



FCC/ IC TEST REPORT

According to

FCC CFR Title 47 Part 15 Subpart E (15.407) & RSS-247 Issue 1

Applicant	:	Qualcomm Atheros, Inc.
Address	:	1700 Technology Drive, San Jose, CA 95110
Manufacturer	:	Qualcomm Atheros, Inc.
Address	:	1700 Technology Drive, San Jose, CA 95110
Equipment	:	Single Stream 802.11a/b/g/n/ac + BT 4.1 M.2 Type Card
Brand	:	Qualcomm Atheros
Model No.	:	QCNFA435
FCC ID	:	PPD-QCNFA435
IC ID	:	4104A-QCNFA435

■ The test result refers exclusively to the test presented test model / sample.,

■ Without written approval of **Cerpass Technology (Suzhou) Co., Ltd.** the test report shall not be reproduced except in full.

■ The test was carried out on Mar 01, 2016~Apr 12, 2016 at **Cerpass Technology (Suzhou) Corp.**

I HEREBY CERTIFY THAT:

The measurements shown in this test report were made in accordance with the procedures given in **ANSI C63.10**. The equipment was **passed** the test performed according to **FCC Rules and Regulations Part 15 Subpart E (15.407) and RSS-247 Issue 1**.

Prepared By: Kerry Zhou
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Approved By: Miro Chueh
Miro Chueh

Laboratory accreditation





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History of this test report

Report No.	Version	Issue Date	Description
SEDM1512164	Rev.01	2016-04-12	Initial release
SEDM1512164	Rev.02	2016-04-29	1. Add test setting of radiated emission and band edges measurement . 2. Update UNII Band 1 limit. 3. Add the worst-case plots of bandedge and the worst-case plots of radiated emission 4. Update the configuration of Tested System
SEDM1512164	Rev.03	2016-05-04	1. Update the worst-case plots of radiated emission. 2. Update UNII Band 1 limit. 3. Update the level of VBW set for average test.
SEDM1512164	Rev.04	2016-05-05	1. Update UNII Band 1 limit.



1. Test Configuration of Equipment under Test

1.1 Feature of Equipment under Test

WLAN Module	QCNFA435
Frequency Range	802.11a/n/ac(20MHz): 5180~5320MHz, 5500~5720MHz,5725~5850MHz 802.11n/ac(40MHz): 5190~5310MHz, 5510~5710,5755~5795MHz 802.11ac(80MHz): 5210MHz,5290MHz,5530MHz,5610MHz,5690MHz,5775MHz
Type of Modulation	802.11a/g/n/ac: OFDM
Data Rate	802.11a: 6/9/12/18/24/36/48/54 Mbps 802.11ac: up to 433.3 Mbps
Channel Control	Auto
Antenna Delivery	1*Tx + 1*Rx for 5GHz

Host Details,

Host Manufacture	Host Type	Host Model
Lenovo	Notebook Computer	Lenovo YOGA 710-11ISK

1.2 Antenna Construction and Directional Gain

Antenna	Manufacturer	Part Number	Peak Gain
PIFA Antenna(Main)	Speed	DC33001D900	2400- 2500MHz: 1.46dBi, 5150- 5850MHz: 1.95dBi
PIFA Antenna(Aux)	Speed	DC33001D910	2400- 2500MHz: 0.26dBi, 5150- 5850MHz: 2.82dBi
PIFA Antenna(Main)	HongLin	DC33001DB00	2400- 2500MHz: 0.87dBi, 5150- 5850MHz: 0.58dBi
PIFA Antenna(Aux)	HongLin	DC33001DB10	2400- 2500MHz: 0.64dBi, 5150- 5850MHz: 0.29dBi

Note: This EUT will collocation two kinds of antenna, we choose one of the high peak gain antenna for all RF testing.



1.3 Channels

802.11a/n/ac(20MHz) Working Frequency of Each Channel:							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
36	5180 MHz	40	5200 MHz	44	5220 MHz	48	5240 MHz
52	5260 MHz	56	5280 MHz	60	5300 MHz	64	5320 MHz
100	5500 MHz	104	5520 MHz	108	5540 MHz	112	5560 MHz
116	5580 MHz	120	5600 MHz	124	5620 MHz	128	5640 MHz
132	5660 MHz	136	5680 MHz	140	5700 MHz	144	5720 MHz
149	5745 MHz	153	5765 MHz	157	5785 MHz	161	5805 MHz
165	5825 MHz	N/A	N/A	N/A	N/A	N/A	N/A
802.11n/ac(40MHz) Working Frequency of Each Channel:							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
38	5190 MHz	46	5230 MHz	54	5270 MHz	62	5310 MHz
102	5510 MHz	110	5550 MHz	118	5590 MHz	126	5630 MHz
134	5670 MHz	142	5710 MHz	151	5755 MHz	159	5795 MHz
802.11ac(80MHz) Working Frequency of Each Channel:							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
42	5210 MHz	58	5290 MHz	106	5530 MHz	122	5610 MHz
138	5690 MHz	155	5775 MHz	N/A	N/A	N/A	N/A



1.4 Power Parameter Value of the test software

Ch.	Freq(MHz)	11a	HT20	VHT20
36	5180	15.5	15.5	15.5
38	5200	17.0	17.0	17.0
44	5220	17.0	17.0	17.0
48	5240	17.0	17.0	17.0
52	5260	17.0	17.0	17.0
56	5280	17.0	16.0	16.0
60	5300	17.0	17.0	17.0
64	5320	16.0	15.0	15.0
100	5500	15.0	15.0	15.0
104	5520	17.0	17.0	17.0
108	5540	17.0	17.0	17.0
112	5560	17.0	17.0	17.0
116	5580	17.0	17.0	17.0
120	5600	17.0	17.0	17.0
124	5620	17.0	17.0	17.0
128	5640	17.0	17.0	17.0
132	5660	17.0	17.0	17.0
136	5680	17.0	17.0	17.0
140	5700	14.5	15.0	15.0
144	5720	17.0	17.0	17.0
149	5745	17.0	17.0	17.0
153	5765	17.0	17.0	17.0
157	5785	17.0	17.0	17.0
161	5805	17.0	17.0	17.0
165	5825	17.0	17.0	17.0



Ch.	Freq(MHz)	HT40	VHT40
38	5190	12.0	12.0
46	5230	16.0	16.0
54	5270	16.0	16.0
62	5310	13.0	13.0
102	5510	13.0	13.0
110	5550	16.0	16.0
118	5590	16.0	16.0
126	5630	16.0	16.0
134	5670	15.5	15.5
142	5710	16.0	16.0
151	5755	15.0	15.0
159	5795	16.0	16.0

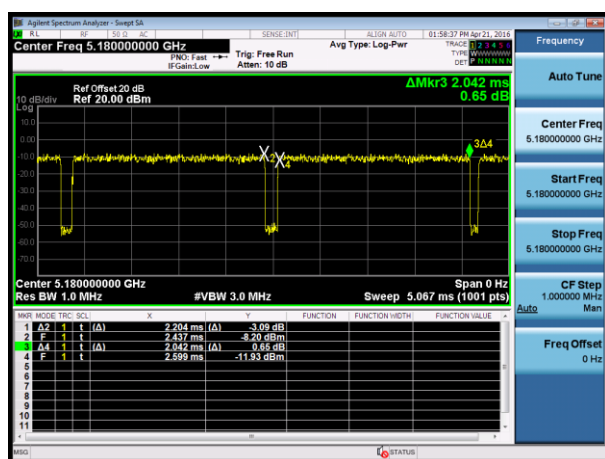
Ch.	Freq(MHz)	VHT80
42	5210	14.0
58	5290	12.0
106	5530	12.0
122	5610	16.0
138	5690	16.0
155	5775	14.5



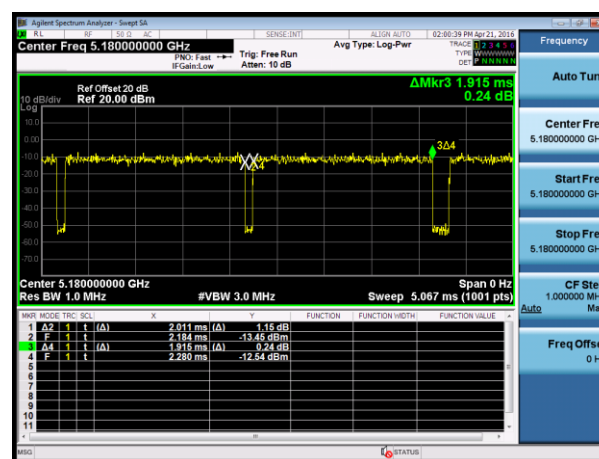
1.5 Duty Cycle

Test Mode	Frequency (MHz)	Duty Cycle
802.11a	5180	92.60%
802.11n(20MHz)	5180	95.20%
802.11n(40MHz)	5190	84.20%
802.11ac(80MHz)	5210	77.30%

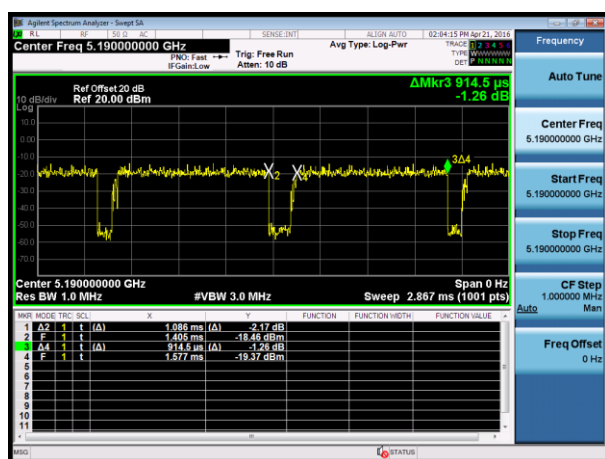
Transmit at 5180MHz by 802.11a



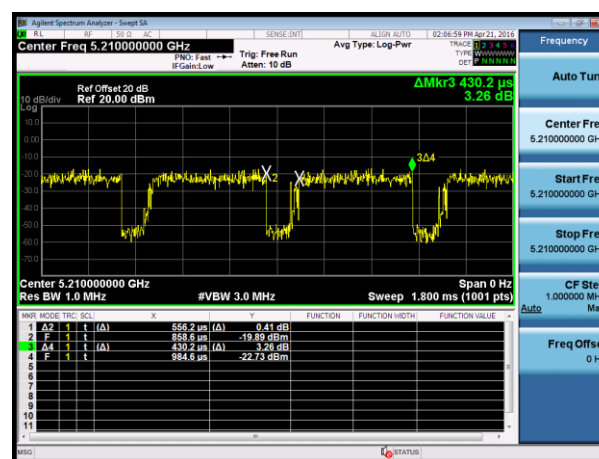
Transmit at 5180MHz by 802.11 n(20MHz)



Transmit at 5190MHz by 802.11 n(40MHz)



Transmit at 5210MHz by 802.11 ac(80MHz)





1.6 Test Manner

Test Manner	
a	During testing, the interface cables and equipment positions were varied according to ANSI C63.10
b	Adjust the EUT at the test mode and the test channel. Then test.

Test Mode
Mode 1: Transmit by 802.11 a
Mode 2: Transmit by 802.11n(20MHz)
Mode 3: Transmit by 802.11n(40MHz)
Mode 4: Transmit by 802.11ac (80MHz)

Note: Regards to the frequency band operation: the lowest, middle and highest frequency of channel were selected to perform the test, then shown on this report.

