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FCC RADIO TEST REPORT

Applicant's company	Realtek Semiconductor Corp.
Applicant Address	No. 2, Innovation Road II, Hsinchu Science Park, Hsinchu 300, Taiwan
FCC ID	TX2-RTL8822BE
Manufacturer's company	Realtek Semiconductor Corp.
Manufacturer Address	No. 2, Innovation Road II, Hsinchu Science Park, Hsinchu 300, Taiwan

Product Name	802.11a/b/g/n/ac RTL8822BE Combo module
Brand Name	REALTEK
Model No.	RTL8822BE
Test Rule Part(s)	47 CFR FCC Part 15 Subpart C § 15.247
Test Freq. Range	2400 ~ 2483.5MHz
Received Date	May 20, 2016
Final Test Date	Aug. 12, 2016
Submission Type	Original Equipment

Statement

Test result included is only for the IEEE 802.11b/g, IEEE 802.11n and IEEE 802.11ac 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 C63.10-2013, 47 CFR FCC Part 15 Subpart C,**

KDB558074 D01 v03r05, KDB 662911 D01 v02r01, KDB644545 D01 v01r02.

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



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History of This Test Report



1. VERIFICATION OF COMPLIANCE

Product Name : 802.11a/b/g/n/ac RTL8822BE Combo module
Brand Name : REALTEK
Model No. : RTL8822BE
Applicant : Realtek Semiconductor Corp.
Test Rule Part(s) : 47 CFR FCC Part 15 Subpart C § 15.247

Sportun International as requested by the applicant to evaluate the EMC performance of the product sample received on May 20, 2016 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.

A handwritten signature in blue ink that appears to read "Sam Chen".

Sam Chen

SPORTON INTERNATIONAL INC.

2. SUMMARY OF THE TEST RESULT

Applied Standard: 47 CFR FCC Part 15 Subpart C			
Part	Rule Section	Description of Test	Result
4.1	2.3	AC Power Line Conducted Emissions	Complies
4.2	3.10.1(2.3)	Maximum Conducted Output Power	Complies
4.3	3.10.1(6.2.2)	Power Spectral Density	Complies
4.4	3.10.1(6.2.1)	6dB Spectrum Bandwidth	Complies
4.5	3.10.1(5)	Radiated Emissions	Complies
4.6	3.10.1(5)	Band Edge Emissions	Complies
4.7	3.10.1(4)	Antenna Requirements	Complies

3. GENERAL INFORMATION

3.1. Product Details

Frequency Range (MHz)	IEEE Std. 802.11	Ch. Frequency (MHz)	Channel Number
2400-2483.5	b, g, n (HT20), ac (VHT20)	2412-2472	1-13 [13]
2400-2483.5	n (HT40), ac (VHT40)	2422-2462	3-11 [9]

Band	Mode	BWch (MHz)	Nant
2.4G	11b	20	1
2.4G	11g	20	1
2.4G	HT20	20	1
2.4G	VHT20	20	1
2.4G	HT40	40	1
2.4G	VHT40	40	1
2.4G	11g	20	2
2.4G	HT20	20	2
2.4G	VHT20	20	2
2.4G	HT40	40	2
2.4G	VHT40	40	2

Note:

- 2.4G is the 2.4GHz Band (2.4-2.4835GHz).
- 11b mode uses a combination of DSSS-DBPSK, DQPSK, CCK modulation.
- 11g, HT20 and HT40 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM modulation.
- VHT20, VHT40 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM, 256QAM modulation.
- BWch is the nominal channel bandwidth.
- Nss-Min is the minimum number of spatial streams.
- Nant is the number of outputs. e.g., 2(2,3) means have 2 outputs for port 2 and port 3. 2 means have 2 outputs for port 1 and port 2.

3.2. EUT Operational Condition

EUT Power Type	From host system		
Beamforming Function	<input checked="" type="checkbox"/> With beamforming	<input type="checkbox"/> Without beamforming	
Note: The product has beamforming function for 802.11n/ac in 2TX mode.			

3.3. Accessories

N/A

3.4. Table for Filed Antenna

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	
					2.4GHz	5GHz
1	PSA	RFDPA171320EMLB301	Dipole Antenna	I-PEX	3.14	5
2	LYNwave	ALA110-222050-300011	PIFA Antenna	I-PEX	3.5	5

Note: The EUT has two types of antenna and there are two antennas for each set.

For 2.4GHz function:

For IEEE 802.11b/g/n/ac mode (1TX/1RX):

The EUT supports the antenna with TX and RX diversity functions.

Both Chain 1 and Chain 2 support transmit and receive functions, but only one of them will be used at one time.

The Chain 1 generated the worst case, so it was selected to test and record in the report.

For IEEE 802.11g/n/ac mode (2TX/2RX):

Chain 1 and Chain 2 can be used as transmitting/receiving antenna.

Chain 1 and Chain 2 could transmit/receive simultaneously.

For 5GHz function:

For IEEE 802.11a/n/ac mode (1TX/1RX):

The EUT supports the antenna with TX and RX diversity functions.

Both Chain 1 and Chain 2 support transmit and receive functions, but only one of them will be used at one time.

The Chain 2 generated the worst case, so it was selected to test and record in the report.

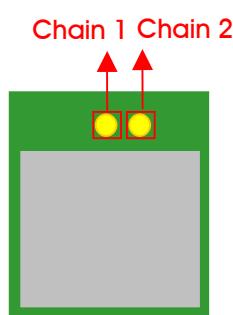
For IEEE 802.11a/n/ac mode (2TX/2RX):

Chain 1 and Chain 2 can be used as transmitting/receiving antenna.

Chain 1 and Chain 2 could transmit/receive simultaneously.

For Bluetooth function:

Only Chain 2 can be used as transmitting/receiving functions.



3.5. The Worst Case Measurement Configuration

The Worst Case Mode for Following Conformance Tests	
Tests Item	AC power-line conducted emissions
Condition	AC power-line conducted measurement for line and neutral
Operating Mode	Normal Link
1	EUT 1 with Ant.2 (wireless 2.4GHz + Bluetooth4.0)
2	EUT 1 with Ant.2 (wireless 5GHz + Bluetooth4.0)
Mode 1 has been evaluated to be the worst case between Mode 1~2, thus measurement for Mode 3 will follow this same test mode.	
3	EUT 2 with Ant.2 (wireless 2.4GHz + Bluetooth4.0)
Mode 1 has been evaluated to be the worst case among Mode 1~3, thus measurement for Mode 4 will follow this same test mode.	
4	EUT 1 with Ant.1 (wireless 2.4GHz + Bluetooth4.0)
Mode 1 generated the worst test result, so it was recorded in this report.	

The Worst Case Mode for Following Conformance Tests	
Tests Item	Fundamental Emission Output Power Power Spectral Density DTS Bandwidth
Test Condition	Conducted measurement at transmit chains

The Worst Case Mode for Following Conformance Tests	
Tests Item	Emissions in Non-restricted Frequency Bands Emissions in Restricted Frequency Bands
Test Condition	Radiated measurement If EUT consist of multiple antenna assembly (multiple antenna are used in EUT regardless of spatial multiplexing MIMO configuration), the radiated test should be performed with highest antenna gain of each antenna type.
Operating Mode < 1GHz	Normal Link
1	EUT 1 Y axis with Ant.2 (wireless 2.4GHz + Bluetooth4.0)
2	EUT 1 Y axis with Ant.2 (wireless 5GHz + Bluetooth4.0)
Mode 2 has been evaluated to be the worst case between Mode 1~2, thus measurement for Mode 3 will follow this same test mode.	
4	EUT 2 Z axis with Ant.2 (wireless 5GHz + Bluetooth4.0)
Mode 4 has been evaluated to be the worst case among Mode 1~4, thus measurement for Mode 5 will follow this same test mode.	
5	EUT 2 Z axis with Ant.1 (wireless 5GHz + Bluetooth4.0)
Mode 4 and Mode 5 generated the worst test result, so it was recorded in this report.	
Operating Mode > 1GHz	CTX
The EUT was performed at X axis, Y axis and Z axis position for Radiated emission above 1GHz test, and the worst case was found at Y axis for dipole antenna and X axis for PIFA antenna. So the measurement will follow this same test configuration.	
1	EUT 1 Y axis with Ant.1
2	EUT 1 X axis with Ant.2

The Worst Case Mode for Following Conformance Tests	
Tests Item	Simultaneous Transmission Analysis
Test Condition	Radiated measurement
Operating Mode	Normal Link
1	EUT 1 X axis with Ant.2 (wireless 2.4GHz + Bluetooth4.0)
2	EUT 1 Y axis with Ant.2 (wireless 2.4GHz + Bluetooth4.0)
3	EUT 1 Z axis with Ant.2 (wireless 2.4GHz + Bluetooth4.0)
Mode 2 has been evaluated to be the worst case among Mode 1~3, thus measurement for Mode 4~6 will follow this same test mode.	
4	EUT 1 Y axis with Ant.2 (wireless 5GHz + Bluetooth4.0)
5	EUT 1 Y axis with Ant.1 (wireless 2.4GHz + Bluetooth4.0)
6	EUT 1 Y axis with Ant.1 (wireless 5GHz + Bluetooth4.0)

Refer to Sporton Test Report No.: FA651715 for Co-location RF Exposure Evaluation and Appendix D for Radiated Emission Co-location. (Mode 2 and Mode 4 generated the worst test result, so it was recorded.)

Note: 1. VHT20/VHT40 covers HT20/HT40, due to same modulation. The power setting for 802.11n HT20 and HT40 are the same or lower than 802.11ac VHT20 and VHT40.

2. There are two modes of EUT, one is beamforming mode, and the other is non-beamforming mode for 802.11n/ac.
3. The non-beamforming mode can be covered by beamforming mode for 2TX of 802.11ac test mode.
4. For Conducted measurement Test: only the higher gain antenna "Ant. 2" was selected to perform the test and recorded in this report.

3.6. Testing Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- ◆ 47 CFR FCC Part 15
- ◆ ANSI C63.10-2013
- ◆ FCC KDB 558074 D01 v03r05
- ◆ FCC KDB 662911 D01 v02r01
- ◆ FCC KDB 644545 D01 v01r02

3.7. 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 Designation No.	IC File No.	Test Engineer	Test Environment	Test Date
03CH01-CB	SAC	Hsin Chu	TW0006	IC 4086D	Stim song, Rom Huang	23.9°C/ 71%	May 19, 2016 Aug. 11, 2016
CO01-CB	Conduction	Hsin Chu	TW0006	IC 4086D	Deven Huang	23°C/ 60%	May 24, 2016
TH01-CB	OVEN Room	Hsin Chu	-	-	Akina Chiu	23.9 °C/ 71%	Aug. 11, 2016 Aug. 12, 2016

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

3.8. Table for Multiple List

The EUT has two types, which are identical to each other in all aspects except for the following table:

Brand Name	Model Name	EUT	Interface for platform
REALTEK	RTL8822BE	EUT 1	PCIE
		EUT 2	USB

3.9. Table for Supporting Units

For Test Site No: 03CH01-CB below 1GHz

Support Unit	Brand	Model	FCC ID
NB*2	DELL	E4300	DoC
Device	REALTEK	RTL8822BE	TX2-RTL8822BE
Test fixture*2	REALTEK	N/A	N/A
Mouse	Logitech	M-U0026	DoC
Earphone	SHYARO CHI	MIC-04	N/A
WLAN AP	D-LINK	DIR860L	KA2IR860LA1

For Test Site No: 03CH01-CB above 1GHz and TH01-CB / <For Non-Beamforming Mode>

Support Unit	Brand	Model	FCC ID
NB	DELL	E4300	DoC
Test fixture	REALTEK	N/A	N/A

For Test Site No: 03CH01-CB above 1GHz / <For Beamforming Mode>

Support Unit	Brand	Model	FCC ID
NB*2	DELL	E4300	DoC
Test fixture	REALTEK	N/A	N/A
RX Device	Netgear	R7500	PY314300288

For Test Site No: CO01-CB

Support Unit	Brand	Model	FCC ID
NB*2	DELL	E6430	DoC
Device	REALTEK	RTL8822BE	TX2-RTL8822BE
Test fixture*2	REALTEK	N/A	N/A
Earphone	e-Power	S90W	DoC
Mouse	HP	FM100	DoC
AP Router	Planex	GW-AP54SGX	KA220030603014-1

3.10. Table for Parameters of Test Software Setting

Band	Mode	BWch (MHz)	Nss-Min	Nant	Ch. (MHz)	Range	Power Setting
2.4G	11b	20	1	1	2412	L	45
2.4G	11b	20	1	1	2437	M	46
2.4G	11b	20	1	1	2462	H	46
2.4G	11b	20	1	1	2467	H	40
2.4G	11b	20	1	1	2472	H	34
2.4G	11g	20	1	1	2412	L	49
2.4G	11g	20	1	1	2437	M	63
2.4G	11g	20	1	1	2462	H	51
2.4G	11g	20	1	1	2467	H	43
2.4G	11g	20	1	1	2472	H	36
2.4G	VHT20	20	1,(M0)	1	2412	L	49
2.4G	VHT20	20	1,(M0)	1	2437	M	59
2.4G	VHT20	20	1,(M0)	1	2462	H	51
2.4G	VHT20	20	1,(M0)	1	2467	H	41
2.4G	VHT20	20	1,(M0)	1	2472	H	35
2.4G	VHT40	40	1,(M0)	1	2422	L	47
2.4G	VHT40	40	1,(M0)	1	2437	M	53
2.4G	VHT40	40	1,(M0)	1	2452	H	46
2.4G	VHT40	40	1,(M0)	1	2457	H	41
2.4G	VHT40	40	1,(M0)	1	2462	H	35
2.4G	11g	20	1	2	2412	L	43/42
2.4G	11g	20	1	2	2437	M	63/62
2.4G	11g	20	1	2	2462	H	46/45
2.4G	11g	20	1	2	2467	H	39/38
2.4G	11g	20	1	2	2472	H	35/34
2.4G	VHT20.BF	20	1,(M0)	2	2412	L	2C/2B
2.4G	VHT20.BF	20	1,(M0)	2	2437	M	3F/3E
2.4G	VHT20.BF	20	1,(M0)	2	2462	H	2F/2E
2.4G	VHT20.BF	20	1,(M0)	2	2467	H	28/27
2.4G	VHT20.BF	20	1,(M0)	2	2472	H	21/22
2.4G	VHT40.BF	40	1,(M0)	2	2422	L	29/29
2.4G	VHT40.BF	40	1,(M0)	2	2437	M	2F/2E
2.4G	VHT40.BF	40	1,(M0)	2	2452	H	2C/2B
2.4G	VHT40.BF	40	1,(M0)	2	2457	H	29/28
2.4G	VHT40.BF	40	1,(M0)	2	2462	H	25/23

3.11. EUT Operation during Test

For non-beamforming mode:

The EUT was programmed to be in continuously transmitting mode.

For beamforming mode:

For Conducted Mode:

The EUT was programmed to be in continuously transmitting mode.

For Radiated Mode:

During the test, the following programs under WIN XP were executed.

The program was executed as follows:

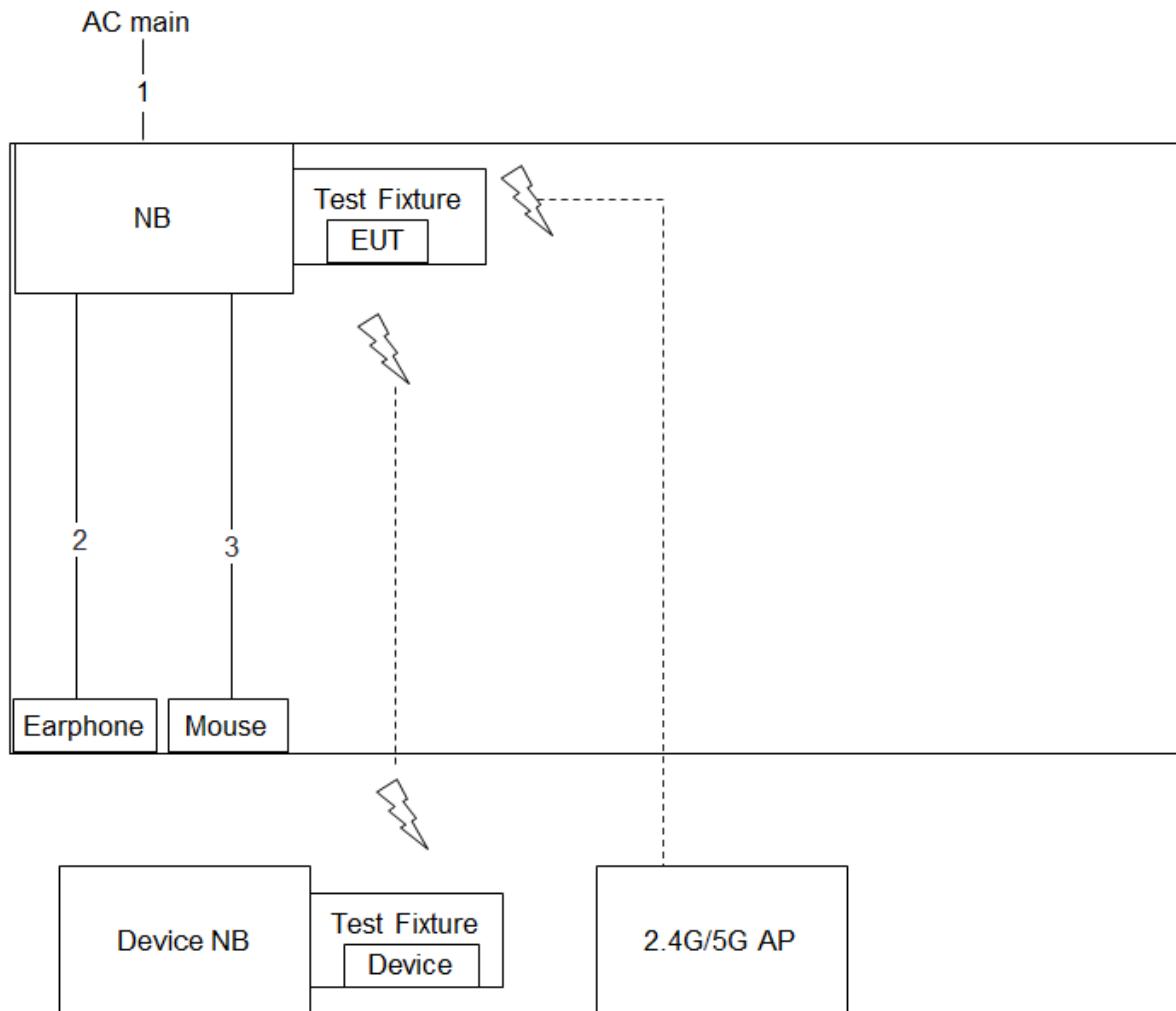
1. During the test, the EUT operation to normal function.
2. Executed command fixed test channel under WlanCLI.
3. Executed "Lantest.exe" to link with the remote workstation to receive and transmit packet by RX Device and transmit duty cycle no less 98%

3.12. Duty Cycle

Mode	DC	T(s)	VBW(Hz) $\geq 1/T$
11b	1	n/a (DC \geq 0.98)	n/a (DC \geq 0.98)
11g	0.998	n/a (DC \geq 0.98)	n/a (DC \geq 0.98)
VHT20	0.997	n/a (DC \geq 0.98)	n/a (DC \geq 0.98)
VHT20.BF	0.918	n/a (DC \geq 0.98)	n/a (DC \geq 0.98)
VHT40	0.994	n/a (DC \geq 0.98)	n/a (DC \geq 0.98)
VHT40.BF	0.901	n/a (DC \geq 0.98)	n/a (DC \geq 0.98)

3.13. Test Configurations

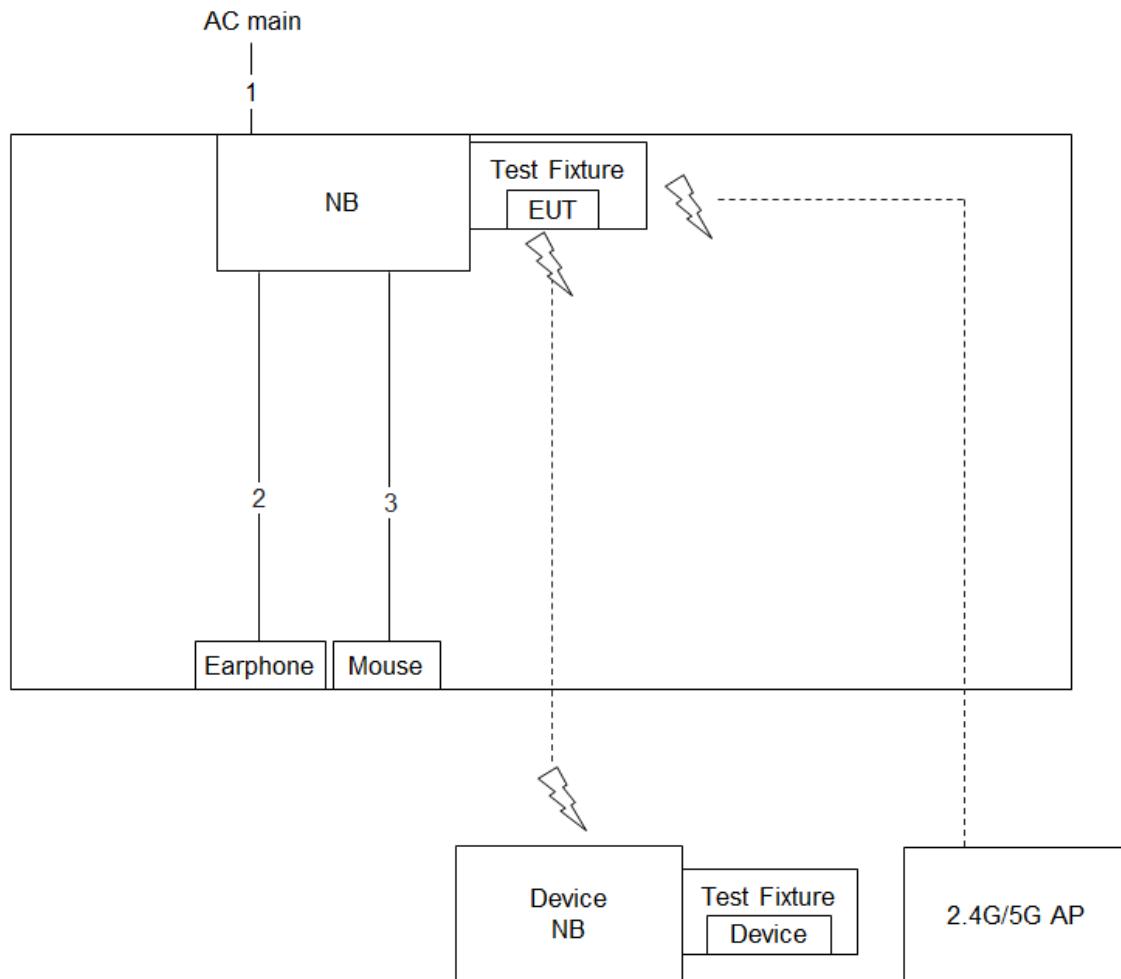
3.13.1. AC Power Line Conduction Emissions Test Configuration



Item	Connection	Shielded	Length
1	Power cable	No	2.6m
2	Audio cable	No	1.5m
3	USB cable	Yes	1.8m

3.13.2. Radiation Emissions Test Configuration

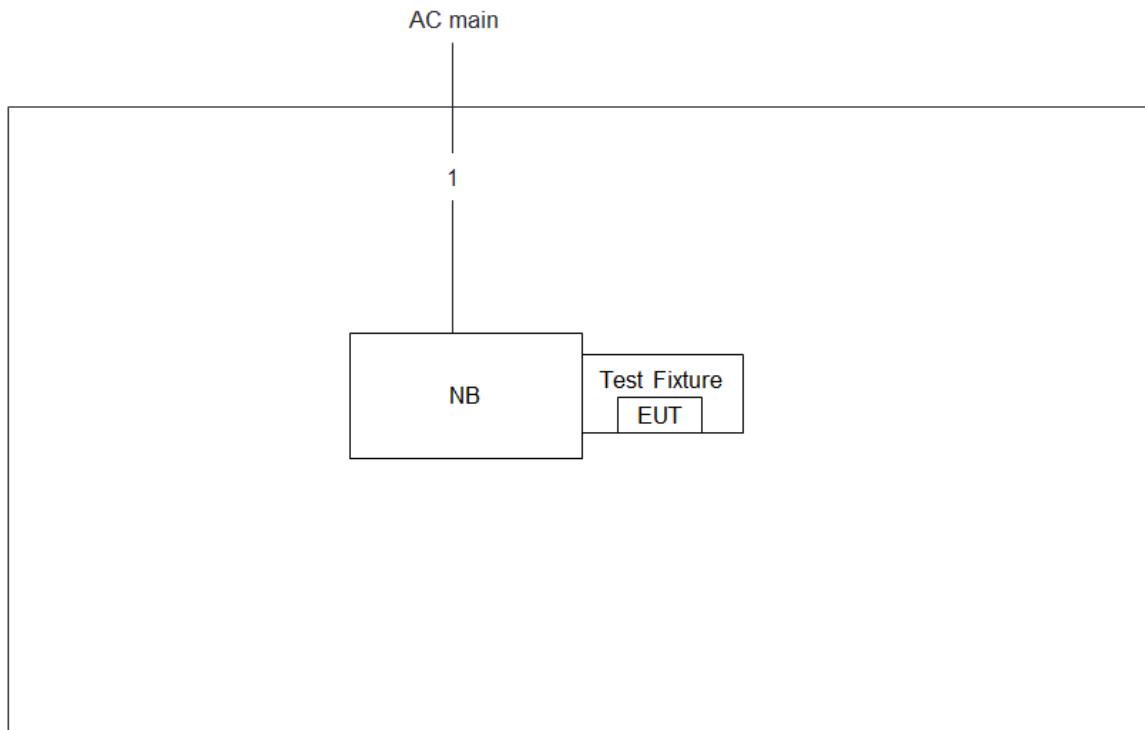
Test Configuration: 30MHz~1GHz



Item	Connection	Shielded	Length
1	Power cable	No	2.6m
2	Audio cable	No	1.1m
3	USB cable	Yes	1.8m

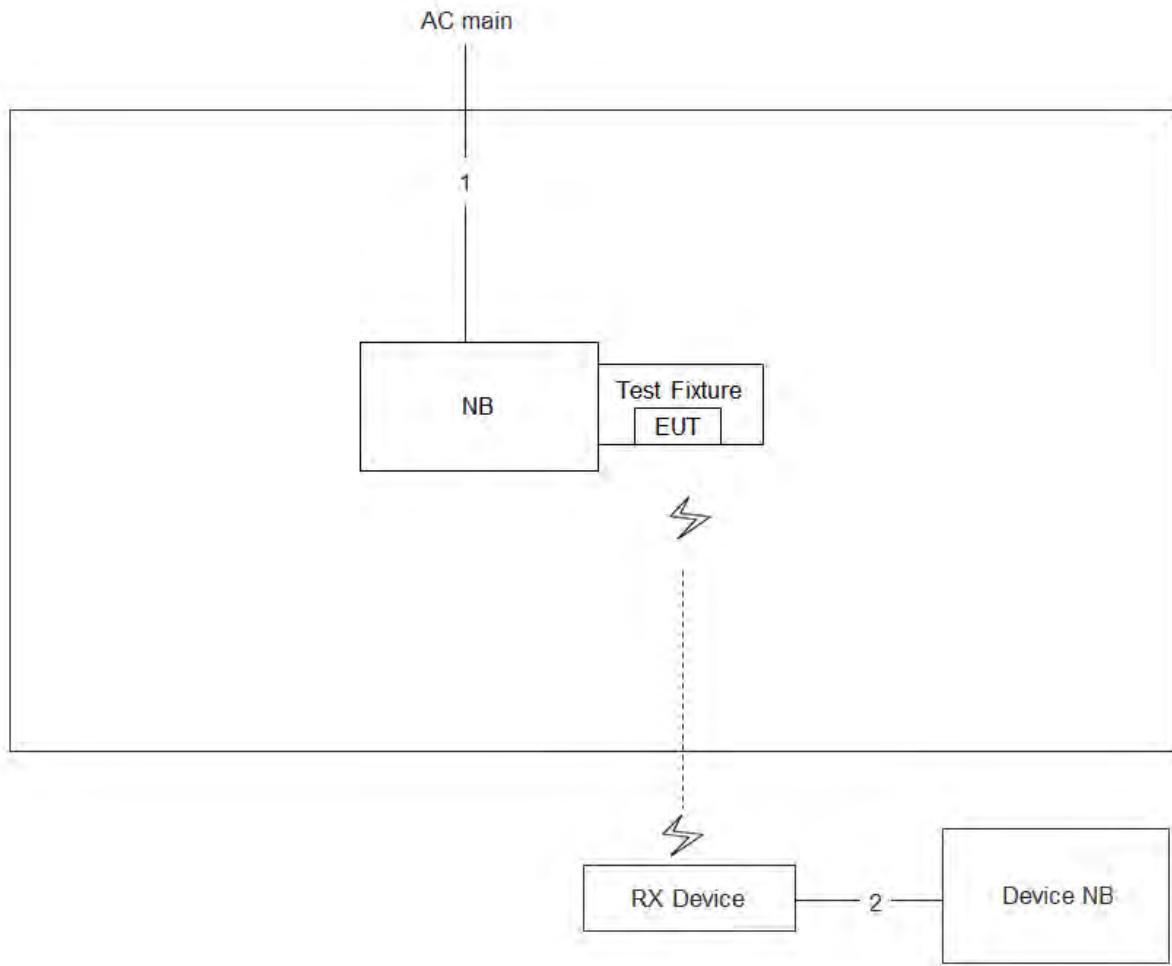
Test Configuration: above 1GHz

<For Non-Beamforming Mode>



Item	Connection	Shielded	Length
1	Power cable	No	2.6m

<For Beamforming Mode>



Item	Connection	Shielded	Length
1	Power cable	No	2.6m
2	RJ-45 cable	No	1.5m

4. TEST RESULT

4.1. AC Power Line Conducted Emissions Measurement

4.1.1. Limit

For this product which is designed to be connected 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

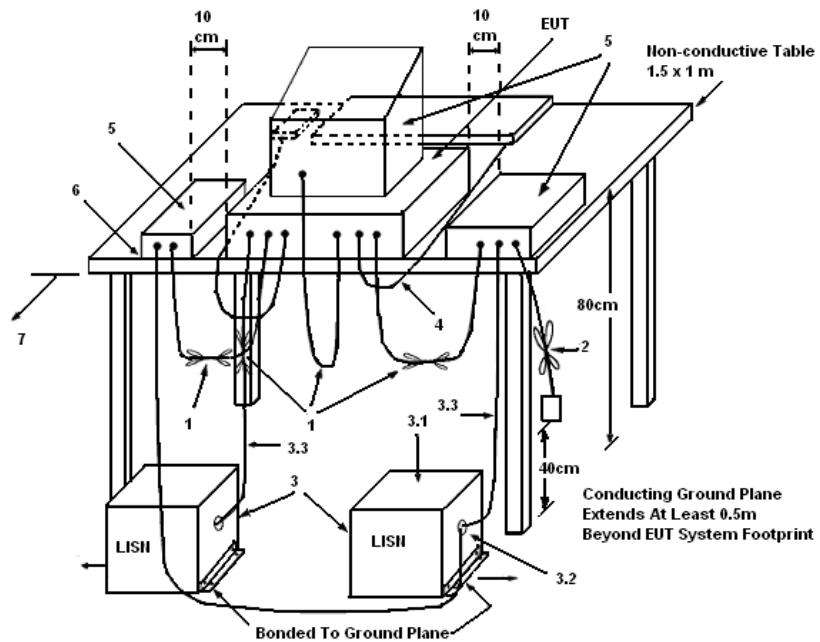
Please refer to section 5 of equipments list in this report. The following table is the setting of the receiver.

