843)				
Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Due**
Test Receiver	R&S	ESPI	101401	Jun. 12, 2018
LISN	Schwarzbeck	NSLK 8126	8126453	Sep. 27, 2018
Coax cable (9KHz-30MHz)	TCT	CE-05	N/A	Sep. 27, 2018
EMI Test Software	Shurple Technology	EZ-EMC	N/A	N/A

Note: *The calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).*

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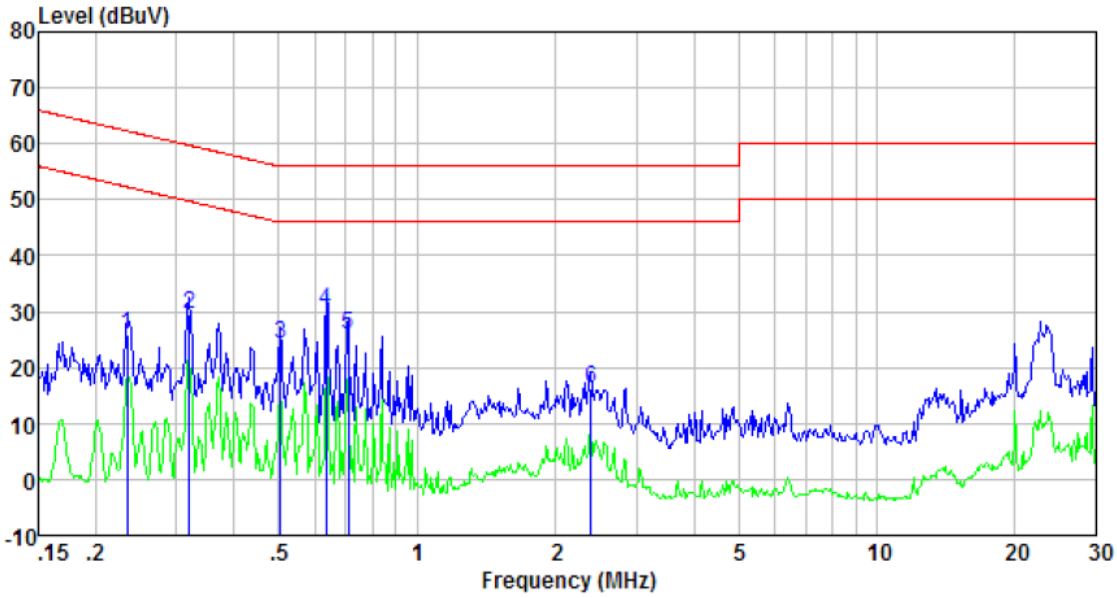
6.2.3. Test data

Please refer to following diagram for individual

Conducted Emission on Line Terminal of the power line (150 kHz to 30MHz)

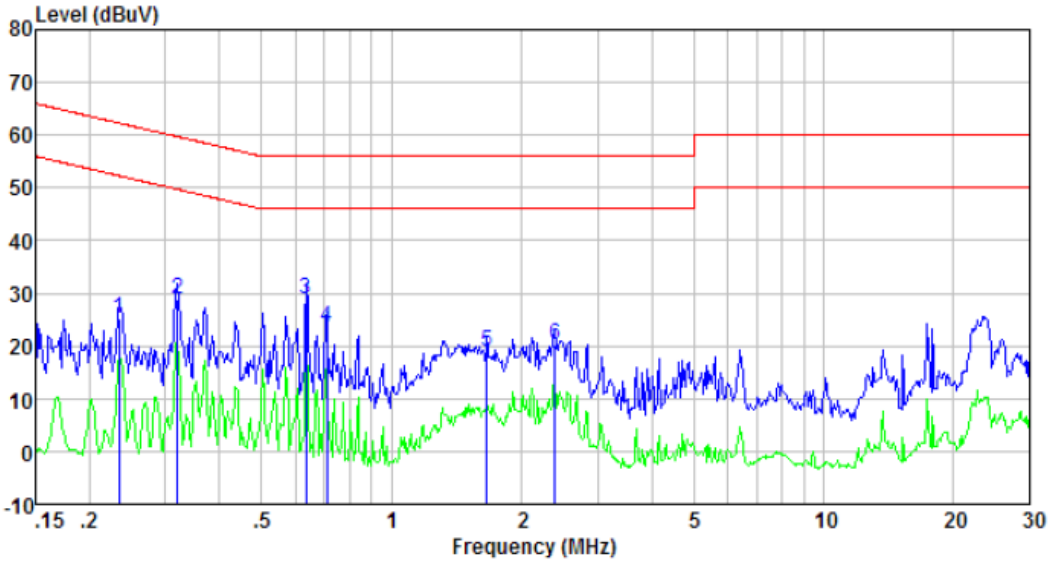


Freq MHz	Reading level dBuV	lISN/ISN factor dB	Cable loss dB	level dBuV	Limit level dBuV	Over limit dB	Remark
0.234	25.37	0.43	0.12	25.92	62.30	-36.38	QP
0.320	29.07	0.44	0.10	29.61	59.71	-30.10	QP
0.505	23.81	0.38	0.11	24.30	56.00	-31.70	QP
0.634	29.90	0.30	0.13	30.33	56.00	-25.67	QP
0.708	25.38	0.28	0.13	25.79	56.00	-30.21	QP
2.384	15.89	0.20	0.15	16.24	56.00	-39.76	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.*

Conducted Emission on Neutral Terminal of the power line (150 kHz to 30MHz)



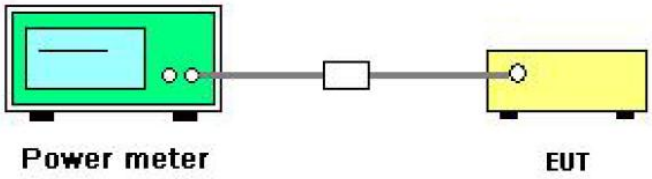
Freq MHz	Reading level dBuV	lISN/ISN factor dB	Cable loss dB	level dBuV	Limit level dBuV	Over limit dB	Remark
0.234	24.60	0.42	0.12	25.14	62.30	-37.16	QP
0.320	28.40	0.42	0.10	28.92	59.71	-30.79	QP
0.634	28.45	0.26	0.13	28.84	56.00	-27.16	QP
0.708	23.17	0.24	0.13	23.54	56.00	-32.46	QP
1.662	18.51	0.20	0.14	18.85	56.00	-37.15	QP
2.384	19.85	0.20	0.15	20.20	56.00	-35.80	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.*

6.2.4. Maximum Conducted Output Power

6.2.5. Test Specification

Test Requirement:	FCC Part15 C Section 15.247 (b)(3)
Test Method:	KDB 558074
Limit:	30dBm
Test Setup:	
Test Mode:	Transmitting mode with modulation
Test Procedure:	1. The testing follows the Measurement Procedure of FCC KDB No. 558074 DTS D01 Meas. Guidance v04. 2. The RF output of EUT was connected to the power meter by RF cable and attenuator. The path loss was compensated to the results for each measurement. 3. Set to the maximum power setting and enable the EUT transmit continuously. 4. Measure the Peak output power and record the results in the test report.
Test Result:	PASS

6.2.6. Test Instruments

Equipment	Manufacturer	Model	Serial Number	Calibration Due
Power Meter	Anritsu	ML2495A	1005002	Sep. 27, 2018
Pulse Power Senor	Anritsu	MA2411B	0917070	Sep. 27, 2018
RF Cable (9KHz-26.5GHz)	TCT	RE-06	N/A	Sep. 27, 2018
Antenna Connector	TCT	RFC-01	N/A	Sep. 27, 2018

Note: *The calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).*

6.2.7. Test Data

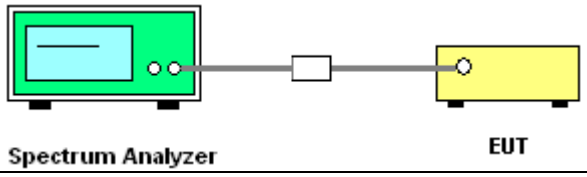
802.11b mode			
Test channel	Maximum Conducted Output Power (dBm)	Limit (dBm)	Result
Lowest	15.07	30.00	PASS
Middle	15.15	30.00	PASS
Highest	15.72	30.00	PASS

802.11g mode			
Test channel	Maximum Conducted Output Power (dBm)	Limit (dBm)	Result
Lowest	13.64	30.00	PASS
Middle	13.57	30.00	PASS
Highest	13.63	30.00	PASS

802.11n(H20) mode			
Test channel	Maximum Conducted Output Power (dBm)	Limit (dBm)	Result
Lowest	13.45	30.00	PASS
Middle	13.45	30.00	PASS
Highest	13.07	30.00	PASS

6.3. Emission Bandwidth

6.3.1. Test Specification

Test Requirement:	FCC Part15 C Section 15.247 (a)(2)
Test Method:	KDB 558074
Limit:	>500kHz
Test Setup:	
Test Mode:	Transmitting mode with modulation
Test Procedure:	1. The testing follows FCC KDB Publication No. 558074 DTS D01 Meas. Guidance v04. 2. Set to the maximum power setting and enable the EUT transmit continuously. 3. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 kHz. Set the Video bandwidth (VBW) = 300 kHz. In order to make an accurate measurement. The 6dB bandwidth must be greater than 500 kHz. 4. Measure and record the results in the test report.
Test Result:	PASS

6.3.2. Test Instruments

RF Test Room				
Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Due**
Spectrum Analyzer	Agilent	N9020A	MY49100060	Sep. 27, 2018
RF Cable (9KHz-26.5GHz)	TCT	RE-06	N/A	Sep. 27, 2018
Antenna Connector	TCT	RFC-01	N/A	Sep. 27, 2018

Note: *The calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).*

6.3.3. Test data

Test channel	6dB Emission Bandwidth (MHz)		
	802.11b	802.11g	802.11n(H20)
Lowest	8.568	15.317	15.022
Middle	7.627	15.457	16.992
Highest	6.878	15.921	14.950
Limit:	>500k		
Test Result:	PASS		

Test plots as follows:

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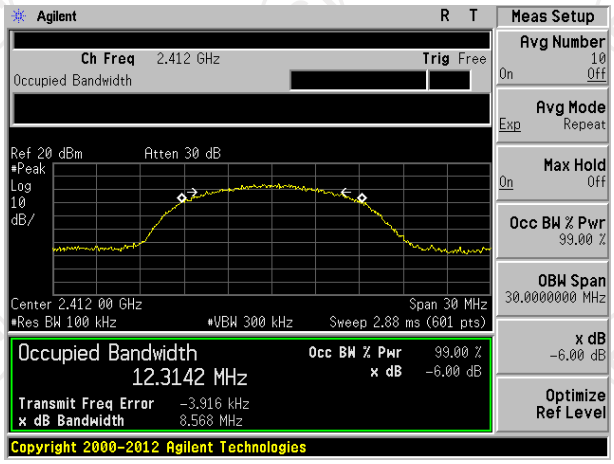
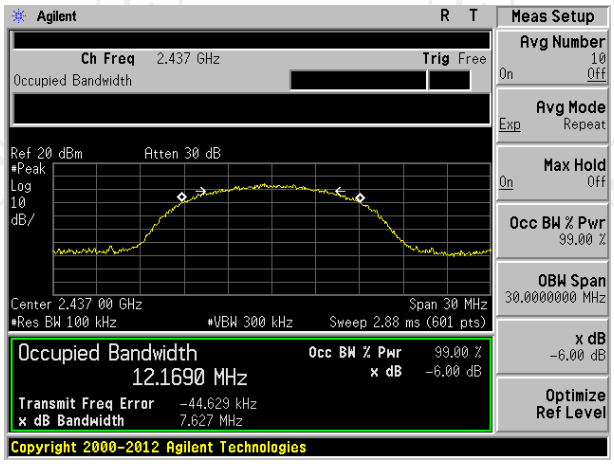
802.11b Modulation

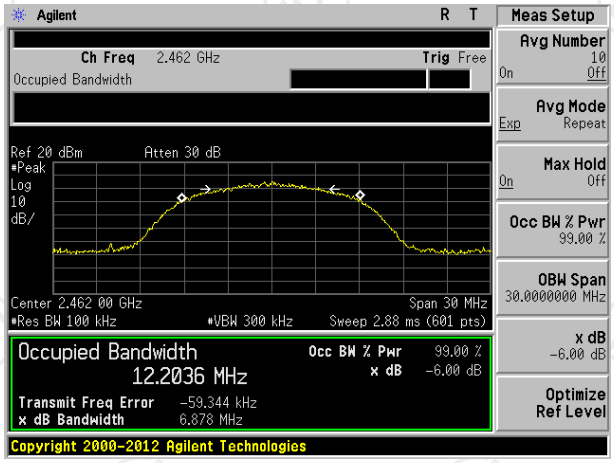
Lowest channel



Middle channel

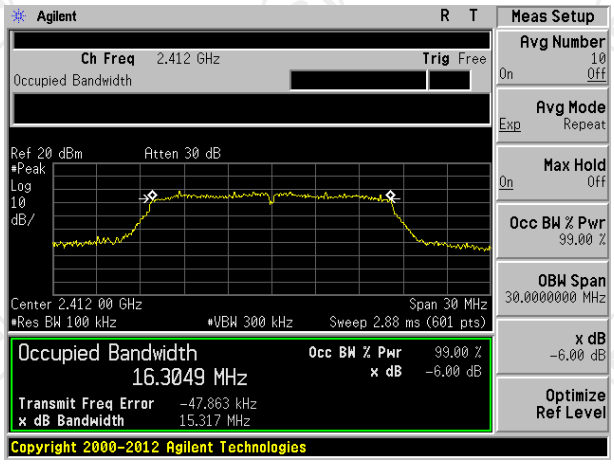


Highest channel

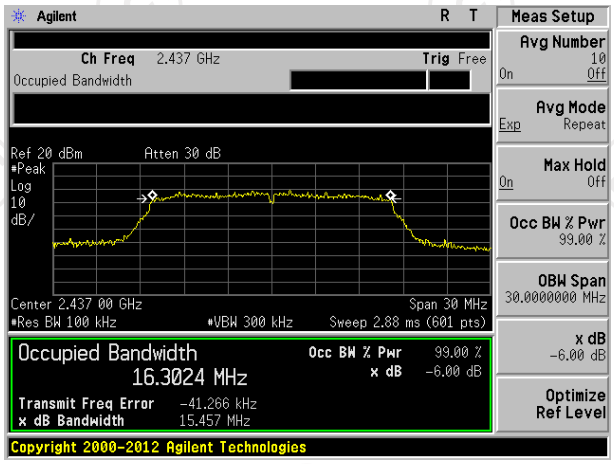


802.11g Modulation

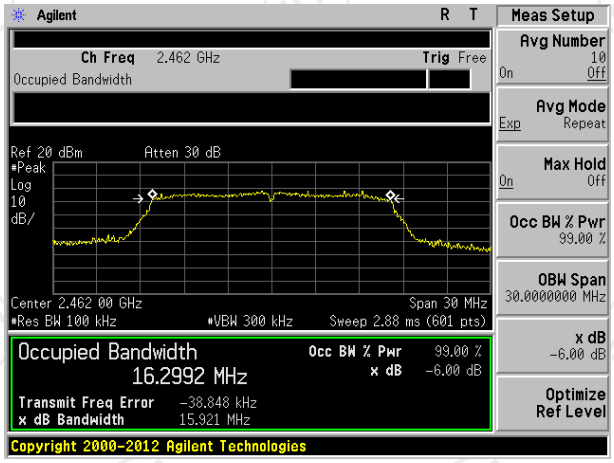
Lowest channel



Middle channel

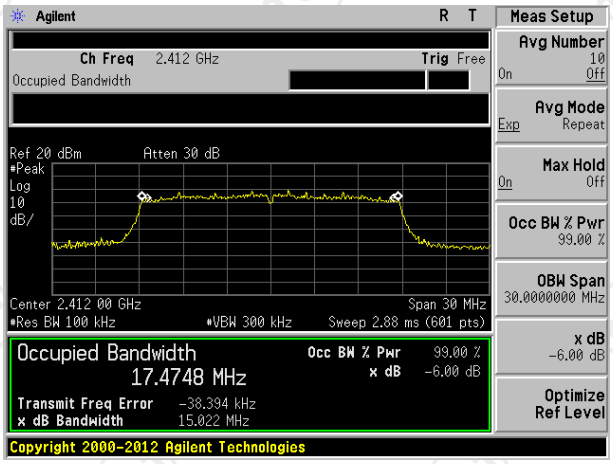


Highest channel

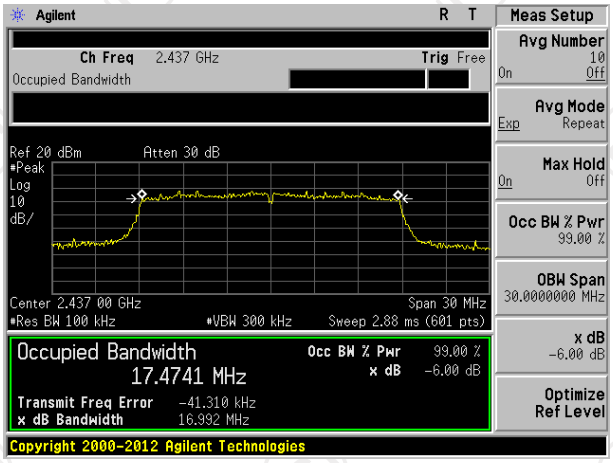


802.11n (HT20) Modulation

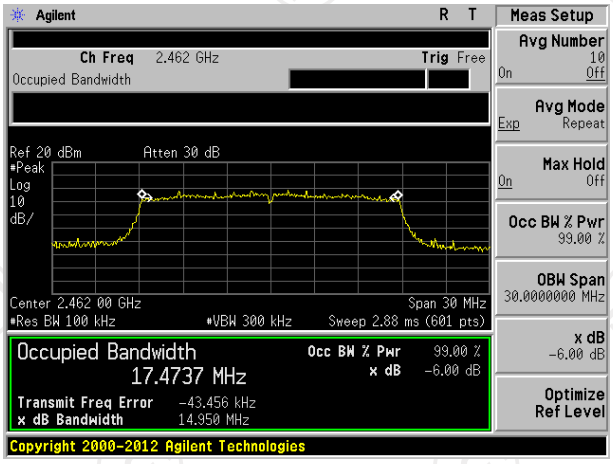
Lowest channel



Middle channel

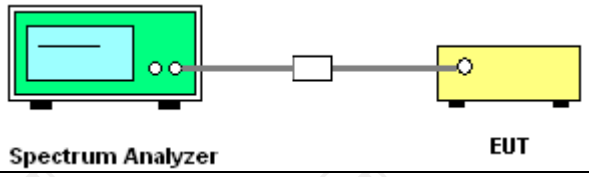


Highest channel



6.4. Power Spectral Density

6.4.1. Test Specification

Test Requirement:	FCC Part15 C Section 15.247 (e)
Test Method:	KDB 558074
Limit:	The average power spectral density shall not be greater than 8dBm in any 3kHz band at any time interval of continuous transmission.
Test Setup:	
Test Mode:	Transmitting mode with modulation
Test Procedure:	1. The testing follows Measurement Procedure 10.3 Method AVGPSD of FCC KDB Publication No.558074 D01 DTS Meas. Guidance v04 2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement. 3. Set to the maximum power setting and enable the EUT transmit continuously. 4. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW): 3 kHz ≤ RBW ≤ 100 kHz. Video bandwidth VBW ≥ 3 x RBW. Set the span to at least 1.5 times the OBW. 5. Detector = RMS, Sweep time = auto couple. 6. Employ trace averaging (RMS) mode over a minimum of 100 traces. Use the peak marker function to determine the maximum power level. 6. Measure and record the results in the test report.
Test Result:	PASS

6.4.2. Test Instruments

RF Test Room				
Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Due**
Spectrum Analyzer	Agilent	N9020A	MY49100060	Sep. 27, 2018
RF Cable (9KHz-26.5GHz)	TCT	RE-06	N/A	Sep. 27, 2018
Antenna Connector	TCT	RFC-01	N/A	Sep. 27, 2018

Note: *The calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).*

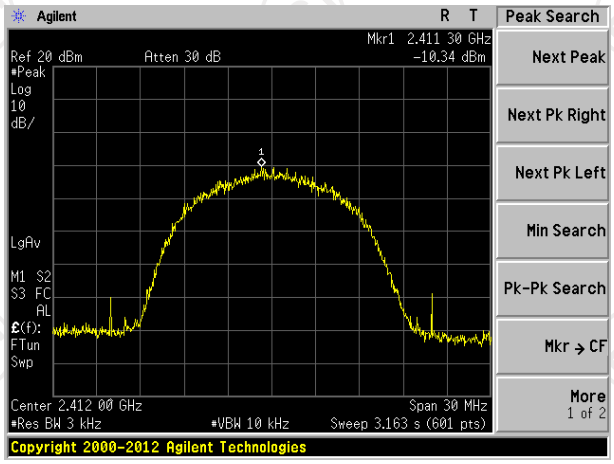
6.4.3. Test data

Test channel	PK Power Spectral Density (dBm/3kHz)		
	802.11b	802.11g	802.11n(H20)
Lowest	-10.34	-14.42	-15.10
Middle	-11.81	-13.84	-14.93
Highest	-11.01	-14.56	-15.27
Limit:	8dBm/3kHz		
Test Result:	PASS		

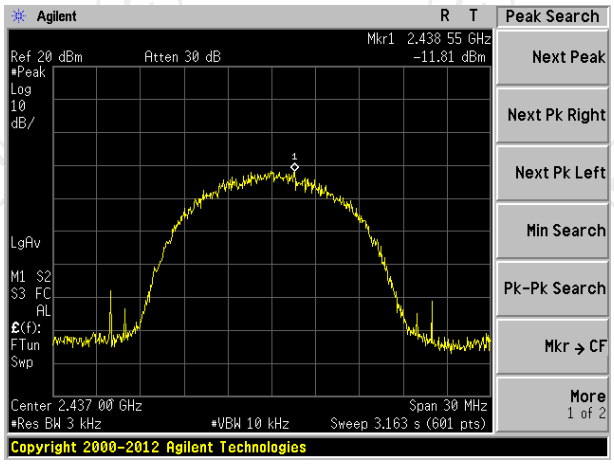
Test plots as follows:

802.11b Modulation

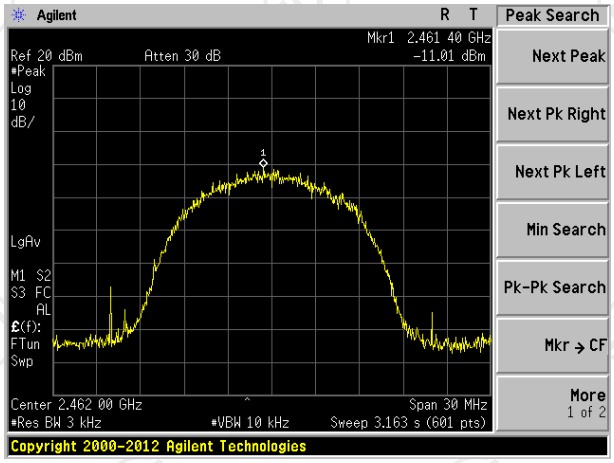
Lowest channel



Middle channel

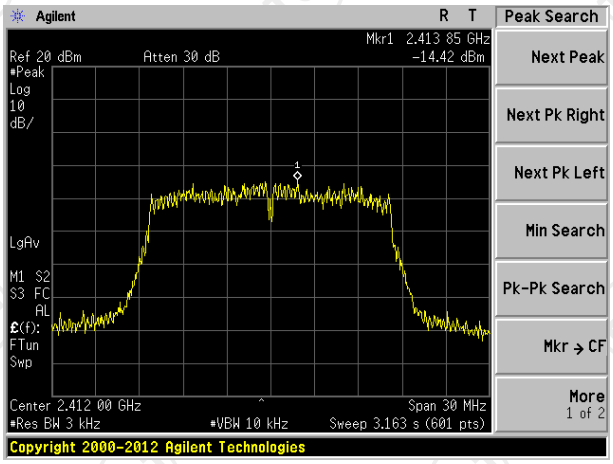


Highest channel

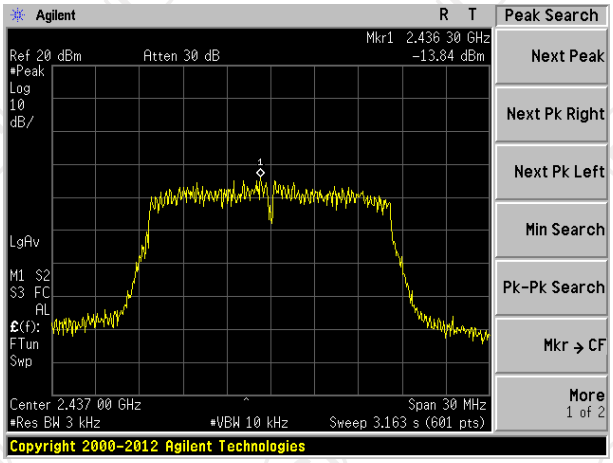


802.11g Modulation

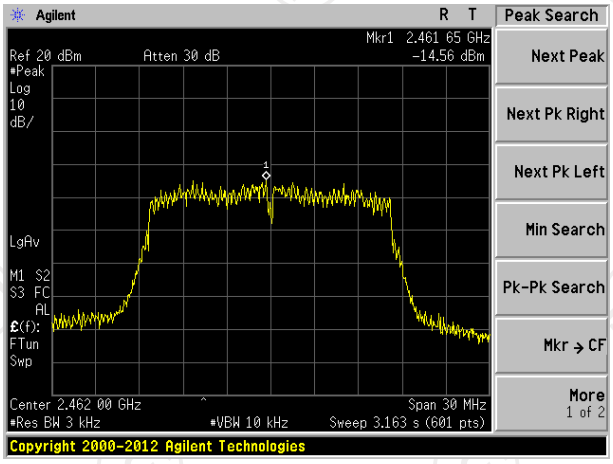
Lowest channel



Middle channel

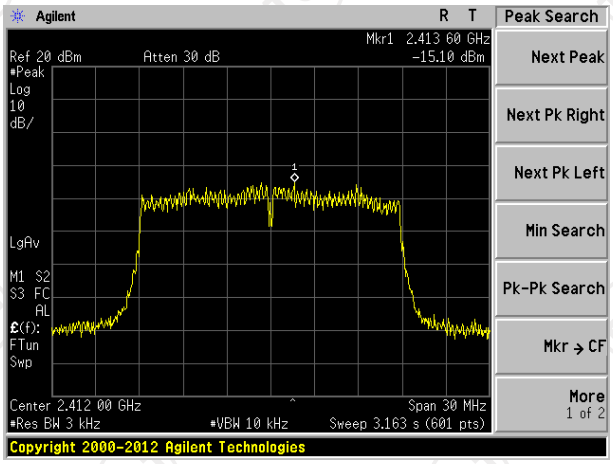


Highest channel

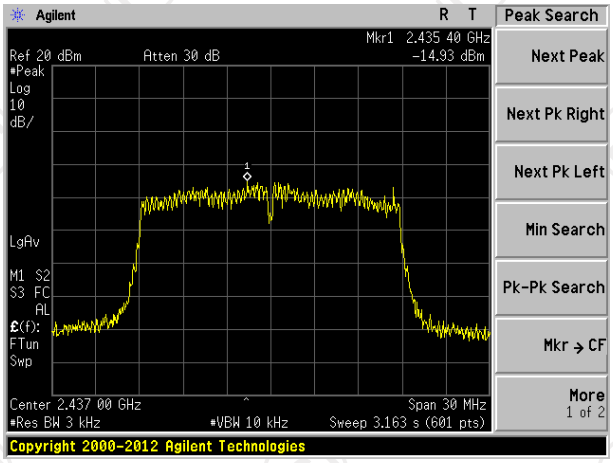


802.11n (HT20) Modulation

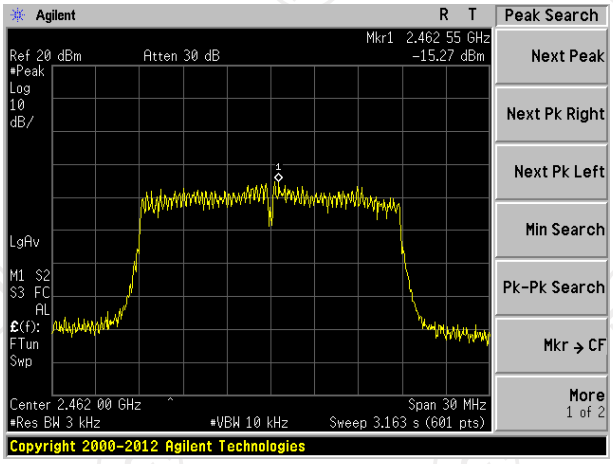
Lowest channel



Middle channel



Highest channel



6.5. Conducted Band Edge and Spurious Emission Measurement

6.5.1. Test Specification

Test Requirement:	FCC Part15 C Section 15.247 (d)
Test Method:	KDB558074
Limit:	In any 100 kHz bandwidth outside of the authorized frequency band, the emissions which fall in the non-restricted bands shall be attenuated at least 20 dB / 30dB relative to the maximum PSD level in 100 kHz by RF conducted measurement and radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a).
Test Setup:	
Test Mode:	Transmitting mode with modulation
Test Procedure:	1. The testing follows FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v04. 2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement. 3. Set to the maximum power setting and enable the EUT transmit continuously. 4. Set RBW = 100 kHz, VBW=300 kHz, Peak Detector. Unwanted Emissions measured in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz when maximum peak conducted output power procedure is used. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB per 15.247(d). 5. Measure and record the results in the test report. 6. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
Test Result:	PASS

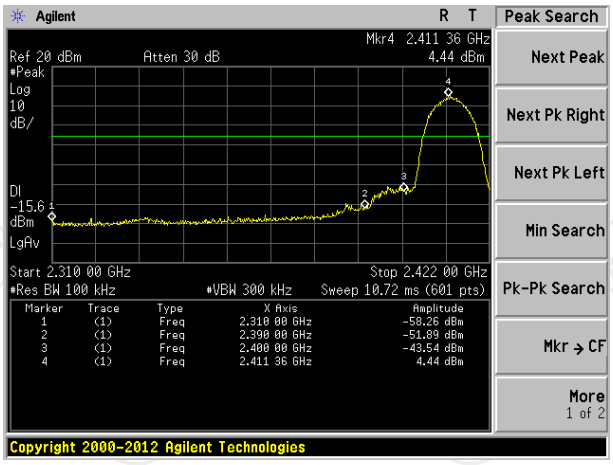
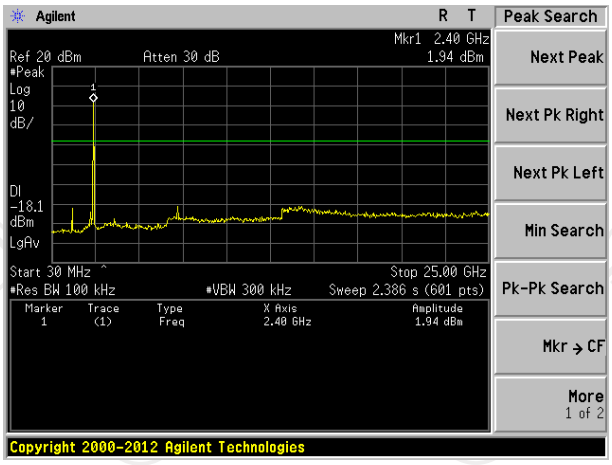
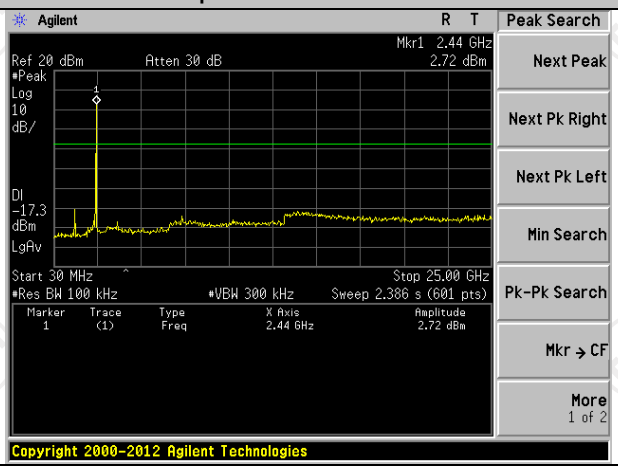
6.5.2. Test Instruments

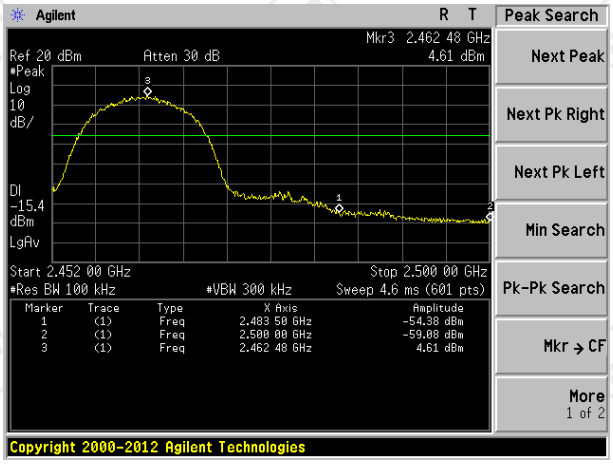
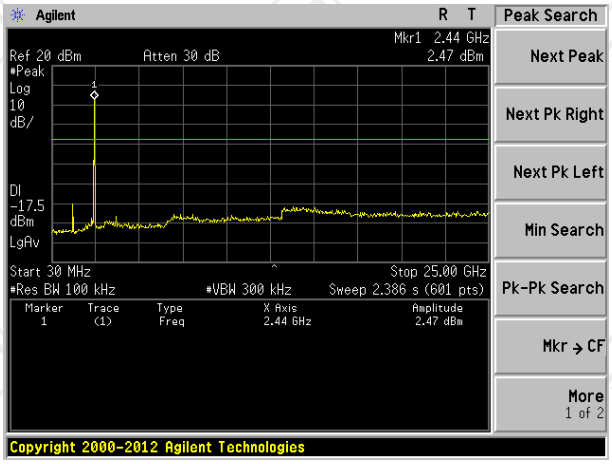
RF Test Room				
Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Due**
Spectrum Analyzer	Agilent	N9020A	MY49100060	Sep. 27, 2018
Spectrum Analyzer	ROHDE&SCHWARZ	FSQ	200061	Sep. 27, 2018
RF Cable (9KHz-26.5GHz)	TCT	RE-06	N/A	Sep. 27, 2018
Antenna Connector	TCT	RFC-01	N/A	Sep. 27, 2018

Note: *The calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).*

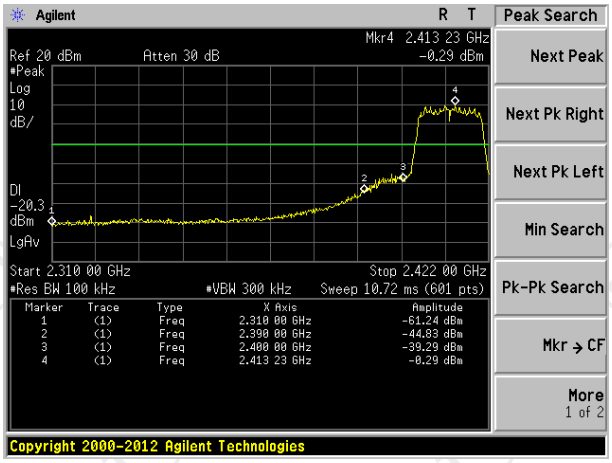
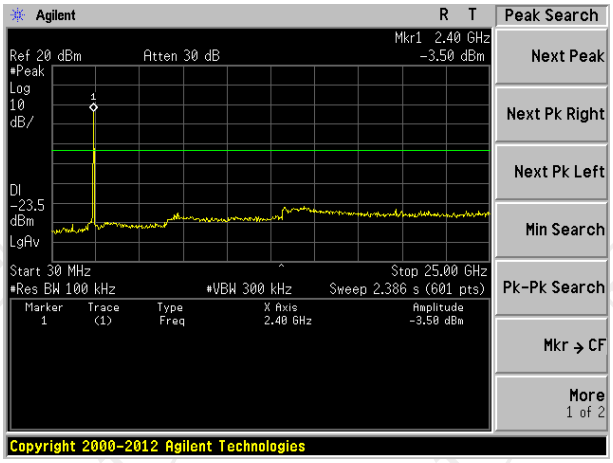
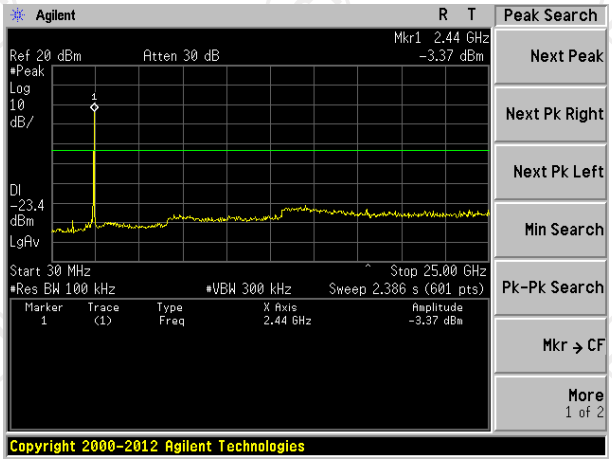
6.5.3. Test Data

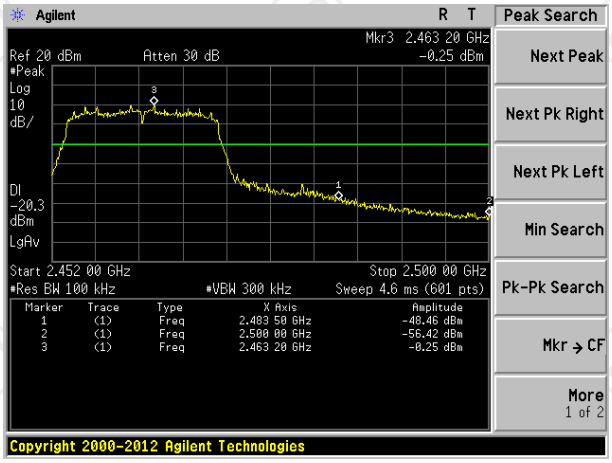
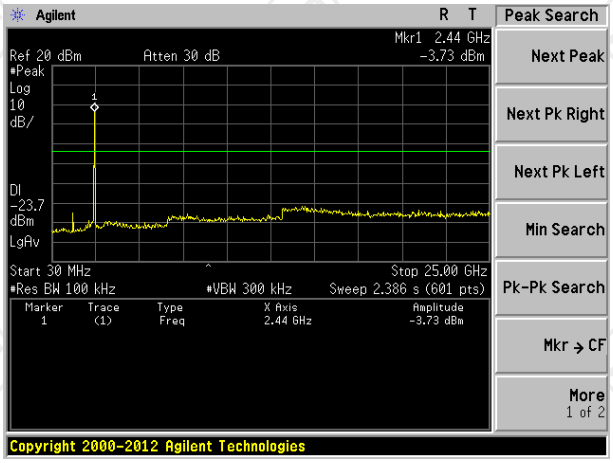
802.11b Modulation

Band Edge	Spurious emission
	
Lowest Channel	
Spurious emission	
	
Middle Channel	

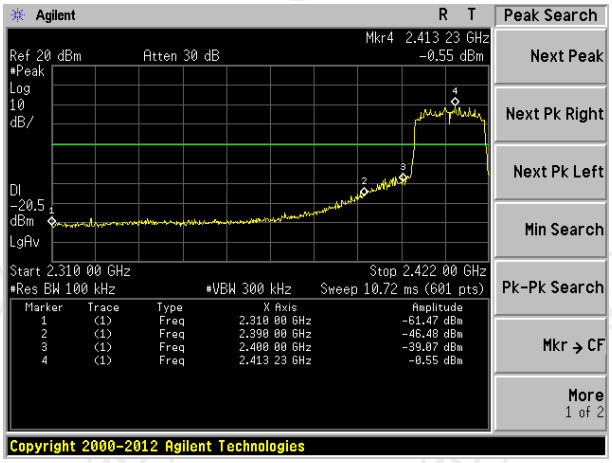
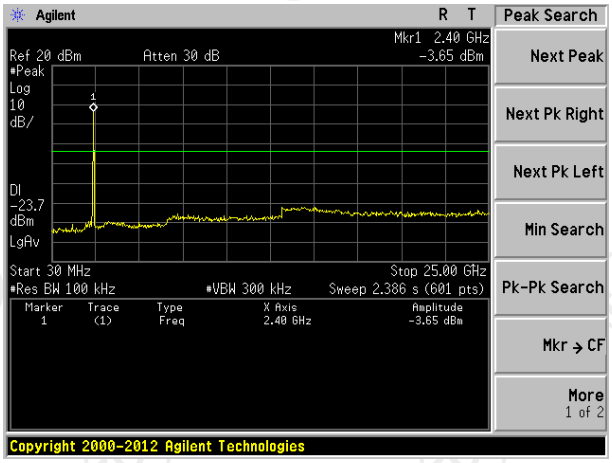
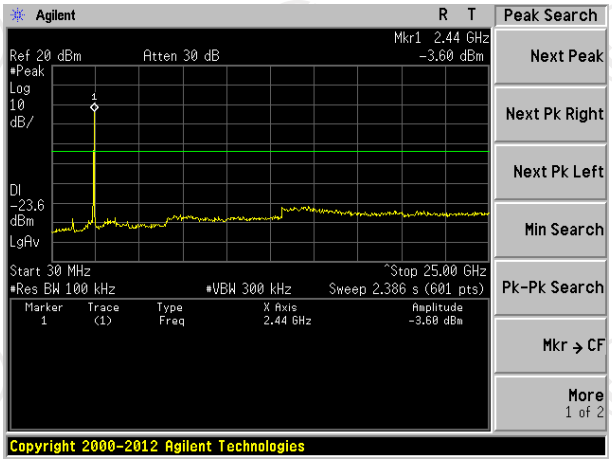
Band Edge	Spurious emission
	
Highest Channel	

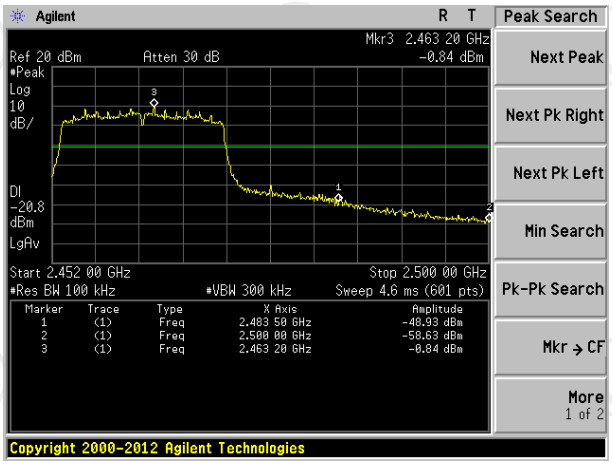
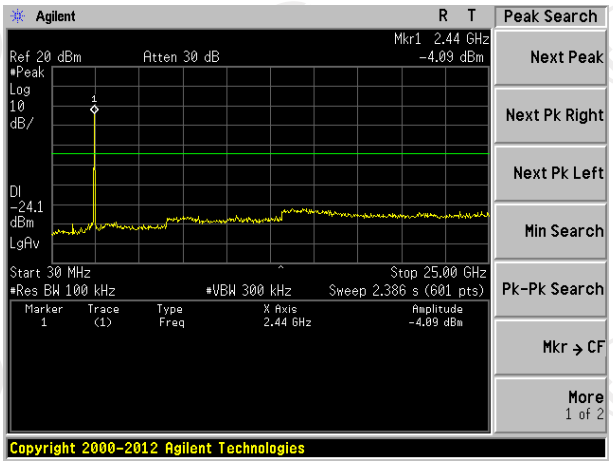
802.11g Modulation

