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FCC RADIO TEST REPORT

Applicant's company	**Hewlett-Packard Company**
Applicant Address	8000 Foothills Blvd. Roseville, CA 95747
FCC ID	**RTPMRLBB1401**
Manufacturer's company	**Joy Technology (ShenZhen) Corporation**
Manufacturer Address	Building A,B,C,D, HengKeng Ind., Shangpai, Shangwu,Aiqun Rd., Shiyan Town,Shenzhen 518135 China

Product Name	HP R110/PS110 Wireless 11n VPN Router
Brand Name	HP
Model No.	MRLBB-1401, MRLBB-1405
Product No.	J9974A(AM), J9975A(WW), JL065A(AM), JL066A(WW)
Test Rule Part(s)	47 CFR FCC Part 15 Subpart E § 15.407
Test Freq. Range	5250 ~ 5350MHz / 5470 ~ 5725MHz
Received Date	May 14, 2014
Final Test Date	Aug. 02, 2014
Submission Type	Class II Change
Operating Mode	Master

Statement

Test result included is for the IEEE 802.11n and IEEE 802.11a of the product.

The test result in this report refers exclusively to the presented test model / sample.

Without written approval of SPORTON International Inc., the test report shall not be reproduced except in full.

The measurements and test results shown in this test report were made in accordance with the procedures and found in compliance with the limit given in **ANSI C63.10-2009**, **47 CFR FCC Part 15 Subpart E, KDB789033 D02 v01, KDB662911 D01 v02r01.**

The test equipment used to perform the test is calibrated and traceable to NML/ROC.

Testing Laboratory
1190

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History of This Test Report

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR410907-05	Rev. 01	Initial issue of report	Aug. 11, 2015

1. VERIFICATION OF COMPLIANCE

Product Name	:	HP R110/PS110 Wireless 11n VPN Router
Brand Name	:	HP
Model No.	:	MRLBB-1401, MRLBB-1405
Product No.	:	J9974A(AM), J9975A(WW), JL065A(AM), JL066A(WW)
Applicant	:	Hewlett-Packard Company
Test Rule Part(s)	:	47 CFR FCC Part 15 Subpart E § 15.407

Sporton International as requested by the applicant to evaluate the EMC performance of the product sample received on May 14, 2014 would like to declare that the tested sample has been evaluated and found to be in compliance with the tested rule parts. The data recorded as well as the test configuration specified is true and accurate for showing the sample's EMC nature.

Sam Chen

SPORTON INTERNATIONAL INC.

2. SUMMARY OF THE TEST RESULT

Applied Standard: 47 CFR FCC Part 15 Subpart E				
Part	**Rule Section**	**Description of Test**	**Result**	**Under Limit**
4.1	15.207	AC Power Line Conducted Emissions	Complies	16.75 dB
4.2	15.407(a)	26dB Spectrum Bandwidth and 99% Occupied Bandwidth	Complies	-
4.3	15.407(a)	Maximum Conducted Output Power	Complies	0.34 dB
4.4	15.407(a)	Power Spectral Density	Complies	0.03 dB
4.5	15.407(b)	Radiated Emissions	Complies	1.86 dB
4.6	15.407(b)	Band Edge Emissions	Complies	0.01 dB
4.7	15.407(g)	Frequency Stability	Complies	-
4.8	15.203	Antenna Requirements	Complies	-

3. GENERAL INFORMATION

3.1. Product Details

IEEE 802.11n/ac

Items	Description
Product Type	WLAN (3TX, 3RX)
Radio Type	Intentional Transceiver
Power Type	From power adapter
Modulation	see the below table for IEEE 802.11n
Data Modulation	For 802.11n: OFDM (BPSK / QPSK / 16QAM / 64QAM)
Data Rate (Mbps)	see the below table for IEEE 802.11n/ac
Frequency Range	5250 ~ 5350MHz / 5470 ~ 5725MHz
Channel Number	15 for 20MHz bandwidth ; 7 for 40MHz bandwidth
Channel Band Width (99%)	Band 2: 802.11n MCS0 (HT20): 18.08 MHz ; 802.11n MCS0 (HT40): 35.52 MHz Band 3: 802.11n MCS0 (HT20): 18.24 MHz ; 802.11n MCS0 (HT40): 36.80 MHz
Maximum Conducted Output Power	Band 2: 802.11n MCS0 (HT20): 19.43 dBm ; 802.11n MCS0 (HT40): 22.39 dBm Band 3: 802.11n MCS0 (HT20): 19.56 dBm ; 802.11n MCS0 (HT40): 22.86 dBm
Carrier Frequencies	Please refer to section 3.4
Antenna	Please refer to section 3.3

IEEE 802.11a

Items	Description
Product Type	WLAN (3TX, 3RX)
Radio Type	Intentional Transceiver
Power Type	From power adapter
Modulation	OFDM for IEEE 802.11a
Data Modulation	OFDM (BPSK / QPSK / 16QAM / 64QAM)
Data Rate (Mbps)	OFDM (6/9/12/18/24/36/48/54)
Frequency Range	5250 ~ 5350MHz / 5470 ~ 5725MHz
Channel Number	15
Channel Band Width (99%)	Bnad 2: 17.28 MHz ; Bnad 3: 17.12 MHz
Maximum Conducted Output Power	Band 2: 19.41 dBm ; Band 3: 19.63 dBm
Carrier Frequencies	Please refer to section 3.4
Antenna	Please refer to section 3.3

Items	Description	
Communication Mode	☒ IP Based (Load Based)	☐ Frame Based
TPC Function	☒ With TPC	☐ Without TPC
Weather Band (5600~5650MHz)	☒ With 5600~5650MHz	☐ Without 5600~5650MHz
Beamforming Function	☐ With beamforming	☒ Without beamforming

Antenna and Band width

Antenna	Three (TX)		
Band width Mode	20 MHz	40 MHz	80 MHz
IEEE 802.11a	V	X	X
IEEE 802.11n	V	V	X

IEEE 11n Spec.

Protocol	Number of Transmit Chains (NTX)	Data Rate / MCS
802.11n (HT20)	3	MCS 0-23
802.11n (HT40)	3	MCS 0-23
Note 1: IEEE Std. 802.11n modulation consists of HT20 and HT40 (HT: High Throughput). The EUT supports HT20 and HT40. Note 2: Modulation modes consist of below configuration: HT20/HT40: IEEE 802.11n.		

3.2. Accessories

Power	Brand	Model	Rating
Adapter 1	APD	WA-24Q12FU	Input: 100-240V~50-60Hz, 0.6A Max. Output: 12V, 2A
Adapter 2	LITE-ON	PA-1031-71	Input: 100-240V~50-60Hz, 1.0A Output: 12V, 2.5A

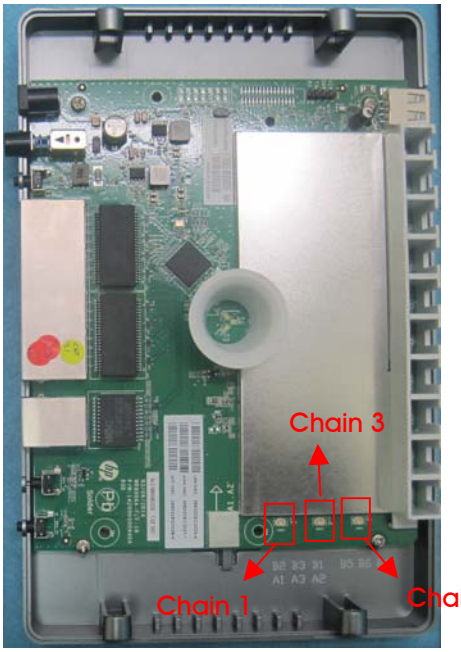
3.3. Table for Filed Antenna

Set	Ant.	Brand	Part No.	Antenna Type	Connector	Gain (dBi)		Directional Gain in Correlation	
						2.4GHz	5GHz	2.4GHz	5GHz
1	1	M.gear	120300000091A	Dual-band Omni Patch Antenna	I-PEX	4.4	5.8	9.27	10.60
	2	M.gear	120300000091A	Dual-band Omni Patch Antenna	I-PEX	4.7	6.8		
	3	M.gear	120300000091A	Dual-band Omni Patch Antenna	I-PEX	4.4	4.6		
2	4	M.gear	120300000106A	Dual-band Omni Patch Antenna	I-PEX	4.36	6.30	9.21	10.37
	5	M.gear	120300000 106A	Dual-band Omni Patch Antenna	I-PEX	4.34	5.71		
	6	M.gear	120300000106A	Dual-band Omni Patch Antenna	I-PEX	4.61	4.62		

Note: Ant. 1~Ant. 3 are for EUT 1; Ant. 4~Ant. 6 are for EUT 2.

Chain 1: Connect to Ant. 1 or Ant. 4; Chain 2: Connect to Ant. 2 or Ant. 5; Chain 3: Connect to Ant. 3 or Ant. 6.

Chain 1, Chain 2 and Chain 3 could transmit/receive simultaneously.



3.4. Table for Carrier Frequencies

There are two bandwidth systems.

For 20MHz bandwidth systems, use Channel 52, 56, 60, 64, 100, 104, 108, 112, 116, 120, 124, 128, 132, 136, 140.

For 40MHz bandwidth systems, use Channel 54, 62, 102, 110, 118, 126, 134.

Frequency Band	Channel No.	Frequency	Channel No.	Frequency
5250~5350 MHz Band 2	52	5260 MHz	60	5300 MHz
	54	5270 MHz	62	5310 MHz
	56	5280 MHz	64	5320 MHz
5470~5725 MHz Band 3	100	5500 MHz	120	5600 MHz
	102	5510 MHz	124	5620 MHz
	104	5520 MHz	126	5630 MHz
	108	5540 MHz	128	5640 MHz
	110	5550 MHz	132	5660 MHz
	112	5560 MHz	134	5670 MHz
	116	5580 MHz	136	5680 MHz
	118	5590 MHz	140	5700 MHz

3.5. Table for Test Modes

Preliminary tests were performed in different data rate to find the worst radiated emission. The data rate shown in the table below is the worst-case rate with respect to the specific test item. Investigation has been done on all the possible configurations for searching the worst cases. The following table is a list of the test modes shown in this test report.

Test Items	Mode		Data Rate	Channel	Chain
AC Power Conducted Emission	CTX		-	-	-
Max. Conducted Output Power	11n HT20	Band 2-3	MCS0	52/60/64/100/116/140	1+2+3
	11n HT40	Band 2-3	MCS0	54/62/102/110/134	1+2+3
	11a/BPSK	Band 2-3	6Mbps	52/60/64/100/116/140	1+2+3
Power Spectral Density	11n HT20	Band 2-3	MCS0	52/60/64/100/116/140	1+2+3
	11n HT40	Band 2-3	MCS0	54/62/102/110/134	1+2+3
	11a/BPSK	Band 2-3	6Mbps	52/60/64/100/116/140	1+2+3
26dB Spectrum Bandwidth 99% Occupied Bandwidth Measurement	11n HT20	Band 2-3	MCS0	52/60/64/100/116/140	1+2+3
	11n HT40	Band 2-3	MCS0	54/62/102/110/134	1+2+3
	11a/BPSK	Band 2-3	6Mbps	52/60/64/100/116/140	1+2+3
Radiated Emission Below 1GHz	CTX		-	-	-
Radiated Emission Above 1GHz	11n HT20	Band 2-3	MCS0	52/60/64/100/116/140	1+2+3
	11n HT40	Band 2-3	MCS0	54/62/102/110/134	1+2+3
	11a/BPSK	Band 2-3	6Mbps	52/60/64/100/116/140	1+2+3

Band Edge Emission	11n HT20	Band 2-3	MCS0	52/60/64/100/116/140	1+2+3
	11n HT40	Band 2-3	MCS0	54/62/102/110/134	1+2+3
	11a/BPSK	Band 2-3	6Mbps	52/60/64/100/116/140	1+2+3
Frequency Stability	Un-modulation		-	60/100	1+2+3

The following test modes were performed for all tests:

For Conducted Emission test:

Radiated Emissions above 1GHz test was performed at its 3-axis (X-axis, Y-axis and Z-axis). X-axis was the worst case, so Conducted Emission test will follow this same configuration.

Mode 1. CTX- Place EUT 1 in X-axis + Adapter 1

Mode 2. CTX- Place EUT 1 in X-axis + Adapter 2

Mode 1 is the worst case, so it was selected to record in this test report.

Note: The difference between EUT 1 and EUT 2 is antenna location, and different antenna location doesn't affect Conducted Emission test. Thus, only EUT 1 was tested and recorded in this test report.

For Radiated Emission test below 1GHz:

For EUT 1:

Radiated Emissions above 1GHz test for EUT 1 was performed at its 3-axis (X-axis, Y-axis and Z-axis). X-axis was the worst case, so Emissions below 1GHz test will follow this same configuration.

Mode 1. CTX- Place EUT 1 in X-axis + WLAN 2.4GHz + Adapter 1

Mode 2. CTX- Place EUT 1 in X-axis + WLAN 2.4GHz + Adapter 2

Mode 1 generated the worst case between Mode 1 and Mode 2. Thus, Mode 3 will follow this same configuration.

Mode 3. CTX- Place EUT 1 in X-axis + WLAN 5GHz + Adapter 1

Mode 3 is the worst case, so it was selected to record in this test report.

For EUT 2:

EUT 1 + WLAN 5GHz + Adapter 1 generated the worst case, so measurements for EUT 2 will follow this configuration.

Radiated Emissions above 1GHz test for EUT 2 was performed at its 3-axis (X-axis, Y-axis and Z-axis). Y-axis was the worst case, so Emissions below 1GHz test will follow this same configuration.

Mode 4. CTX- Place EUT 2 in Y-axis + WLAN 5GHz + Adapter 1

For Radiated Emission test above 1GHz:

For EUT 1:

Radiated Emissions above 1GHz test for EUT 1 was performed at its 3-axis (X-axis, Y-axis and Z-axis). X-axis was the worst case, so it's recorded in this report.

Mode 1. CTX- Place EUT 1 in X-axis

For EUT 2:

Radiated Emissions above 1GHz test for EUT 2 was performed at its 3-axis (X-axis, Y-axis and Z-axis). Y-axis was the worst case, so it's recorded in this report.

Mode 2. CTX- Place EUT 2 in Y-axis

3.6. Table for Testing Locations

Test Site Location					
Address:	No.8, Lane 724, Bo-ai St., Jhubei City, Hsinchu County 302, Taiwan, R.O.C.				
TEL:	886-3-656-9065				
FAX:	886-3-656-9085				
Test Site No.	**Site Category**	**Location**	**FCC Reg. No.**	**IC File No.**	**VCCI Reg. No**
03CH01-CB	SAC	Hsin Chu	262045	IC 4086D	-
CO01-CB	Conduction	Hsin Chu	262045	IC 4086D	-
TH01-CB	OVEN Room	Hsin Chu	-	-	-

Open Area Test Site (OATS); Semi Anechoic Chamber (SAC).

3.7. Table for Multiple Listing

The model numbers in the following table are all refer to the identical product.

EUT	Model No.	Product No.	Antenna Part No.	LED Board (Model No. NI2188006 003E)	Marketing	Description
EUT 1	MRLBB-1401	J9974A(AM)	120300000091A	Without	U.S.A.	The color, shape and antenna location between these two models are different.
		J9975A(WW)			Worldwide	
EUT 2	MRLBB-1405	JL065A(AM)	120300000106A	With	U.S.A.	
		JL066A(WW)			Worldwide	

Note:

1. EUT 1' s directional gain is higher than that of EUT 2, so for 26dB Bandwidth and 99% Occupied Bandwidth, Maximum Conducted Output Power, Power Spectral Density and Frequency Stability tests, only EUT 1 was tested and recorded in this report.
2. For Radiated Emissions and Band Edge and Fundamental Emissions tests, both EUT 1 and EUT 2 were tested and recorded in this report. (EUT 2 was based on EUT 1's output power to test these items.)

3.8. Table for Class II Change

This product is an extension of original one reported under Sporton project number: 410907-01

Below is the table for the change of the product with respect to the original one.

Modifications	Performance Checking
1. Adding Band 2 and Band 3 (5250~5350 MHz, 5470~5725 MHz) for this device. 2. Changing applicant address. 3. Changing grantee code.	All test items.

3.9. Table for Supporting Units

For Test Site No: 03CH01-CB

Support Unit	Brand	Model	FCC ID
Notebook	DELL	M1330	DoC

For Test Site No: CO01-CB & TH01-CB

Support Unit	Brand	Model	FCC ID
NB	DELL	E6430	DoC

3.10. Table for Parameters of Test Software Setting

During testing, Channel and Power Controlling Software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product.

Power Parameters of IEEE 802.11n MCS0 HT20

Test Software Version	ART2-GUI Version 2.3					
Frequency	5260 MHz	5300 MHz	5320 MHz	5500 MHz	5580 MHz	5700 MHz
MCS0 HT20	14.5	15	15	14.5	14.5	13

Power Parameters of IEEE 802.11n MCS0 HT40

Test Software Version	ART2-GUI Version 2.3				
Frequency	5270 MHz	5310 MHz	5510 MHz	5550 MHz	5670 MHz
MCS0 HT40	17	12	10	17.5	17

Power Parameters of IEEE 802.11a

Test Software Version	ART2-GUI Version 2.3					
Frequency	5260 MHz	5300 MHz	5320 MHz	5500 MHz	5580 MHz	5700 MHz
802.11a	14.5	15	15	14.5	14.5	13

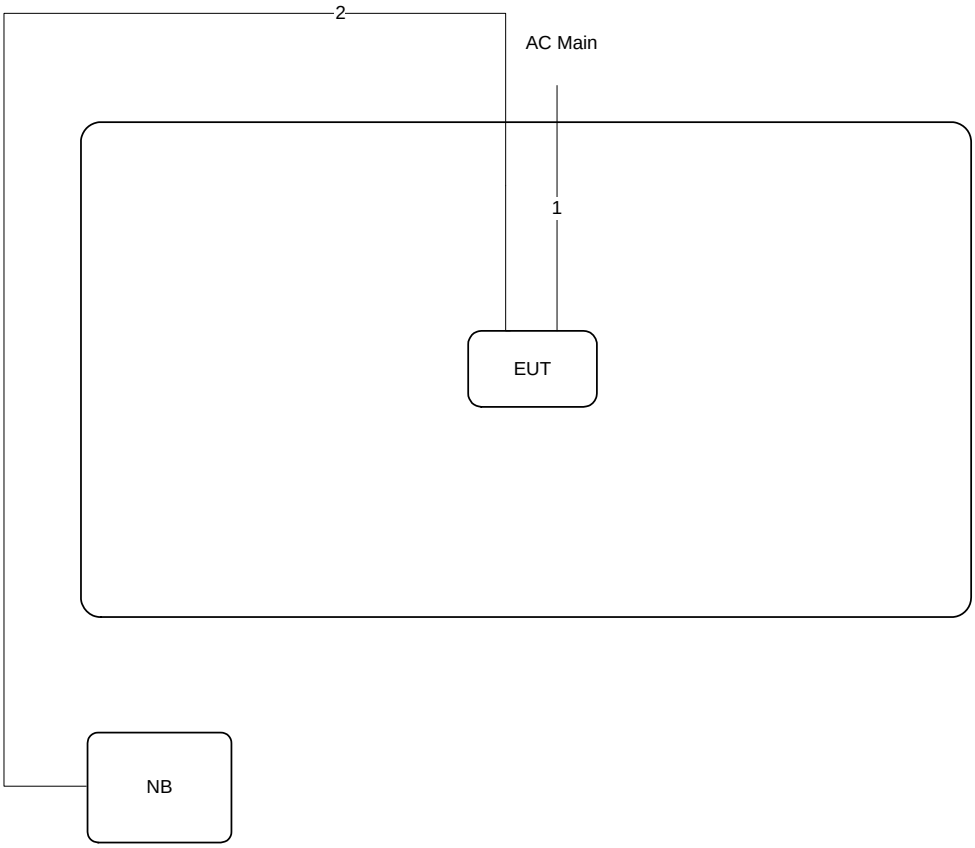
3.11. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

3.12. Duty Cycle

Mode	On Time(ms)	On+Off Time(ms)	Duty Cycle(%)	1/T Minimum VBW (kHz)
802.11n MCS0 HT20	1.890	1.920	98.44%	0.01
802.11n MCS0 HT40	0.935	0.960	97.40%	1.07
802.11a	2.030	2.060	98.54%	0.01

3.13. Test Configurations



Item	Connection	Shield	Length	Remark
1	Power cable	No	1.5m	-
2	RJ-45 cable	No	10m	-

4. TEST RESULT

4.1. AC Power Line Conducted Emissions Measurement

4.1.1. Limit

For this product that is designed to connect to the AC power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed below limits table.