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 50Ω . 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.

4.1.5. Test Deviation

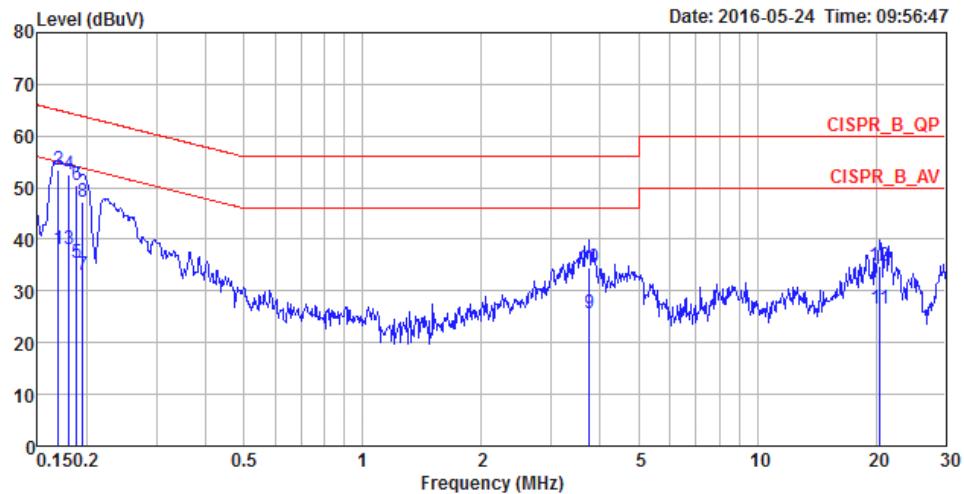
There is no deviation with the original standard.

4.1.6. EUT Operation during Test

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

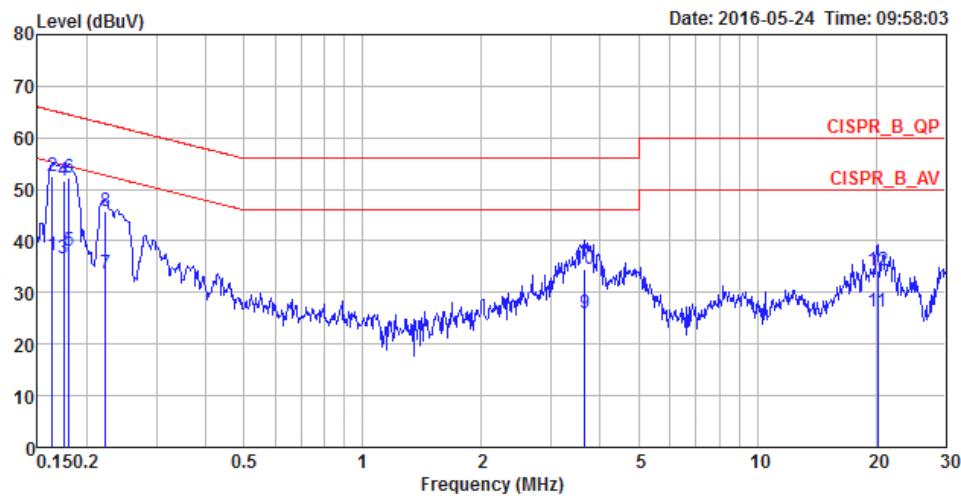
4.1.7. Results of AC Power Line Conducted Emissions Measurement

Temperature	23°C	Humidity	60%
Test Engineer	Deven Huang	Phase	Line
Configuration	Normal Link / Mode 1		



Freq	Level	Over Limit	Limit Line	Read		LISN	Cable	Pol/Phase	Remark
				MHz	dBuV				
1	0.1694	38.03	-16.96	54.99	27.99	10.02	0.02	LINE	Average
2	0.1694	53.36	-11.63	64.99	43.32	10.02	0.02	LINE	QP
3	0.1806	38.09	-16.37	54.46	28.15	9.92	0.02	LINE	Average
4	0.1806	52.41	-12.05	64.46	42.47	9.92	0.02	LINE	QP
5	0.1884	35.48	-18.63	54.11	25.54	9.92	0.02	LINE	Average
6	0.1884	50.36	-13.75	64.11	40.42	9.92	0.02	LINE	QP
7	0.1955	32.96	-20.84	53.80	23.02	9.92	0.02	LINE	Average
8	0.1955	47.27	-16.53	63.80	37.33	9.92	0.02	LINE	QP
9	3.7594	25.56	-20.44	46.00	15.50	9.99	0.07	LINE	Average
10	3.7594	34.52	-21.48	56.00	24.46	9.99	0.07	LINE	QP
11	20.4855	26.67	-23.33	50.00	16.09	10.32	0.26	LINE	Average
12	20.4855	34.84	-25.16	60.00	24.26	10.32	0.26	LINE	QP

Temperature	23°C	Humidity	60%
Test Engineer	Deven Huang	Phase	Neutral
Configuration	Normal Link / Mode 1		



Freq	Over Limit		Read Line Level	LISN Factor	Cable Loss	Pol/Phase	Remark
	Level	Limit					
1	0.1633	37.31	-17.99	55.30	27.27	10.02	0.02 NEUTRAL Average
2	0.1633	52.47	-12.83	65.30	42.43	10.02	0.02 NEUTRAL QP
3	0.1749	36.55	-18.17	54.72	26.61	9.92	0.02 NEUTRAL Average
4	0.1749	51.66	-13.06	64.72	41.72	9.92	0.02 NEUTRAL QP
5	0.1806	38.09	-16.37	54.46	28.15	9.92	0.02 NEUTRAL Average
6	0.1806	52.36	-12.10	64.46	42.42	9.92	0.02 NEUTRAL QP
7	0.2232	33.77	-18.93	52.70	23.82	9.92	0.03 NEUTRAL Average
8	0.2232	45.83	-16.87	62.70	35.88	9.92	0.03 NEUTRAL QP
9	3.6611	25.98	-20.02	46.00	15.93	9.99	0.06 NEUTRAL Average
10	3.6611	34.64	-21.36	56.00	24.59	9.99	0.06 NEUTRAL QP
11	20.1625	26.20	-23.80	50.00	15.63	10.31	0.26 NEUTRAL Average
12	20.1625	34.34	-25.66	60.00	23.77	10.31	0.26 NEUTRAL QP

Note:

Level = Read Level + LISN Factor + Cable Loss

4.2. Fundamental Emission Output Power

4.2.1. Fundamental Emission Output Power Limit

Maximum Conducted Output Power Limit	
▪ If $G_{TX} \leq 6 \text{ dBi}$, then $P_{Out} \leq 30 \text{ dBm}$ (1 W)	
▪ Point-to-multipoint systems (P2M): If $G_{TX} > 6 \text{ dBi}$, then $P_{Out} = 30 - (G_{TX} - 6) \text{ dBm}$	
▪ Point-to-point systems (P2P): If $G_{TX} > 6 \text{ dBi}$, then $P_{Out} = 30 - (G_{TX} - 6)/3 \text{ dBm}$	
▪ Smart antenna system (SAS):	
- Single beam: If $G_{TX} > 6 \text{ dBi}$, then $P_{Out} = 30 - (G_{TX} - 6)/3 \text{ dBm}$	
- Overlap beam: If $G_{TX} > 6 \text{ dBi}$, then $P_{Out} = 30 - (G_{TX} - 6)/3 \text{ dBm}$	
- Aggregate power on all beams: If $G_{TX} > 6 \text{ dBi}$, then $P_{Out} = 30 - (G_{TX} - 6)/3 + 8 \text{ dB dBm}$	
P_{Out} = maximum peak conducted output power or maximum conducted output power in dBm, G_{TX} = the maximum transmitting antenna directional gain in dBi.	

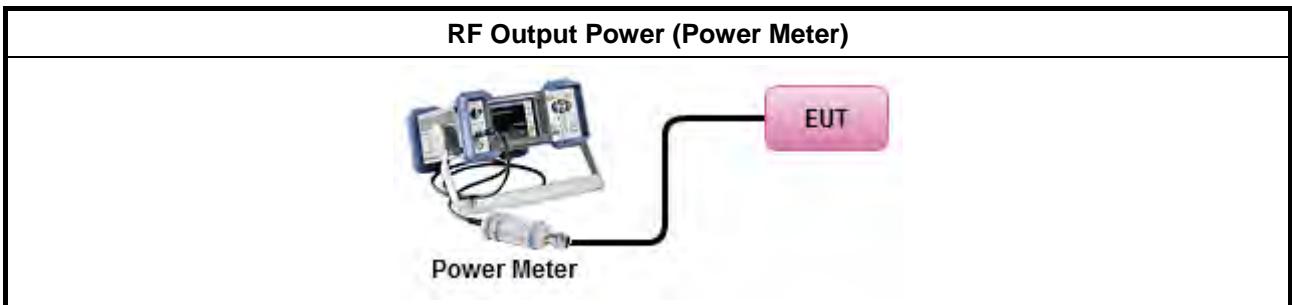
4.2.2. Measuring Instruments

Refer a test equipment and calibration data table in this test report.

4.2.3. Test Procedures

Test Method	
▪ Maximum Peak Conducted Output Power	
<input type="checkbox"/> Refer as FCC KDB 558074, clause 9.1.1 Option 1 (RBW \geq EBW method).	
<input type="checkbox"/> Refer as FCC KDB 558074, clause 9.1.2 Option 2 (peak power meter for VBW \geq DTS BW)	
▪ Maximum Conducted Output Power	
[$\text{duty cycle} \geq 98\%$ or external video / power trigger]	
<input type="checkbox"/> Refer as FCC KDB 558074, clause 9.2.2.2 Method AVGSA-1 (spectral trace averaging).	
<input type="checkbox"/> Refer as FCC KDB 558074, clause 9.2.2.3 Method AVGSA-1 Alt. (slow sweep speed)	
duty cycle $< 98\%$ and average over on/off periods with duty factor	
<input type="checkbox"/> Refer as FCC KDB 558074, clause 9.2.2.4 Method AVGSA-2 (spectral trace averaging).	
<input type="checkbox"/> Refer as FCC KDB 558074, clause 9.2.2.5 Method AVGSA-2 Alt. (slow sweep speed)	
RF power meter and average over on/off periods with duty factor or gated trigger	
<input checked="" type="checkbox"/> Refer as FCC KDB 558074, clause 9.2.3 Method AVGPM-G (using an RF average power meter).	
▪ For conducted measurement.	
<input type="checkbox"/> If the EUT supports multiple transmit chains using options given below: Refer as FCC KDB 662911, In-band power measurements. Using the measure-and-sum approach, measured all transmit ports individually. Sum the power (in linear power units e.g., mW) of all ports for each individual sample and save them.	
<input type="checkbox"/> If multiple transmit chains, EIRP calculation could be following as methods: $P_{total} = P_1 + P_2 + \dots + P_n$ (calculated in linear unit [mW] and transfer to log unit [dBm]) $EIRP_{total} = P_{total} + DG$	

4.2.4. Test Setup



4.2.5. Test Result of Maximum Conducted Output Power

Refer as Appendix A

4.3. Power Spectral Density

4.3.1. Power Spectral Density Limit

Power Spectral Density Limit
▪ Power Spectral Density (PSD) $\leq 8 \text{ dBm/3kHz}$

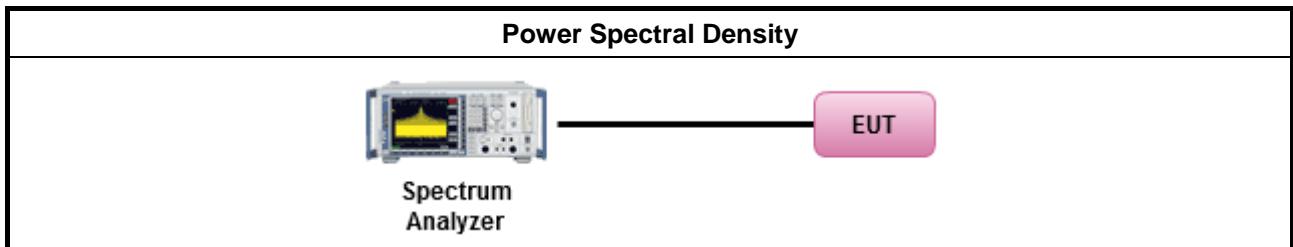
4.3.2. Measuring Instruments

Refer a test equipment and calibration data table in this test report.

4.3.3. Test Procedures

Test Method
▪ Peak power spectral density procedures that the same method as used to determine the conducted output power. If maximum peak conducted output power was measured to demonstrate compliance to the output power limit, then the peak PSD procedure below (Method PKPSD) shall be used. If maximum conducted output power was measured to demonstrate compliance to the output power limit, then one of the average PSD procedures shall be used, as applicable based on the following criteria (the peak PSD procedure is also an acceptable option).
<input checked="" type="checkbox"/> Refer as FCC KDB 558074, clause 10.2 Method PKPSD (RBW=3-100kHz; Detector=peak). [duty cycle $\geq 98\%$ or external video / power trigger]
<input type="checkbox"/> Refer as FCC KDB 558074, clause 10.3 Method AVGPSD-1 (spectral trace averaging).
<input type="checkbox"/> Refer as FCC KDB 558074, clause 10.4 Method AVGPSD-2 (slow sweep speed)
duty cycle $< 98\%$ and average over on/off periods with duty factor
<input type="checkbox"/> Refer as FCC KDB 558074, clause 10.5 Method AVGPSD-1 Alt (spectral trace averaging).
<input type="checkbox"/> Refer as FCC KDB 558074, clause 10.6 Method AVGPSD-2 Alt. (slow sweep speed)
▪ For conducted measurement.
▪ If The EUT supports multiple transmit chains using options given below:
<input checked="" type="checkbox"/> Option 1: Measure and sum the spectra across the outputs. Refer as FCC KDB 662911, In-band power spectral density (PSD). Sample all transmit ports simultaneously using a spectrum analyzer for each transmit port. Where the trace bin-by-bin of each transmit port summing can be performed. (i.e., in the 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 NTX output to obtain the value for the first frequency bin of the summed spectrum.). Add up the amplitude (power) values for the different transmit chains and use this as the new data trace.
<input type="checkbox"/> Option 2: Measure and sum spectral maxima across the outputs. With this technique, spectra are measured at each output of the device at the required resolution bandwidth. The maximum value (peak) of each spectrum is determined. These maximum values are then summed mathematically in linear power units across the outputs. These operations shall be performed separately over frequency spans that have different out-of-band or spurious emission limits,
<input type="checkbox"/> Option 3: Measure and add $10 \log(N) \text{ dB}$, where N is the number of transmit chains. Refer as FCC KDB 662911, In-band power spectral density (PSD). Performed at each transmit chains and each transmit chains shall be compared with the limit have been reduced with $10 \log(N)$. Or each transmit chains shall be add $10 \log(N)$ to compared with the limit.

4.3.4. Test Setup



4.3.5. Test Result of Power Spectral Density

Refer as Appendix B

4.4. DTS Bandwidth

4.4.1. 6dB Bandwidth Limit

6dB Bandwidth Limit
Systems using digital modulation techniques:
▪ 6 dB bandwidth \geq 500 kHz.

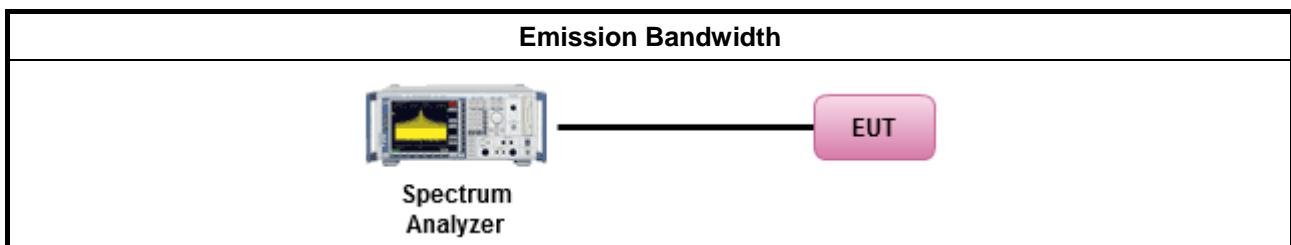
4.4.2. Measuring Instruments

Refer a test equipment and calibration data table in this test report.

4.4.3. Test Procedures

Test Method
▪ For the emission bandwidth shall be measured using one of the options below:
<input checked="" type="checkbox"/> Refer as FCC KDB 558074, clause 8.1 Option 1 for 6 dB bandwidth measurement.
<input type="checkbox"/> Refer as FCC KDB 558074, clause 8.2 Option 2 for 6 dB bandwidth measurement.
<input type="checkbox"/> Refer as ANSI C63.10, clause 6.9.1 for occupied bandwidth testing.

4.4.4. Test Setup



4.4.5. Test Result of Emission Bandwidth

Refer as Appendix C

4.5. Radiated Emissions Measurement

4.5.1. Limit

30dBc in any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified on 2.7, then the 2.8 limit in the table below has to be followed.

Frequencies (MHz)	Field Strength (microvolt/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	10th carrier harmonic
RBW / VBW (Emission in restricted band)	1MHz / 3MHz for Peak, 1MHz / 1/T for Average
RBW / VBW (Emission in non-restricted band)	100kHz / 300kHz for peak

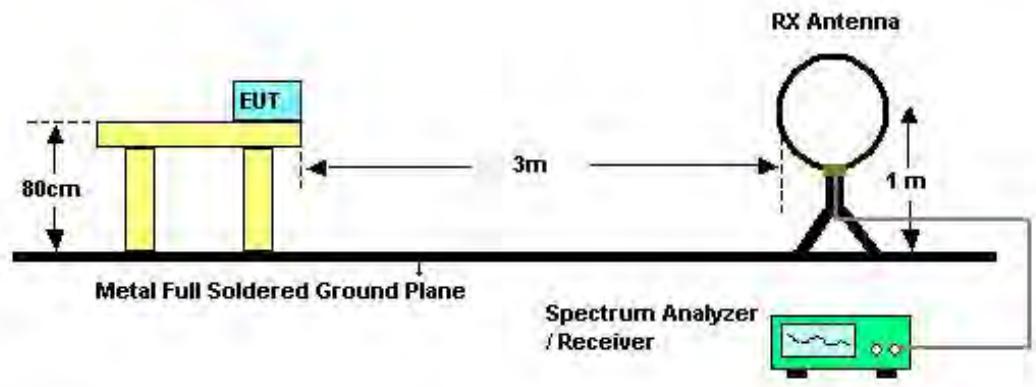
Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RBW 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RBW 9kHz for QP
Start ~ Stop Frequency	30MHz~1GHz / RBW 120kHz for QP

4.5.3. Test Procedures

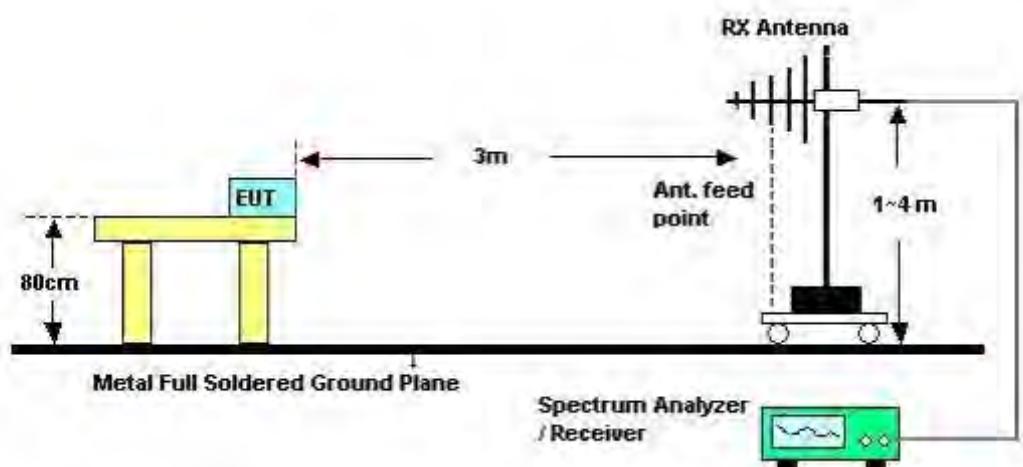
1. Configure the EUT according to ANSI C63.10. The EUT was placed on the top of the turntable 1.5 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 1m & 3m far away from the turntable.
2. Power on the EUT and all the supporting 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 3MHz RBW for peak reading. Then 1MHz RBW and 1/T 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

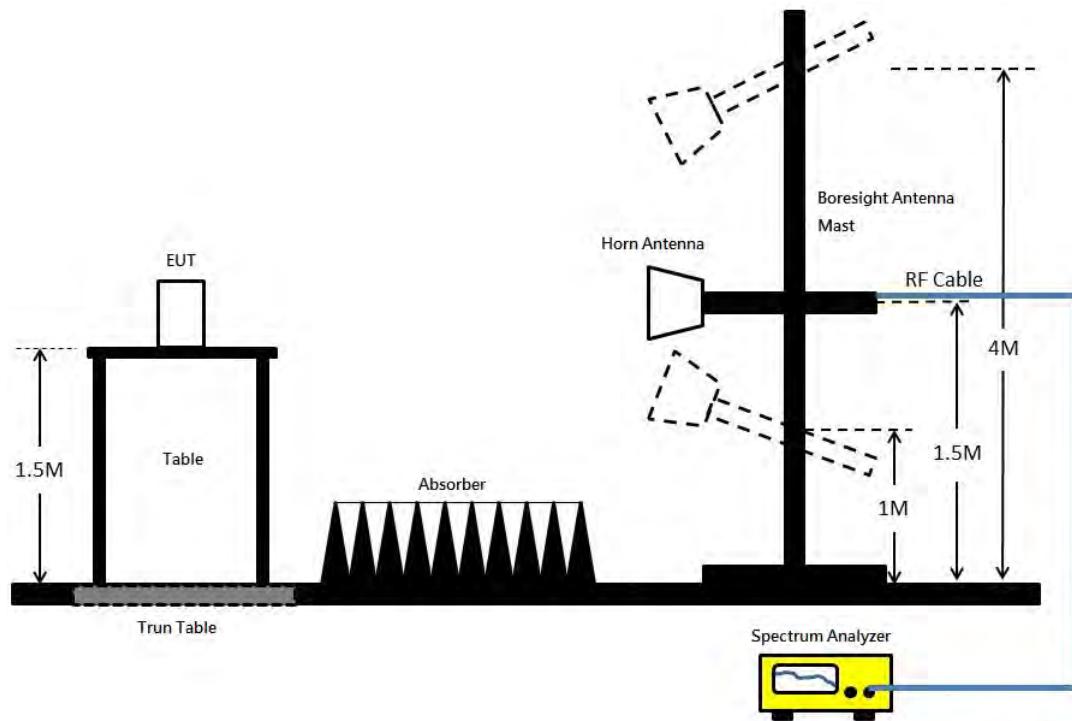
For Radiated Emissions: 9kHz ~30MHz



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

For non-beamforming mode:

The EUT was programmed to be in continuously transmitting mode.

For beamforming mode:

The EUT was programmed to be in beamforming transmitting mode.

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

Temperature	22°C	Humidity	54%
Test Engineer	Gino Huang	Configurations	Normal Link / Mode 4 and Mode5
Test Date	Jun. 21, 2016		

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 20 dB below the permissible value has no need to be reported.

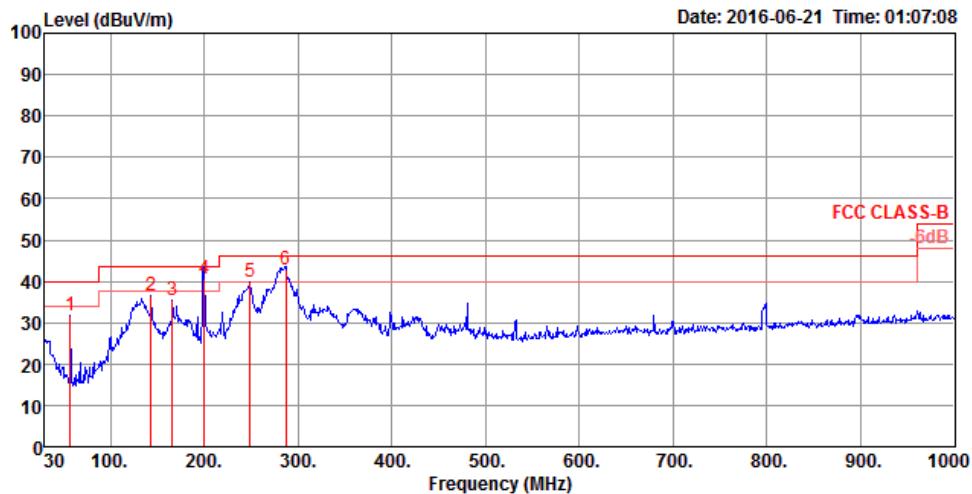
Distance extrapolation factor = 40 log (specific distance / test distance) (dB);

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

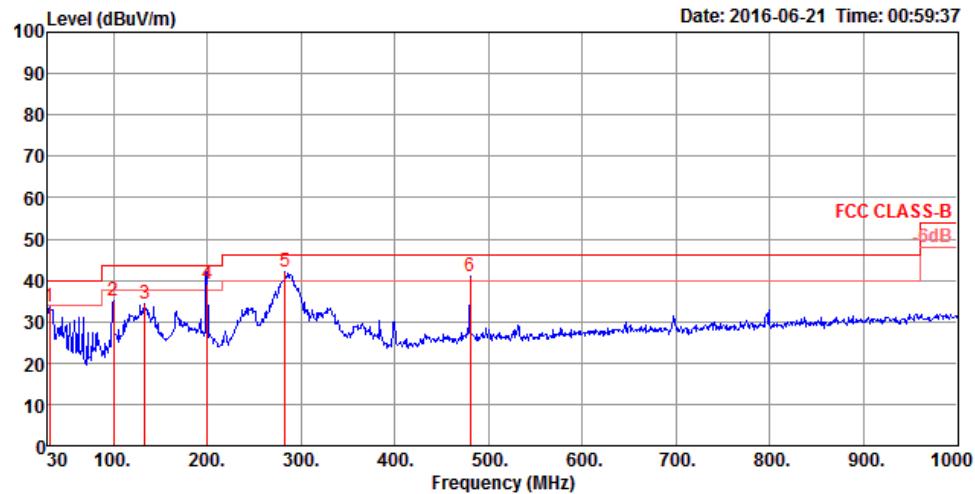
4.5.8. Results of Radiated Emissions (30MHz~1GHz)

Temperature	22°C	Humidity	54%
Test Engineer	Gino Huang	Configurations	Normal Link / Mode 4

Horizontal

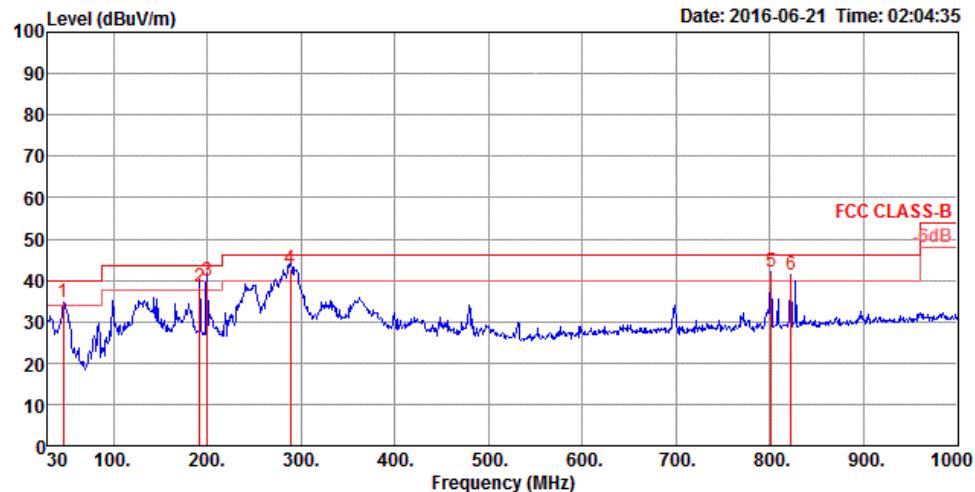


Freq	Level	Limit		Over Limit	Read Level	Cable Antenna			Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
		Line	dB			dBuV	dB	dB/m					
MHz	dBuV/m	dBuV/m	dB							cm	deg		
1	57.16	31.71	40.00	-8.29	49.43	0.67	14.02	32.41	150	244	Peak	HORIZONTAL	
2	143.49	36.42	43.50	-7.08	49.87	1.02	17.89	32.36	200	169	Peak	HORIZONTAL	
3	165.80	35.28	43.50	-8.22	49.80	1.11	16.72	32.35	200	154	Peak	HORIZONTAL	
4	199.75	40.49	43.50	-3.01	54.90	1.22	16.70	32.33	150	181	QP	HORIZONTAL	
5	249.22	39.72	46.00	-6.28	51.64	1.34	19.04	32.30	125	174	Peak	HORIZONTAL	
6	287.05	42.96	46.00	-3.04	54.03	1.45	19.77	32.29	200	211	QP	HORIZONTAL	

Vertical


Freq MHz	Level dBuV/m	Limit Line dB	Over Limit dB	Read Level dBuV	Cable			Antenna Loss dB	Preamp Factor dB	A/Pos cm	T/Pos deg	Remark	Pol/Phase
					Antenna Loss dB	Preamp Factor dB	A/Pos cm						
1 31.94	33.54	40.00	-6.46	40.78	0.50	24.66	32.40	100	213	Peak		VERTICAL	
2 99.84	35.20	43.50	-8.30	49.13	0.86	17.60	32.39	100	56	Peak		VERTICAL	
3 133.79	34.15	43.50	-9.35	46.95	0.99	18.57	32.36	100	186	Peak		VERTICAL	
4 199.75	39.11	43.50	-4.39	53.52	1.22	16.70	32.33	100	102	QP		VERTICAL	
5 283.17	42.24	46.00	-3.76	53.37	1.43	19.73	32.29	200	155	Peak		VERTICAL	
6 480.08	40.82	46.00	-5.18	47.56	1.90	23.71	32.35	100	196	Peak		VERTICAL	

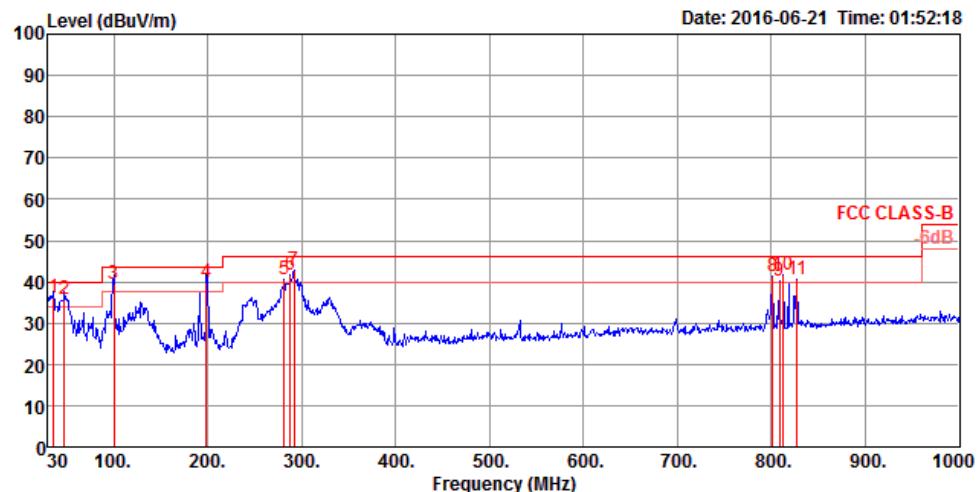
Temperature	22°C	Humidity	54%
Test Engineer	Gino Huang	Configurations	Normal Link / Mode 5

Horizontal


Freq	Level	Limit	Over	Read	Cable			A/Pos	T/Pos	Remark	Pol/Phase
					Line	Limit	Level				
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	46.49	34.75	40.00	-5.25	50.12	0.60	16.44	32.41	200	56 Peak	HORIZONTAL
2	191.99	38.41	43.50	-5.09	53.40	1.20	16.14	32.33	125	24 QP	HORIZONTAL
3	199.75	40.01	43.50	-3.49	54.42	1.22	16.70	32.33	200	16 QP	HORIZONTAL
4	288.99	42.78	46.00	-3.22	53.83	1.45	19.79	32.29	125	214 QP	HORIZONTAL
5	801.15	41.95	46.00	-4.05	44.90	2.46	26.83	32.24	125	67 Peak	HORIZONTAL
6	822.49	41.16	46.00	-4.84	43.72	2.49	27.07	32.12	125	101 Peak	HORIZONTAL



Vertical



Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
		Line	Limit	Level	Loss	Factor	Factor	cm	deg		
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	35.82	36.13	40.00	-3.87	45.28	0.52	22.73	32.40	100	306 QP	VERTICAL
2	47.46	35.78	40.00	-4.22	51.58	0.61	16.00	32.41	125	185 QP	VERTICAL
3	99.84	39.45	43.50	-4.05	53.38	0.86	17.60	32.39	100	316 QP	VERTICAL
4	198.78	39.89	43.50	-3.61	54.39	1.22	16.61	32.33	200	233 QP	VERTICAL
5	281.23	40.67	46.00	-5.33	51.82	1.43	19.71	32.29	200	195 Peak	VERTICAL
6	288.02	41.72	46.00	-4.28	52.78	1.45	19.78	32.29	150	187 Peak	VERTICAL
7	291.90	42.74	46.00	-3.26	53.72	1.46	19.84	32.28	200	188 Peak	VERTICAL
8	801.15	41.25	46.00	-4.75	44.20	2.46	26.83	32.24	150	157 Peak	VERTICAL
9	808.91	40.25	46.00	-5.75	43.05	2.47	26.93	32.20	150	355 Peak	VERTICAL
10	812.79	41.69	46.00	-4.31	44.42	2.48	26.97	32.18	125	271 Peak	VERTICAL
11	827.34	40.63	46.00	-5.37	43.11	2.49	27.13	32.10	100	324 Peak	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.