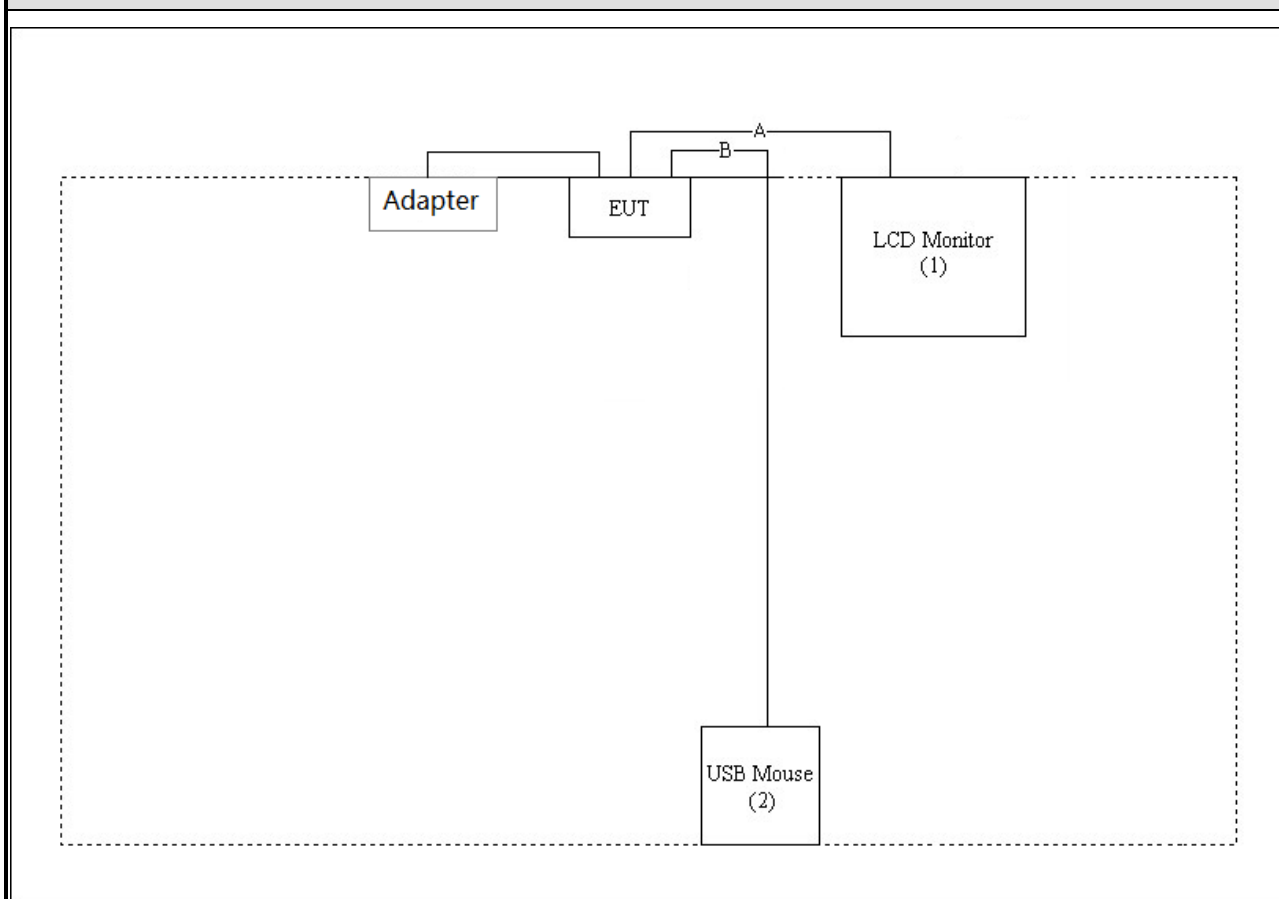
**1.7 Description of Test System**

Product		Manufacturer	Model No.	Power Cord
1	LCD Monitor	DELL	U2713HMt	Non-Shielded, 1.8m
2	USB Mouse	LENOVO	M-U0025-O	Power by Notebook



1.8 Configuration of Tested System

Connection Diagram



Signal Cable Type		Signal cable Description
A	HDMI Cable	Shielded, 1.8m
B	USB Mouse Cable	Shielded, 1.8m



2. Technical Test

2.1 Summary of Test Result

☒ No deviations from the test standards

☐ Deviations from the test standards as below description:

FCC Part Section(s)	Test Description	Test Result	Reference
15.407(a)(1)(ii), (2), (3)	Maximum Conducted Output Power	Pass	Section 7.4
15.407(b)(1), (2), (3), (4)	Undesirable Emissions	Pass	Section 7.8 & 7.9
15.205, 15.209 15.407(b)(5), (6), (7)	General Field Strength Limits (Restricted Bands and Radiated Emission Limits)	Pass	Section 7.8 & 7.9

ANSI C63.10: 2013; RSS-247 issue 1; RSS-Gen issue 4

IC Rule	. Description of Test	Result
Item 6	. Spurious Emission(Radiated)	Pass
Item 6	. Maximum Peak Output Power	Pass



2.2 General Information of Test

Test Site	Cerpass Technology (Suzhou) Co.,Ltd
Test Site Location	No.66,Tangzhuang Road, Suzhou Industrial Park, Jiangsu 215006, China
NVLAP LAB Code	200814-0
FCC Registration Number	916572, 331395
IC Registration Number	7290A-1, 7290A-2
VCCI Registration Number	T-1945 for Telecommunication Test C-2919 for Conducted emission test R-2670 for Radiated emission test below 1GHz G-227 for Radiated emission test above 1GHz
Frequency Range Investigated	Conducted: from 150kHz to 30MHz Radiation: from 30MHz to 40000MHz
Test Distance	The test distance of radiated emission from antenna to EUT is 3 M.

2.3 Measurement Uncertainty

Measurement Item	Measurement Frequency	Polarization	Uncertainty
Radiated Emission	30 MHz ~ 40GHz	Vertical	± 4.11 dB
		Horizontal	± 4.10 dB
Maximum Peak Output Power	---	---	± 1.4 dB
Conducted Band Edges	---	---	± 2.2 dB



3. Test of Radiated Emission

3.1 Test Limit

3.1.1 Limits of radiated emission

According to §15.209(a), except as provided elsewhere in this Subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Distance Meters	Radiated (μ V / M)	Radiated (dB μ V / M)
30-88	3	100	40.0
88-216	3	150	43.5
216-960	3	200	46.0
Above 960	3	500	54.0

NOTE:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. For frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB.

3.1.2 Limits of unwanted emission out of the restricted bands

LIMIT	
Field strength at 3M (dB μ V / M)	
PK	AV
74	54



3.2 Test Procedures

KDB 789033 D02v01r02 – Section II.G.4 (Procedure for Unwanted Emissions Measurements below 1000 MHz)

KDB 789033 D02v01r02 – Section II.G.5 (Procedure for Unwanted Maximum Emissions Measurements above 1000 MHz)

KDB 789033 D02v01r02 – Section II.G.6 (Procedures for Average Unwanted Emissions Measurements above 1000 MHz)



3.3 Test Setting

Quasi-Peak Measurements below 1GHz

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. Span was set greater than 1MHz
3. RBW = 120 kHz
4. Detector = CISPR quasi-peak
5. Sweep time = auto couple
6. Trace was allowed to stabilize

Average Measurements above 1GHz (Method AD)

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW = 3MHz
4. Detector = power average (RMS)
5. Number of measurement points = 1001 (Number of points must be $> 2 \times \text{span}/\text{RBW}$)
6. Sweep time = auto
7. Trace was averaged over at 100 sweeps

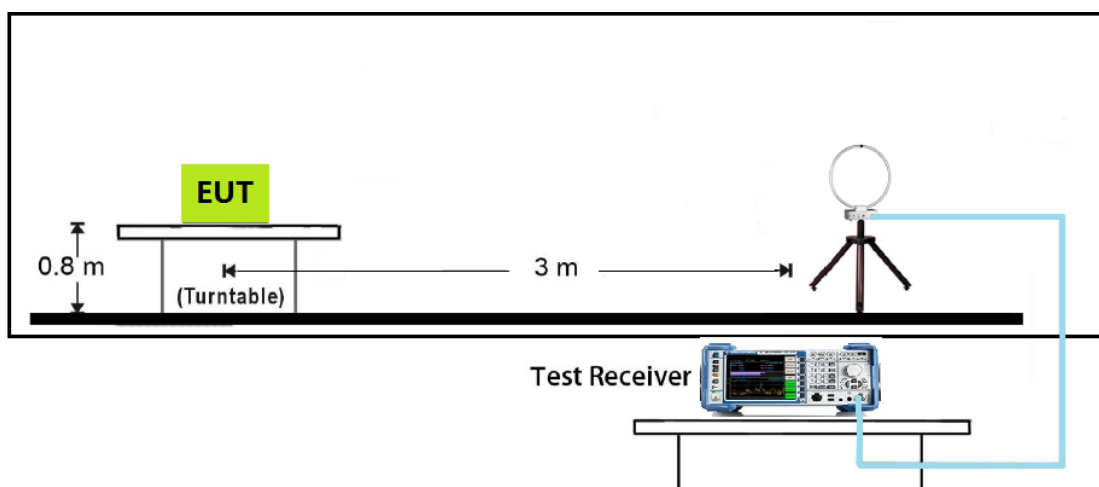
Peak Measurements above 1GHz

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW = 3MHz
4. Detector = peak
5. Sweep time = auto couple
6. Trace mode = max hold
7. Trace was allowed to stabilize



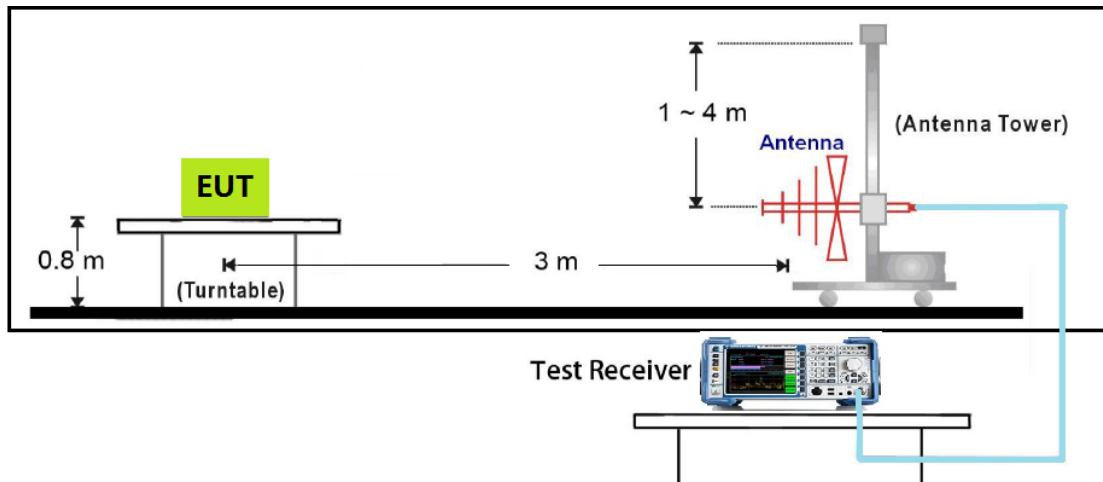
3.4 Typical Test Setup

9kHz~30MHz Test Setup

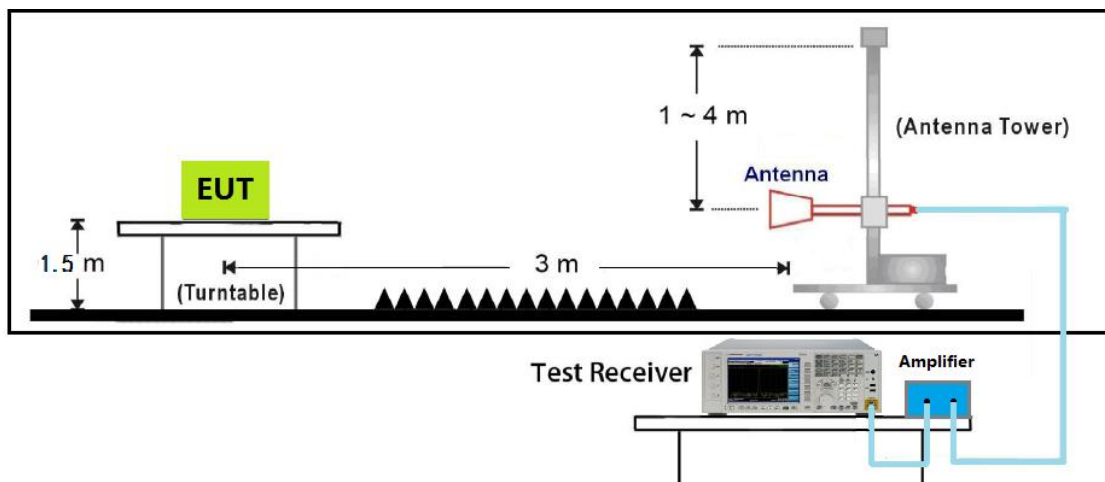




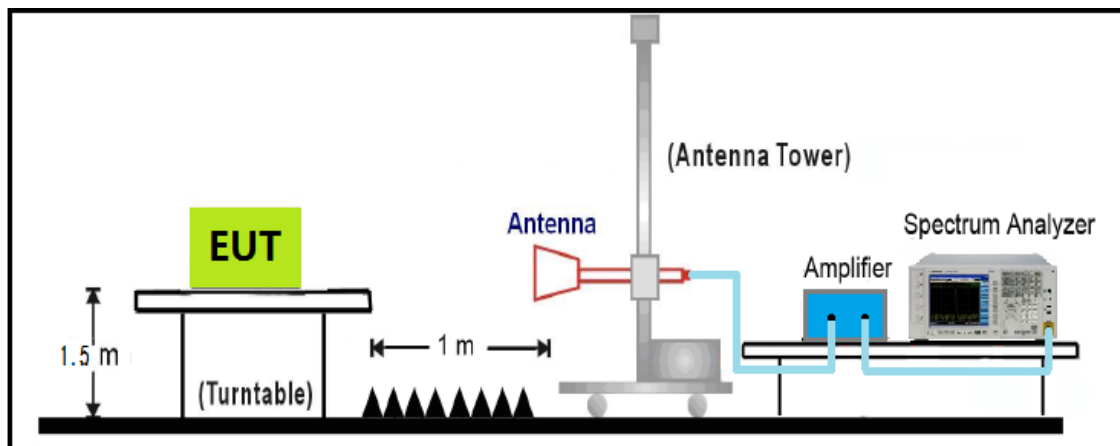
Below 1GHz Test Setup



1GHz~18GHz Test Setup



18GHz~40GHz Test Setup



**3.5 Measurement equipment**

Instrument	Model No.	Manufacturer	Serial No.	Calibration Date	Valid Date.
EMI Test Receiver	R&S	ESCI	100563	2016.03.10	2017.03.09
Spectrum Analyzer	R&S	FSP40	100047	2016.03.27	2017.03.26
H64 Preamplifier	HP	8447F	3113A05582	2016.03.10	2017.03.09
Preamplifier	COM-POWER	PA-840	711885	2016.03.24	2017.03.23
Preamplifier	Agilent	8449B	3008A02342	2016.03.10	2017.03.09
Ultra Broadband Antenna	R&S	HL562	100362	2015.05.03	2016.05.02
Broad-Band Horn Antenna	Schwarzbeck	BBHA9120D	9120D-619	2015.05.03	2016.05.02
Broad-Band Horn Antenna	Schwarzbeck	BBHA9170	9170-347	2015.05.03	2016.05.02
Spectrum Analyzer	Agilent	E4407B	MY44211883	2015.09.25	2016.09.25
Temperature/ Humidity Meter	Zhicheng	ZC1-11	CEP-TH-002	2016.03.10	2017.03.09



