FCC Report (WIFI)

Product Name	:	RS500i/RS500 safe
Trade mark	:	Vaultek
Mode No.	:	RS500i-BK, RS500-BK, RS500i-TG, RS500i-WT, RS500-TG, RS500-WT
FCC ID:	:	2AONI-PRO-RS50I01
Report Number	:	BLA-EMC-201812-A30-01
Date of sample receipt	:	December 25, 2018
Date of Test:	:	December 25 , 2018 – January 7, 2019
Date of Issue	:	January 7, 2019
Test standard	:	FCC CFR Title 47 Part 15 Subpart C Section 15.247
Test result	:	PASS

Prepared for:

Vaultek Safe, Inc.
37 N Orange Ave.Suite 800B Orlando, FL 32801

Prepared by:

Qianhai BlueAsia of Technical Services(Shenzhen) Co., Ltd.
IOT Test Centre of BlueAsia
No. 448 Bulong Road, Bantian Street, Longgang District, Shenzhen, China
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Compiled by: Alex_jiang Review by: Sweet.liang

Approved by: Emen_li Date: January 7, 2019

2 Version

Version No.	Date	Description
00	*January 7, 2019*	*Original*

3 Contents

4 Test Summary

Test Item	Section in CFR 47	Result
Antenna requirement	15.203/15.247 (c)	Pass
AC Power Line Conducted Emission	15.207	N/A
Conducted Peak Output Power	15.247 (b)(3)	Pass
Channel Bandwidth	15.247 (a)(2)	Pass
Power Spectral Density	15.247 (e)	Pass
Band Edge	15.247(d)	Pass
Spurious Emission	15.205/15.209	Pass

Remark: Test according to ANSI C63.10:2013.

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

N/A: Not applicable.

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 ~ 26.5GHz	± 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:	RS500i/RS500 safe
Model No.:	RS500i-BK, RS500-BK, RS500i-TG, RS500i-WT, RS500-TG, RS500-WT
Serial No.:	N/A
Sample(s) Status	Engineer sample
Operation Frequency:	2412MHz~2462MHz (802.11b/802.11g/802.11n(H20)) 2422MHz~2452MHz (802.11n(H40))
Channel numbers:	802.11b/802.11g /802.11n(HT20): 11; 802.11n(H40): 7
Channel separation:	5MHz
Modulation technology:	802.11b: Direct Sequence Spread Spectrum (DSSS) 802.11g/802.11n(H20)/ 802.11n(H40) 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 150Mbps
Antenna Type:	PCB Antenna
Antenna gain:	1.2dBi(declare by applicant)
Power supply:	DC 3.6V

Operation Frequency each of channel							
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:

Test channel	**Frequency (MHz)**
	802.11b/802.11g/802.11n(HT20)
Lowest channel	2412MHz
Middle channel	2437MHz
Highest channel	2462MHz
Test channel	802.11n(HT40)
Lowest channel	2422MHz
Middle channel	2437MHz
Highest channel	2452MHz

5.2 Test mode

Transmitting mode	Keep the EUT in continuously transmitting mode

Remark: During the test, the dutycycle >98%, Full battery is used during all test.

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:

Pre-scan all kind of data rate in lowest channel, and found the follow list which it was worst case.

Mode	802.11b	802.11g	802.11n(HT20)	802.11n(HT40)
Data rate	1Mbps	6Mbps	6.5Mbps	13.5Mbps

5.3 Description of Support Units

Manufacturer	Description	Model	Serial Number
Lenovo	Notebook computer	E470C	PF-10FB5C

5.4 Test Facility

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

● FCC — Designation No.: CN1252

Qianhai BlueAsia of Technical Services(Shenzhen) Co., Ltd 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. Designation CN1252.

●ISED — CAB identifier No.: CN0028

Qianhai BlueAsia of Technical Services(Shenzhen) Co., Ltd has been registered by Certification and Engineering Bureau of ISED for radio equipment testing with CAB identifier CN0028

5.5 Test Location

All tests were performed at:

All tests were performed at:
Qianhai BlueAsia of Technical Services(Shenzhen) Co., Ltd.
IOT Test Centre of BlueAsia
No. 448 Bulong Road, Bantian Street, Longgang District, Shenzhen, China
Telephone: TEL: +86-755-28682673 FAX: +86-755-28682673
No tests were sub-contracted.

6 Test Instruments list

Radiated Emission:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Serial No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	3m SAC	SKET	9m*6m*6m	966	06-10-2018	06-09-2023
2	Broadband Antenna	SCHWARZBECK	VULB9168	00836 P:00227	07-14-2018	07-13-2019
3	Horn Antenna	SCHWARZBECK	9120D	01892 P:00331	07-14-2018	07-13-2019
4	EMI Test Software	EZ	EZ	N/A	N/A	N/A
5	Pre-amplifier	SKET	N/A	N/A	07-19-2018	07-18-2019
6	Spectrum analyzer	Rohde & Schwarz	FSP40	100817	05-24-2018	05-23-2019
7	EMI Test Receiver	Rohde & Schwarz	ESR7	101199	03-21-2018	03-20-2019
8	Controller	SKET	N/A	N/A	N/A	N/A
9	Vector Signal Generator	Agilent	E4438C	MY45092582	05-24-2018	05-23-2019
10	Signal Generator	Agilent	E8257D	MY44320250	05-24-2018	05-23-2019

Conducted Emission						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Serial No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	EMI Test Receiver	Rohde & Schwarz	ESPI3	101082	06-10-2018	06-09-2019
2	LISN	CHASE	MN2050D	1447	12-18-2018	12-17-2019
3	LISN	Rohde & Schwarz	ENV216	3560.6550.15	07-19-2018	07-18-2019
4	EMI Test Software	EZ	EZ	N/A	N/A	N/A
5	Temperature Humidity Chamber	Mingle	TH101B	N/A	07-19-2018	07-18-2019

RF Conducted Test:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Serial No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	Spectrum Analyzer	Agilent	N9030A	MY50510123	05-24-2018	05-23-2019
2	Spectrum analyzer	Rohde & Schwarz	FSP40	100817	05-24-2018	05-23-2019
3	Vector Signal Generator	Agilent	E4438C	MY45092582	05-24-2018	05-23-2019
4	Signal Generator	Agilent	E8257D	MY44320250	05-24-2018	05-23-2019
5	Power Sensor	D.A.R.E	RPR3006W	17I00015SNO 27	05-24-2018	05-23-2019
6	Power Sensor	D.A.R.E	RPR3006W	17I00015SNO 28	05-24-2018	05-23-2019
7	DC Power Supply	LODESTAR	LP305DE	N/A	07-19-2018	07-18-2019
	Temperature Humidity Chamber	Mingle	TH101B	N/A	07-19-2018	07-18-2019

7 Test results and Measurement Data

7.1 Antenna requirement

Standard requirement:	FCC Part15 C Section 15.203 /247(c)

15.203 requirement:

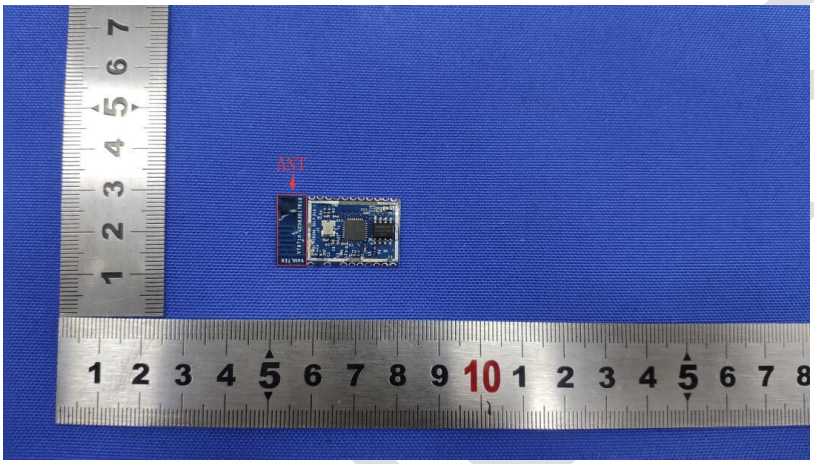
An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit 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:

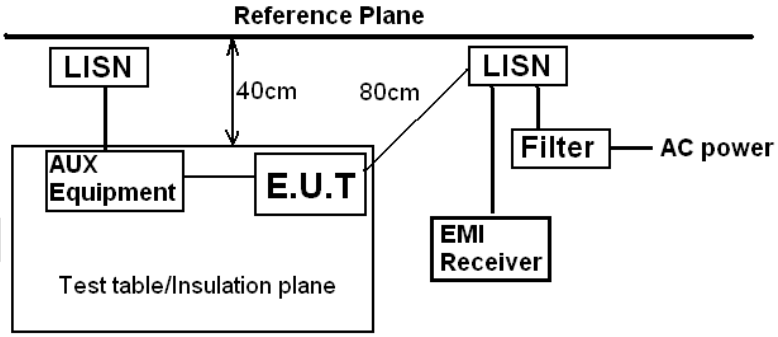
(i) Systems operating in the 2400-2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6dBi.

EUT Antenna:

The antenna is PCB Antenna, the best case gain of the antenna is 1.2dBi

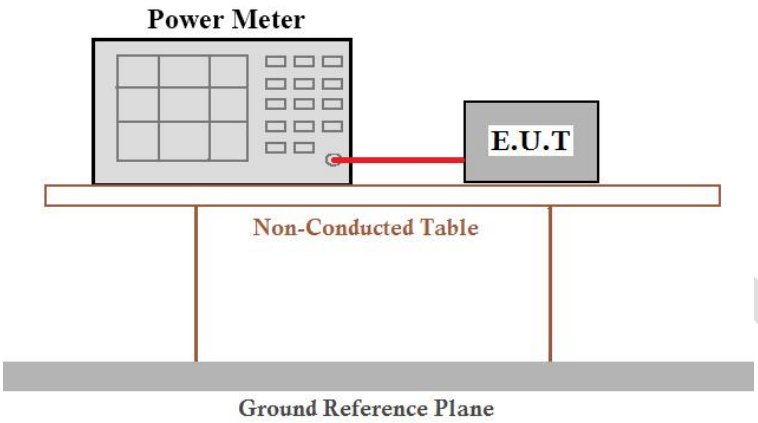


7.2 Conducted Emission

<table>
<tr><td>Test Requirement:</td><td colspan="3">FCC Part15 C Section 15.207</td></tr>
<tr><td>Test Method:</td><td colspan="3">ANSI C63.10: 2013</td></tr>
<tr><td>TestFrequencyRange:</td><td colspan="3">150kHz to 30MHz</td></tr>
<tr><td>Class / Severity:</td><td colspan="3">Class B</td></tr>
<tr><td>Receiver setup:</td><td colspan="3">RBW=9kHz, VBW=30kHz</td></tr>
<tr><td>Limit:</td><td>Frequency range (MHz)</td><td colspan="2">Limit (dBuV)</td></tr>
<tr><td></td><td></td><td>Quasi-peak</td><td>Average</td></tr>
<tr><td></td><td>0.15-0.5</td><td>66 to 56*</td><td>56 to 46*</td></tr>
<tr><td></td><td>0.5-5</td><td>56</td><td>46</td></tr>
<tr><td></td><td>5-30</td><td>60</td><td>50</td></tr>
<tr><td></td><td colspan="3">* Decreases with the logarithm of the frequency.</td></tr>
<tr><td>Test procedure</td><td colspan="3">1. The E.U.T and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.), whichprovides a 50ohm/50uH coupling impedance for the measuring equipment.
2. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs).
3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4: 2014 on conducted measurement.</td></tr>
<tr><td>Test setup:</td><td colspan="3"> 