4.5.9. Results for Radiated Emissions (1GHz~10th Harmonic)

Dipole Antenna

<For Non-Beamforming / 1TX Mode>

Temperature	22°C	Humidity	54%
Test Engineer	Gino Huang	Configurations	IEEE 802.11b CH 1 / Chain 1
Test Date	May 19, 2016 ~ Aug. 11, 2016		

Horizontal

Freq	Level	Limit		Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
		Line	dB									
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	dB	cm	deg		
1	4823.76	49.00	74.00	-25.00	42.69	7.04	34.17	34.90	139	211	Peak	HORIZONTAL
2	4824.08	40.13	54.00	-13.87	33.82	7.04	34.17	34.90	139	211	Average	HORIZONTAL
3	7235.04	52.75	74.00	-21.25	41.75	8.86	37.30	35.16	165	56	Peak	HORIZONTAL
4	7235.24	40.57	54.00	-13.43	29.57	8.86	37.30	35.16	165	56	Average	HORIZONTAL

Vertical

Freq	Level	Limit		Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
		Line	dB									
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	dB	cm	deg		
1	4823.88	50.68	74.00	-23.32	44.37	7.04	34.17	34.90	130	183	Peak	VERTICAL
2	4823.96	43.31	54.00	-10.69	37.00	7.04	34.17	34.90	130	183	Average	VERTICAL
3	7233.24	53.13	74.00	-20.87	42.13	8.86	37.30	35.16	141	209	Peak	VERTICAL
4	7235.32	41.73	54.00	-12.27	30.73	8.86	37.30	35.16	141	209	Average	VERTICAL

Temperature	22°C	Humidity	54%
Test Engineer	Gino Huang	Configurations	IEEE 802.11b CH 6 / Chain 1
Test Date	May 19, 2016 ~ Aug. 11, 2016		

Horizontal

Freq	Level	Limit		Over Limit	Read Level	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
		Line	dB			Loss	Factor	Factor	cm	deg		
1	4873.80	51.86	74.00	-22.14	45.24	7.18	34.34	34.90	130	213	Peak	HORIZONTAL
2	4873.96	46.60	54.00	-7.40	39.98	7.18	34.34	34.90	130	213	Average	HORIZONTAL
3	7311.80	45.88	54.00	-8.12	34.96	8.63	37.45	35.16	126	54	Average	HORIZONTAL
4	7311.98	54.92	74.00	-19.08	44.00	8.63	37.45	35.16	126	54	Peak	HORIZONTAL

Vertical

Freq	Level	Limit		Over Limit	Read Level	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
		Line	dB			Loss	Factor	Factor	cm	deg		
1	4873.98	50.90	54.00	-3.10	44.28	7.18	34.34	34.90	144	186	Average	VERTICAL
2	4873.98	54.22	74.00	-19.78	47.60	7.18	34.34	34.90	144	186	Peak	VERTICAL
3	7311.74	46.90	54.00	-7.10	35.98	8.63	37.45	35.16	101	176	Average	VERTICAL
4	7312.02	55.65	74.00	-18.35	44.73	8.63	37.45	35.16	101	176	Peak	VERTICAL

Temperature	22°C	Humidity	54%
Test Engineer	Gino Huang	Configurations	IEEE 802.11b CH 11 / Chain 1
Test Date	May 19, 2016 ~ Aug. 11, 2016		

Horizontal

Freq	Level	Limit		Over Limit	Read Level	Cable		Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
		Line	dB			dB	dB			cm	deg		
1	4924.00	44.42	54.00	-9.58	37.51	7.31	34.50	34.90	128	211	Average	HORIZONTAL	
2	4924.12	51.20	74.00	-22.80	44.29	7.31	34.50	34.90	128	211	Peak	HORIZONTAL	
3	7386.72	44.44	54.00	-9.56	33.63	8.33	37.65	35.17	133	195	Average	HORIZONTAL	
4	7389.22	54.54	74.00	-19.46	43.73	8.33	37.65	35.17	133	195	Peak	HORIZONTAL	

Vertical

Freq	Level	Limit		Over Limit	Read Level	Cable		Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
		Line	dB			dB	dB			cm	deg		
1	4923.96	46.67	54.00	-7.33	39.76	7.31	34.50	34.90	134	146	Average	VERTICAL	
2	4924.04	52.11	74.00	-21.89	45.20	7.31	34.50	34.90	134	146	Peak	VERTICAL	
3	7385.24	46.36	54.00	-7.64	35.55	8.33	37.65	35.17	188	175	Average	VERTICAL	
4	7387.16	55.34	74.00	-18.66	44.53	8.33	37.65	35.17	188	175	Peak	VERTICAL	



Temperature	22°C	Humidity	54%
Test Engineer	Gino Huang	Configurations	IEEE 802.11b CH 12 / Chain 1
Test Date	May 19, 2016 ~ Aug. 11, 2016		

Horizontal

Freq	Level	Limit		Over Limit	Read Level	Cable		Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
		Line	dB			dB	dBuV			dB	dB/m	dB	cm
1	4933.79	51.23	74.00	-22.77	43.80	7.65	32.78	33.00	154	197	Peak		HORIZONTAL
2	4933.99	44.27	54.00	-9.73	36.84	7.65	32.78	33.00	154	197	Average		HORIZONTAL

Vertical

Freq	Level	Limit		Over Limit	Read Level	Cable		Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
		Line	dB			dB	dBuV			dB	dB/m	dB	cm
1	4933.98	41.40	54.00	-12.60	33.97	7.65	32.78	33.00	199	297	Average		VERTICAL
2	4934.40	49.59	74.00	-24.41	42.16	7.65	32.78	33.00	199	297	Peak		VERTICAL

Temperature	22°C	Humidity	54%
Test Engineer	Gino Huang	Configurations	IEEE 802.11b CH 13 / Chain 1
Test Date	May 19, 2016 ~ Aug. 11, 2016		

Horizontal

Freq	Level	Limit		Over Limit	Read Level	Cable		Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
		Line	dB			dB	dB/m			cm	deg		
1	4944.05	40.92	54.00	-13.08	33.44	7.67	32.80	32.99	132	192	Average	HORIZONTAL	
2	4944.16	49.97	74.00	-24.03	42.49	7.67	32.80	32.99	132	192	Peak	HORIZONTAL	

Vertical

Freq	Level	Limit		Over Limit	Read Level	Cable		Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
		Line	dB			dB	dB/m			cm	deg		
1	4943.75	50.15	74.00	-23.85	42.67	7.67	32.80	32.99	142	199	Peak	VERTICAL	
2	4944.00	40.94	54.00	-13.06	33.46	7.67	32.80	32.99	142	199	Average	VERTICAL	

Temperature	22°C	Humidity	54%
Test Engineer	Gino Huang	Configurations	IEEE 802.11g CH 1 / Chain 1
Test Date	May 19, 2016 ~ Aug. 11, 2016		

Horizontal

	Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
			Line	Limit	Level	Loss	Factor	Factor	dB	cm		
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4821.36	35.11	54.00	-18.89	28.80	7.04	34.17	34.90	155	104	Average	HORIZONTAL
2	4827.08	47.40	74.00	-26.60	41.01	7.08	34.21	34.90	155	104	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
			Line	Limit	Level	Loss	Factor	Factor	dB	cm		
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4828.88	47.75	74.00	-26.25	41.36	7.08	34.21	34.90	143	321	Peak	VERTICAL
2	4831.84	35.40	54.00	-18.60	29.01	7.08	34.21	34.90	143	321	Average	VERTICAL

Temperature	22°C			Humidity	54%				
Test Engineer	Gino Huang			Configurations	IEEE 802.11g CH 6 / Chain 1				
Test Date	May 19, 2016 ~ Aug. 11, 2016								

Horizontal

	Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
			Line	Limit	Level	Loss	Factor	Factor	dB	cm		
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4868.20	48.78	74.00	-25.22	42.16	7.18	34.34	34.90	146	248	Peak	HORIZONTAL
2	4874.04	36.19	54.00	-17.81	29.57	7.18	34.34	34.90	146	248	Average	HORIZONTAL

Vertical

	Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
			Line	Limit	Level	Loss	Factor	Factor	dB	cm		
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4871.96	50.31	74.00	-23.69	43.69	7.18	34.34	34.90	153	48	Peak	VERTICAL
2	4874.16	37.58	54.00	-16.42	30.96	7.18	34.34	34.90	153	48	Average	VERTICAL

Temperature	22°C	Humidity	54%
Test Engineer	Gino Huang	Configurations	IEEE 802.11g CH 11 / Chain 1
Test Date	May 19, 2016 ~ Aug. 11, 2016		

Horizontal

Freq	Level	Limit		Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
		Line	Over								
		dB	dB								
1	4917.52	48.91	74.00	-25.09	42.07	7.28	34.46	34.90	134	98 Peak	HORIZONTAL
2	4922.52	36.06	54.00	-17.94	29.22	7.28	34.46	34.90	134	98 Average	HORIZONTAL

Vertical

Freq	Level	Limit		Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
		Line	Over								
		dB	dB								
1	4922.20	48.19	74.00	-25.81	41.35	7.28	34.46	34.90	144	304 Peak	VERTICAL
2	4924.64	36.85	54.00	-17.15	29.94	7.31	34.50	34.90	144	304 Average	VERTICAL



Temperature	22°C	Humidity	54%
Test Engineer	Gino Huang	Configurations	IEEE 802.11g CH 12 / Chain 1
Test Date	May 19, 2016 ~ Aug. 11, 2016		

Horizontal

Freq	Level	Limit		Over Limit	Read Level	Cable		Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
		Line	dB			dB	dBuV			dB	dB/m	dB	cm
1	4935.71	35.75	54.00	-18.25	28.32	7.65	32.78	33.00	213	107	Average	HORIZONTAL	
2	4936.26	49.08	74.00	-24.92	41.65	7.65	32.78	33.00	213	107	Peak	HORIZONTAL	

Vertical

Freq	Level	Limit		Over Limit	Read Level	Cable		Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
		Line	dB			dB	dBuV			dB	dB/m	dB	cm
1	4932.50	35.73	54.00	-18.27	28.30	7.65	32.78	33.00	191	173	Average	VERTICAL	
2	4935.51	48.32	74.00	-25.68	40.89	7.65	32.78	33.00	191	173	Peak	VERTICAL	



Temperature	22°C	Humidity	54%
Test Engineer	Gino Huang	Configurations	IEEE 802.11g CH 13 / Chain 1
Test Date	May 19, 2016 ~ Aug. 11, 2016		

Horizontal

Freq	Level	Limit		Over Limit	Read Level	Cable		Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
		Line	dB			dB	dBuV			dB	dB/m	dB	cm
1	4942.81	36.56	54.00	-17.44	29.08	7.67	32.80	32.99	221	221	223	Average	HORIZONTAL
2	4944.15	49.32	74.00	-24.68	41.84	7.67	32.80	32.99	221	221	223	Peak	HORIZONTAL

Vertical

Freq	Level	Limit		Over Limit	Read Level	Cable		Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
		Line	dB			dB	dBuV			dB	dB/m	dB	cm
1	4943.41	48.95	74.00	-25.05	41.47	7.67	32.80	32.99	268	268	72	Peak	VERTICAL
2	4946.18	36.13	54.00	-17.87	28.65	7.67	32.80	32.99	268	268	72	Average	VERTICAL

Temperature	22°C	Humidity	54%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 1 / Chain 1
Test Date	May 19, 2016 ~ Aug. 11, 2016		

Horizontal

Freq	Level	Limit		Over Limit	Read Level	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
		Line	dB			dBuV	dB	dB/m	dB	cm		
1	4828.64	48.12	74.00	-25.88	41.73	7.08	34.21	34.90	138	248	Peak	HORIZONTAL
2	4830.28	35.17	54.00	-18.83	28.78	7.08	34.21	34.90	138	248	Average	HORIZONTAL

Vertical

Freq	Level	Limit		Over Limit	Read Level	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
		Line	dB			dBuV	dB	dB/m	dB	cm		
1	4819.92	48.54	74.00	-25.46	42.23	7.04	34.17	34.90	143	146	Peak	VERTICAL
2	4820.84	35.16	54.00	-18.84	28.85	7.04	34.17	34.90	143	146	Average	VERTICAL

Temperature	22°C	Humidity	54%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 6 / Chain 1
Test Date	May 19, 2016 ~ Aug. 11, 2016		

Horizontal

Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
		Line	Limit	Level	Loss	Factor	Factor	cm	deg		
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	4864.32	49.83	74.00	-24.17	43.30	7.14	34.29	34.90	125	289	Peak HORIZONTAL
2	4871.84	36.35	54.00	-17.65	29.73	7.18	34.34	34.90	125	289	Average HORIZONTAL

Vertical

Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
		Line	Limit	Level	Loss	Factor	Factor	cm	deg		
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	4869.20	35.76	54.00	-18.24	29.14	7.18	34.34	34.90	140	354	Average VERTICAL
2	4875.76	48.55	74.00	-25.45	41.93	7.18	34.34	34.90	140	354	Peak VERTICAL

Temperature	22°C	Humidity	54%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 11 / Chain 1
Test Date	May 19, 2016 ~ Aug. 11, 2016		

Horizontal

Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
		Line	Limit	Level	Loss	Factor	Factor	cm	deg		
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	4922.68	48.38	74.00	-25.62	41.54	7.28	34.46	34.90	130	147	Peak HORIZONTAL
2	4924.28	36.05	54.00	-17.95	29.14	7.31	34.50	34.90	130	147	Average HORIZONTAL

Vertical

Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
		Line	Limit	Level	Loss	Factor	Factor	cm	deg		
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	4923.24	35.97	54.00	-18.03	29.13	7.28	34.46	34.90	135	248	Average VERTICAL
2	4930.28	48.49	74.00	-25.51	41.58	7.31	34.50	34.90	135	248	Peak VERTICAL

Temperature	22°C	Humidity	54%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 12 / Chain 1
Test Date	May 19, 2016 ~ Aug. 11, 2016		

Horizontal

	Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
			Line	Limit	Level	Loss	Factor	Factor	cm	deg		
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB				
1	4932.57	48.70	74.00	-25.30	41.27	7.65	32.78	33.00	150	263	Peak	HORIZONTAL
2	4936.24	35.81	54.00	-18.19	28.38	7.65	32.78	33.00	150	263	Average	HORIZONTAL

Vertical

	Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
			Line	Limit	Level	Loss	Factor	Factor	cm	deg		
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB				
1	4933.67	48.54	74.00	-25.46	41.11	7.65	32.78	33.00	207	172	Peak	VERTICAL
2	4935.61	35.85	54.00	-18.15	28.42	7.65	32.78	33.00	207	172	Average	VERTICAL

Temperature	22°C	Humidity	54%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 13 / Chain 1
Test Date	May 19, 2016 ~ Aug. 11, 2016		

Horizontal

	Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
			Line	Limit	Level	Loss	Factor	Factor	cm	deg		
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB				
1	4941.55	49.64	74.00	-24.36	42.16	7.67	32.80	32.99	141	176	Peak	HORIZONTAL
2	4945.82	36.14	54.00	-17.86	28.66	7.67	32.80	32.99	141	176	Average	HORIZONTAL

Vertical

	Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
			Line	Limit	Level	Loss	Factor	Factor	cm	deg		
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB				
1	4942.07	49.16	74.00	-24.84	41.68	7.67	32.80	32.99	182	98	Peak	VERTICAL
2	4943.03	36.33	54.00	-17.67	28.85	7.67	32.80	32.99	182	98	Average	VERTICAL

Temperature	22°C	Humidity	54%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 3 / Chain 1
Test Date	May 19, 2016 ~ Aug. 11, 2016		

Horizontal

Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
		Line	Limit	Level	Loss	Factor	Factor	cm	deg		
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	4842.24	48.56	74.00	-25.44	42.10	7.11	34.25	34.90	115	148	Peak HORIZONTAL
2	4849.84	35.18	54.00	-18.82	28.72	7.11	34.25	34.90	115	148	Average HORIZONTAL

Vertical

Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
		Line	Limit	Level	Loss	Factor	Factor	cm	deg		
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	4847.16	47.84	74.00	-26.16	41.38	7.11	34.25	34.90	128	348	Peak VERTICAL
2	4850.04	35.31	54.00	-18.69	28.85	7.11	34.25	34.90	128	348	Average VERTICAL

Temperature	22°C	Humidity	54%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 6 / Chain 1
Test Date	May 19, 2016 ~ Aug. 11, 2016		

Horizontal

Freq	Level	Limit		Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
		Line	Over Limit								
MHz	dBuV/m	dBuV/m		dB	dBuV	dB	dB/m	dB	cm	deg	
1	4875.08	47.59	74.00	-26.41	41.01	6.28	33.23	32.93	221	34	Peak HORIZONTAL
2	4875.14	34.60	54.00	-19.40	28.02	6.28	33.23	32.93	221	34	Average HORIZONTAL

Vertical

Freq	Level	Limit		Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
		Line	Over Limit								
MHz	dBuV/m	dBuV/m		dB	dBuV	dB	dB/m	dB	cm	deg	
1	4874.21	35.78	54.00	-18.22	29.20	6.28	33.23	32.93	173	204	Average VERTICAL
2	4874.30	47.83	74.00	-26.17	41.25	6.28	33.23	32.93	173	204	Peak VERTICAL

Temperature	22°C	Humidity	54%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 9 / Chain 1
Test Date	May 19, 2016 ~ Aug. 11, 2016		

Horizontal

Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
		Line	Limit	Level	Loss	Factor	Factor	cm	deg		
1	4905.40	48.54	74.00	-25.46	41.78	7.24	34.42	34.90	112	360 Peak	HORIZONTAL
2	4906.24	35.76	54.00	-18.24	29.00	7.24	34.42	34.90	112	360 Average	HORIZONTAL

Vertical

Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
		Line	Limit	Level	Loss	Factor	Factor	cm	deg		
1	4905.48	48.97	74.00	-25.03	42.21	7.24	34.42	34.90	106	128 Peak	VERTICAL
2	4906.12	35.64	54.00	-18.36	28.88	7.24	34.42	34.90	106	128 Average	VERTICAL

Temperature	22°C	Humidity	54%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 10 / Chain 1
Test Date	May 19, 2016 ~ Aug. 11, 2016		

Horizontal

	Freq	Limit		Over Limit	Read Level	Cable		Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
		Level	Line			Loss	dB/m						
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg			
1	4914.16	48.99	74.00	-25.01	41.61	7.63	32.75	33.00	163	134	Peak		HORIZONTAL
2	4915.51	36.05	54.00	-17.95	28.67	7.63	32.75	33.00	163	134	Average		HORIZONTAL

Vertical

	Freq	Limit		Over Limit	Read Level	Cable		Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
		Level	Line			Loss	dB/m						
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg			
1	4913.58	49.09	74.00	-24.91	41.71	7.63	32.75	33.00	142	212	Peak		VERTICAL
2	4915.86	36.03	54.00	-17.97	28.65	7.63	32.75	33.00	142	212	Average		VERTICAL

Temperature	22°C	Humidity	54%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 11 / Chain 1
Test Date	May 19, 2016 ~ Aug. 11, 2016		

Horizontal

	Freq	Limit		Over Limit	Read Level	Cable		Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
		Level	Line			dB	dBuV						
	MHz	dBuV/m	dBuV/m								cm	deg	
1	4922.04	36.14	54.00	-17.86	28.76	7.63	32.75	33.00	157	250	Average	HORIZONTAL	
2	4922.84	49.92	74.00	-24.08	42.54	7.63	32.75	33.00	157	250	Peak	HORIZONTAL	

Vertical

	Freq	Limit		Over Limit	Read Level	Cable		Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
		Level	Line			dB	dBuV						
	MHz	dBuV/m	dBuV/m								cm	deg	
1	4922.23	36.24	54.00	-17.76	28.86	7.63	32.75	33.00	157	88	Average	VERTICAL	
2	4925.56	49.30	74.00	-24.70	41.87	7.65	32.78	33.00	157	88	Peak	VERTICAL	

<For Non-Beamforming / 2TX Mode>

Temperature	22°C	Humidity	54%
Test Engineer	Gino Huang	Configurations	IEEE 802.11g CH 1 / Chain 1 + Chain 2
Test Date	May 19, 2016 ~ Aug. 11, 2016		

Horizontal

	Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
			Line	Limit	Level	Loss	Factor	Factor	cm	deg		
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4822.60	45.63	74.00	-28.37	41.31	6.02	32.82	34.52	162	338	Peak	HORIZONTAL
2	4825.60	32.94	54.00	-21.06	28.60	6.02	32.84	34.52	162	338	Average	HORIZONTAL

Vertical

	Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
			Line	Limit	Level	Loss	Factor	Factor	cm	deg		
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4826.90	47.25	74.00	-26.75	42.91	6.02	32.84	34.52	162	119	Peak	VERTICAL
2	4827.90	33.88	54.00	-20.12	29.54	6.02	32.84	34.52	162	119	Average	VERTICAL

Temperature	22°C	Humidity	54%
Test Engineer	Gino Huang	Configurations	IEEE 802.11g CH 6 / Chain 1 + Chain 2
Test Date	May 19, 2016 ~ Aug. 11, 2016		

Horizontal

Freq	Level	Limit		Over Limit	Read Level	CableAntenna Preamp			A/Pos	T/Pos	Remark	Pol/Phase
		Line	dB			Cable Loss	Antenna Factor	Preamp Factor				
1	4874.50	36.17	54.00	-17.83	31.75	6.02	32.91	34.51	228	345	Average	HORIZONTAL
2	4875.30	47.67	74.00	-26.33	43.25	6.02	32.91	34.51	228	345	Peak	HORIZONTAL
3	7312.50	56.13	74.00	-17.87	46.16	7.56	37.17	34.76	142	334	Peak	HORIZONTAL
4	7312.80	44.99	54.00	-9.01	35.02	7.56	37.17	34.76	142	334	Average	HORIZONTAL

Vertical

Freq	Level	Limit		Over Limit	Read Level	CableAntenna Preamp			A/Pos	T/Pos	Remark	Pol/Phase
		Line	dB			Cable Loss	Antenna Factor	Preamp Factor				
1	4866.10	53.74	74.00	-20.26	49.35	6.02	32.88	34.51	211	320	Peak	VERTICAL
2	4870.80	42.20	54.00	-11.80	37.78	6.02	32.91	34.51	211	320	Average	VERTICAL
3	7311.90	44.70	54.00	-9.30	34.73	7.56	37.17	34.76	143	25	Average	VERTICAL
4	7316.60	57.51	74.00	-16.49	47.61	7.46	37.20	34.76	143	25	Peak	VERTICAL

Temperature	22°C	Humidity	54%
Test Engineer	Gino Huang	Configurations	IEEE 802.11g CH 11 / Chain 1 + Chain 2
Test Date	May 19, 2016 ~ Aug. 11, 2016		

Horizontal

Freq	Level	Limit		Over Limit	Read Level	Cable			Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
		Line	dB			dB	dB	dB/m			cm	deg		
1	4920.80	34.34	54.00	-19.66	29.85	6.01	32.97	34.49	148	282	Average		HORIZONTAL	
2	4925.00	45.94	74.00	-28.06	41.43	6.01	32.99	34.49	148	282	Peak		HORIZONTAL	
3	7389.60	39.70	54.00	-14.30	30.01	7.18	37.28	34.77	146	337	Average		HORIZONTAL	
4	7390.30	50.92	74.00	-23.08	41.23	7.18	37.28	34.77	146	337	Peak		HORIZONTAL	

Vertical

Freq	Level	Limit		Over Limit	Read Level	Cable			Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
		Line	dB			dB	dB	dB/m			cm	deg		
1	4922.20	36.59	54.00	-17.41	32.10	6.01	32.97	34.49	196	319	Average		VERTICAL	
2	4922.40	47.28	74.00	-26.72	42.79	6.01	32.97	34.49	196	319	Peak		VERTICAL	
3	7386.40	39.73	54.00	-14.27	30.04	7.18	37.28	34.77	147	328	Average		VERTICAL	
4	7388.20	50.41	74.00	-23.59	40.72	7.18	37.28	34.77	147	328	Peak		VERTICAL	

Temperature	22°C	Humidity	54%
Test Engineer	Gino Huang	Configurations	IEEE 802.11g CH 12 / Chain 1 + Chain 2
Test Date	May 19, 2016 ~ Aug. 11, 2016		

Horizontal

Freq	Level	Limit		Over Limit	Read Level	Cable			Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
		Line	dB			dB	dB	dB/m						
1	4932.50	33.42	54.00	-20.58	28.91	6.01	32.99	34.49	165	231	Average	HORIZONTAL		
2	4933.90	45.74	74.00	-28.26	41.23	6.01	32.99	34.49	165	231	Peak	HORIZONTAL		
3	7399.60	38.00	54.00	-16.00	28.31	7.18	37.28	34.77	171	196	Average	HORIZONTAL		
4	7404.10	50.11	74.00	-23.89	40.37	7.21	37.30	34.77	171	196	Peak	HORIZONTAL		

Vertical

Freq	Level	Limit		Over Limit	Read Level	Cable			Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
		Line	dB			dB	dB	dB/m						
1	4933.40	35.46	54.00	-18.54	30.95	6.01	32.99	34.49	209	326	Average	VERTICAL		
2	4939.00	46.91	74.00	-27.09	42.38	6.01	33.01	34.49	209	326	Peak	VERTICAL		
3	7396.80	38.34	54.00	-15.66	28.65	7.18	37.28	34.77	182	117	Average	VERTICAL		
4	7402.90	50.47	74.00	-23.53	40.73	7.21	37.30	34.77	182	117	Peak	VERTICAL		

Temperature	22°C	Humidity	54%
Test Engineer	Gino Huang	Configurations	IEEE 802.11g CH 13 / Chain 1 + Chain 2
Test Date	May 19, 2016 ~ Aug. 11, 2016		

Horizontal

Freq	Level	Limit		Over Limit	Read Level	Cable			A/Pos	T/Pos	Remark	Pol/Phase
		Line	dB			Antenna	Preamp					
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg			
1	4945.20	33.49	54.00	-20.51	28.95	6.01	33.01	34.48	159	268	Average	HORIZONTAL
2	4946.60	46.20	74.00	-27.80	41.66	6.01	33.01	34.48	159	268	Peak	HORIZONTAL
3	7415.65	37.04	54.00	-16.96	27.30	7.21	37.30	34.77	200	310	Average	HORIZONTAL
4	7417.20	50.04	74.00	-23.96	40.30	7.21	37.30	34.77	200	310	Peak	HORIZONTAL

Vertical

Freq	Level	Limit		Over Limit	Read Level	Cable			A/Pos	T/Pos	Remark	Pol/Phase
		Line	dB			Antenna	Preamp					
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg			
1	4941.28	33.48	54.00	-20.52	28.94	6.01	33.01	34.48	183	262	Average	VERTICAL
2	4943.42	46.29	74.00	-27.71	41.75	6.01	33.01	34.48	183	262	Peak	VERTICAL
3	7412.70	37.79	54.00	-16.21	28.05	7.21	37.30	34.77	164	195	Average	VERTICAL
4	7413.26	50.54	74.00	-23.46	40.80	7.21	37.30	34.77	164	195	Peak	VERTICAL

<For Beamforming / 2TX Mode>

Temperature	22°C	Humidity	54%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 1 / Chain 1 + Chain 2
Test Date	May 19, 2016 ~ Aug. 11, 2016		

Horizontal

	Freq	Limit		Over Limit	Read Level	Cable		Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
		Level	Line			Loss	dB/m						
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg			
1	4821.74	47.92	74.00	-26.08	41.61	7.04	34.17	34.90	154	151	Peak	HORIZONTAL	
2	4823.81	35.63	54.00	-18.37	29.32	7.04	34.17	34.90	154	151	Average	HORIZONTAL	

Vertical

	Freq	Limit		Over Limit	Read Level	Cable		Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
		Level	Line			Loss	dB/m						
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg			
1	4823.29	36.88	54.00	-17.12	30.57	7.04	34.17	34.90	190	263	Average	VERTICAL	
2	4823.91	51.77	74.00	-22.23	45.46	7.04	34.17	34.90	190	263	Peak	VERTICAL	

Temperature	22°C	Humidity	54%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 6 / Chain 1 + Chain 2
Test Date	May 19, 2016 ~ Aug. 11, 2016		