3.6 Test Result and Data

The worst case of Radiated Emission below 1GHz:

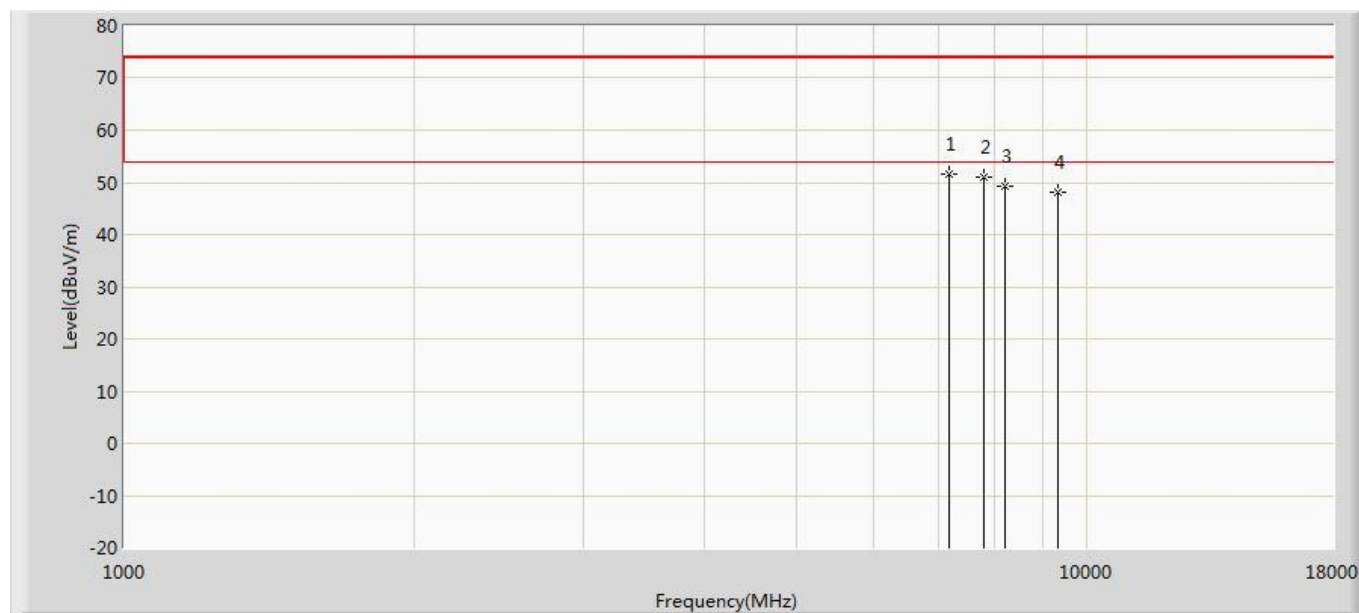
Engineer :Ternence	
Site : EMC Lab AC 102	Time : 2016-04-10
Limit : FCC_CLASS_B_03M_QP	Margin : 6
EUT :Notebook computer	Probe : VERTICAL/ HORIZONTAL
Power : AC 120V/60Hz	Note : Normal Link

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	AntPol. H/V
1	39.7200	-8.20	32.84	24.64	40.00	-15.36	QP	H
2	49.1699	-14.42	26.87	12.45	40.00	-27.55	QP	H
3	59.1600	-15.59	27.78	12.19	40.00	-27.81	QP	H
4	71.0400	-20.59	26.80	6.21	40.00	-33.79	QP	H
5	94.8000	-17.05	27.01	9.96	43.50	-33.54	QP	H
6	128.8200	-13.82	27.30	13.48	43.50	-30.02	QP	H

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	AntPol. H/V
1	31.0800	-6.67	25.31	18.64	40.00	-21.36	QP	V
2	39.9900	-8.25	35.25	27.00	40.00	-13.00	QP	V
3	47.5500	-13.33	32.96	19.63	40.00	-20.37	QP	V
4	63.2100	-17.25	34.38	17.13	40.00	-22.87	QP	V
5	73.4700	-20.45	28.38	7.93	40.00	-32.07	QP	V
6	99.6600	-15.87	36.50	20.63	43.50	-22.87	QP	V

**The worst case of Radiated Emission 1~18GHz:**

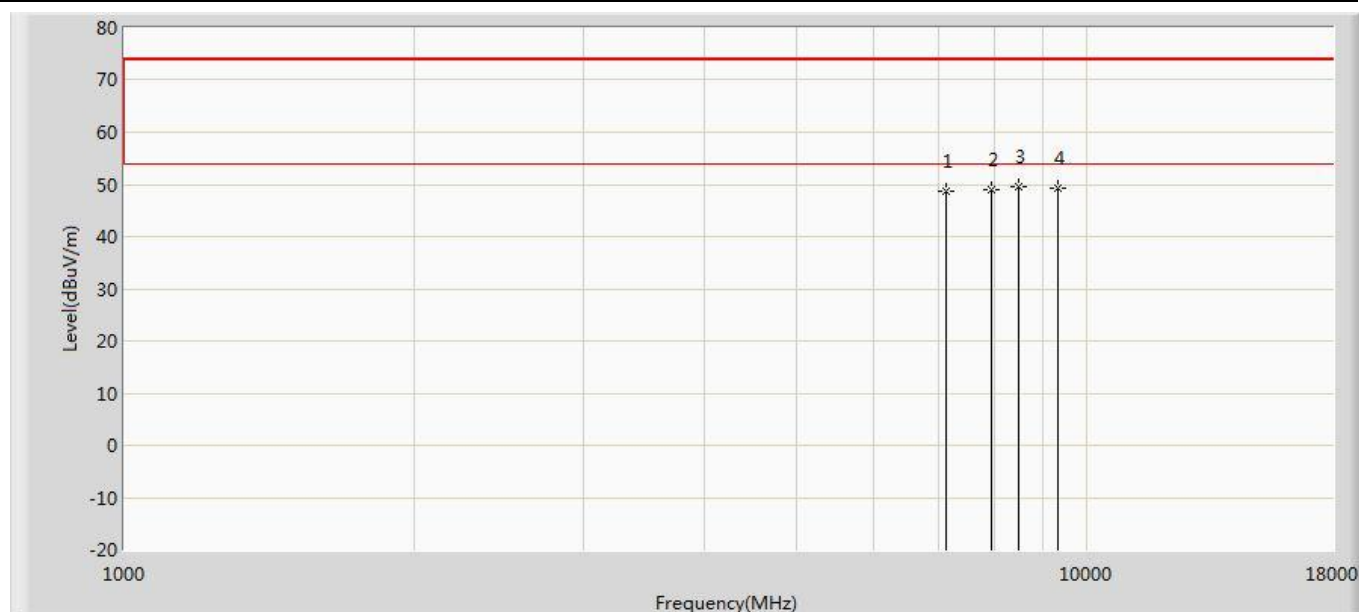
Engineer: Ternence	
Site: AC102	Time: 2016/04/10 - 14:27
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA9120D(1-18GHz)	Polarity: Horizontal
EUT: QCNFA435	Power: 120V/60HZ
Note: Transmit by 802.11 n20MHz at 5220MHz	



No	Mark	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Type
1	*	7188.6	38.0	13.6	51.6	68.2(Note6)	-16.6	PK
2		7808.7	35.3	15	50.3	68.2(Note6)	-17.9	PK
3		8225.6	34.8	14.5	49.3	74	-24.7	PK
4		9339.0	34.4	15.4	49.8	74	-24.2	PK



Engineer: Ternence	
Site: AC102	Time: 2016/04/10 - 14:49
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA9120D(1-18GHz)	Polarity: Vertical
EUT: QCNFA435	Power: 120V/60HZ
Note: Transmit by 802.11 n20MHz at 5220MHz	



No	Mark	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Type
1		7145.9	35.1	13.5	48.6	68.2(Note6)	-19.6	PK
2		7954.0	33.8	15.1	48.9	68.2(Note6)	-19.3	PK
3	*	8481.0	35.3	14.6	49.9	74	-24.1	PK
4		9339.0	33.8	15.4	49.2	74	-24.8	PK



Above 1G:

Engineer : Ternence	
Site : EMC Lab AC 102	Time : 2016-04-10
Limit : FCC_15_03M_PK	Margin : 6
EUT : Notebook computer	Probe : VERTICAL/ HORIZONTAL
Power : AC 120V/60Hz	Note : Transmit by 802.11 a

Frequency (MHz)	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna
5180	7188.9	36.5	13.6	50.1	68.2(Note6)	-18.1	Peak	H
	7919.2	35.0	15.1	50.1	68.2(Note6)	-18.1	Peak	H
	8429.1	35.5	14.6	50.1	74	-23.9	Peak	H
	9382.0	33.5	15.3	48.8	74	-25.2	Peak	H
	7188.3	37.7	13.6	51.3	68.2(Note6)	-16.9	Peak	V
	7826.3	35.5	15.1	50.6	68.2(Note6)	-17.6	Peak	V
	8276.7	33.5	14.3	47.8	74	-26.2	Peak	V
	9347.6	33.4	15.4	48.8	74	-25.2	Peak	V

Frequency (MHz)	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna
5220	7155.0	35.1	13.6	48.7	68.2(Note6)	-19.5	Peak	H
	7894.4	34.8	15	49.8	68.2(Note6)	-18.4	Peak	H
	8438.4	34.9	14.6	49.5	74	-24.5	Peak	H
	9160.6	35.4	15.3	50.7	74	-23.3	Peak	H
	7188.3	37.1	13.6	50.7	68.2(Note6)	-17.5	Peak	V
	7877.3	33.6	15	48.6	68.2(Note6)	-19.6	Peak	V
	8403.5	33.6	14.5	48.1	74	-25.9	Peak	V
	9075.4	34.4	14.5	48.9	74	-25.1	Peak	V



Frequency (MHz)	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna
5240	7146.2	35.0	13.5	48.5	68.2(Note6)	-19.7	Peak	H
	7792.1	33.7	15	48.7	68.2(Note6)	-19.5	Peak	H
	8301.8	34.0	14.3	48.3	74	-25.7	Peak	H
	9100.8	34.4	14.6	49.0	74	-25.0	Peak	H
	7086.3	35.3	13.3	48.6	68.2(Note6)	-19.6	Peak	V
	7783.8	33.0	15	48.0	68.2(Note6)	-20.2	Peak	V
	8352.9	33.4	14.4	47.8	74	-26.2	Peak	V
	9041.0	34.3	14.5	48.8	74	-25.2	Peak	V

Frequency (MHz)	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna
5260	7120.9	35.0	13.4	48.4	68.2(Note6)	-19.8	Peak	H
	7843.1	35.0	15.1	50.1	68.2(Note6)	-18.1	Peak	H
	8251.4	33.3	14.4	47.7	74	-26.3	Peak	H
	9390.4	34.2	15.4	49.6	74	-24.4	Peak	H
	7239.6	36.2	13.8	50.0	68.2(Note6)	-18.2	Peak	V
	7783.7	34.1	15	49.1	68.2(Note6)	-19.1	Peak	V
	8455.5	33.2	14.5	47.7	74	-26.3	Peak	V
	9109.9	34.9	14.7	49.6	74	-24.4	Peak	V

Frequency (MHz)	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna
5300	7222.2	35.8	13.7	49.5	68.2(Note6)	-18.7	Peak	H
	7868.0	32.8	15	47.8	68.2(Note6)	-20.4	Peak	H
	8463.3	32.9	14.5	47.4	74	-26.6	Peak	H
	9134.5	34.5	15.1	49.6	74	-24.4	Peak	H
	7188.7	36.5	13.6	50.1	68.2(Note6)	-18.1	Peak	V
	7885.8	33.4	15	48.4	68.2(Note6)	-19.8	Peak	V
	8310.3	34.5	14.4	48.9	74	-25.1	Peak	V
	9033.2	35.0	14.5	49.5	74	-24.5	Peak	V



Frequency (MHz)	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna
5320	7154.9	35.7	13.6	49.3	68.2(Note6)	-18.9	Peak	H
	7971.0	33.7	15	48.7	68.2(Note6)	-19.5	Peak	H
	8387.3	34.7	14.4	49.1	74	-24.9	Peak	H
	9016.4	34.6	14.5	49.1	74	-24.9	Peak	H
	7154.4	37.1	13.6	50.7	68.2(Note6)	-17.5	Peak	V
	7707.0	34.6	14.5	49.1	68.2(Note6)	-19.1	Peak	V
	8353.0	34.0	14.4	48.4	74	-25.6	Peak	V
	9398.4	34.6	15.4	50.0	74	-24.0	Peak	V