Remark:
E.U.T: Equipment Under Test
LISN: Line Impedence Stabilization Network
Test table height=0.8m</td></tr>
<tr><td>Test Instruments:</td><td colspan="3">Refer to section 6.0 for details</td></tr>
<tr><td>Test mode:</td><td colspan="3">Refer to section 5.2 for details</td></tr>
<tr><td>Test results:</td><td colspan="3">N/A</td></tr>
</table>

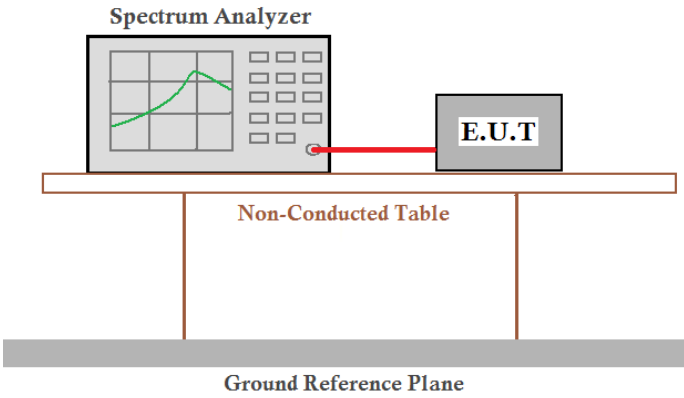
7.3 Conducted Peak Output Power

Test Requirement:	FCC Part15 C Section 15.247 (b)(3)
Test Method:	KDB558074 D01 DTS Meas Guidance V05
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
	802.11b	802.11g	802.11n(HT20)	802.11n(HT40)		
Lowest	13.79	9.86	9.73	10.10	30.00	Pass
Middle	13.93	9.70	9.55	9.92		
Highest	13.53	9.68	9.54	9.41		

7.4 Channel Bandwidth

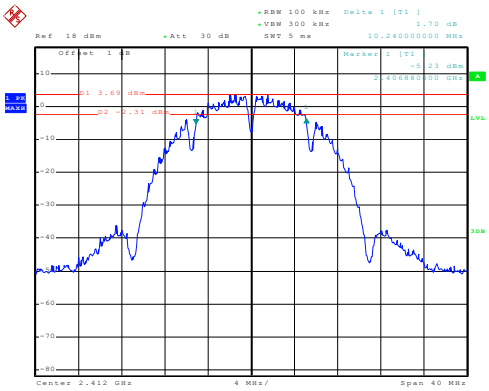
Test Requirement:	FCC Part15 C Section 15.247 (a)(2)
Test Method:	KDB558074 D01 DTS Meas Guidance V05
Limit:	>500KHz
Test setup:	
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

Measurement Data

Test CH	6dB Emission Bandwidth (MHz)				Limit(kHz)	Result
	802.11b	802.11g	802.11n(H20)	802.11n(H40)		
Lowest	10.24	16.80	17.92	36.80	>500	Pass
Middle	10.32	16.80	17.88	36.80		
Highest	10.24	16.80	18.08	36.80		

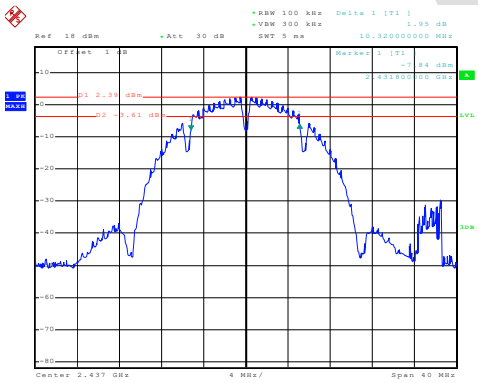
Test plot as follows:

Test mode:802.11b
6dBEBW



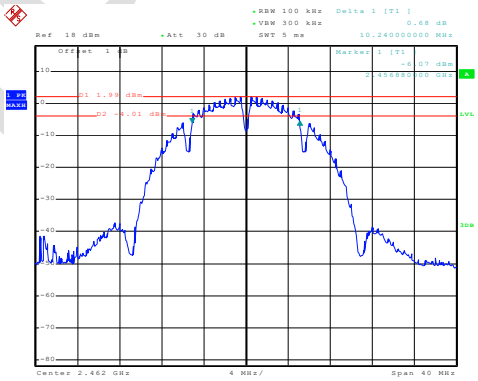
Date: 29.DEC.2018 14:06:46

Lowest channel



Date: 29.DEC.2018 14:15:41

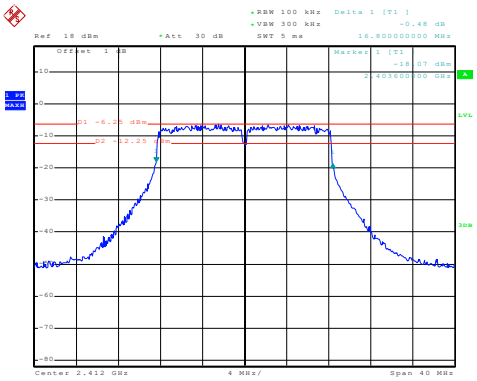
Middle channel



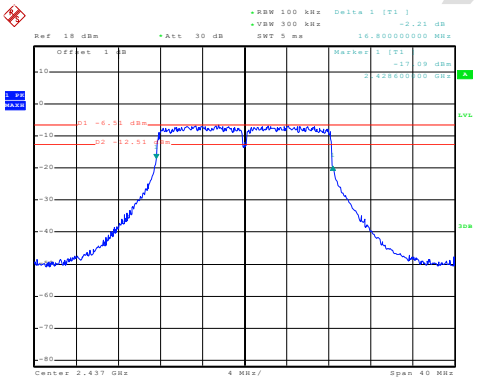
Date: 29.DEC.2018 14:14:31

Highest channel

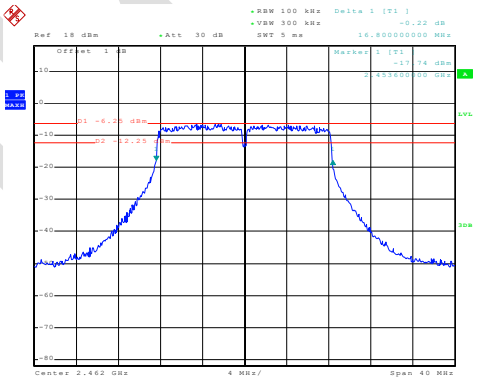
Test mode:802.11g
6dBEBW



Lowest channel

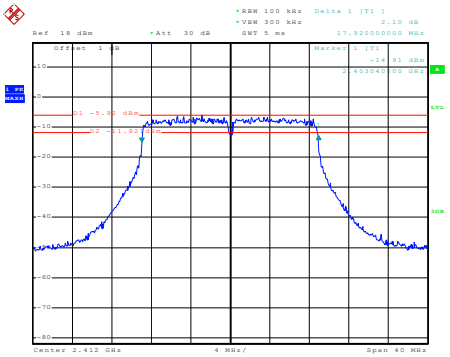


Middle channel

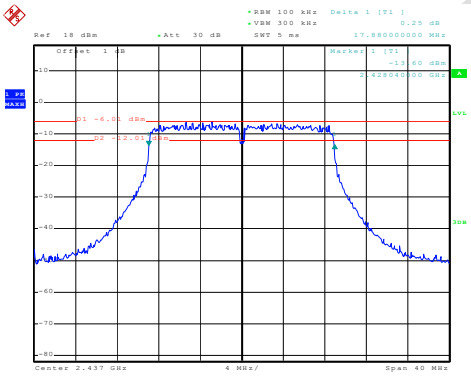


Highest channel

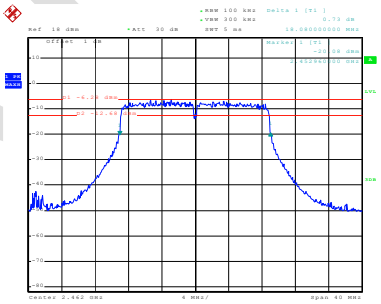
Test mode:802.11n(HT20)
6dBEBW



Lowest channel

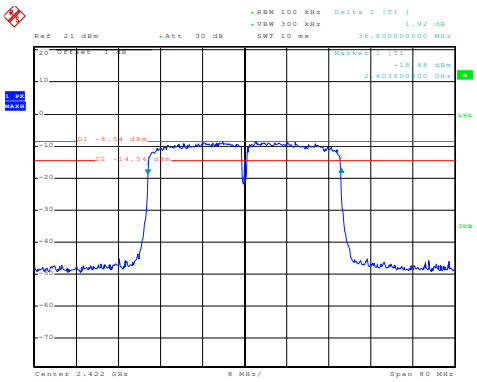


Middle channel



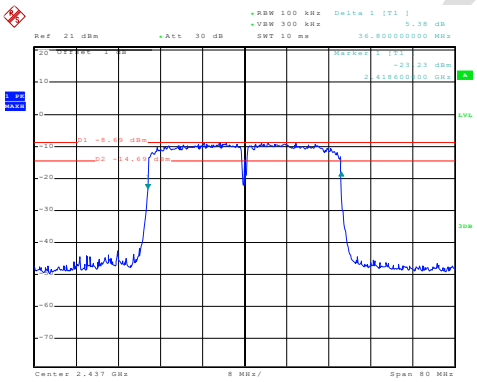
Highest channel

Test mode:802.11n(HT40)
6dBEBW



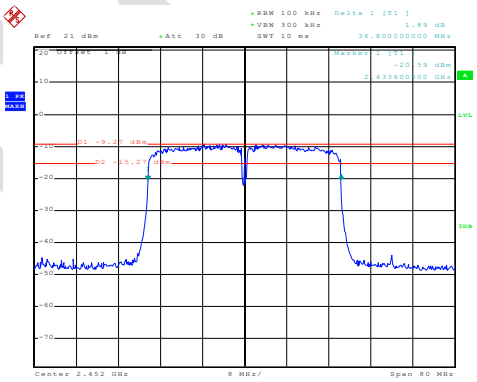
Date: 7.JAN.2019 16:51:21

Lowest channel



Date: 7.JAN.2019 16:53:33

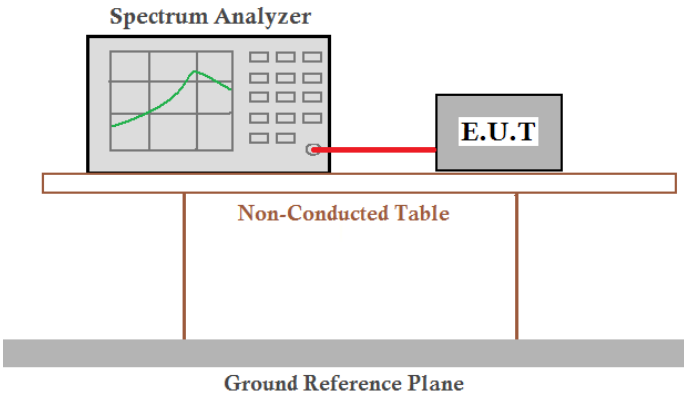
Middle channel



Date: 7.JAN.2019 16:55:47

Highest channel

7.5 Power Spectral Density

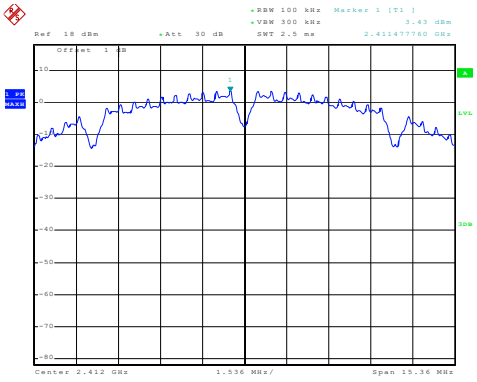
Test Requirement:	FCC Part15 C Section 15.247 (e)
Test Method:	KDB558074 D01 DTS Meas Guidance V05
Limit:	8dBm/3KHz
Test setup:	
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