Horizontal

	Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
			Line	Limit	Level	Loss	Factor	Factor	dB	cm		
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4873.34	48.36	74.00	-25.64	41.74	7.18	34.34	34.90	134	244	Peak	HORIZONTAL
2	4874.18	37.79	54.00	-16.21	31.17	7.18	34.34	34.90	134	244	Average	HORIZONTAL

Vertical

	Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
			Line	Limit	Level	Loss	Factor	Factor	dB	cm		
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4873.26	37.32	54.00	-16.68	30.70	7.18	34.34	34.90	169	48	Average	VERTICAL
2	4874.08	52.79	74.00	-21.21	46.17	7.18	34.34	34.90	169	48	Peak	VERTICAL

Temperature	22°C	Humidity	54%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 11 / Chain 1 + Chain 2
Test Date	May 19, 2016 ~ Aug. 11, 2016		

Horizontal

	Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
			Line	Limit	Level	Loss	Factor	Factor	cm	deg		
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4922.32	48.71	74.00	-25.29	41.87	7.28	34.46	34.90	149	95	Peak	HORIZONTAL
2	4925.50	35.61	54.00	-18.39	28.70	7.31	34.50	34.90	149	95	Average	HORIZONTAL

Vertical

	Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
			Line	Limit	Level	Loss	Factor	Factor	cm	deg		
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4923.01	49.24	74.00	-24.76	42.40	7.28	34.46	34.90	157	173	Peak	VERTICAL
2	4923.06	35.71	54.00	-18.29	28.87	7.28	34.46	34.90	157	173	Average	VERTICAL

Temperature	22°C	Humidity	54%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 12 / Chain 1 + Chain 2
Test Date	May 19, 2016 ~ Aug. 11, 2016		

Horizontal

	Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
			Line	Limit	Level	Loss	Factor	Factor	dB	cm		
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4933.09	48.53	74.00	-25.47	41.62	7.31	34.50	34.90	127	320	Peak	HORIZONTAL
2	4933.69	35.93	54.00	-18.07	29.02	7.31	34.50	34.90	127	320	Average	HORIZONTAL

Vertical

	Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
			Line	Limit	Level	Loss	Factor	Factor	dB	cm		
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4933.25	35.94	54.00	-18.06	29.03	7.31	34.50	34.90	161	205	Average	VERTICAL
2	4934.69	49.74	74.00	-24.26	42.83	7.31	34.50	34.90	161	205	Peak	VERTICAL

Temperature	22°C	Humidity	54%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 13 / Chain 1 + Chain 2
Test Date	May 19, 2016 ~ Aug. 11, 2016		

Horizontal

	Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
			Line	Limit	Level	Loss	Factor	Factor	dB	cm		
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4944.24	37.06	54.00	-16.94	30.07	7.35	34.54	34.90	140	203	Average	HORIZONTAL
2	4946.25	49.69	74.00	-24.31	42.70	7.35	34.54	34.90	140	203	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
			Line	Limit	Level	Loss	Factor	Factor	dB	cm		
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4943.99	38.08	54.00	-15.92	31.09	7.35	34.54	34.90	188	122	Average	VERTICAL
2	4944.11	49.34	74.00	-24.66	42.35	7.35	34.54	34.90	188	122	Peak	VERTICAL

Temperature	22°C	Humidity	54%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 3 / Chain 1 + Chain 2
Test Date	May 19, 2016 ~ Aug. 11, 2016		

Horizontal

Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
		Line	Limit	Level	Loss	Factor	Factor	cm	deg		
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	4843.98	35.11	54.00	-18.89	28.65	7.11	34.25	34.90	143	129	Average
2	4844.02	48.52	74.00	-25.48	42.06	7.11	34.25	34.90	143	129	Peak

Vertical

Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
		Line	Limit	Level	Loss	Factor	Factor	cm	deg		
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	4842.78	35.41	54.00	-18.59	28.95	7.11	34.25	34.90	193	32	Average
2	4844.50	48.30	74.00	-25.70	41.84	7.11	34.25	34.90	193	32	Peak

Temperature	22°C	Humidity	54%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 6 / Chain 1 + Chain 2
Test Date	May 19, 2016 ~ Aug. 11, 2016		

Horizontal

	Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
			Line	Limit	Level	Loss	Factor	Factor	dB	cm		
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4872.40	35.80	54.00	-18.20	29.18	7.18	34.34	34.90	161	116	Average	HORIZONTAL
2	4874.10	49.16	74.00	-24.84	42.54	7.18	34.34	34.90	161	116	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
			Line	Limit	Level	Loss	Factor	Factor	dB	cm		
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4872.07	49.15	74.00	-24.85	42.53	7.18	34.34	34.90	149	222	Peak	VERTICAL
2	4872.10	35.93	54.00	-18.07	29.31	7.18	34.34	34.90	149	222	Average	VERTICAL

Temperature	22°C	Humidity	54%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 9 / Chain 1 + Chain 2
Test Date	May 19, 2016 ~ Aug. 11, 2016		

Horizontal

	Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
			Line	Limit	Level	Loss	Factor	Factor	dB	cm		
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4905.70	35.49	54.00	-18.51	28.73	7.24	34.42	34.90	140	287	Average	HORIZONTAL
2	4905.97	47.92	74.00	-26.08	41.16	7.24	34.42	34.90	140	287	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
			Line	Limit	Level	Loss	Factor	Factor	dB	cm		
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4905.97	48.64	74.00	-25.36	41.88	7.24	34.42	34.90	147	158	Peak	VERTICAL
2	4906.35	35.45	54.00	-18.55	28.69	7.24	34.42	34.90	147	158	Average	VERTICAL

Temperature	22°C	Humidity	54%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 10 / Chain 1 + Chain 2
Test Date	May 19, 2016 ~ Aug. 11, 2016		

Horizontal

Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
		Line	Limit	Level	Loss	Factor	Factor	cm	deg		
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	4915.56	35.99	54.00	-18.01	29.15	7.28	34.46	34.90	155	70	Average
2	4915.95	49.08	74.00	-24.92	42.24	7.28	34.46	34.90	155	70	Peak
											HORIZONTAL

Vertical

Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
		Line	Limit	Level	Loss	Factor	Factor	cm	deg		
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	4914.08	36.41	54.00	-17.59	29.57	7.28	34.46	34.90	138	342	Average
2	4914.21	49.08	74.00	-24.92	42.24	7.28	34.46	34.90	138	342	Peak
											VERTICAL

Temperature	22°C	Humidity	54%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 11 / Chain 1 + Chain 2
Test Date	May 19, 2016 ~ Aug. 11, 2016		

Horizontal

Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
		Line	Limit	Level	Loss	Factor	Factor	cm	deg		
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	4923.73	36.01	54.00	-17.99	29.10	7.31	34.50	34.90	142	308	Average
2	4924.36	49.07	74.00	-24.93	42.16	7.31	34.50	34.90	142	308	Peak

Vertical

Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
		Line	Limit	Level	Loss	Factor	Factor	cm	deg		
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	4924.05	36.20	54.00	-17.80	29.29	7.31	34.50	34.90	121	224	Average
2	4925.21	49.67	74.00	-24.33	42.76	7.31	34.50	34.90	121	224	Peak

PIFA Antenna
<For Non-Beamforming / 1TX Mode>

Temperature	22°C	Humidity	54%
Test Engineer	Gino Huang	Configurations	IEEE 802.11b CH 1 / Chain 1
Test Date	May 19, 2016 ~ Aug. 11, 2016		

Horizontal

Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
		Line	Limit	Level	Loss	Factor	Factor	cm	deg		
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	4823.99	48.40	54.00	-5.60	41.39	7.48	32.58	33.05	176	233	Average
2	4824.02	52.81	74.00	-21.19	45.80	7.48	32.58	33.05	176	233	Peak

Vertical

Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
		Line	Limit	Level	Loss	Factor	Factor	cm	deg		
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	4823.93	53.18	74.00	-20.82	46.17	7.48	32.58	33.05	173	89	Peak
2	4823.99	49.03	54.00	-4.97	42.02	7.48	32.58	33.05	173	89	Average



Temperature	22°C	Humidity	54%
Test Engineer	Gino Huang	Configurations	IEEE 802.11b CH 6 / Chain 1
Test Date	May 19, 2016 ~ Aug. 11, 2016		

Horizontal

	Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
			Line	Limit	Level	Loss	Factor	Factor	cm	deg		
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4873.88	53.30	74.00	-20.70	46.09	7.56	32.68	33.03	183	237	Peak	HORIZONTAL
2	4873.95	49.05	54.00	-4.95	41.84	7.56	32.68	33.03	183	237	Average	HORIZONTAL

Vertical

	Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
			Line	Limit	Level	Loss	Factor	Factor	cm	deg		
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4873.96	55.60	74.00	-18.40	48.39	7.56	32.68	33.03	179	106	Peak	VERTICAL
2	4873.98	51.95	54.00	-3.05	44.74	7.56	32.68	33.03	179	106	Average	VERTICAL

Temperature	22°C	Humidity	54%
Test Engineer	Gino Huang	Configurations	IEEE 802.11b CH 11 / Chain 1
Test Date	May 19, 2016 ~ Aug. 11, 2016		

Horizontal

	Freq	Limit		Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
		Level	Line									
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4923.97	47.57	54.00	-6.43	40.14	7.65	32.78	33.00	188	291	Average	HORIZONTAL
2	4924.02	53.11	74.00	-20.89	45.68	7.65	32.78	33.00	188	291	Peak	HORIZONTAL

Vertical

	Freq	Limit		Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
		Level	Line									
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4923.95	50.16	54.00	-3.84	42.73	7.65	32.78	33.00	173	107	Average	VERTICAL
2	4923.96	54.38	74.00	-19.62	46.95	7.65	32.78	33.00	173	107	Peak	VERTICAL

Temperature	22°C	Humidity	54%
Test Engineer	Gino Huang	Configurations	IEEE 802.11b CH 12 / Chain 1
Test Date	May 19, 2016 ~ Aug. 11, 2016		

Horizontal

	Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
			Line	Limit	Level	Loss	Factor	Factor	cm	deg		
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB				
1	4934.00	39.38	54.00	-14.62	31.95	7.65	32.78	33.00	196	287	Average	HORIZONTAL
2	4934.12	49.65	74.00	-24.35	42.22	7.65	32.78	33.00	196	287	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
			Line	Limit	Level	Loss	Factor	Factor	cm	deg		
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB				
1	4933.83	49.72	74.00	-24.28	42.29	7.65	32.78	33.00	178	91	Peak	VERTICAL
2	4933.99	40.12	54.00	-13.88	32.69	7.65	32.78	33.00	178	91	Average	VERTICAL

Temperature	22°C	Humidity	54%
Test Engineer	Gino Huang	Configurations	IEEE 802.11b CH 13 / Chain 1
Test Date	May 19, 2016 ~ Aug. 11, 2016		

Horizontal

	Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
			Line	Limit	Level	Loss	Factor	Factor	cm	deg		
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB				
1	4943.78	48.29	74.00	-25.71	40.81	7.67	32.80	32.99	180	88	Peak	HORIZONTAL
2	4943.96	34.97	54.00	-19.03	27.49	7.67	32.80	32.99	180	88	Average	HORIZONTAL

Vertical

	Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
			Line	Limit	Level	Loss	Factor	Factor	cm	deg		
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB				
1	4943.40	34.67	54.00	-19.33	27.19	7.67	32.80	32.99	178	87	Average	VERTICAL
2	4943.64	47.56	74.00	-26.44	40.08	7.67	32.80	32.99	178	87	Peak	VERTICAL

Temperature	22°C	Humidity	54%
Test Engineer	Gino Huang	Configurations	IEEE 802.11g CH 1 / Chain 1
Test Date	May 19, 2016 ~ Aug. 11, 2016		

Horizontal

Freq	Level	Limit		Over Limit	Read Level	Cable		Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
		Line	dB			dB	dB/m			cm	deg		
1	4823.71	34.33	54.00	-19.67	28.02	7.04	34.17	34.90	138	56	Average	HORIZONTAL	
2	4824.46	47.23	74.00	-26.77	40.92	7.04	34.17	34.90	138	56	Peak	HORIZONTAL	

Vertical

Freq	Level	Limit		Over Limit	Read Level	Cable		Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
		Line	dB			dB	dB/m			cm	deg		
1	4823.53	34.35	54.00	-19.65	28.04	7.04	34.17	34.90	190	125	Average	VERTICAL	
2	4823.58	47.22	74.00	-26.78	40.91	7.04	34.17	34.90	190	125	Peak	VERTICAL	

Temperature	22°C	Humidity	54%
Test Engineer	Gino Huang	Configurations	IEEE 802.11g CH 6 / Chain 1
Test Date	May 19, 2016 ~ Aug. 11, 2016		

Horizontal

Freq	Level	Limit		Over Limit	Read Level	Cable			A/Pos	T/Pos	Remark	Pol/Phase
		Line	dB			Antenna	Preamp	Factor				
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4873.90	38.88	54.00	-15.12	32.30	6.28	33.23	32.93	142	24	Average	HORIZONTAL
2	4877.20	51.47	74.00	-22.53	44.89	6.28	33.23	32.93	142	24	Peak	HORIZONTAL
3	7310.10	45.56	54.00	-8.44	34.91	7.86	36.09	33.30	264	326	Average	HORIZONTAL
4	7312.90	59.25	74.00	-14.75	48.60	7.86	36.09	33.30	264	326	Peak	HORIZONTAL

Vertical

Freq	Level	Limit		Over Limit	Read Level	Cable			A/Pos	T/Pos	Remark	Pol/Phase
		Line	dB			Antenna	Preamp	Factor				
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4874.10	41.03	54.00	-12.97	34.45	6.28	33.23	32.93	160	18	Average	VERTICAL
2	4875.60	54.28	74.00	-19.72	47.70	6.28	33.23	32.93	160	18	Peak	VERTICAL
3	7310.10	47.62	54.00	-6.38	36.97	7.86	36.09	33.30	150	345	Average	VERTICAL
4	7312.60	61.41	74.00	-12.59	50.76	7.86	36.09	33.30	150	345	Peak	VERTICAL



Temperature	22°C	Humidity	54%
Test Engineer	Gino Huang	Configurations	IEEE 802.11g CH 11 / Chain 1
Test Date	May 19, 2016 ~ Aug. 11, 2016		

Horizontal

Freq	Level	Limit		Over Limit	Read Level	Cable		Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
		Line	dBuV/m			dB	dBuV			dB	dB/m	dB	cm
1	4923.16	46.98	74.00	-27.02	39.60	7.63	32.75	33.00	33.00	180	87	Peak	HORIZONTAL
2	4923.18	34.46	54.00	-19.54	27.08	7.63	32.75	33.00	33.00	180	87	Average	HORIZONTAL

Vertical

Freq	Level	Limit		Over Limit	Read Level	Cable		Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
		Line	dBuV/m			dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg
1	4923.06	34.40	54.00	-19.60	27.02	7.63	32.75	33.00	33.00	183	82	Average	VERTICAL
2	4923.85	47.78	74.00	-26.22	40.35	7.65	32.78	33.00	33.00	183	82	Peak	VERTICAL



Temperature	22°C	Humidity	54%
Test Engineer	Gino Huang	Configurations	IEEE 802.11g CH 12 / Chain 1
Test Date	May 19, 2016 ~ Aug. 11, 2016		

Horizontal

Freq	Level	Limit		Over Limit	Read Level	Cable		Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
		Line	dBuV/m			dB	dBuV			dB	dB/m	dB	cm
1	4933.60	47.78	74.00	-26.22	40.35	7.65	32.78	33.00	185	76	Peak		HORIZONTAL
2	4934.03	36.39	54.00	-17.61	28.96	7.65	32.78	33.00	185	76	Average		HORIZONTAL

Vertical

Freq	Level	Limit		Over Limit	Read Level	Cable		Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
		Line	dBuV/m			dBuV/m	dB			dB	dB/m	dB	cm
1	4933.94	47.35	74.00	-26.65	39.92	7.65	32.78	33.00	188	75	Peak		VERTICAL
2	4934.03	36.21	54.00	-17.79	28.78	7.65	32.78	33.00	188	75	Average		VERTICAL



Temperature	22°C	Humidity	54%
Test Engineer	Gino Huang	Configurations	IEEE 802.11g CH 13 / Chain 1
Test Date	May 19, 2016 ~ Aug. 11, 2016		

Horizontal

Freq	Level	Limit		Over Limit	Read Level	Cable		Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
		Line	dBuV/m			dB	dBuV			dB	dB/m	dB	cm
1	4943.40	46.19	74.00	-27.81	38.71	7.67	32.80	32.99	32.99	190	68	Peak	HORIZONTAL
2	4943.57	33.99	54.00	-20.01	26.51	7.67	32.80	32.99	32.99	190	68	Average	HORIZONTAL

Vertical

Freq	Level	Limit		Over Limit	Read Level	Cable		Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
		Line	dBuV/m			dB	dBuV			dB	dB/m	dB	cm
1	4943.27	33.67	54.00	-20.33	26.19	7.67	32.80	32.99	32.99	187	76	Average	VERTICAL
2	4943.95	46.67	74.00	-27.33	39.19	7.67	32.80	32.99	32.99	187	76	Peak	VERTICAL

Temperature	22°C	Humidity	54%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 1 / Chain 1
Test Date	May 19, 2016 ~ Aug. 11, 2016		

Horizontal

	Freq	Limit		Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
		Level	Line								
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	4823.94	47.78	74.00	-26.22	41.47	7.04	34.17	34.90	134	225	Peak
2	4824.05	34.36	54.00	-19.64	28.05	7.04	34.17	34.90	134	225	Average
											HORIZONTAL

Vertical

	Freq	Limit		Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
		Level	Line								
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	4823.00	34.62	54.00	-19.38	28.31	7.04	34.17	34.90	124	263	Average
2	4824.29	48.00	74.00	-26.00	41.69	7.04	34.17	34.90	124	263	Peak
											VERTICAL

Temperature	22°C	Humidity	54%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 6 / Chain 1
Test Date	May 19, 2016 ~ Aug. 11, 2016		

Horizontal

Freq	Level	Limit		Read Level	Cable			Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
		Line	Over Limit		Loss	Antenna Factor	Factor					
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg			
1	4868.00	52.09	74.00	-21.91	45.51	6.28	33.23	32.93	128	15	Peak	HORIZONTAL
2	4874.00	38.18	54.00	-15.82	31.60	6.28	33.23	32.93	128	15	Average	HORIZONTAL
3	7311.60	44.87	54.00	-9.13	34.22	7.86	36.09	33.30	167	311	Average	HORIZONTAL
4	7317.40	59.77	74.00	-14.23	49.07	7.87	36.13	33.30	167	311	Peak	HORIZONTAL

Vertical

Freq	Level	Limit		Read Level	Cable			Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
		Line	Over Limit		Loss	Antenna Factor	Factor					
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg			
1	4872.20	54.00	74.00	-20.00	47.42	6.28	33.23	32.93	158	20	Peak	VERTICAL
2	4873.60	40.98	54.00	-13.02	34.40	6.28	33.23	32.93	158	20	Average	VERTICAL
3	7314.00	46.37	54.00	-7.63	35.72	7.86	36.09	33.30	173	343	Average	VERTICAL
4	7317.70	61.42	74.00	-12.58	50.72	7.87	36.13	33.30	173	343	Peak	VERTICAL

Temperature	22°C	Humidity	54%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 11 / Chain 1
Test Date	May 19, 2016 ~ Aug. 11, 2016		

Horizontal

Freq	Level	Limit		Over Limit	Read Level	Cable			A/Pos	T/Pos	Remark	Pol/Phase
		Line	dB			dBuV	dB	dB/m				
1	4923.08	34.37	54.00	-19.63	26.99	7.63	32.75	33.00	195	59	Average	HORIZONTAL
2	4923.43	47.76	74.00	-26.24	40.38	7.63	32.75	33.00	195	59	Peak	HORIZONTAL

Vertical

Freq	Level	Limit		Over Limit	Read Level	Cable			A/Pos	T/Pos	Remark	Pol/Phase
		Line	dB			dBuV	dB	dB/m				
1	4923.20	34.27	54.00	-19.73	26.89	7.63	32.75	33.00	192	63	Average	VERTICAL
2	4924.06	47.35	74.00	-26.65	39.92	7.65	32.78	33.00	192	63	Peak	VERTICAL

Temperature	22°C	Humidity	54%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 12 / Chain 1
Test Date	May 19, 2016 ~ Aug. 11, 2016		

Horizontal

Freq	Level	Limit		Over Limit	Read Level	Cable			A/Pos	T/Pos	Remark	Pol/Phase
		Line	dB			dBuV	Antenna Loss	Preamp Factor				
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4933.94	35.27	54.00	-18.73	27.84	7.65	32.78	33.00	195	61	Average	HORIZONTAL
2	4933.97	47.68	74.00	-26.32	40.25	7.65	32.78	33.00	195	61	Peak	HORIZONTAL

Vertical

Freq	Level	Limit		Over Limit	Read Level	Cable			A/Pos	T/Pos	Remark	Pol/Phase
		Line	dB			dBuV	Antenna Loss	Preamp Factor				
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4933.84	47.97	74.00	-26.03	40.54	7.65	32.78	33.00	197	50	Peak	VERTICAL
2	4933.95	37.26	54.00	-16.74	29.83	7.65	32.78	33.00	197	50	Average	VERTICAL

Temperature	22°C	Humidity	54%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 13 / Chain 1
Test Date	May 19, 2016 ~ Aug. 11, 2016		

Horizontal

Freq	Level	Limit		Over Limit	Read Level	Cable			A/Pos	T/Pos	Remark	Pol/Phase
		Line	dB			dBuV	dB	dB/m				
1	4943.76	33.95	54.00	-20.05	26.47	7.67	32.80	32.99	200	46	Average	HORIZONTAL
2	4944.38	47.00	74.00	-27.00	39.52	7.67	32.80	32.99	200	46	Peak	HORIZONTAL

Vertical

Freq	Level	Limit		Over Limit	Read Level	Cable			A/Pos	T/Pos	Remark	Pol/Phase
		Line	dB			dBuV	dB	dB/m				
1	4943.14	46.57	74.00	-27.43	39.09	7.67	32.80	32.99	197	36	Peak	VERTICAL
2	4944.40	33.68	54.00	-20.32	26.20	7.67	32.80	32.99	197	36	Average	VERTICAL

Temperature	22°C	Humidity	54%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 3 / Chain 1
Test Date	May 19, 2016 ~ Aug. 11, 2016		

Horizontal

Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
		Line	Limit	Level	Loss	Factor	Factor	cm	deg		
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	4843.38	34.27	54.00	-19.73	27.96	7.04	34.17	34.90	156	209	Average HORIZONTAL
2	4844.02	47.56	74.00	-26.44	41.25	7.04	34.17	34.90	156	209	Peak HORIZONTAL

Vertical

Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
		Line	Limit	Level	Loss	Factor	Factor	cm	deg		
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	4843.18	47.55	74.00	-26.45	41.24	7.04	34.17	34.90	112	321	Peak VERTICAL
2	4843.92	34.59	54.00	-19.41	28.28	7.04	34.17	34.90	112	321	Average VERTICAL

Temperature	22°C	Humidity	54%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 6 / Chain 1
Test Date	May 19, 2016 ~ Aug. 11, 2016		

Horizontal

Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
		Line	Limit	Level	Loss	Factor	Factor	cm	deg		
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	4872.66	48.53	74.00	-25.47	41.95	6.28	33.23	32.93	178	262	Peak HORIZONTAL
2	4874.19	34.43	54.00	-19.57	27.85	6.28	33.23	32.93	178	262	Average HORIZONTAL

Vertical

Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
		Line	Limit	Level	Loss	Factor	Factor	cm	deg		
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	4873.21	47.83	74.00	-26.17	41.25	6.28	33.23	32.93	155	319	Peak VERTICAL
2	4873.80	35.39	54.00	-18.61	28.81	6.28	33.23	32.93	155	319	Average VERTICAL

Temperature	22°C	Humidity	54%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 9 / Chain 1
Test Date	May 19, 2016 ~ Aug. 11, 2016		

Horizontal

	Freq	Limit Level	Over Line	Read Limit	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	4904.10	34.50	54.00	-19.50	27.17	7.61	32.73	33.01	207	34 Average	HORIZONTAL
2	4904.27	47.22	74.00	-26.78	39.89	7.61	32.73	33.01	207	34 Peak	HORIZONTAL

Vertical

	Freq	Limit Level	Over Line	Read Limit	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	4914.15	34.16	54.00	-19.84	26.78	7.63	32.75	33.00	210	42 Average	VERTICAL
2	4914.18	47.99	74.00	-26.01	40.61	7.63	32.75	33.00	210	42 Peak	VERTICAL

Temperature	22°C	Humidity	54%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 10 / Chain 1
Test Date	May 19, 2016 ~ Aug. 11, 2016		

Horizontal

Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
		Line	Limit	Level	Loss	Factor	Factor				
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4913.38	34.42	54.00	-19.58	27.04	7.63	32.75	33.00	208	45 Average	HORIZONTAL
2	4913.96	47.28	74.00	-26.72	39.90	7.63	32.75	33.00	208	45 Peak	HORIZONTAL

Vertical

Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
		Line	Limit	Level	Loss	Factor	Factor				
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4913.19	47.21	74.00	-26.79	39.83	7.63	32.75	33.00	203	33 Peak	VERTICAL
2	4913.54	34.13	54.00	-19.87	26.75	7.63	32.75	33.00	203	33 Average	VERTICAL

Temperature	22°C	Humidity	54%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 11 / Chain 1
Test Date	May 19, 2016 ~ Aug. 11, 2016		

Horizontal

Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
		Line	Limit	Level	Loss	Factor	Factor	cm	deg		
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	4923.04	34.46	54.00	-19.54	27.08	7.63	32.75	33.00	206	27 Average	HORIZONTAL
2	4923.06	47.22	74.00	-26.78	39.84	7.63	32.75	33.00	206	27 Peak	HORIZONTAL

Vertical

Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
		Line	Limit	Level	Loss	Factor	Factor	cm	deg		
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	4923.17	34.33	54.00	-19.67	26.95	7.63	32.75	33.00	213	38 Average	VERTICAL
2	4924.65	46.60	74.00	-27.40	39.17	7.65	32.78	33.00	213	38 Peak	VERTICAL

<For Non-Beamforming / 2TX Mode>

Temperature	22°C	Humidity	54%
Test Engineer	Gino Huang	Configurations	IEEE 802.11g CH 1 / Chain 1 + Chain 2
Test Date	May 19, 2016 ~ Aug. 11, 2016		

Horizontal

Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
		Line	Limit	Level	Loss	Factor	Factor	cm	deg		
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	4821.16	47.90	74.00	-26.10	41.59	7.04	34.17	34.90	173	182	Peak HORIZONTAL
2	4821.46	35.01	54.00	-18.99	28.70	7.04	34.17	34.90	173	182	Average HORIZONTAL

Vertical

Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
		Line	Limit	Level	Loss	Factor	Factor	cm	deg		
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	4823.44	48.11	74.00	-25.89	41.80	7.04	34.17	34.90	201	300	Peak VERTICAL
2	4823.96	36.72	54.00	-17.28	30.41	7.04	34.17	34.90	201	300	Average VERTICAL

Temperature	22°C	Humidity	54%
Test Engineer	Gino Huang	Configurations	IEEE 802.11g CH 6 / Chain 1 + Chain 2
Test Date	May 19, 2016 ~ Aug. 11, 2016		

Horizontal

Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
		Line	Limit	Level	Loss	Factor	Factor	dB	cm		
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	4874.14	42.66	54.00	-11.34	36.04	7.18	34.34	34.90	157	206	Average
2	4875.14	56.10	74.00	-17.90	49.48	7.18	34.34	34.90	157	206	Peak
											HORIZONTAL

Vertical

Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
		Line	Limit	Level	Loss	Factor	Factor	dB	cm		
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	4875.28	57.33	74.00	-16.67	50.71	7.18	34.34	34.90	142	8	Peak
2	4875.90	44.10	54.00	-9.90	37.48	7.18	34.34	34.90	142	8	Average
											VERTICAL

Temperature	22°C	Humidity	54%
Test Engineer	Gino Huang	Configurations	IEEE 802.11g CH 11 / Chain 1 + Chain 2
Test Date	May 19, 2016 ~ Aug. 11, 2016		

Horizontal

	Freq	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	Freq	Level	Line	Limit	Level	Loss	Factor	Factor			
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	4923.72	36.28	54.00	-17.72	29.37	7.31	34.50	34.90	169	202	Average
2	4924.84	49.23	74.00	-24.77	42.32	7.31	34.50	34.90	169	202	Peak

Vertical

	Freq	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	Freq	Level	Line	Limit	Level	Loss	Factor	Factor			
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	4925.42	36.13	54.00	-17.87	29.22	7.31	34.50	34.90	128	90	Average
2	4927.94	49.02	74.00	-24.98	42.11	7.31	34.50	34.90	128	90	Peak

Temperature	22°C	Humidity	54%
Test Engineer	Gino Huang	Configurations	IEEE 802.11g CH 12 / Chain 1 + Chain 2
Test Date	May 19, 2016 ~ Aug. 11, 2016		

Horizontal

Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
		Line	Limit	Level	Loss	Factor	Factor	dB	cm		
		MHz	dBuV/m	dBuV/m							
1	4934.30	35.73	54.00	-18.27	28.82	7.31	34.50	34.90	144	12 Average	HORIZONTAL
2	4934.44	48.30	74.00	-25.70	41.39	7.31	34.50	34.90	144	12 Peak	HORIZONTAL

Vertical

Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
		Line	Limit	Level	Loss	Factor	Factor	dB	cm		
		MHz	dBuV/m	dBuV/m							
1	4934.16	36.22	54.00	-17.78	29.31	7.31	34.50	34.90	156	206 Average	VERTICAL
2	4935.80	48.50	74.00	-25.50	41.59	7.31	34.50	34.90	156	206 Peak	VERTICAL

Temperature	22°C	Humidity	54%
Test Engineer	Gino Huang	Configurations	IEEE 802.11g CH 13 / Chain 1 + Chain 2
Test Date	May 19, 2016 ~ Aug. 11, 2016		

Horizontal

Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
		Line	Limit	Level	Loss	Factor	Factor	cm	deg		
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	4943.30	36.04	54.00	-17.96	29.05	7.35	34.54	34.90	218	187	Average
2	4943.88	49.63	74.00	-24.37	42.64	7.35	34.54	34.90	218	187	Peak
											HORIZONTAL

Vertical

Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
		Line	Limit	Level	Loss	Factor	Factor	cm	deg		
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	4943.96	36.14	54.00	-17.86	29.15	7.35	34.54	34.90	135	119	Average
2	4945.34	49.06	74.00	-24.94	42.07	7.35	34.54	34.90	135	119	Peak
											VERTICAL

<For Beamforming / 2TX Mode>

Temperature	22°C	Humidity	54%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 1 / Chain 1 + Chain 2
Test Date	May 19, 2016 ~ Aug. 11, 2016		

Horizontal

Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
		Line	Limit	Level	Loss	Factor	Factor	cm	deg		
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	4579.42	48.41	74.00	-25.59	43.42	6.46	33.44	34.91	153	20 Peak	HORIZONTAL
2	4582.70	35.57	54.00	-18.43	30.53	6.47	33.48	34.91	153	20 Average	HORIZONTAL

Vertical

Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
		Line	Limit	Level	Loss	Factor	Factor	cm	deg		
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	4581.70	48.61	74.00	-25.39	43.57	6.47	33.48	34.91	142	132 Peak	VERTICAL
2	4585.60	35.52	54.00	-18.48	30.48	6.47	33.48	34.91	142	132 Average	VERTICAL