Frequency (MHz)	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna
5500	7196.7	36.8	13.6	50.4	68.2(Note6)	-17.8	Peak	H
	7766.0	35.4	14.8	50.2	68.2(Note6)	-18.0	Peak	H
	8437.6	35.1	14.6	49.7	74	-24.3	Peak	H
	9466.4	34.4	15.4	49.8	74	-24.2	Peak	H
	7239.8	36.6	13.8	50.4	68.2(Note6)	-17.8	Peak	V
	7987.4	33.4	15	48.4	68.2(Note6)	-19.8	Peak	V
	8369.8	33.9	14.4	48.3	74	-25.7	Peak	V
	9143.1	35.0	15.2	50.2	74	-23.8	Peak	V

Frequency (MHz)	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna
5600	7230.5	36.5	13.8	50.3	68.2(Note6)	-17.9	Peak	H
	7987.6	33.1	15	48.1	68.2(Note6)	-20.1	Peak	H
	8463.6	34.3	14.5	48.8	74	-25.2	Peak	H
	9466.6	35.0	15.4	50.4	74	-23.6	Peak	H
	7222.4	36.1	13.7	49.8	68.2(Note6)	-18.4	Peak	V
	7877.2	33.9	15	48.9	68.2(Note6)	-19.3	Peak	V
	8404.0	33.9	14.5	48.4	74	-25.6	Peak	V
	9041.6	35.5	14.5	50.0	74	-24.0	Peak	V



Frequency (MHz)	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna
5700	7196.7	36.5	13.6	50.1	68.2(Note6)	-18.1	Peak	H
	7851.4	34.7	15.1	49.8	68.2(Note6)	-18.4	Peak	H
	8276.5	34.7	14.3	49.0	74	-25.0	Peak	H
	9092.4	34.6	14.6	49.2	74	-24.8	Peak	H
	7222.7	36.8	13.7	50.5	68.2(Note6)	-17.7	Peak	V
	7843.2	33.6	15.1	48.7	68.2(Note6)	-19.5	Peak	V
	8471.8	34.5	14.6	49.1	74	-24.9	Peak	V
	9135.4	35.2	15.1	50.3	74	-23.7	Peak	V

Engineer : Ternence	
Site : EMC Lab AC 102	Time : 2016-04-21
Limit : FCC_15_03M_PK	Margin : 6
EUT :Notebook computer	Probe : VERTICAL/ HORIZONTAL
Power : AC 120V/60Hz	Note : Transmit by 802.11 a

Frequency (MHz)	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna
5720	7196.5	35.9	13.6	49.5	68.2(Note6)	-18.7	Peak	H
	7774.5.4	33.8	14.9	48.7	68.2(Note6)	-19.5	Peak	H
	8480.0	34.1	14.6	48.7	74	-25.3	Peak	H
	9185.5	33.5	15.3	48.8	74	-25.2	Peak	H
	7205.0	36.3	13.6	49.9	68.2(Note6)	-18.3	Peak	V
	7808.5	35.7	15.0	50.7	68.2(Note6)	-17.5	Peak	V
	8182.5	35.8	14.7	50.5	74	-23.5	Peak	V
	9100.5	36.3	14.6	50.9	74	-23.1	Peak	V



Frequency (MHz)	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna
5745	7247.8	37.5	13.8	51.3	68.2(Note6)	-16.9	Peak	H
	7809.4	33.9	15	48.9	68.2(Note6)	-19.3	Peak	H
	8387.5	34.0	14.4	48.4	74	-25.6	Peak	H
	9041.8	35.6	14.5	50.1	74	-23.9	Peak	H
	7180.1	37.3	13.6	50.9	68.2(Note6)	-17.3	Peak	V
	7775.2	33.7	14.9	48.6	68.2(Note6)	-19.6	Peak	V
	8386.6	33.7	14.4	48.1	74	-25.9	Peak	V
	9093.0	34.9	14.6	49.5	74	-24.5	Peak	V

Frequency (MHz)	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna
5785	7129.0	35.7	13.5	49.2	68.2(Note6)	-19.0	Peak	H
	7851.5	34.5	15.1	49.6	68.2(Note6)	-18.6	Peak	H
	8352.7	34.4	14.4	48.8	74	-25.2	Peak	H
	9092.4	35.0	14.6	49.6	74	-24.4	Peak	H
	7188.2	36.3	13.6	49.9	68.2(Note6)	-18.3	Peak	V
	7851.8	34.6	15.1	49.7	68.2(Note6)	-18.5	Peak	V
	8310.3	33.1	14.4	47.5	74	-26.5	Peak	V
	9152.1	35.3	15.3	50.6	74	-23.4	Peak	V

Frequency (MHz)	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna
5825	7179.7	35.9	13.6	49.5	68.2(Note6)	-18.7	Peak	H
	7842.9	33.9	15.1	49.0	68.2(Note6)	-19.2	Peak	H
	8174.8	34.3	14.8	49.1	74	-24.9	Peak	H
	9092.3	34.9	14.6	49.5	74	-24.5	Peak	H
	7180.2	35.8	13.6	49.4	68.2(Note6)	-18.8	Peak	V
	7774.6	33.2	14.9	48.1	68.2(Note6)	-20.1	Peak	V
	8370.0	34.4	14.4	48.8	74	-25.2	Peak	V
	9101.1	34.3	14.6	48.9	74	-25.1	Peak	V



Engineer : Ternence	
Site : EMC Lab AC 102	Time : 2016-04-10
Limit : FCC_15_03M_PK	Margin : 6
EUT :Notebook computer	Probe : VERTICAL/ HORIZONTAL
Power : AC 120V/60Hz	Note : Transmit by 802.11 n20

Frequency (MHz)	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna
5180	7120.3	35.9	13.4	49.3	68.2(Note6)	-18.9	Peak	H
	7910.5	33.5	15	48.5	68.2(Note6)	-19.7	Peak	H
	8242.5	34.4	14.5	48.9	74	-25.1	Peak	H
	9050.2	35.7	14.5	50.2	74	-23.8	Peak	H
	7196.5	36.9	13.6	50.5	68.2(Note6)	-17.7	Peak	V
	7842.6	34.3	15.1	49.4	68.2(Note6)	-18.8	Peak	V
	8310.5	35.0	14.4	49.4	74	-24.6	Peak	V
	9058.2	35.5	14.5	50.0	74	-24.0	Peak	V

Frequency (MHz)	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna
5220	7188.6	38.0	13.6	51.6	68.2(Note6)	-16.6	Peak	H
	7808.7	35.3	15	50.3	68.2(Note6)	-17.9	Peak	H
	8225.6	34.8	14.5	49.3	74	-24.7	Peak	H
	9339.0	34.4	15.4	49.8	74	-24.2	Peak	H
	7145.9	35.1	13.5	48.6	68.2(Note6)	-19.6	Peak	V
	7954.0	33.8	15.1	48.9	68.2(Note6)	-19.3	Peak	V
	8481.0	35.3	14.6	49.9	74	-24.1	Peak	V
	9339.0	33.8	15.4	49.2	74	-24.8	Peak	V



Frequency (MHz)	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna
5240	7188.7	37.0	13.6	50.6	68.2(Note6)	-17.6	Peak	H
	7970.4	33.1	15	48.1	68.2(Note6)	-20.1	Peak	H
	8276.2	34.6	14.3	48.9	74	-25.1	Peak	H
	9305.3	34.9	15.4	50.3	74	-23.7	Peak	H
	7044.1	34.9	13.1	48.0	68.2(Note6)	-20.2	Peak	V
	7808.8	33.7	15	48.7	68.2(Note6)	-19.5	Peak	V
	8216.7	34.1	14.6	48.7	74	-25.3	Peak	V
	9321.5	35.0	15.4	50.4	74	-23.6	Peak	V

Frequency (MHz)	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna
5260	7129.3	34.5	13.5	48.0	68.2(Note6)	-20.2	Peak	H
	7919.9	34.1	15.1	49.2	68.2(Note6)	-19.0	Peak	H
	8174.2	35.0	14.8	49.8	74	-24.2	Peak	H
	9032.6	34.3	14.5	48.8	74	-25.2	Peak	H
	7188.1	36.4	13.6	50.0	68.2(Note6)	-18.2	Peak	V
	7851.1	34.0	15.1	49.1	68.2(Note6)	-19.1	Peak	V
	8174.3	34.9	14.8	49.7	74	-24.3	Peak	V
	9135.5	33.2	15.1	48.3	74	-25.7	Peak	V

Frequency (MHz)	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna
5300	7230.6	36.2	13.8	50.0	68.2(Note6)	-18.2	Peak	H
	7953.3	33.8	15.1	48.9	68.2(Note6)	-19.3	Peak	H
	8284.7	35.0	14.3	49.3	74	-24.7	Peak	H
	9390.0	34.6	15.4	50.0	74	-24.0	Peak	H
	7146.4	36.3	13.5	49.8	68.2(Note6)	-18.4	Peak	V
	7843.3	34.2	15.1	49.3	68.2(Note6)	-18.9	Peak	V
	8318.9	34.5	14.4	48.9	74	-25.1	Peak	V
	9101.1	33.9	14.6	48.5	74	-25.5	Peak	V



Frequency (MHz)	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna
5320	7009.9	36.5	12.8	49.3	68.2(Note6)	-18.9	Peak	H
	7809.2	34.3	15	49.3	68.2(Note6)	-18.9	Peak	H
	8131.7	34.2	15	49.2	74	-24.8	Peak	H
	9415.6	34.6	15.5	50.1	74	-23.9	Peak	H
	7180.3	35.2	13.6	48.8	68.2(Note6)	-19.4	Peak	V
	7825.8	33.3	15.1	48.4	68.2(Note6)	-19.8	Peak	V
	8284.8	34.5	14.3	48.8	74	-25.2	Peak	V
	9058.3	34.7	14.5	49.2	74	-24.8	Peak	V

Frequency (MHz)	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna
5500	7137.3	35.3	13.5	48.8	68.2(Note6)	-19.4	Peak	H
	7843.3	33.9	15.1	49.0	68.2(Note6)	-19.2	Peak	H
	8132.3	34.5	15	49.5	74	-24.5	Peak	H
	9151.9	36.2	15.3	51.5	74	-22.5	Peak	H
	7214.0	36.1	13.7	49.8	68.2(Note6)	-18.4	Peak	V
	7851.6	34.3	15.1	49.4	68.2(Note6)	-18.8	Peak	V
	8174.2	35.3	14.8	50.1	74	-23.9	Peak	V
	9041.4	36.7	14.5	51.2	74	-22.8	Peak	V

Frequency (MHz)	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna
5600	7129.5	35.7	13.5	49.2	68.2(Note6)	-19.0	Peak	H
	7851.2	33.9	15.1	49.0	68.2(Note6)	-19.2	Peak	H
	9050.1	34.6	14.5	49.1	74	-24.9	Peak	H
	9449.9	34.8	15.5	50.3	74	-23.7	Peak	H
	7171.6	35.1	13.6	48.7	68.2(Note6)	-19.5	Peak	V
	7809.1	34.4	15	49.4	68.2(Note6)	-18.8	Peak	V
	8200.1	34.8	14.6	49.4	74	-24.6	Peak	V
	9305.4	35.1	15.4	50.5	74	-23.5	Peak	V



Frequency (MHz)	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna
5700	7197.5	37.4	13.6	51.0	68.2(Note6)	-17.2	Peak	H
	7885.9	34.2	15	49.2	68.2(Note6)	-19.0	Peak	H
	8412.3	35.0	14.5	49.5	74	-24.5	Peak	H
	9109.5	35.8	14.7	50.5	74	-23.5	Peak	H
	7179.9	35.3	13.6	48.9	68.2(Note6)	-19.3	Peak	V
	7842.9	35.0	15.1	50.1	68.2(Note6)	-18.1	Peak	V
	8165.6	34.7	14.8	49.5	74	-24.5	Peak	V
	9092.7	35.9	14.6	50.5	74	-23.5	Peak	V

Frequency (MHz)	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna
5720	7205.3	34.5	13.6	48.1	68.2(Note6)	-20.1	Peak	H
	7868.2	33.2	15.0	48.2	68.2(Note6)	-20	Peak	H
	8429.1	33.5	14.6	48.1	74	-25.9	Peak	H
	9381.0	35.1	15.3	50.4	74	-23.6	Peak	H
	7188.1	35.6	13.6	49.2	68.2(Note6)	-19.0	Peak	V
	7859.1	34.2	15.1	49.3	68.2(Note6)	-18.9	Peak	V
	8378.2	34.7	14.4	49.1	74	-24.9	Peak	V
	9177.1	36.1	15.2	51.3	74	-22.7	Peak	V

Frequency (MHz)	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna
5745	7145.9	35.9	13.5	49.4	68.2(Note6)	-18.8	Peak	H
	7842.8	33.9	15.1	49.0	68.2(Note6)	-19.2	Peak	H
	8369.9	34.5	14.4	48.9	74	-25.1	Peak	H
	9423.8	34.6	15.5	50.1	74	-23.9	Peak	H
	7197.5	36.3	13.6	49.9	68.2(Note6)	-18.3	Peak	V
	7808.6	34.4	15	49.4	68.2(Note6)	-18.8	Peak	V
	8131.7	35.2	15	50.2	74	-23.8	Peak	V
	9160.6	35.2	15.3	50.5	74	-23.5	Peak	V