Measurement Data

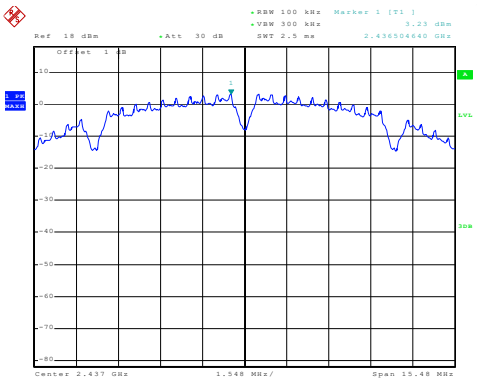
Test CH	Power Spectral Density (dBm)				Limit (dBm/3KHz)	Result
	802.11b	802.11g	802.11n(HT20)	802.11n(HT40)		
Lowest	3.43	-6.61	-5.84	-8.03	8.00	Pass
Middle	3.23	-6.64	-5.97	-9.27		
Highest	2.21	-6.74	-6.41	-9.81		

Test plot as follows:

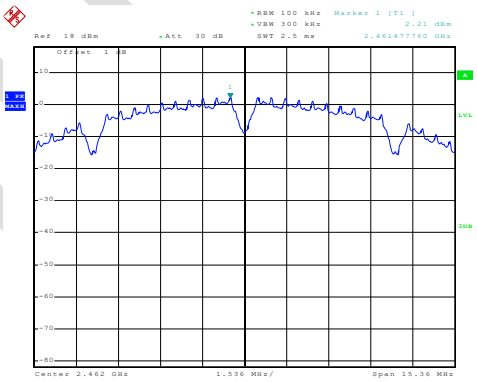
Test mode:	802.11b



Lowest channel

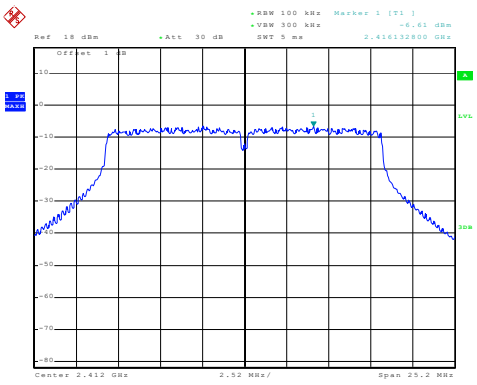


Middle channel

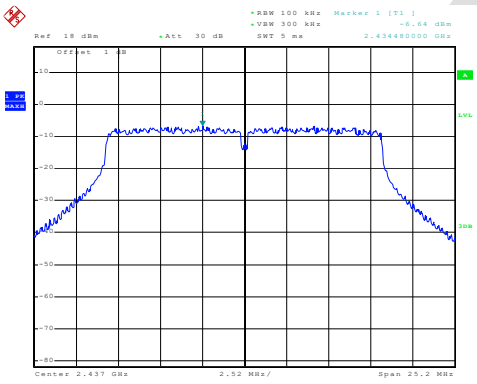


Highest channel

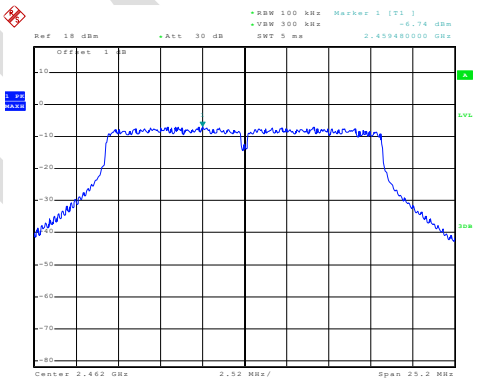
Test mode:	802.11g



Lowest channel

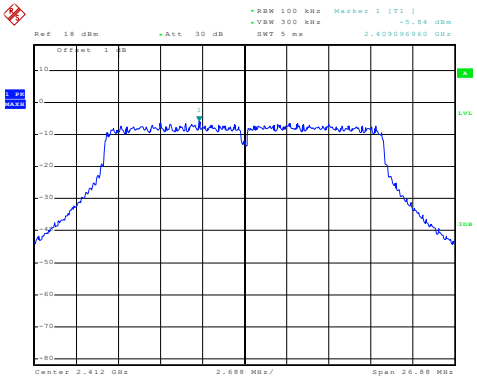


Middle channel

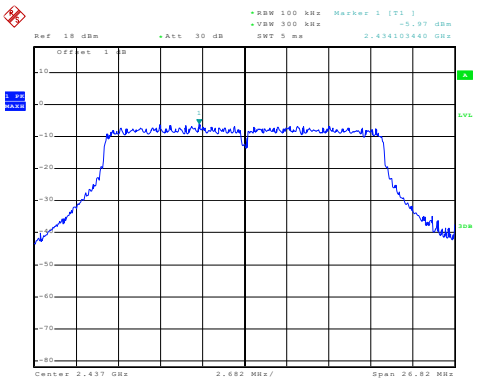


Highest channel

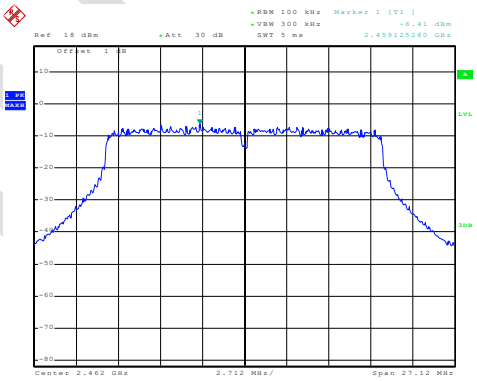
Test mode:	802.11n(HT20)



Lowest channel

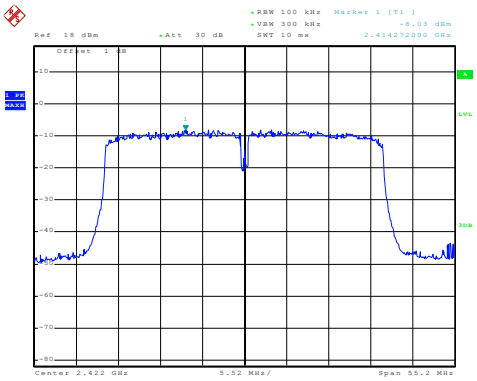


Middle channel



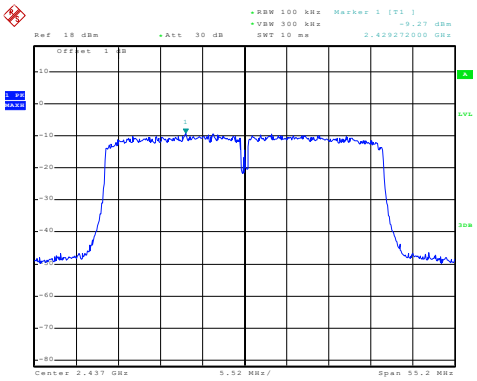
Highest channel

Test mode:	802.11n(HT40)



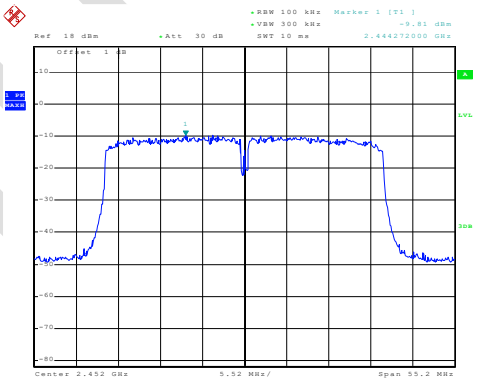
Date: 2.JAN.2019 12:52:34

Lowest channel



Date: 2.JAN.2019 12:55:35

Middle channel

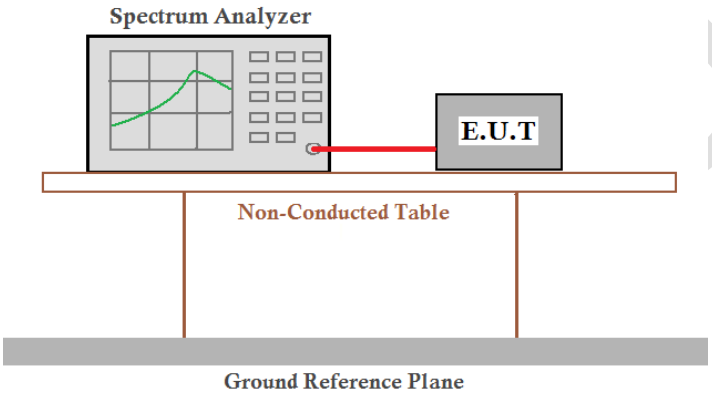


Date: 2.JAN.2019 12:59:20

Highest channel

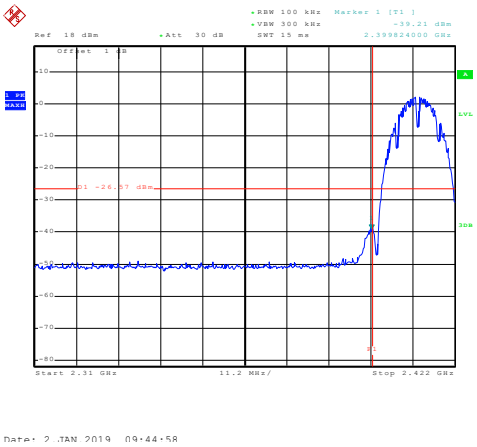
7.6 Band edges

7.6.1 Conducted Emission Method

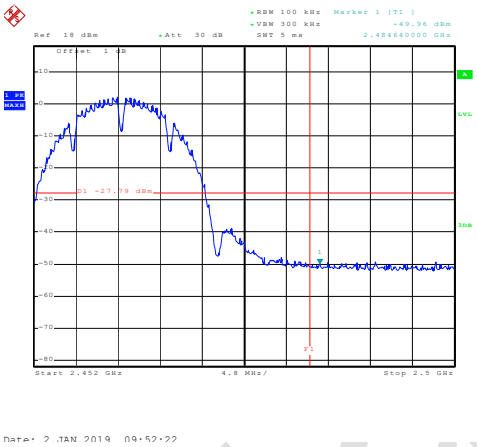
Test Requirement:	FCC Part15 C Section 15.247 (d)
Test Method:	KDB558074 D01 DTS Meas Guidance V05
Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 30 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.
Test setup:	
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