Temperature	22°C	Humidity	54%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 6 / Chain 1 + Chain 2
Test Date	May 19, 2016 ~ Aug. 11, 2016		

Horizontal

	Freq	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	4871.65	38.51	54.00	-15.49	32.43	6.64	34.34	34.90	163	160	Average
2	4873.16	46.09	74.00	-27.91	40.01	6.64	34.34	34.90	163	160	Peak

Vertical

	Freq	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	4872.49	45.76	74.00	-28.24	39.68	6.64	34.34	34.90	142	20	Peak
2	4872.98	38.43	54.00	-15.57	32.35	6.64	34.34	34.90	142	59	Average

Temperature	22°C	Humidity	54%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 11 / Chain 1 + Chain 2
Test Date	May 19, 2016 ~ Aug. 11, 2016		

Horizontal

	Freq	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	Freq	Level	Line	Limit	Level	Loss	Factor	Factor			
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	4922.44	46.28	74.00	-27.72	40.00	6.72	34.46	34.90	197	356	Peak HORIZONTAL
2	4922.85	36.25	54.00	-17.75	29.97	6.72	34.46	34.90	197	356	Average HORIZONTAL

Vertical

	Freq	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	Freq	Level	Line	Limit	Level	Loss	Factor	Factor			
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	4921.78	36.01	54.00	-17.99	29.73	6.72	34.46	34.90	189	294	Average VERTICAL
2	4922.66	48.65	74.00	-25.35	42.37	6.72	34.46	34.90	189	294	Peak VERTICAL

Temperature	22°C	Humidity	54%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 12 / Chain 1 + Chain 2
Test Date	May 19, 2016 ~ Aug. 11, 2016		

Horizontal

	Freq	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	4934.42	49.74	74.00	-24.26	43.40	6.74	34.50	34.90	206	192 Peak	HORIZONTAL
2	4935.74	36.62	54.00	-17.38	30.28	6.74	34.50	34.90	206	192 Average	HORIZONTAL

Vertical

	Freq	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	4930.42	35.10	54.00	-18.90	28.76	6.74	34.50	34.90	153	93 Average	VERTICAL
2	4931.84	48.43	74.00	-25.57	42.09	6.74	34.50	34.90	153	93 Peak	VERTICAL

Temperature	22°C	Humidity	54%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 13 / Chain 1 + Chain 2
Test Date	May 19, 2016 ~ Aug. 11, 2016		

Horizontal

	Freq	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	5683.60	36.18	54.00	-17.82	28.54	7.34	35.24	34.94	191	271	Average
2	5683.60	46.38	74.00	-27.62	38.74	7.34	35.24	34.94	191	271	Peak

Vertical

	Freq	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	4942.16	36.69	54.00	-17.31	30.28	6.77	34.54	34.90	122	66	Average
2	4944.26	49.95	74.00	-24.05	43.54	6.77	34.54	34.90	122	66	Peak

Temperature	22°C	Humidity	54%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 3 / Chain 1 + Chain 2
Test Date	May 19, 2016 ~ Aug. 11, 2016		

Horizontal

	Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4840.42	49.07	74.00	-24.93	43.13	6.59	34.25	34.90	154	267	Peak	HORIZONTAL
2	4844.12	36.28	54.00	-17.72	30.34	6.59	34.25	34.90	154	267	Average	HORIZONTAL

Vertical

	Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4842.72	49.03	74.00	-24.97	43.09	6.59	34.25	34.90	120	345	Peak	VERTICAL
2	4846.22	36.50	54.00	-17.50	30.56	6.59	34.25	34.90	120	345	Average	VERTICAL

Temperature	22°C	Humidity	54%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 6 / Chain 1 + Chain 2
Test Date	May 19, 2016 ~ Aug. 11, 2016		

Horizontal

	Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4864.92	36.71	54.00	-17.29	30.71	6.61	34.29	34.90	212	3	Average	HORIZONTAL
2	4876.48	49.39	74.00	-24.61	43.31	6.64	34.34	34.90	212	3	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4864.52	36.64	54.00	-17.36	30.64	6.61	34.29	34.90	174	111	Average	VERTICAL
2	4865.20	49.86	74.00	-24.14	43.86	6.61	34.29	34.90	174	111	Peak	VERTICAL

Temperature	22°C	Humidity	54%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 9 / Chain 1 + Chain 2
Test Date	May 19, 2016 ~ Aug. 11, 2016		

Horizontal

	Freq	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	4909.96	49.32	74.00	-24.68	43.04	6.72	34.46	34.90	156	214	Peak HORIZONTAL
2	4913.44	36.58	54.00	-17.42	30.30	6.72	34.46	34.90	156	214	Average HORIZONTAL

Vertical

	Freq	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	4896.76	49.33	74.00	-24.67	43.12	6.69	34.42	34.90	146	136	Peak VERTICAL
2	4913.60	36.63	54.00	-17.37	30.35	6.72	34.46	34.90	146	136	Average VERTICAL

Temperature	22°C	Humidity	54%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 10 / Chain 1 + Chain 2
Test Date	May 19, 2016 ~ Aug. 11, 2016		

Horizontal

	Freq	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	Freq	Level	Line	Limit	Level	Loss	Factor	Factor			
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	4908.80	49.94	74.00	-24.06	43.73	6.69	34.42	34.90	143	284	Peak HORIZONTAL
2	4914.80	36.79	54.00	-17.21	30.51	6.72	34.46	34.90	143	284	Average HORIZONTAL

Vertical

	Freq	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	Freq	Level	Line	Limit	Level	Loss	Factor	Factor			
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	4905.04	36.99	54.00	-17.01	30.78	6.69	34.42	34.90	151	201	Average VERTICAL
2	4916.96	49.80	74.00	-24.20	43.52	6.72	34.46	34.90	151	201	Peak VERTICAL

Temperature	22°C	Humidity	54%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 11 / Chain 1 + Chain 2
Test Date	May 19, 2016 ~ Aug. 11, 2016		

Horizontal

	Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4918.80	49.88	74.00	-24.12	43.60	6.72	34.46	34.90	194	261	Peak	HORIZONTAL
2	4926.64	36.86	54.00	-17.14	30.52	6.74	34.50	34.90	194	261	Average	HORIZONTAL

Vertical

	Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4924.93	36.93	54.00	-17.07	30.59	6.74	34.50	34.90	204	71	Average	VERTICAL
2	4924.95	49.64	74.00	-24.36	43.30	6.74	34.50	34.90	204	71	Peak	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.

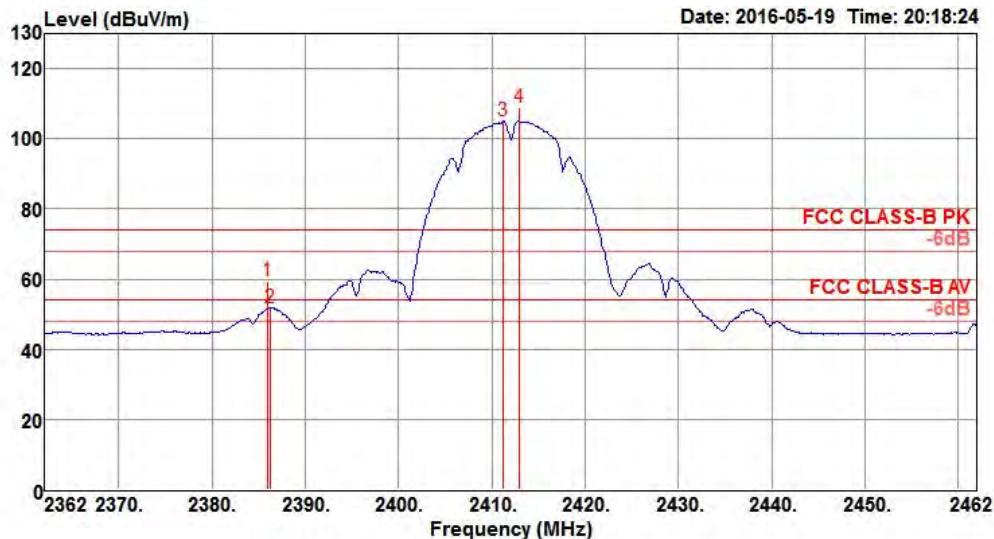
4.6. Test Result of Band Edge and Fundamental Emissions

Dipole Antenna

<For Non-Beamforming / 1TX Mode>

Temperature	22°C	Humidity	54%
Test Engineer	Gino Huang	Configurations	IEEE 802.11b CH 1, 6, 11, 12, 13 / Chain 1
Test Date	May 19, 2016 ~ Aug. 11, 2016		

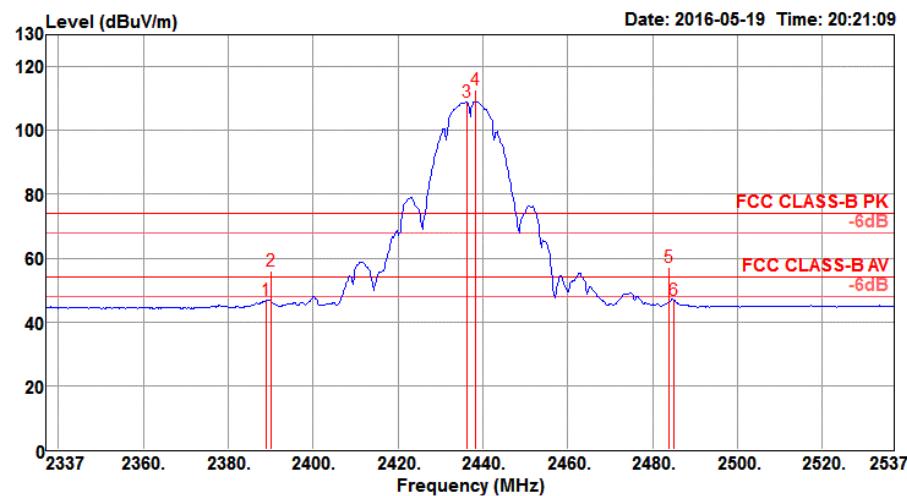
Channel 1



Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
		Line	Limit	Level	Loss	Factor	Factor	dB	cm		
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	2386.00	59.60	74.00	-14.40	26.18	4.85	28.57	0.00	106	154 Peak	VERTICAL
2	2386.20	51.88	54.00	-2.12	18.46	4.85	28.57	0.00	106	154 Average	VERTICAL
3	2411.20	104.93			71.42	4.88	28.63	0.00	106	154 Average	VERTICAL
4	2413.00	108.78			75.27	4.88	28.63	0.00	106	154 Peak	VERTICAL

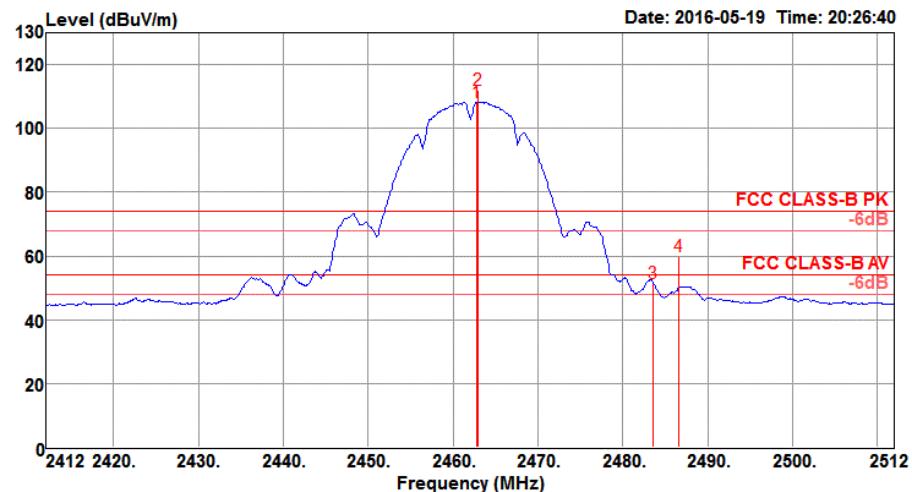
Item 3, 4 are the fundamental frequency at 2412 MHz.

Channel 6



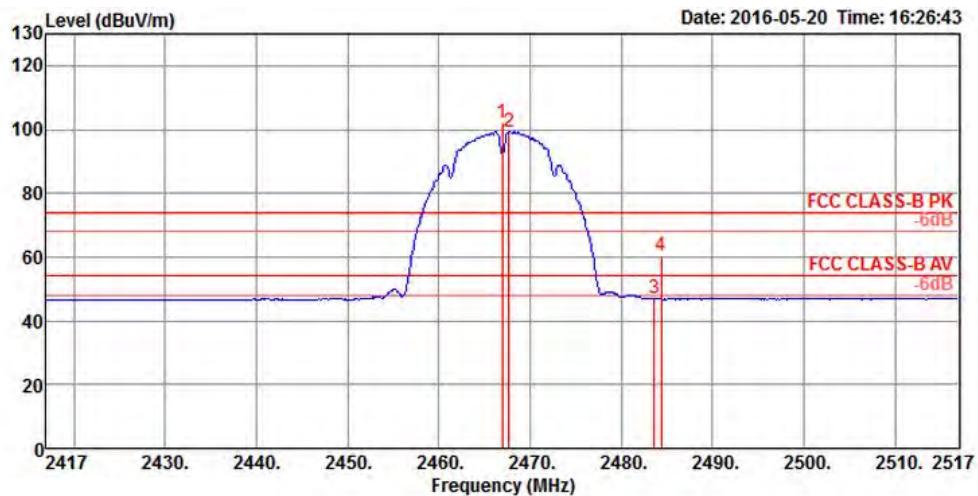
-	Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
			Line	Limit	Level	Loss	Factor	Factor	cm	deg		
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB				
1	2389.00	46.64	54.00	-7.36	13.22	4.85	28.57	0.00	103	159	Average	VERTICAL
2	2390.00	56.06	74.00	-17.94	22.64	4.85	28.57	0.00	103	159	Peak	VERTICAL
3	2436.20	108.94			75.37	4.90	28.67	0.00	103	159	Average	VERTICAL
4	2438.20	112.81			79.24	4.90	28.67	0.00	103	159	Peak	VERTICAL
5	2483.90	57.34	74.00	-16.66	23.62	4.95	28.77	0.00	103	159	Peak	VERTICAL
6	2485.00	46.93	54.00	-7.07	13.21	4.95	28.77	0.00	103	159	Average	VERTICAL

Item 3, 4 are the fundamental frequency at 2437 MHz.

Channel 11


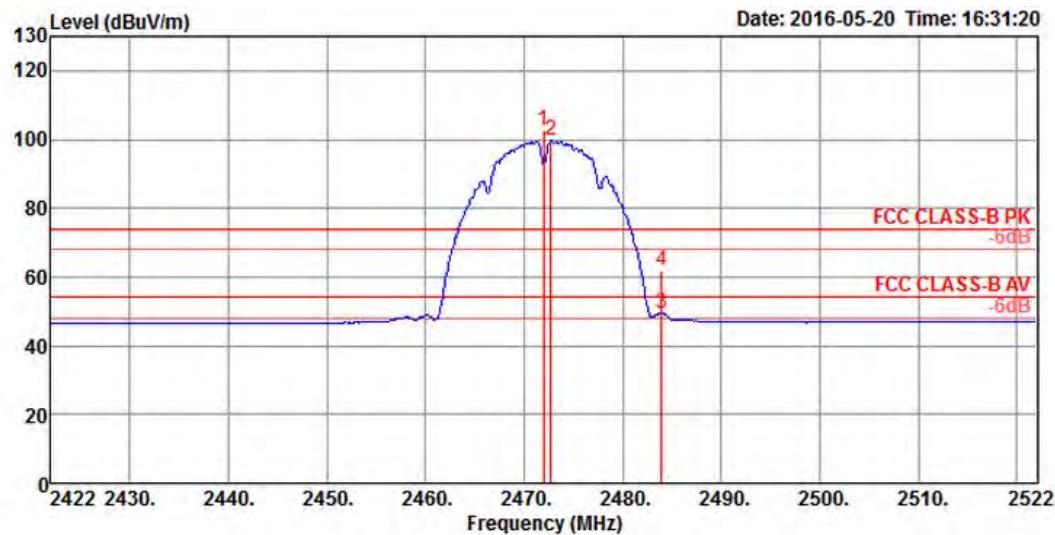
Freq	Level	Limit Line	Over Limit	Read Level	Cable			Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
					Loss	dB	dBuV						
MHz	dBuV/m	dBuV/m		dB		dB	dBuV	dB	dB/m	dB	cm	deg	
1	2462.80	108.18				74.52	4.93	28.73	0.00	100	158	Average	VERTICAL
2	2463.00	112.09				78.43	4.93	28.73	0.00	100	158	Peak	VERTICAL
3	2483.50	51.57	54.00	-2.43	17.85	4.95	28.77	0.00	100	158	Average	VERTICAL	
4	2486.60	59.79	74.00	-14.21	26.07	4.95	28.77	0.00	100	158	Peak	VERTICAL	

Item 1, 2 are the fundamental frequency at 2462 MHz.

Channel 12


Freq	Limit		Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	Level	Line									
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	2467.00	102.27	74.00			5.31	27.83	0.00	154	306	Peak VERTICAL
2	2467.72	99.45	54.00			5.32	27.83	0.00	154	306	Average VERTICAL
3	2483.64	46.94	54.00	-7.06	13.79	5.34	27.81	0.00	154	306	Average VERTICAL
4	2484.37	60.65	74.00	-13.35	27.50	5.34	27.81	0.00	154	306	Peak VERTICAL

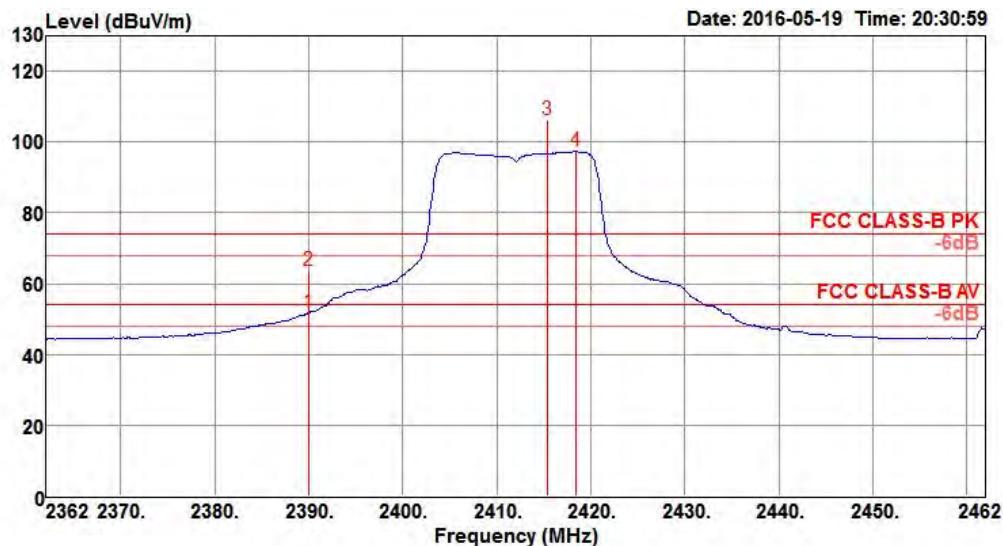
Item 1, 2 are the fundamental frequency at 2467 MHz.

Channel 13


Freq	Level	Limit		Over Limit	Read Level	Cable		Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
		Line	dB			dBuV	dB			cm	deg		
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg				
1	2472.00	102.52			69.37	5.32	27.83	0.00	105	123	Peak	VERTICAL	
2	2472.72	99.71			66.56	5.32	27.83	0.00	105	123	Average	VERTICAL	
3	2483.93	49.43	54.00	-4.57	16.28	5.34	27.81	0.00	105	123	Average	VERTICAL	
4	2483.93	62.00	74.00	-12.00	28.85	5.34	27.81	0.00	105	123	Peak	VERTICAL	

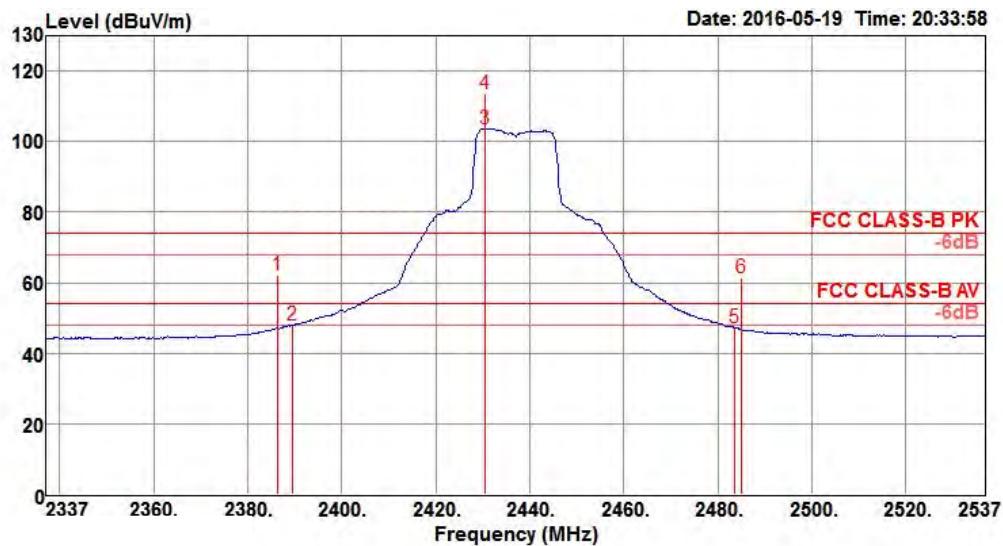
Item 1, 2 are the fundamental frequency at 2472 MHz.

Temperature	22°C	Humidity	54%
Test Engineer	Gino Huang	Configurations	IEEE 802.11g CH 1, 6, 11, 12, 13 / Chain 1
Test Date	May 19, 2016 ~ Aug. 11, 2016		

Channel 1


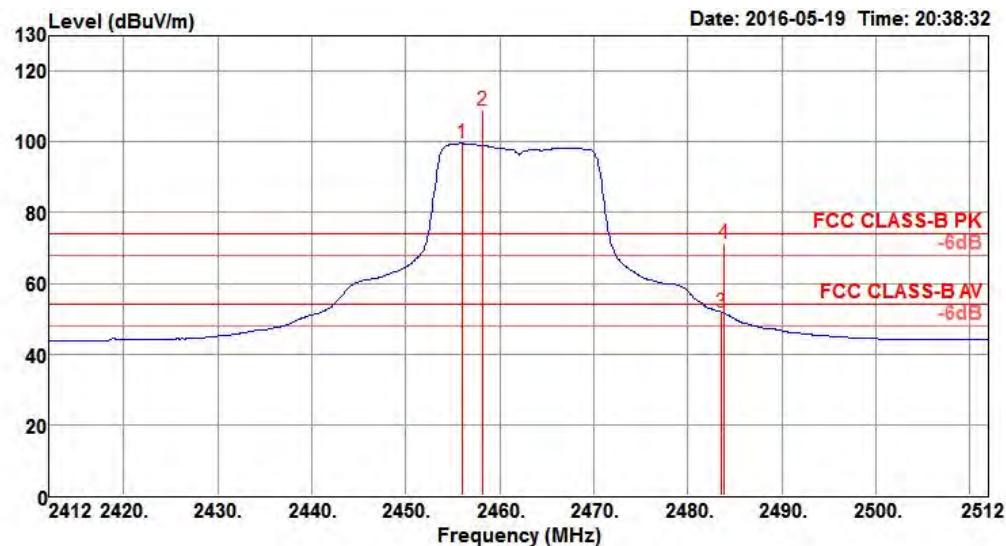
Freq	Level	Limit	Over	Read	Cable			Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
					Line	Limit	Level						
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg				
1	2390.00	51.72	54.00	-2.28	18.30	4.85	28.57	0.00	106	157	Average	VERTICAL	
2	2390.00	63.72	74.00	-10.28	30.30	4.85	28.57	0.00	106	157	Peak	VERTICAL	
3	2415.40	106.43			72.92	4.88	28.63	0.00	106	157	Peak	VERTICAL	
4	2418.40	97.43			63.91	4.88	28.64	0.00	106	157	Average	VERTICAL	

Item 3, 4 are the fundamental frequency at 2412 MHz.

Channel 6


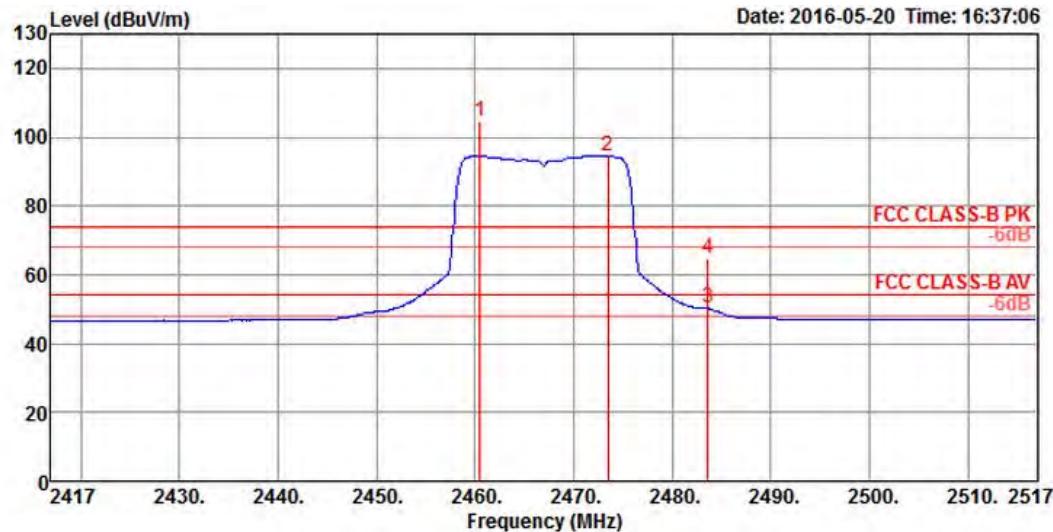
Freq	Level	Limit		Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
		Line	dB									
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	2386.20	62.00	74.00	-12.00	28.58	4.85	28.57	0.00	105	164	Peak	VERTICAL
2	2389.40	48.04	54.00	-5.96	14.62	4.85	28.57	0.00	105	164	Average	VERTICAL
3	2430.60	103.73			78.18	4.89	28.66	0.00	105	164	Average	VERTICAL
4	2430.60	113.51			79.96	4.89	28.66	0.00	105	164	Peak	VERTICAL
5	2483.50	47.18	54.00	-6.82	13.46	4.95	28.77	0.00	105	164	Average	VERTICAL
6	2485.00	61.48	74.00	-12.52	27.76	4.95	28.77	0.00	105	164	Peak	VERTICAL

Item 3, 4 are the fundamental frequency at 2437 MHz.

Channel 11


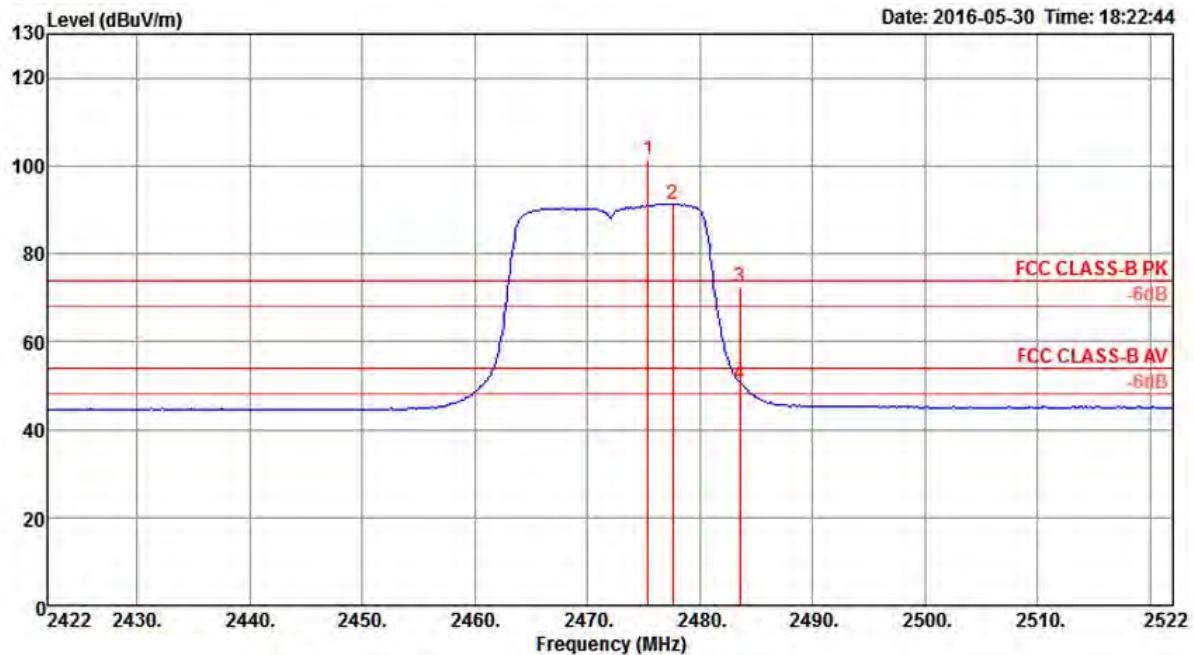
Freq	Level	Limit Line	Over Limit	Read Level	Cable			Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
					Loss	Antenna Factor	dB/m					
	MHz	dBuV/m	dBuV/m		dB	dBuV	dB	dB	cm	deg		
1	2456.00	99.57			65.94	4.92	28.71	0.00	120	162	Average	VERTICAL
2	2458.20	108.88			75.25	4.92	28.71	0.00	120	162	Peak	VERTICAL
3	2483.50	51.88	54.00	-2.12	18.16	4.95	28.77	0.00	120	162	Average	VERTICAL
4	2483.80	71.33	74.00	-2.67	37.61	4.95	28.77	0.00	120	162	Peak	VERTICAL

Item 1, 2 are the fundamental frequency at 2462 MHz.

Channel 12


Freq	Level	Limit	Over	Read	Cable		Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
					Line	Limit						
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg			
1	2460.49	104.80			71.66	5.31	27.83	0.00	106	356	Peak	VERTICAL
2	2473.51	94.57			61.42	5.32	27.83	0.00	106	356	Average	VERTICAL
3	2483.64	50.18	54.00	-3.82	17.03	5.34	27.81	0.00	106	356	Average	VERTICAL
4	2483.64	64.74	74.00	-9.26	31.59	5.34	27.81	0.00	106	356	Peak	VERTICAL

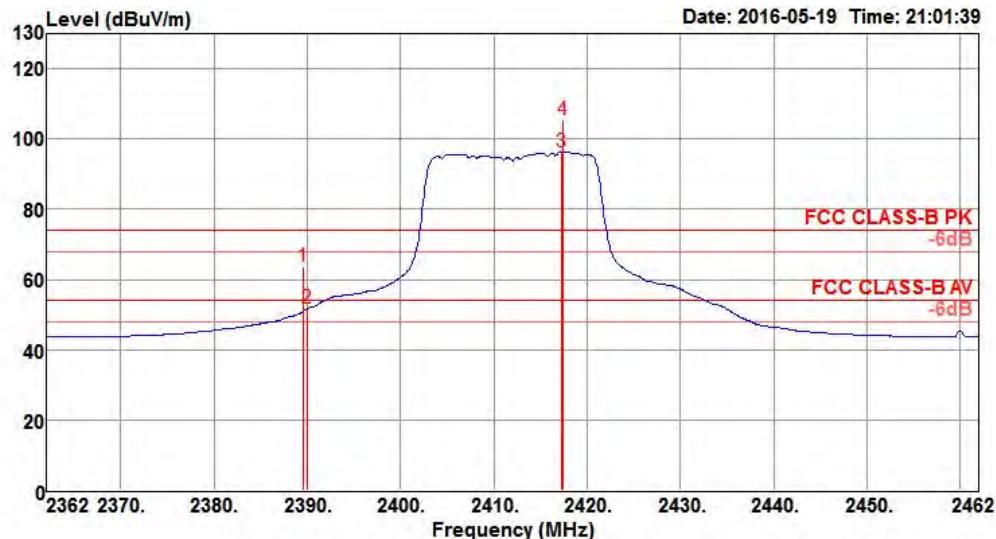
Item 1, 2 are the fundamental frequency at 2467 MHz.