Frequency (MHz)	QP Limit (dBuV)	AV Limit (dBuV)
0.15~0.5	66~56	56~46
0.5~5	56	46
5~30	60	50

4.1.2. Measuring Instruments and Setting

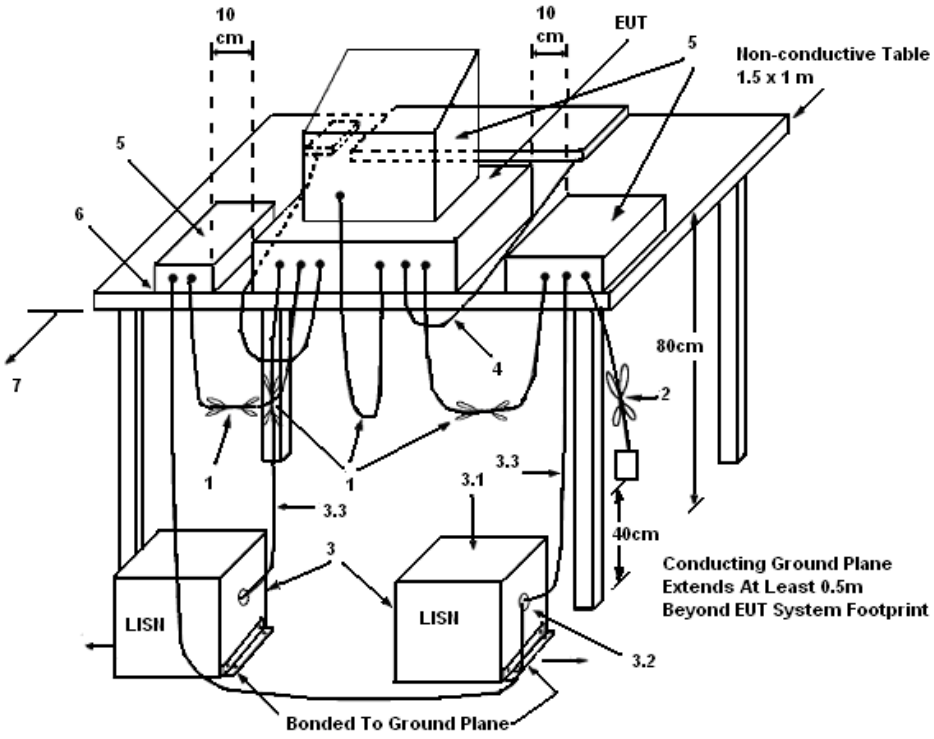
Please refer to section 5 of equipments list in this report. The following table is the setting of the receiver.

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

4.1.3. Test Procedures

1. Configure the EUT according to ANSI C63.10. The EUT or host of EUT has to be placed 0.4 meter far from the conducting wall of the shielding room and at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT or host of EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connected to the other LISNs. The LISN should provide 50uH/50ohms coupling impedance.
4. The frequency range from 150 kHz to 30 MHz was searched.
5. Set the test-receiver system to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
6. The measurement has to be done between each power line and ground at the power terminal.

4.1.4. Test Setup Layout



LEGEND:

(1) Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.

(2) I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.

(3) EUT connected to one LISN. Unused LISN measuring port connectors shall be terminated in 50 Ω. LISN can be placed on top of, or immediately beneath, reference ground plane.

(3.1) All other equipment powered from additional LISN(s).

(3.2) Multiple outlet strip can be used for multiple power cords of non-EUT equipment.

(3.3) LISN at least 80 cm from nearest part of EUT chassis.

(4) Cables of hand-operated devices, such as keyboards, mice, etc., shall be placed as for normal use.

(5) Non-EUT components of EUT system being tested.

(6) Rear of EUT, including peripherals, shall all be aligned and flush with rear of tabletop.

(7) Rear of tabletop shall be 40 cm removed from a vertical conducting plane that is bonded to the ground plane.

Test Deviation

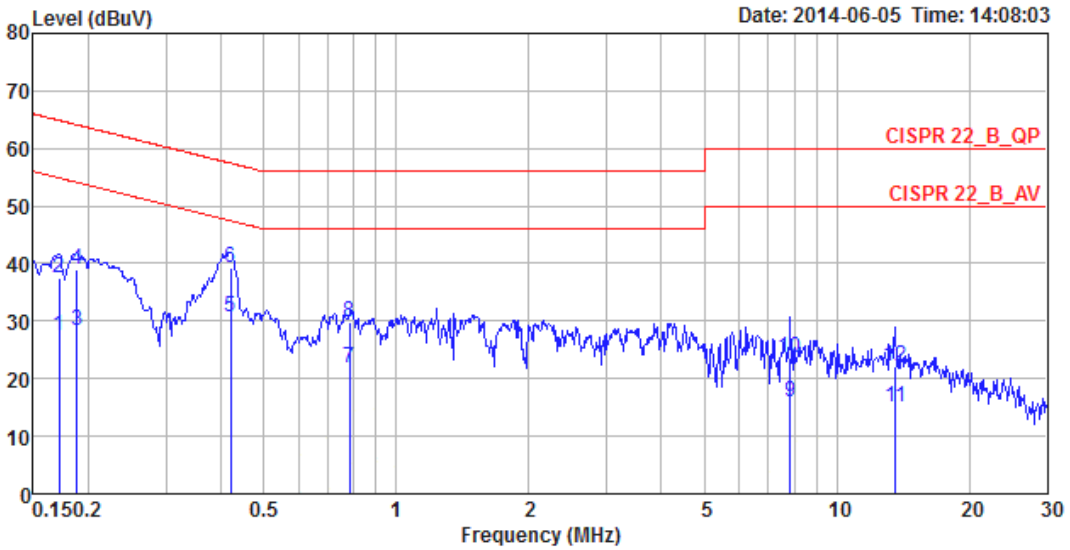
There is no deviation with the original standard.

4.1.5. EUT Operation during Test

The EUT was placed on the test table and programmed in normal function.

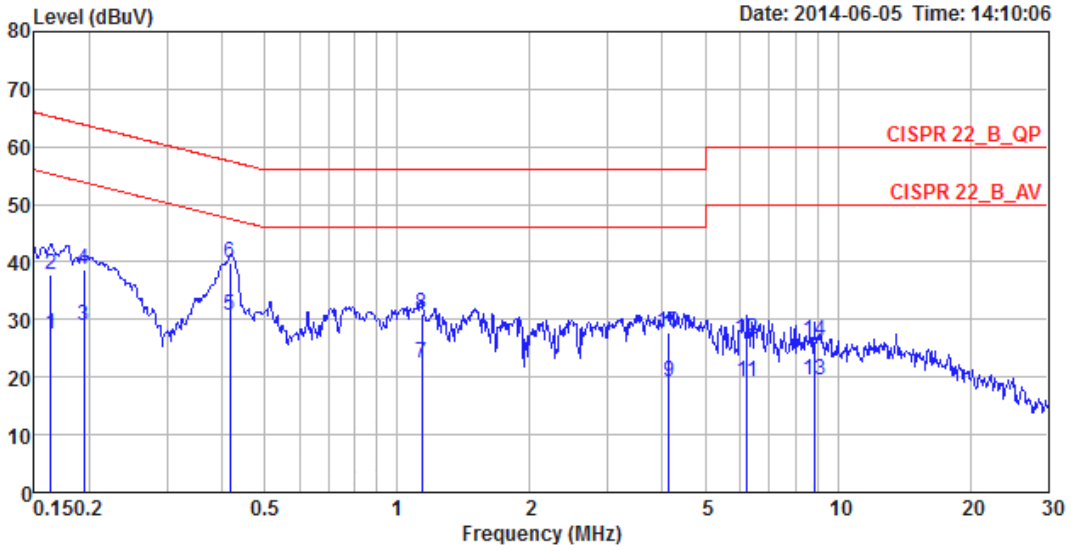
4.1.6. Results of AC Power Line Conducted Emissions Measurement

Temperature	22°C	Humidity	54%
Test Engineer	Ryo Fan	Phase	Line
Configuration	CTX	Test Mode	Mode 1



	Freq	Level	Over Limit	Limit Line	LISN Factor	Read Level	Cable Loss	Pol/Phase	Remark
	MHz	dBuV	dB	dBuV	dB	dBuV	dB		
1	0.1712	27.39	-27.51	54.90	0.22	26.98	0.19	LINE	Average
2	0.1712	37.35	-27.55	64.90	0.22	36.94	0.19	LINE	QP
3	0.1884	28.29	-25.82	54.11	0.21	27.88	0.20	LINE	Average
4	0.1884	39.07	-25.04	64.11	0.21	38.66	0.20	LINE	QP
5 a	0.4215	30.57	-16.85	47.42	0.22	30.15	0.20	LINE	Average
6 q	0.4215	39.22	-18.20	57.42	0.22	38.80	0.20	LINE	QP
7	0.7835	21.87	-24.13	46.00	0.23	21.44	0.20	LINE	Average
8	0.7835	29.87	-26.13	56.00	0.23	29.44	0.20	LINE	QP
9	7.8516	15.97	-34.03	50.00	0.39	15.24	0.34	LINE	Average
10	7.8516	23.62	-36.38	60.00	0.39	22.89	0.34	LINE	QP
11	13.6228	14.93	-35.07	50.00	0.56	13.97	0.40	LINE	Average
12	13.6228	22.06	-37.94	60.00	0.56	21.10	0.40	LINE	QP

Temperature	22°C	Humidity	54%
Test Engineer	Ryo Fan	Phase	Neutral
Configuration	CTX	Test Mode	Mode 1



	Freq	Level	Over Limit	Limit Line	LISN Factor	Read Level	Cable Loss	Pol/Phase	Remark
	MHz	dBuV	dB	dBuV	dB	dBuV	dB		
1	0.1633	27.37	-27.93	55.30	0.08	27.10	0.19	NEUTRAL	Average
2	0.1633	37.80	-27.50	65.30	0.08	37.53	0.19	NEUTRAL	QP
3	0.1945	28.87	-24.97	53.84	0.07	28.60	0.20	NEUTRAL	Average
4	0.1945	38.80	-25.04	63.84	0.07	38.53	0.20	NEUTRAL	QP
5 a	0.4171	30.76	-16.75	47.51	0.08	30.48	0.20	NEUTRAL	Average
6 q	0.4171	39.78	-17.73	57.51	0.08	39.50	0.20	NEUTRAL	QP
7	1.1352	22.50	-23.50	46.00	0.10	22.19	0.21	NEUTRAL	Average
8	1.1352	30.94	-25.06	56.00	0.10	30.63	0.21	NEUTRAL	QP
9	4.1356	19.05	-26.95	46.00	0.16	18.59	0.30	NEUTRAL	Average
10	4.1356	27.87	-28.13	56.00	0.16	27.41	0.30	NEUTRAL	QP
11	6.2189	19.34	-30.66	50.00	0.22	18.80	0.32	NEUTRAL	Average
12	6.2189	26.46	-33.54	60.00	0.22	25.92	0.32	NEUTRAL	QP
13	8.8223	19.38	-30.62	50.00	0.27	18.77	0.34	NEUTRAL	Average
14	8.8223	26.28	-33.72	60.00	0.27	25.67	0.34	NEUTRAL	QP

Note:

Level = Read Level + LISN Factor + Cable Loss.

4.2. 26dB Bandwidth and 99% Occupied Bandwidth Measurement

4.2.1. Limit

No restriction limits.

4.2.2. Measuring Instruments and Setting

Please refer to section 5 of equipments list in this report. The following table is the setting of the spectrum analyzer.

26dB Bandwidth	
Spectrum Parameters	**Setting**
Attenuation	Auto
Span Frequency	> 26dB Bandwidth
RBW	Approximately 1% of the emission bandwidth
VBW	VBW > RBW
Detector	Peak
Trace	Max Hold
Sweep Time	Auto
99% Occupied Bandwidth	
Spectrum Parameters	**Setting**
Span	1.5 times to 5.0 times the OBW
RBW	1 % to 5 % of the OBW
VBW	≥ 3 x RBW
Detector	Peak
Trace	Max Hold

4.2.3. Test Procedures

For Radiated 26dB Bandwidth and 99% Occupied Bandwidth Measurement:

1. The transmitter was radiated to the spectrum analyzer in peak hold mode.
2. Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

4.2.4. Test Setup Layout

For Radiated 26dB Bandwidth and 99% Occupied Bandwidth Measurement:

This test setup layout is the same as that shown in section 4.5.4.

4.2.5. Test Deviation

There is no deviation with the original standard.

4.2.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

4.2.7. Test Result of 26dB Bandwidth and 99% Occupied Bandwidth

Temperature	20°C	Humidity	60%
Test Engineer	Benson Peng	Configurations	IEEE 802.11n

Configuration IEEE 802.11n MCS0 HT20 / Chain 1 + Chain 2 + Chain 3

Channel	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
52	5260 MHz	23.68	18.08
60	5300 MHz	23.36	17.92
64	5320 MHz	23.04	17.92
100	5500 MHz	23.52	18.24
116	5580 MHz	22.56	18.24
140	5700 MHz	23.52	18.24

Configuration IEEE 802.11n MCS0 HT40 / Chain 1 + Chain 2 + Chain 3

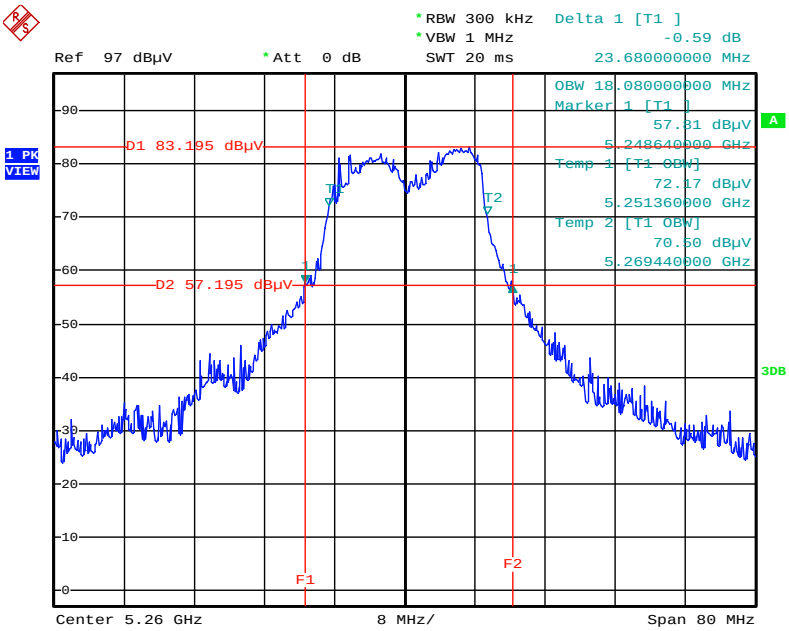
Channel	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
54	5270 MHz	40.00	35.52
62	5310 MHz	39.36	35.20
102	5510 MHz	44.16	36.80
110	5550 MHz	45.12	36.48
134	5670 MHz	40.96	35.84

Temperature	20°C	Humidity	60%
Test Engineer	Benson Peng	Configurations	IEEE 802.11a

Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3

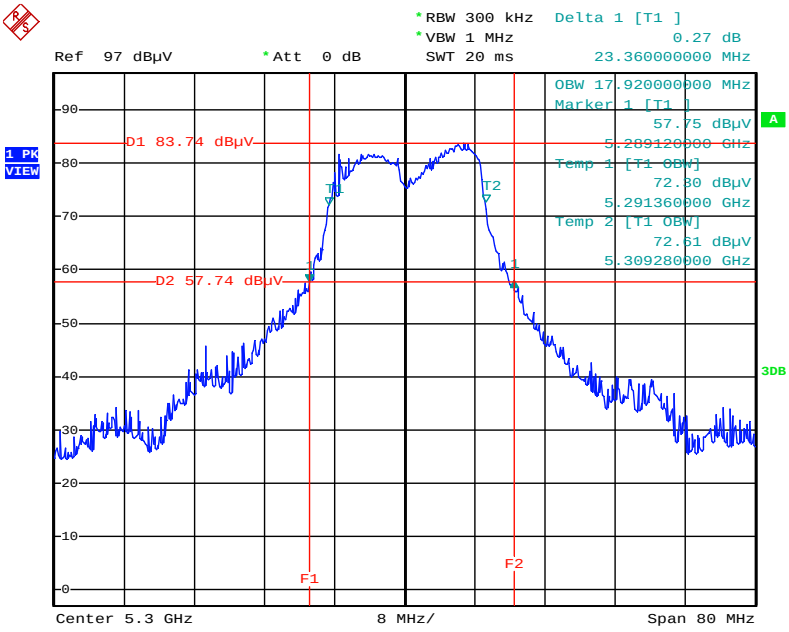
Channel	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
52	5260 MHz	23.52	17.28
60	5300 MHz	21.76	17.28
64	5320 MHz	22.88	17.28
100	5500 MHz	22.08	17.12
116	5580 MHz	21.92	17.12
140	5700 MHz	22.40	17.12

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11n MCS0 HT20 / Chain 1 + Chain 2 + Chain 3 / 5260 MHz



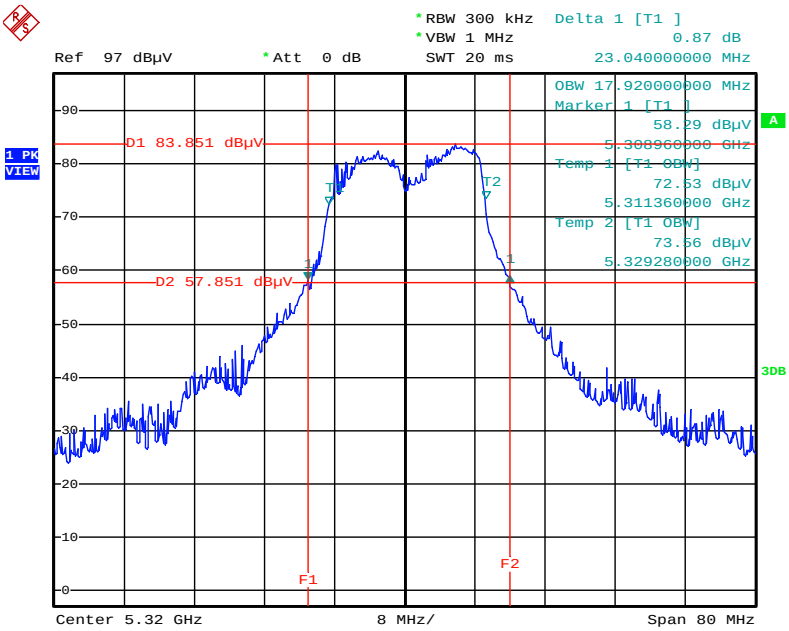
Date: 10.JUL.2014 14:49:15

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11n MCS0 HT20 / Chain 1 + Chain 2 + Chain 3 / 5300 MHz



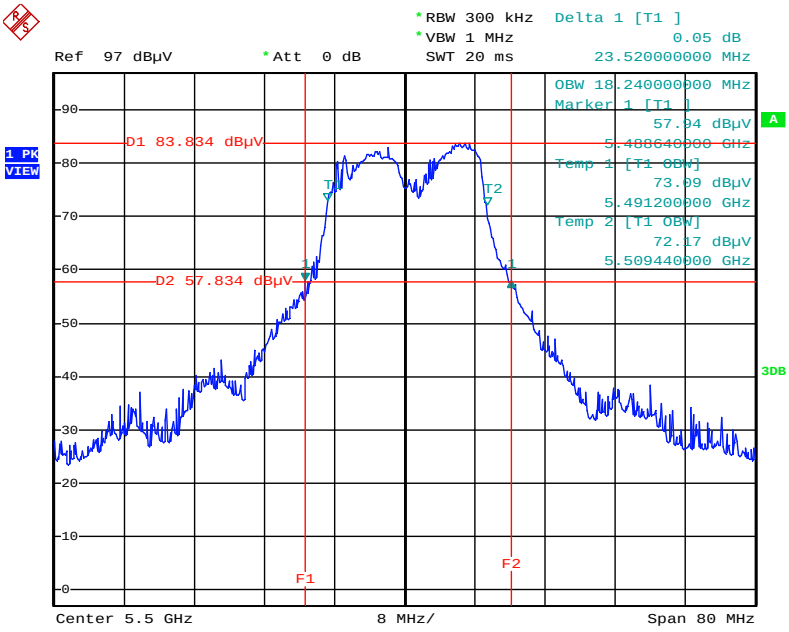
Date: 10.JUL.2014 14:49:52

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11n MCS0 HT20 / Chain 1 + Chain 2 + Chain 3 / 5320 MHz