Test plot as follows:

Test mode:	802.11b

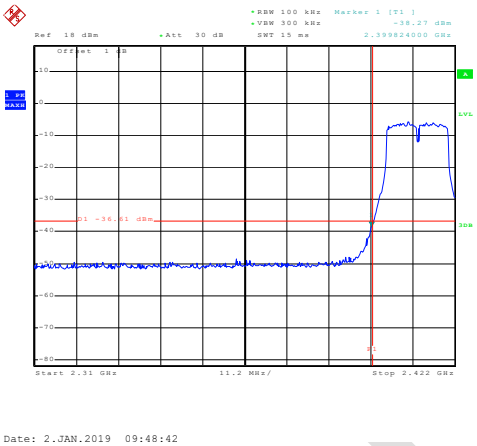


Lowest channel

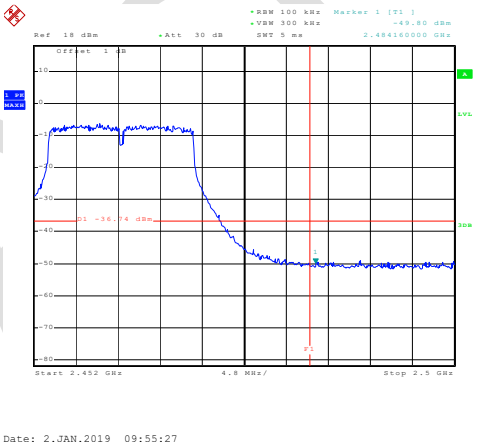


Highest channel

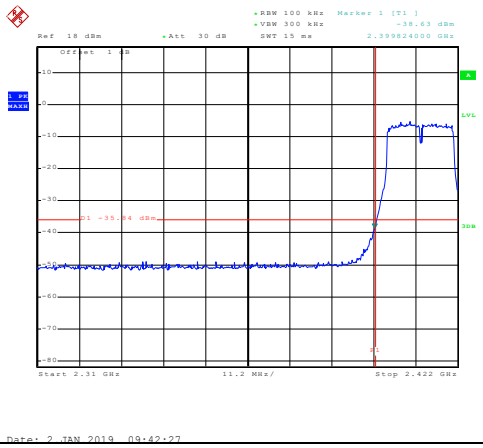
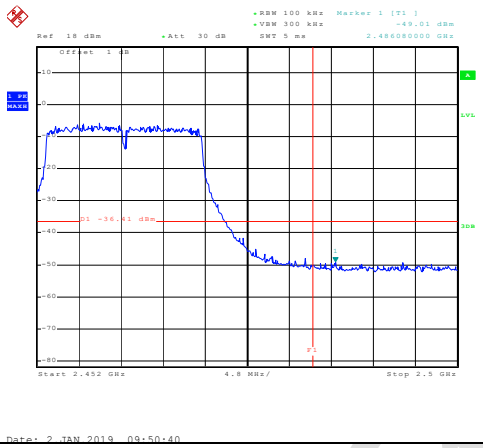
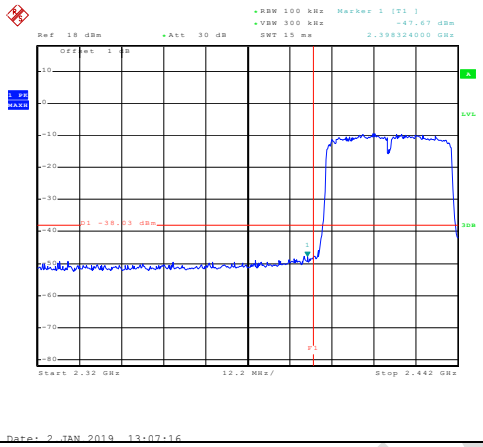
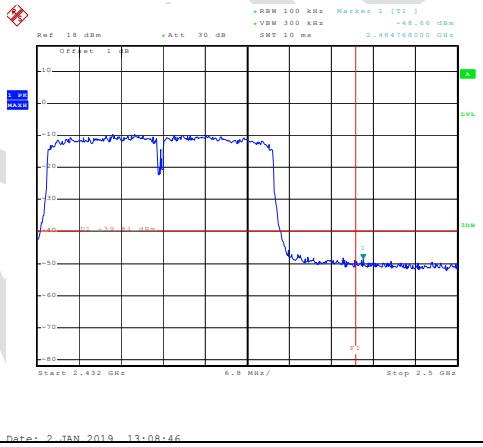
Test mode:	802.11g



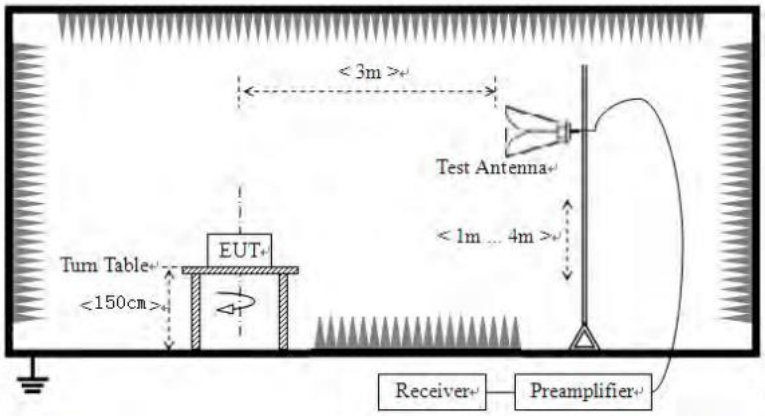
Lowest channel



Highest channel

Test mode:	802.11n(HT20)
	
Lowest channel	Highest channel
Test mode:	802.11n(HT40)
	
Lowest channel	Highest channel

7.6.2 Radiated Emission Method

<table>
<tr><td>Test Requirement:</td><td>FCC Part15 C Section 15.209 and 15.205</td></tr>
<tr><td>Test Method:</td><td>ANSI C63.10:2013</td></tr>
<tr><td>Test Frequency Range:</td><td>All of the restrict bands were tested, only the worst band's (2310MHz to 2390MHz, 2483.5MHz to 2500MHz) data was showed.</td></tr>
<tr><td>Test site:</td><td>Measurement Distance: 3m</td></tr>
<tr><td>Receiver setup:</td><td>
<table>
<tr><td>Frequency</td><td>Detector</td><td>RBW</td><td>VBW</td><td>Value</td></tr>
<tr><td rowspan="2">Above 1GHz</td><td>Peak</td><td>1MHz</td><td>3MHz</td><td>Peak</td></tr>
<tr><td>Average</td><td>1MHz</td><td>3MHz</td><td>Average</td></tr>
</table>
</td></tr>
<tr><td>Limit:</td><td>
<table>
<tr><td>Frequency</td><td>Limit (dBuV/m @3m)</td><td>Value</td></tr>
<tr><td rowspan="2">Above 1GHz</td><td>54.00</td><td>Average</td></tr>
<tr><td>74.00</td><td>Peak</td></tr>
</table>
</td></tr>
<tr><td>Test setup:</td><td> 
</td></tr>
<tr><td>Test Procedure:</td><td>1. The EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.
2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading.
5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.
7. The radiation measurements are performed in X, Y, Z axis positioning. And found the Y axis positioning which it is worse case, only the test worst case mode is recorded in the report.</td></tr>
<tr><td>Test Instruments:</td><td>Refer to section 6.0 for details</td></tr>
<tr><td>Test mode:</td><td>Refer to section 5.2 for details</td></tr>
<tr><td>Test results:</td><td>Pass</td></tr>
</table>

Measurement data:

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

Test mode:	802.11b	Test channel:	Lowest

Peak value:

Frequency (MHz)	Read Level (dBuV)	Correct factor (dB/m)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2310.00	58.56	-14.56	44.00	74.00	-30.00	Horizontal
2390.00	53.14	-14.19	38.95	74.00	-35.05	Horizontal
2310.00	54.29	-14.85	39.44	74.00	-34.56	Vertical
2390.00	54.03	-14.52	39.51	74.00	-34.49	Vertical

Average value:

Frequency (MHz)	Read Level (dBuV)	Correct factor (dB/m)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2310.00	42.78	-14.56	28.22	54.00	-25.78	Horizontal
2390.00	44.36	-14.19	30.17	54.00	-23.83	Horizontal
2310.00	45.15	-14.85	30.3	54.00	-23.70	Vertical
2390.00	43.82	-14.52	29.3	54.00	-24.70	Vertical

Test channel:	Highest

Peak value:

Frequency (MHz)	Read Level (dBuV)	Correct factor (dB/m)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	58.26	-13.66	44.6	74.00	-29.40	Horizontal
2500.00	54.03	-13.57	40.46	74.00	-33.54	Horizontal
2483.50	57.83	-14.05	43.78	74.00	-30.22	Vertical
2500.00	53.46	-13.97	39.49	74.00	-34.51	Vertical

Average value:

Frequency (MHz)	Read Level (dBuV)	Correct factor (dB/m)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	47.29	-13.66	33.63	54.00	-20.37	Horizontal
2500.00	45.12	-13.57	31.55	54.00	-22.45	Horizontal
2483.50	48.23	-14.05	34.18	54.00	-19.82	Vertical
2500.00	44.07	-13.97	30.1	54.00	-23.9	Vertical

Remark:

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

Test mode:	802.11g	Test channel:	Lowest

Peak value:

Frequency (MHz)	Read Level (dBuV)	Correct factor (dB/m)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2310.00	54.36	-14.56	39.8	74.00	-34.2	Horizontal
2390.00	53.81	-14.19	39.62	74.00	-34.38	Horizontal
2310.00	54.13	-14.85	39.28	74.00	-34.72	Vertical
2390.00	54.01	-14.52	39.49	74.00	-34.51	Vertical

Average value:

Frequency (MHz)	Read Level (dBuV)	Correct factor (dB/m)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2310.00	44.36	-14.56	29.8	54.00	-24.2	Horizontal
2390.00	43.15	-14.19	28.96	54.00	-25.04	Horizontal
2310.00	45.08	-14.85	30.23	54.00	-23.77	Vertical
2390.00	44.69	-14.52	30.17	54.00	-23.83	Vertical

Test mode:	802.11g	Test channel:	Highest

Peak value:

Frequency (MHz)	Read Level (dBuV)	Correct factor (dB/m)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	58.34	-13.66	44.68	74.00	-29.32	Horizontal
2500.00	53.73	-13.57	40.16	74.00	-33.84	Horizontal
2483.50	57.74	-14.05	43.69	74.00	-30.31	Vertical
2500.00	53.19	-13.97	39.22	74.00	-34.78	Vertical

Average value:

Frequency (MHz)	Read Level (dBuV)	Correct factor (dB/m)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	45.19	-13.66	31.53	54.00	-22.47	Horizontal
2500.00	44.03	-13.57	30.46	54.00	-23.54	Horizontal
2483.50	45.36	-14.05	31.31	54.00	-22.69	Vertical
2500.00	44.18	-13.97	30.21	54.00	-23.79	Vertical

Remark:

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

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

Peak value:

Frequency (MHz)	Read Level (dBuV)	Correct factor (dB/m)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2310.00	54.69	-14.56	40.13	74.00	-33.87	Horizontal
2390.00	53.29	-14.19	39.1	74.00	-34.9	Horizontal
2310.00	54.81	-14.85	39.96	74.00	-34.04	Vertical
2390.00	52.73	-14.52	38.21	74.00	-35.79	Vertical