Channel 13


	Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	2475.40	101.29			69.34	4.03	27.92	0.00	104	62	Peak	VERTICAL
2	2477.60	91.40			59.45	4.03	27.92	0.00	104	62	Average	VERTICAL
3	2483.50	72.30	74.00	-1.70	40.34	4.04	27.92	0.00	104	62	Peak	VERTICAL
4	2483.50	50.38	54.00	-3.62	18.42	4.04	27.92	0.00	104	62	Average	VERTICAL

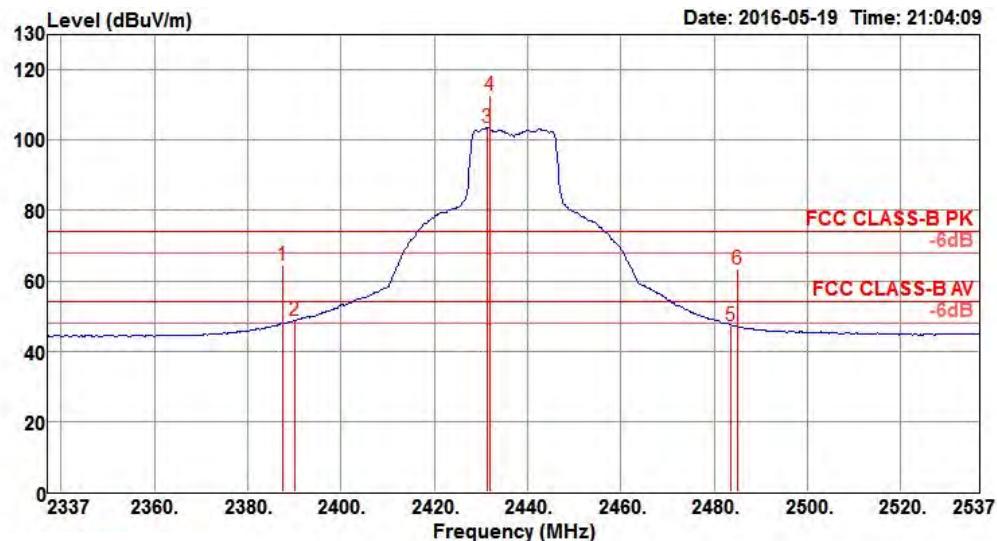
Item 1, 2 are the fundamental frequency at 2472 MHz.

Temperature	22°C	Humidity	54%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 1, 6, 11, 12, 13 / Chain 1
Test date	May 19, 2016 ~ Aug. 11, 2016		

Channel 1


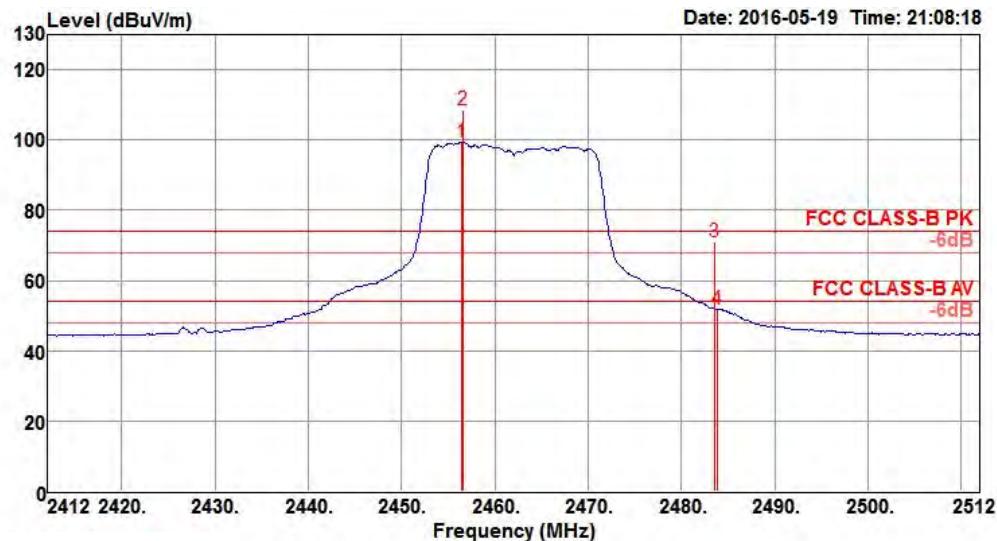
Freq	Level	Limit		Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
		Line	dB									
MHz	dBuV/m	dBuV/m	dB		dBuV	dB	dB/m	dB	cm	deg		
1	2389.60	63.67	74.00	-10.33	30.25	4.85	28.57	0.00	104	153	Peak	VERTICAL
2	2390.00	51.71	54.00	-2.29	18.29	4.85	28.57	0.00	104	153	Average	VERTICAL
3	2417.20	96.32			62.81	4.88	28.63	0.00	104	153	Average	VERTICAL
4	2417.40	105.64			72.13	4.88	28.63	0.00	104	153	Peak	VERTICAL

Item 3, 4 are the fundamental frequency at 2412 MHz.

Channel 6


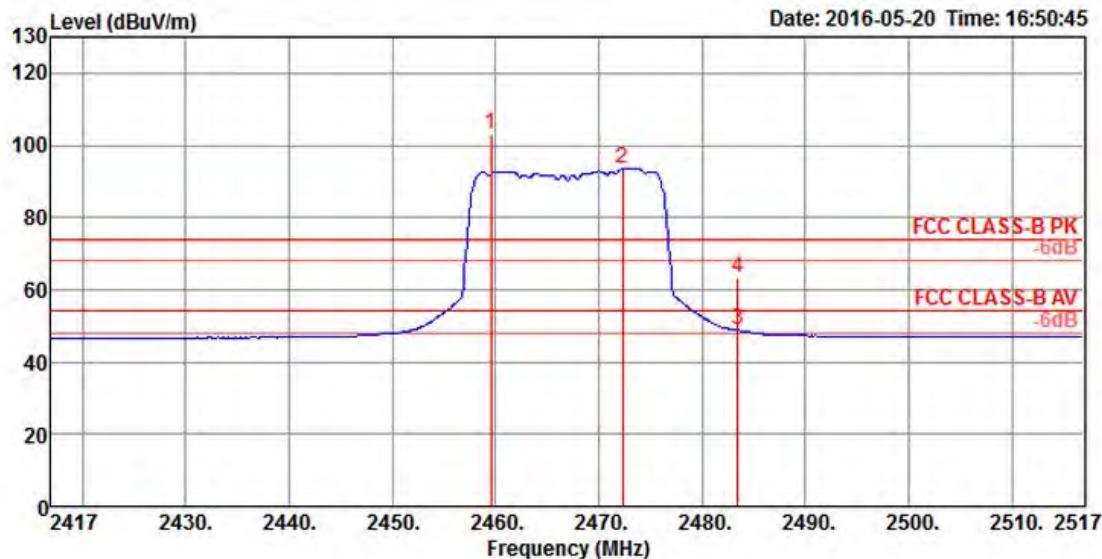
Freq	Level	Limit	Over	Read	Cable		Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
					Line	dB	dBuV	dB	dB/m	cm	deg	
MHz	dBuV/m	dBuV/m										
1	2387.40	64.48	74.00	-9.52	31.06	4.85	28.57	0.00	103	160	Peak	VERTICAL
2	2390.00	48.79	54.00	-5.21	15.37	4.85	28.57	0.00	103	160	Average	VERTICAL
3	2431.40	103.57			70.02	4.89	28.66	0.00	103	160	Average	VERTICAL
4	2431.80	112.76			79.21	4.89	28.66	0.00	103	160	Peak	VERTICAL
5	2483.50	47.30	54.00	-6.70	13.58	4.95	28.77	0.00	103	160	Average	VERTICAL
6	2485.00	63.44	74.00	-10.56	29.72	4.95	28.77	0.00	103	160	Peak	VERTICAL

Item 3, 4 are the fundamental frequency at 2437 MHz.

Channel 11


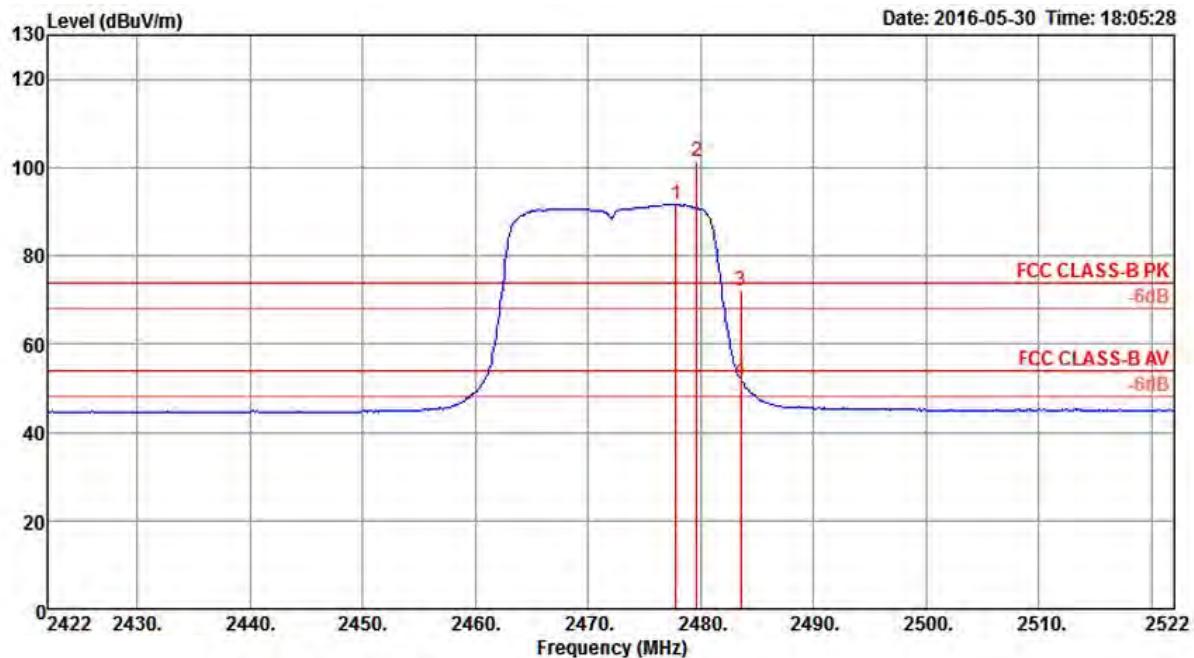
Freq	Level	Limit	Over	Read	Cable			Preamp	A/Pos	T/Pos	Remark	Pol/Phase
					Line	Limit	Level					
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg			
1	2456.40	99.27			65.64	4.92	28.71	0.00	120	162	Average	VERTICAL
2	2456.60	108.71			75.08	4.92	28.71	0.00	120	162	Peak	VERTICAL
3	2483.50	70.85	74.00	-3.15	37.13	4.95	28.77	0.00	120	162	Peak	VERTICAL
4	2483.80	51.93	54.00	-2.07	18.21	4.95	28.77	0.00	120	162	Average	VERTICAL

Item 1, 2 are the fundamental frequency at 2462 MHz.

Channel 12


Freq	Level	Limit	Over	Read	Cable			Preamp	A/Pos	T/Pos	Remark	Pol/Phase
					Line	Limit	Level					
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg			
1	2459.62	103.24			70.10	5.30	27.84	0.00	105	118	Peak	VERTICAL
2	2472.35	93.61	-----	-----	60.46	5.32	27.83	0.00	105	118	Average	VERTICAL
3	2483.50	48.77	54.00	-5.23	15.62	5.34	27.81	0.00	105	118	Average	VERTICAL
4	2483.50	63.08	74.00	-10.92	29.93	5.34	27.81	0.00	105	118	Peak	VERTICAL

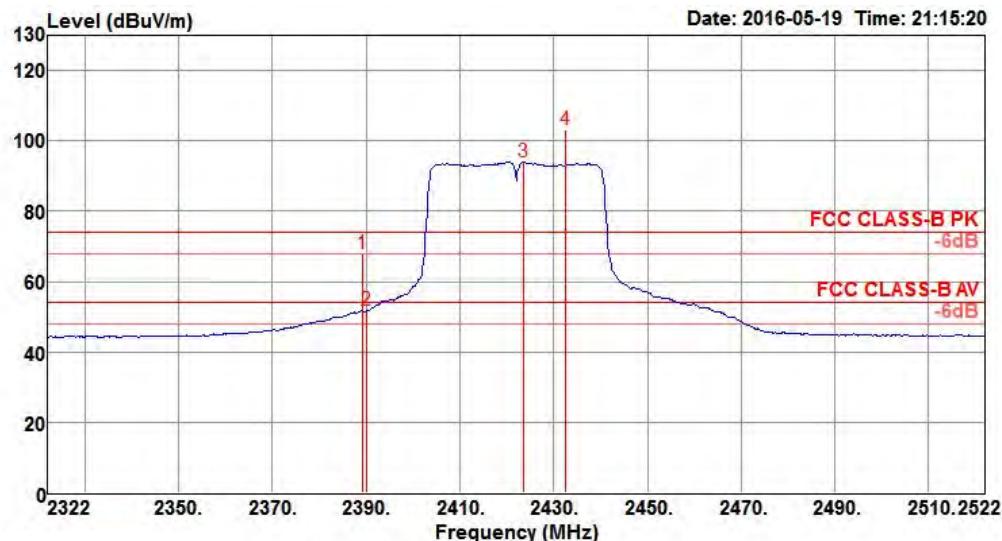
Item 1, 2 are the fundamental frequency at 2467 MHz.

Channel 13


Freq	Level	Limit	Over	Read	Cable			Antenna	Preamplifier	A/Pos	T/Pos	Remark	Pol/Phase
					Line	Limit	Level						
MHz	dBuV/m	dBuV/m			dB	dB	dB/m	dB	cm	deg			
1	2477.80	91.77				59.82	4.03	27.92	0.00	104	59	Average	VERTICAL
2	2479.60	101.38				69.43	4.03	27.92	0.00	104	59	Peak	VERTICAL
3	2483.50	71.94	74.00	-2.06	39.98	4.04	27.92	0.00	104	59	Peak	VERTICAL	
4	2483.50	51.68	54.00	-2.32	19.72	4.04	27.92	0.00	104	59	Average	VERTICAL	

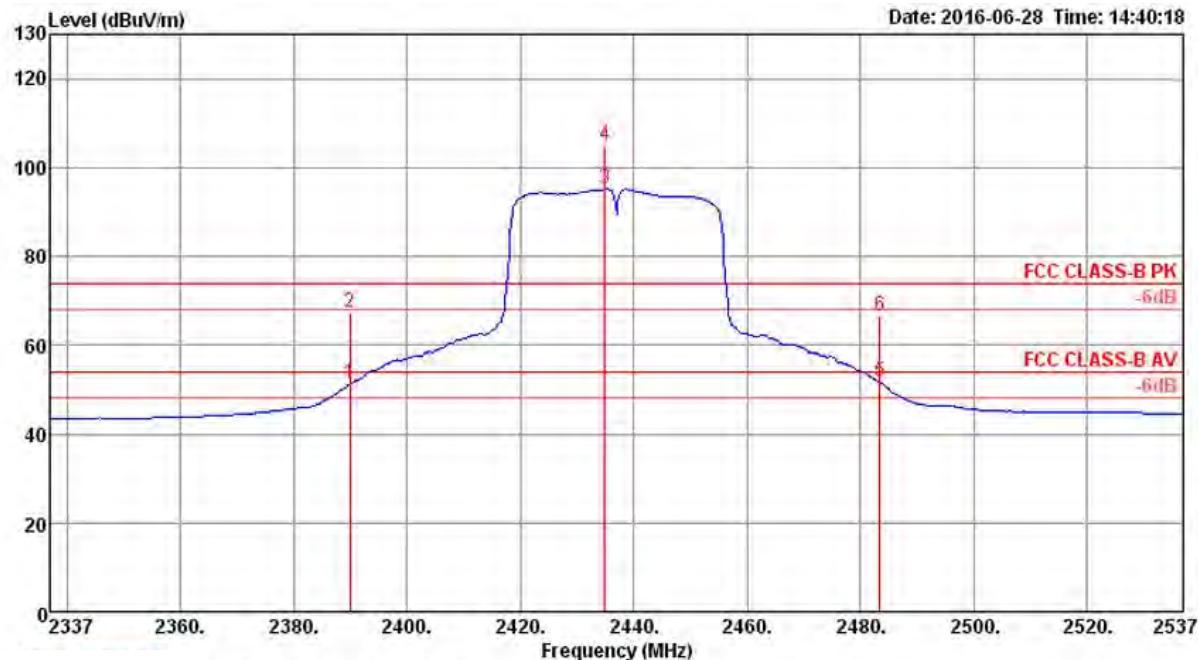
Item 1, 2 are the fundamental frequency at 2472 MHz.

Temperature	22°C	Humidity	54%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 3, 6, 9, 10, 11 / Chain 1
Test date	May 19, 2016 ~ Aug. 11, 2016		

Channel 3


Freq	Level	Limit	Over	Read	Cable			Preamp	A/Pos	T/Pos	Remark	Pol/Phase	
					Line	Limit	dB						
MHz	dBuV/m	dBuV/m					dB	dBuV	dB	dB/m	dB	cm	deg
1	2389.20	67.96	74.00	-6.04	34.54	4.85	28.57	0.00	103	156	Peak	VERTICAL	
2	2390.00	51.66	54.00	-2.34	18.24	4.85	28.57	0.00	103	156	Average	VERTICAL	
3	2423.60	93.99			60.47	4.88	28.64	0.00	103	156	Average	VERTICAL	
4	2432.40	103.32			69.75	4.90	28.67	0.00	103	156	Peak	VERTICAL	

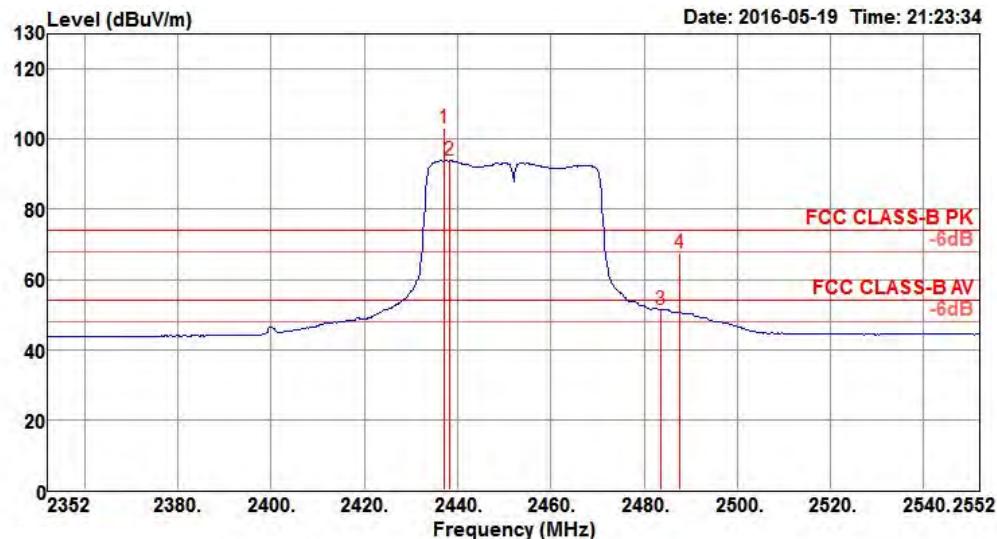
Item 3, 4 are the fundamental frequency at 2422 MHz.

Channel 6


Freq	Level	Limit	Over	Read	Cable			Preamp	A/Pos	T/Pos	Remark	Pol/Phase
					Line	Limit	Level					
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg			
1	2390.00	51.44	54.00	-2.56	19.53	3.60	28.31	0.00	100	307	Average	VERTICAL
2	2390.00	67.34	74.00	-6.66	35.43	3.60	28.31	0.00	100	307	Peak	VERTICAL
3	2435.00	95.13			63.10	3.64	28.39	0.00	100	307	Average	VERTICAL
4	2435.00	104.85			72.82	3.64	28.39	0.00	100	307	Peak	VERTICAL
5	2483.50	51.61	54.00	-2.39	19.45	3.68	28.48	0.00	100	307	Average	VERTICAL
6	2483.50	66.77	74.00	-7.23	34.61	3.68	28.48	0.00	100	307	Peak	VERTICAL

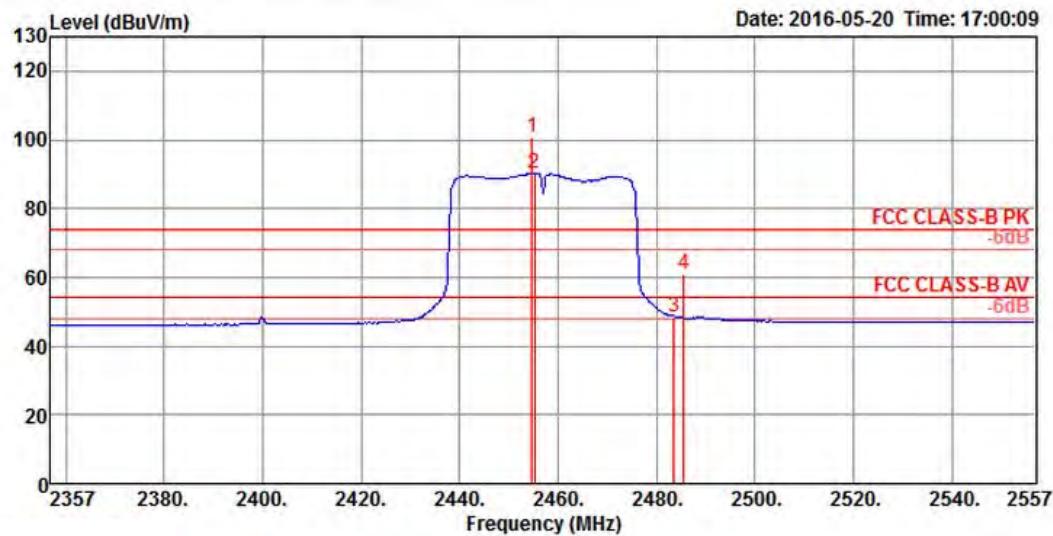
Item 3, 4 are the fundamental frequency at 2437 MHz.

Channel 9



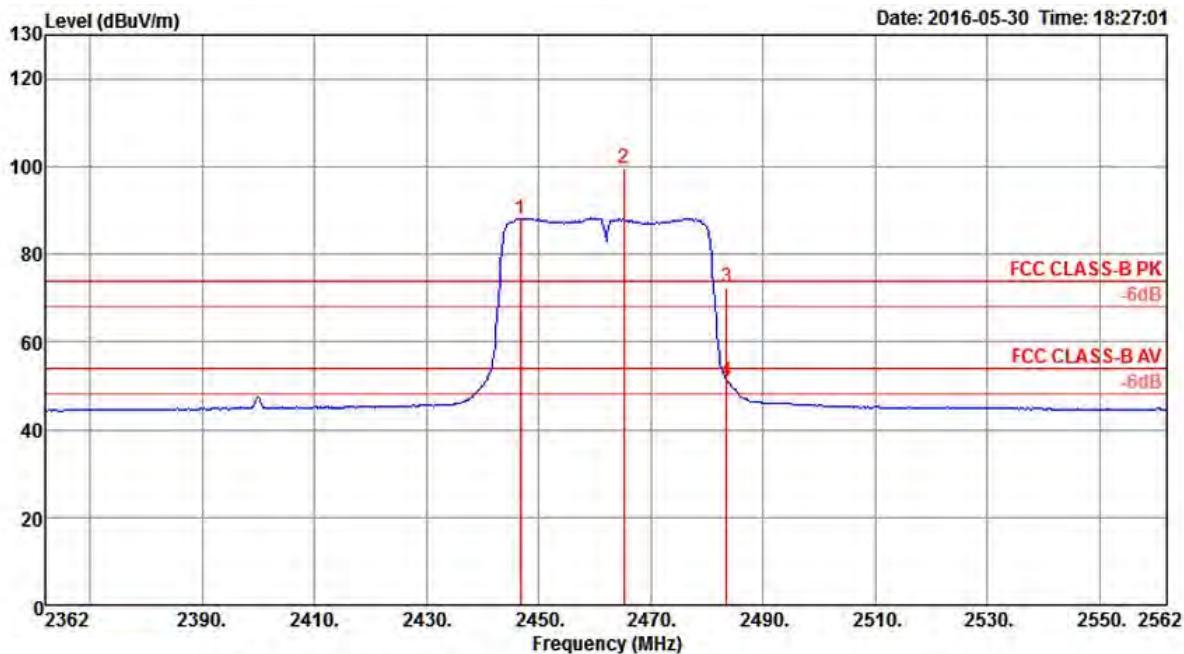
Freq	Level	Limit Line	Over Limit	Read Level	Cable		Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
					Loss	Factor						
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg			
1 2437.20	103.17				69.60	4.90	28.67	0.00	126	166	Peak	VERTICAL
2 2438.40	93.87				60.30	4.90	28.67	0.00	126	166	Average	VERTICAL
3 2483.50	51.52	54.00	-2.48	17.80	4.95	28.77	0.00	126	166	Average	VERTICAL	
4 2487.60	67.58	74.00	-6.42	33.86	4.95	28.77	0.00	126	166	Peak	VERTICAL	

Item 1, 2 are the fundamental frequency at 2452 MHz.

Channel 10


Freq	Level	Limit		Over Limit	Read Level	Cable			Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
		Line	dB			dB	dB	dB/m						
1	2454.68	100.59			67.45	5.30	27.84	0.00	102	352	Peak		VERTICAL	
2	2455.26	90.28			57.14	5.30	27.84	0.00	102	352	Average		VERTICAL	
3	2483.50	48.69	54.00	-5.31	15.54	5.34	27.81	0.00	102	352	Average		VERTICAL	
4	2485.53	61.09	74.00	-12.91	27.94	5.34	27.81	0.00	102	352	Peak		VERTICAL	

Item 1, 2 are the fundamental frequency at 2457 MHz.

Channel 11


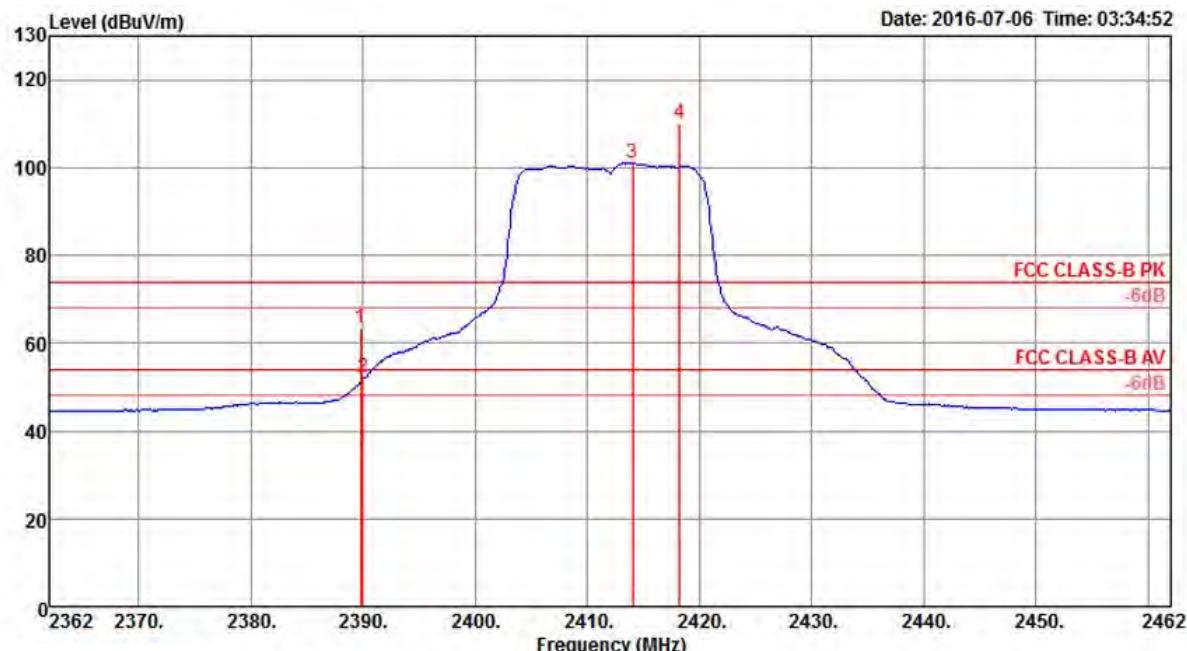
Freq	Level	Limit	Over	Read	Cable			Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
					Line	Limit	dB						
MHz	dBuV/m	dBuV/m					dB	dBuV	dB	dB	dB/m	deg	
1 2446.80	88.16						56.22	3.99	27.95	0.00	102	309	Average VERTICAL
2 2465.20	99.56						67.61	4.01	27.94	0.00	102	309	Peak VERTICAL
3 2483.50	72.35	74.00	-1.65	40.39	4.04	27.92	0.00	102	309	Peak VERTICAL			
4 2483.50	50.90	54.00	-3.10	18.94	4.04	27.92	0.00	102	309	Average VERTICAL			

Item 1, 2 are the fundamental frequency at 2462 MHz.