Band Edge	Spurious emission
	
Lowest Channel	
Spurious emission	
	
Middle Channel	

Band Edge	Spurious emission
	
Highest Channel	

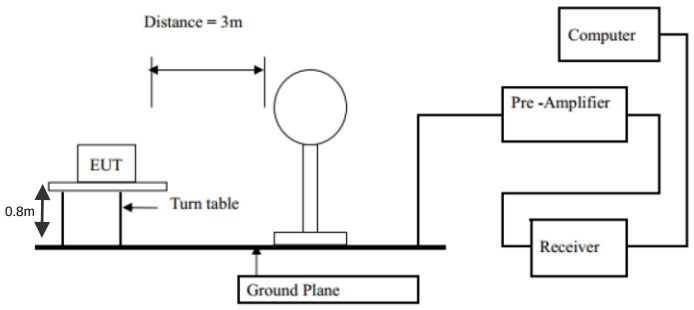
802.11n (HT20) Modulation

Band Edge	Spurious emission
	
Lowest Channel	
Spurious emission	
	
Middle Channel	

Band Edge	Spurious emission
	
Highest Channel	

6.6. Radiated Spurious Emission Measurement

6.6.1. Test Specification

<table>
<tr><td>Test Requirement:</td><td>FCC Part15 C Section 15.209</td></tr>
<tr><td>Test Method:</td><td>ANSI C63.10: 2013</td></tr>
<tr><td>Frequency Range:</td><td>9 kHz to 25 GHz</td></tr>
<tr><td>Measurement Distance:</td><td>3 m</td></tr>
<tr><td>Antenna Polarization:</td><td>Horizontal & Vertical</td></tr>
<tr><td>Operation mode:</td><td>Transmitting mode with modulation</td></tr>
<tr><td>Receiver Setup:</td><td>
<table>
<tr><td>Frequency</td><td>Detector</td><td>RBW</td><td>VBW</td><td>Remark</td></tr>
<tr><td>9kHz- 150kHz</td><td>Quasi-peak</td><td>200Hz</td><td>1kHz</td><td>Quasi-peak Value</td></tr>
<tr><td>150kHz-30MHz</td><td>Quasi-peak</td><td>9kHz</td><td>30kHz</td><td>Quasi-peak 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>Peak</td><td>1MHz</td><td>10Hz</td><td>Average Value</td></tr>
</table>
</td></tr>
<tr><td>Limit:</td><td>
<table>
<tr><td>Frequency</td><td>Field Strength (microvolts/meter)</td><td>Measurement Distance (meters)</td></tr>
<tr><td>0.009-0.490</td><td>2400/F(KHz)</td><td>300</td></tr>
<tr><td>0.490-1.705</td><td>24000/F(KHz)</td><td>30</td></tr>
<tr><td>1.705-30</td><td>30</td><td>30</td></tr>
<tr><td>30-88</td><td>100</td><td>3</td></tr>
<tr><td>88-216</td><td>150</td><td>3</td></tr>
<tr><td>216-960</td><td>200</td><td>3</td></tr>
<tr><td>Above 960</td><td>500</td><td>3</td></tr>
</table>
<table>
<tr><td>Frequency</td><td>Field Strength (microvolts/meter)</td><td>Measurement Distance (meters)</td><td>Detector</td></tr>
<tr><td rowspan="2">Above 1GHz</td><td>500</td><td>3</td><td>Average</td></tr>
<tr><td>5000</td><td>3</td><td>Peak</td></tr>
</table>
</td></tr>
<tr><td>Test setup:</td><td>For radiated emissions below 30MHz
 

30MHz to 1GHz</td></tr>
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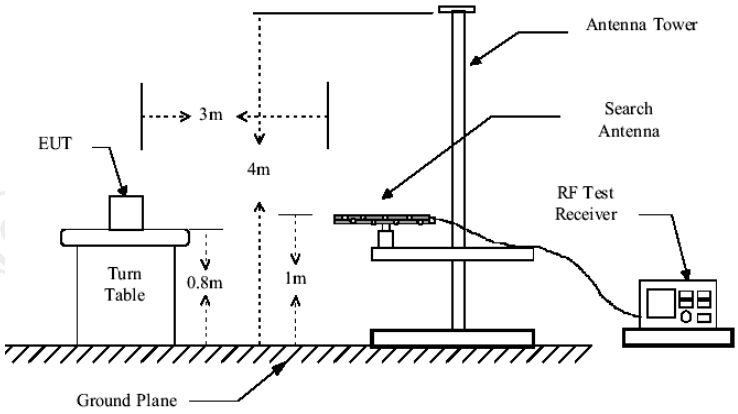
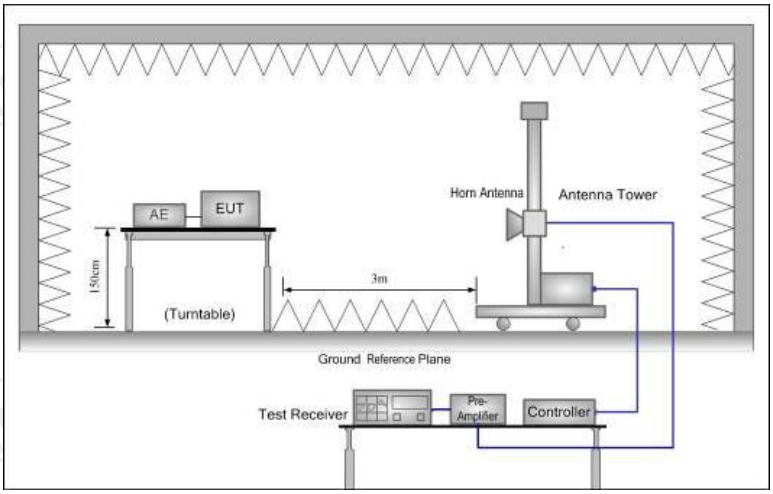


Above 1GHz



Test Procedure:

1. For the radiated emission test below 1GHz:
The EUT was placed on a turntable with 0.8 meter above ground. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high PASS filter are used for the test in order to get better signal level.
For the radiated emission test above 1GHz:
Place the measurement antenna on a turntable with 1.5 meter above ground, which is away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for

	receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane. 3. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level 4. For measurement below 1GHz, If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported. 5. Use the following spectrum analyzer settings: (1) Span shall wide enough to fully capture the emission being measured; (2) Set RBW=100 kHz for f < 1 GHz; VBW ≥RBW; Sweep = auto; Detector function = peak; Trace = max hold; (3) Set RBW = 1 MHz, VBW= 3MHz for f 1 GHz for peak measurement. For average measurement: VBW = 10 Hz, when duty cycle is no less than 98 percent. VBW ≥ 1/T, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.
Test results:	PASS

Hotline: 400-6611-140 Tel: 86-755-27673339 Fax: 86-755-27673332 http://www.tct-lab.com

6.6.2. Test Instruments

Radiated Emission Test Site (966)				
Name of Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Due**
Test Receiver	ROHDE&SCHWARZ	ESVD	100008	Sep. 27, 2018
Spectrum Analyzer	ROHDE&SCHWARZ	FSQ	200061	Sep. 27, 2018
Pre-amplifier	EM Electronics Corporation CO.,LTD	EM30265	07032613	Sep. 27, 2018
Pre-amplifier	HP	8447D	2727A05017	Sep. 27, 2018
Loop antenna	ZHINAN	ZN30900A	12024	Sep. 27, 2018
Broadband Antenna	Schwarzbeck	VULB9163	340	Sep. 27, 2018
Horn Antenna	Schwarzbeck	BBHA 9120D	631	Sep. 27, 2018
Horn Antenna	Schwarzbeck	BBH 9170	582	Jun. 07, 2018
Antenna Mast	Keleto	CC-A-4M	N/A	N/A
Coax cable (9KHz-1GHz)	TCT	RE-low-01	N/A	Sep. 27, 2018
Coax cable (9KHz-40GHz)	TCT	RE-high-02	N/A	Sep. 27, 2018
Coax cable (9KHz-1GHz)	TCT	RE-low-03	N/A	Sep. 27, 2018
Coax cable (9KHz-40GHz)	TCT	RE-high-04	N/A	Sep. 27, 2018
EMI Test Software	Shurple Technology	EZ-EMC	N/A	N/A

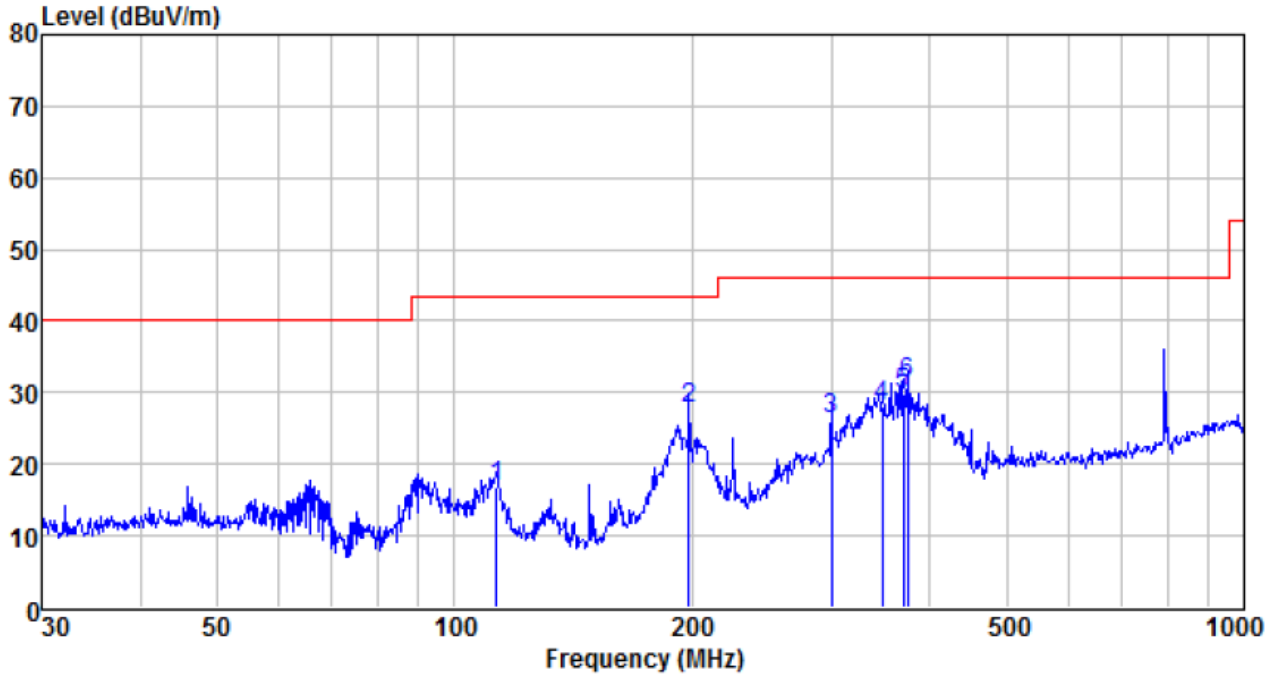
Note: *The calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).*

6.6.3. Test Data

Please refer to following diagram for individual

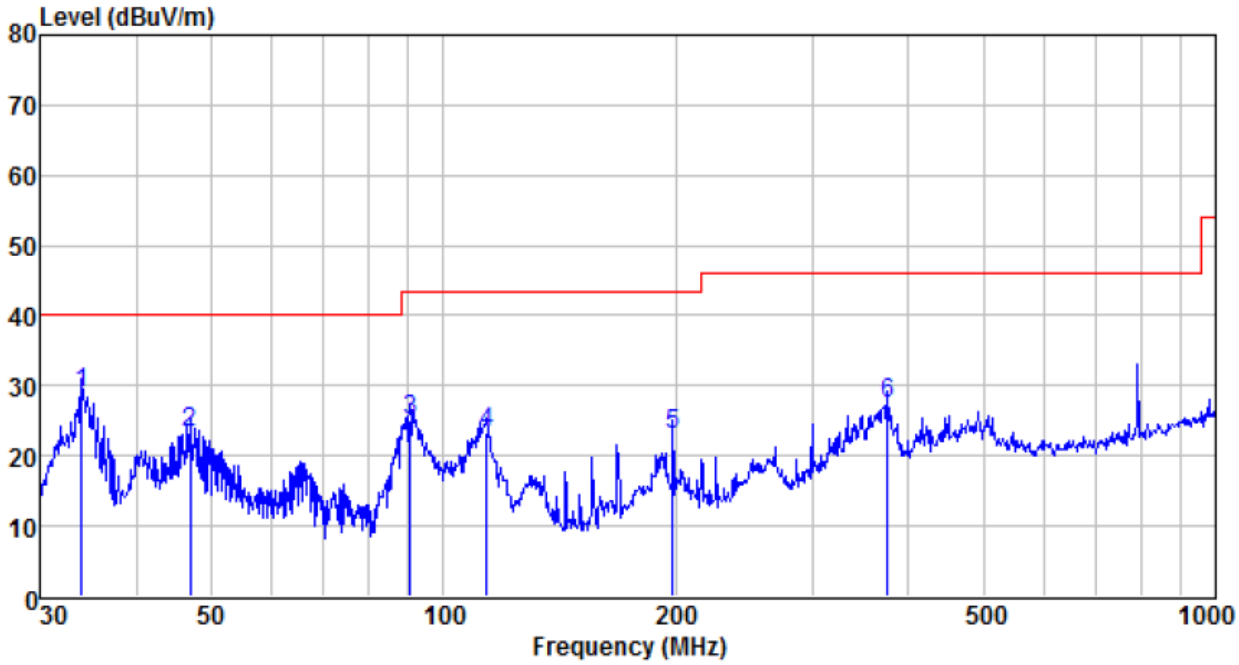
Below 1GHz

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
112.920	31.41	13.73	1.30	29.61	16.83	43.50	-26.67	QP
197.893	42.54	12.57	1.83	29.21	27.73	43.50	-15.77	QP
300.367	38.78	15.06	2.36	29.99	26.21	46.00	-19.79	QP
348.027	38.79	16.25	2.61	29.75	27.90	46.00	-18.10	QP
370.702	40.28	16.51	2.72	29.64	29.87	46.00	-16.13	QP
374.623	41.50	16.54	2.74	29.62	31.16	46.00	-14.84	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
34.037	44.18	14.31	0.60	30.08	29.01	40.00	-10.99	QP
46.995	37.21	15.44	0.74	30.01	23.38	40.00	-16.62	QP
90.537	39.71	14.07	1.11	29.74	25.15	43.50	-18.35	QP
113.714	38.07	13.63	1.31	29.61	23.40	43.50	-20.10	QP
197.893	37.95	12.57	1.83	29.21	23.14	43.50	-20.36	QP
375.939	37.61	16.56	2.75	29.61	27.31	46.00	-18.69	QP

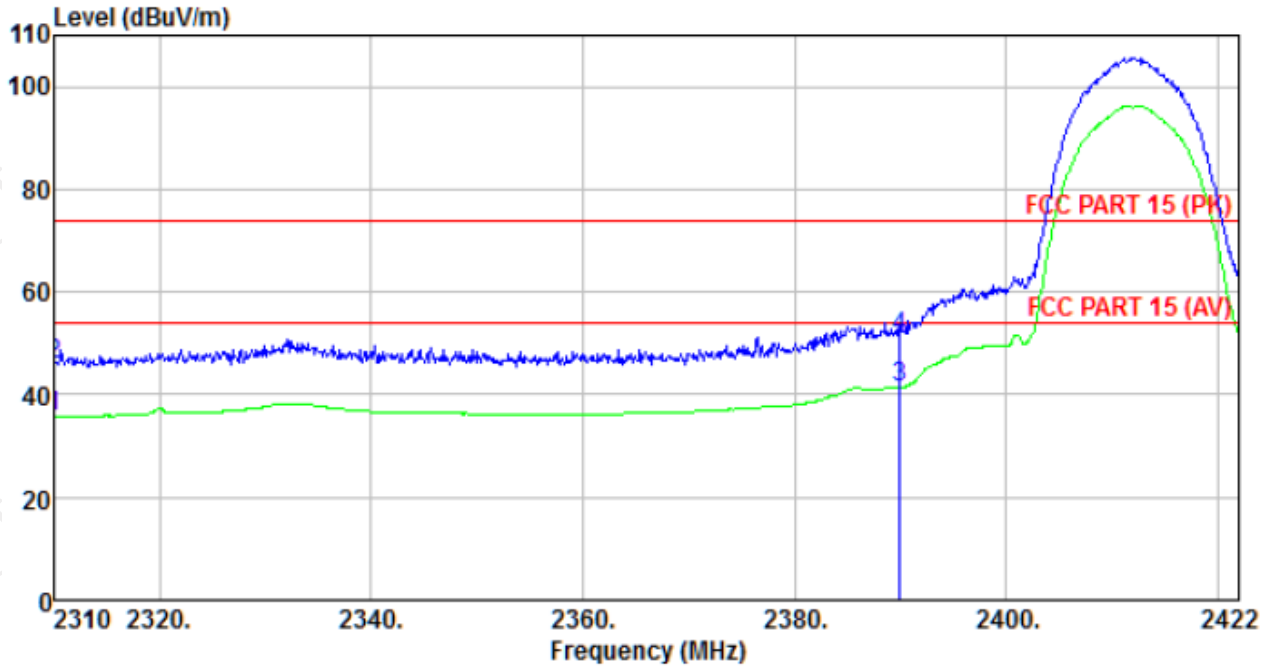
Note: *1.The low frequency, which started from 9KHz~30MHz, was pre-scanned and the result which was 20dB lower than the limit line per 15.31(o) was not reported*

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.

Band Edge

Test mode:	802.11b	Test channel:	Lowest

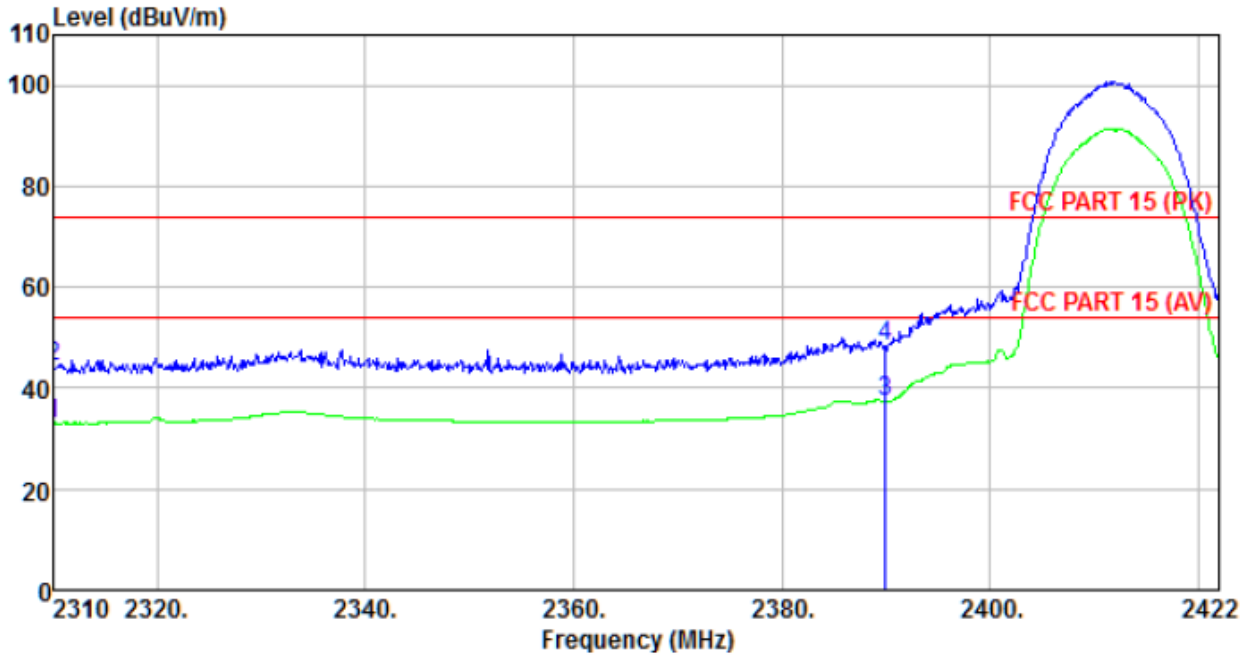
Horizontal:



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
2310.000	26.97	27.91	5.30	24.64	35.54	54.00	-18.46	Average
2310.000	37.39	27.91	5.30	24.64	45.96	74.00	-28.04	Peak
2390.000	33.17	27.59	5.38	24.71	41.43	54.00	-12.57	Average
2390.000	42.92	27.59	5.38	24.71	51.18	74.00	-22.82	Peak

Remarks:level = Reading level + Antenna factor + Cable loss - Preamp Factor

Vertical:

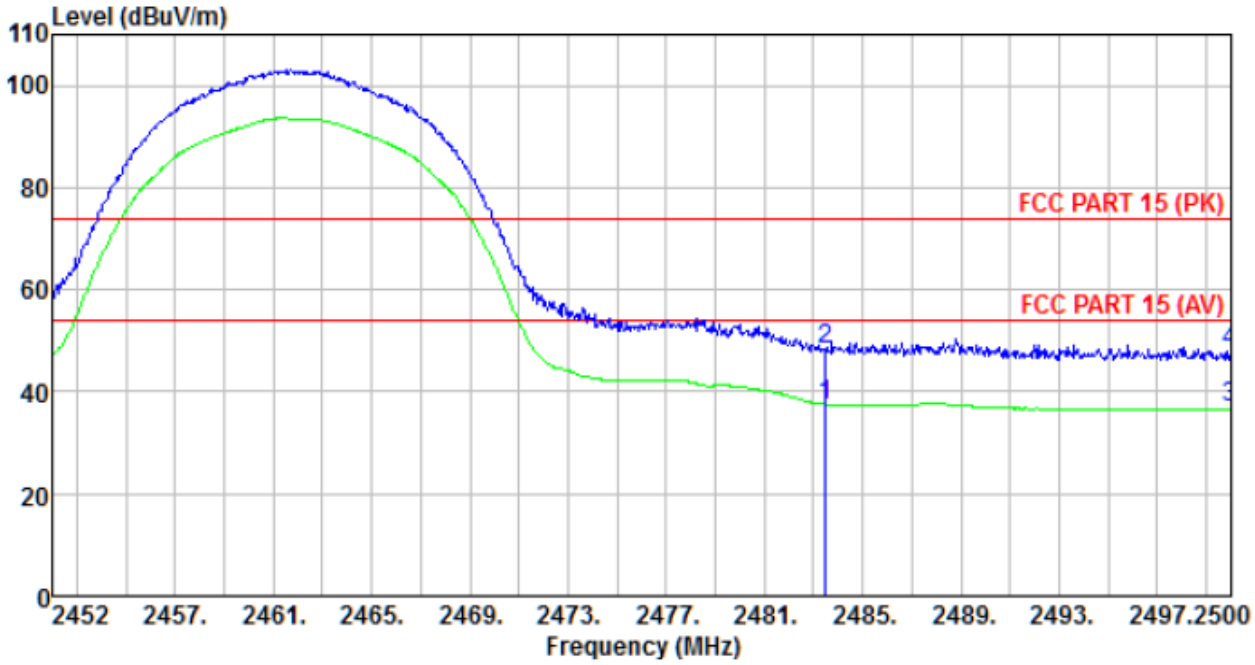


Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV	Limit level dBuV/m	Over limit dB	Remark
2310.000	24.16	27.91	5.30	24.64	32.73	54.00	-21.27	Average
2310.000	35.58	27.91	5.30	24.64	44.15	74.00	-29.85	Peak
2390.000	29.19	27.59	5.38	24.71	37.45	54.00	-16.55	Average
2390.000	39.93	27.59	5.38	24.71	48.19	74.00	-25.81	Peak