Average value:

Frequency (MHz)	Read Level (dBuV)	Correct factor (dB/m)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2310.00	46.01	-14.56	31.45	54.00	-22.55	Horizontal
2390.00	44.28	-14.19	30.09	54.00	-23.91	Horizontal
2310.00	45.16	-14.85	30.31	54.00	-23.69	Vertical
2390.00	43.37	-14.52	28.85	54.00	-25.15	Vertical

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

Peak value:

Frequency (MHz)	Read Level (dBuV)	Correct factor (dB/m)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	57.82	-13.66	44.16	74.00	-29.84	Horizontal
2500.00	54.01	-13.57	40.44	74.00	-33.56	Horizontal
2483.50	57.43	-14.05	43.38	74.00	-30.62	Vertical
2500.00	53.31	-13.97	39.34	74.00	-34.66	Vertical

Average value:

Frequency (MHz)	Read Level (dBuV)	Correct factor (dB/m)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	46.65	-13.66	32.99	54.00	-21.01	Horizontal
2500.00	44.19	-13.57	30.62	54.00	-23.38	Horizontal
2483.50	45.13	-14.05	31.08	54.00	-22.92	Vertical
2500.00	44.82	-13.97	30.85	54.00	-23.15	Vertical

Remark:

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

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

Peak value:

Frequency (MHz)	Read Level (dBuV)	Correct factor (dB/m)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2310.00	55.61	-14.56	41.05	74.00	-32.95	Horizontal
2390.00	53.37	-14.19	39.18	74.00	-34.82	Horizontal
2310.00	54.39	-14.85	39.54	74.00	-34.46	Vertical
2390.00	52.49	-14.52	37.97	74.00	-36.03	Vertical

Average value:

Frequency (MHz)	Read Level (dBuV)	Correct factor (dB/m)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2310.00	46.67	-14.56	32.11	54.00	-21.89	Horizontal
2390.00	44.19	-14.19	30	54.00	-24.00	Horizontal
2310.00	45.89	-14.85	31.04	54.00	-22.96	Vertical
2390.00	43.28	-14.52	28.76	54.00	-25.24	Vertical

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

Peak value:

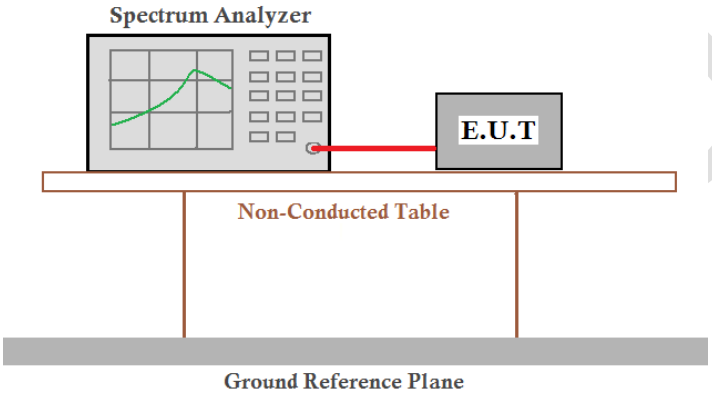
Frequency (MHz)	Read Level (dBuV)	Correct factor (dB/m)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	55.67	-13.66	42.01	74.00	-31.99	Horizontal
2500.00	53.15	-13.57	39.58	74.00	-34.42	Horizontal
2483.50	54.78	-14.05	40.73	74.00	-33.27	Vertical
2500.00	52.37	-13.97	38.4	74.00	-35.6	Vertical

Average value:

Frequency (MHz)	Read Level (dBuV)	Correct factor (dB/m)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	47.08	-13.66	33.42	54.00	-20.58	Horizontal
2500.00	44.68	-13.57	31.11	54.00	-22.89	Horizontal
2483.50	46.12	-14.05	32.07	54.00	-21.93	Vertical
2500.00	43.87	-13.97	29.9	54.00	-24.10	Vertical

7.7 Spurious Emission

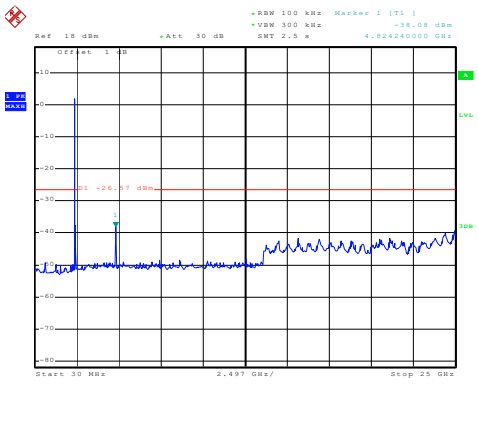
7.7.1 Conducted Emission Method

Test Requirement:	FCC Part15 C Section 15.247 (d)
Test Method:	KDB558074 D01 DTS Meas Guidance V05
Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.
Test setup:	
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

Test plot as follows:

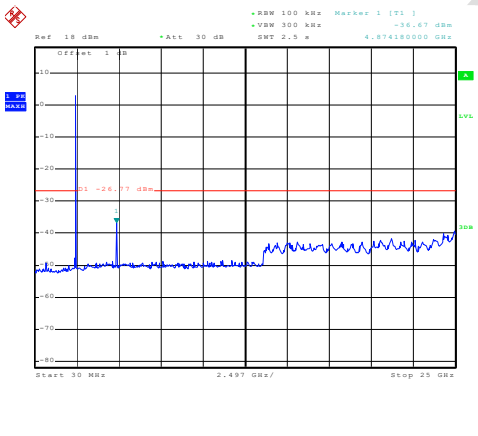
Test mode:	802.11b

Lowest channel



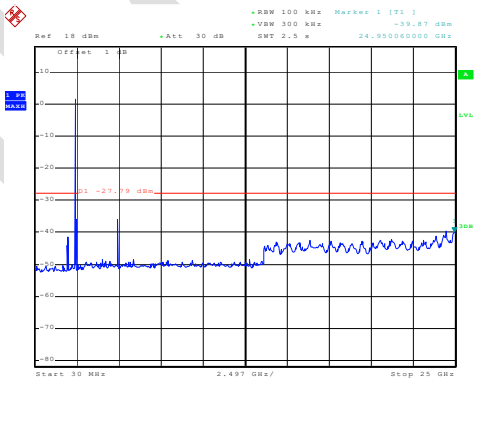
30MHz~25GHz

Middle channel



30MHz~25GHz

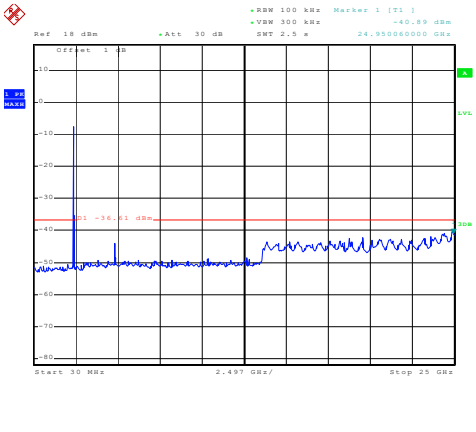
Highest channel



30MHz~25GHz

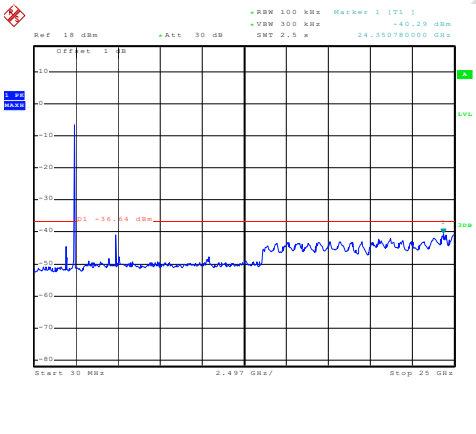
Test mode:	802.11g

Lowest channel



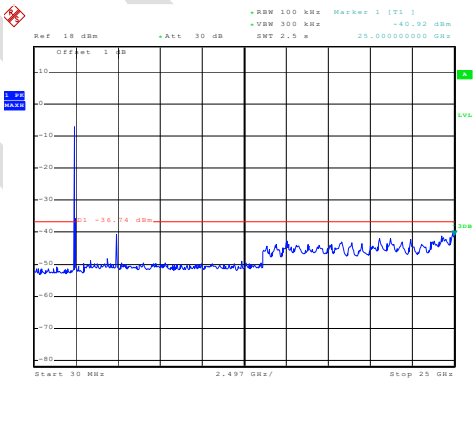
30MHz~25GHz

Middle channel



30MHz~25GHz

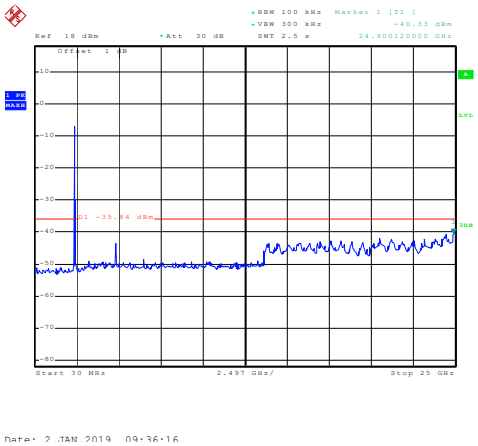
Highest channel



30MHz~25GHz

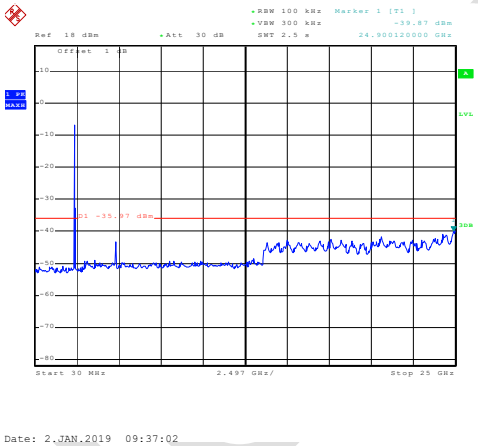
Test mode:	802.11n(HT20)

Lowest channel



30MHz~25GHz

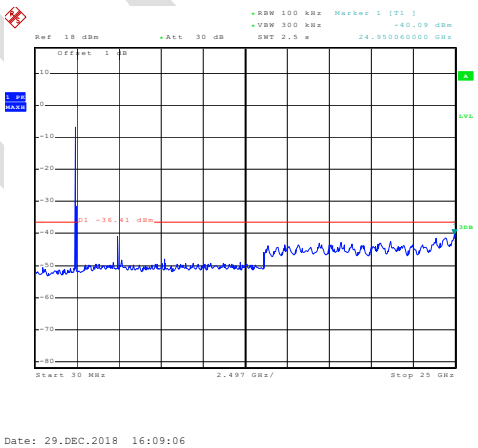
Middle channel



Date: 2.JAN.2019 09:37:02

30MHz~25GHz

Highest channel

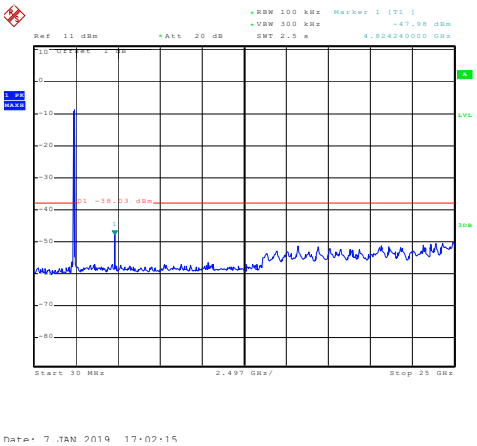


Date: 29.DEC.2018 16:09:06

30MHz~25GHz

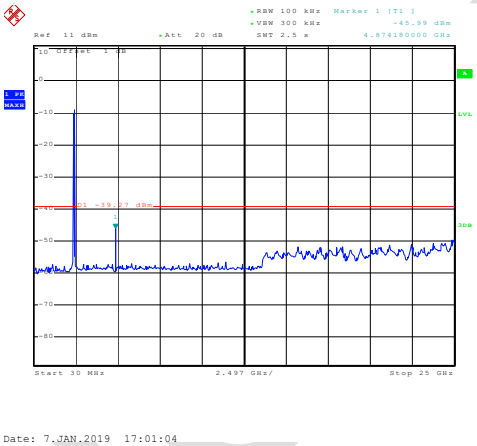
Test mode:	802.11n(HT40)