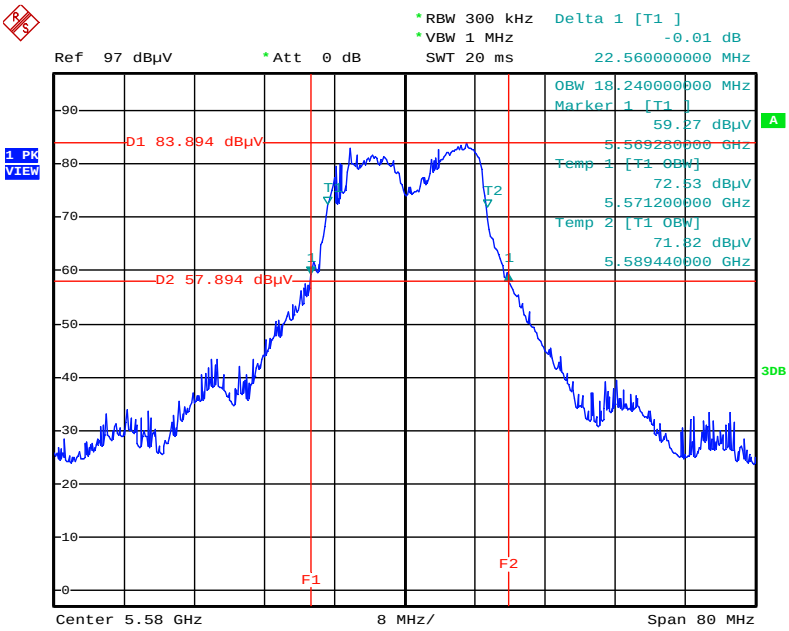
Date: 10.JUL.2014 14:50:25

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11n MCS0 HT20 / Chain 1 + Chain 2 + Chain 3 / 5500 MHz



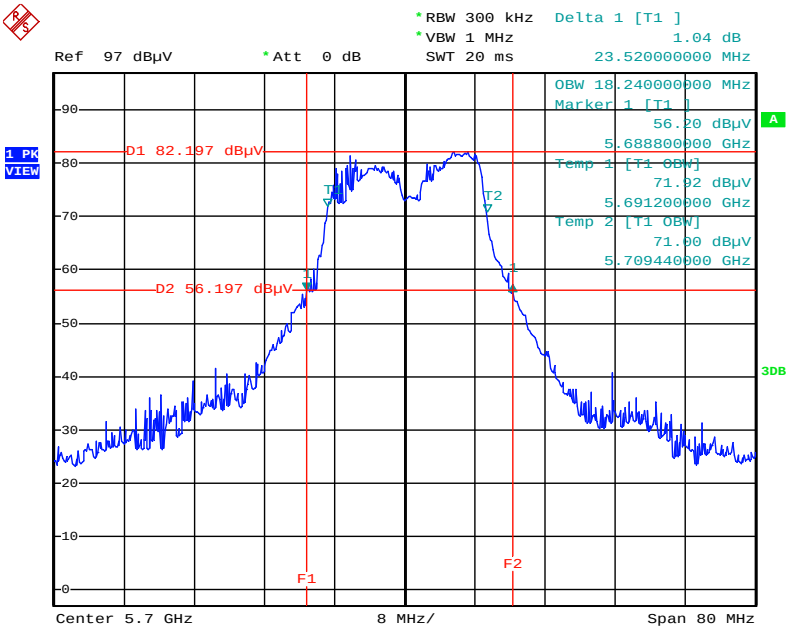
Date: 10.JUL.2014 14:50:53

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11n MCS0 HT20 / Chain 1 + Chain 2 + Chain 3 / 5580 MHz



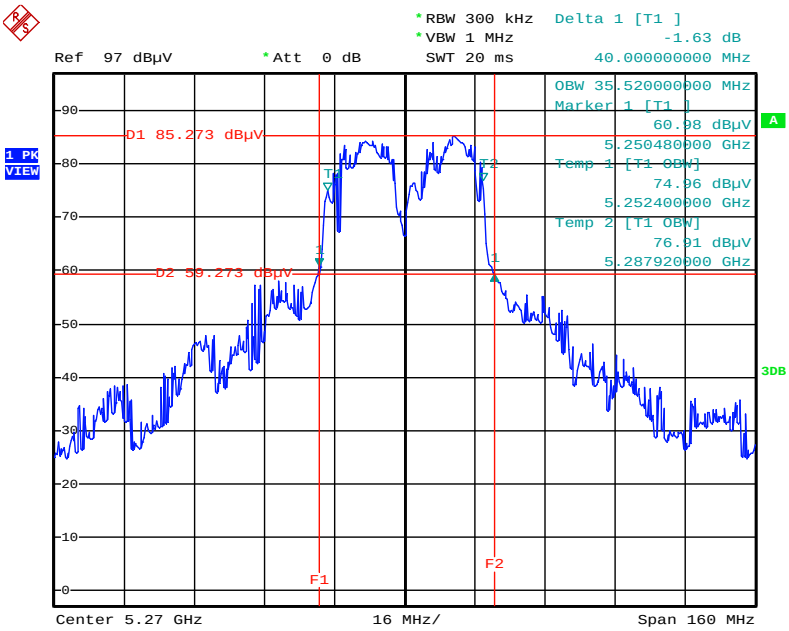
Date: 10.JUL.2014 14:51:27

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11n MCS0 HT20 / Chain 1 + Chain 2 + Chain 3 / 5700 MHz



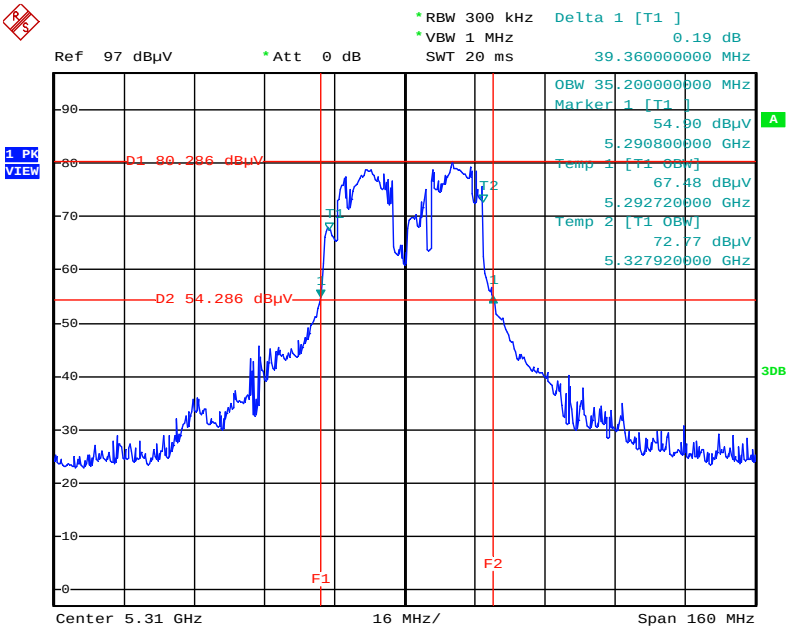
Date: 10.JUL.2014 14:51:47

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11n MCS0 HT40 / Chain 1 + Chain 2 + Chain 3 / 5270 MHz



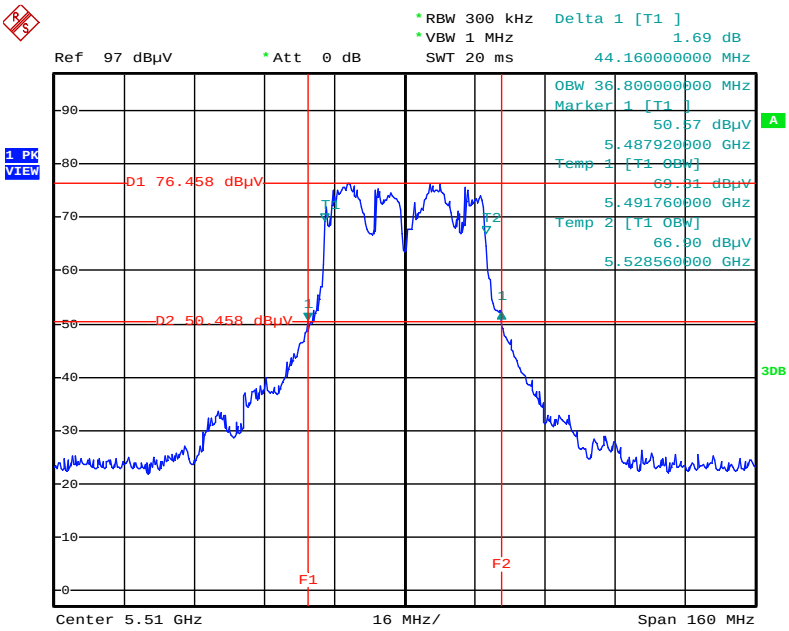
Date: 10.JUL.2014 14:55:22

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11n MCS0 HT40 / Chain 1 + Chain 2 + Chain 3 / 5310 MHz



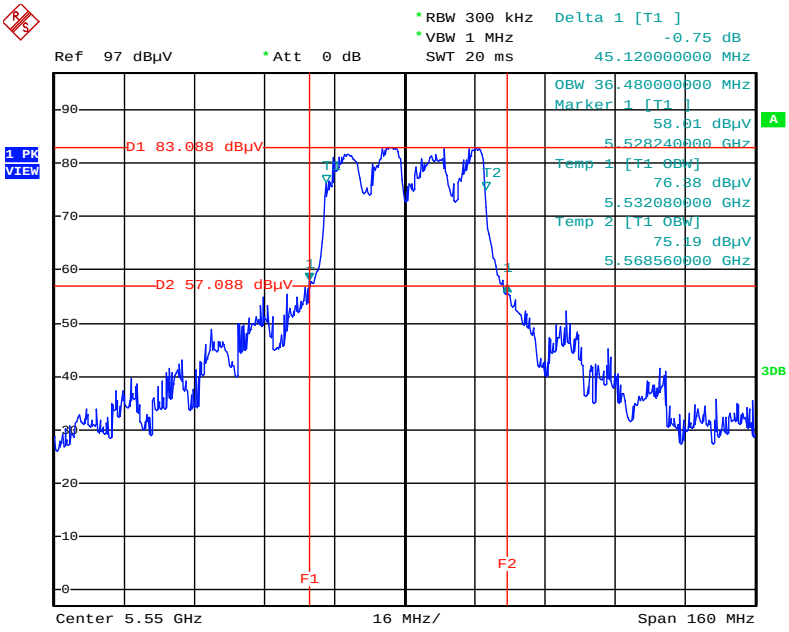
Date: 10.JUL.2014 14:55:44

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11n MCS0 HT40 / Chain 1 + Chain 2 + Chain 3 / 5510 MHz



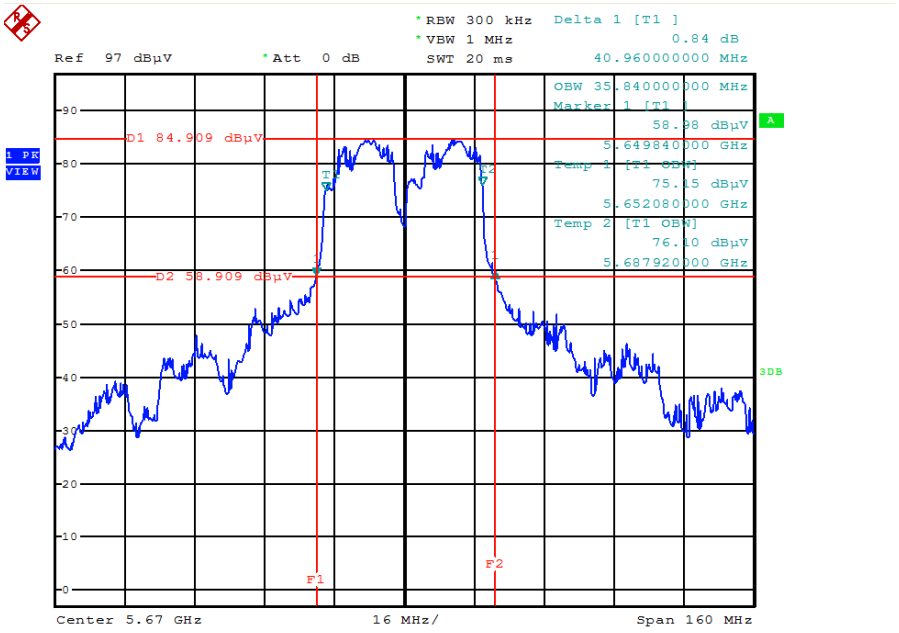
Date: 10.JUL.2014 14:56:11

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11n MCS0 HT40 / Chain 1 + Chain 2 + Chain 3 / 5550 MHz



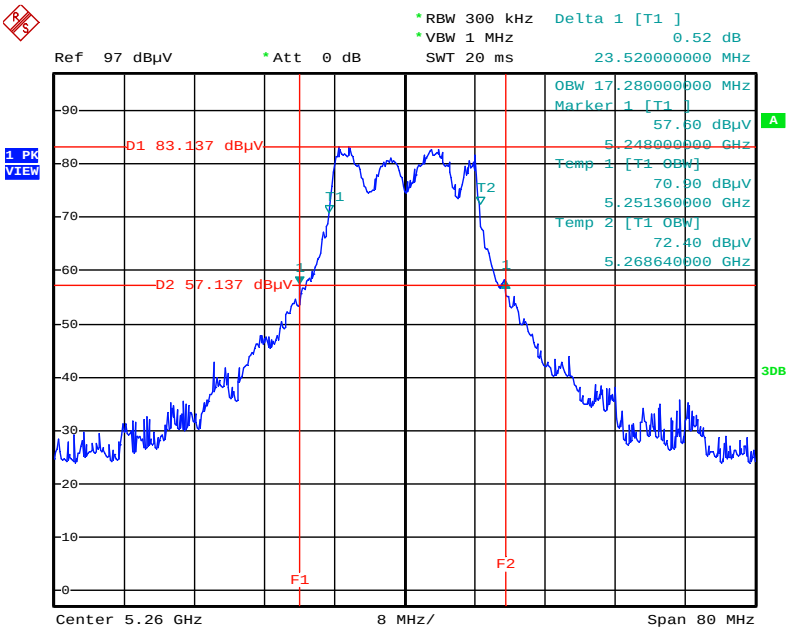
Date: 10.JUL.2014 14:56:39

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11n MCS0 HT40 / Chain 1 + Chain 2 + Chain 3 / 5670 MHz



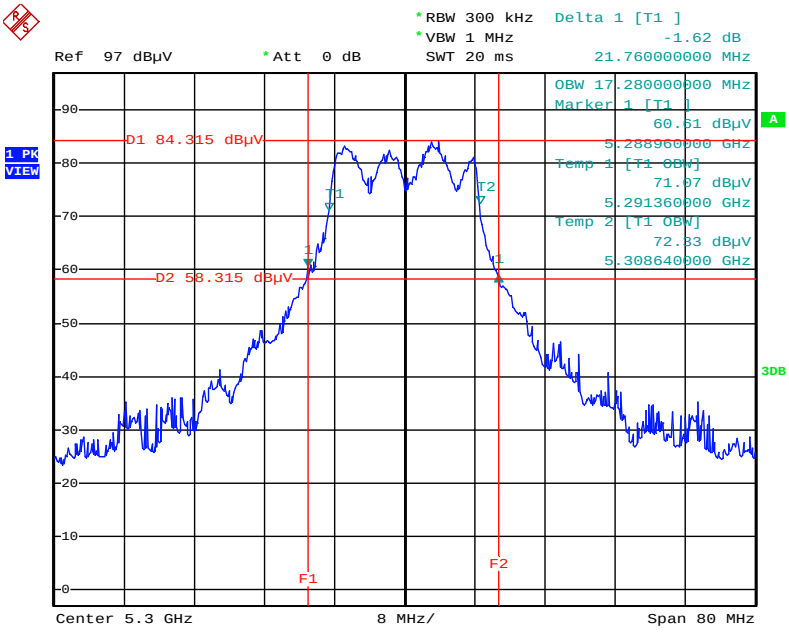
Date: 10.JUL.2014 15:03:42

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 / 5260 MHz



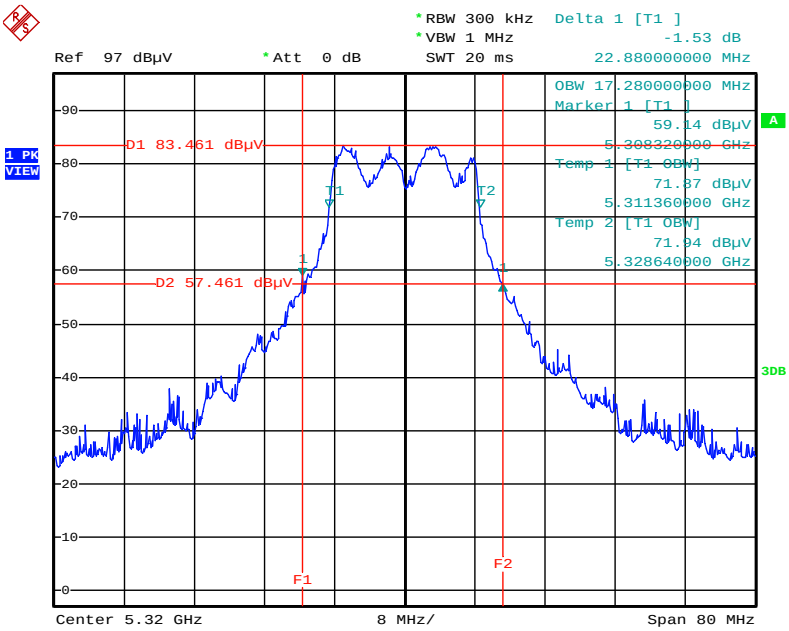
Date: 10.JUL.2014 12:45:08

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 / 5300 MHz

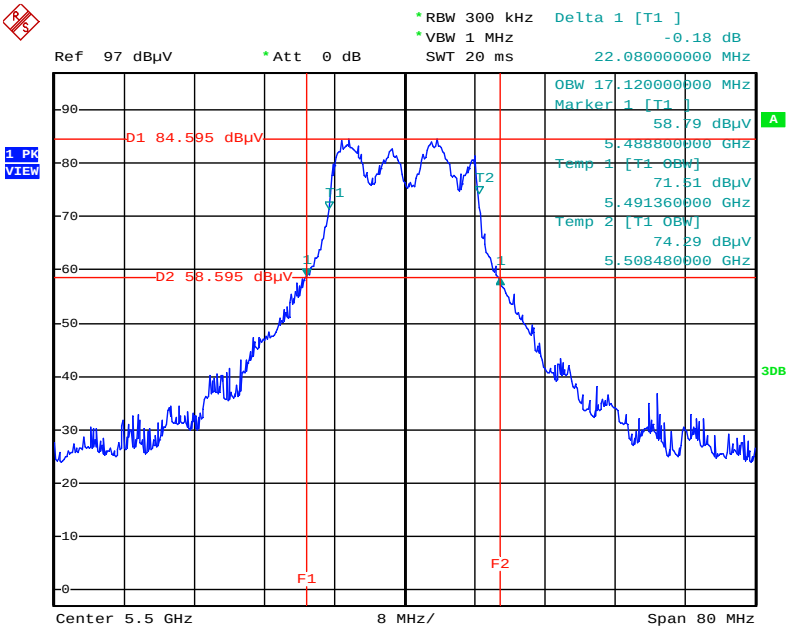


Date: 10.JUL.2014 12:45:38

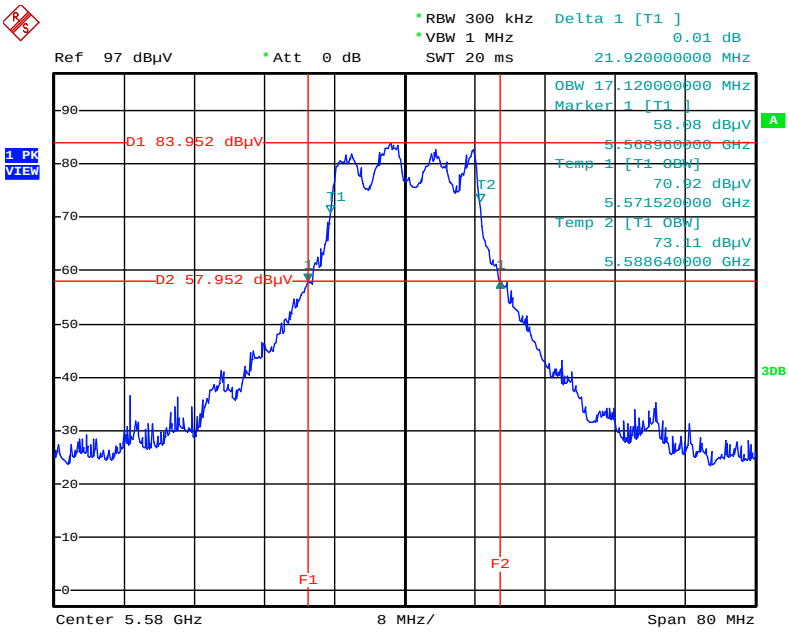
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 / 5320 MHz



26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 / 5500 MHz

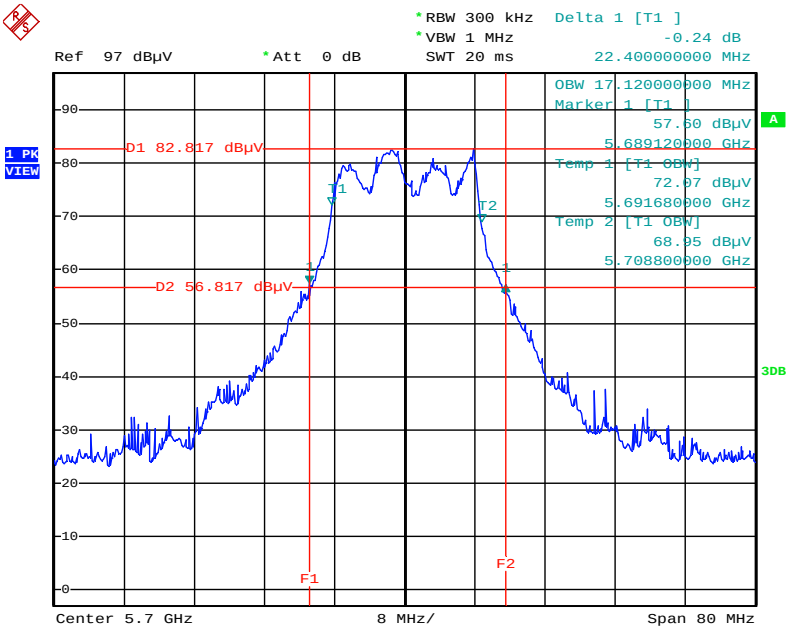


26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 / 5580 MHz



Date: 10.JUL.2014 12:47:03

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 / 5700 MHz



Date: 10.JUL.2014 12:47:26

4.3. Maximum Conducted Output Power Measurement

4.3.1. Limit

For the 5.25-5.35 GHz and 5.470-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW (24dBm) or 11 dBm + 10log B, where B is the 26-dB emission bandwidth in MHz. 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.