Frequency (MHz)	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna
5785	7112.0	35.6	13.4	49.0	68.2(Note6)	-19.2	Peak	H
	7809.1	34.1	15	49.1	68.2(Note6)	-19.1	Peak	H
	8089.9	34.7	15.1	49.8	74	-24.2	Peak	H
	9134.7	34.1	15.1	49.2	74	-24.8	Peak	H
	7112.4	35.4	13.4	48.8	68.2(Note6)	-19.4	Peak	V
	7894.4	34.7	15	49.7	68.2(Note6)	-18.5	Peak	V
	8429.2	34.7	14.6	49.3	74	-24.7	Peak	V
	9152.1	35.3	15.3	50.6	74	-23.4	Peak	V

Frequency (MHz)	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna
5825	7137.7	35.4	13.5	48.9	68.2(Note6)	-19.3	Peak	H
	7842.5	34.7	15.1	49.8	68.2(Note6)	-18.4	Peak	H
	8080.8	35.3	15.2	50.5	74	-23.5	Peak	H
	8251.0	35.4	14.4	49.8	74	-24.2	Peak	H
	7188.9	36.4	13.6	50.0	68.2(Note6)	-18.2	Peak	V
	7987.1	34.2	15	49.2	68.2(Note6)	-19.0	Peak	V
	8276.7	34.1	14.3	48.4	74	-25.6	Peak	V
	9492.0	34.6	15.4	50.0	74	-24.0	Peak	V



Engineer : Ternence	
Site : EMC Lab AC 102	Time : 2016-04-10
Limit : FCC_15_03M_PK	Margin : 6
EUT :Notebook computer	Probe : VERTICAL/ HORIZONTAL
Power : AC 120V/60Hz	Note : Transmit by 802.11 n40

Frequency (MHz)	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna
5190	7223.0	37.1	13.7	50.8	68.2(Note6)	-17.4	Peak	H
	7757.8	34.5	14.8	49.3	68.2(Note6)	-18.9	Peak	H
	8403.9	34.0	14.5	48.5	74	-25.5	Peak	H
	9066.5	35.3	14.5	49.8	74	-24.2	Peak	H
	7188.2	35.8	13.6	49.4	68.2(Note6)	-18.8	Peak	V
	7953.3	35.0	15.1	50.1	68.2(Note6)	-18.1	Peak	V
	8318.7	34.8	14.4	49.2	74	-24.8	Peak	V
	9134.9	33.8	15.1	48.9	74	-25.1	Peak	V

Frequency (MHz)	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna
5230	7197.0	36.2	13.6	49.8	68.2(Note6)	-18.4	Peak	H
	7774.9	34.6	14.9	49.5	68.2(Note6)	-18.7	Peak	H
	8480.9	34.7	14.6	49.3	74	-24.7	Peak	H
	9186.3	34.8	15.3	50.1	74	-23.9	Peak	H
	7205.9	37.1	13.6	50.7	68.2(Note6)	-17.5	Peak	V
	7809.3	33.7	15	48.7	68.2(Note6)	-19.5	Peak	V
	8183.4	35.9	14.7	50.6	74	-23.4	Peak	V
	9100.7	35.1	14.6	49.7	74	-24.3	Peak	V



Frequency (MHz)	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna
5270	7137.6	35.4	13.5	48.9	68.2(Note6)	-19.3	Peak	H
	7876.5	33.2	15	48.2	68.2(Note6)	-20.0	Peak	H
	8386.8	34.8	14.4	49.2	74	-24.8	Peak	H
	9177.1	35.4	15.3	50.7	74	-23.3	Peak	H
	7137.4	35.3	13.5	48.8	68.2(Note6)	-19.4	Peak	V
	7800.2	34.0	15	49.0	68.2(Note6)	-19.2	Peak	V
	8259.3	34.4	14.4	48.8	74	-25.2	Peak	V
	9152.3	35.1	15.3	50.4	74	-23.6	Peak	V

Frequency (MHz)	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna
5310	7146.4	36.0	13.5	49.5	68.2(Note6)	-18.7	Peak	H
	7774.8	34.0	14.9	48.9	68.2(Note6)	-19.3	Peak	H
	8429.3	34.7	14.6	49.3	74	-24.7	Peak	H
	9050.4	34.8	14.5	49.3	74	-24.7	Peak	H
	7230.7	36.5	13.8	50.3	68.2(Note6)	-17.9	Peak	V
	7876.8	32.9	15	47.9	68.2(Note6)	-20.3	Peak	V
	8429.8	33.9	14.6	48.5	74	-25.5	Peak	V
	9143.4	34.5	15.2	49.7	74	-24.3	Peak	V

Frequency (MHz)	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna
5510	7146.2	36.3	13.5	49.8	68.2(Note6)	-18.4	Peak	H
	7876.6	33.1	15	48.1	68.2(Note6)	-20.1	Peak	H
	8131.9	34.3	15	49.3	74	-24.7	Peak	H
	9066.6	34.6	14.5	49.1	74	-24.9	Peak	H
	7230.9	36.0	13.8	49.8	68.2(Note6)	-18.4	Peak	V
	7902.6	34.1	15	49.1	68.2(Note6)	-19.1	Peak	V
	8429.6	34.4	14.6	49.0	74	-25.0	Peak	V
	9024.5	33.9	14.5	48.4	74	-25.6	Peak	V



Frequency (MHz)	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna
5590	7180.2	35.6	13.6	49.2	68.2(Note6)	-19.0	Peak	H
	7902.2	34.3	15	49.3	68.2(Note6)	-18.9	Peak	H
	8471.9	34.0	14.6	48.6	74	-25.4	Peak	H
	9015.8	34.5	14.5	49.0	74	-25.0	Peak	H
	7145.8	35.9	13.5	49.4	68.2(Note6)	-18.8	Peak	V
	7902.4	34.0	15	49.0	68.2(Note6)	-19.2	Peak	V
	8276.7	33.3	14.3	47.6	74	-26.4	Peak	V
	9355.7	33.0	15.4	48.4	74	-25.6	Peak	V

Frequency (MHz)	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna
5670	7145.6	36.6	13.5	50.1	68.2(Note6)	-18.1	Peak	H
	7885.0	34.2	15	49.2	68.2(Note6)	-19.0	Peak	H
	8242.1	35.1	14.5	49.6	74	-24.4	Peak	H
	9092.3	35.1	14.6	49.7	74	-24.3	Peak	H
	7171.8	35.9	13.6	49.5	68.2(Note6)	-18.7	Peak	V
	7842.9	33.9	15.1	49.0	68.2(Note6)	-19.2	Peak	V
	8166.1	34.9	14.8	49.7	74	-24.3	Peak	V
	9466.3	35.0	15.4	50.4	74	-23.6	Peak	V

Frequency (MHz)	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna
5710	7205.1	34.7	13.6	48.3	68.2(Note6)	-19.9	Peak	H
	7868.3	34.2	15	49.2	68.2(Note6)	-19.0	Peak	H
	8429.3	33.3	14.6	47.9	74	-26.1	Peak	H
	9381.2	34.6	15.3	49.9	74	-24.1	Peak	H
	7187.9	34.7	13.6	48.3	68.2(Note6)	-19.9	Peak	V
	7859.0	34.8	15.1	49.9	68.2(Note6)	-18.3	Peak	V
	8378.1	35.1	14.4	49.5	74	-24.5	Peak	V
	9177.2	35.9	15.2	51.1	74	-22.9	Peak	V



Frequency (MHz)	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna
5755	7120.0	34.4	13.4	47.8	68.2(Note6)	-20.4	Peak	H
	7945.4	35.0	15.1	50.1	68.2(Note6)	-18.1	Peak	H
	8437.9	34.1	14.6	48.7	74	-25.3	Peak	H
	9135.5	34.1	15.1	49.2	74	-24.8	Peak	H
	7189.0	36.7	13.6	50.3	68.2(Note6)	-17.9	Peak	V
	7962.3	32.8	15	47.8	68.2(Note6)	-20.4	Peak	V
	8395.4	33.5	14.4	47.9	74	-26.1	Peak	V
	9304.8	35.5	15.4	50.9	74	-23.1	Peak	V

Frequency (MHz)	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna
5795	7188.7	35.4	13.6	49.0	68.2(Note6)	-19.2	Peak	H
	7809.4	34.1	15	49.1	68.2(Note6)	-19.1	Peak	H
	8352.7	32.0	14.4	46.4	74	-27.6	Peak	H
	9304.8	34.2	15.4	49.6	74	-24.4	Peak	H
	7171.0	35.0	13.6	48.6	68.2(Note6)	-19.6	Peak	V
	7783.2	33.4	15	48.4	68.2(Note6)	-19.8	Peak	V
	8463.9	32.8	14.5	47.3	74	-26.7	Peak	V
	9347.8	33.3	15.4	48.7	74	-25.3	Peak	V



Engineer : Ternence	
Site : EMC Lab AC 102	Time : 2016-04-10
Limit : FCC_15_03M_PK	Margin : 6
EUT :Notebook computer	Probe : VERTICAL/ HORIZONTAL
Power : AC 120V/60Hz	Note : Transmit by 802.11 ac80

Frequency (MHz)	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna
5210	7179.7	36.0	13.6	49.6	68.2(Note6)	-18.6	Peak	H
	7885.4	33.8	15	48.8	68.2(Note6)	-19.4	Peak	H
	8438.3	33.9	14.6	48.5	74	-25.5	Peak	H
	9024.4	34.9	14.5	49.4	74	-24.6	Peak	H
	7247.8	36.1	13.8	49.9	68.2(Note6)	-18.3	Peak	V
	7808.7	34.0	15	49.0	68.2(Note6)	-19.2	Peak	V
	8319.0	33.7	14.4	48.1	74	-25.9	Peak	V
	9186.4	34.9	15.3	50.2	74	-23.8	Peak	V

Frequency (MHz)	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna
5290	7222.6	37.2	13.7	50.9	68.2(Note6)	-17.3	Peak	H
	7800.6	33.7	15	48.7	68.2(Note6)	-19.5	Peak	H
	8327.4	33.6	14.5	48.1	74	-25.9	Peak	H
	9024.8	35.1	14.5	49.6	74	-24.4	Peak	H
	7205.3	35.2	13.6	48.8	68.2(Note6)	-19.4	Peak	V
	7800.7	34.5	15	49.5	68.2(Note6)	-18.7	Peak	V
	8242.7	33.8	14.5	48.3	74	-25.7	Peak	V
	9135.5	34.7	15.1	49.8	74	-24.2	Peak	V



Frequency (MHz)	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna
5530	7205.2	36.0	13.6	49.6	68.2(Note6)	-18.6	Peak	H
	7885.3	33.4	15	48.4	68.2(Note6)	-19.8	Peak	H
	9024.1	35.0	14.5	49.5	74	-24.5	Peak	H
	9424.1	36.3	15.5	51.8	74	-22.2	Peak	H
	7145.7	34.9	13.5	48.4	68.2(Note6)	-19.8	Peak	V
	7868.5	33.3	15	48.3	68.2(Note6)	-19.9	Peak	V
	8285.3	33.3	14.3	47.6	74	-26.4	Peak	V
	9432.3	34.3	15.5	49.8	74	-24.2	Peak	V

Frequency (MHz)	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna
5610	7146.2	35.7	13.5	49.2	68.2(Note6)	-19.0	Peak	H
	7834.8	35.1	15.1	50.2	68.2(Note6)	-18.0	Peak	H
	8429.8	33.9	14.6	48.5	74	-25.5	Peak	H
	9432.3	34.0	15.5	49.5	74	-24.5	Peak	H
	7239.8	37.2	13.8	51.0	68.2(Note6)	-17.2	Peak	V
	7911.2	34.2	15	49.2	68.2(Note6)	-19.0	Peak	V
	8319.0	34.7	14.4	49.1	74	-24.9	Peak	V
	9364.1	33.2	15.3	48.5	74	-25.5	Peak	V

Frequency (MHz)	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna
5690	7111.8	35.4	13.4	48.8	68.2(Note6)	-19.4	Peak	H
	7996.0	34.3	15	49.3	68.2(Note6)	-18.9	Peak	H
	8446.9	32.7	14.5	47.2	74	-26.8	Peak	H
	9338.6	33.9	15.4	49.3	74	-24.7	Peak	H
	7154.7	36.1	13.6	49.7	68.2(Note6)	-18.5	Peak	V
	7876.5	33.6	15	48.6	68.2(Note6)	-19.6	Peak	V
	8242.2	34.5	14.5	49.0	74	-25.0	Peak	V
	9305.3	34.0	15.4	49.4	74	-24.6	Peak	V



Frequency (MHz)	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna
5775	7145.8	36.1	13.5	49.6	68.2(Note6)	-18.6	Peak	H
	7843.2	34.9	15.1	50.0	68.2(Note6)	-18.2	Peak	H
	8429.8	35.0	14.6	49.6	74	-24.4	Peak	H
	9016.0	36.7	14.5	51.2	74	-22.8	Peak	H
	7231.5	35.8	13.8	49.6	68.2(Note6)	-18.6	Peak	V
	7843.3	35.3	15.1	50.4	68.2(Note6)	-17.8	Peak	V
	8489.0	35.5	14.7	50.2	74	-23.8	Peak	V
	9177.1	35.6	15.3	50.9	74	-23.1	Peak	V

Note:

1. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
2. Measurement Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.
6. Is not in restricted band, its limit is -27dBm/MHz. At a distance of 3 meters, the field strength limit in dBuV/m can be determined by adding a “conversion” factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the PK limit for out of band spurious emissions of 68.2dBuV/m.
- 7.The data above is worst case.
- 8.The test trace is same as the ambient noise (the test frequency range18GHz~40GHz), therefore no data appear in the report.