Remarks:level = Reading level + Antenna factor + Cable loss - Preamp Factor

Test mode:	802.11b	Test channel:	Highest

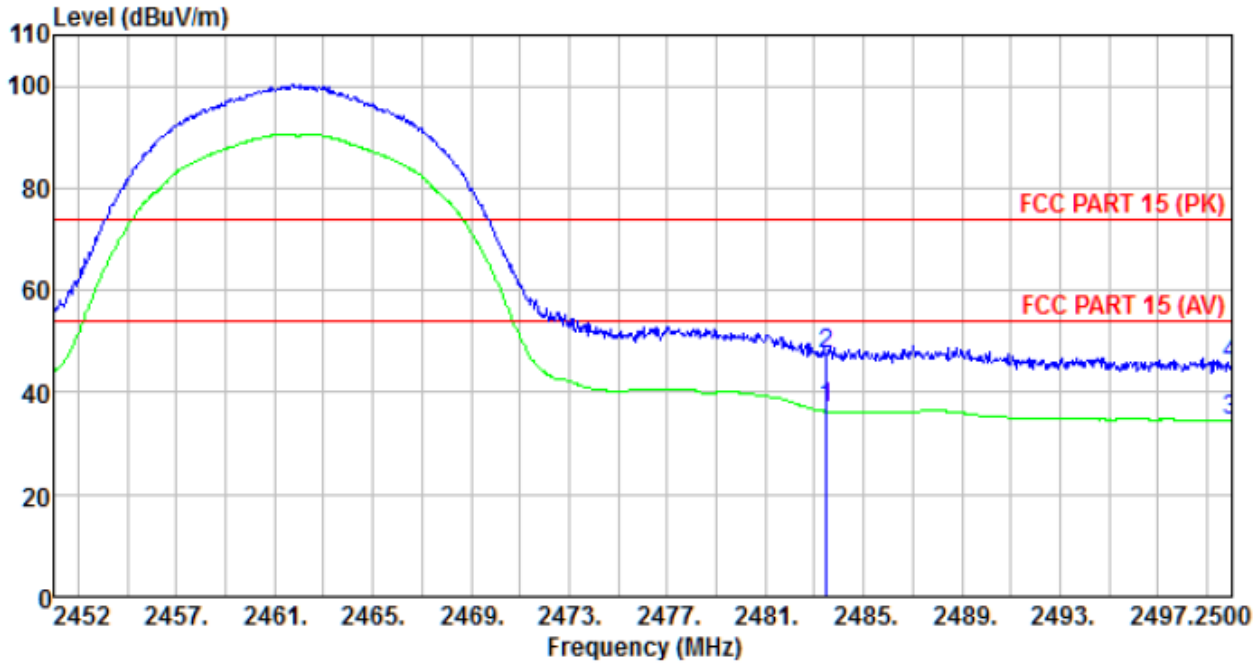
Horizontal:



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
2483.500	29.23	27.53	5.47	24.80	37.43	54.00	-16.57	Average
2483.500	40.03	27.53	5.47	24.80	48.23	74.00	-25.77	Peak
2500.000	28.88	27.55	5.49	24.86	37.06	54.00	-16.94	Average
2500.000	39.71	27.55	5.49	24.86	47.89	74.00	-26.11	Peak

Remarks:level = Reading level + Antenna factor + Cable loss - Preamp Factor

Vertical:

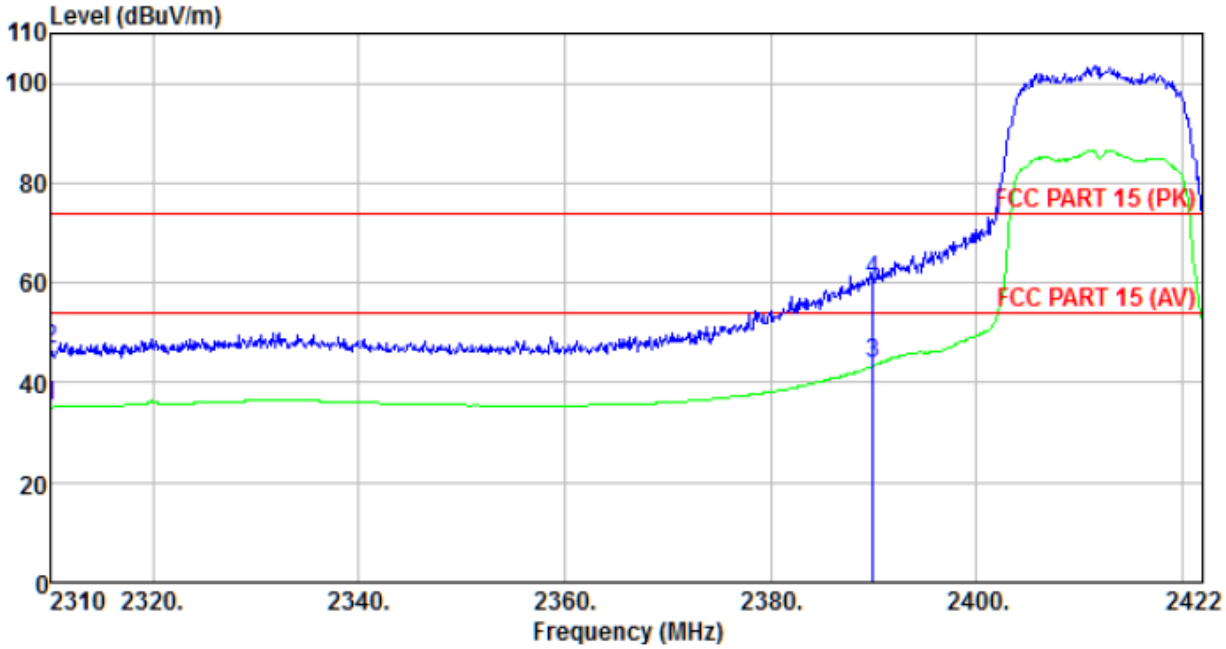


Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV	Limit level dBuV/m	Over limit dB	Remark
2483.500	28.61	27.53	5.47	24.80	36.81	54.00	-17.19	Average
2483.500	39.41	27.53	5.47	24.80	47.61	74.00	-26.39	Peak
2500.000	26.52	27.55	5.49	24.86	34.70	54.00	-19.30	Average
2500.000	37.35	27.55	5.49	24.86	45.53	74.00	-28.47	Peak

Remarks:level = Reading level + Antenna factor + Cable loss - Preamp Factor

Test mode:	802.11g	Test channel:	Lowest

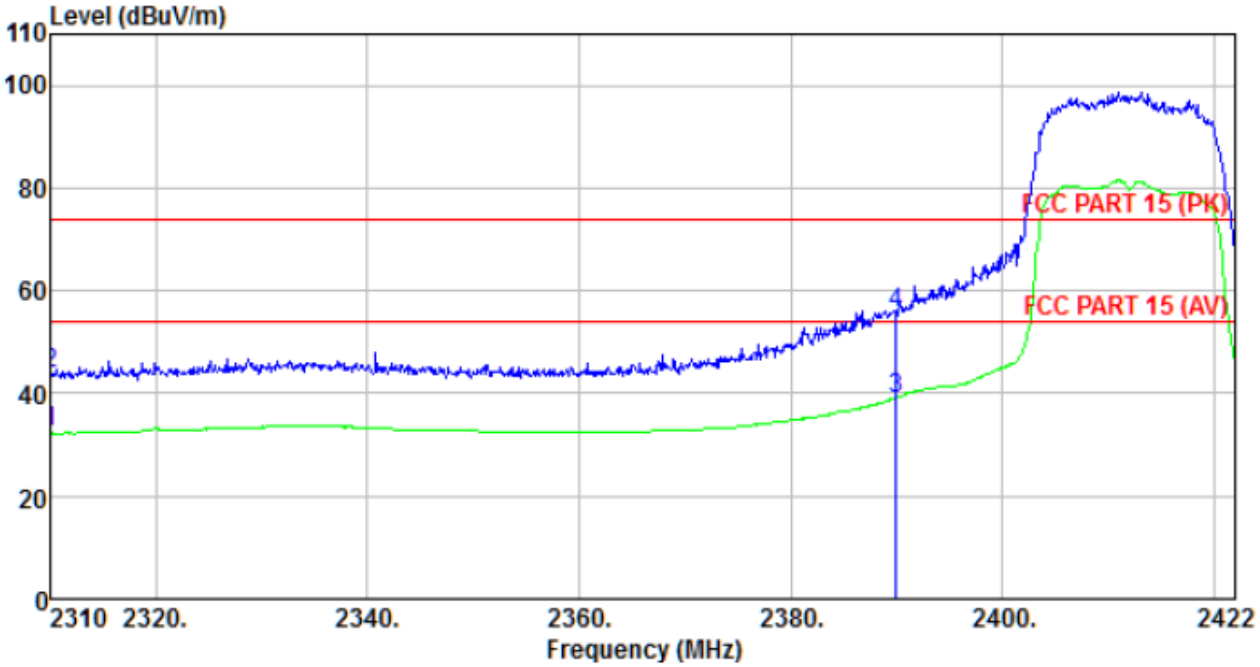
Horizontal:



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
2310.000	26.73	27.91	5.30	24.64	35.30	54.00	-18.70	Average
2310.000	38.16	27.91	5.30	24.64	46.73	74.00	-27.27	Peak
2390.000	35.44	27.59	5.38	24.71	43.70	54.00	-10.30	Average
2390.000	52.18	27.59	5.38	24.71	60.44	74.00	-13.56	Peak

Remarks:level = Reading level + Antenna factor + Cable loss - Preamp Factor

Vertical:

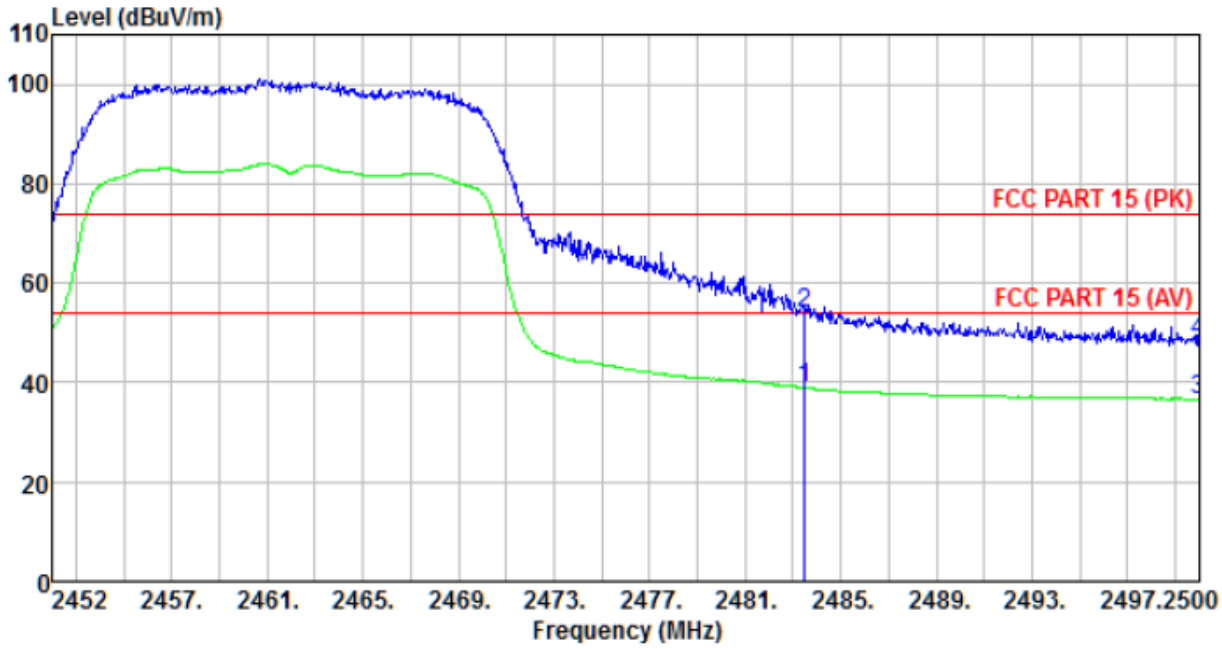


Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV	Limit level dBuV/m	Over limit dB	Remark
2310.000	23.83	27.91	5.30	24.64	32.40	54.00	-21.60	Average
2310.000	35.25	27.91	5.30	24.64	43.82	74.00	-30.18	Peak
2390.000	30.66	27.59	5.38	24.71	38.92	54.00	-15.08	Average
2390.000	47.40	27.59	5.38	24.71	55.66	74.00	-18.34	Peak

Remarks:level = Reading level + Antenna factor + Cable loss - Preamp Factor

Test mode:	802.11g	Test channel:	Highest

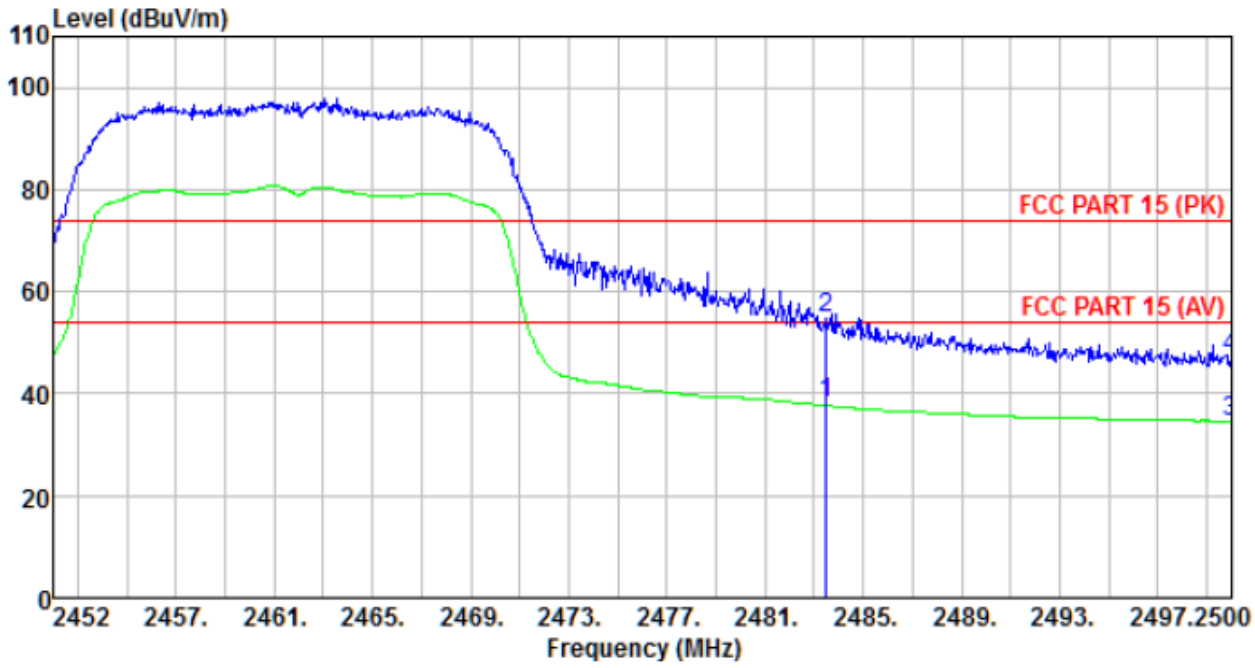
Horizontal:



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
2483.500	30.91	27.53	5.47	24.80	39.11	54.00	-14.89	Average
2483.500	45.71	27.53	5.47	24.80	53.91	74.00	-20.09	Peak
2500.000	28.24	27.55	5.49	24.86	36.42	54.00	-17.58	Average
2500.000	40.07	27.55	5.49	24.86	48.25	74.00	-25.75	Peak

Remarks:level = Reading level + Antenna factor + Cable loss - Preamp Factor

Vertical:

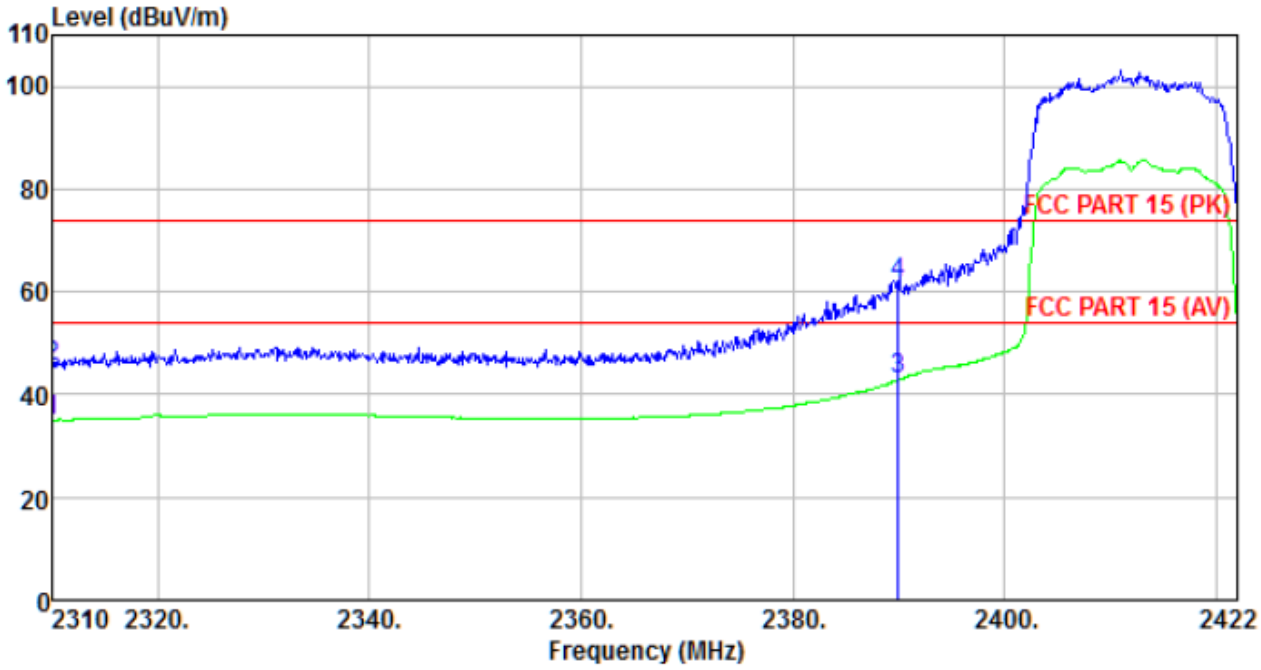


Freq	Reading level	Antenna factor	Cable loss	Preamp factor	level	Limit level	Over limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV	dBuV/m	dB	
2483.500	29.76	27.53	5.47	24.80	37.96	54.00	-16.04	Average
2483.500	46.56	27.53	5.47	24.80	54.76	74.00	-19.24	Peak
2500.000	26.20	27.55	5.49	24.86	34.38	54.00	-19.62	Average
2500.000	39.02	27.55	5.49	24.86	47.20	74.00	-26.80	Peak

Remarks:level = Reading level + Antenna factor + Cable loss - Preamp Factor

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

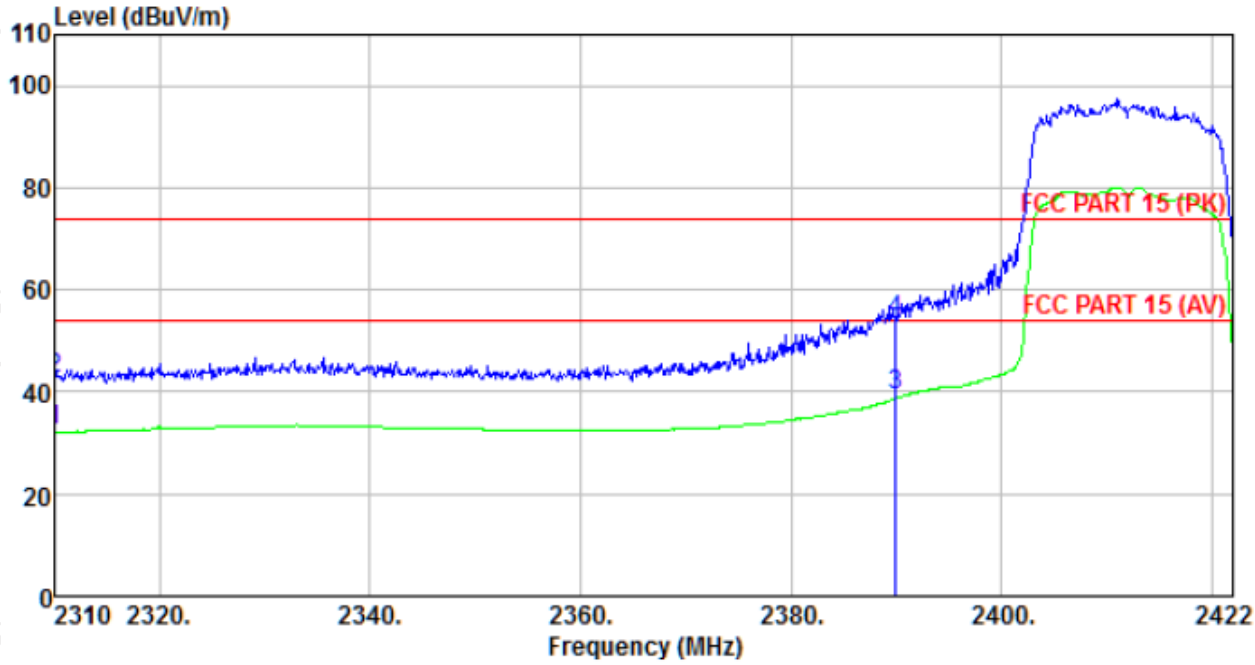
Horizontal:



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
2310.000	26.48	27.91	5.30	24.64	35.05	54.00	-18.95	Average
2310.000	36.90	27.91	5.30	24.64	45.47	74.00	-28.53	Peak
2390.000	34.83	27.59	5.38	24.71	43.09	54.00	-10.91	Average
2390.000	53.57	27.59	5.38	24.71	61.83	74.00	-12.17	Peak

Remarks:level = Reading level + Antenna factor + Cable loss - Preamp Factor

Vertical:

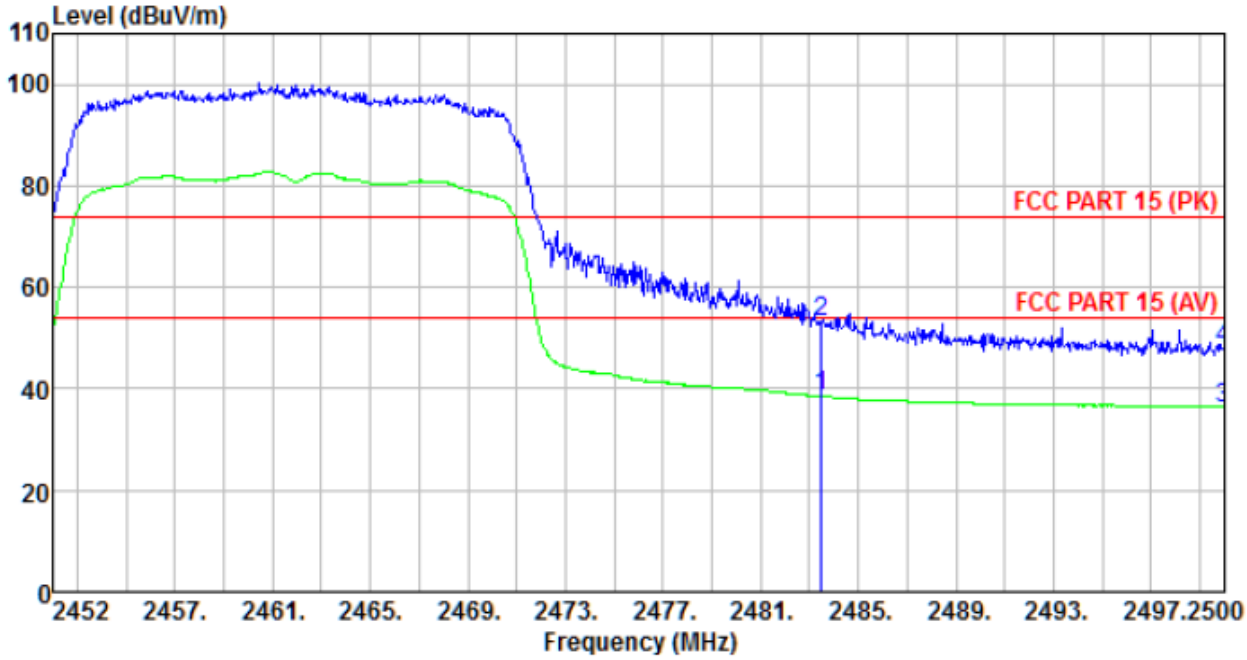


Freq	Reading level	Antenna factor	Cable loss	Preamp factor	level	Limit level	Over limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV	dBuV/m	dB	
2310.000	23.73	27.91	5.30	24.64	32.30	54.00	-21.70	Average
2310.000	34.16	27.91	5.30	24.64	42.73	74.00	-31.27	Peak
2390.000	30.94	27.59	5.38	24.71	39.20	54.00	-14.80	Average
2390.000	45.68	27.59	5.38	24.71	53.94	74.00	-20.06	Peak

Remarks:level = Reading level + Antenna factor + Cable loss - Preamp Factor

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

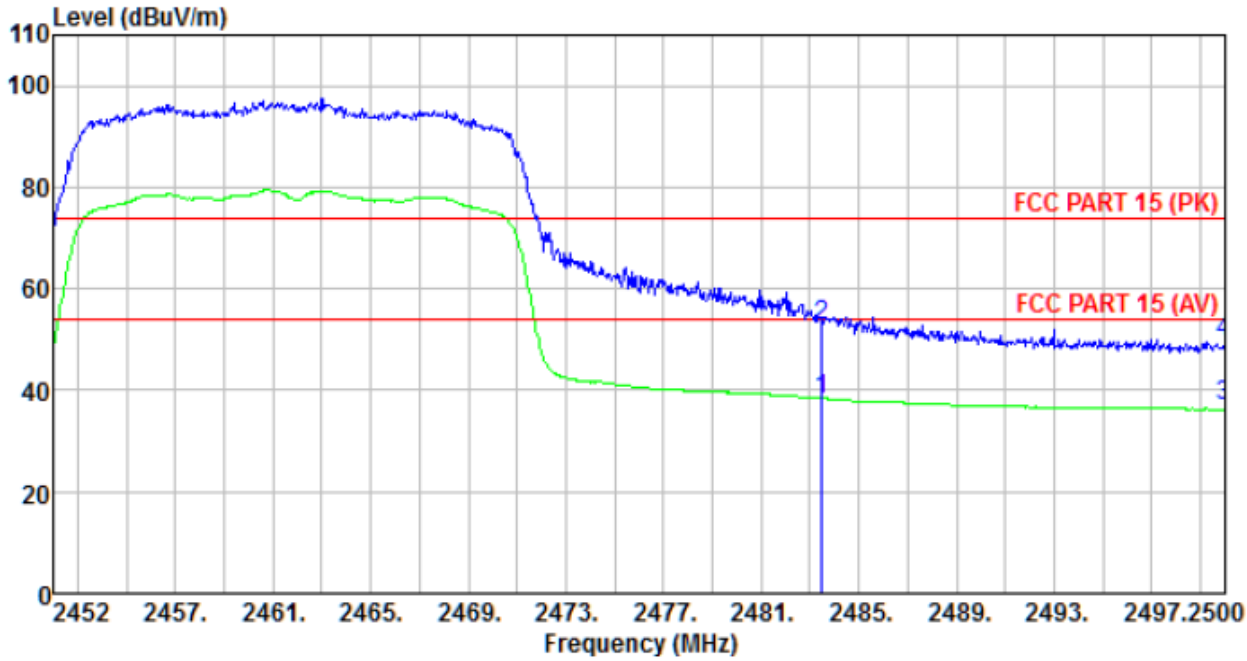
Horizontal:



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
2483.500	30.17	27.53	5.47	24.80	38.37	54.00	-15.63	Average
2483.500	44.96	27.53	5.47	24.80	53.16	74.00	-20.84	Peak
2500.000	27.94	27.55	5.49	24.86	36.12	54.00	-17.88	Average
2500.000	39.76	27.55	5.49	24.86	47.94	74.00	-26.06	Peak

Remarks:level = Reading level + Antenna factor + Cable loss - Preamp Factor

Vertical:



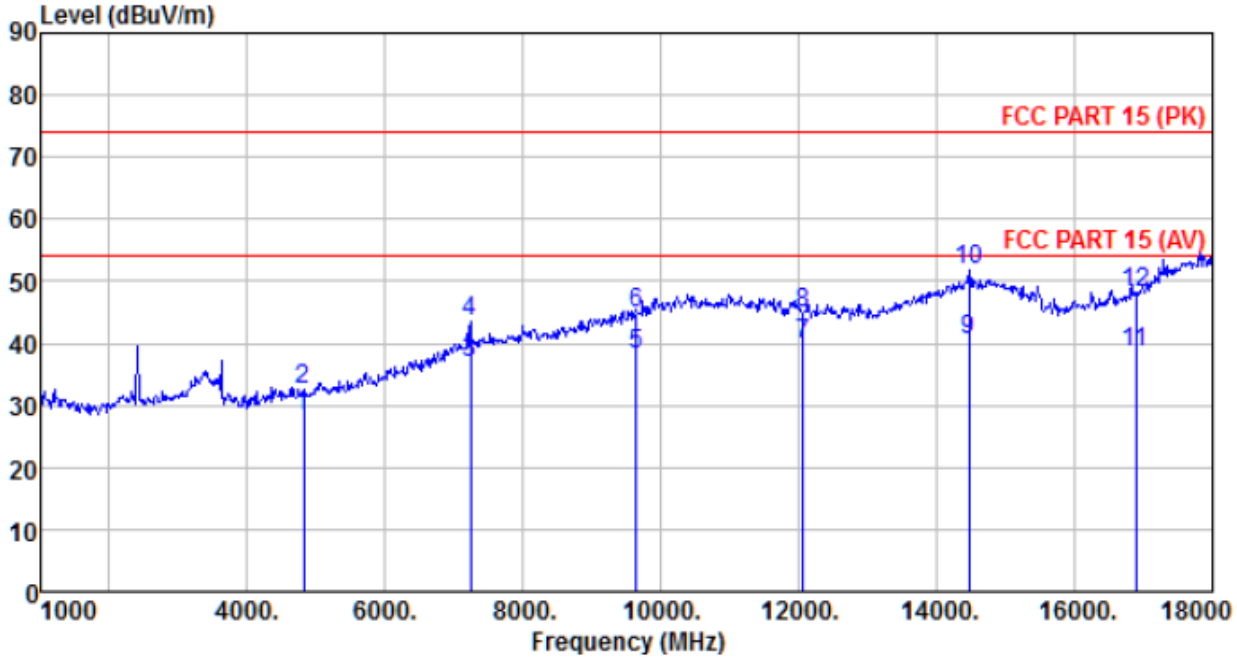
Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV	Limit level dBuV/m	Over limit dB	Remark
2483.500	29.89	27.53	5.47	24.80	38.09	54.00	-15.91	Average
2483.500	44.69	27.53	5.47	24.80	52.89	74.00	-21.11	Peak
2500.000	28.67	27.55	5.49	24.86	36.85	54.00	-17.15	Average
2500.000	41.50	27.55	5.49	24.86	49.68	74.00	-24.32	Peak

Remarks:level = Reading level + Antenna factor + Cable loss - Preamp Factor

■ **Above 1GHz**

Test mode:	802.11b	Test channel:	Lowest

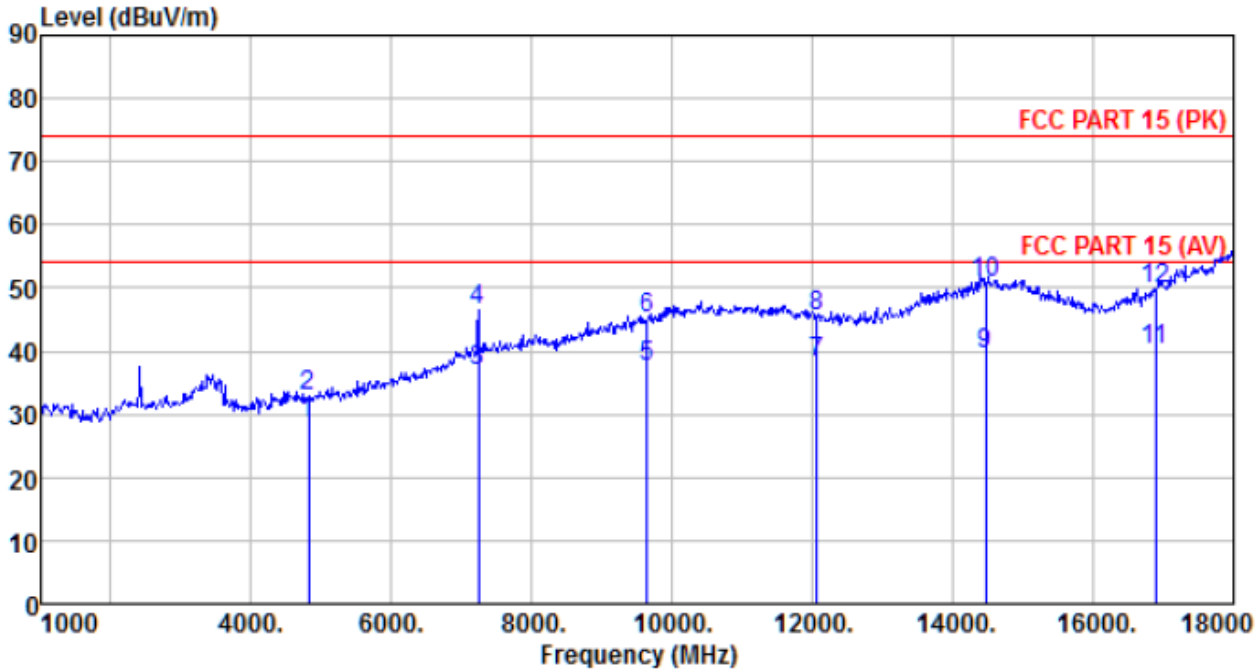
Horizontal:



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
4824.000	25.52	31.79	8.61	37.67	28.25	54.00	-25.75	Average
4824.000	29.78	31.79	8.61	37.67	32.51	74.00	-41.49	Peak
7236.000	24.62	36.19	11.68	35.68	36.81	54.00	-17.19	Average
7236.000	31.43	36.19	11.68	35.68	43.62	74.00	-30.38	Peak
9648.000	20.96	38.07	14.16	34.93	38.26	54.00	-15.74	Average
9648.000	27.66	38.07	14.16	34.93	44.96	74.00	-29.04	Peak
12060.000	21.81	39.05	15.05	36.15	39.76	54.00	-14.24	Average
12060.000	26.87	39.05	15.05	36.15	44.82	74.00	-29.18	Peak
14472.000	16.68	42.51	17.19	35.96	40.42	54.00	-13.58	Average
14472.000	27.94	42.51	17.19	35.96	51.68	74.00	-22.32	Peak
16884.000	13.28	42.50	18.88	36.12	38.54	54.00	-15.46	Average
16884.000	23.02	42.50	18.88	36.12	48.28	74.00	-25.72	Peak

Remarks:level = Reading level + Antenna factor + Cable loss - Preamp Factor

Vertical:

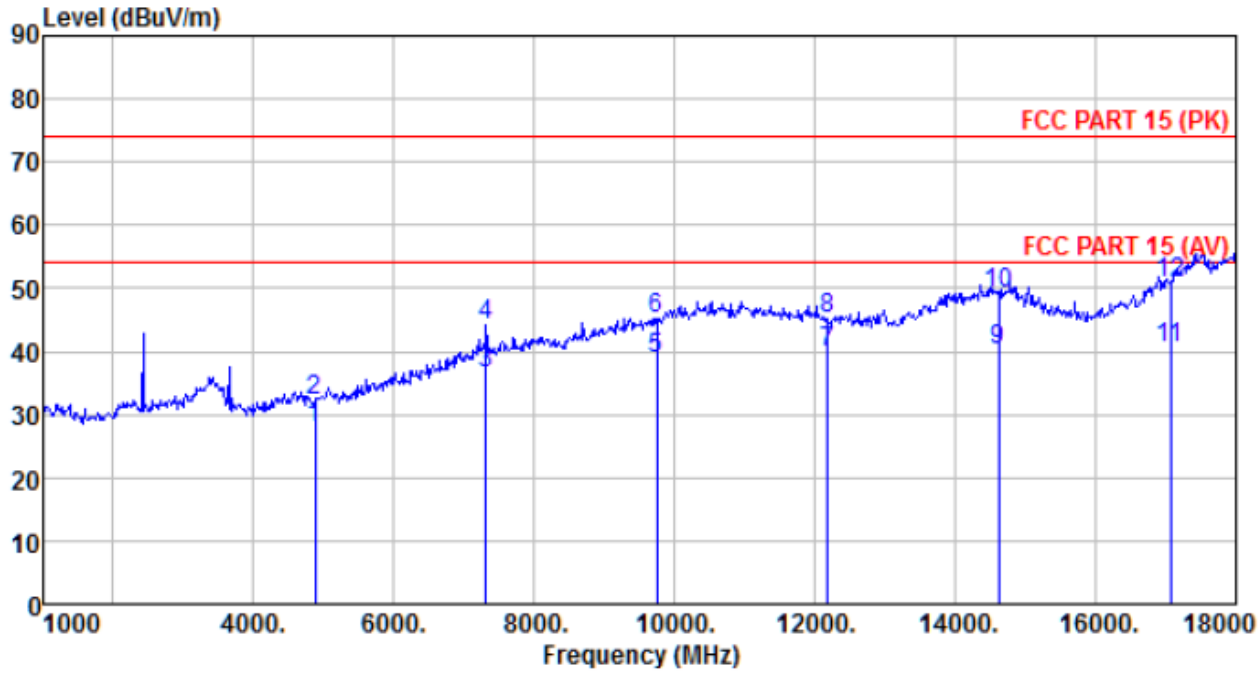


Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV	Limit level dBuV/m	Over limit dB	Remark
4824.000	25.96	31.79	8.61	37.67	28.69	54.00	-25.31	Average
4824.000	30.22	31.79	8.61	37.67	32.95	74.00	-41.05	Peak
7236.000	24.63	36.19	11.68	35.68	36.82	54.00	-17.18	Average
7236.000	34.44	36.19	11.68	35.68	46.63	74.00	-27.37	Peak
9648.000	20.30	38.07	14.16	34.93	37.60	54.00	-16.40	Average
9648.000	28.00	38.07	14.16	34.93	45.30	74.00	-28.70	Peak
12060.000	20.39	39.05	15.05	36.15	38.34	54.00	-15.66	Average
12060.000	27.44	39.05	15.05	36.15	45.39	74.00	-28.61	Peak
14472.000	15.95	42.51	17.19	35.96	39.69	54.00	-14.31	Average
14472.000	27.20	42.51	17.19	35.96	50.94	74.00	-23.06	Peak
16884.000	14.80	42.50	18.88	36.12	40.06	54.00	-13.94	Average
16884.000	24.54	42.50	18.88	36.12	49.80	74.00	-24.20	Peak

Remarks:level = Reading level + Antenna factor + Cable loss - Preamp Factor

Test mode:	802.11b	Test channel:	Middle

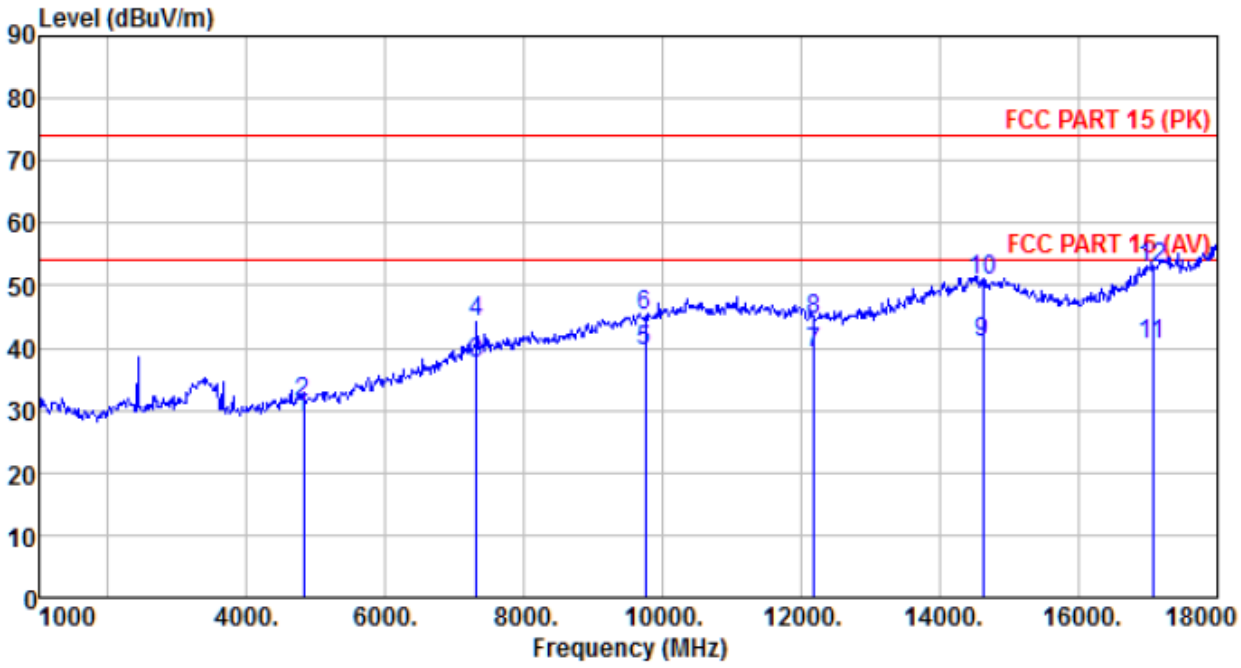
Horizontal:



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
4874.000	25.18	31.85	8.66	37.68	28.01	54.00	-25.99	Average
4874.000	29.35	31.85	8.66	37.68	32.18	74.00	-41.82	Peak
7311.000	24.11	36.37	11.71	35.65	36.54	54.00	-17.46	Average
7311.000	31.67	36.37	11.71	35.65	44.10	74.00	-29.90	Peak
9748.000	21.16	38.27	14.25	34.98	38.70	54.00	-15.30	Average
9748.000	27.62	38.27	14.25	34.98	45.16	74.00	-28.84	Peak
12185.000	22.16	38.92	15.14	36.25	39.97	54.00	-14.03	Average
12185.000	27.36	38.92	15.14	36.25	45.17	74.00	-28.83	Peak
14622.000	16.22	42.33	17.26	35.75	40.06	54.00	-13.94	Average
14622.000	25.38	42.33	17.26	35.75	49.22	74.00	-24.78	Peak
17059.000	13.82	43.82	18.99	36.19	40.44	54.00	-13.56	Average
17059.000	24.20	43.82	18.99	36.19	50.82	74.00	-23.18	Peak

Remarks:level = Reading level + Antenna factor + Cable loss - Preamp Factor

Vertical:

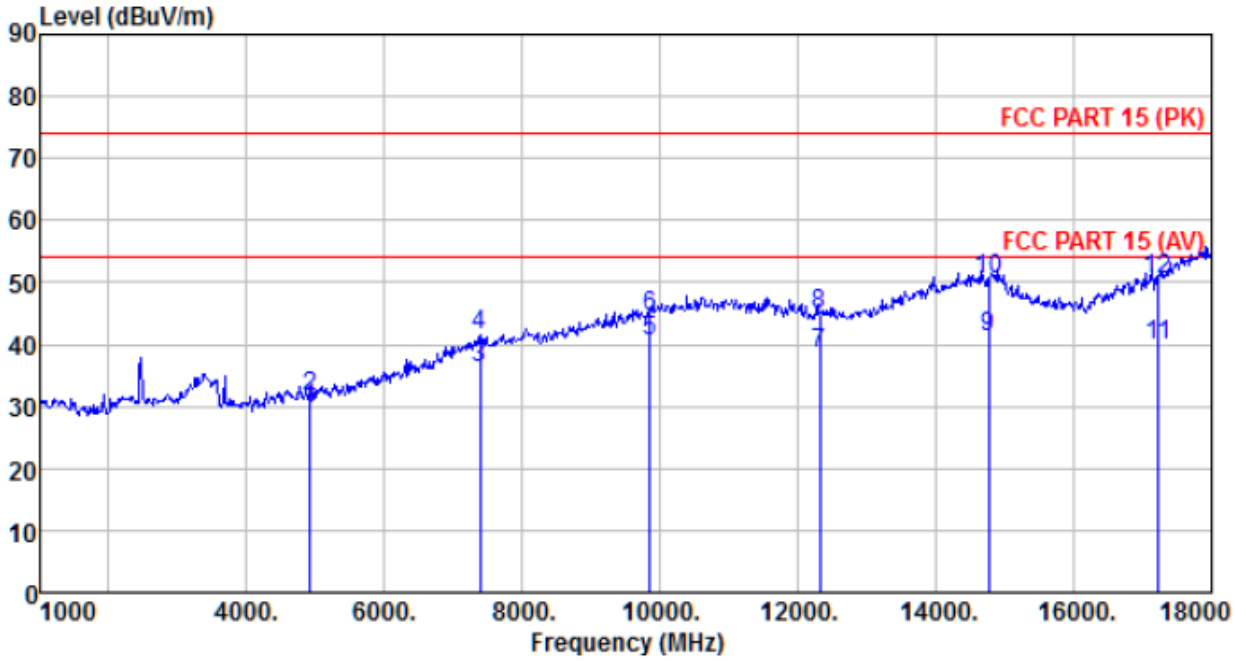


Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV	Limit level dBuV/m	Over limit dB	Remark
4824.000	26.27	31.79	8.61	37.67	29.00	54.00	-25.00	Average
4824.000	28.54	31.79	8.61	37.67	31.27	74.00	-42.73	Peak
7311.000	25.03	36.37	11.71	35.65	37.46	54.00	-16.54	Average
7311.000	31.60	36.37	11.71	35.65	44.03	74.00	-29.97	Peak
9748.000	22.00	38.27	14.25	34.98	39.54	54.00	-14.46	Average
9748.000	27.46	38.27	14.25	34.98	45.00	74.00	-29.00	Peak
12185.000	21.47	38.92	15.14	36.25	39.28	54.00	-14.72	Average
12185.000	26.66	38.92	15.14	36.25	44.47	74.00	-29.53	Peak
14622.000	16.86	42.33	17.26	35.75	40.70	54.00	-13.30	Average
14622.000	27.02	42.33	17.26	35.75	50.86	74.00	-23.14	Peak
17059.000	13.92	43.82	18.99	36.19	40.54	54.00	-13.46	Average
17059.000	26.30	43.82	18.99	36.19	52.92	74.00	-21.08	Peak