4.3.2. Measuring Instruments and Setting

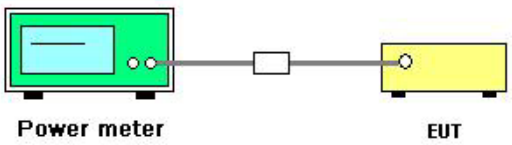
Please refer to section 5 of equipments list in this report The following table is the setting of the power meter.

Power Meter Parameter	Setting
Detector	AVERAGE

4.3.3. Test Procedures

1. The transmitter output (antenna port) was connected to the power meter.
2. Test was performed in accordance with KDB789033 D02 v01 for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices - section (E) Maximum conducted output power =>3) Measurement using a power meter (PM) =>b) Method PM-G (Measurement using a gated RF average power meter).
3. Multiple antenna systems was performed in accordance with KDB662911 D01 v02r01 Emissions Testing of Transmitters with Multiple Outputs in the Same Band.
4. When measuring maximum conducted output power with multiple antenna systems,add every result of the values by mathematic formula.

4.3.4. Test Setup Layout



4.3.5. Test Deviation

There is no deviation with the original standard.

4.3.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

4.3.7. Test Result of Maximum Conducted Output Power

Temperature	20°C	Humidity	60%
Test Engineer	Benson Peng	Configurations	IEEE 802.11n
Test Date	Jul. 10, 2014		

Configuration IEEE 802.11n MCS0 HT20

Channel	Frequency	Conducted Power (dBm)				Max. Limit (dBm)	Result
		Chain 1	Chain 2	Chain 3	Total		
52	5260 MHz	14.19	14.02	15.28	19.30	23.20	Complies
60	5300 MHz	14.58	14.18	15.15	19.43	23.20	Complies
64	5320 MHz	14.67	14.19	14.87	19.36	23.20	Complies
100	5500 MHz	14.56	12.92	15.22	19.11	23.20	Complies
116	5580 MHz	15.24	13.59	15.33	19.56	23.20	Complies
140	5700 MHz	14.06	13.34	14.66	18.82	23.20	Complies

Note: Max Ant Gain=6.8dBi > 6dBi , so power limit=24-(6.8-6)=23.2dBm

Configuration IEEE 802.11n MCS0 HT40

Channel	Frequency	Conducted Power (dBm)				Max. Limit (dBm)	Result
		Chain 1	Chain 2	Chain 3	Total		
54	5270 MHz	17.96	17.02	17.82	22.39	23.20	Complies
62	5310 MHz	11.79	11.36	12.78	16.79	23.20	Complies
102	5510 MHz	9.78	9.14	11.21	14.90	23.20	Complies
110	5550 MHz	18.32	17.04	18.24	22.68	23.20	Complies
134	5670 MHz	18.47	17.15	18.52	22.86	23.20	Complies

Note: Max Ant Gain=6.8dBi > 6dBi , so power limit=24-(6.8-6)=23.2dBm

Temperature	20°C	Humidity	60%
Test Engineer	Benson Peng	Configurations	IEEE 802.11a
Test Date	Jul. 10, 2014		

Configuration IEEE 802.11a

Channel	Frequency	Conducted Power (dBm)				Max. Limit (dBm)	Result
		Chain 1	Chain 2	Chain 3	Total		
52	5260 MHz	14.02	14.19	15.27	19.30	23.20	Complies
60	5300 MHz	15.02	13.77	14.92	19.38	23.20	Complies
64	5320 MHz	14.54	14.25	15.08	19.41	23.20	Complies
100	5500 MHz	14.81	13.27	15.38	19.35	23.20	Complies
116	5580 MHz	15.08	13.75	15.55	19.63	23.20	Complies
140	5700 MHz	14.15	13.32	15.04	19.00	23.20	Complies

4.4. Power Spectral Density Measurement

4.4.1. Limit

The power spectral density is defined as the highest level of power in dBm per MHz generated by the transmitter within the power envelope. The following table is power spectral density limits and decrease power density limit rule refer to section 4.3.1.

Frequency Range	Power Spectral Density limit (dBm/MHz)
5.25-5.35 GHz	11
5.47-5.725 GHz	11

4.4.2. Measuring Instruments and Setting

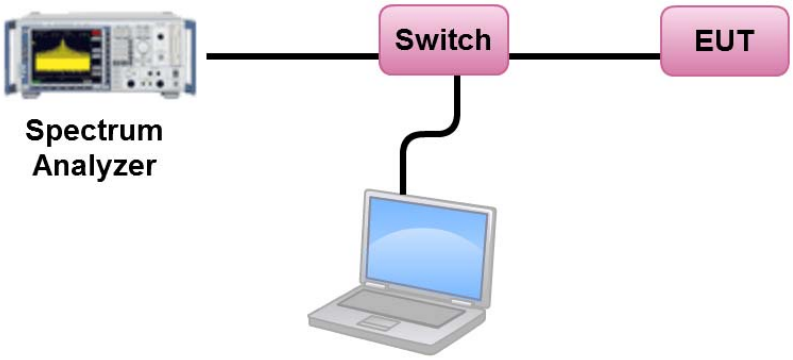
Please refer to section 5 of equipments list in this report. The following table is the setting of the spectrum analyzer.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	Encompass the entire emissions bandwidth (EBW) of the signal
RBW	1000 kHz
VBW	3000 kHz
Detector	RMS
Trace	AVERAGE
Sweep Time	Auto
Trace Average	100 times

4.4.3. Test Procedures

1. The transmitter output (antenna port) was connected RF switch to the spectrum analyzer.
2. Test was performed in accordance with KDB789033 D02 v01 for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices - section (F) Peak power spectral density (PPSD).
3. Multiple antenna systems was performed in accordance KDB662911 D01 v02r01 in-Band Power Spectral Density (PSD) Measurements (a) Measure and sum the spectra across the outputs.
4. When measuring first spectral bin of output 1 is summed with that in the first spectral bin of output 2 and that from the first spectral bin of output 3 and so on up to the Nth output to obtain the value for the first frequency bin of the summed spectrum. The summed spectrum value for each of the other frequency bins is computed in the same way.

4.4.4. Test Setup Layout



4.4.5. Test Deviation

There is no deviation with the original standard.

4.4.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

4.4.7. Test Result of Power Spectral Density

Temperature	20°C	Humidity	60%
Test Engineer	Benson Peng	Configurations	IEEE 802.11n
Test Date	Jul. 10, 2014		

Configuration IEEE 802.11n MCS0 HT20 / Chain 1 + Chain 2 + Chain 3

Channel	Frequency	Total Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
52	5260 MHz	6.25	6.40	Complies
60	5300 MHz	6.13	6.40	Complies
64	5320 MHz	6.34	6.40	Complies
100	5500 MHz	6.10	6.40	Complies
116	5580 MHz	6.15	6.40	Complies
140	5700 MHz	5.53	6.40	Complies

Note: Directional gain= $DirectionalGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ =10.6dBi > 6dBi,So Limit =11-(10.6-6)=6.4dBm/MHz

Configuration IEEE 802.11n MCS0 HT40 / Chain 1 + Chain 2 + Chain 3

Channel	Frequency	Total Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
54	5270 MHz	6.37	6.40	Complies
62	5310 MHz	0.33	6.40	Complies
102	5510 MHz	-1.38	6.40	Complies
110	5550 MHz	6.34	6.40	Complies
134	5670 MHz	6.30	6.40	Complies

Note: Directional gain= $DirectionalGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ =10.6dBi > 6dBi,So Limit =11-(10.6-6)=6.4dBm/MHz

Temperature	20°C	Humidity	60%
Test Engineer	Benson Peng	Configurations	IEEE 802.11a
Test Date	Jul. 10, 2014		

Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3

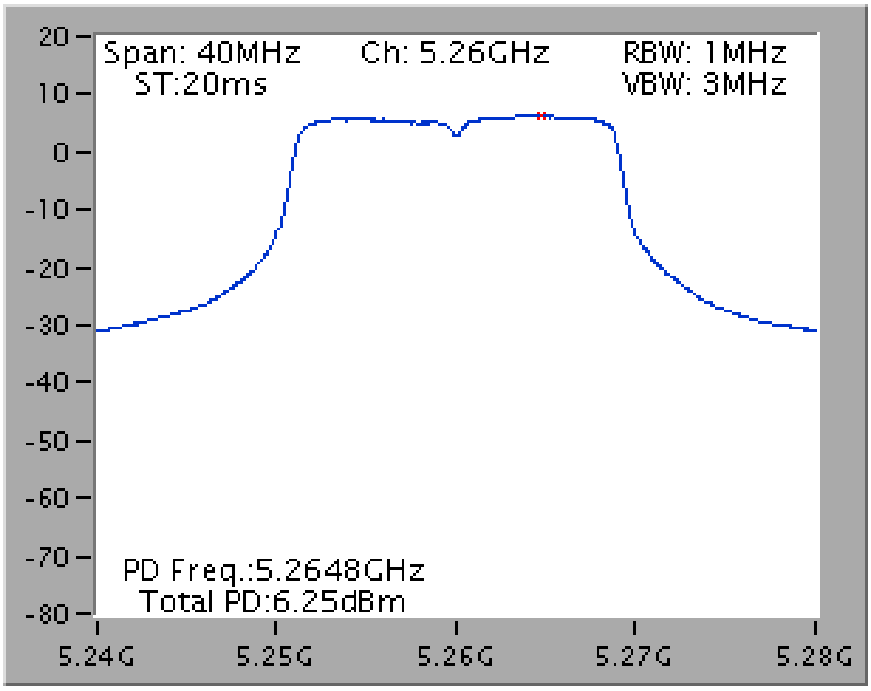
Channel	Frequency	Total Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
52	5260 MHz	6.21	6.40	Complies
60	5300 MHz	6.25	6.40	Complies
64	5320 MHz	6.29	6.40	Complies
100	5500 MHz	6.32	6.40	Complies
116	5580 MHz	6.16	6.40	Complies
140	5700 MHz	5.54	6.40	Complies

Note: Directional gain= $DirectionalGain = 10 \cdot \log\left[\frac{\sum_{i=1}^{N_{spt}}\left\{\sum_{k=1}^{N_{ANT}} g_{i,k}\right\}^2}{N_{ANT}}\right]$ =10.6dBi > 6dBi,So Limit =11-(10.6-6)=6.4dBm/MHz

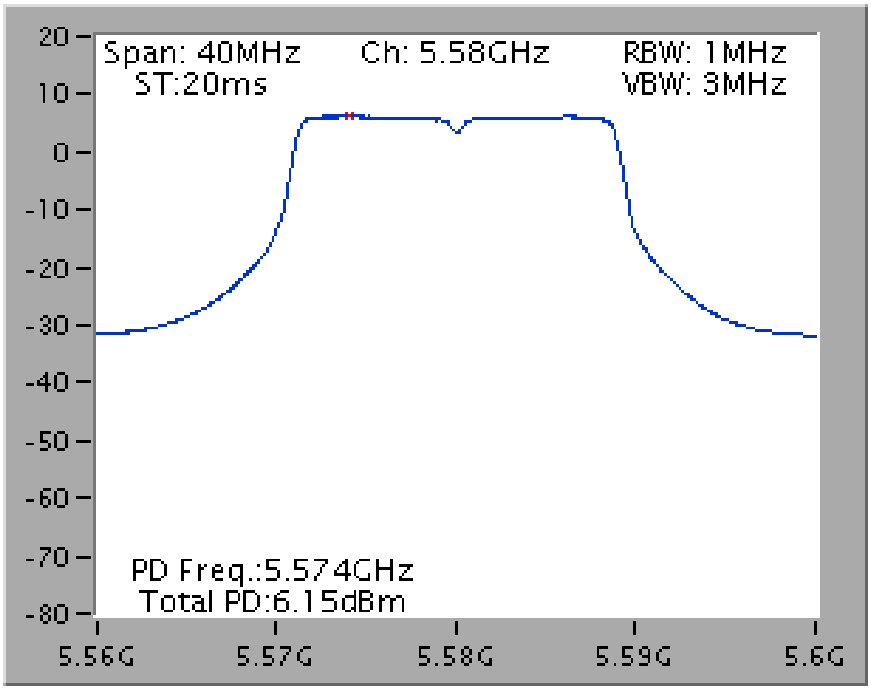
Note: All the test values were listed in the report.

For plots, only the channel with worse result was shown.

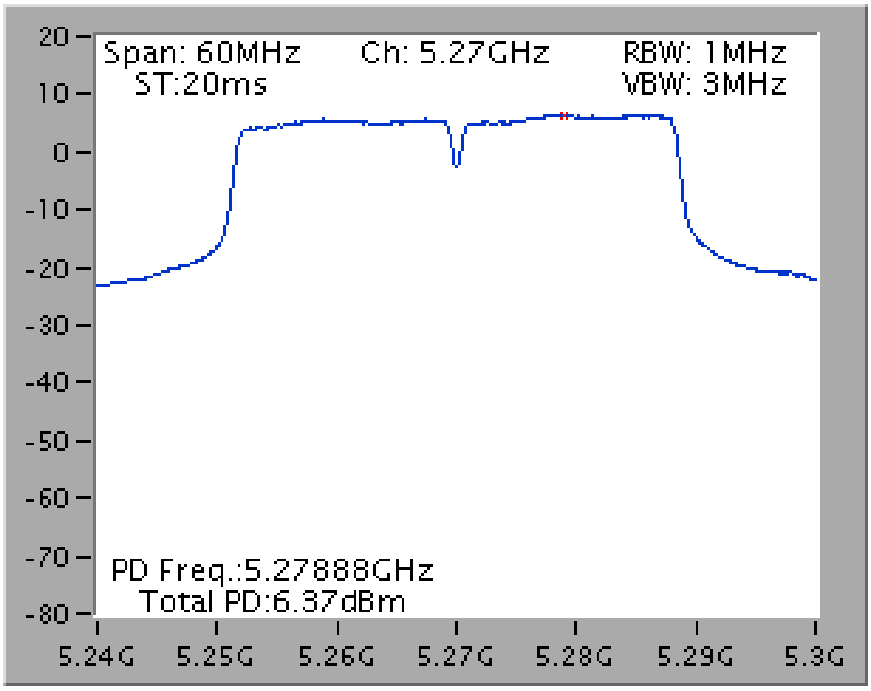
Power Density Plot on Configuration IEEE 802.11n MCS0 HT20 / Chain 1 + Chain 2 + Chain 3 / 5260 MHz



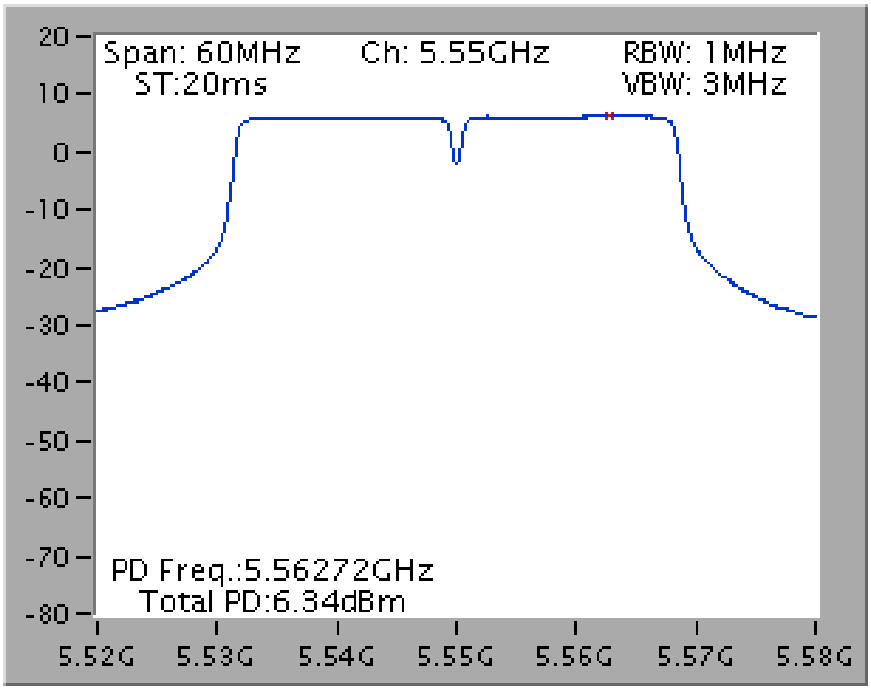
Power Density Plot on Configuration IEEE 802.11n MCS0 HT20 / Chain 1 + Chain 2 + Chain 3 / 5580 MHz



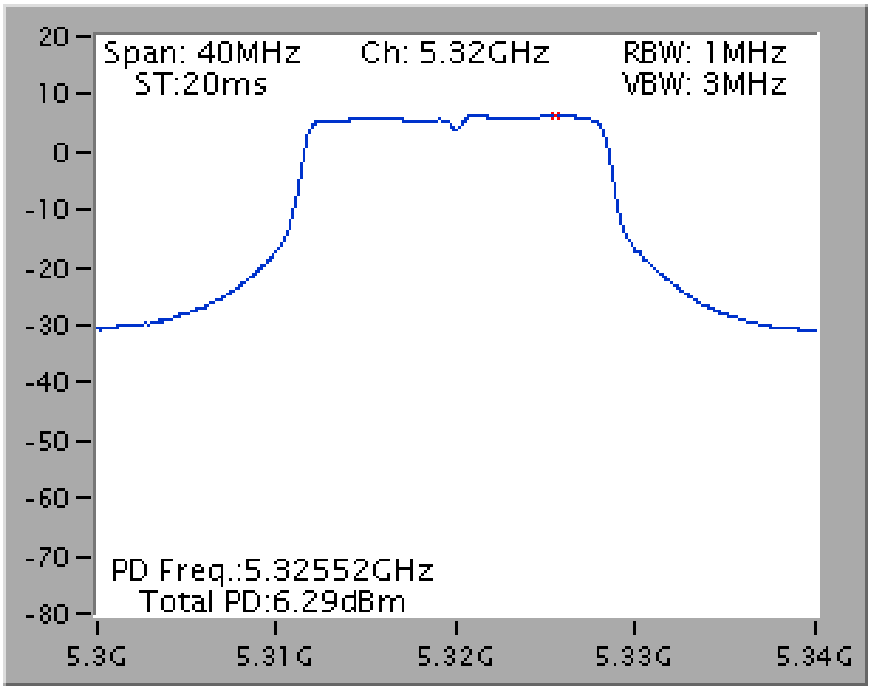
Power Density Plot on Configuration IEEE 802.11n MCS0 HT40 / Chain 1 + Chain 2 + Chain 3 / 5270 MHz