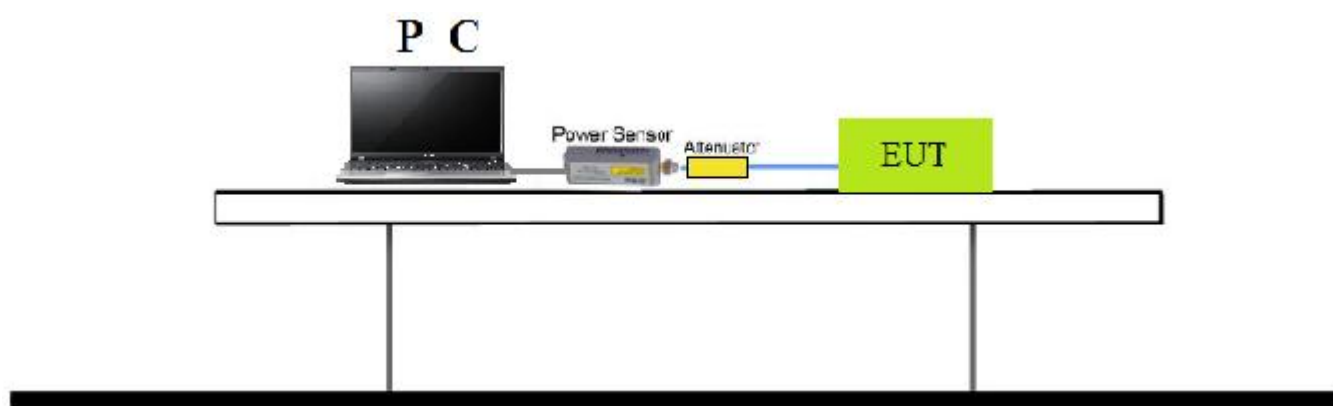
4. Power Output

4.1 Test Equipment

Instrument	Manufacturer	Type No.	Serial No.	Calibration Date	Valid Date.
PC	Lenovo	E40-70	MP078UQV	N/A	N/A
POWER SENSOR	Agilent	U2021XA	MY53260020	2016.03.27	2017.03.26
Temperature/ Humidity Meter	Zhicheng	ZC1-11	CEP-TH-003	2016.03.31	2017.03.30

Note: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

4.2 Test Setup





4.3 Limit

For FCC 15.407 Power Limit:

- For mobile and portable client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. For mobile and portable client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi..
- For the band 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or $11 \text{ dBm} + 10\log B$, where B is the 26 dB emission bandwidth in megahertz. If transmitting antenna of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that directional gain of the antenna exceeds 6 dBi.
- For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W (30dBm).

**For RSS-247 Power Limit:**

Frequency Band 5150-5250 MHz: The maximum e.i.r.p. shall not exceed 200 mW or $10 + 10 \log_{10} B$, dBm, whichever power is less. B is the 99% emission bandwidth in megahertz. The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.

Frequency Band 5250-5350 MHz: The maximum e.i.r.p. shall not exceed 1.0 W or $17 + 10 \log_{10} B$, dBm, whichever is less. B is the 99% emission bandwidth in megahertz. Note that devices with a maximum e.i.r.p. greater than 500 mW shall implement TPC in order to have the capability to operate at least 6 dB below the maximum permitted e.i.r.p. of 1 W.

Frequency Bands 5470-5600 MHz and 5650-5725 MHz: The maximum e.i.r.p. shall not exceed 1.0 W or $17 + 10 \log_{10} B$, dBm, whichever is less. B is the 99% emission bandwidth in megahertz. Note that devices with a maximum e.i.r.p. greater than 500 mW shall implement TPC in order to have the capability to operate at least 6 dB below the maximum permitted e.i.r.p. of 1 W.

Frequency Band 5725-5850 MHz: The maximum conducted output power shall not exceed 1 W. The power spectral density shall not exceed 30 dBm in any 500 kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed point-to-point operations exclude the use of point-to-multipoint³ systems, omnidirectional applications and multiple collocated transmitters transmitting the same information.

4.4 Test Procedure

The EUT was tested according to KDB 789033 D02v01r02 Section E.3.b) for compliance to FCC 47CFR 15.407 requirements.

Use the wideband power meter to test RMS power and record the result.

Refer to RSS-247 Clause 6.



4.5 Test Result

Power output test was verified over all data rates of each mode shown as below, and then choose the maximum power output (yellow marker) for final test of each channel.

MCS Index for 802.11n	Spatial Streams	Data Rate (Mbps)				
		802.11a	20MHz Bandwidth		40MHz Bandwidth	
			800ns GI	400ns GI	800ns GI	400ns GI
0	1	6	6.5	7.2	13.5	15.0
1	1	9	13.0	14.4	27.0	30.0
2	1	12	19.5	21.7	40.5	45.0
3	1	18	26.0	28.9	54.0	60.0
4	1	24	39.0	43.3	81.0	90.0
5	1	36	52.0	57.8	108.0	120.0
6	1	48	58.5	65.0	121.5	135.0
7	1	54	65.0	72.2	135.0	150.0
8	2	---	13.0	14.4	27.0	30.0
9	2	---	26.0	28.9	54.0	60.0
10	2	---	39.0	43.3	81.0	90.0
11	2	---	52.0	57.8	108.0	120.0
12	2	---	78.0	86.7	162.0	180.0
13	2	---	104.0	115.6	216.0	240.0
14	2	---	117.0	130.0	243.0	270.0
15	2	---	130.0	144.0	270.0	300.0

Spatial Streams	MCS Index	Modulation type	Coding rate	Data Rate(Mb/s)					
				20MHz		40MHz		80MHz	
				Guard Interval		Guard Interval		Guard Interval	
				800ns	400ns	800ns	400ns	800ns	400ns
1	0	BPSK	1/2	6.5	7.2	13.5	15	29.3	32.5
	1	QPSK	1/2	13	14.4	27	30	58.5	65
	2	QPSK	3/4	19.5	21.7	40.5	45	87.8	97.5
	3	16-QAM	1/2	26	28.9	54	60	117	130
	4	16-QAM	3/4	39	43.3	81	90	175.5	195
	5	64-QAM	2/3	52	57.8	108	120	234	260



	6	64-QAM	3/4	58.5	65	121.5	135	263.3	292.5
	7	64-QAM	5/6	65	72.2	135	150	292.5	325
	8	256-QAM	3/4	78	86.7	162	180	351	390
	9	256-QAM	5/6	N/A	N/A	180	200	390	433.3

Power output at various data rates

Test Mode	Bandwidth	Frequency (MHz)	Channel	Data Rate	Average Power (dBm)
802.11a	20	5180	36	6	13.82
				24	13.21
				54	13.46
802.11n(20MHz)	20	5180	36	MCS0	14.00
				MCS5	13.77
				MCS7	13.62
802.11n(40MHz)	40	5190	38	MCS0	10.03
				MCS5	9.98
				MCS7	9.68
802.11ac(80MHz)	80	5210	42	MCS0NSS1	12.47
				MCS5NSS1	12.32
				MCS9NSS1	12.17

5.2GHz WLAN Average Power (Main)	802.11a			
	36/5180	40/5200	44/5220	48/5240
	13.82	15.03	15.26	15.15
	802.11n(HT20)			
	36/5180	40/5200	44/5220	48/5240
	14.00	15.15	15.24	15.45
	802.11ac(VHT20)			
	36/5180	40/5200	44/5220	48/5240
	14.03	15.11	15.21	15.37
	802.11n(HT40)			
	38/5190		46/5230	
	10.03		14.62	



	802.11ac(VHT40)	
	38/5190	38/5230
	10.01	14.32
	802.11ac(VHT80)	
	42/5210	
	12.47	

Configurations	Mode						
	Channel / Frequency (MHz)						
5.3GHz WLAN Average Power (Main)	802.11a						
	52/5260	56/5280	60/5300	64/5320			
	15.40	15.09	15.10	14.54			
	802.11n(HT20)						
	52/5260	56/5280	60/5300	64/5320			
	15.29	15.14	15.28	13.02			
	802.11ac(VHT20)						
	52/5260	56/5280	60/5300	64/5320			
	15.21	15.17	15.17	13.05			
	802.11n(HT40)						
	54/5270	62/5310					
	14.12	11.07					
	802.11ac(VHT40)						
	54/5270	62/5310					
	14.05	11.21					
	802.11ac(VHT80)						
	58/5290						
	10.31						
5.6GHz WLAN Average Power (Main)	802.11a						
	100/5500	112/5560	116/5580	128/5640	132/5660	136/5680	144/5720
	13.21	15.13	15.25	15.17	15.06	15.38	15.04
	802.11n(HT20)						
	100/5500	112/5560	116/5580	128/5640	132/5660	136/5680	144/5720
	13.24	15.07	15.12	15.01	15.29	15.34	15.19
	802.11ac(VHT20)						
	100/5500	112/5560	116/5580	128/5640	132/5660	136/5680	144/5720
	13.21	15.01	15.09	15.12	15.31	15.35	15.08
	802.11n(HT40)						
	102/5510	134/5670	142/5710				
	11.20	13.67	14.12				
	802.11ac(VHT40)						
	102/5510	134/5670	142/5710				



	11.18	13.59	14.09
	802.11ac(VHT80)		
	106/5530	122/5610	138/5690
	10.40	14.11	14.18

Configurations	Mode				
	Channel / Frequency (MHz)				
5.8GHz WLAN Average Power (Main)	802.11a				
	149/5745	153/5765	157/5785	161/5805	165/5825
	15.22	15.01	15.20	15.12	15.17
	802.11n(HT20)				
	149/5745	153/5765	157/5785	161/5805	165/5825
	15.32	15.17	15.05	15.03	15.09
	802.11ac(VHT20)				
	149/5745	153/5765	157/5785	161/5805	165/5825
	15.23	15.06	15.01	15.03	15.0
	802.11n(HT40)				
	151/5755		159/5795		
	13.32		14.57		
	802.11ac(VHT40)				
	151/5755		159/5795		
	13.30		14.51		
	802.11ac(VHT80)				
	155/5775				
	12.89				

Result	PASS
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5. Band Edges Measurement

5.1 Test Limit

For 15.205 requirement:

Radiated emissions which fall in the restricted bands, as defined in Section 15.205(a) of FCC part 15, must also comply with the radiated emission limits specified in Section 15.209(a).

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
¹ 0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2690 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	(²)

**For 15.407(b) requirement:**

For transmitters operating in the 5.15-5.25 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP of -27 dBm/MHz.

Operating Frequency Band (MHz)	EIRP Limit (dBm/MHz)	Equivalent Field Strength at 3m (dBuV/m)
5150 - 5350	-27	68.2
5470 - 5725	-27	68.2
5725 - 5850	-27 [Note(1)]	68.2
	-17 [Note(2)]	78.2
Note(1): Outside the frequency range 5715 - 5835MHz. Note(2): Within the frequency range from the band edge to 10MHz below or above the band edge, 5715 – 5725MHz and 5850 - 5860MHz.		

Note:

1. Refer to KDB 789033 D02v01r02 G)2)c), as specified in § 15.407(b), emissions above 1000 MHz that are outside of the restricted bands are subject to a maximum emission limit of -27 dBm/MHz (or -17 dBm/MHz as specified in § 15.407(b)(4)). However, an out-of-band emission that complies with both the peak and average limits of § 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz maximum emission limit.
2. Refer to RSS-247 Clause 6.
3. All out of band emissions appearing in a restricted band as specified in Section 15.205 of the Title 47 CFR must not exceed the limits shown in Table per Section 15.209.

FCC Part 15 Subpart C Paragraph 15.209		
Frequency [MHz]	Field Strength [V/m]	Measured Distance [Meters]
0.009 – 0.490	2400/F (kHz)	300
0.490 – 1.705	24000/F (kHz)	30
1.705 - 30	30	30
30 - 88	100	3
88 - 216	200	3
216 - 960	200	3
Above 960	500	3



5.2 Test Setting

Peak Measurements above 1GHz

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW = 3MHz
4. Detector = peak
5. Sweep time = auto couple
6. Trace mode = max hold
7. Trace was allowed to stabilize

Average Measurements above 1GHz

- (i) Set span to encompass the entire emission bandwidth (EBW) of the signal.
- (ii) Set sweep trigger to "free run."
- (iii) Set RBW = 1 MHz.
- (iv) Set $VBW \geq 1/T$, where T is defined in section II.B.1.a).

Note: For a mode $VBW=510\text{Hz}$; For n(20MHz) mode $VBW=560\text{Hz}$; For n(40MHz) mode $VBW=1.1\text{KHz}$; For ac(80MHz) mode $VBW=2.4\text{KHz}$.

- (v) Number of points in sweep $\geq 2 \times \text{span} / \text{RBW}$. (This ensures that bin-to-bin spacing is $\leq \text{RBW}/2$, so that narrowband signals are not lost between frequency bins.)

- (vi) Sweep time = auto.

- (vii) Detector = peak.