<For Non-Beamforming / 2TX Mode>

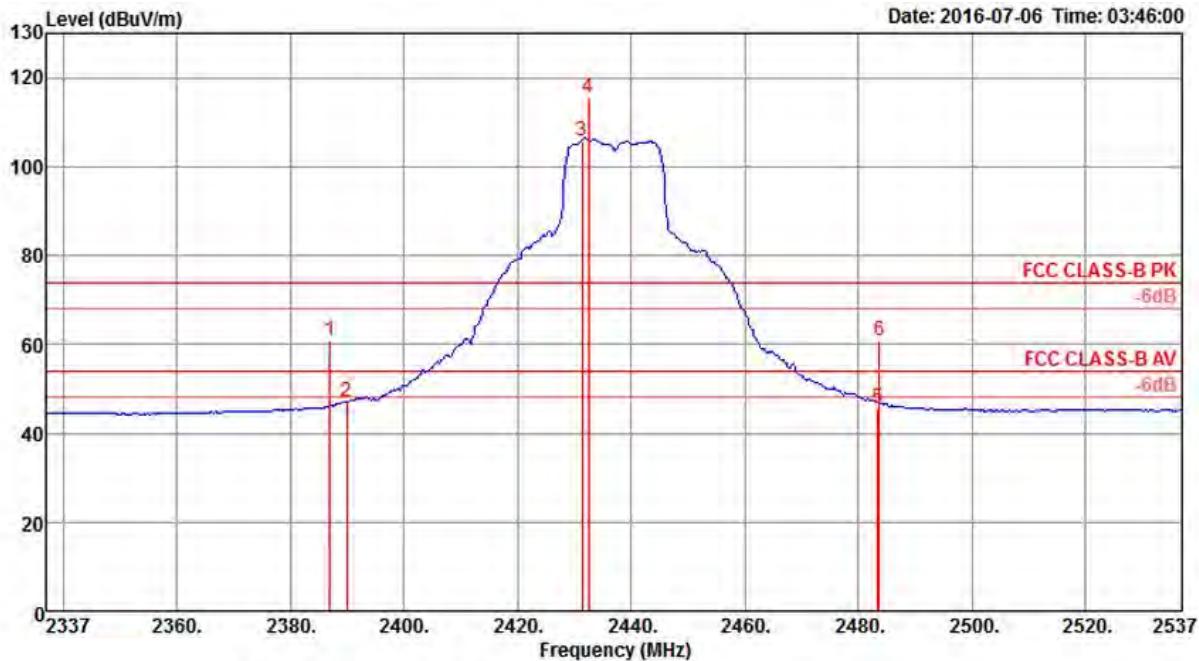
Temperature	22°C	Humidity	54%
Test Engineer	Gino Huang	Configurations	IEEE 802.11g CH 1, 6, 11, 12, 13 / Chain 1 + Chain 2
Test Date	May 19, 2016 ~ Aug. 11, 2016		

Channel 1



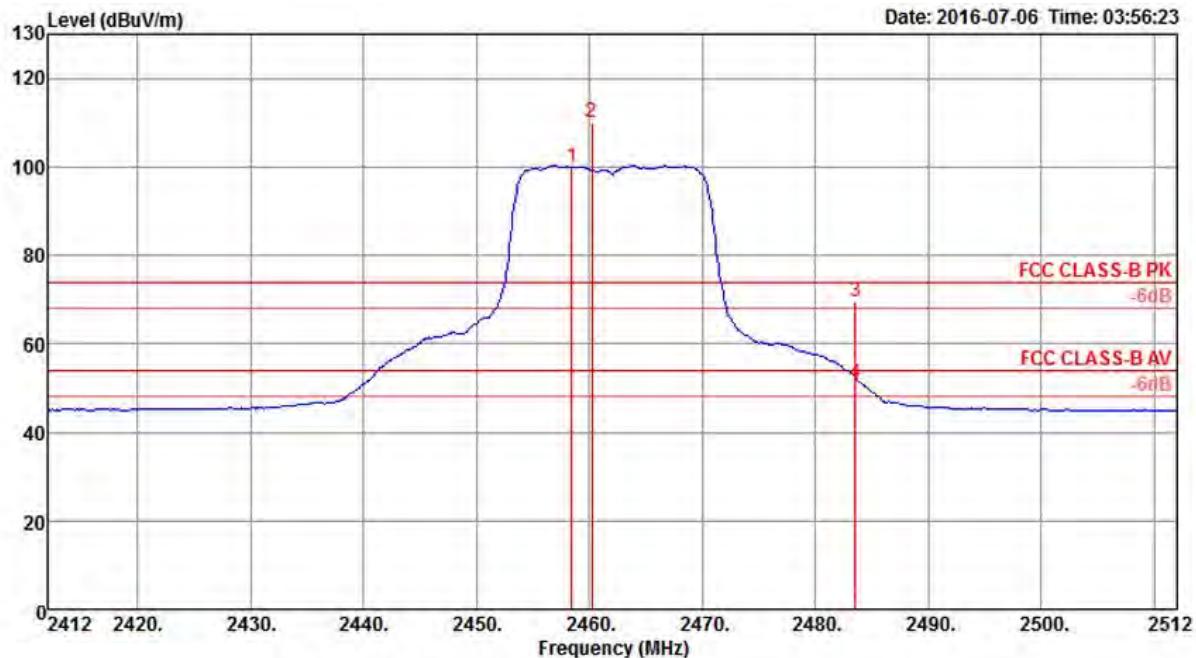
Freq	Level	Limit	Over	Read	Cable			A/Pos	T/Pos	Remark	Pol/Phase
					Line	Limit	Level				
MHz	dBuV/m	dBuV/m		dB	dBuV		dB	dB	dB/m	cm	deg
1	2389.80	63.41	74.00	-10.59	31.49	3.90	28.02	0.00	100	71	Peak
2	2390.00	52.10	54.00	-1.00	20.18	3.90	28.02	0.00	100	71	Average
3	2414.00	101.01			69.08	3.94	27.99	0.00	100	71	Average
4	2418.20	110.02			78.08	3.95	27.99	0.00	100	71	Peak

Item 3, 4 are the fundamental frequency at 2412 MHz.

Channel 6


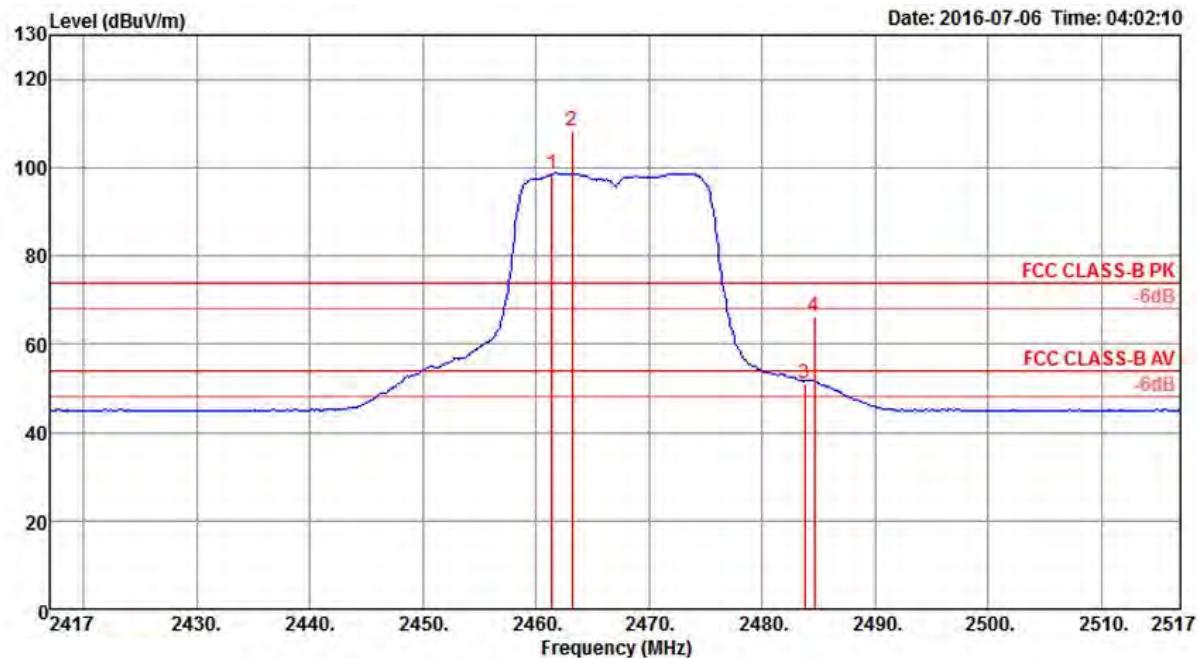
Freq MHz	Level dBuV/m	Limit Line dBuV/m	Over Limit dB	Read Level dBuV	Cable Loss dB	Antenna Factor dB/m	Preamp Factor dB	A/Pos cm	T/Pos deg	Remark	Pol/Phase
1 2387.00	60.90	74.00	-13.10	28.98	3.90	28.02	0.00	116	67	Peak	VERTICAL
2 2390.00	47.20	54.00	-6.80	15.28	3.90	28.02	0.00	116	67	Average	VERTICAL
3 2431.40	105.60			73.66	3.96	27.98	0.00	116	67	Average	VERTICAL
4 2432.60	115.47			83.53	3.97	27.97	0.00	116	67	Peak	VERTICAL
5 2483.50	45.78	54.00	-8.22	13.82	4.04	27.92	0.00	116	67	Average	VERTICAL
6 2483.80	60.70	74.00	-13.30	28.74	4.04	27.92	0.00	116	67	Peak	VERTICAL

Item 3, 4 are the fundamental frequency at 2437 MHz.

Channel 11


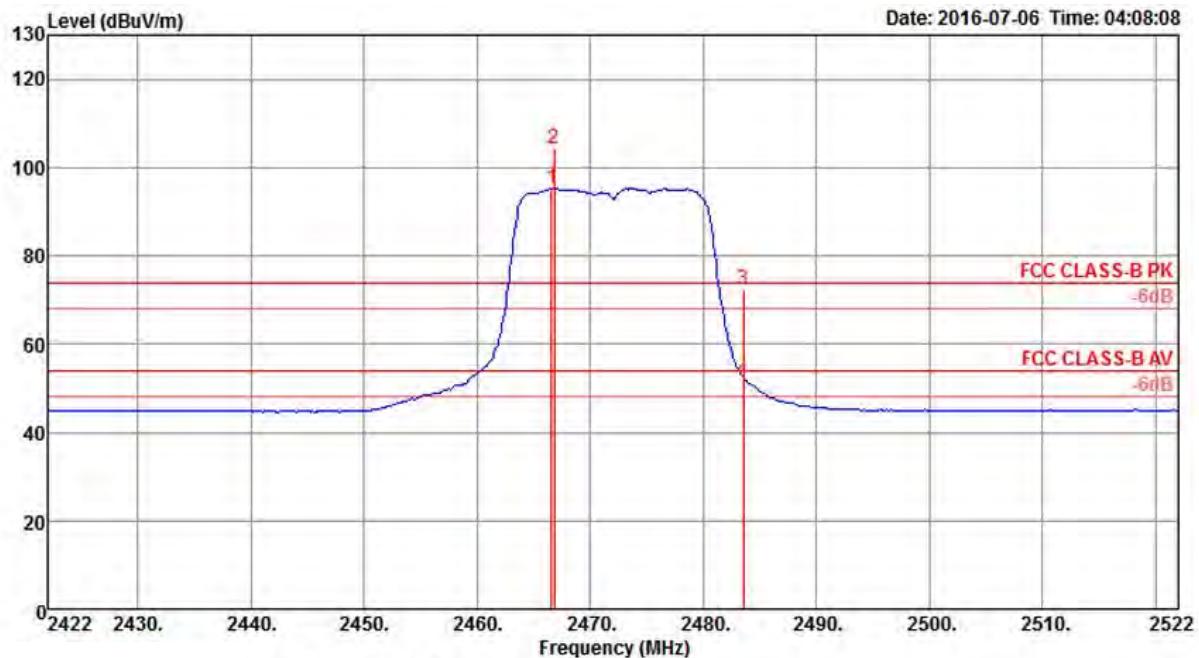
Freq	Level	Limit	Over	Read	Cable			A/Pos	T/Pos	Remark	Pol/Phase
					Line	Limit	Level				
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	2458.40	99.94			67.99	4.00	27.95	0.00	116	68	Average
2	2460.20	110.02			78.07	4.00	27.95	0.00	116	68	Peak
3	2483.50	69.40	74.00	-4.60	37.44	4.04	27.92	0.00	116	68	Peak
4	2483.50	51.00	54.00	-3.00	19.04	4.04	27.92	0.00	116	68	Average

Item 1, 2 are the fundamental frequency at 2462 MHz.

Channel 12


Freq	Level	Limit	Over	Read	Cable			A/Pos	T/Pos	Remark	Pol/Phase
					Line	Limit	Level				
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	2461.40	98.55			66.60	4.01	27.94	0.00	100	63 Average	VERTICAL
2	2463.20	108.32			76.37	4.01	27.94	0.00	100	63 Peak	VERTICAL
3	2483.80	50.97	54.00	-3.03	19.01	4.04	27.92	0.00	100	63 Average	VERTICAL
4	2484.60	66.13	74.00	-7.87	34.17	4.04	27.92	0.00	100	63 Peak	VERTICAL

Item 1, 2 are the fundamental frequency at 2467 MHz.

Channel 13


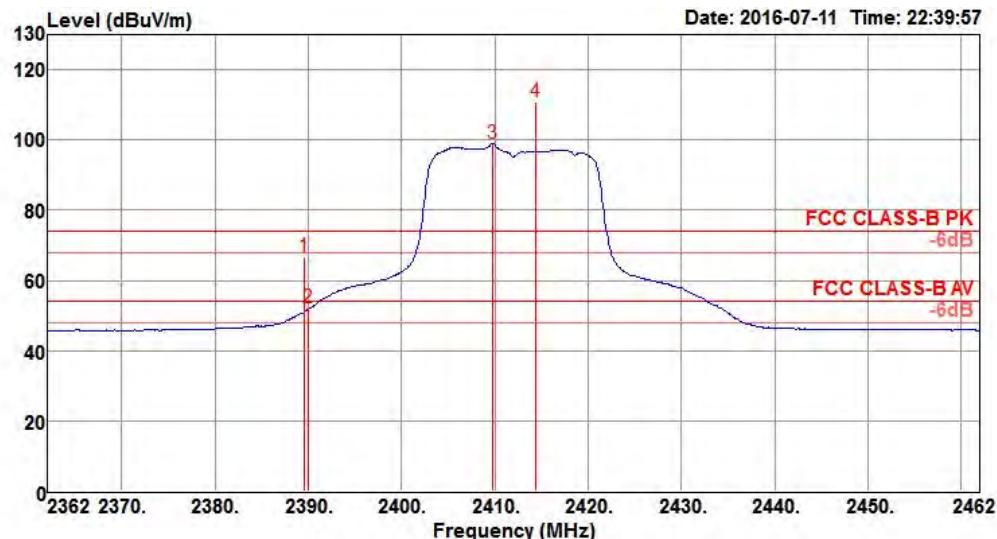
Freq	Level	Limit	Over	Read	Cable			A/Pos	T/Pos	Remark	Pol/Phase
					Line	Limit	Level				
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	2466.60	95.30			63.35	4.01	27.94	0.00	104	62 Average	VERTICAL
2	2466.80	104.22			72.27	4.01	27.94	0.00	104	62 Peak	VERTICAL
3	2483.50	72.34	74.00	-1.66	40.38	4.04	27.92	0.00	104	62 Peak	VERTICAL
4	2483.50	51.83	54.00	-2.17	19.87	4.04	27.92	0.00	104	62 Average	VERTICAL

Item 1, 2 are the fundamental frequency at 2472 MHz.

<For Beamforming / 2TX Mode>

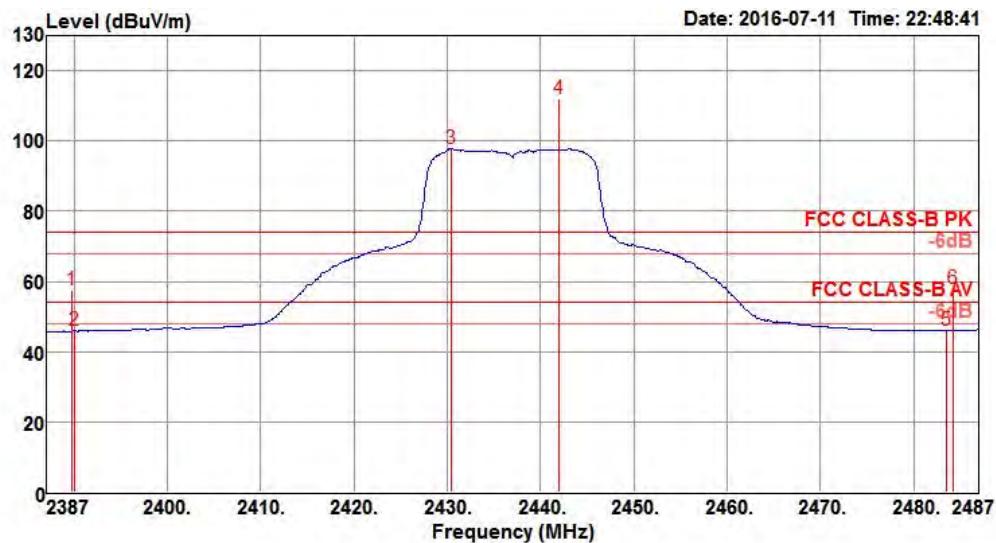
Temperature	22°C	Humidity	54%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 1, 6, 11, 12, 13 / Chain 1 + Chain 2
Test date	May 19, 2016 ~ Aug. 11, 2016		

Channel 1



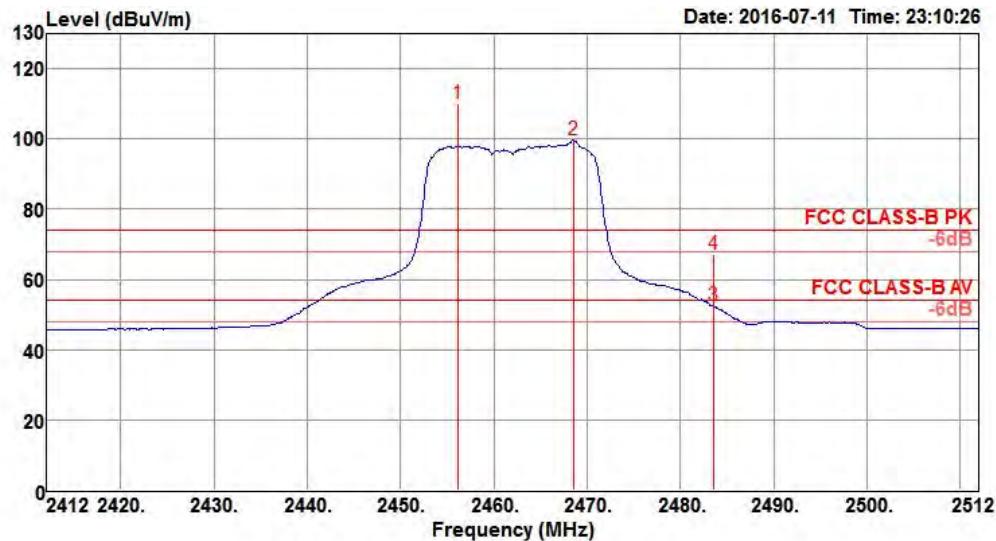
Freq	Level	Limit	Over	Read	Cable		Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
					Line	Limit						
MHz	dBuV/m	dBuV/m			dB	dBuV	dB	dB/m	dB	cm	deg	
1 2389.60	66.84	74.00	-7.16	33.42	4.85	28.57	0.00	108	287	Peak	VERTICAL	
2 2390.00	52.12	54.00	-1.88	18.70	4.85	28.57	0.00	108	287	Average	VERTICAL	
3 2409.80	98.89			65.41	4.87	28.61	0.00	108	287	Average	VERTICAL	
4 2414.40	110.72			77.21	4.88	28.63	0.00	108	287	Peak	VERTICAL	

Item 3, 4 are the fundamental frequency at 2412 MHz.

Channel 6


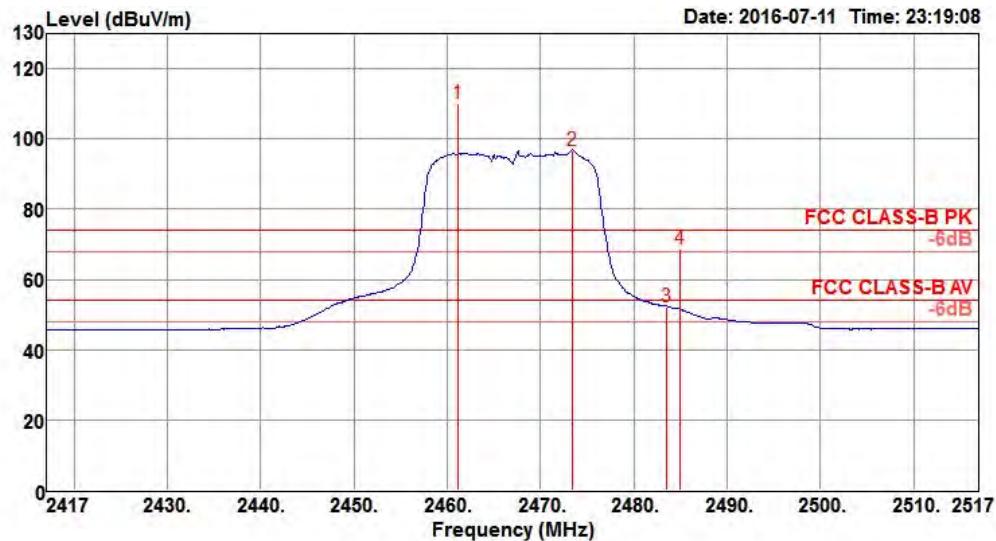
Freq	Level	Limit Line	Over Limit	Read Level	Cable		Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
					MHz	dBuV/m	dBuV/m	dB	dB	dB	cm	deg
1	2389.80	57.44	74.00	-16.56	24.02	4.85	28.57	0.00	121	287	Peak	VERTICAL
2	2390.00	45.89	54.00	-8.11	12.47	4.85	28.57	0.00	121	287	Average	VERTICAL
3	2430.40	97.74			64.19	4.89	28.66	0.00	121	287	Average	VERTICAL
4	2442.00	112.13			78.53	4.91	28.69	0.00	121	287	Peak	VERTICAL

Item 3, 4 are the fundamental frequency at 2437 MHz.

Channel 11


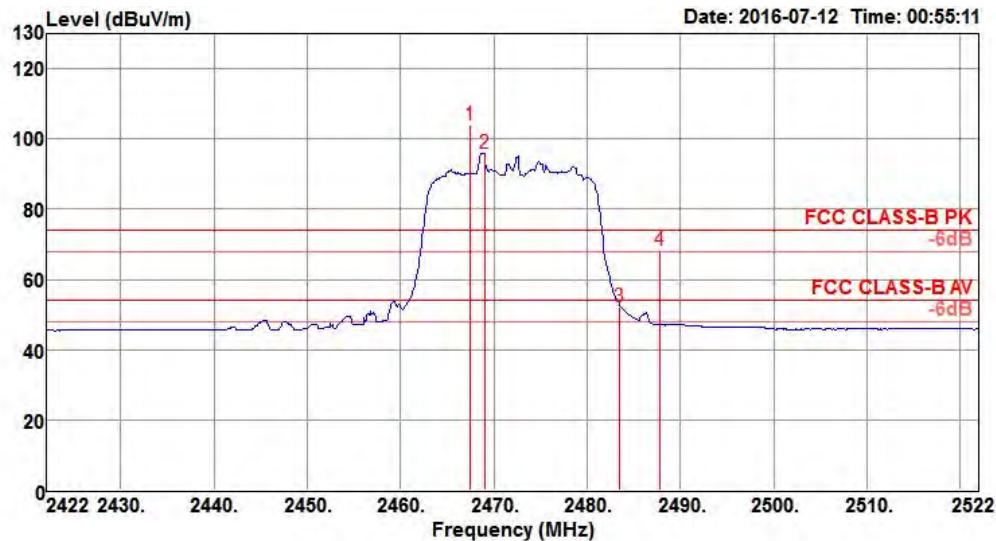
Freq	Level	Limit Line	Over Limit	Read Level	Cable		Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
					dB	dBuV						
1	2456.20	110.15			76.52	4.92	28.71	0.00	108	276	Peak	VERTICAL
2	2468.60	99.69			66.01	4.94	28.74	0.00	108	276	Average	VERTICAL
3	2483.50	52.47	54.00	-1.53	18.75	4.95	28.77	0.00	108	276	Average	VERTICAL
4	2483.50	67.01	74.00	-6.99	33.29	4.95	28.77	0.00	108	276	Peak	VERTICAL

Item 1, 2 are the fundamental frequency at 2462 MHz.

Channel 12


Freq	Level	Limit	Over	Read	Cable			Preamp	A/Pos	T/Pos	Remark	Pol/Phase
					Line	Limit	Level					
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg			
1	2461.20	110.25			76.59	4.93	28.73	0.00	112	276	Peak	VERTICAL
2	2473.40	96.73			63.05	4.94	28.74	0.00	112	276	Average	VERTICAL
3	2483.50	52.23	54.00	-1.77	18.51	4.95	28.77	0.00	112	276	Average	VERTICAL
4	2485.00	68.66	74.00	-5.34	34.94	4.95	28.77	0.00	112	276	Peak	VERTICAL

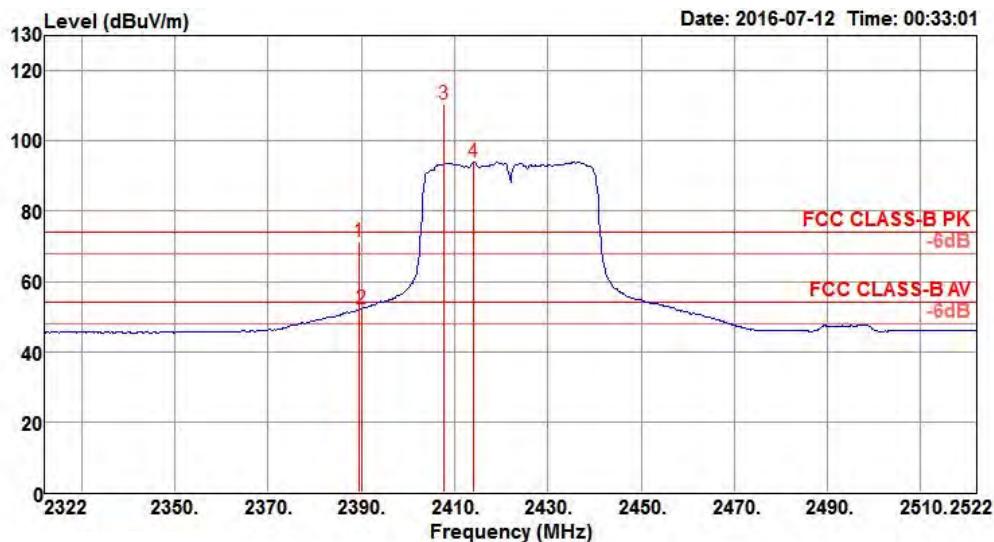
Item 1, 2 are the fundamental frequency at 2467 MHz.

Channel 13


Freq	Level	Limit	Over	Read	Cable			Preamp	A/Pos	T/Pos	Remark	Pol/Phase
					Line	Limit	Level					
MHz	dBuV/m	dBuV/m		dB	dBuV	dB	dB/m	dB	cm	deg		
1	2467.40	103.77				70.11	4.93	28.73	0.00	100	48 Peak	VERTICAL
2	2469.00	95.85				62.17	4.94	28.74	0.00	100	48 Average	VERTICAL
3	2483.50	52.17	54.00	-1.83	18.45	4.95	28.77	0.00	100	48 Average	VERTICAL	
4	2487.80	68.31	74.00	-5.69	34.59	4.95	28.77	0.00	100	48 Peak	VERTICAL	

Item 1, 2 are the fundamental frequency at 2472 MHz.

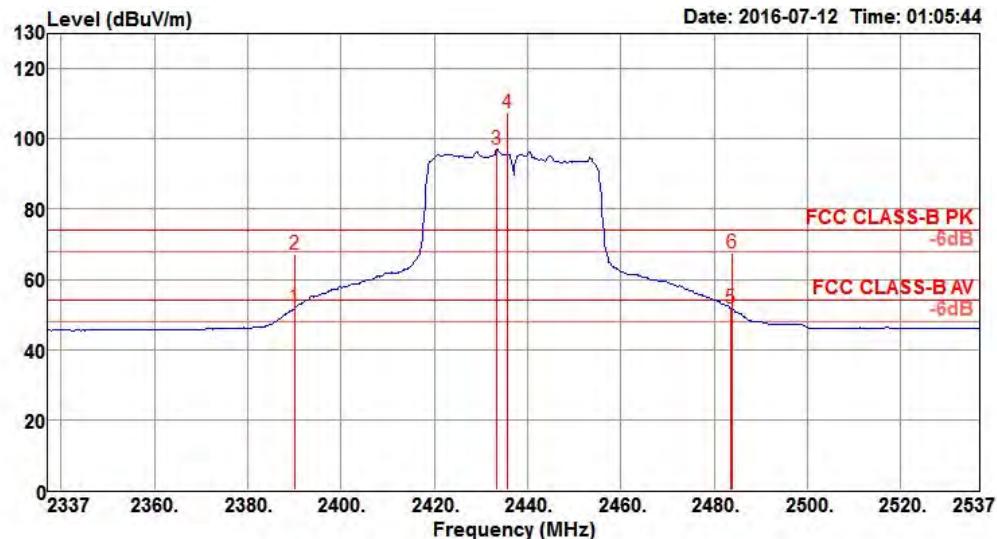
Temperature	22°C	Humidity	54%
Test Engineer	Gino Huang	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 3, 6, 9, 10, 11 / Chain 1 + Chain 2
Test date	May 19, 2016 ~ Aug. 11, 2016		

Channel 3


Freq	Level	Limit		Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
		Line	Limit									
MHz	dBuV/m	dBuV/m	dB	dB	dBuV	dB	dB/m	dB	cm	deg		
1 2389.60	71.21	74.00	-2.79	37.79	4.85	28.57	0.00	101	278	Peak	VERTICAL	
2 2390.00	52.08	54.00	-1.92	18.66	4.85	28.57	0.00	101	278	Average	VERTICAL	
3 2407.60	110.35			76.87	4.87	28.61	0.00	101	278	Peak	VERTICAL	
4 2414.00	93.98			60.47	4.88	28.63	0.00	101	278	Average	VERTICAL	

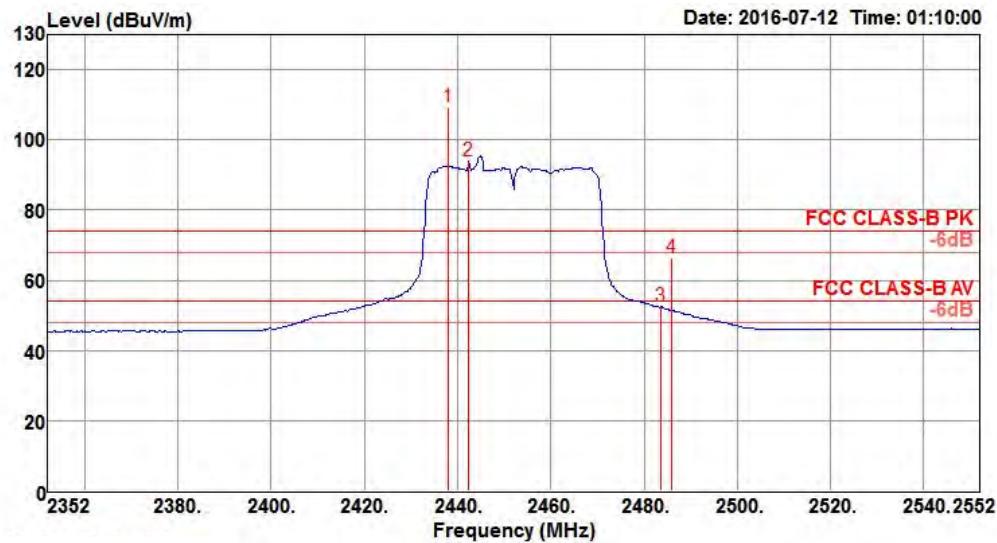
Item 3, 4 are the fundamental frequency at 2422 MHz.