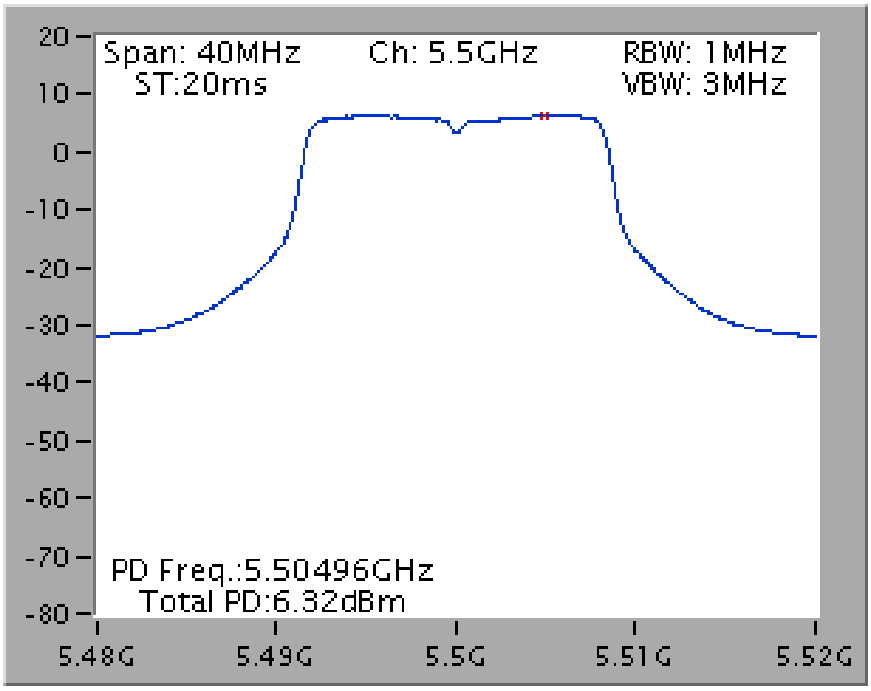
Power Density Plot on Configuration IEEE 802.11n MCS0 HT40 / Chain 1 + Chain 2 + Chain 3 / 5550 MHz



Power Density Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 / 5320 MHz



Power Density Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 / 5500 MHz



4.5. Radiated Emissions Measurement

4.5.1. Limit

For transmitters operating in the 5.15-5.35 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed a -27dBm peak limit or average 54dBuV/m and peak 74dBuV/m limits. For transmitters operating in the 5.470-5.725 GHz band: all emissions outside of the 5.470-5.725 GHz band shall not exceed a -27dBm peak limit or average 54dBuV/m and peak 74dBuV/m limits. In addition, In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

Frequencies (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(kHz)	300
0.490~1.705	24000/F(kHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

4.5.2. Measuring Instruments and Setting

Please refer to section 5 of equipments list in this report. The following table is the setting of spectrum analyzer and receiver.

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	40 GHz
RBW / VBW (Emission in restricted band)	1MHz / 3MHz for Peak, Please refer to section 3.12 for Average
RBW / VBW (Emission in non-restricted band)	1MHz / 3MHz for peak

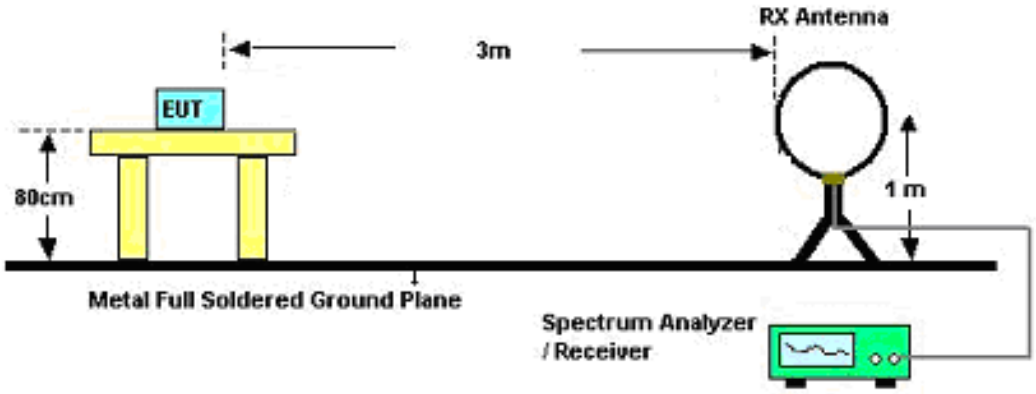
Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RBW 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RBW 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RBW 120kHz for QP

4.5.3. Test Procedures

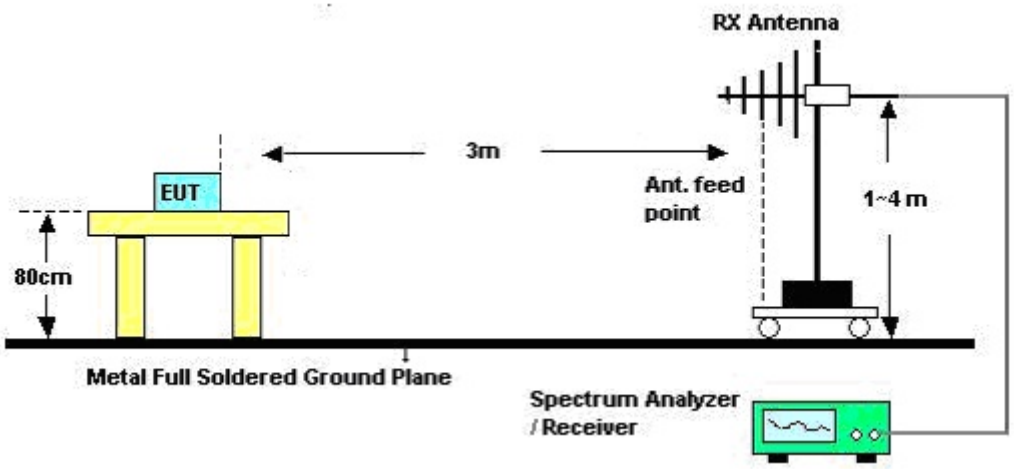
1. Configure the EUT according to ANSI C63.10. The EUT was placed on the top of the turntable 0.8 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
2. Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
3. The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emissions field strength of both horizontal and vertical polarization.
4. For each suspected emissions, the antenna tower was scan (from 1 M to 4 M) and then the turntable was rotated (from 0 degree to 360 degrees) to find the maximum reading.
5. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.
6. For emissions above 1GHz, use 1MHz VBW and RBW for peak reading. Then 1MHz RBW and 10Hz VBW for average reading in spectrum analyzer.
7. If the emissions level of the EUT in peak mode was 3 dB lower than the average limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method for below 1GHz.
8. For testing above 1GHz, the emissions level of the EUT in peak mode was lower than average limit (that means the emissions level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
9. In case the emission is lower than 30MHz, loop antenna has to be used for measurement and the recorded data should be QP measured by receiver. High – Low scan is not required in this case.

4.5.4. Test Setup Layout

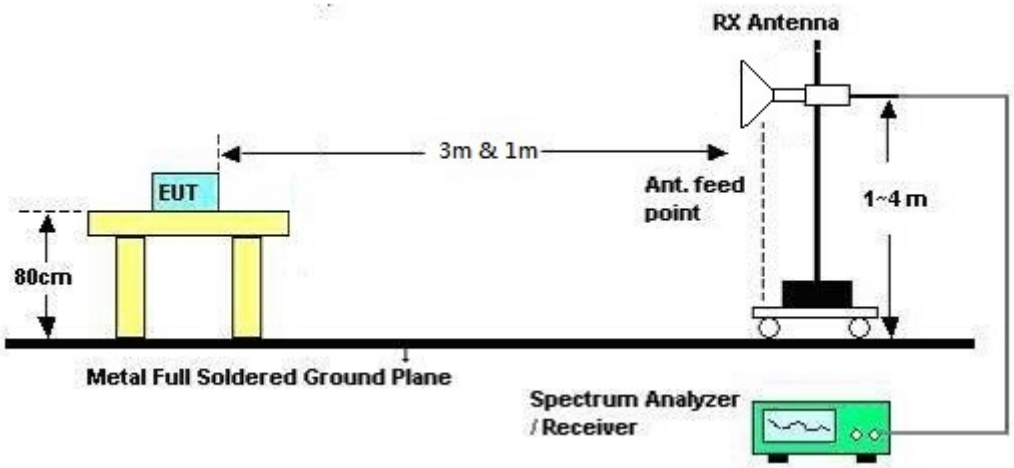
For Radiated Emissions: 9kHz ~30MHz



For Radiated Emissions: 30MHz~1GHz



For Radiated Emissions: Above 1GHz



4.5.5. Test Deviation

There is no deviation with the original standard.

4.5.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

4.5.7. Results of Radiated Emissions (9kHz~30MHz)

For EUT 1:

Temperature	23°C	Humidity	61%
Test Engineer	Magic Lai	Configurations	CTX
Test Date	Jul. 14, 2014	Test Mode	Mode 3

Freq. (MHz)	Level (dBuV)	Over Limit (dB)	Limit Line (dBuV)	Remark
-	-	-	-	See Note

For EUT 2:

Temperature	28°C	Humidity	62%
Test Engineer	YC Chen	Configurations	CTX
Test Date	Aug. 05, 2014	Test Mode	Mode 4

Freq. (MHz)	Level (dBuV)	Over Limit (dB)	Limit Line (dBuV)	Remark
-	-	-	-	See Note

Note:

The amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

Distance extrapolation factor = 40 log (specific distance / test distance) (dB);

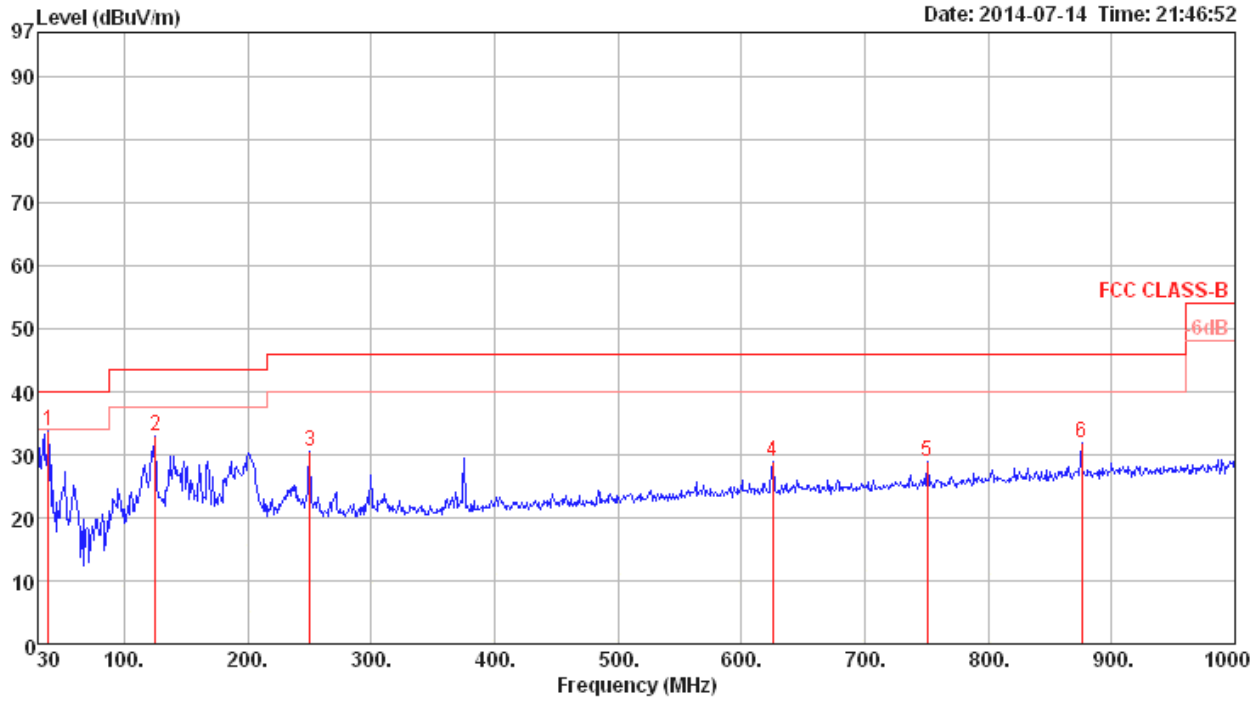
Limit line = specific limits (dBuV) + distance extrapolation factor.

4.5.8. Results of Radiated Emissions (30MHz~1GHz)

For EUT 1:

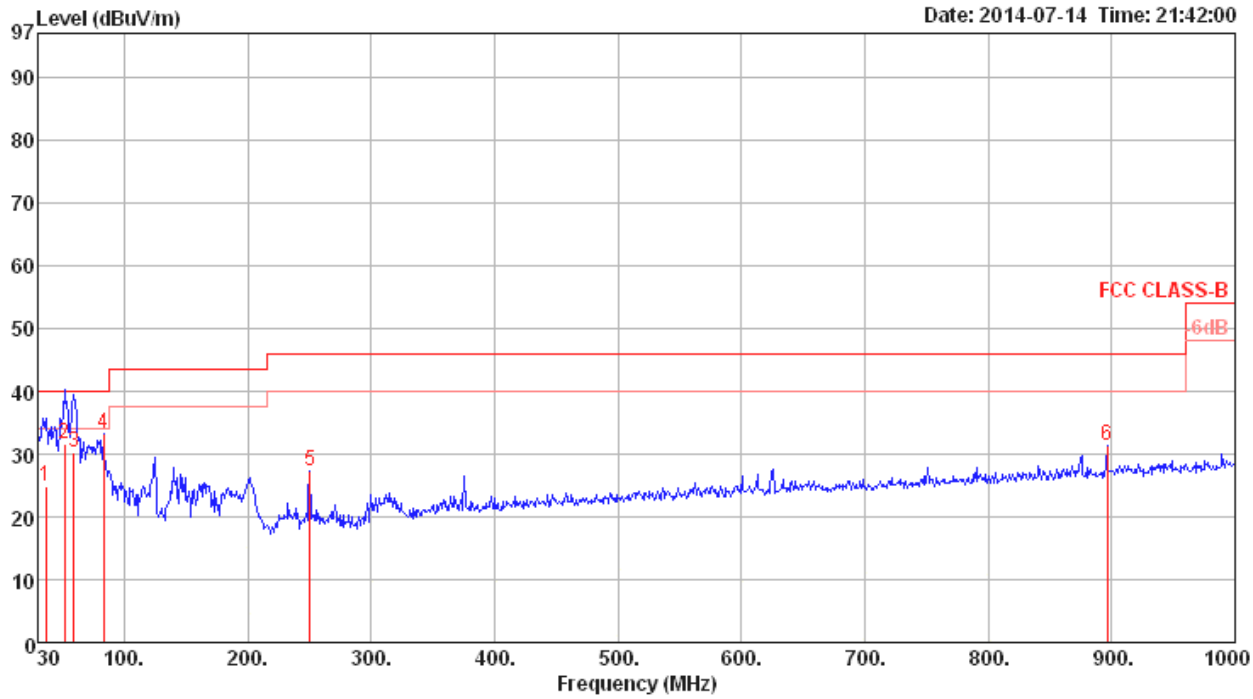
Temperature	23°C	Humidity	61%
Test Engineer	Magic Lai	Configurations	CTX
Test Mode	Mode 3		

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	38.73	33.78	40.00	-6.22	47.21	0.67	13.70	27.80	QP	100	0	HORIZONTAL
2	125.06	32.94	43.50	-10.56	46.88	1.33	12.21	27.48	QP	100	0	HORIZONTAL
3	250.19	30.56	46.00	-15.44	43.01	1.78	12.77	27.00	QP	100	0	HORIZONTAL
4	625.58	28.96	46.00	-17.04	35.28	2.90	18.85	28.07	QP	100	0	HORIZONTAL
5	750.71	29.01	46.00	-16.99	34.18	3.20	19.43	27.80	QP	100	0	HORIZONTAL
6	875.84	31.89	46.00	-14.11	35.53	3.46	20.35	27.45	QP	100	0	HORIZONTAL

Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	36.79	24.94	40.00	-15.06	37.17	0.68	14.89	27.80	QP	100	65	VERTICAL
2	51.34	31.53	40.00	-8.47	50.11	0.86	8.35	27.79	QP	100	251	VERTICAL
3	59.10	30.23	40.00	-9.77	50.14	0.90	6.95	27.76	QP	100	56	VERTICAL
4	83.35	33.13	40.00	-6.87	52.02	1.07	7.71	27.67	QP	400	0	VERTICAL
5	250.19	27.36	46.00	-18.64	39.81	1.78	12.77	27.00	QP	400	0	VERTICAL
6	896.21	31.31	46.00	-14.69	34.68	3.54	20.50	27.41	QP	400	0	VERTICAL

Note:

The amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

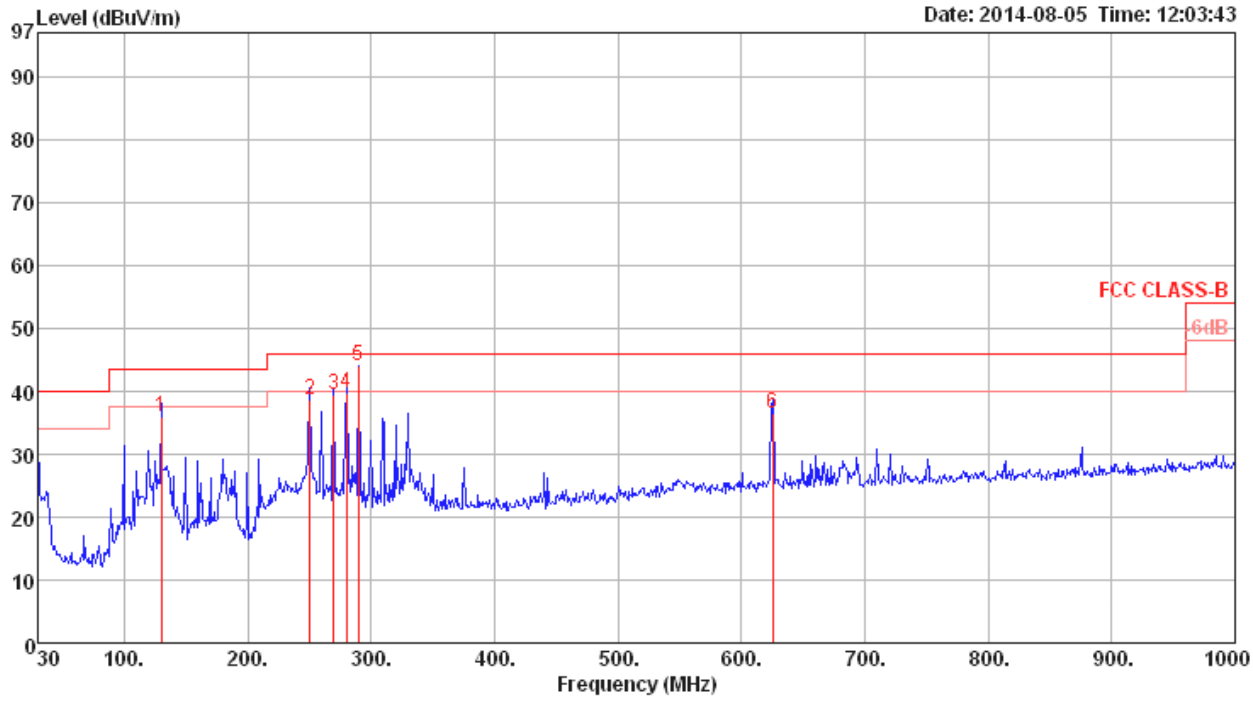
Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

For EUT 2:

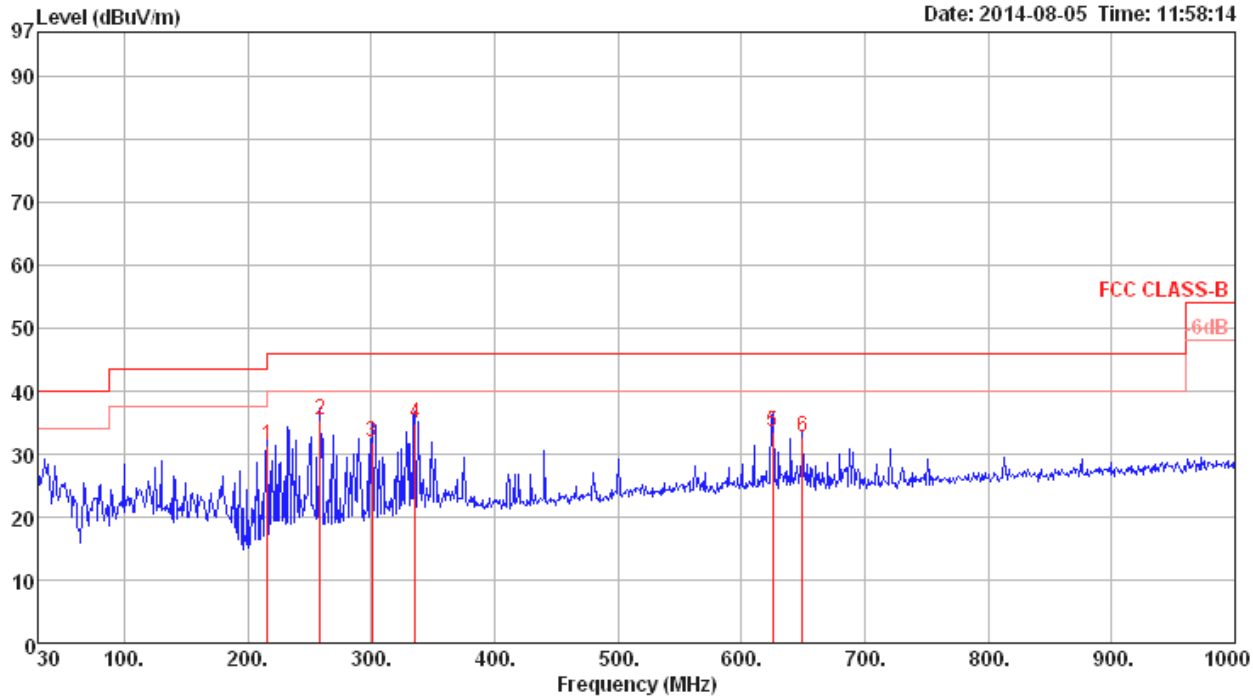
Temperature	28°C	Humidity	62%
Test Engineer	YC Chen	Configurations	CTX
Test Mode	Mode 4		

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	129.91	36.03	43.50	-7.47	49.85	1.37	12.26	27.45	QP	100	254	HORIZONTAL
2	250.19	38.52	46.00	-7.48	50.97	1.78	12.77	27.00	QP	100	333	HORIZONTAL
3	269.59	39.32	46.00	-6.68	51.40	1.88	13.00	26.96	QP	100	120	HORIZONTAL
4	280.26	39.61	46.00	-6.39	51.49	1.93	13.13	26.94	QP	100	156	HORIZONTAL
5	289.96	44.14	46.00	-1.86	55.84	1.98	13.24	26.92	QP	100	124	HORIZONTAL
6	625.58	36.57	46.00	-9.43	42.89	2.90	18.85	28.07	QP	100	323	HORIZONTAL

Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	216.24	31.43	46.00	-14.57	46.53	1.70	10.27	27.07	QP	100	124	VERTICAL
2	258.92	35.41	46.00	-10.59	47.70	1.82	12.87	26.98	QP	100	233	VERTICAL
3	300.63	31.87	46.00	-14.13	43.35	2.03	13.39	26.90	QP	100	111	VERTICAL
4	335.55	34.84	46.00	-11.16	45.58	2.08	14.33	27.15	QP	100	124	VERTICAL
5	625.58	33.38	46.00	-12.62	39.70	2.90	18.85	28.07	QP	100	222	VERTICAL
6	649.83	32.61	46.00	-13.39	38.74	2.99	18.93	28.05	QP	100	127	VERTICAL

Note:

The amplitude of spurious emissions which are attenuated by more than 20 dB below the permissible value has no need to be reported.

Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

4.5.9. Results for Radiated Emissions (1GHz~40GHz)

For EUT 1:

Temperature	23°C	Humidity	61%
Test Engineer	Magic Lai	Configurations	IEEE 802.11n MCS0 HT20 CH 52 / Chain 1 + Chain 2 + Chain 3
Test Date	Jun. 11, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	15783.52	53.17	74.00	-20.83	44.18	6.14	38.09	35.24	Peak	100	223	HORIZONTAL
2	15787.72	42.08	54.00	-11.92	33.09	6.14	38.09	35.24	Average	100	223	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	15787.68	54.04	74.00	-19.96	45.05	6.14	38.09	35.24	Peak	100	168	VERTICAL
2	15789.00	40.69	54.00	-13.31	31.70	6.14	38.09	35.24	Average	100	168	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Magic Lai	Configurations	IEEE 802.11n MCS0 HT20 CH 60 / Chain 1 + Chain 2 + Chain 3
Test Date	Jun. 11, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10604.80	37.95	54.00	-16.05	29.25	5.01	38.92	35.23	Average	100	70	HORIZONTAL
2	10605.36	49.42	74.00	-24.58	40.72	5.01	38.92	35.23	Peak	100	70	HORIZONTAL
3	15894.00	40.38	54.00	-13.62	31.55	6.15	37.94	35.26	Average	100	127	HORIZONTAL
4	15904.76	52.43	74.00	-21.57	43.63	6.15	37.92	35.27	Peak	100	127	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10601.48	49.77	74.00	-24.23	41.07	5.01	38.92	35.23	Peak	100	230	VERTICAL
2	10602.96	37.58	54.00	-16.42	28.88	5.01	38.92	35.23	Average	100	230	VERTICAL
3	15897.48	40.89	54.00	-13.11	32.06	6.15	37.94	35.26	Average	100	198	VERTICAL
4	15906.72	52.92	74.00	-21.08	44.12	6.15	37.92	35.27	Peak	100	198	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Magic Lai	Configurations	IEEE 802.11n MCS0 HT20 CH 64 / Chain 1 + Chain 2 + Chain 3
Test Date	Jun. 11, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10639.28	36.83	54.00	-17.17	28.11	5.01	38.93	35.22	Average	100	282	HORIZONTAL
2	10639.28	47.66	74.00	-26.34	38.94	5.01	38.93	35.22	Peak	100	282	HORIZONTAL
3	15951.20	40.40	54.00	-13.60	31.66	6.15	37.87	35.28	Average	100	227	HORIZONTAL
4	15953.92	52.93	74.00	-21.07	44.21	6.15	37.85	35.28	Peak	100	227	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10642.52	36.70	54.00	-17.30	27.98	5.01	38.93	35.22	Average	100	306	VERTICAL
2	10645.92	48.86	74.00	-25.14	40.14	5.01	38.93	35.22	Peak	100	306	VERTICAL
3	15956.52	53.17	74.00	-20.83	44.45	6.15	37.85	35.28	Peak	100	281	VERTICAL
4	15963.68	40.70	54.00	-13.30	31.98	6.15	37.85	35.28	Average	100	281	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Magic Lai	Configurations	IEEE 802.11n MCS0 HT20 CH 100 / Chain 1 + Chain 2 + Chain 3
Test Date	Jun. 11, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11006.28	36.71	54.00	-17.29	27.67	5.01	39.01	34.98	Average	100	358	HORIZONTAL
2	11006.92	49.19	74.00	-24.81	40.15	5.01	39.01	34.98	Peak	100	358	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10999.16	48.89	74.00	-25.11	39.86	5.01	39.00	34.98	Peak	100	262	VERTICAL
2	11003.24	36.63	54.00	-17.37	27.60	5.01	39.00	34.98	Average	100	262	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Magic Lai	Configurations	IEEE 802.11n MCS0 HT20 CH 116 / Chain 1 + Chain 2 + Chain 3
Test Date	Jun. 11, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11161.48	49.71	74.00	-24.29	40.54	5.04	39.13	35.00	Peak	114	143	HORIZONTAL
2	11161.84	37.26	54.00	-16.74	28.08	5.05	39.13	35.00	Average	114	143	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11150.56	38.04	54.00	-15.96	28.88	5.04	39.12	35.00	Average	106	190	VERTICAL
2	11157.00	50.07	74.00	-23.93	40.91	5.04	39.12	35.00	Peak	106	190	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Magic Lai	Configurations	IEEE 802.11n MCS0 HT20 CH 140 / Chain 1 + Chain 2 + Chain 3
Test Date	Jun. 11, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11401.88	37.33	54.00	-16.67	27.95	5.10	39.32	35.04	Average	100	137	HORIZONTAL
2	11408.88	49.83	74.00	-24.17	40.45	5.10	39.32	35.04	Peak	100	137	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11394.08	49.36	74.00	-24.64	39.99	5.10	39.31	35.04	Peak	100	224	VERTICAL
2	11403.72	37.24	54.00	-16.76	27.86	5.10	39.32	35.04	Average	100	224	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Magic Lai	Configurations	IEEE 802.11n MCS0 HT40 CH 54 / Chain 1 + Chain 2 + Chain 3
Test Date	Jun. 11, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	15809.08	40.44	54.00	-13.56	31.47	6.14	38.07	35.24	Average	100	63	HORIZONTAL
2	15816.32	53.20	74.00	-20.80	44.26	6.14	38.04	35.24	Peak	100	63	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	15816.84	40.51	54.00	-13.49	31.57	6.14	38.04	35.24	Average	100	150	VERTICAL
2	15818.88	53.32	74.00	-20.68	44.38	6.14	38.04	35.24	Peak	100	150	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Magic Lai	Configurations	IEEE 802.11n MCS0 HT40 CH 62 / Chain 1 + Chain 2 + Chain 3
Test Date	Jun. 11, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10610.84	49.10	74.00	-24.90	40.40	5.01	38.92	35.23	Peak	100	41	HORIZONTAL
2	10625.20	36.30	54.00	-17.70	27.60	5.01	38.92	35.23	Average	100	41	HORIZONTAL
3	15923.84	40.32	54.00	-13.68	31.54	6.15	37.90	35.27	Average	100	77	HORIZONTAL
4	15935.28	52.61	74.00	-21.39	43.87	6.15	37.87	35.28	Peak	100	77	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10614.80	36.24	54.00	-17.76	27.54	5.01	38.92	35.23	Average	100	175	VERTICAL
2	10619.44	48.42	74.00	-25.58	39.72	5.01	38.92	35.23	Peak	100	175	VERTICAL
3	15923.08	52.40	74.00	-21.60	43.62	6.15	37.90	35.27	Peak	100	126	VERTICAL
4	15936.88	40.28	54.00	-13.72	31.54	6.15	37.87	35.28	Average	100	126	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Magic Lai	Configurations	IEEE 802.11n MCS0 HT40 CH 102 / Chain 1 + Chain 2 + Chain 3
Test Date	Jun. 11, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11017.04	40.43	54.00	-13.57	31.38	5.02	39.01	34.98	Average	100	215	HORIZONTAL
2	11028.20	53.28	74.00	-20.72	44.21	5.02	39.03	34.98	Peak	100	215	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11026.56	39.71	54.00	-14.29	30.64	5.02	39.03	34.98	Average	100	293	VERTICAL
2	11029.08	51.85	74.00	-22.15	42.78	5.02	39.03	34.98	Peak	100	293	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Magic Lai	Configurations	IEEE 802.11n MCS0 HT40 CH 110 / Chain 1 + Chain 2 + Chain 3
Test Date	Jun. 11, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11100.52	37.10	54.00	-16.90	27.98	5.03	39.08	34.99	Average	100	238	HORIZONTAL
2	11105.36	49.26	74.00	-24.74	40.14	5.03	39.08	34.99	Peak	100	238	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11098.12	36.96	54.00	-17.04	27.84	5.03	39.08	34.99	Average	100	198	VERTICAL
2	11107.88	49.40	74.00	-24.60	40.27	5.03	39.09	34.99	Peak	100	198	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Magic Lai	Configurations	IEEE 802.11n MCS0 HT40 CH 134 / Chain 1 + Chain 2 + Chain 3
Test Date	Jun. 11, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11341.52	37.05	54.00	-16.95	27.72	5.09	39.27	35.03	Average	100	169	HORIZONTAL
2	11349.88	49.69	74.00	-24.31	40.35	5.09	39.28	35.03	Peak	100	169	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11342.20	37.90	54.00	-16.10	28.57	5.09	39.27	35.03	Average	100	194	VERTICAL
2	11347.00	49.21	74.00	-24.79	39.87	5.09	39.28	35.03	Peak	100	194	VERTICAL

Note:

The amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

Temperature	23℃	Humidity	61%
Test Engineer	Magic Lai	Configurations	IEEE 802.11a CH 52 / Chain 1 + Chain 2 + Chain 3
Test Date	Jun. 11, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	15747.68	53.27	74.00	-20.73	44.21	6.14	38.14	35.22	Peak	100	332	HORIZONTAL
2	15748.36	40.18	54.00	-13.82	31.12	6.14	38.14	35.22	Average	100	332	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	15732.16	54.19	74.00	-19.81	45.11	6.14	38.16	35.22	Peak	100	76	VERTICAL
2	15748.64	39.04	54.00	-14.96	29.98	6.14	38.14	35.22	Average	100	76	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Magic Lai	Configurations	IEEE 802.11a CH 60 / Chain 1 + Chain 2 + Chain 3
Test Date	Jun. 11, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10601.20	36.67	54.00	-17.33	27.97	5.01	38.92	35.23	Average	100	234	HORIZONTAL
2	10601.20	47.71	74.00	-26.29	39.01	5.01	38.92	35.23	Peak	100	234	HORIZONTAL
3	15896.00	43.47	54.00	-10.53	34.64	6.15	37.94	35.26	Average	100	130	HORIZONTAL
4	15901.56	53.06	74.00	-20.94	44.25	6.15	37.92	35.26	Peak	100	130	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10600.44	36.69	54.00	-17.31	28.01	5.01	38.92	35.25	Average	100	119	VERTICAL
2	10603.48	49.29	74.00	-24.71	40.59	5.01	38.92	35.23	Peak	100	119	VERTICAL
3	15894.16	40.80	54.00	-13.20	31.97	6.15	37.94	35.26	Average	100	59	VERTICAL
4	15896.72	53.58	74.00	-20.42	44.75	6.15	37.94	35.26	Peak	100	59	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Magic Lai	Configurations	IEEE 802.11a CH 64 / Chain 1 + Chain 2 + Chain 3
Test Date	Jun. 11, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10639.08	48.71	74.00	-25.29	39.99	5.01	38.93	35.22	Peak	100	200	HORIZONTAL
2	10644.48	36.31	54.00	-17.69	27.59	5.01	38.93	35.22	Average	100	200	HORIZONTAL
3	15958.76	53.01	74.00	-20.99	44.29	6.15	37.85	35.28	Peak	100	276	HORIZONTAL
4	15966.20	40.05	54.00	-13.95	31.33	6.15	37.85	35.28	Average	100	276	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10640.84	36.22	54.00	-17.78	27.50	5.01	38.93	35.22	Average	100	257	VERTICAL
2	10642.32	49.41	74.00	-24.59	40.69	5.01	38.93	35.22	Peak	100	257	VERTICAL
3	15950.16	52.68	74.00	-21.32	43.94	6.15	37.87	35.28	Peak	100	336	VERTICAL
4	15957.84	40.18	54.00	-13.82	31.46	6.15	37.85	35.28	Average	100	336	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Magic Lai	Configurations	IEEE 802.11a CH 100 / Chain 1 + Chain 2 + Chain 3
Test Date	Jun. 11, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11001.56	48.61	74.00	-25.39	39.58	5.01	39.00	34.98	Peak	100	205	HORIZONTAL
2	11003.00	37.26	54.00	-16.74	28.23	5.01	39.00	34.98	Average	100	205	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11005.64	48.81	74.00	-25.19	39.77	5.01	39.01	34.98	Peak	100	164	VERTICAL
2	11006.72	36.70	54.00	-17.30	27.66	5.01	39.01	34.98	Average	100	164	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Magic Lai	Configurations	IEEE 802.11a CH 116 / Chain 1 + Chain 2 + Chain 3
Test Date	Jun. 11, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11156.76	38.17	54.00	-15.83	29.01	5.04	39.12	35.00	Average	127	203	HORIZONTAL
2	11158.32	49.56	74.00	-24.44	40.39	5.04	39.13	35.00	Peak	127	203	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11160.16	53.20	74.00	-20.80	44.03	5.04	39.13	35.00	Peak	139	297	VERTICAL
2	11160.60	41.55	54.00	-12.45	32.38	5.04	39.13	35.00	Average	139	297	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Magic Lai	Configurations	IEEE 802.11a CH 140 / Chain 1 + Chain 2 + Chain 3
Test Date	Jun. 11, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11400.00	49.81	74.00	-24.19	40.43	5.10	39.32	35.04	Peak	100	100	HORIZONTAL
2	11401.48	36.05	54.00	-17.95	26.67	5.10	39.32	35.04	Average	100	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11400.00	36.89	54.00	-17.11	27.51	5.10	39.32	35.04	Average	100	39	VERTICAL
2	11400.00	49.88	74.00	-24.12	40.50	5.10	39.32	35.04	Peak	100	39	VERTICAL

Note:

The amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

For EUT 2:

Temperature	28°C	Humidity	62%
Test Engineer	YC Chen	Configurations	IEEE 802.11n MCS0 HT20 CH 52 / Chain 1 + Chain 2 + Chain 3
Test Date	Aug. 02, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	15779.62	56.29	74.00	-17.71	43.28	10.80	37.75	35.54	Peak	100	306	HORIZONTAL
2	15780.42	43.50	54.00	-10.50	30.49	10.80	37.75	35.54	Average	100	306	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	15779.78	56.40	74.00	-17.60	43.39	10.80	37.75	35.54	Peak	100	150	VERTICAL
2	15780.41	43.17	54.00	-10.83	30.16	10.80	37.75	35.54	Average	100	150	VERTICAL

Temperature	28℃	Humidity	62%
Test Engineer	YC Chen	Configurations	IEEE 802.11n MCS0 HT20 CH 60 / Chain 1 + Chain 2 + Chain 3
Test Date	Aug. 02, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10600.40	41.78	54.00	-12.22	28.38	8.64	39.90	35.14	Average	107	135	HORIZONTAL
2	10601.40	54.83	74.00	-19.17	41.41	8.64	39.90	35.12	Peak	107	135	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10600.40	41.89	54.00	-12.11	28.49	8.64	39.90	35.14	Average	123	282	VERTICAL
2	10602.00	54.16	74.00	-19.84	40.74	8.64	39.90	35.12	Peak	123	282	VERTICAL

Temperature	28°C	Humidity	62%
Test Engineer	YC Chen	Configurations	IEEE 802.11n MCS0 HT20 CH 64 / Chain 1 + Chain 2 + Chain 3
Test Date	Aug. 02, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10639.56	41.54	54.00	-12.46	28.11	8.66	39.86	35.09	Average	116	226	HORIZONTAL
2	10639.58	54.77	74.00	-19.23	41.34	8.66	39.86	35.09	Peak	116	223	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10639.98	41.73	54.00	-12.27	28.30	8.66	39.86	35.09	Average	100	114	VERTICAL
2	10640.41	54.16	74.00	-19.84	40.73	8.66	39.86	35.09	Peak	100	114	VERTICAL

Temperature	28°C	Humidity	62%
Test Engineer	YC Chen	Configurations	IEEE 802.11n MCS0 HT20 CH 100 / Chain 1 + Chain 2 + Chain 3
Test Date	Aug. 02, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11005.90	52.82	74.00	-21.18	39.18	8.94	39.50	34.80	Peak	118	306	HORIZONTAL
2	11006.10	41.76	54.00	-12.24	28.12	8.94	39.50	34.80	Average	118	306	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11005.20	42.78	54.00	-11.22	29.14	8.94	39.50	34.80	Average	183	278	VERTICAL
2	11006.10	54.87	74.00	-19.13	41.23	8.94	39.50	34.80	Peak	183	278	VERTICAL

Temperature	28°C	Humidity	62%
Test Engineer	YC Chen	Configurations	IEEE 802.11n MCS0 HT20 CH 116 / Chain 1 + Chain 2 + Chain 3
Test Date	Aug. 02, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11160.50	59.03	74.00	-14.97	45.38	9.04	39.50	34.89	Peak	161	219	HORIZONTAL
2	11161.40	46.12	54.00	-7.88	32.47	9.04	39.50	34.89	Average	161	219	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11160.40	46.89	54.00	-7.11	33.24	9.04	39.50	34.89	Average	116	227	VERTICAL
2	11161.40	59.03	74.00	-14.97	45.38	9.04	39.50	34.89	Peak	116	227	VERTICAL