Lowest channel



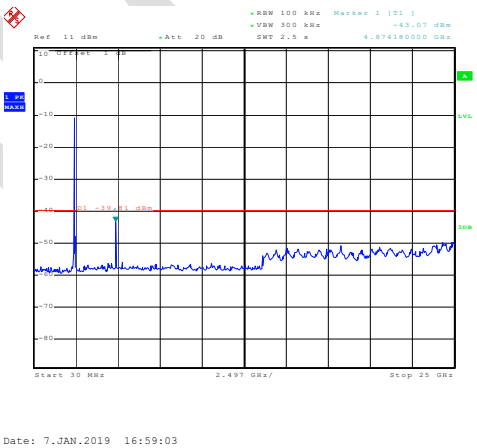
30MHz~25GHz

Middle channel



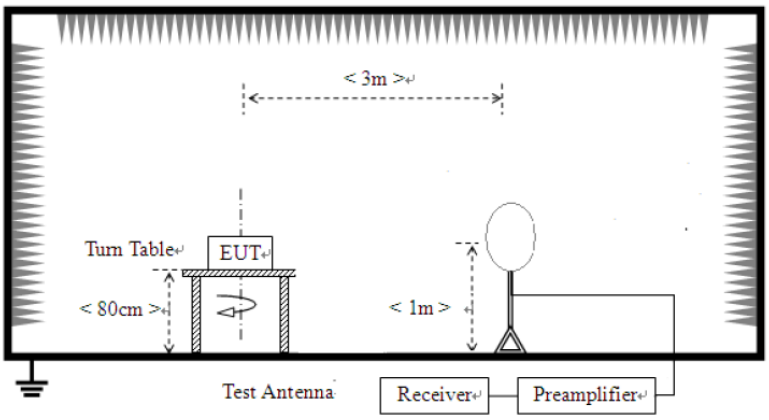
30MHz~25GHz

Highest channel

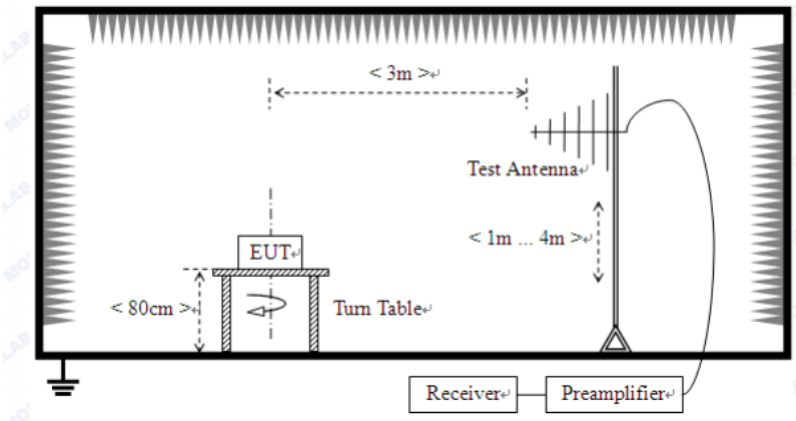


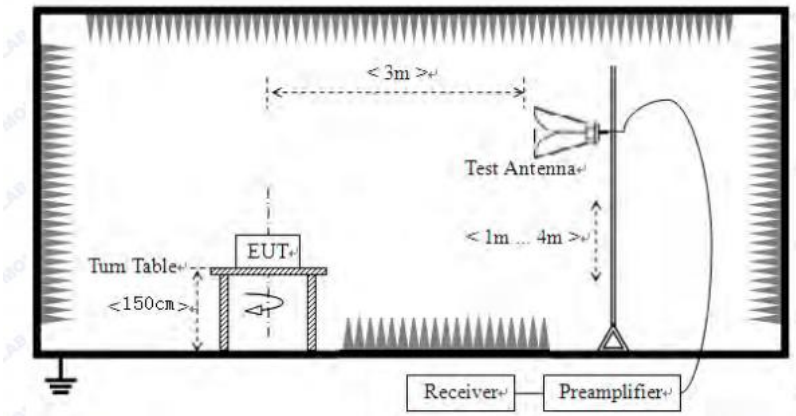
30MHz~25GHz

7.7.2 Radiated Emission Method

<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>Test Frequency Range:</td><td>9kHz to 25GHz</td></tr>
<tr><td>Test site:</td><td>Measurement Distance: 3m</td></tr>
<tr><td>Receiver setup:</td><td>
<table>
<tr><th>Frequency</th><th>Detector</th><th>RBW</th><th>VBW</th><th>Value</th></tr>
<tr><td>30MHz-1GHz</td><td>Quasi-peak</td><td>120KHz</td><td>300KHz</td><td>Quasi-peak</td></tr>
<tr><td rowspan="2">Above 1GHz</td><td>Peak</td><td>1MHz</td><td>3MHz</td><td>Peak</td></tr>
<tr><td>RMS</td><td>1MHz</td><td>3MHz</td><td>Average</td></tr>
</table>
</td></tr>
<tr><td>Limit:</td><td>
<table>
<tr><th>Frequency</th><th>Limit (uV/m)</th><th>Value</th><th>Measurement Distance</th></tr>
<tr><td>30MHz-88MHz</td><td>100</td><td>QP</td><td rowspan="6">3m</td></tr>
<tr><td>88MHz-216MHz</td><td>150</td><td>QP</td></tr>
<tr><td>216MHz-960MHz</td><td>200</td><td>QP</td></tr>
<tr><td>960MHz-1GHz</td><td>500</td><td>QP</td></tr>
<tr><td rowspan="2">Above 1GHz</td><td>500</td><td>Average</td></tr>
<tr><td>5000</td><td>Peak</td></tr>
</table>
</td></tr>
<tr><td>Test setup:</td><td>For radiated emissions from 9kHz to 30MHz
 

For radiated emissions from 30MHz to1GHz</td></tr>
</table>

<table>
<tr><td></td><td> 

For radiated emissions above 1GHz

</td></tr>
<tr><td>Test Procedure:</td><td>1. The EUT was placed on the top of a rotating table (0.8m for below 1G and 1.5m for above 1G) above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.
2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading.
5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.</td></tr>
<tr><td>Test Instruments:</td><td>Refer to section 6.0 for details</td></tr>
<tr><td>Test mode:</td><td>Refer to section 5.2 for details</td></tr>
<tr><td>Test results:</td><td>Pass</td></tr>
</table>

Test voltage:	AC120V 60Hz

Remark:
Pre-scan all kind of the place mode (X-axis, Y-axis, Z-axis), and found the Y-axis which it is worse case.

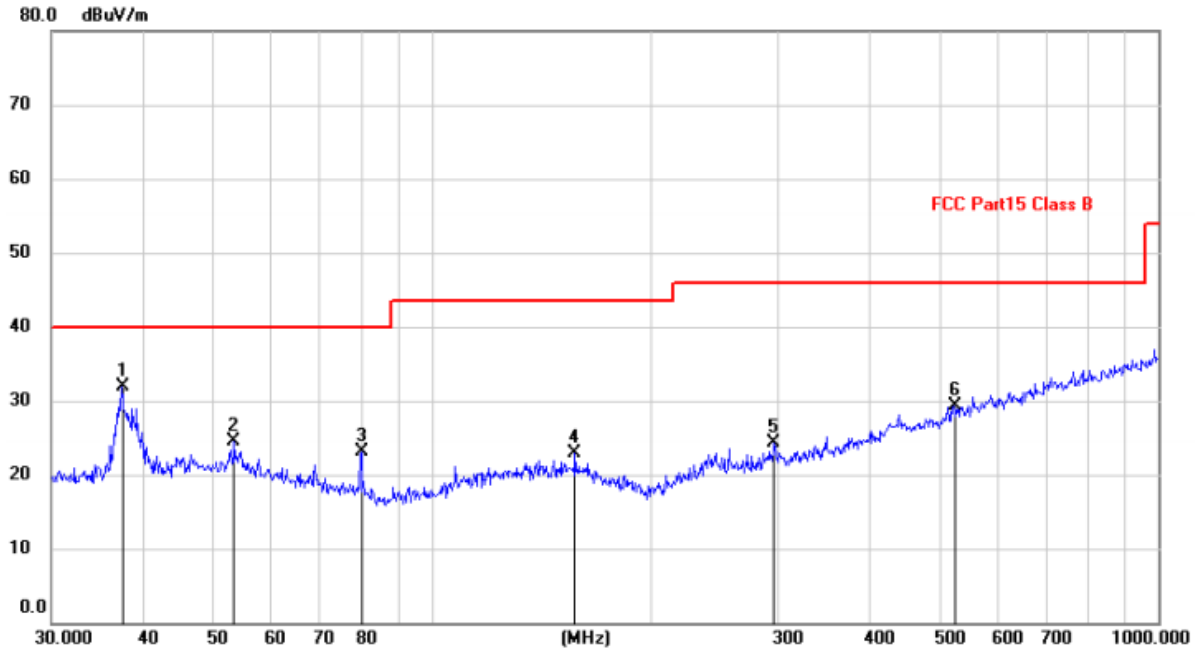
Measurement data:

■ **9kHz~30MHz**

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.