Channel 6



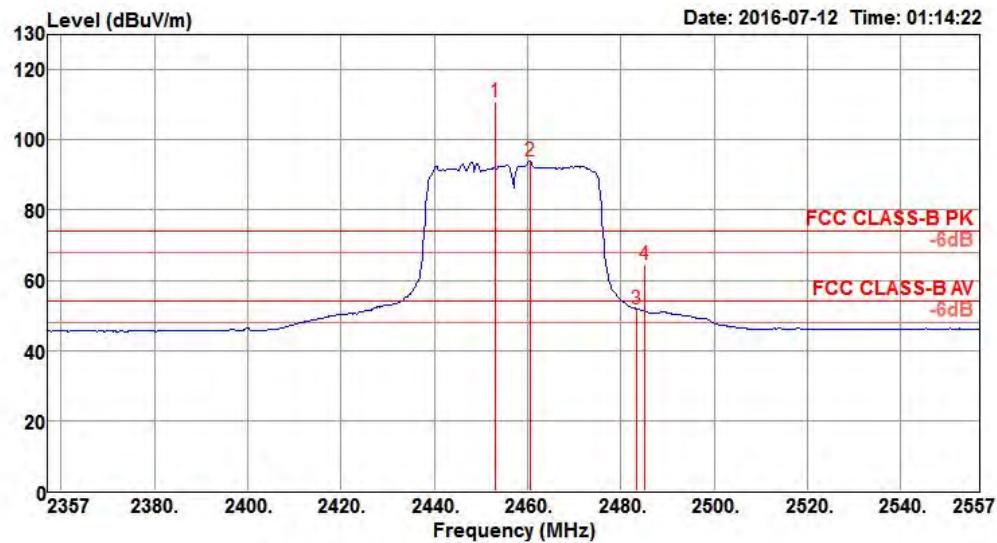
Freq	Level	Limit Line	Over Limit	Read Level	Cable		Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
					Loss	Factor						
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg			
1	2390.00	52.08	54.00	-1.92	18.66	4.85	28.57	0.00	104	284	Average	VERTICAL
2	2390.00	67.08	74.00	-6.92	33.66	4.85	28.57	0.00	104	284	Peak	VERTICAL
3	2433.40	96.97			63.40	4.90	28.67	0.00	104	284	Average	VERTICAL
4	2435.80	107.56			73.99	4.90	28.67	0.00	104	284	Peak	VERTICAL
5	2483.50	51.95	54.00	-2.05	18.23	4.95	28.77	0.00	104	284	Average	VERTICAL
6	2483.80	67.64	74.00	-6.36	33.92	4.95	28.77	0.00	104	284	Peak	VERTICAL

Item 3, 4 are the fundamental frequency at **2437 MHz**.

Channel 9


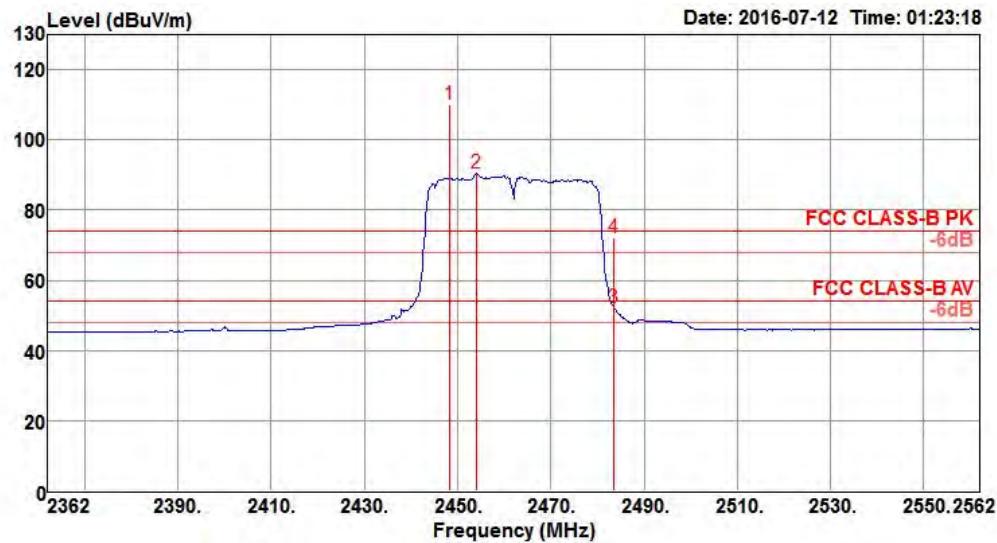
Freq	Level	Limit	Over	Read	Cable		Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
					Line	Limit						
MHz	dBuV/m	dBuV/m										
1 2438.00	109.26					75.69	4.90	28.67	0.00	103	52 Peak	VERTICAL
2 2442.40	93.95					60.35	4.91	28.69	0.00	103	52 Average	VERTICAL
3 2483.50	52.46	54.00	-1.54	18.74	4.95	28.77	0.00	103	103	52 Average	VERTICAL	
4 2486.00	66.17	74.00	-7.83	32.45	4.95	28.77	0.00	103	103	52 Peak	VERTICAL	

Item 1, 2 are the fundamental frequency at 2452 MHz.

Channel 10


Freq	Level	Limit Line	Over Limit	Read Level	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
					Loss	Factor	Factor				
MHz	dBuV/m	dBuV/m		dB	dBuV	dB	dB/m	dB	cm	deg	
1 2453.00	110.94				77.33	4.91	28.70	0.00	108	272	Peak VERTICAL
2 2460.60	93.97				60.31	4.93	28.73	0.00	108	272	Average VERTICAL
3 2483.50	51.72	54.00	-2.28	18.00	4.95	28.77	0.00	108	272	Average VERTICAL	
4 2485.00	64.32	74.00	-9.68	30.60	4.95	28.77	0.00	108	272	Peak VERTICAL	

Item 1, 2 are the fundamental frequency at 2457 MHz.

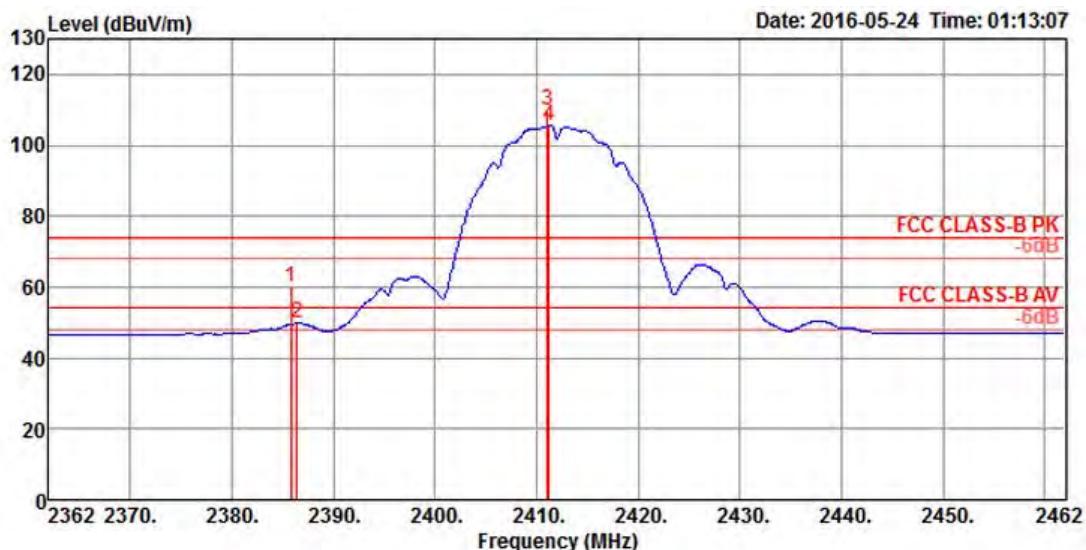
Channel 11


Freq	Level	Limit Line	Over Limit	Read Level	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
					Loss	Factor	Factor				
MHz	dBuV/m	dBuV/m		dB	dBuV	dB	dB/m	dB	cm	deg	
1	2448.40	109.90			76.29	4.91	28.70	0.00	110	276	Peak VERTICAL
2	2454.00	90.47			56.84	4.92	28.71	0.00	110	276	Average VERTICAL
3	2483.50	52.13	54.00	-1.87	18.41	4.95	28.77	0.00	110	276	Average VERTICAL
4	2483.50	72.02	74.00	-1.98	38.30	4.95	28.77	0.00	110	276	Peak VERTICAL

Item 1, 2 are the fundamental frequency at 2462 MHz.

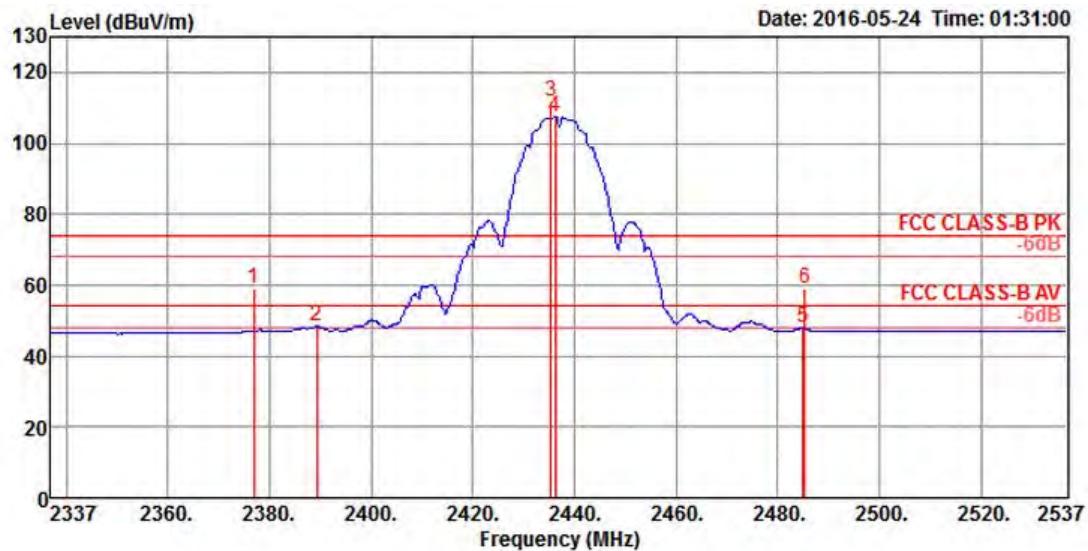
PIFA Antenna
<For Non-Beamforming / 1TX Mode>

Temperature	22°C	Humidity	54%
Test Engineer	Gino Huang	Configurations	IEEE 802.11b CH 1, 6, 11, 12, 13 / Chain 1
Test Date	May 19, 2016 ~ Aug. 11, 2016		

Channel 1


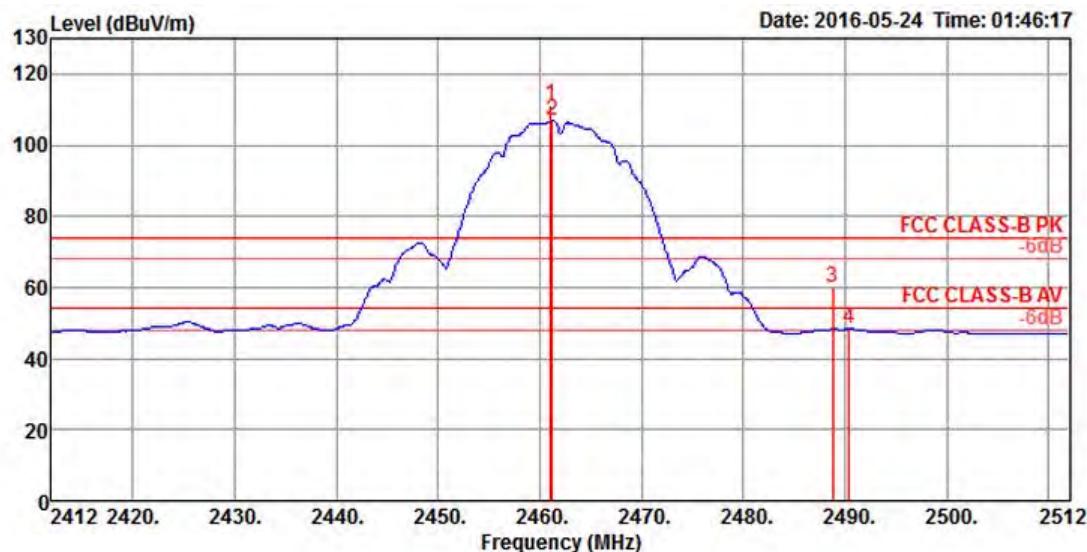
Freq	Level	Limit		Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
		Line	dBuV/m									
MHz	dBuV/m	dBuV/m	dB	dB	dBuV	dB	dB/m	dB	cm	deg		
1 2385.80	60.12	74.00	-13.88	27.02	5.20	27.90	0.00	204	65	Peak	HORIZONTAL	
2 2386.40	49.69	54.00	-4.31	16.59	5.20	27.90	0.00	204	65	Average	HORIZONTAL	
3 2411.00	109.92			76.81	5.23	27.88	0.00	204	65	Peak	HORIZONTAL	
4 2411.20	105.60			72.48	5.24	27.88	0.00	204	65	Average	HORIZONTAL	

Item 3, 4 are the fundamental frequency at 2412 MHz.

Channel 6


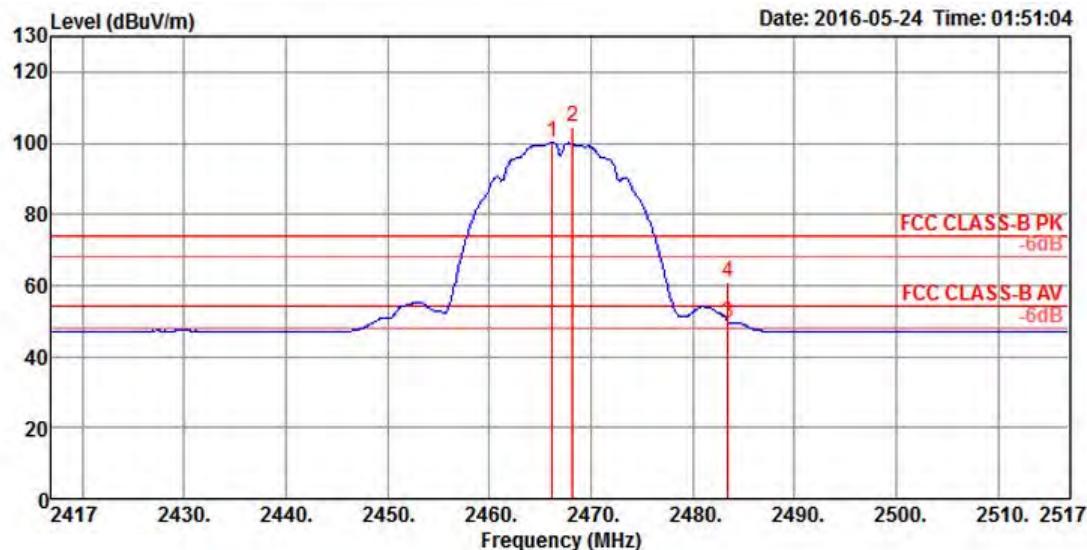
Freq	Level	Limit	Over	Read	Cable		Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
					Line	Limit						
	MHz	dBuV/m	dBuV/m		dB	dBuV	dB	dB/m	dB	cm	deg	
1	2377.00	58.85	74.00	-15.15	25.75	5.19	27.91	0.00	180	73	Peak	HORIZONTAL
2	2389.40	48.27	54.00	-5.73	15.17	5.20	27.90	0.00	180	73	Average	HORIZONTAL
3	2435.40	111.98			78.85	5.27	27.86	0.00	180	73	Peak	HORIZONTAL
4	2436.20	107.57			74.44	5.27	27.86	0.00	180	73	Average	HORIZONTAL
5	2485.00	47.74	54.00	-6.26	14.59	5.34	27.81	0.00	180	73	Average	HORIZONTAL
6	2485.40	58.89	74.00	-15.11	25.74	5.34	27.81	0.00	180	73	Peak	HORIZONTAL

Item 3, 4 are the fundamental frequency at 2437 MHz.

Channel 11


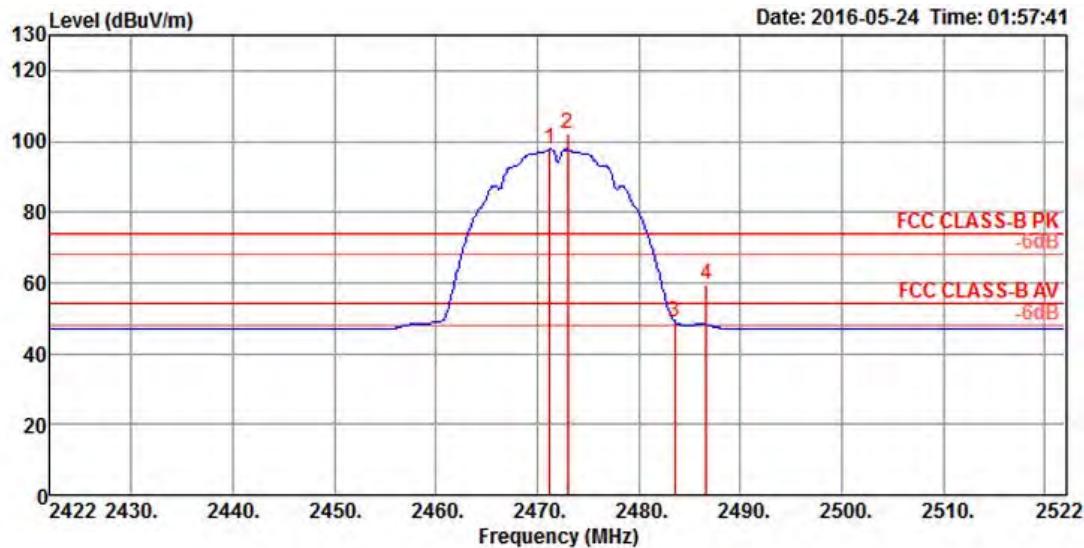
Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
		Line	Limit	Level	Loss	Factor	Factor	cm	deg		
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB				
1	2461.00	111.23			78.09	5.31	27.83	0.00	204	65 Peak	HORIZONTAL
2	2461.20	106.81			73.67	5.31	27.83	0.00	204	65 Average	HORIZONTAL
3	2488.80	59.74	74.00	-14.26	26.59	5.34	27.81	0.00	204	65 Peak	HORIZONTAL
4	2490.40	48.40	54.00	-5.60	15.24	5.35	27.81	0.00	204	65 Average	HORIZONTAL

Item 1, 2 are the fundamental frequency at 2462 MHz.

Channel 12


Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
		Line	Limit	Level	Loss	Factor	Factor	cm	deg		
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB				
1	2466.20	100.25			67.11	5.31	27.83	0.00	176	62 Average	HORIZONTAL
2	2468.20	104.69			71.54	5.32	27.83	0.00	176	62 Peak	HORIZONTAL
3	2483.50	49.54	54.00	-4.46	16.39	5.34	27.81	0.00	176	62 Average	HORIZONTAL
4	2483.50	60.76	74.00	-13.24	27.61	5.34	27.81	0.00	176	62 Peak	HORIZONTAL

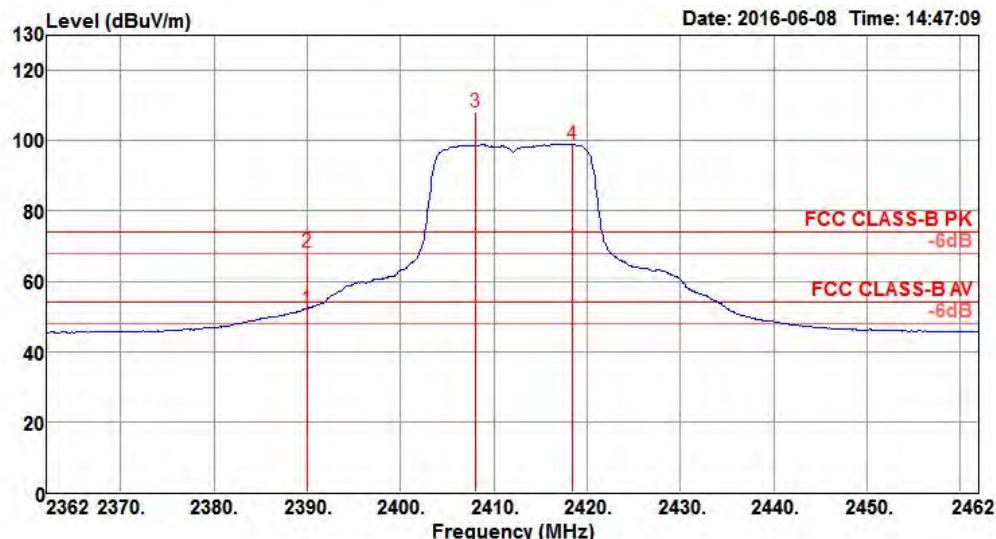
Item 1, 2 are the fundamental frequency at 2467 MHz.

Channel 13


Freq	Level	Limit		Over Limit	Read Level	Cable		Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
		Line	dBuV/m			dB	dBuV						
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	dB	cm	deg	deg	deg	deg
1 2471.20	97.79				64.64	5.32	27.83	0.00	178	62	Average	HORIZONTAL	
2 2473.00	102.35				69.20	5.32	27.83	0.00	178	62	Peak	HORIZONTAL	
3 2483.50	48.89	54.00	-5.11	15.74	5.34	27.81	0.00	178	62	Average	HORIZONTAL		
4 2486.60	59.44	74.00	-14.56	26.29	5.34	27.81	0.00	178	62	Peak	HORIZONTAL		

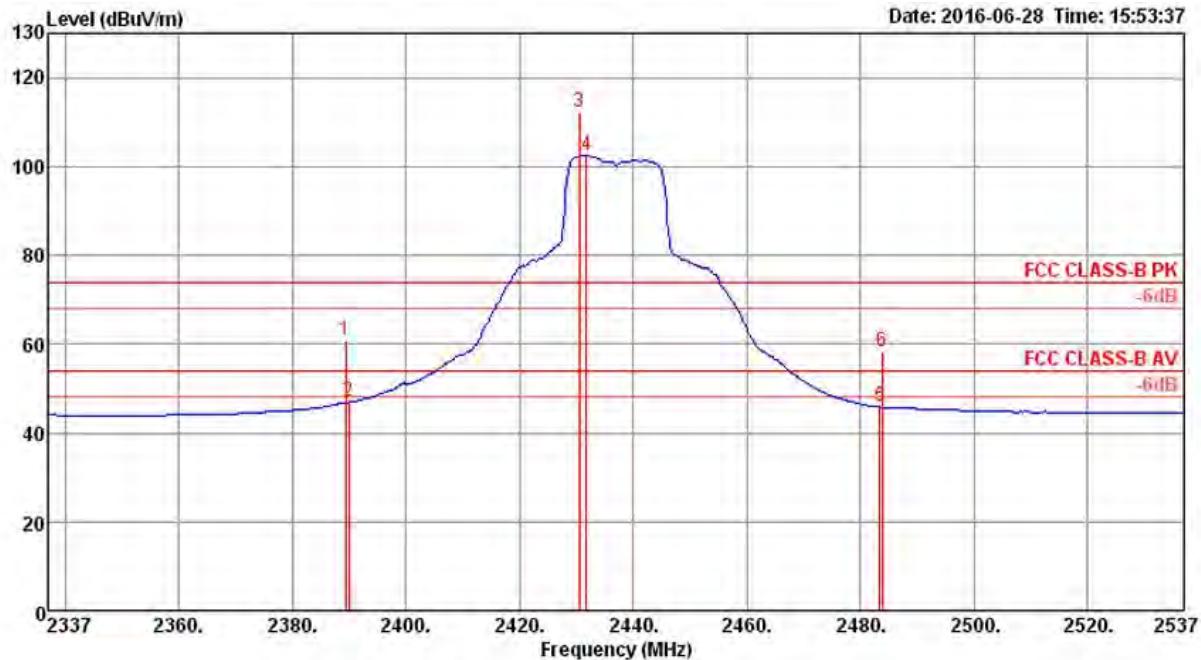
Item 1, 2 are the fundamental frequency at 2472 MHz.

Temperature	22°C	Humidity	54%
Test Engineer	Gino Huang	Configurations	IEEE 802.11g CH 1, 6, 11, 12, 13 / Chain 1
Test Date	May 19, 2016 ~ Aug. 11, 2016		

Channel 1


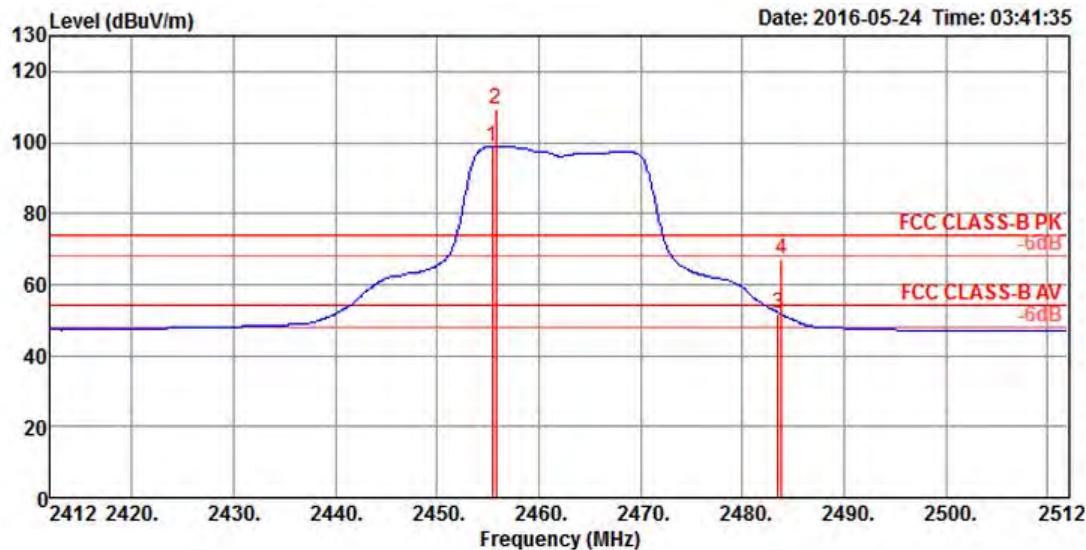
Freq	Level	Limit	Over	Read	Cable			A/Pos	T/Pos	Remark	Pol/Phase
					Line	Limit	Loss				
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1 2390.00	52.31	54.00	-1.69	19.20	4.54	28.57	0.00	179	357	Average	HORIZONTAL
2 2390.00	68.25	74.00	-5.75	35.14	4.54	28.57	0.00	179	357	Peak	HORIZONTAL
3 2408.00	107.98			74.80	4.57	28.61	0.00	179	357	Peak	HORIZONTAL
4 2418.40	99.10			65.88	4.58	28.64	0.00	179	357	Average	HORIZONTAL

Item 3, 4 are the fundamental frequency at 2412 MHz.

Channel 6


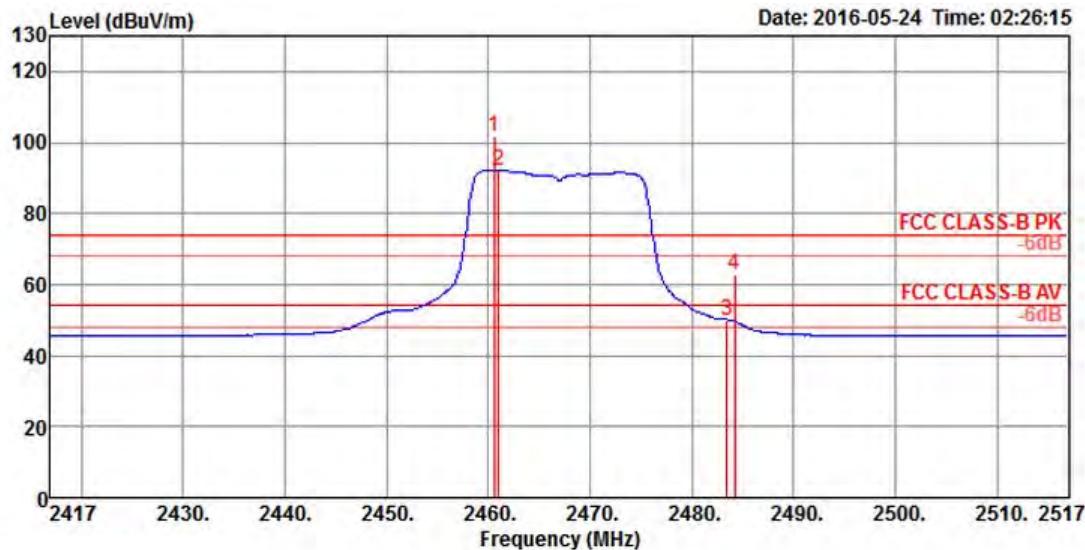
Freq	Level	Limit	Over	Read	Cable			Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
					Line	Limit	dB						
MHz	dBuV/m	dBuV/m			dB	dBuV	dB	dB/m	dB	cm	deg		
1 2389.40	60.66	74.00	-13.34	28.75	3.60	28.31	0.00	170	28	Peak		HORIZONTAL	
2 2390.00	46.91	54.00	-7.09	15.00	3.60	28.31	0.00	170	28	Average		HORIZONTAL	
3 2430.60	112.43			80.42	3.63	28.38	0.00	170	28	Peak		HORIZONTAL	
4 2431.80	102.42			70.41	3.63	28.38	0.00	170	28	Average		HORIZONTAL	
5 2483.50	45.82	54.00	-8.18	13.66	3.68	28.48	0.00	170	28	Average		HORIZONTAL	
6 2483.90	58.23	74.00	-15.77	26.07	3.68	28.48	0.00	170	28	Peak		HORIZONTAL	

Item 3, 4 are the fundamental frequency at 2437 MHz.

Channel 11


Freq	Level	Limit	Over	Read	Cable			Preamp	A/Pos	T/Pos	Remark	Pol/Phase
					Line	Limit	Level					
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg			
1	2455.40	98.92			65.78	5.30	27.84	0.00	164	67	Average	HORIZONTAL
2	2455.80	109.26			76.12	5.30	27.84	0.00	164	67	Peak	HORIZONTAL
3	2483.50	51.99	54.00	-2.01	18.84	5.34	27.81	0.00	164	67	Average	HORIZONTAL
4	2483.80	67.28	74.00	-6.72	34.13	5.34	27.81	0.00	164	67	Peak	HORIZONTAL

Item 1, 2 are the fundamental frequency at 2462 MHz.

Channel 12


Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
		Line	Limit	Level	Loss	Factor	Factor	cm	deg		
MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB				
1	2460.60	101.65			68.51	5.31	27.83	0.00	183	70 Peak	HORIZONTAL
2	2461.00	92.27			59.13	5.31	27.83	0.00	183	70 Average	HORIZONTAL
3	2483.50	50.07	54.00	-3.93	16.92	5.34	27.81	0.00	183	70 Average	HORIZONTAL
4	2484.20	62.98	74.00	-11.02	29.83	5.34	27.81	0.00	183	70 Peak	HORIZONTAL

Item 1, 2 are the fundamental frequency at 2467 MHz.