Temperature	28℃	Humidity	62%
Test Engineer	YC Chen	Configurations	IEEE 802.11n MCS0 HT20 CH 140 / Chain 1 + Chain 2 + Chain 3
Test Date	Aug. 02, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11399.90	40.74	54.00	-13.26	27.09	9.19	39.50	35.04	Average	121	245	HORIZONTAL
2	11400.15	52.97	74.00	-21.03	39.32	9.19	39.50	35.04	Peak	121	245	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11399.66	53.65	74.00	-20.35	40.00	9.19	39.50	35.04	Peak	100	160	VERTICAL
2	11399.87	41.54	54.00	-12.46	27.89	9.19	39.50	35.04	Average	100	160	VERTICAL

Temperature	28°C	Humidity	62%
Test Engineer	YC Chen	Configurations	IEEE 802.11n MCS0 HT40 CH 54 / Chain 1 + Chain 2 + Chain 3
Test Date	Aug. 02, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	15809.68	57.29	74.00	-16.71	44.31	10.80	37.72	35.54	Peak	117	69	HORIZONTAL
2	15809.97	43.87	54.00	-10.13	30.89	10.80	37.72	35.54	Average	117	69	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	15809.68	56.60	74.00	-17.40	43.62	10.80	37.72	35.54	Peak	100	220	VERTICAL
2	15809.95	43.75	54.00	-10.25	30.77	10.80	37.72	35.54	Average	100	220	VERTICAL

Temperature	28°C	Humidity	62%
Test Engineer	YC Chen	Configurations	IEEE 802.11n MCS0 HT40 CH 62 / Chain 1 + Chain 2 + Chain 3
Test Date	Aug. 02, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10601.40	42.22	54.00	-11.78	28.80	8.64	39.90	35.12	Average	100	305	HORIZONTAL
2	10612.50	54.28	74.00	-19.72	40.86	8.64	39.90	35.12	Peak	100	305	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10606.60	41.75	54.00	-12.25	28.33	8.64	39.90	35.12	Average	100	168	VERTICAL
2	10610.70	55.04	74.00	-18.96	41.62	8.64	39.90	35.12	Peak	100	168	VERTICAL

Temperature	28°C	Humidity	62%
Test Engineer	YC Chen	Configurations	IEEE 802.11n MCS0 HT40 CH 102 / Chain 1 + Chain 2 + Chain 3
Test Date	Aug. 02, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11019.72	53.69	74.00	-20.31	40.06	8.94	39.50	34.81	Peak	100	118	HORIZONTAL
2	11020.41	41.67	54.00	-12.33	28.04	8.94	39.50	34.81	Average	100	118	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11019.73	53.86	74.00	-20.14	40.23	8.94	39.50	34.81	Peak	100	184	VERTICAL
2	11020.26	41.80	54.00	-12.20	28.17	8.94	39.50	34.81	Average	100	184	VERTICAL

Temperature	28°C	Humidity	62%
Test Engineer	YC Chen	Configurations	IEEE 802.11n MCS0 HT40 CH 110 / Chain 1 + Chain 2 + Chain 3
Test Date	Aug. 02, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11086.00	57.65	74.00	-16.35	44.01	8.98	39.50	34.84	Peak	146	219	HORIZONTAL
2	11088.40	45.95	54.00	-8.05	32.33	8.98	39.50	34.86	Average	146	219	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11101.20	60.09	74.00	-13.91	46.46	8.99	39.50	34.86	Peak	131	227	VERTICAL
2	11101.80	46.89	54.00	-7.11	33.26	8.99	39.50	34.86	Average	131	227	VERTICAL

Temperature	28℃	Humidity	62%
Test Engineer	YC Chen	Configurations	IEEE 802.11n MCS0 HT40 CH 134 / Chain 1 + Chain 2 + Chain 3
Test Date	Aug. 02, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11339.40	43.73	54.00	-10.27	30.08	9.14	39.50	34.99	Average	167	216	HORIZONTAL
2	11341.20	55.88	74.00	-18.12	42.23	9.14	39.50	34.99	Peak	167	216	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11340.01	41.72	54.00	-12.28	28.07	9.14	39.50	34.99	Average	100	221	VERTICAL
2	11340.36	54.60	74.00	-19.40	40.95	9.14	39.50	34.99	Peak	100	221	VERTICAL

Temperature	28°C	Humidity	62%
Test Engineer	YC Chen	Configurations	IEEE 802.11a CH 52 / Chain 1 + Chain 2 + Chain 3
Test Date	Aug. 02, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	15779.73	56.79	74.00	-17.21	43.78	10.80	37.75	35.54	Peak	129	208	HORIZONTAL
2	15780.19	43.75	54.00	-10.25	30.74	10.80	37.75	35.54	Average	129	208	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	15779.63	56.14	74.00	-17.86	43.13	10.80	37.75	35.54	Peak	114	147	VERTICAL
2	15780.29	43.34	54.00	-10.66	30.33	10.80	37.75	35.54	Average	114	147	VERTICAL

Temperature	28°C	Humidity	62%
Test Engineer	YC Chen	Configurations	IEEE 802.11a CH 60 / Chain 1 + Chain 2 + Chain 3
Test Date	Aug. 02, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10600.50	41.76	54.00	-12.24	28.36	8.64	39.90	35.14	Average	119	164	HORIZONTAL
2	10600.80	52.45	74.00	-21.55	39.05	8.64	39.90	35.14	Peak	119	164	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10600.70	55.13	74.00	-18.87	41.73	8.64	39.90	35.14	Peak	108	202	VERTICAL
2	10600.80	41.83	54.00	-12.17	28.43	8.64	39.90	35.14	Average	108	202	VERTICAL

Temperature	28°C	Humidity	62%
Test Engineer	YC Chen	Configurations	IEEE 802.11a CH 64 / Chain 1 + Chain 2 + Chain 3
Test Date	Aug. 02, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10639.54	41.66	54.00	-12.34	28.23	8.66	39.86	35.09	Average	115	256	HORIZONTAL
2	10640.33	53.99	74.00	-20.01	40.56	8.66	39.86	35.09	Peak	115	256	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10639.95	41.74	54.00	-12.26	28.31	8.66	39.86	35.09	Average	115	114	VERTICAL
2	10640.48	54.08	74.00	-19.92	40.65	8.66	39.86	35.09	Peak	115	114	VERTICAL

Temperature	28℃	Humidity	62%
Test Engineer	YC Chen	Configurations	IEEE 802.11a CH 100 / Chain 1 + Chain 2 + Chain 3
Test Date	Aug. 02, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11003.20	42.93	54.00	-11.07	29.30	8.93	39.50	34.80	Average	118	219	HORIZONTAL
2	11004.00	55.05	74.00	-18.95	41.42	8.93	39.50	34.80	Peak	118	219	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10993.60	54.76	74.00	-19.24	41.13	8.93	39.50	34.80	Peak	134	226	VERTICAL
2	11002.10	44.08	54.00	-9.92	30.45	8.93	39.50	34.80	Average	134	226	VERTICAL

Temperature	28°C	Humidity	62%
Test Engineer	YC Chen	Configurations	IEEE 802.11a CH 116 / Chain 1 + Chain 2 + Chain 3
Test Date	Aug. 02, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11160.60	45.96	54.00	-8.04	32.31	9.04	39.50	34.89	Average	164	215	HORIZONTAL
2	11161.20	57.81	74.00	-16.19	44.16	9.04	39.50	34.89	Peak	164	215	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11160.20	59.80	74.00	-14.20	46.15	9.04	39.50	34.89	Peak	130	231	VERTICAL
2	11160.50	47.10	54.00	-6.90	33.45	9.04	39.50	34.89	Average	130	231	VERTICAL

Temperature	28℃	Humidity	62%
Test Engineer	YC Chen	Configurations	IEEE 802.11a CH 140 / Chain 1 + Chain 2 + Chain 3
Test Date	Aug. 02, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11399.99	40.84	54.00	-13.16	27.19	9.19	39.50	35.04	Average	118	98	HORIZONTAL
2	11400.28	53.51	74.00	-20.49	39.86	9.19	39.50	35.04	Peak	118	98	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11399.74	54.55	74.00	-19.45	40.90	9.19	39.50	35.04	Peak	119	233	VERTICAL
2	11399.99	41.48	54.00	-12.52	27.83	9.19	39.50	35.04	Average	119	233	VERTICAL

Note:

The amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

4.6. Band Edge Emissions Measurement

4.6.1. Limit

For transmitters operating in the 5.15-5.35 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed a -27dBm peak limit or average 54dBuV/m and peak 74dBuV/m limits. For transmitters operating in the 5.470-5.725 GHz band: all emissions outside of the 5.470-5.725 GHz band shall not exceed a -27dBm peak limit or average 54dBuV/m and peak 74dBuV/m limits. In addition, In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

Frequencies (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(kHz)	300
0.490~1.705	24000/F(kHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

4.6.2. Measuring Instruments and Setting

Please refer to section 5 of equipments list in this report. The following table is the setting of the spectrum analyzer.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	100 MHz
RBW / VBW (Emission in restricted band)	1MHz / 3MHz for Peak, Please refer to section 3.12 for Average
RBW / VBW (Emission in non-restricted band)	1MHz / 3MHz for Peak

4.6.3. Test Procedures

1. The test procedure is the same as section 4.5.3, only the frequency range investigated is limited to 100MHz around bandedges.

4.6.4. Test Setup Layout

This test setup layout is the same as that shown in section 4.5.4.

4.6.5. Test Deviation

There is no deviation with the original standard.

4.6.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

4.6.7. Test Result of Band Edge and Fundamental Emissions

For EUT 1:

Temperature	23°C	Humidity	61%
Test Engineer	Magic Lai	Configurations	IEEE 802.11n MCS0 HT20 CH 52, 60, 64 / Chain 1 + Chain 2 + Chain 3
Test Date	Jun. 11, 2014		

Channel 52

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5150.00	47.85	54.00	-6.15	45.22	3.43	34.11	34.91	Average	160	76	HORIZONTAL
2	5150.00	61.65	74.00	-12.35	59.02	3.43	34.11	34.91	Peak	160	76	HORIZONTAL
3	5252.20	112.30			109.50	3.46	34.25	34.91	Average	160	76	HORIZONTAL
4	5255.80	124.60			121.80	3.46	34.25	34.91	Peak	160	76	HORIZONTAL
5	5350.00	50.87	54.00	-3.13	47.90	3.49	34.39	34.91	Average	160	76	HORIZONTAL
6	5350.00	65.68	74.00	-8.32	62.71	3.49	34.39	34.91	Peak	160	76	HORIZONTAL

Item 3, 4 are the fundamental frequency at 5260 MHz.

Channel 60

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5293.20	123.30			120.42	3.47	34.32	34.91	Peak	156	90	HORIZONTAL
2	5293.60	111.57			108.69	3.47	34.32	34.91	Average	156	90	HORIZONTAL
3	5351.20	53.44	54.00	-0.56	50.47	3.49	34.39	34.91	Average	156	90	HORIZONTAL
4	5352.40	73.23	74.00	-0.77	70.26	3.49	34.39	34.91	Peak	156	90	HORIZONTAL

Item 1, 2 are the fundamental frequency at 5300 MHz.

Channel 64

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5313.60	107.44			104.53	3.48	34.34	34.91	Average	154	257	HORIZONTAL
2	5315.20	118.59			115.68	3.48	34.34	34.91	Peak	154	257	HORIZONTAL
3	5352.80	53.03	54.00	-0.97	50.06	3.49	34.39	34.91	Average	154	257	HORIZONTAL
4	5353.20	73.92	74.00	-0.08	70.95	3.49	34.39	34.91	Peak	154	257	HORIZONTAL

Item 1, 2 are the fundamental frequency at 5320 MHz.

Temperature	23°C	Humidity	61%
Test Engineer	Magic Lai	Configurations	IEEE 802.11n MCS0 HT20 CH 100, 140 / Chain 1 + Chain 2 + Chain 3
Test Date	Jun. 11, 2014		

Channel 100

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5457.60	48.06	54.00	-5.94	44.93	3.52	34.53	34.92	Average	163	87	HORIZONTAL
2	5457.60	64.95	74.00	-9.05	61.82	3.52	34.53	34.92	Peak	163	87	HORIZONTAL
3	5469.20	73.56	74.00	-0.44	70.41	3.52	34.55	34.92	Peak	163	87	HORIZONTAL
4	5470.00	52.87	54.00	-1.13	49.72	3.52	34.55	34.92	Average	163	87	HORIZONTAL
5	5505.20	115.82			112.60	3.54	34.60	34.92	Peak	163	87	HORIZONTAL
6	5508.00	103.43			100.21	3.54	34.60	34.92	Average	163	87	HORIZONTAL

Item 5, 6 are the fundamental frequency at 5500 MHz.

Channel 140

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5698.40	115.12			111.79	3.59	34.68	34.94	Peak	143	93	HORIZONTAL
2	5699.00	103.59			100.26	3.59	34.68	34.94	Average	143	93	HORIZONTAL
3	5725.20	73.72	74.00	-0.28	70.37	3.60	34.69	34.94	Peak	143	93	HORIZONTAL
4	5727.60	49.30	54.00	-4.70	45.95	3.60	34.69	34.94	Average	143	93	HORIZONTAL

Item 1, 2 are the fundamental frequency at 5700 MHz.

Temperature	23℃	Humidity	61%
Test Engineer	Magic Lai	Configurations	IEEE 802.11n MCS0 HT40 CH 54, 62 / Chain 1 + Chain 2 + Chain 3
Test Date	Jun. 11, 2014		

Channel 54

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5272.00	104.44			101.61	3.47	34.27	34.91	Average	155	71	HORIZONTAL
2	5272.40	116.30			113.47	3.47	34.27	34.91	Peak	155	71	HORIZONTAL
3	5350.00	53.93	54.00	-0.07	50.96	3.49	34.39	34.91	Average	155	71	HORIZONTAL
4	5350.00	68.88	74.00	-5.12	65.91	3.49	34.39	34.91	Peak	155	71	HORIZONTAL

Item 1, 2 are the fundamental frequency at 5270 MHz.

Channel 62

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5318.80	97.84			94.93	3.48	34.34	34.91	Average	154	95	HORIZONTAL
2	5320.80	109.85			106.94	3.48	34.34	34.91	Peak	154	95	HORIZONTAL
3	5350.00	53.43	54.00	-0.57	50.46	3.49	34.39	34.91	Average	154	95	HORIZONTAL
4	5350.40	70.67	74.00	-3.33	67.70	3.49	34.39	34.91	Peak	154	95	HORIZONTAL

Item 1, 2 are the fundamental frequency at 5310 MHz.

Temperature	23°C	Humidity	61%
Test Engineer	Magic Lai	Configurations	IEEE 802.11n MCS0 HT40 CH 102, 110, 134 / Chain 1 + Chain 2 + Chain 3
Test Date	Jun. 11, 2014		

Channel 102

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5459.60	61.47	74.00	-12.53	58.34	3.52	34.53	34.92	Peak	166	96	HORIZONTAL
2	5460.00	48.48	54.00	-5.52	45.35	3.52	34.53	34.92	Average	166	96	HORIZONTAL
3	5469.20	71.22	74.00	-2.78	68.07	3.52	34.55	34.92	Peak	166	96	HORIZONTAL
4	5470.00	53.99	54.00	-0.01	50.84	3.52	34.55	34.92	Average	166	96	HORIZONTAL
5	5508.40	95.87			92.65	3.54	34.60	34.92	Average	166	96	HORIZONTAL
6	5508.80	106.93			103.71	3.54	34.60	34.92	Peak	166	96	HORIZONTAL

Item 5, 6 are the fundamental frequency at 5510 MHz.

Channel 110

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5460.00	49.30	54.00	-4.70	46.17	3.52	34.53	34.92	Average	140	106	HORIZONTAL
2	5460.00	65.08	74.00	-8.92	61.95	3.52	34.53	34.92	Peak	140	106	HORIZONTAL
3	5466.80	73.79	74.00	-0.21	70.64	3.52	34.55	34.92	Peak	140	106	HORIZONTAL
4	5467.60	53.46	54.00	-0.54	50.31	3.52	34.55	34.92	Average	140	106	HORIZONTAL
5	5546.40	105.73			102.49	3.55	34.61	34.92	Average	140	106	HORIZONTAL
6	5546.80	118.25			115.01	3.55	34.61	34.92	Peak	140	106	HORIZONTAL

Item 5, 6 are the fundamental frequency at 5550 MHz.

Channel 134

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5657.20	103.55			100.23	3.59	34.66	34.93	Average	165	108	HORIZONTAL
2	5657.20	115.41			112.09	3.59	34.66	34.93	Peak	165	108	HORIZONTAL
3	5725.80	53.88	54.00	-0.12	50.53	3.60	34.69	34.94	Average	165	108	HORIZONTAL
4	5725.80	72.90	74.00	-1.10	69.55	3.60	34.69	34.94	Peak	165	108	HORIZONTAL

Item 1, 2 are the fundamental frequency at 5670 MHz.

Temperature	23℃	Humidity	61%
Test Engineer	Magic Lai	Configurations	IEEE 802.11a CH 52, 60, 64 / Chain 1 + Chain 2 + Chain 3
Test Date	Jun. 10, 2014		

Channel 52

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5144.00	59.58	74.00	-14.42	56.95	3.43	34.11	34.91	Peak	150	270	HORIZONTAL
2	5146.40	46.88	54.00	-7.12	44.25	3.43	34.11	34.91	Average	150	270	HORIZONTAL
3	5261.20	110.75			107.93	3.46	34.27	34.91	Average	150	270	HORIZONTAL
4	5261.20	122.41			119.59	3.46	34.27	34.91	Peak	150	270	HORIZONTAL
5	5351.20	63.65	74.00	-10.35	60.68	3.49	34.39	34.91	Peak	150	270	HORIZONTAL
6	5400.40	50.96	54.00	-3.04	47.91	3.51	34.46	34.92	Average	150	270	HORIZONTAL

Item 3, 4 are the fundamental frequency at 5260 MHz.

Channel 60

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5298.80	122.77			119.88	3.48	34.32	34.91	Peak	152	255	HORIZONTAL
2	5299.20	111.54			108.65	3.48	34.32	34.91	Average	152	255	HORIZONTAL
3	5350.00	53.77	54.00	-0.23	50.80	3.49	34.39	34.91	Average	152	255	HORIZONTAL
4	5350.00	68.52	74.00	-5.48	65.55	3.49	34.39	34.91	Peak	152	255	HORIZONTAL

Item 1, 2 are the fundamental frequency at 5300 MHz.

Channel 64

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5315.20	120.06			117.15	3.48	34.34	34.91	Peak	150	260	HORIZONTAL
2	5324.80	108.81			105.89	3.49	34.34	34.91	Average	150	260	HORIZONTAL
3	5354.40	53.54	54.00	-0.46	50.57	3.49	34.39	34.91	Average	150	260	HORIZONTAL
4	5354.80	72.88	74.00	-1.12	69.91	3.49	34.39	34.91	Peak	150	260	HORIZONTAL

Item 1, 2 are the fundamental frequency at 5320 MHz.

Temperature	23℃	Humidity	61%
Test Engineer	Magic Lai	Configurations	IEEE 802.11a CH 100, 140 / Chain 1 + Chain 2 + Chain 3
Test Date	Jun. 10, 2014		

Channel 100

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5454.40	66.21	74.00	-7.79	63.08	3.52	34.53	34.92	Peak	146	88	HORIZONTAL
2	5460.00	49.30	54.00	-4.70	46.17	3.52	34.53	34.92	Average	146	88	HORIZONTAL
3	5468.80	72.99	74.00	-1.01	69.84	3.52	34.55	34.92	Peak	146	88	HORIZONTAL
4	5470.00	52.97	54.00	-1.03	49.82	3.52	34.55	34.92	Average	146	88	HORIZONTAL
5	5504.00	119.79			116.57	3.54	34.60	34.92	Peak	146	88	HORIZONTAL
6	5504.40	108.44			105.22	3.54	34.60	34.92	Average	146	88	HORIZONTAL

Item 5, 6 are the fundamental frequency at 5500 MHz.