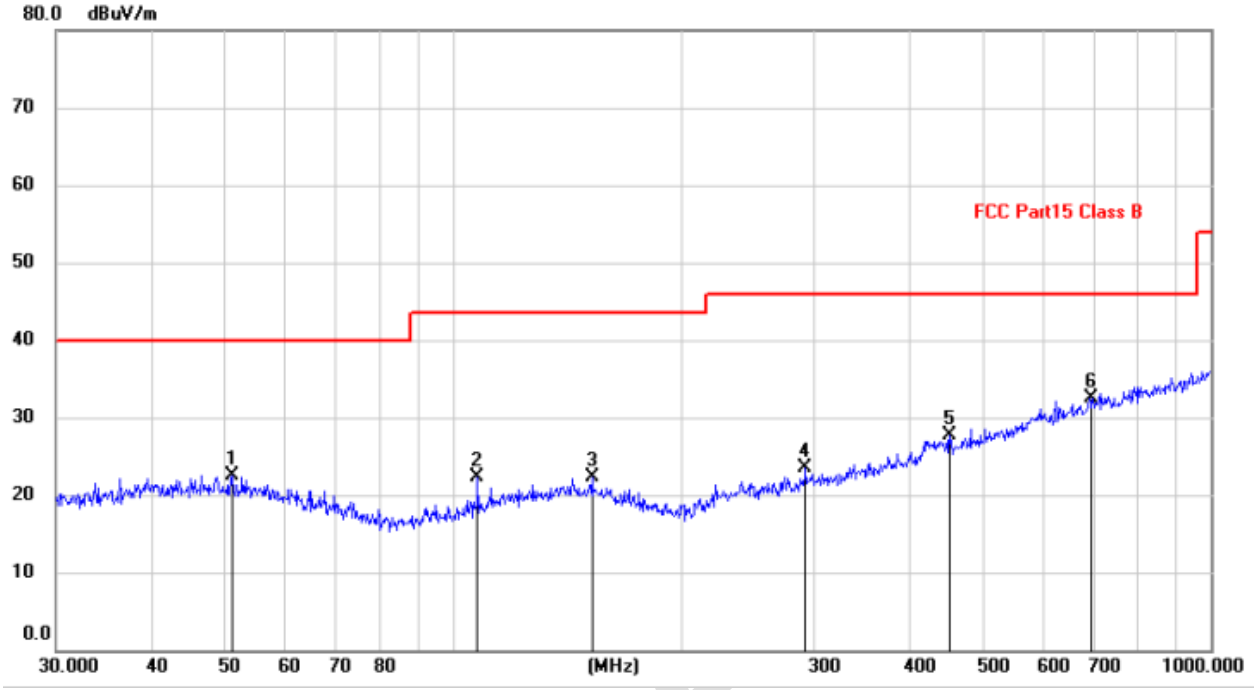
■ **Below 1GHz**

Mode:	**Transmitting mode**	**Polarziation:**	**Horizontal**
Temp./Hum.(%H):	**26℃/56%RH**		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1	*	37.4165	18.74	13.14	31.88	40.00	-8.12	QP
2		53.5052	10.82	13.61	24.43	40.00	-15.57	QP
3		80.0806	14.04	8.99	23.03	40.00	-16.97	QP
4		157.5588	9.82	13.02	22.84	43.50	-20.66	QP
5		296.1836	11.04	13.36	24.40	46.00	-21.60	QP
6		522.7180	9.97	19.36	29.33	46.00	-16.67	QP

Mode:	**Transmitting mode**	**Polarziation:**	**Vertical**
Temp./Hum.(%H):	**26℃/56%RH**		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		51.1209	8.68	13.86	22.54	40.00	-17.46	QP
2		107.8877	11.25	11.12	22.37	43.50	-21.13	QP
3		152.6641	9.27	13.04	22.31	43.50	-21.19	QP
4		292.0583	10.20	13.27	23.47	46.00	-22.53	QP
5		452.7197	10.03	17.76	27.79	46.00	-18.21	QP
6	*	691.9867	10.16	22.26	32.42	46.00	-13.58	QP

■ **Above 1GHz**

Test mode:	802.11b	Test channel:	Lowest

Peak value:

Frequency (MHz)	Read Level (dBuV)	Correct factor (dB/m)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4824.00	61.8	-9.61	52.19	74.00	-21.81	Vertical
7236.00	66.51	-3.23	63.28	74.00	-10.72	Vertical
9648.00	68.48	-3.18	65.30	74.00	-8.70	Vertical
12060.00	*			74.00		Vertical
14472.00	*			74.00		Vertical
4824.00	71.08	-9.61	61.48	74.00	-12.52	Horizontal
7236.00	68.56	-3.23	65.33	74.00	-8.67	Horizontal
9648.00	69.89	-3.18	66.81	74.00	-7.19	Horizontal
12060.00				74.00		Horizontal
14472.00	*			74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Correct factor (dB/m)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4824.00	60.57	-9.61	50.18	54.00	-3.82	Vertical
7236.00	55.32	-3.23	52.09	54.00	-1.91	Vertical
9648.00	56.26	-3.18	53.08	54.00	-0.92	Vertical
12060.00	*			54.00		Vertical
14472.00	*			54.00		Vertical
4824.00	60.72	-9.61	51.11	54.00	-2.89	Horizontal
7236.00	54.86	-3.23	51.63	54.00	-2.37	Horizontal
9648.00	55.58	-3.18	52.40	54.00	-1.60	Horizontal
12060.00	*			54.00		Horizontal
14472.00	*			54.00		Horizontal

Remark:

1. *Final Level =Receiver Read level + Correct factor*
2. *"*", means this data is the too weak instrument of signal is unable to test.*
3. *Correct factor = Antenna Factor + Cable Loss – Preamplifier Factor*

Test mode:	802.11b	Test channel:	Middle

Peak value:

Frequency (MHz)	Read Level (dBuV)	Correct factor (dB/m)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4874.00	57.48	-9.59	47.89	74.00	-26.11	Vertical
7311.00	53.52	-3.21	50.31	74.00	-23.69	Vertical
9748.00	54.11	-3.17	50.94	74.00	-23.06	Vertical
12185.00	*			74.00		Vertical
14622.00	*			74.00		Vertical
4874.00	62.16	-9.59	52.57	74.00	-21.43	Horizontal
7311.00	58.41	-3.21	55.20	74.00	-18.80	Horizontal
9748.00	57.53	-3.17	55.36	74.00	-8.64	Horizontal
12185.00	*			74.00		Horizontal
14622.00	*			74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Correct factor (dB/m)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4874.00	55.94	-9.59	46.35	54.00	-7.65	Vertical
7311.00	49.41	-3.21	46.20	54.00	-7.80	Vertical
9748.00	47.77	-3.17	44.60	54.00	-9.40	Vertical
12185.00	*			54.00		Vertical
14622.00	*			54.00		Vertical
4874.00	59.30	-9.59	49.71	54.00	-4.29	Horizontal
7311.00	52.98	-3.21	49.77	54.00	-4.23	Horizontal
9748.00	55.64	-3.17	52.47	54.00	-1.53	Horizontal
12185.00	*			54.00		Horizontal
14622.00	*			54.00		Horizontal

1. *Remark:*
2. *1. Final Level =Receiver Read level + Correct factor*
3. *2. "*", means this data is the too weak instrument of signal is unable to test.*
4. *3. Correct factor = Antenna Factor + Cable Loss – Preamplifier Factor*
5. *.*

Test mode:	802.11b	Test channel:	Highest

Peak value:

Frequency (MHz)	Read Level (dBuV)	Correct factor (dB/m)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4924.00	57.48	-9.57	47.91	74.00	-26.09	Vertical
7386.00	57.95	-3.20	54.75	74.00	-18.25	Vertical
9848.00	56.18	-3.16	53.02	74.00	-20.98	Vertical
12310.00	*			74.00		Vertical
14772.00	*			74.00		Vertical
4924.00	63.59	-9.57	54.02	74.00	-19.98	Horizontal
7386.00	54.21	-3.20	51.01	74.00	-22.99	Horizontal
9848.00	53.62	-3.16	50.46	74.00	-23.54	Horizontal
12310.00	*			74.00		Horizontal
14772.00	*			74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Correct factor (dB/m)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4924.00	55.94	-9.57	46.37	54.00	-7.63	Vertical
7386.00	52.25	-3.20	49.05	54.00	-4.95	Vertical
9848.00	53.56	-3.16	50.40	54.00	-3.60	Vertical
12310.00	*			54.00		Vertical
14772.00	*			54.00		Vertical
4924.00	60.74	-9.57	51.17	54.00	-2.83	Horizontal
7386.00	53.61	-3.20	50.41	54.00	-3.59	Horizontal
9848.00	50.18	-3.16	47.02	54.00	-6.98	Horizontal
12310.00	*			54.00		Horizontal
14772.00	*			54.00		Horizontal

Remark:

1. *Final Level =Receiver Read level + Correct factor*
2. *"*", means this data is the too weak instrument of signal is unable to test.*
3. *Correct factor = Antenna Factor + Cable Loss – Preamplifier Factor*

Test mode:	802.11g	Test channel:	lowest

Peak value:

Frequency (MHz)	Read Level (dBuV)	Correct factor (dB/m)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4824.00	55.56	-9.61	45.95	74.00	-28.05	Vertical
7236.00	53.78	-3.23	50.55	74.00	-23.45	Vertical
9648.00	55.48	-3.18	52.3	74.00	-21.7	Vertical
12060.00	*			74.00		Vertical
14472.00	*			74.00		Vertical
4824.00	54.59	-9.61	44.98	74.00	-29.02	Horizontal
7236.00	56.63	-3.23	53.4	74.00	-20.6	Horizontal
9648.00	57.89	-3.18	54.71	74.00	-19.29	Horizontal
12060.00	*			74.00		Horizontal
14472.00	*			74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Correct factor (dB/m)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4824.00	45.63	-9.61	36.02	54.00	-17.98	Vertical
7236.00	43.85	-3.23	40.62	54.00	-13.38	Vertical
9648.00	42.48	-3.18	39.3	54.00	-14.7	Vertical
12060.00	*			54.00		Vertical
14472.00	*			54.00		Vertical
4824.00	44.58	-9.61	34.97	54.00	-19.03	Horizontal
7236.00	43.19	-3.23	39.96	54.00	-14.04	Horizontal
9648.00	42.36	-3.18	39.18	54.00	-14.82	Horizontal
12060.00	*			54.00		Horizontal
14472.00	*			54.00		Horizontal

Remark:

1. *Final Level =Receiver Read level + Correct factor*
2. *"*", means this data is the too weak instrument of signal is unable to test.*
3. *Correct factor = Antenna Factor + Cable Loss – Preamplifier Factor*

Test mode:	802.11g	Test channel:	Middle

Peak value:

Frequency (MHz)	Read Level (dBuV)	Correct factor (dB/m)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4874.00	55.48	-9.59	45.89	74.00	-28.11	Vertical
7311.00	53.16	-3.21	49.95	74.00	-24.05	Vertical
9748.00	54.78	-3.17	51.61	74.00	-22.39	Vertical
12185.00	*			74.00		Vertical
14622.00	*			74.00		Vertical
4874.00	55.95	-9.59	46.36	74.00	-27.64	Horizontal
7311.00	54.65	-3.21	51.44	74.00	-22.56	Horizontal
9748.00	56.32	-3.17	53.15	74.00	-20.85	Horizontal
12185.00	*			74.00		Horizontal
14622.00	*			74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Correct factor (dB/m)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4874.00	47.26	-9.59	37.67	54.00	-16.33	Vertical
7311.00	45.16	-3.21	41.95	54.00	-12.05	Vertical
9748.00	46.89	-3.17	43.72	54.00	-10.28	Vertical
12185.00	*			54.00		Vertical
14622.00	*			54.00		Vertical
4874.00	48.65	-9.59	39.06	54.00	-14.94	Horizontal
7311.00	48.21	-3.21	45	54.00	-9.00	Horizontal
9748.00	47.35	-3.17	44.18	54.00	-9.82	Horizontal
12185.00	*			54.00		Horizontal
14622.00	*			54.00		Horizontal

Remark:

1. *Final Level =Receiver Read level + Correct factor*
2. *"*", means this data is the too weak instrument of signal is unable to test.*
3. *Correct factor = Antenna Factor + Cable Loss – Preamplifier Factor*

Test mode:	802.11g	Test channel:	Highest

Peak value:

Frequency (MHz)	Read Level (dBuV)	Correct factor (dB/m)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4924.00	56.42	-9.57	46.85	74.00	-27.15	Vertical
7386.00	55.78	-3.20	52.58	74.00	-21.42	Vertical
9848.00	53.51	-3.16	50.35	74.00	-23.65	Vertical
12310.00	*			74.00		Vertical
14772.00	*			74.00		Vertical
4924.00	57.12	-9.57	47.55	74.00	-26.45	Horizontal
7386.00	55.42	-3.20	52.22	74.00	-21.78	Horizontal
9848.00	53.69	-3.16	50.53	74.00	-23.47	Horizontal
12310.00	*			74.00		Horizontal
14772.00	*			74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Correct factor (dB/m)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4924.00	44.62	-9.57	35.05	54.00	-18.95	Vertical
7386.00	43.78	-3.20	40.58	54.00	-13.42	Vertical
9848.00	42.49	-3.16	39.33	54.00	-14.67	Vertical
12310.00	*			54.00		Vertical
14772.00	*			54.00		Vertical
4924.00	43.34	-9.57	33.77	54.00	-20.23	Horizontal
7386.00	44.61	-3.20	41.41	54.00	-12.59	Horizontal
9848.00	42.58	-3.16	39.42	54.00	-14.58	Horizontal
12310.00	*			54.00		Horizontal
14772.00	*			54.00		Horizontal

Remark:

1. *Final Level =Receiver Read level + Correct factor*
2. *"*", means this data is the too weak instrument of signal is unable to test.*
3. *Correct factor = Antenna Factor + Cable Loss – Preamplifier Factor*

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

Peak value:

Frequency (MHz)	Read Level (dBuV)	Correct factor (dB/m)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4824.00	53.59	-9.61	43.98	74.00	-30.02	Vertical
7236.00	52.63	-3.23	49.4	74.00	-24.6	Vertical
9648.00	54.48	-3.18	51.3	74.00	-22.7	Vertical
12060.00	*			74.00		Vertical
14472.00	*			74.00		Vertical
4824.00	53.62	-9.61	44.01	74.00	-29.99	Horizontal
7236.00	52.48	-3.23	49.25	74.00	-24.75	Horizontal
9648.00	51.49	-3.18	48.31	74.00	-25.69	Horizontal
12060.00	*			74.00		Horizontal
14472.00	*			74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Correct factor (dB/m)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4824.00	46.25	-9.61	36.64	54.00	-17.36	Vertical
7236.00	44.78	-3.23	41.55	54.00	-12.45	Vertical
9648.00	41.63	-3.18	38.45	54.00	-15.55	Vertical
12060.00	*			54.00		Vertical
14472.00	*			54.00		Vertical
4824.00	43.26	-9.61	33.65	54.00	-20.35	Horizontal
7236.00	45.28	-3.23	42.05	54.00	-11.95	Horizontal
9648.00	43.84	-3.18	40.66	54.00	-13.34	Horizontal
12060.00	*			54.00		Horizontal
14472.00	*			54.00		Horizontal

Remark:

1. *Final Level =Receiver Read level + Correct factor*
2. *"*", means this data is the too weak instrument of signal is unable to test.*
3. *Correct factor = Antenna Factor + Cable Loss – Preamplifier Factor*

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

Peak value:

Frequency (MHz)	Read Level (dBuV)	Correct factor (dB/m)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4874.00	55.77	-9.59	46.18	74.00	-27.82	Vertical
7311.00	53.51	-3.21	50.3	74.00	-23.7	Vertical
9748.00	55.78	-3.17	52.61	74.00	-21.39	Vertical
12185.00	*			74.00		Vertical
14622.00	*			74.00		Vertical
4874.00	53.48	-9.59	43.89	74.00	-30.11	Horizontal
7311.00	52.94	-3.21	49.73	74.00	-24.27	Horizontal
9748.00	55.55	-3.17	52.38	74.00	-21.62	Horizontal
12185.00	*			74.00		Horizontal
14622.00	*			74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Correct factor (dB/m)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4874.00	43.51	-9.59	33.54	54.00	-20.08	Vertical
7311.00	42.34	-3.21	38.34	54.00	-15.66	Vertical
9748.00	43.27	-3.17	40.98	54.00	-13.02	Vertical
12185.00	*			54.00		Vertical
14622.00	*			54.00		Vertical
4874.00	43.48	-9.59	33.89	54.00	-20.11	Horizontal
7311.00	42.61	-3.21	39.40	54.00	-14.60	Horizontal
9748.00	42.15	-3.17	38.98	54.00	-15.02	Horizontal
12185.00	*			54.00		Horizontal
14622.00	*			54.00		Horizontal

Remark:

1. *Final Level =Receiver Read level + Correct factor*
2. *"*", means this data is the too weak instrument of signal is unable to test.*
3. *Correct factor = Antenna Factor + Cable Loss – Preamplifier Factor*

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

Peak value:

Frequency (MHz)	Read Level (dBuV)	Correct factor (dB/m)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4924.00	56.81	-9.57	47.24	74.00	-26.76	Vertical
7386.00	55.61	-3.20	52.41	74.00	-21.59	Vertical
9848.00	53.15	-3.16	49.99	74.00	-24.01	Vertical
12310.00	*			74.00		Vertical
14772.00	*			74.00		Vertical
4924.00	54.71	-9.57	45.14	74.00	-28.86	Horizontal
7386.00	53.19	-3.20	49.99	74.00	-24.01	Horizontal
9848.00	52.24	-3.16	49.08	74.00	-24.92	Horizontal
12310.00	*			74.00		Horizontal
14772.00	*			74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Correct factor (dB/m)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4924.00	43.86	-9.57	34.29	54.00	-19.71	Vertical
7386.00	43.28	-3.20	40.08	54.00	-13.92	Vertical
9848.00	41.89	-3.16	38.73	54.00	-15.27	Vertical
12310.00	*			54.00		Vertical
14772.00	*			54.00		Vertical
4924.00	43.87	-9.57	33.54	54.00	-20.46	Horizontal
7386.00	43.01	-3.20	38.34	54.00	-15.66	Horizontal
9848.00	42.56	-3.16	40.98	54.00	-13.02	Horizontal
12310.00	*			54.00		Horizontal
14772.00	*			54.00		Horizontal

Remark:

1 Final Level =Receiver Read level + Correct factor

2 "", means this data is the too weak instrument of signal is unable to test.*

3 Correct factor= Antenna Factor + Cable Loss – Preamplifier Factor

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

Peak value:

Frequency (MHz)	Read Level (dBuV)	Correct factor (dB/m)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4844.00	54.52	-9.61	44.12	74.00	-29.88	Vertical
7266.00	53.15	-3.23	49.25	74.00	-24.75	Vertical
9688.00	54.26	-3.18	49.99	74.00	-24.01	Vertical
12110.00	*			74.00		Vertical
14532.00	*			74.00		Vertical
4844.00	53.52	-9.61	43.91	74.00	-30.09	Horizontal
7266.00	52.25	-3.23	49.02	74.00	-24.98	Horizontal
9688.00	51.16	-3.18	47.98	74.00	-26.02	Horizontal
12110.00	*			74.00		Horizontal
14532.00	*			74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Correct factor (dB/m)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4844.00	43.23	-9.61	33.62	54.00	-20.38	Vertical
7266.00	41.51	-3.23	38.28	54.00	-15.72	Vertical
9688.00	44.24	-3.18	41.06	54.00	-12.94	Vertical
12110.00	*			54.00		Vertical
14532.00	*			54.00		Vertical
4844.00	42.26	-9.61	32.65	54.00	-21.35	Horizontal
7266.00	44.18	-3.23	40.95	54.00	-13.05	Horizontal
9688.00	45.74	-3.18	42.56	54.00	-11.44	Horizontal
12110.00	*			54.00		Horizontal
14532.00	*			54.00		Horizontal

Remark:

1. *Final Level =Receiver Read level + Correct factor*
2. *"*", means this data is the too weak instrument of signal is unable to test.*
3. *Correct factor = Antenna Factor + Cable Loss – Preamplifier Factor*

Test mode:	802.11n(HT40)	Test channel:	Middle

Peak value:

Frequency (MHz)	Read Level (dBuV)	Correct factor (dB/m)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4874.00	53.27	-9.59	43.68	74.00	-30.32	Vertical
7311.00	52.49	-3.21	49.28	74.00	-24.72	Vertical
9748.00	53.16	-3.17	49.99	74.00	-24.01	Vertical
12185.00	*			74.00		Vertical
14622.00	*			74.00		Vertical
4874.00	52.34	-9.59	42.75	74.00	-31.25	Horizontal
7311.00	52.37	-3.21	49.16	74.00	-24.84	Horizontal
9748.00	53.34	-3.17	50.17	74.00	-23.83	Horizontal
12185.00	*			74.00		Horizontal
14622.00	*			74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Correct factor (dB/m)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4874.00	43.18	-9.59	33.59	54.00	-20.41	Vertical
7311.00	42.34	-3.21	39.13	54.00	-14.87	Vertical
9748.00	43.29	-3.17	40.12	54.00	-13.88	Vertical
12185.00	*			54.00		Vertical
14622.00	*			54.00		Vertical
4874.00	43.48	-9.59	33.89	54.00	-20.11	Horizontal
7311.00	42.27	-3.21	39.06	54.00	-14.94	Horizontal
9748.00	42.26	-3.17	39.09	54.00	-14.91	Horizontal
12185.00	*			54.00		Horizontal
14622.00	*			54.00		Horizontal

Remark:

1. *Final Level =Receiver Read level + Correct factor*
2. *"*", means this data is the too weak instrument of signal is unable to test.*
3. *Correct factor = Antenna Factor + Cable Loss – Preamplifier Factor*

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

Peak value:

Frequency (MHz)	Read Level (dBuV)	Correct factor (dB/m)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4844.00	54.34	-9.57	44.77	74.00	-29.23	Vertical
7386.00	53.27	-3.20	50.07	74.00	-23.93	Vertical
9848.00	52.24	-3.16	49.08	74.00	-24.92	Vertical
12310.00	*			74.00		Vertical
14772.00	*			74.00		Vertical
4924.00	53.37	-9.57	43.80	74.00	-30.20	Horizontal
7386.00	52.12	-3.20	48.92	74.00	-25.08	Horizontal
9848.00	51.19	-3.16	48.03	74.00	-25.97	Horizontal
12310.00	*			74.00		Horizontal
14772.00	*			74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Correct factor (dB/m)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4844.00	43.38	-9.57	33.81	54.00	-20.19	Vertical
7386.00	42.62	-3.20	39.42	54.00	-14.58	Vertical
9848.00	41.57	-3.16	38.41	54.00	-15.59	Vertical
12310.00	*			54.00		Vertical
14772.00	*			54.00		Vertical
4924.00	43.38	-9.57	33.81	54.00	-20.19	Horizontal
7386.00	43.25	-3.20	40.05	54.00	-13.95	Horizontal
9848.00	42.61	-3.16	39.45	54.00	-14.55	Horizontal
12310.00	*			54.00		Horizontal
14772.00	*			54.00		Horizontal

Remark:

1 Final Level =Receiver Read level + Correct factor

2 "", means this data is the too weak instrument of signal is unable to test.*

3 Correct factor= Antenna Factor + Cable Loss – Preamplifier Factor