Remarks:level = Reading level + Antenna factor + Cable loss - Preamp Factor

Test mode:	802.11b	Test channel:	Highest

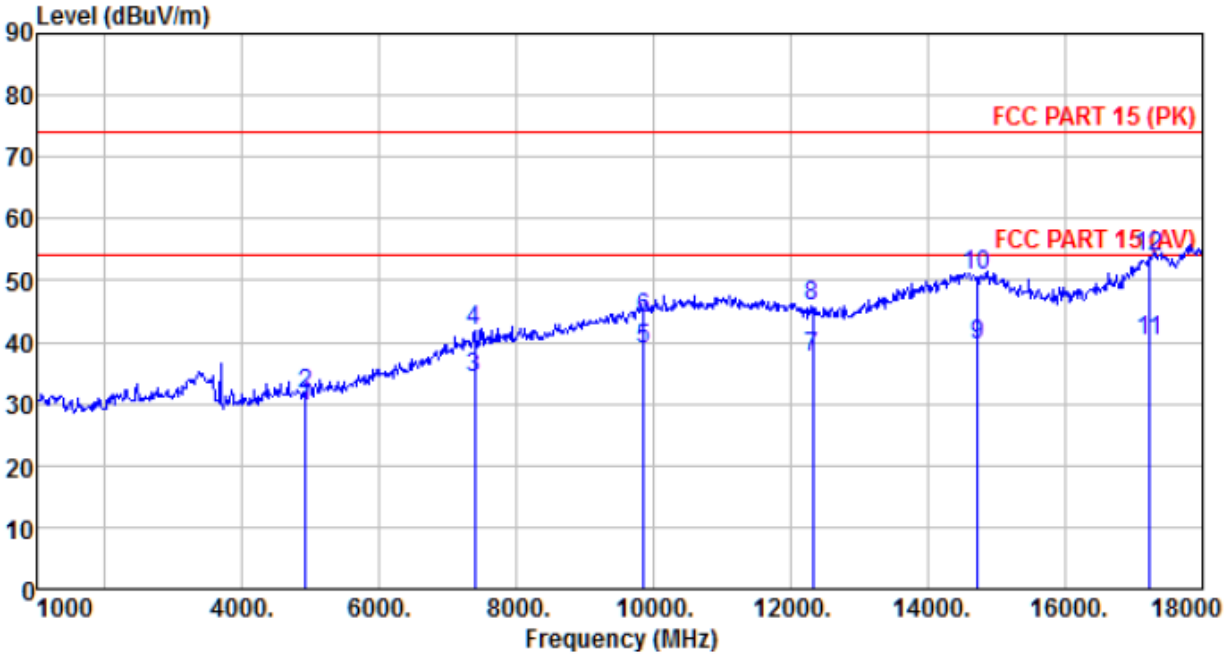
Horizontal:



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
4924.000	26.57	31.89	8.70	37.69	29.47	54.00	-24.53	Average
4924.000	28.67	31.89	8.70	37.69	31.57	74.00	-42.43	Peak
7386.000	23.63	36.49	11.76	35.61	36.27	54.00	-17.73	Average
7386.000	28.98	36.49	11.76	35.61	41.62	74.00	-32.38	Peak
9848.000	22.55	38.62	14.31	35.02	40.46	54.00	-13.54	Average
9848.000	26.64	38.62	14.31	35.02	44.55	74.00	-29.45	Peak
12310.000	20.80	38.83	15.23	36.34	38.52	54.00	-15.48	Average
12310.000	27.09	38.83	15.23	36.34	44.81	74.00	-29.19	Peak
14772.000	17.53	41.82	17.34	35.53	41.16	54.00	-12.84	Average
14772.000	26.90	41.82	17.34	35.53	50.53	74.00	-23.47	Peak
17234.000	11.62	45.51	18.98	36.18	39.93	54.00	-14.07	Average
17234.000	22.30	45.51	18.98	36.18	50.61	74.00	-23.39	Peak

Remarks:level = Reading level + Antenna factor + Cable loss - Preamp Factor

Vertical:

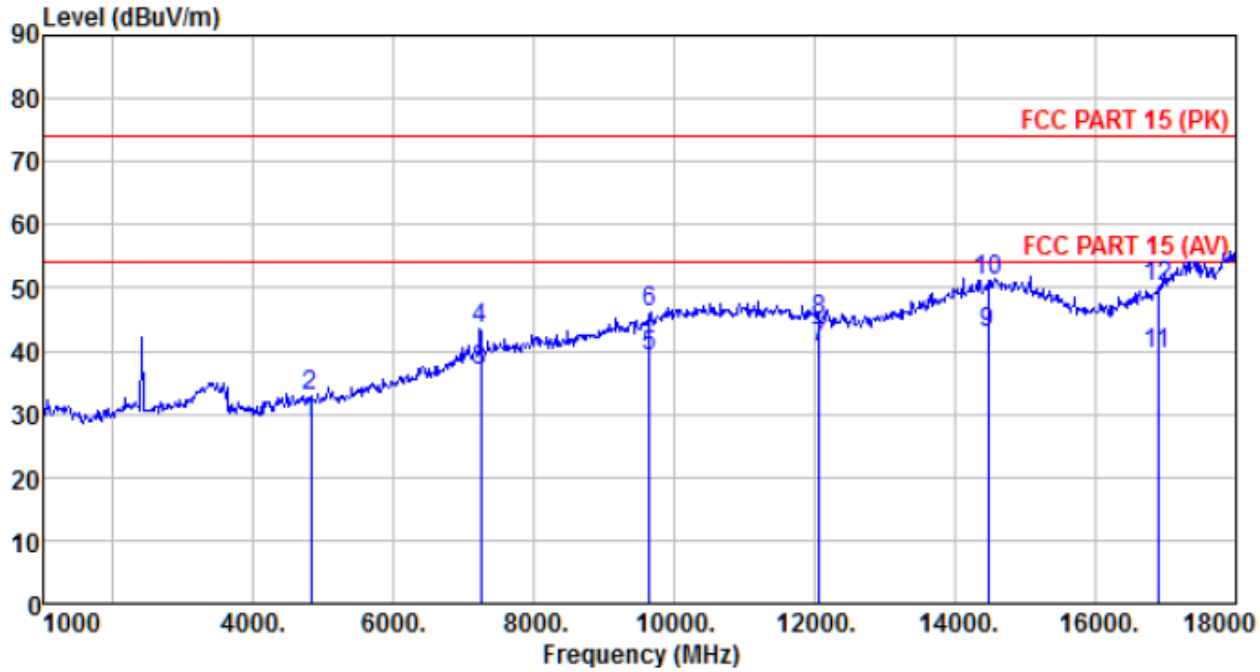


Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV	Limit level dBuV/m	Over limit dB	Remark
4924.000	26.70	31.89	8.70	37.69	29.60	54.00	-24.40	Average
4924.000	28.79	31.89	8.70	37.69	31.69	74.00	-42.31	Peak
7386.000	21.69	36.49	11.76	35.61	34.33	54.00	-19.67	Average
7386.000	29.05	36.49	11.76	35.61	41.69	74.00	-32.31	Peak
9848.000	20.91	38.62	14.31	35.02	38.82	54.00	-15.18	Average
9848.000	26.00	38.62	14.31	35.02	43.91	74.00	-30.09	Peak
12310.000	19.78	38.83	15.23	36.34	37.50	54.00	-16.50	Average
12310.000	28.06	38.83	15.23	36.34	45.78	74.00	-28.22	Peak
14722.000	15.82	41.95	17.30	35.60	39.47	54.00	-14.53	Average
14722.000	27.17	41.95	17.30	35.60	50.82	74.00	-23.18	Peak
17234.000	11.95	45.51	18.98	36.18	40.26	54.00	-13.74	Average
17234.000	25.63	45.51	18.98	36.18	53.94	74.00	-20.06	Peak

Remarks:level = Reading level + Antenna factor + Cable loss - Preamp Factor

Test mode:	802.11g	Test channel:	lowest

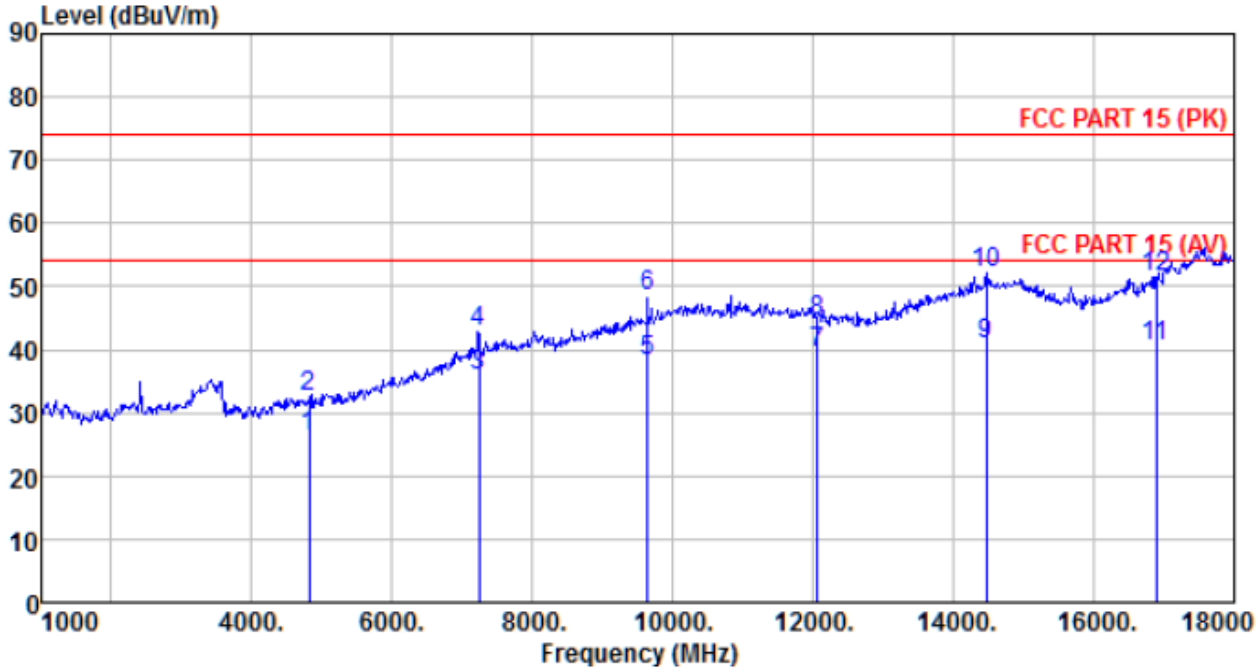
Horizontal:



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
4824.000	25.83	31.79	8.61	37.67	28.56	54.00	-25.44	Average
4824.000	30.09	31.79	8.61	37.67	32.82	74.00	-41.18	Peak
7236.000	24.53	36.19	11.68	35.68	36.72	54.00	-17.28	Average
7236.000	31.36	36.19	11.68	35.68	43.55	74.00	-30.45	Peak
9648.000	22.03	38.07	14.16	34.93	39.33	54.00	-14.67	Average
9648.000	28.73	38.07	14.16	34.93	46.03	74.00	-27.97	Peak
12060.000	22.67	39.05	15.05	36.15	40.62	54.00	-13.38	Average
12060.000	26.73	39.05	15.05	36.15	44.68	74.00	-29.32	Peak
14472.000	18.99	42.51	17.19	35.96	42.73	54.00	-11.27	Average
14472.000	27.25	42.51	17.19	35.96	50.99	74.00	-23.01	Peak
16884.000	14.16	42.50	18.88	36.12	39.42	54.00	-14.58	Average
16884.000	24.79	42.50	18.88	36.12	50.05	74.00	-23.95	Peak

Remarks:level = Reading level + Antenna factor + Cable loss - Preamp Factor

Vertical:

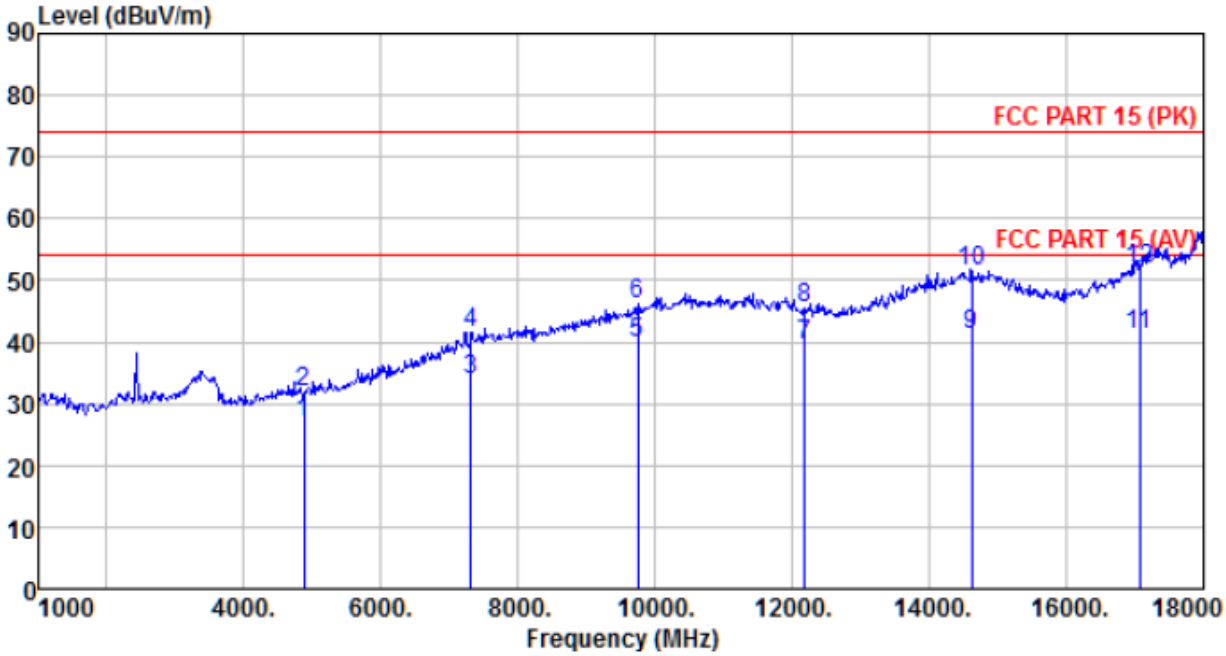


Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV	Limit level dBuV/m	Over limit dB	Remark
4824.000	23.62	31.79	8.61	37.67	26.35	54.00	-27.65	Average
4824.000	29.88	31.79	8.61	37.67	32.61	74.00	-41.39	Peak
7236.000	23.69	36.19	11.68	35.68	35.88	54.00	-18.12	Average
7236.000	30.53	36.19	11.68	35.68	42.72	74.00	-31.28	Peak
9648.000	20.75	38.07	14.16	34.93	38.05	54.00	-15.95	Average
9648.000	31.03	38.07	14.16	34.93	48.33	74.00	-25.67	Peak
12060.000	21.57	39.05	15.05	36.15	39.52	54.00	-14.48	Average
12060.000	26.63	39.05	15.05	36.15	44.58	74.00	-29.42	Peak
14472.000	17.06	42.51	17.19	35.96	40.80	54.00	-13.20	Average
14472.000	28.32	42.51	17.19	35.96	52.06	74.00	-21.94	Peak
16884.000	15.34	42.50	18.88	36.12	40.60	54.00	-13.40	Average
16884.000	26.08	42.50	18.88	36.12	51.34	74.00	-22.66	Peak

Remarks:level = Reading level + Antenna factor + Cable loss - Preamp Factor

Test mode:	802.11g	Test channel:	Middle

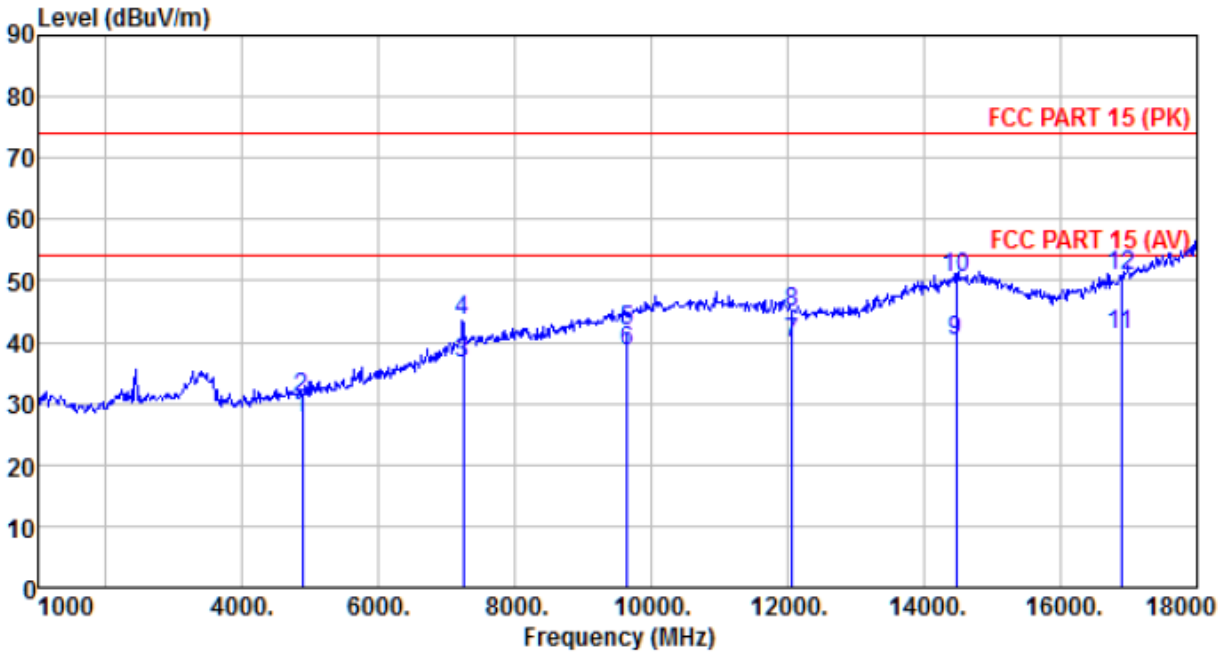
Horizontal:



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
4874.000	24.00	31.85	8.66	37.68	26.83	54.00	-27.17	Average
4874.000	29.17	31.85	8.66	37.68	32.00	74.00	-42.00	Peak
7311.000	21.53	36.37	11.71	35.65	33.96	54.00	-20.04	Average
7311.000	29.10	36.37	11.71	35.65	41.53	74.00	-32.47	Peak
9748.000	22.15	38.27	14.25	34.98	39.69	54.00	-14.31	Average
9748.000	28.62	38.27	14.25	34.98	46.16	74.00	-27.84	Peak
12185.000	21.55	38.92	15.14	36.25	39.36	54.00	-14.64	Average
12185.000	27.75	38.92	15.14	36.25	45.56	74.00	-28.44	Peak
14622.000	17.37	42.33	17.26	35.75	41.21	54.00	-12.79	Average
14622.000	27.53	42.33	17.26	35.75	51.37	74.00	-22.63	Peak
17059.000	14.68	43.82	18.99	36.19	41.30	54.00	-12.70	Average
17059.000	25.06	43.82	18.99	36.19	51.68	74.00	-22.32	Peak

Remarks:level = Reading level + Antenna factor + Cable loss - Preamp Factor

Vertical:

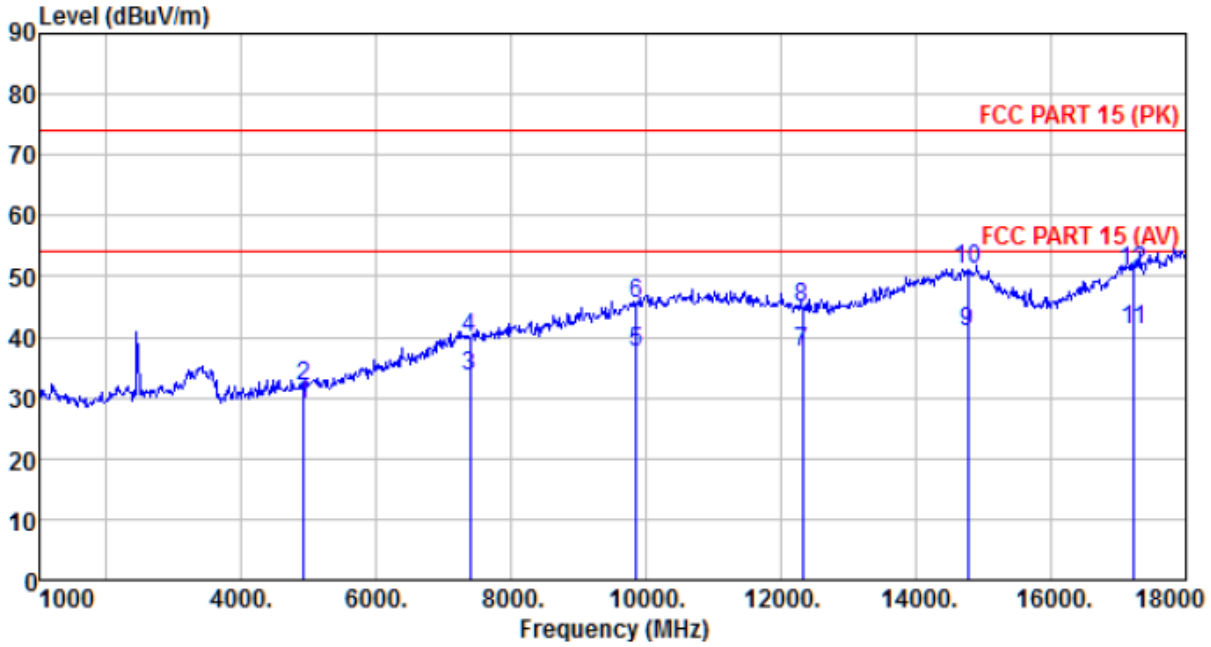


Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV	Limit level dBuV/m	Over limit dB	Remark
4874.000	24.76	31.85	8.66	37.68	27.59	54.00	-26.41	Average
4874.000	27.93	31.85	8.66	37.68	30.76	74.00	-43.24	Peak
7236.000	24.46	36.19	11.68	35.68	36.65	54.00	-17.35	Average
7236.000	31.30	36.19	11.68	35.68	43.49	74.00	-30.51	Peak
9648.000	24.67	38.07	14.16	34.93	41.97	54.00	-12.03	Average
9648.000	21.21	38.07	14.16	34.93	38.51	74.00	-35.49	Peak
12060.000	21.95	39.05	15.05	36.15	39.90	54.00	-14.10	Average
12060.000	27.00	39.05	15.05	36.15	44.95	74.00	-29.05	Peak
14472.000	16.33	42.51	17.19	35.96	40.07	54.00	-13.93	Average
14472.000	26.59	42.51	17.19	35.96	50.33	74.00	-23.67	Peak
16884.000	15.77	42.50	18.88	36.12	41.03	54.00	-12.97	Average
16884.000	25.51	42.50	18.88	36.12	50.77	74.00	-23.23	Peak