Channel 140

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5696.00	104.69			101.36	3.59	34.68	34.94	Average	164	92	HORIZONTAL
2	5705.60	116.38			113.04	3.60	34.68	34.94	Peak	164	92	HORIZONTAL
3	5725.80	51.29	54.00	-2.71	47.94	3.60	34.69	34.94	Average	164	92	HORIZONTAL
4	5726.80	73.27	74.00	-0.73	69.92	3.60	34.69	34.94	Peak	164	92	HORIZONTAL

Item 1, 2 are the fundamental frequency at 5700 MHz.

Note:

Emission level (dBuV/m) = 20 log Emission level (uV/m)

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level

For EUT 2:

Temperature	28°C	Humidity	62%
Test Engineer	YC Chen	Configurations	IEEE 802.11n MCS0 HT20 CH 52, 60, 64 / Chain 1 + Chain 2 + Chain 3
Test Date	Aug. 02, 2014		

Channel 52

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5145.80	55.60	74.00	-18.40	50.66	6.13	34.01	35.20	Peak	151	278	HORIZONTAL
2	5150.00	43.55	54.00	-10.45	38.61	6.13	34.01	35.20	Average	151	278	HORIZONTAL
3	5265.40	101.00			95.74	6.21	34.25	35.20	Average	151	278	HORIZONTAL
4	5267.80	112.76			107.50	6.21	34.25	35.20	Peak	151	278	HORIZONTAL
5	5350.00	45.69	54.00	-8.31	40.21	6.26	34.42	35.20	Average	151	278	HORIZONTAL
6	5354.20	58.43	74.00	-15.57	52.95	6.26	34.42	35.20	Peak	151	278	HORIZONTAL

Item 3, 4 are the fundamental frequency at 5260 MHz.

Channel 60

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5294.80	101.81			96.49	6.23	34.29	35.20	Average	149	272	HORIZONTAL
2	5295.60	112.99			107.67	6.23	34.29	35.20	Peak	149	272	HORIZONTAL
3	5350.00	45.87	54.00	-8.13	40.39	6.26	34.42	35.20	Average	149	272	HORIZONTAL
4	5353.20	58.26	74.00	-15.74	52.78	6.26	34.42	35.20	Peak	149	272	HORIZONTAL

Item 1, 2 are the fundamental frequency at 5300 MHz.

Channel 64

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5326.40	102.31			96.91	6.24	34.36	35.20	Average	151	260	HORIZONTAL
2	5326.40	113.90			108.50	6.24	34.36	35.20	Peak	151	260	HORIZONTAL
3	5350.00	47.40	54.00	-6.60	41.92	6.26	34.42	35.20	Average	151	260	HORIZONTAL
4	5351.00	63.03	74.00	-10.97	57.55	6.26	34.42	35.20	Peak	151	260	HORIZONTAL

Item 1, 2 are the fundamental frequency at 5320 MHz.

Temperature	28°C	Humidity	62%
Test Engineer	YC Chen	Configurations	IEEE 802.11n MCS0 HT20 CH 100, 116, 140 / Chain 1 + Chain 2 + Chain 3
Test Date	Aug. 02, 2014		

Channel 100

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5459.60	59.55	74.00	-14.45	53.79	6.33	34.63	35.20	Peak	149	264	HORIZONTAL
2	5460.00	45.51	54.00	-8.49	39.75	6.33	34.63	35.20	Average	149	264	HORIZONTAL
3	5467.80	47.49	54.00	-6.51	41.68	6.34	34.67	35.20	Average	149	264	HORIZONTAL
4	5469.60	63.61	74.00	-10.39	57.80	6.34	34.67	35.20	Peak	149	264	HORIZONTAL
5	5506.00	113.55			107.68	6.36	34.71	35.20	Peak	149	264	HORIZONTAL
6	5507.80	101.90			96.03	6.36	34.71	35.20	Average	149	264	HORIZONTAL

Item 5, 6 are the fundamental frequency at 5500 MHz.

Channel 116

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5449.80	59.03	74.00	-14.97	53.30	6.33	34.60	35.20	Peak	146	276	HORIZONTAL
2	5460.00	45.51	54.00	-8.49	39.75	6.33	34.63	35.20	Average	146	276	HORIZONTAL
3	5469.40	57.27	74.00	-16.73	51.46	6.34	34.67	35.20	Peak	146	276	HORIZONTAL
4	5470.00	45.59	54.00	-8.41	39.78	6.34	34.67	35.20	Average	146	276	HORIZONTAL
5	5575.20	102.15			96.19	6.39	34.77	35.20	Average	146	276	HORIZONTAL
6	5575.80	113.31			107.35	6.39	34.77	35.20	Peak	146	276	HORIZONTAL

Item 5, 6 are the fundamental frequency at 5580 MHz.

Channel 140

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5696.40	99.46			93.37	6.43	34.86	35.20	Average	182	256	HORIZONTAL
2	5696.60	111.29			105.20	6.43	34.86	35.20	Peak	182	256	HORIZONTAL
3	5733.60	45.66	54.00	-8.34	39.52	6.45	34.89	35.20	Average	182	256	HORIZONTAL
4	5734.40	64.27	74.00	-9.73	58.13	6.45	34.89	35.20	Peak	182	256	HORIZONTAL

Item 1, 2 are the fundamental frequency at 5700 MHz.

Temperature	28°C	Humidity	62%
Test Engineer	YC Chen	Configurations	IEEE 802.11n MCS0 HT40 CH 54, 62 / Chain 1 + Chain 2 + Chain 3
Test Date	Aug. 02, 2014		

Channel 54

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5284.40	110.36			105.05	6.22	34.29	35.20	Peak	100	277	HORIZONTAL
2	5285.20	100.39			95.08	6.22	34.29	35.20	Average	100	277	HORIZONTAL
3	5351.60	46.99	54.00	-7.01	41.51	6.26	34.42	35.20	Average	100	277	HORIZONTAL
4	5365.60	62.75	74.00	-11.25	57.22	6.27	34.46	35.20	Peak	100	277	HORIZONTAL

Item 1, 2 are the fundamental frequency at 5270 MHz.

Channel 62

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5296.40	95.52			90.20	6.23	34.29	35.20	Average	152	259	HORIZONTAL
2	5297.20	107.44			102.09	6.23	34.32	35.20	Peak	152	259	HORIZONTAL
3	5352.00	67.05	74.00	-6.95	61.57	6.26	34.42	35.20	Peak	152	259	HORIZONTAL
4	5354.00	49.15	54.00	-4.85	43.67	6.26	34.42	35.20	Average	152	259	HORIZONTAL

Item 1, 2 are the fundamental frequency at 5310 MHz.

Temperature	28°C	Humidity	62%
Test Engineer	YC Chen	Configurations	IEEE 802.11n MCS0 HT40 CH 102, 110, 134 / Chain 1 + Chain 2 + Chain 3
Test Date	Aug. 02, 2014		

Channel 102

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5460.00	45.62	54.00	-8.38	39.86	6.33	34.63	35.20	Average	147	252	HORIZONTAL
2	5460.00	59.21	74.00	-14.79	53.45	6.33	34.63	35.20	Peak	147	252	HORIZONTAL
3	5469.60	66.45	74.00	-7.55	60.64	6.34	34.67	35.20	Peak	147	252	HORIZONTAL
4	5470.00	52.30	54.00	-1.70	46.49	6.34	34.67	35.20	Average	147	252	HORIZONTAL
5	5507.20	106.88			101.01	6.36	34.71	35.20	Peak	147	252	HORIZONTAL
6	5508.00	94.85			88.98	6.36	34.71	35.20	Average	147	252	HORIZONTAL

Item 5, 6 are the fundamental frequency at 5510 MHz.

Channel 110

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5452.20	47.44	54.00	-6.56	41.68	6.33	34.63	35.20	Average	147	252	HORIZONTAL
2	5459.40	64.63	74.00	-9.37	58.87	6.33	34.63	35.20	Peak	147	252	HORIZONTAL
3	5465.80	65.73	74.00	-8.27	59.96	6.34	34.63	35.20	Peak	147	252	HORIZONTAL
4	5470.00	48.95	54.00	-5.05	43.14	6.34	34.67	35.20	Average	147	252	HORIZONTAL
5	5547.60	113.54			107.62	6.38	34.74	35.20	Peak	147	252	HORIZONTAL
6	5548.80	104.11			98.19	6.38	34.74	35.20	Average	147	252	HORIZONTAL

Item 5, 6 are the fundamental frequency at 5550 MHz.

Channel 134

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5660.80	115.49			109.44	6.42	34.83	35.20	Peak	141	259	HORIZONTAL
2	5662.00	102.81			96.76	6.42	34.83	35.20	Average	141	259	HORIZONTAL
3	5725.00	53.49	54.00	-0.51	47.35	6.45	34.89	35.20	Average	141	259	HORIZONTAL
4	5727.00	73.04	74.00	-0.96	66.90	6.45	34.89	35.20	Peak	141	259	HORIZONTAL

Item 1, 2 are the fundamental frequency at 5670 MHz.

Temperature	28℃	Humidity	62%
Test Engineer	YC Chen	Configurations	IEEE 802.11a CH 52, 60, 64 / Chain 1 + Chain 2 + Chain 3
Test Date	Aug. 02, 2014		

Channel 52

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5150.00	43.71	54.00	-10.29	38.77	6.13	34.01	35.20	Average	104	330	VERTICAL
2	5150.00	54.13	74.00	-19.87	49.19	6.13	34.01	35.20	Peak	104	330	VERTICAL
3	5255.20	93.84			88.62	6.20	34.22	35.20	Average	104	330	VERTICAL
4	5255.20	103.61			98.39	6.20	34.22	35.20	Peak	104	330	VERTICAL
5	5350.00	45.64	54.00	-8.36	40.16	6.26	34.42	35.20	Average	104	330	VERTICAL
6	5350.00	57.09	74.00	-16.91	51.61	6.26	34.42	35.20	Peak	104	330	VERTICAL

Item 3, 4 are the fundamental frequency at 5260 MHz.

Channel 60

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5303.60	102.60			97.25	6.23	34.32	35.20	Average	152	261	HORIZONTAL
2	5304.40	113.64			108.29	6.23	34.32	35.20	Peak	152	261	HORIZONTAL
3	5356.00	58.38	74.00	-15.62	52.90	6.26	34.42	35.20	Peak	152	261	HORIZONTAL
4	5372.80	46.19	54.00	-7.81	40.66	6.27	34.46	35.20	Average	152	261	HORIZONTAL

Item 1, 2 are the fundamental frequency at 5300 MHz.

Channel 64

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5312.80	101.90			96.54	6.24	34.32	35.20	Average	150	276	HORIZONTAL
2	5313.60	113.42			108.06	6.24	34.32	35.20	Peak	150	276	HORIZONTAL
3	5352.00	46.63	54.00	-7.37	41.15	6.26	34.42	35.20	Average	150	276	HORIZONTAL
4	5353.40	63.24	74.00	-10.76	57.76	6.26	34.42	35.20	Peak	150	276	HORIZONTAL

Item 1, 2 are the fundamental frequency at 5320 MHz.

Temperature	28℃	Humidity	62%
Test Engineer	YC Chen	Configurations	IEEE 802.11a CH 100, 140 / Chain 1 + Chain 2 + Chain 3
Test Date	Aug. 02, 2014		

Channel 100

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5455.40	59.30	74.00	-14.70	53.54	6.33	34.63	35.20	Peak	187	261	HORIZONTAL
2	5456.20	45.89	54.00	-8.11	40.13	6.33	34.63	35.20	Average	187	261	HORIZONTAL
3	5466.40	46.77	54.00	-7.23	41.00	6.34	34.63	35.20	Average	187	261	HORIZONTAL
4	5468.40	60.69	74.00	-13.31	54.88	6.34	34.67	35.20	Peak	187	261	HORIZONTAL
5	5505.80	101.40			95.53	6.36	34.71	35.20	Average	187	261	HORIZONTAL
6	5506.00	113.46			107.59	6.36	34.71	35.20	Peak	187	261	HORIZONTAL

Item 5, 6 are the fundamental frequency at 5500 MHz.

Channel 116

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5439.60	46.07	54.00	-7.93	40.35	6.32	34.60	35.20	Average	187	272	HORIZONTAL
2	5451.60	58.45	74.00	-15.55	52.69	6.33	34.63	35.20	Peak	187	272	HORIZONTAL
3	5468.20	59.62	74.00	-14.38	53.81	6.34	34.67	35.20	Peak	187	272	HORIZONTAL
4	5470.00	45.53	54.00	-8.47	39.72	6.34	34.67	35.20	Average	187	272	HORIZONTAL
5	5578.80	101.83			95.87	6.39	34.77	35.20	Average	187	272	HORIZONTAL
6	5578.80	112.70			106.74	6.39	34.77	35.20	Peak	187	272	HORIZONTAL

Item 5, 6 are the fundamental frequency at 5580 MHz.

Channel 140

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5702.20	99.65			93.55	6.44	34.86	35.20	Average	135	288	HORIZONTAL
2	5702.60	111.58			105.48	6.44	34.86	35.20	Peak	135	288	HORIZONTAL
3	5725.00	46.60	54.00	-7.40	40.46	6.45	34.89	35.20	Average	135	288	HORIZONTAL
4	5732.00	65.21	74.00	-8.79	59.07	6.45	34.89	35.20	Peak	135	288	HORIZONTAL

Item 1, 2 are the fundamental frequency at 5700 MHz.

Note:

Emission level (dBuV/m) = 20 log Emission level (uV/m)

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level

4.7. Frequency Stability Measurement

4.7.1. Limit

In-band emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

The transmitter center frequency tolerance shall be ± 20 ppm maximum for the 5 GHz band (IEEE 802.11n specification).

4.7.2. Measuring Instruments and Setting

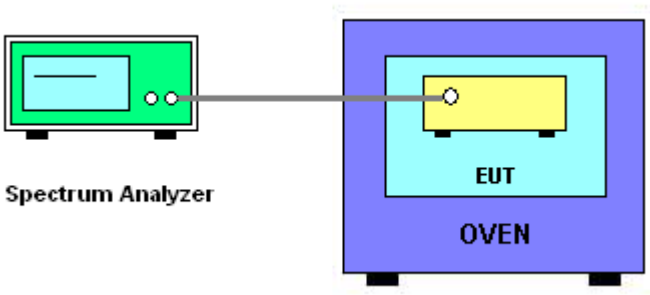
Please refer to section 5 of equipments list in this report. The following table is the setting of the spectrum analyzer.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	Entire absence of modulation emissions bandwidth
RBW	10 kHz
VBW	10 kHz
Sweep Time	Auto

4.7.3. Test Procedures

1. The transmitter output (antenna port) was connected to the spectrum analyzer.
2. EUT have transmitted absence of modulation signal and fixed channelize.
3. Set the spectrum analyzer span to view the entire absence of modulation emissions bandwidth.
4. Set RBW = 10 kHz, VBW = 10 kHz with peak detector and maxhold settings.
5. fc is declaring of channel frequency. Then the frequency error formula is (fc-f)/fc × 10^6 ppm and the limit is less than ±20ppm (IEEE 802.11nspecification).
6. The test extreme voltage is to change the primary supply voltage from 85 to 115 percent of the nominal value
7. Extreme temperature is 0°C~40°C.

4.7.4. Test Setup Layout



4.7.5. Test Deviation

There is no deviation with the original standard.

4.7.6. EUT Operation during Test

The EUT was programmed to be in continuously un-modulation transmitting mode.

4.7.7. Test Result of Frequency Stability

Temperature	20°C	Humidity	60%
Test Engineer	Benson Peng	Test Date	Jul. 10, 2014

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)	
(V)	5300 MHz	5500 MHz
126.50	5299.9946	5499.9930
110.00	5299.9952	5499.9932
93.50	5299.9954	5499.9938
Max. Deviation (MHz)	0.005400	0.007000
Max. Deviation (ppm)	1.02	1.27

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)	
(°C)	5300 MHz	5500 MHz
0	5299.9940	5499.9922
10	5299.9948	5499.9930
20	5299.9952	5499.9932
30	5299.9960	5499.9938
40	5299.9962	5499.9936
Max. Deviation (MHz)	0.006000	0.007800
Max. Deviation (ppm)	1.13	1.42

4.8. Antenna Requirements

4.8.1. Limit

Except for special regulations, the Low-power Radio-frequency Devices must not be equipped with any jacket for installing an antenna with extension cable. 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 shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that the user can replace a broken antenna, but the use of a standard antenna jack or electrical connector is prohibited. Further, this requirement does not apply to intentional radiators that must be professionally installed.

4.8.2. Antenna Connector Construction

Please refer to section 3.3 in this test report; antenna connector complied with the requirements.

5. LIST OF MEASURING EQUIPMENTS

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
EMI Test Receiver	R&S	ESCS 30	100355	9 kHz ~ 2.75 GHz	Apr. 23, 2014	Conduction (CO01-CB)
LISN	F.C.C.	FCC-LISN-50-16-2	04083	150 kHz ~ 100 MHz	Nov. 23, 2013	Conduction (CO01-CB)
LISN	Schwarzbeck	NSLK 8127	8127478	9kHz ~ 30MHz	Nov. 11, 2013	Conduction (CO01-CB)
COND Cable	Woken	Cable	01	150 kHz ~ 30 MHz	Dec. 04, 2013	Conduction (CO01-CB)
Software	Audix	E3	5.410e	-	N.C.R.	Conduction (CO01-CB)
BILOG ANTENNA	Schaffner	CBL6112B	2928	30MHz ~ 2GHz	Dec. 27, 2013	Radiation (03CH01-CB)
Loop Antenna	Teseq	HLA 6120	24155	9 kHz - 30 MHz	Nov. 05, 2012*	Radiation (03CH01-CB)
Horn Antenna	EMCO	3115	00075790	750MHz~18GHz	Nov. 01, 2013	Radiation (03CH01-CB)
Horn Antenna	SCHWARZBEAK	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Dec. 17, 2013	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8447D	2944A10991	0.1MHz ~ 1.3GHz	Nov. 12, 2013	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8449B	3008A02310	1GHz ~ 26.5GHz	Dec. 16, 2013	Radiation (03CH01-CB)
Pre-Amplifier	WM	TF-130N-R1	923365	26GHz ~ 40GHz	Oct. 23, 2013	Radiation (03CH01-CB)
Spectrum analyzer	R&S	FSP40	100019	9kHz~40GHz	Dec. 02, 2013	Radiation (03CH01-CB)
EMI Test Receiver	Agilent	N9038A	MY52260123	9kHz ~ 8GHz	Dec. 12, 2013	Radiation (03CH01-CB)
Turn Table	INN CO	CO 2000	N/A	0 ~ 360 degree	N.C.R.	Radiation (03CH01-CB)
Antenna Mast	INN CO	CO2000	N/A	1 m - 4 m	N.C.R.	Radiation (03CH01-CB)
RF Cable-low	Woken	Low Cable-1	N/A	30 MHz - 1 GHz	Nov. 17, 2013	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-3	N/A	1 GHz - 40 GHz	Nov. 17, 2013	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-4	N/A	1 GHz - 40 GHz	Nov. 17, 2013	Radiation (03CH01-CB)
Signal analyzer	R&S	FSV40	100979	9kHz~40GHz	Nov. 29, 2013	Conducted (TH01-CB)
Temp. and Humidity Chamber	Ten Billion	TTH-D3SP	TBN-931011	-30~100 degree	Jun. 03, 2014	Conducted (TH01-CB)
RF Cable-high	Woken	High Cable-7	-	1 GHz – 26.5 GHz	Nov. 17, 2013	Conducted (TH01-CB)
RF Cable-high	Woken	High Cable-8	-	1 GHz – 26.5 GHz	Nov. 17, 2013	Conducted (TH01-CB)
RF Cable-high	Woken	High Cable-9	-	1 GHz – 26.5 GHz	Nov. 17, 2013	Conducted (TH01-CB)
RF Cable-high	Woken	High Cable-10	-	1 GHz – 26.5 GHz	Nov. 17, 2013	Conducted (TH01-CB)
RF Cable-high	Woken	High Cable-11	-	1 GHz – 26.5 GHz	Nov. 17, 2013	Conducted (TH01-CB)

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
Power Sensor	Anritsu	MA2411B	0917223	300MHz~40GHz	Sep. 18, 2013	Conducted (TH01-CB)
Power Meter	Anritsu	ML2495A	1035008	300MHz~40GHz	Sep. 18, 2013	Conducted (TH01-CB)

Note: Calibration Interval of instruments listed above is one year.

"*" Calibration Interval of instruments listed above is two years.

N.C.R. means Non-Calibration required.

6. MEASUREMENT UNCERTAINTY

Test Items	Uncertainty	Remark
Conducted Emission (150kHz ~ 30MHz)	2.4 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	3.6 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 18GHz)	3.7 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	3.5 dB	Confidence levels of 95%
Conducted Emission	1.7 dB	Confidence levels of 95%