(viii) Video filtering shall be applied to a voltage-squared or power signal (rms), if possible. Otherwise, it shall be set to operate on a linear voltage signal (which may require use of linear display mode). Log mode must not be used.

- The preferred voltage-squared (i.e., power or rms) mode is selected on some analyzers by setting the "Average-VBW Type" to power or rms.
- If power averaging (rms) mode is not available, linear voltage mode is selected on some analyzers by setting the display mode to linear. Other analyzers have a setting for "Average-VBW Type" that can be set to "Voltage" regardless of the display mode.

- (ix) Trace mode = max hold.

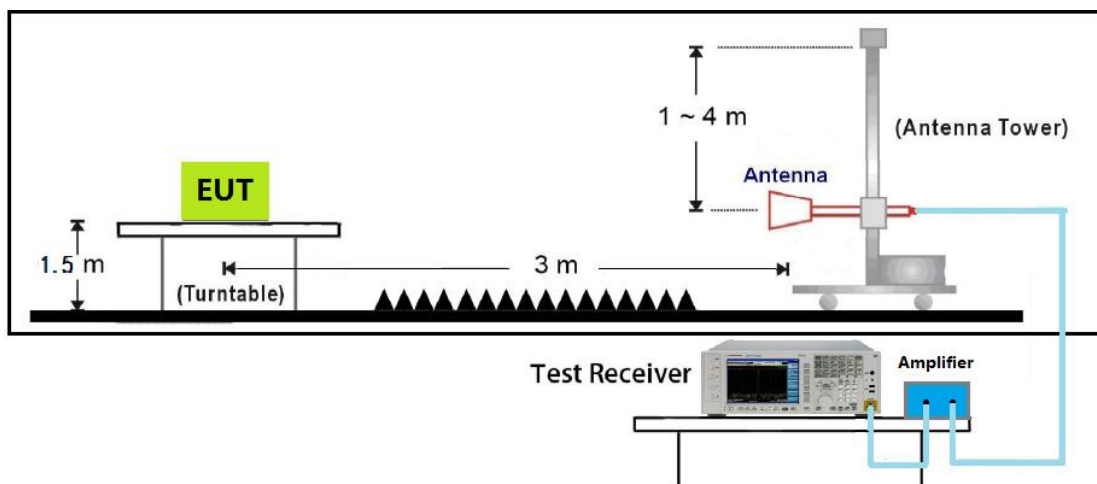
- (x) Allow max hold to run for at least 60 seconds, or longer as needed to allow the trace to stabilize.

(xi) Compute power by integrating the spectrum across the EBW (or, alternatively, the entire 99% occupied bandwidth) of the signal using the instrument's band power measurement function with band limits set equal to the EBW (or occupied bandwidth) band edges. If the instrument does not have a band power function, sum the spectrum levels (in power units) at 1 MHz intervals extending across the EBW (or, alternatively, the entire 99% occupied bandwidth) of the spectrum.

- (xii) If linear mode was used in step (viii), add 1 dB to the final result to compensate for the difference between linear averaging and power averaging.



5.3 Test Setup Layout



5.4 Measurement Equipment

Instrument	Model No.	Manufacturer	Serial No.	Calibration Date	Valid Date.
EMI Test Receiver	R&S	ESCI	100563	2016.03.10	2017.03.09
Spectrum Analyzer	R&S	FSP40	100047	2016.03.27	2017.03.26
H64 Preamplifier	HP	8447F	3113A05582	2016.03.10	2017.03.09
Preamplifier	Agilent	8449B	3008A02342	2016.03.10	2017.03.09
Preamplifier	COM-POWER	PA-840	711885	2016.03.24	2017.03.23
Ultra Broadband Antenna	R&S	HL562	100362	2015.05.03	2016.05.02
Broad-Band Horn Antenna	Schwarzbeck	BBHA9120D	9120D-619	2015.05.03	2016.05.02
Broad-Band Horn Antenna	Schwarzbeck	BBHA9170	9170-347	2015.05.03	2016.05.02
Spectrum Analyzer	Agilent	N9010A	MY53400169	2015.11.03	2016.11.03
Temperature/ Humidity Meter	Zhicheng	ZC1-11	CEP-TH-002	2016.03.10	2017.03.09



5.5 Measurement Data

802.11a 5180

No.	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type	Antenna Pole (V/H)
1	5150.000	70.748	74.197	-3.252	74.000	-3.449	PK	H
2	5150.000	50.721	54.170	-3.279	54.000	-3.449	AV	H
3	5150.000	66.826	70.275	-7.174	74.000	-3.449	PK	V
4	5150.000	47.722	51.171	-6.278	54.000	-3.449	AV	V

802.11a 5320

No.	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type	Antenna Pole (V/H)
1	5350.000	69.128	72.149	-4.872	74.000	-3.021	PK	H
2	5350.000	48.755	51.776	-5.245	54.000	-3.021	AV	H
3	5350.000	68.414	71.435	-5.586	74.000	-3.021	PK	V
4	5350.000	50.492	53.513	-3.508	54.000	-3.021	AV	V

802.11a 5500

No.	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type	Antenna Pole (V/H)
1	5460.000	62.677	65.462	-11.323	74.000	-2.785	PK	H
2	5470.000	66.828	69.592	-7.172	74.000	-2.764	PK	H
3	5460.000	37.860	40.645	-16.140	54.000	-2.785	AV	V
4	5470.000	42.424	45.188	-11.576	54.000	-2.764	AV	V
5	5460.000	63.809	66.594	-10.191	74.000	-2.785	PK	H
6	5470.000	65.640	68.404	-8.360	74.000	-2.764	PK	H
7	5460.000	37.807	40.592	-16.193	54.000	-2.785	AV	V
8	5470.000	42.566	45.330	-11.434	54.000	-2.764	AV	V



802.11a 5700

No.	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type	Antenna Pole (V/H)
1	5725.000	66.645	69.152	-7.355	74.000	-2.507	PK	H
2	5725.000	41.530	44.037	-12.470	54.000	-2.507	AV	H
3	5725.000	68.453	70.960	-5.547	74.000	-2.507	PK	V
4	5725.000	42.943	45.450	-11.057	54.000	-2.507	AV	V

802.11a 5745

No.	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type	Antenna Pole (V/H)
1	5715.000	65.515	68.030	-2.785	68.300	-2.515	PK	H
2	5725.000	73.731	76.238	-4.569	78.300	-2.507	PK	H
3	5715.000	65.406	67.921	-2.894	68.300	-2.515	PK	V
4	5725.000	74.356	76.863	-3.944	78.300	-2.507	PK	V

802.11a 5825

No.	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type	Antenna Pole (V/H)
1	5850.000	65.555	67.954	-12.745	78.300	-2.399	PK	H
2	5860.000	62.537	64.928	-5.763	68.300	-2.391	PK	H
3	5850.000	65.610	68.009	-12.690	78.300	-2.399	PK	V
4	5860.000	58.445	60.836	-9.855	68.300	-2.391	PK	V

802.11 n20 5180

No.	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type	Antenna Pole (V/H)
1	5150.000	64.567	68.016	-9.433	74.000	-3.449	PK	H
2	5150.000	41.077	44.526	-12.923	54.000	-3.449	AV	H
3	5150.000	61.810	65.259	-12.190	74.000	-3.449	PK	V
4	5150.000	38.897	42.346	-15.103	54.000	-3.449	AV	V

**802.11n20 5320**

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type	Antenna Pole (V/H)
1	5350.000	70.372	73.393	-3.628	74.000	-3.021	PK	H
2	5350.000	51.871	54.892	-2.129	54.000	-3.021	AV	H
3	5350.000	69.351	72.372	-4.649	74.000	-3.021	PK	V
4	5350.000	50.611	53.632	-3.389	54.000	-3.021	AV	V

802.11 n20 5500

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type	Antenna Pole (V/H)
1	5460.000	62.482	65.267	-11.518	74.000	-2.785	PK	H
2	5470.000	66.637	69.401	-7.363	74.000	-2.764	PK	H
3	5460.000	37.691	40.476	-16.309	54.000	-2.785	AV	V
4	5470.000	40.887	43.651	-13.113	54.000	-2.764	AV	V
5	5460.000	63.186	65.971	-10.814	74.000	-2.785	PK	H
6	5470.000	66.949	69.713	-7.051	74.000	-2.764	PK	H
7	5460.000	36.839	39.624	-17.161	54.000	-2.785	AV	V
8	5470.000	40.326	43.090	-13.674	54.000	-2.764	AV	V

802.11 n20 5700

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type	Antenna Pole (V/H)
1	5725.000	65.755	68.262	-8.245	74.000	-2.507	PK	H
2	5725.000	42.041	44.548	-11.959	54.000	-2.507	AV	H
3	5725.000	68.353	70.860	-5.647	74.000	-2.507	PK	V
4	5725.000	45.374	47.881	-8.626	54.000	-2.507	AV	V



802.11 n20 5745

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type	Antenna Pole (V/H)
1	5715.000	62.847	65.362	-5.453	68.300	-2.515	PK	H
2	5725.000	71.553	74.060	-6.747	78.300	-2.507	PK	H
3	5715.000	64.814	67.329	-3.486	68.300	-2.515	PK	V
4	5725.000	72.960	75.467	-5.340	78.300	-2.507	PK	V

802.11 n20 5825

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type	Antenna Pole (V/H)
1	5850.000	66.355	68.754	-11.945	78.300	-2.399	PK	H
2	5860.000	62.459	64.850	-5.841	68.300	-2.391	PK	H
3	5850.000	65.092	67.491	-13.208	78.300	-2.399	PK	V
4	5860.000	58.913	61.304	-9.387	68.300	-2.391	PK	V

802.11 n40 5190

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type	Antenna Pole (V/H)
1	5150.000	66.791	70.240	-7.209	74.000	-3.449	PK	H
2	5150.000	48.320	51.769	-5.680	54.000	-3.449	AV	H
3	5150.000	66.083	69.532	-7.917	74.000	-3.449	PK	V
4	5150.000	45.102	48.551	-8.898	54.000	-3.449	AV	V

802.11n40 5310

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type	Antenna Pole (V/H)
1	5350.000	68.601	71.622	-5.399	74.000	-3.021	PK	H
2	5350.000	50.262	53.283	-3.738	54.000	-3.021	AV	H
3	5350.000	69.082	72.103	-4.918	74.000	-3.021	PK	V
4	5350.000	51.028	54.049	-2.972	54.000	-3.021	AV	V



802.11 n40 5510

No.	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type	Antenna Pole (V/H)
1	5460.000	61.122	63.907	-12.878	74.000	-2.785	PK	H
2	5470.000	67.350	70.114	-6.650	74.000	-2.764	PK	H
3	5460.000	41.027	43.812	-12.973	54.000	-2.785	AV	V
4	5470.000	47.671	50.435	-6.329	54.000	-2.764	AV	V
5	5460.000	60.244	63.029	-13.756	74.000	-2.785	PK	H
6	5470.000	66.267	69.031	-7.733	74.000	-2.764	PK	H
7	5460.000	39.315	42.100	-14.685	54.000	-2.785	AV	V
8	5470.000	46.331	49.095	-7.669	54.000	-2.764	AV	V

802.11 n40 5670

No.	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type	Antenna Pole (V/H)
1	5725.000	63.068	65.575	-10.932	74.000	-2.507	PK	H
2	5725.000	44.498	47.005	-9.502	54.000	-2.507	AV	H
3	5725.000	63.556	66.063	-10.444	74.000	-2.507	PK	V
4	5725.000	47.451	49.958	-6.549	54.000	-2.507	AV	V

802.11 n40 5755

No.	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type	Antenna Pole (V/H)
1	5715.000	64.738	67.253	-3.562	68.300	-2.515	PK	H
2	5725.000	68.053	70.560	-10.247	78.300	-2.507	PK	H
3	5715.000	65.239	67.754	-3.061	68.300	-2.515	PK	V
4	5725.000	68.598	71.105	-9.702	78.300	-2.507	PK	V



802.11 n40 5795

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type	Antenna Pole (V/H)
1	5850.000	60.837	63.236	-17.463	78.300	-2.399	PK	H
2	5860.000	59.025	61.416	-9.275	68.300	-2.391	PK	H
3	5850.000	61.066	63.465	-17.234	78.300	-2.399	PK	V
4	5860.000	58.152	60.543	-10.148	68.300	-2.391	PK	V

802.11 ac80 5210

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type	Antenna Pole (V/H)
1	5150.000	70.245	73.694	-3.755	74.000	-3.449	PK	H
2	5150.000	51.170	54.619	-2.830	54.000	-3.449	AV	H
3	5150.000	71.985	75.434	-2.015	74.000	-3.449	PK	V
4	5150.000	51.196	54.645	-2.804	54.000	-3.449	AV	V

802.11 ac80 5290

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type	Antenna Pole (V/H)
1	5350.000	70.940	73.961	-3.060	74.000	-3.021	PK	H
2	5350.000	51.025	54.046	-2.975	54.000	-3.021	AV	H
3	5350.000	70.037	73.058	-3.963	74.000	-3.021	PK	V
4	5350.000	51.197	54.218	-2.803	54.000	-3.021	AV	V