Remarks:level = Reading level + Antenna factor + Cable loss - Preamp Factor

Test mode:	802.11g	Test channel:	Highest

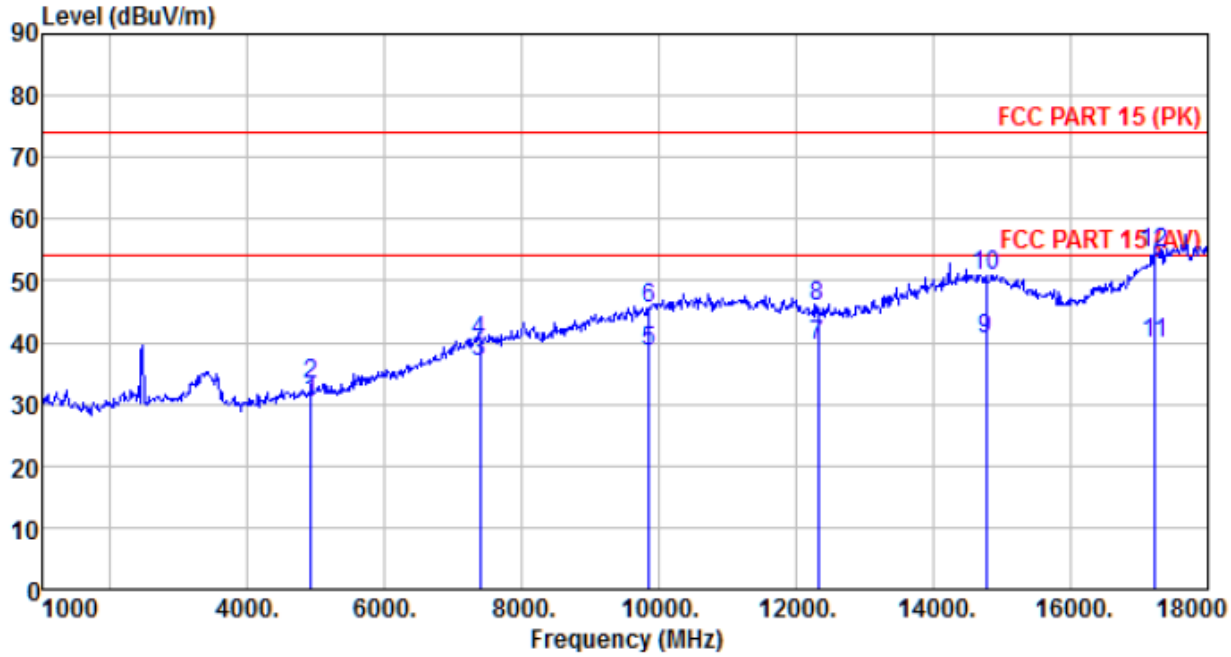
Horizontal:



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
4924.000	25.88	31.89	8.70	37.69	28.78	54.00	-25.22	Average
4924.000	28.98	31.89	8.70	37.69	31.88	74.00	-42.12	Peak
7386.000	20.83	36.49	11.76	35.61	33.47	54.00	-20.53	Average
7386.000	27.18	36.49	11.76	35.61	39.82	74.00	-34.18	Peak
9848.000	19.61	38.62	14.31	35.02	37.52	54.00	-16.48	Average
9848.000	27.70	38.62	14.31	35.02	45.61	74.00	-28.39	Peak
12310.000	19.73	38.83	15.23	36.34	37.45	54.00	-16.55	Average
12310.000	27.02	38.83	15.23	36.34	44.74	74.00	-29.26	Peak
14772.000	17.08	41.82	17.34	35.53	40.71	54.00	-13.29	Average
14772.000	27.45	41.82	17.34	35.53	51.08	74.00	-22.92	Peak
17234.000	12.96	45.51	18.98	36.18	41.27	54.00	-12.73	Average
17234.000	22.64	45.51	18.98	36.18	50.95	74.00	-23.05	Peak

Remarks:level = Reading level + Antenna factor + Cable loss - Preamp Factor

Vertical:

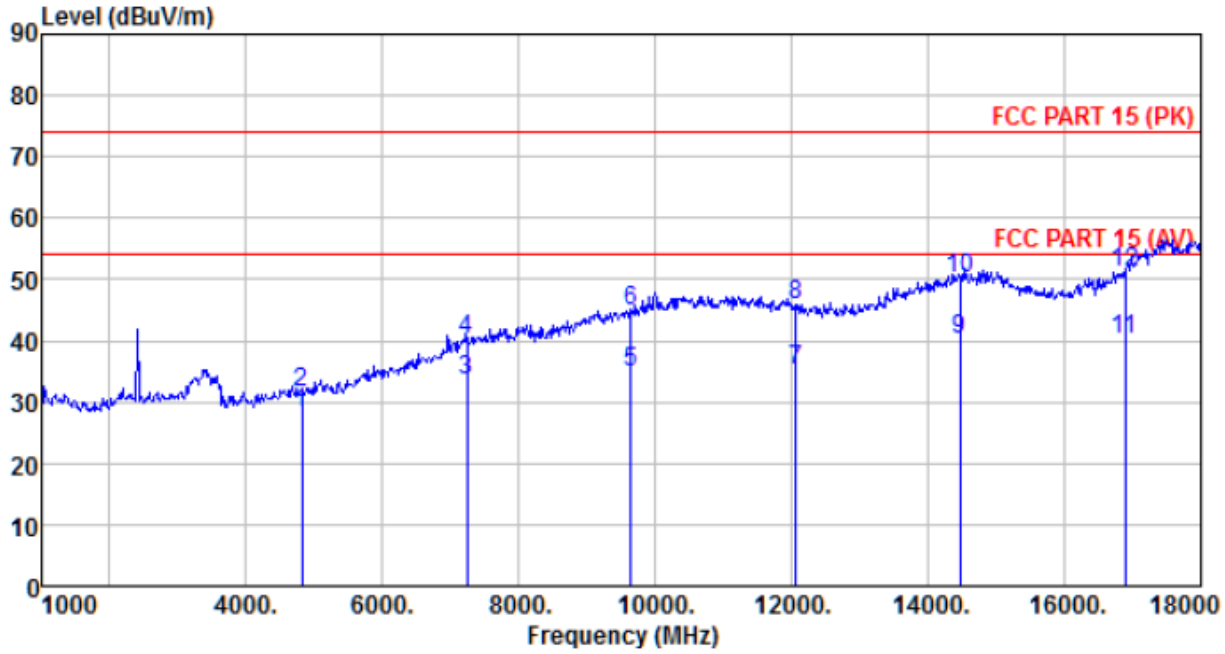


Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV	Limit level dBuV/m	Over limit dB	Remark
4924.000	27.20	31.89	8.70	37.69	30.10	54.00	-23.90	Average
4924.000	30.30	31.89	8.70	37.69	33.20	74.00	-40.80	Peak
7386.000	24.12	36.49	11.76	35.61	36.76	54.00	-17.24	Average
7386.000	27.48	36.49	11.76	35.61	40.12	74.00	-33.88	Peak
9848.000	20.63	38.62	14.31	35.02	38.54	54.00	-15.46	Average
9848.000	27.72	38.62	14.31	35.02	45.63	74.00	-28.37	Peak
12310.000	21.89	38.83	15.23	36.34	39.61	54.00	-14.39	Average
12310.000	28.18	38.83	15.23	36.34	45.90	74.00	-28.10	Peak
14772.000	16.74	41.82	17.34	35.53	40.37	54.00	-13.63	Average
14772.000	27.11	41.82	17.34	35.53	50.74	74.00	-23.26	Peak
17234.000	11.59	45.51	18.98	36.18	39.90	54.00	-14.10	Average
17234.000	26.27	45.51	18.98	36.18	54.58	74.00	-19.42	Peak

Remarks:level = Reading level + Antenna factor + Cable loss - Preamp Factor

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

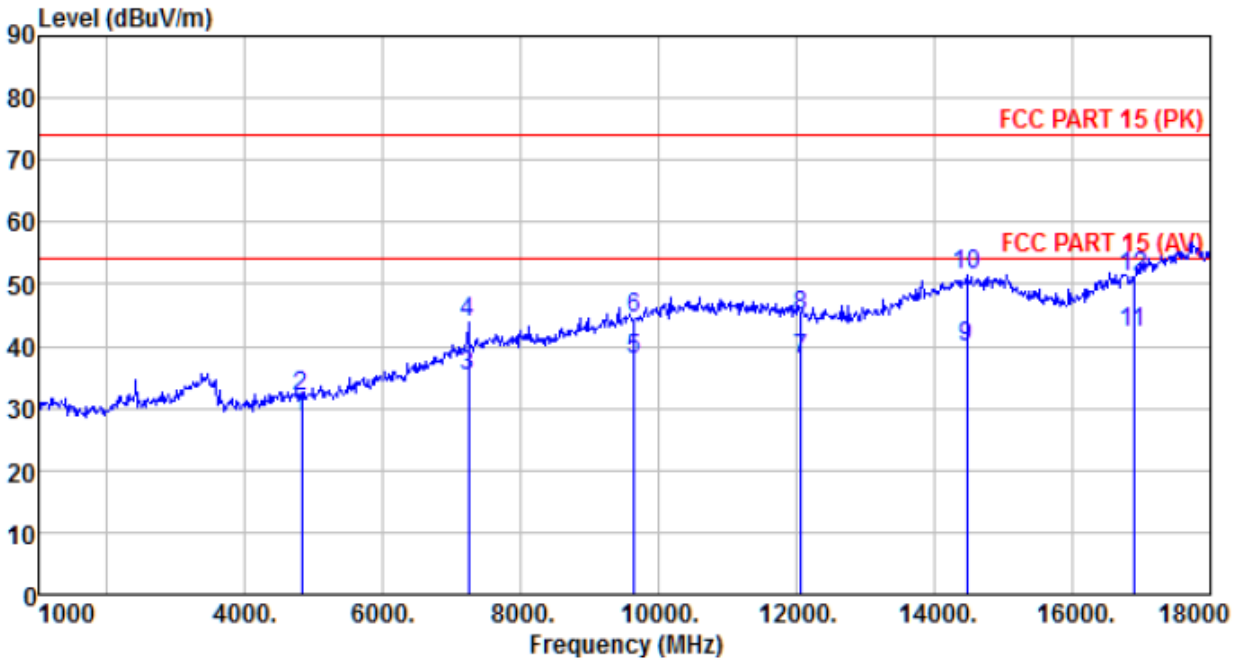
Horizontal:



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
4824.000	25.47	31.79	8.61	37.67	28.20	54.00	-25.80	Average
4824.000	28.73	31.79	8.61	37.67	31.46	74.00	-42.54	Peak
7236.000	21.47	36.19	11.68	35.68	33.66	54.00	-20.34	Average
7236.000	28.01	36.19	11.68	35.68	40.20	74.00	-33.80	Peak
9648.000	17.50	38.07	14.16	34.93	34.80	54.00	-19.20	Average
9648.000	27.65	38.07	14.16	34.93	44.95	74.00	-29.05	Peak
12060.000	17.36	39.05	15.05	36.15	35.31	54.00	-18.69	Average
12060.000	27.83	39.05	15.05	36.15	45.78	74.00	-28.22	Peak
14472.000	16.31	42.51	17.19	35.96	40.05	54.00	-13.95	Average
14472.000	26.56	42.51	17.19	35.96	50.30	74.00	-23.70	Peak
16884.000	15.00	42.50	18.88	36.12	40.26	54.00	-13.74	Average
16884.000	25.80	42.50	18.88	36.12	51.06	74.00	-22.94	Peak

Remarks:level = Reading level + Antenna factor + Cable loss - Preamp Factor

Vertical:

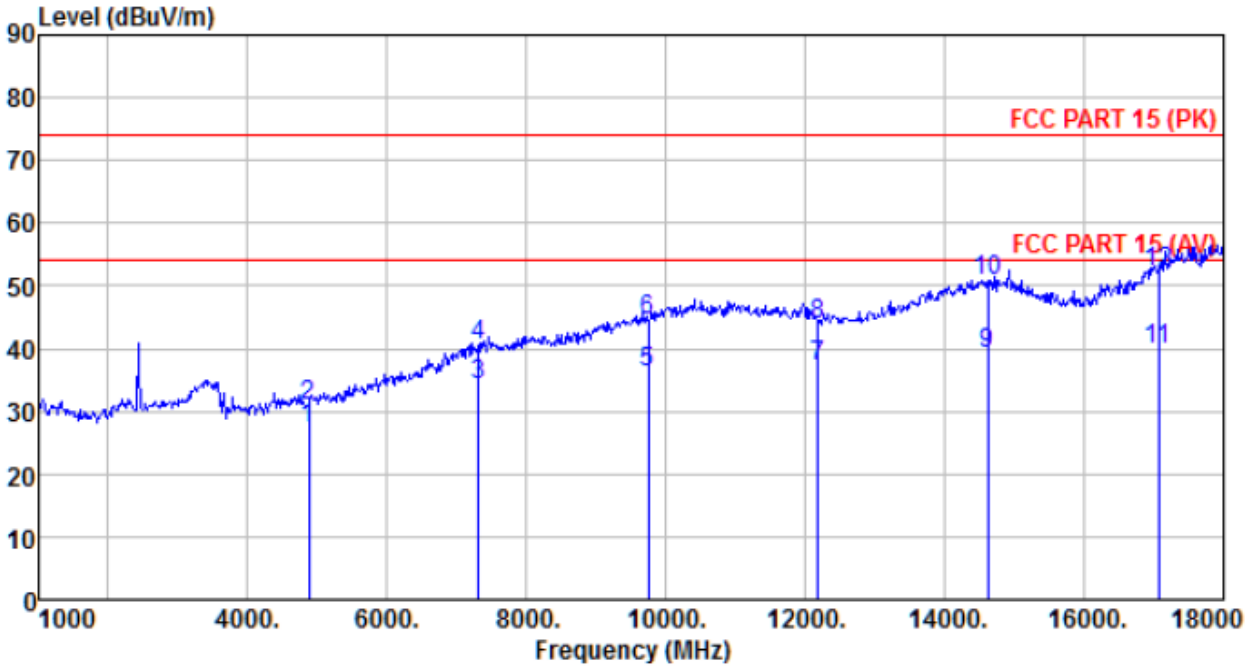


Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV	Limit level dBuV/m	Over limit dB	Remark
4824.000	25.90	31.79	8.61	37.67	28.63	54.00	-25.37	Average
4824.000	29.16	31.79	8.61	37.67	31.89	74.00	-42.11	Peak
7236.000	22.96	36.19	11.68	35.68	35.15	54.00	-18.85	Average
7236.000	31.78	36.19	11.68	35.68	43.97	74.00	-30.03	Peak
9648.000	20.57	38.07	14.16	34.93	37.87	54.00	-16.13	Average
9648.000	27.26	38.07	14.16	34.93	44.56	74.00	-29.44	Peak
12060.000	19.79	39.05	15.05	36.15	37.74	54.00	-16.26	Average
12060.000	26.84	39.05	15.05	36.15	44.79	74.00	-29.21	Peak
14472.000	16.27	42.51	17.19	35.96	40.01	54.00	-13.99	Average
14472.000	27.60	42.51	17.19	35.96	51.34	74.00	-22.66	Peak
16884.000	17.03	42.50	18.88	36.12	42.29	54.00	-11.71	Average
16884.000	25.77	42.50	18.88	36.12	51.03	74.00	-22.97	Peak

Remarks:level = Reading level + Antenna factor + Cable loss - Preamp Factor

Test mode:	802.11n(HT20)	Test channel:	Middle

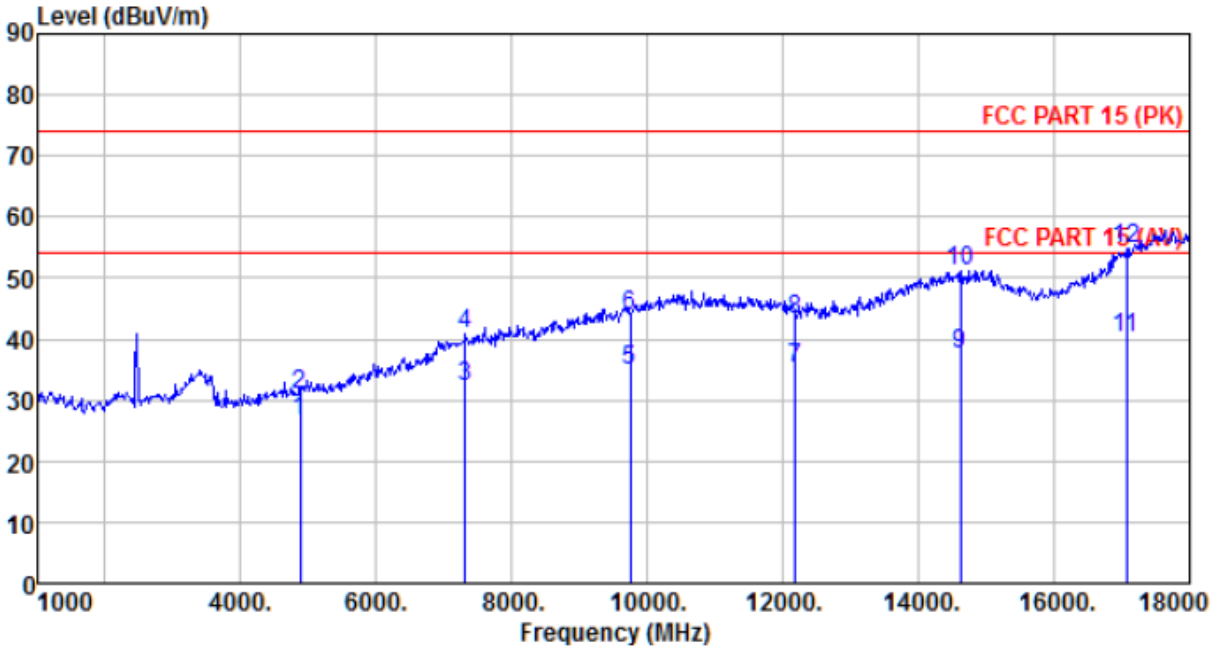
Horizontal:



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
4874.000	24.36	31.85	8.66	37.68	27.19	54.00	-26.81	Average
4874.000	28.12	31.85	8.66	37.68	30.95	74.00	-43.05	Peak
7311.000	21.63	36.37	11.71	35.65	34.06	54.00	-19.94	Average
7311.000	28.07	36.37	11.71	35.65	40.50	74.00	-33.50	Peak
9748.000	18.70	38.27	14.25	34.98	36.24	54.00	-17.76	Average
9748.000	26.87	38.27	14.25	34.98	44.41	74.00	-29.59	Peak
12185.000	19.37	38.92	15.14	36.25	37.18	54.00	-16.82	Average
12185.000	26.18	38.92	15.14	36.25	43.99	74.00	-30.01	Peak
14622.000	15.41	42.33	17.26	35.75	39.25	54.00	-14.75	Average
14622.000	27.04	42.33	17.26	35.75	50.88	74.00	-23.12	Peak
17059.000	13.25	43.82	18.99	36.19	39.87	54.00	-14.13	Average
17059.000	25.67	43.82	18.99	36.19	52.29	74.00	-21.71	Peak

Remarks:level = Reading level + Antenna factor + Cable loss - Preamp Factor

Vertical:

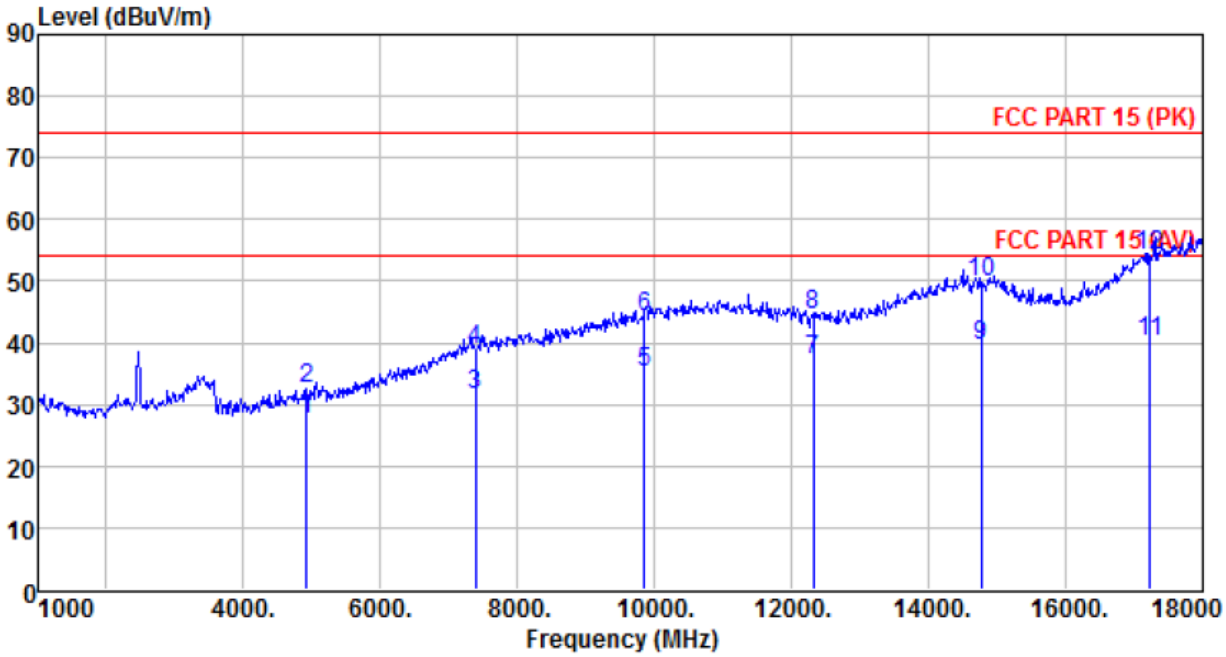


Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV	Limit level dBuV/m	Over limit dB	Remark
4874.000	23.68	31.85	8.66	37.68	26.51	74.00	-47.49	Average
4874.000	28.11	31.85	8.66	37.68	30.94	74.00	-43.06	Peak
7311.000	19.71	36.37	11.71	35.65	32.14	74.00	-41.86	Average
7311.000	28.28	36.37	11.71	35.65	40.71	74.00	-33.29	Peak
9748.000	17.17	38.27	14.25	34.98	34.71	74.00	-39.29	Average
9748.000	26.41	38.27	14.25	34.98	43.95	74.00	-30.05	Peak
12185.000	17.55	38.92	15.14	36.25	35.36	74.00	-38.64	Average
12185.000	25.45	38.92	15.14	36.25	43.26	74.00	-30.74	Peak
14622.000	13.66	42.33	17.26	35.75	37.50	74.00	-36.50	Average
14622.000	27.23	42.33	17.26	35.75	51.07	74.00	-22.93	Peak
17059.000	13.59	43.82	18.99	36.19	40.21	74.00	-33.79	Average
17059.000	28.25	43.82	18.99	36.19	54.87	74.00	-19.13	Peak

Remarks:level = Reading level + Antenna factor + Cable loss - Preamp Factor

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

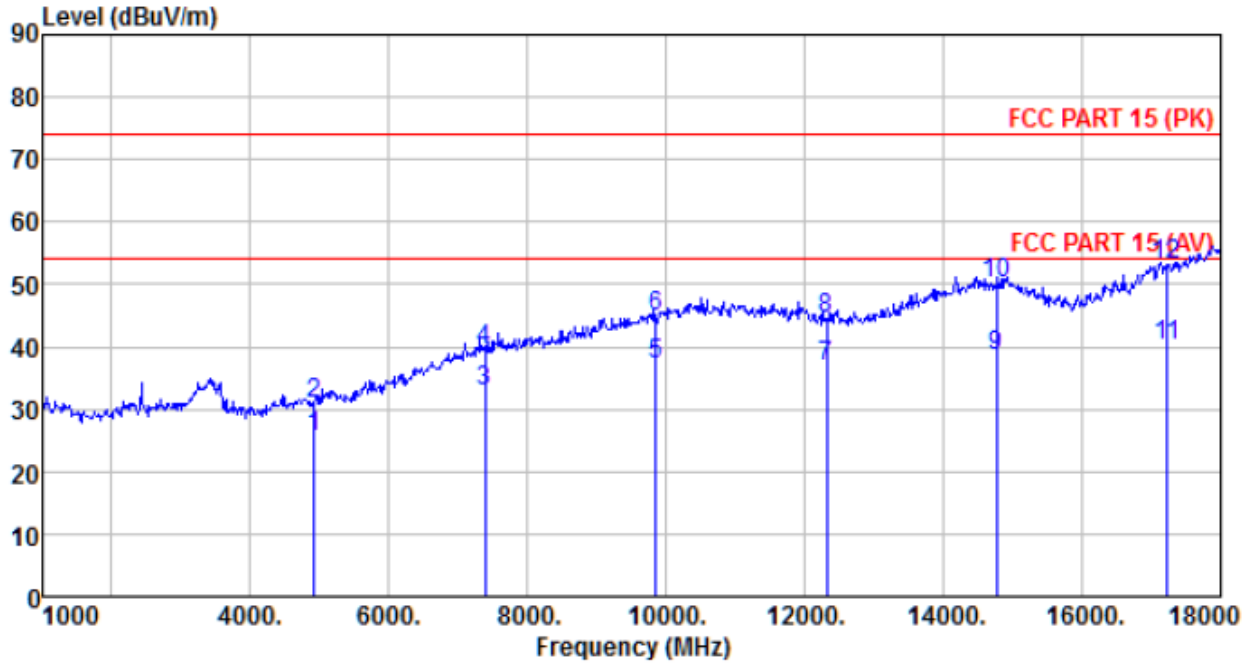
Horizontal:



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
4924.000	24.59	31.89	8.70	37.69	27.49	54.00	-26.51	Average
4924.000	29.69	31.89	8.70	37.69	32.59	74.00	-41.41	Peak
7386.000	18.92	36.49	11.76	35.61	31.56	54.00	-22.44	Average
7386.000	26.27	36.49	11.76	35.61	38.91	74.00	-35.09	Peak
9848.000	17.28	38.62	14.31	35.02	35.19	54.00	-18.81	Average
9848.000	26.37	38.62	14.31	35.02	44.28	74.00	-29.72	Peak
12310.000	19.57	38.83	15.23	36.34	37.29	54.00	-16.71	Average
12310.000	26.75	38.83	15.23	36.34	44.47	74.00	-29.53	Peak
14772.000	15.80	41.82	17.34	35.53	39.43	54.00	-14.57	Average
14772.000	26.17	41.82	17.34	35.53	49.80	74.00	-24.20	Peak
17234.000	11.77	45.51	18.98	36.18	40.08	54.00	-13.92	Average
17234.000	25.68	45.51	18.98	36.18	53.99	74.00	-20.01	Peak

Remarks:level = Reading level + Antenna factor + Cable loss - Preamp Factor

Vertical:

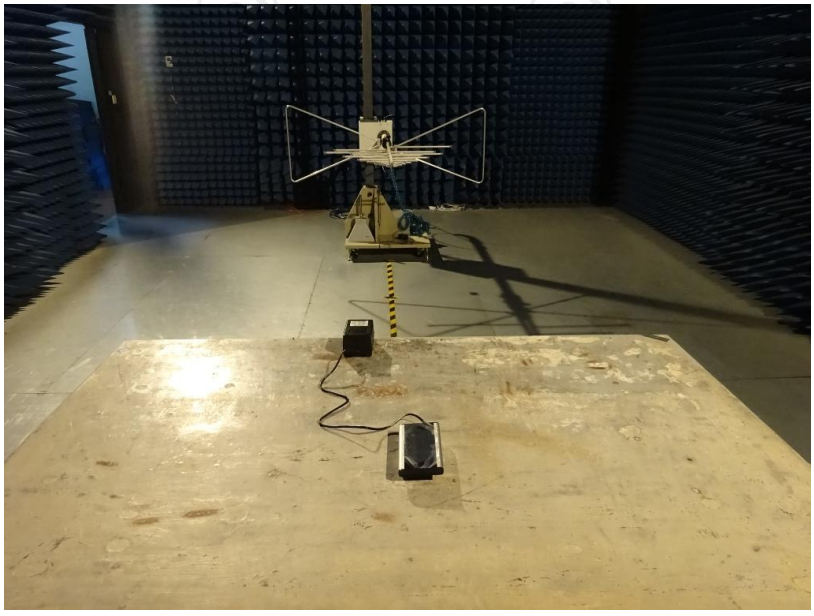


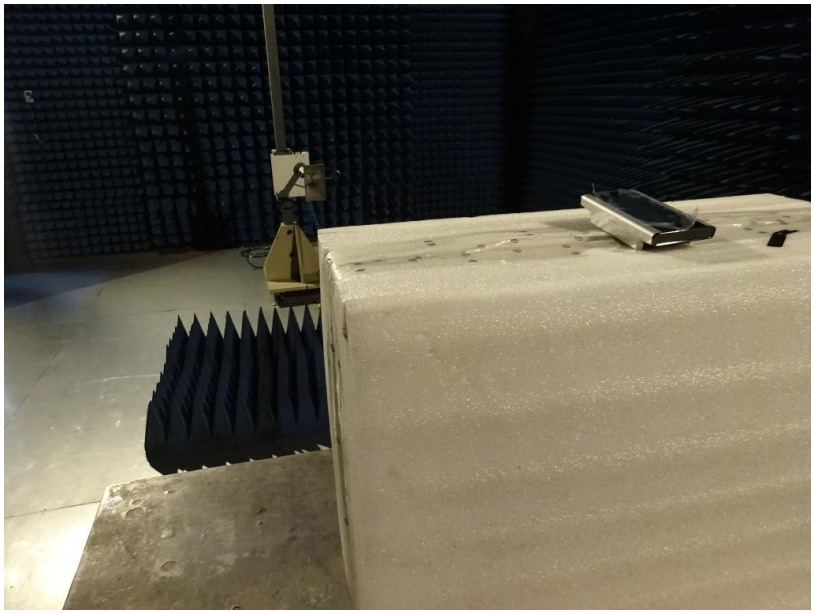
Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV	Limit level dBuV/m	Over limit dB	Remark
4924.000	22.83	31.89	8.70	37.69	25.73	54.00	-28.27	Average
4924.000	28.03	31.89	8.70	37.69	30.93	74.00	-43.07	Peak
7386.000	20.31	36.49	11.76	35.61	32.95	54.00	-21.05	Average
7386.000	26.92	36.49	11.76	35.61	39.56	74.00	-34.44	Peak
9848.000	19.44	38.62	14.31	35.02	37.35	54.00	-16.65	Average
9848.000	26.93	38.62	14.31	35.02	44.84	74.00	-29.16	Peak
12310.000	19.24	38.83	15.23	36.34	36.96	54.00	-17.04	Average
12310.000	26.76	38.83	15.23	36.34	44.48	74.00	-29.52	Peak
14772.000	15.03	41.82	17.34	35.53	38.66	54.00	-15.34	Average
14772.000	26.60	41.82	17.34	35.53	50.23	74.00	-23.77	Peak
17234.000	11.81	45.51	18.98	36.18	40.12	54.00	-13.88	Average
17234.000	24.69	45.51	18.98	36.18	53.00	74.00	-21.00	Peak

Remarks:level = Reading level + Antenna factor + Cable loss - Preamp Factor

Appendix A: Photographs of Test Setup

Product: WiFi Gateway Thermostat
Model: SAU40T1
Radiated Emission





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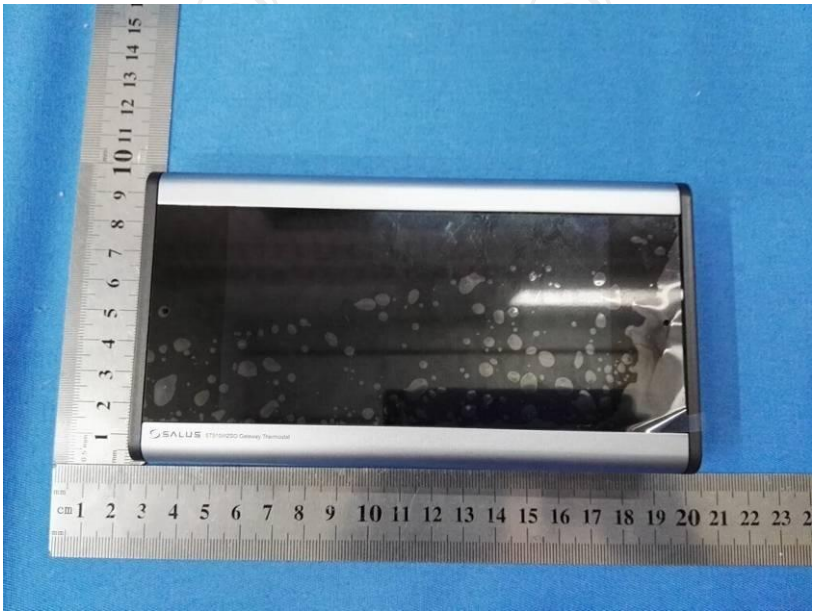
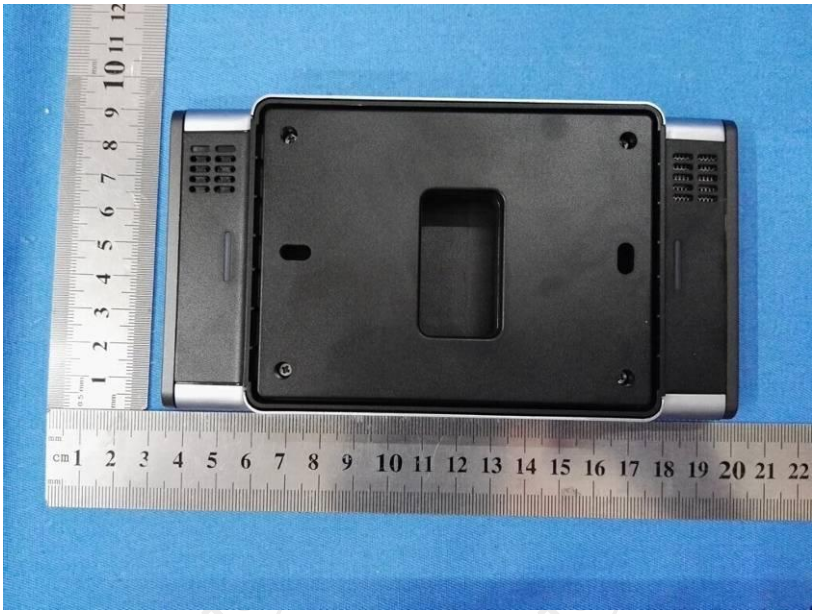
Conducted Emission

Hotline: 400-6611-140 Tel: 86-755-27673339 Fax: 86-755-27673332 http://www.tct-lab.com

Appendix B: Photographs of EUT
Product: WiFi Gateway Thermostat
Model: SAU40T1
External Photos





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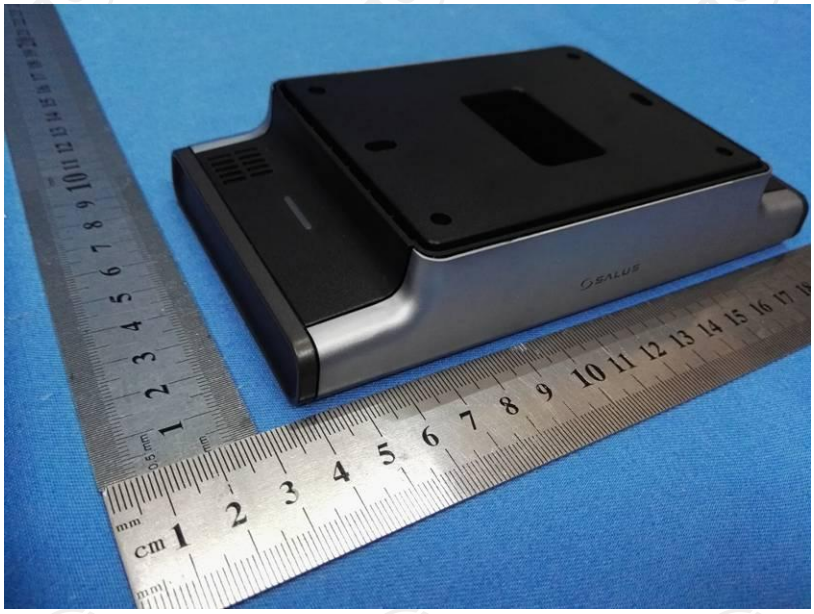
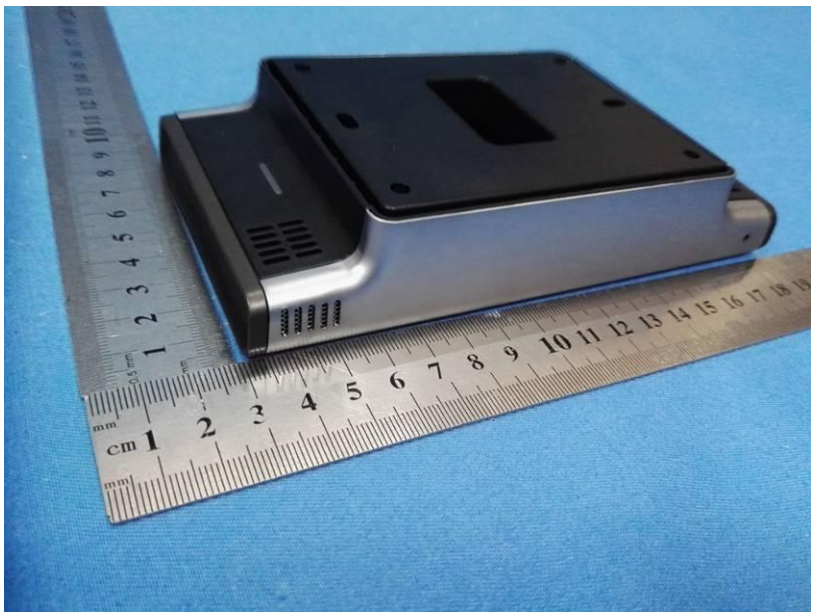
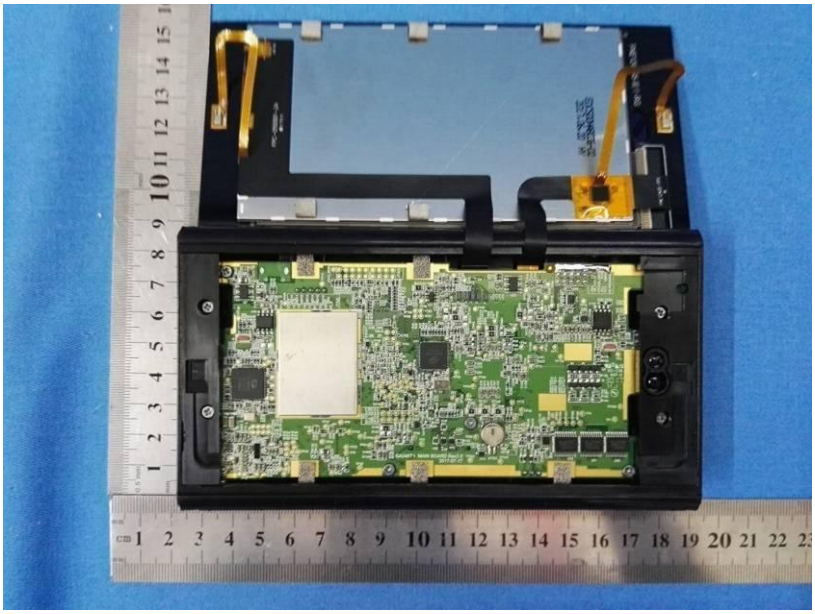
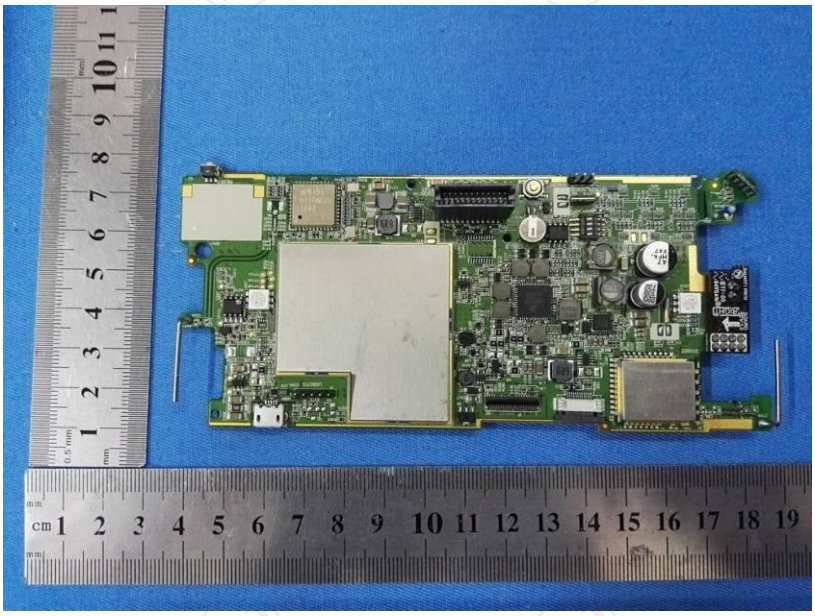




Product: WiFi Gateway Thermostat
Model: SAU40T1
Internal Photos





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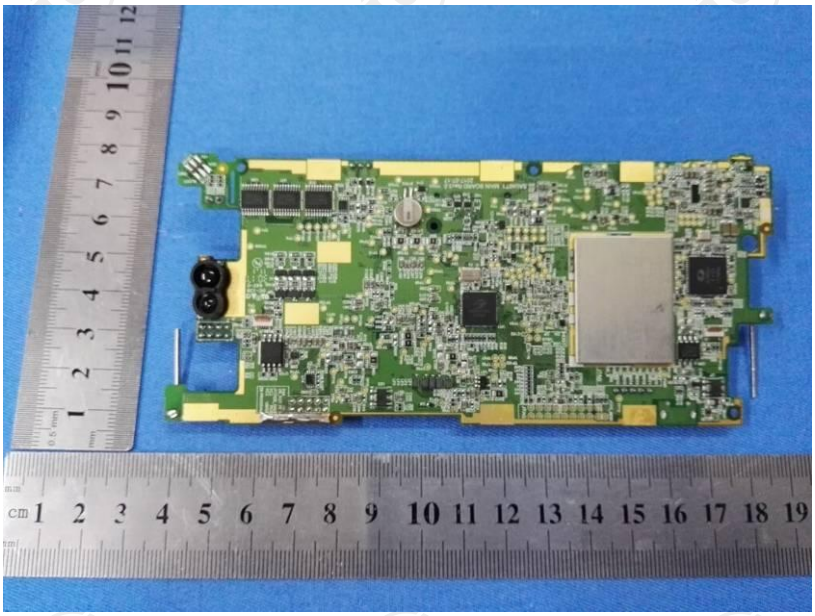

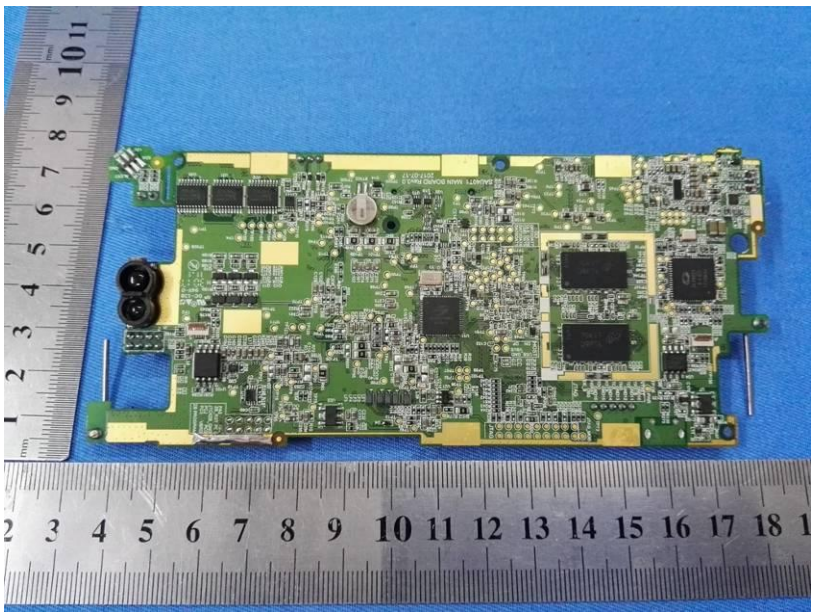

*****END OF REPORT*****