802.11 ac80 5530

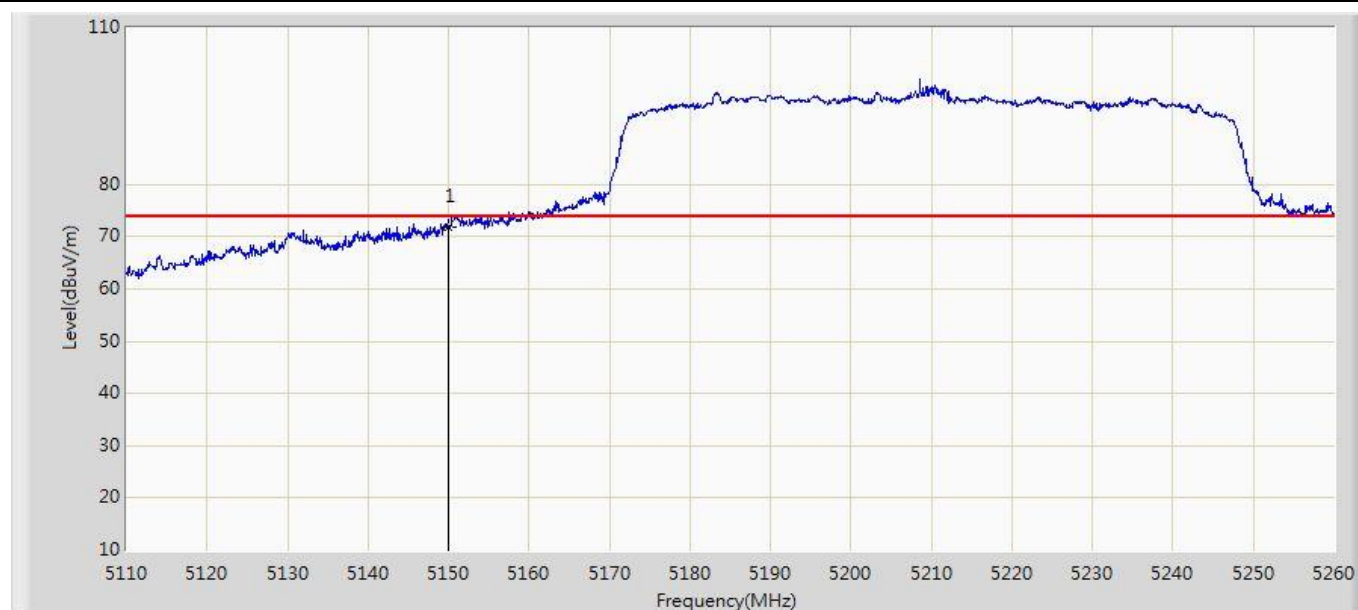
No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type	Antenna Pole (V/H)
1	5460.000	62.530	65.315	-11.470	74.000	-2.785	PK	H
2	5470.000	62.893	65.657	-11.107	74.000	-2.764	PK	H
3	5460.000	44.162	46.947	-9.838	54.000	-2.785	AV	V
4	5470.000	44.553	47.317	-9.447	54.000	-2.764	AV	V
5	5460.000	63.320	66.105	-10.680	74.000	-2.785	PK	H
6	5470.000	63.657	66.421	-10.343	74.000	-2.764	PK	H
7	5460.000	44.614	47.399	-9.386	54.000	-2.785	AV	V
8	5470.000	45.459	48.223	-8.541	54.000	-2.764	AV	V

802.11 ac80 5775

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type	Antenna Pole (V/H)
1	5715.000	61.673	64.188	-6.627	68.300	-2.515	PK	H
2	5725.000	65.287	67.794	-13.013	78.300	-2.507	PK	H
3	5850.000	65.442	67.841	-12.858	78.300	-2.399	PK	H
4	5860.000	61.998	64.389	-6.302	68.300	-2.391	PK	H
5	5715.000	65.624	68.139	-2.676	68.300	-2.515	PK	V
6	5725.000	69.943	72.450	-8.357	78.300	-2.507	PK	V
7	5850.000	68.140	70.539	-10.160	78.300	-2.399	PK	V
8	5860.000	64.085	66.476	-4.215	68.300	-2.391	PK	V

**The worst-case plots of bandedge for each mode in each operating band:**

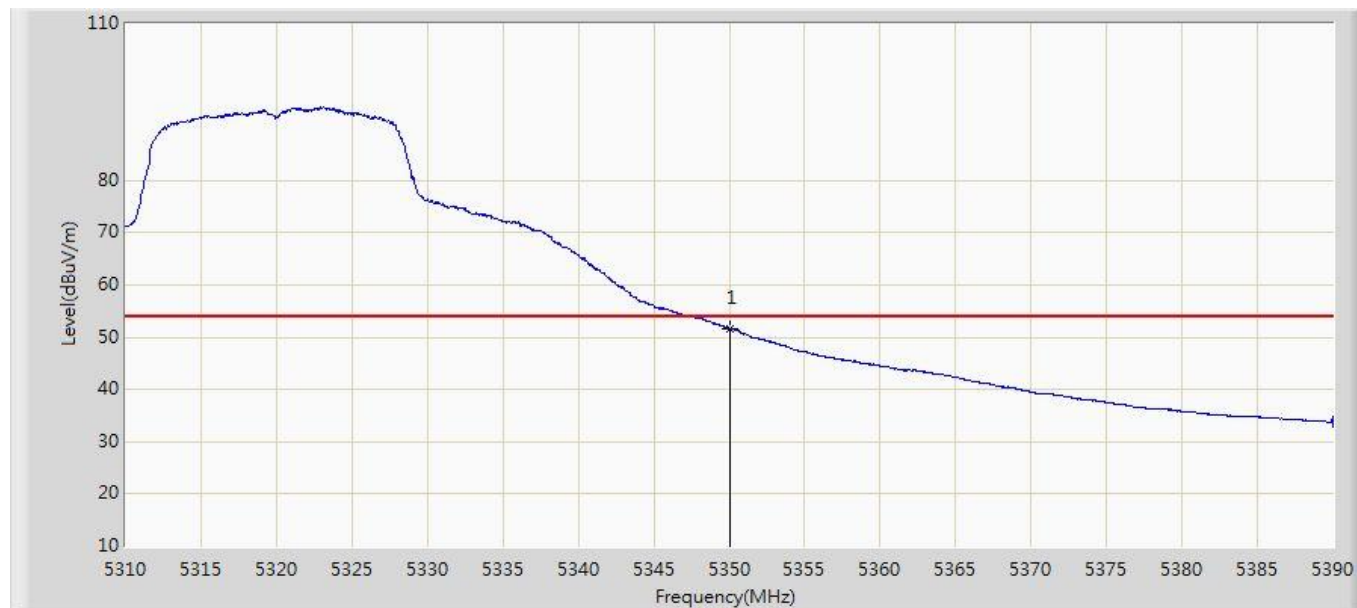
Site: AC102	Time: 2016/04/01 - 16:30
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA9120D(1-18GHz)	Polarity: Vertical
EUT: QCNFA435	Power: AC 120V/60Hz
Note: Mode1: Transmit at 5210MHz by 802.11ac80	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	5150.000	71.985	75.434	-2.015	74	-3.449	PK



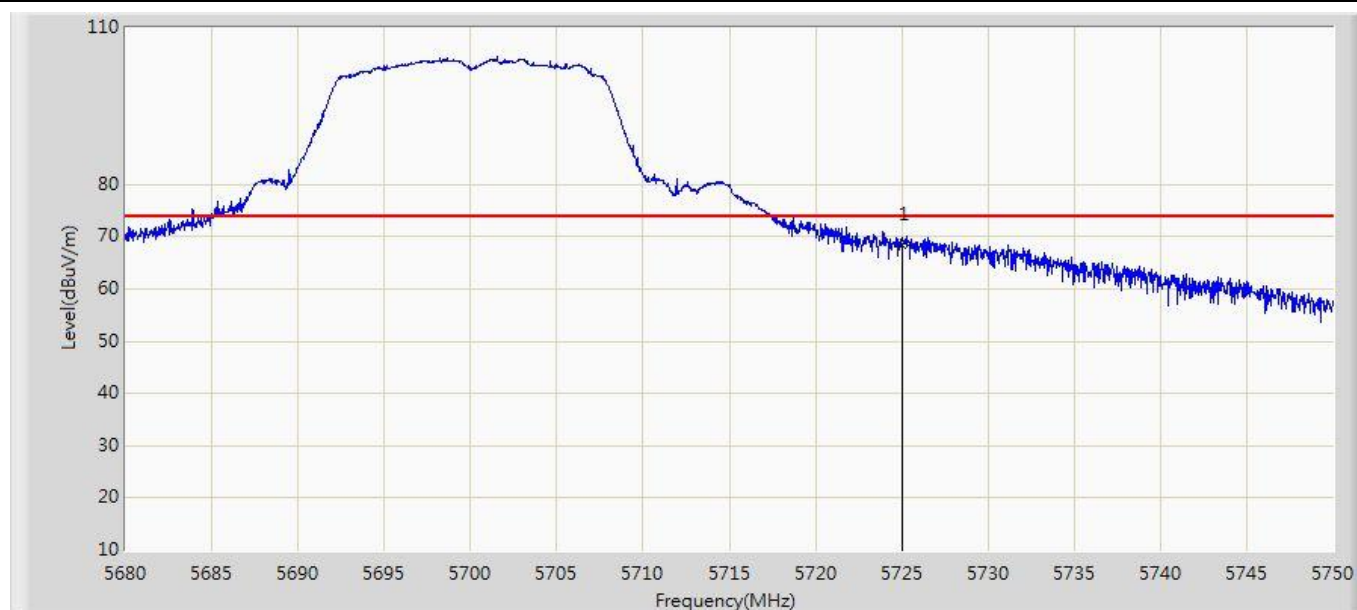
Site: AC102	Time: 2016/04/01 - 16:33
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA9120D(1-18GHz)	Polarity: Horizontal
EUT: QCNFA435	Power: AC 120V/60Hz
Note: Mode1: Transmit at 5320MHz by 802.11a	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	5350.000	51.871	54.892	-2.129	54	-3.021	AV



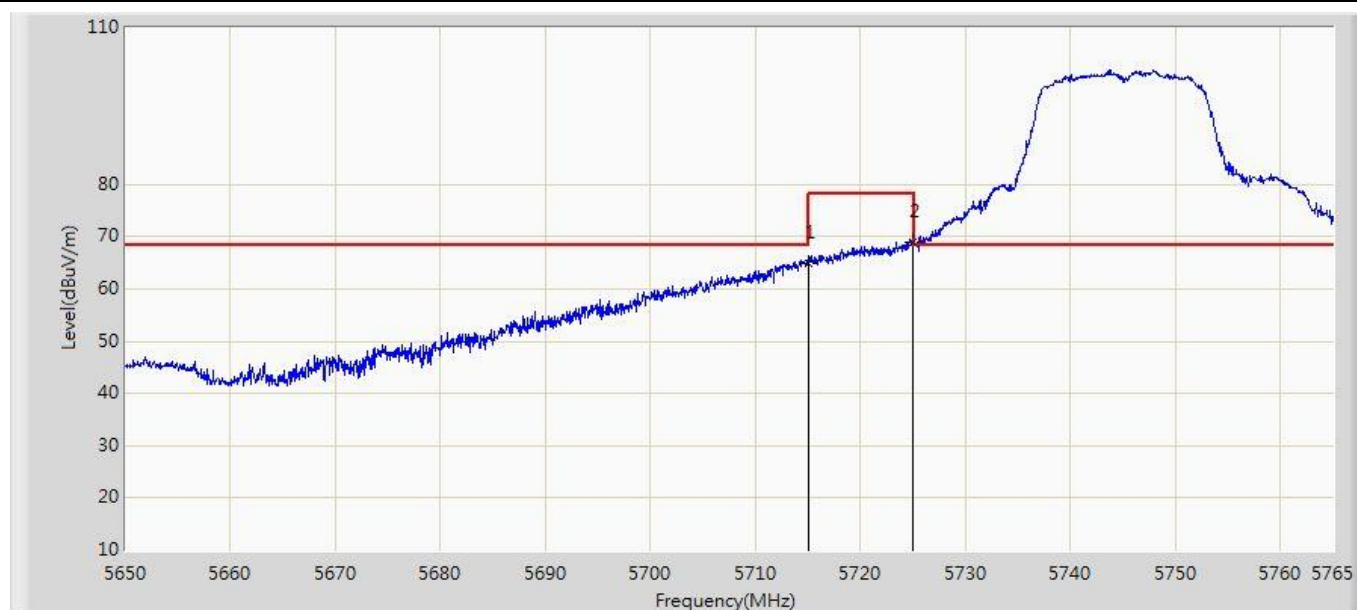
Site: AC102	Time: 2016/04/01 - 16:34
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA9120D(1-18GHz)	Polarity: Vertical
EUT: QCNFA435	Power: AC 120V/60Hz
Note: Mode1: Transmit at 5700MHz by 802.11a	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	5725.000	68.453	70.96	-5.547	74	-2.507	PK



Site: AC102	Time: 2016/04/01 - 16:35
Limit: FCC-15.407 new	Margin: 0
Probe: BBHA9120D(1-18GHz)	Polarity: Horizontal
EUT: QCNFA435	Power: AC 120V/60Hz
Note: Mode1: Transmit at 5745MHz by 802.11a	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	5715.000	65.515	68.03	-2.785	68.3	-2.515	PK
2		5725.000	73.731	76.238	-4.569	78.300	-2.507	PK

--End--