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FCC RADIO TEST REPORT

Applicant's company	**PEGATRON CORPORATION**
Applicant Address	5F., NO. 76, LIGONG ST., BEITOU DISTRICT, TAIPEI CITY 11259 Taiwan
FCC ID	**VUIDPC3941**
Manufacturer's company	**MAINTEK COMPUTER**
Manufacturer Address	233 Jinfeng Rd., Suzhou, Jiangsu, PRC

Product Name	Wireless Residential Voice Gateway
Brand Name	technicolor
Model No.	DPC3941T , DPC3941 , DPC3941XXXX (X can be 0-9, A-Z, a-z or blank)
Test Rule Part(s)	47 CFR FCC Part 15 Subpart E § 15.407
Test Freq. Range	5250 ~ 5350MHz / 5470 ~ 5725MHz
Received Date	Sep. 20, 2016
Final Test Date	Nov. 03, 2016
Submission Type	Class II Change

Statement

Test result included is for the IEEE 802.11n and IEEE 802.11a/ac 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 E, KDB789033 D02 v01r04, KDB662911 D01 v02r01, KDB644545 D03 v01.**

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

Table of Contents

History of This Test Report

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR3D1632-06	Rev. 01	Initial issue of report	Oct. 06, 2017

1. VERIFICATION OF COMPLIANCE

Product Name	:	Wireless Residential Voice Gateway
Brand Name	:	technicolor
Model No.	:	DPC3941T , DPC3941 , DPC3941XXXX (X can be 0-9, A-Z, a-z or blank)
Applicant	:	PEGATRON CORPORATION
Test Rule Part(s)	:	47 CFR FCC Part 15 Subpart E § 15.407

Sporton International as requested by the applicant to evaluate the EMC performance of the product sample received on Sep. 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.

Cliff Chang
SPORTON INTERNATIONAL INC.

2. SUMMARY OF THE TEST RESULT

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

3. GENERAL INFORMATION

3.1. Product Details

Items	Description
Product Type	WLAN (3TX, 3RX)
Radio Type	Intentional Transceiver
Power Type	Internal power supply
Modulation	IEEE 802.11a: OFDM IEEE 802.11n/ac: see the below table
Data Modulation	IEEE 802.11a/n: OFDM (BPSK / QPSK / 16QAM / 64QAM) IEEE 802.11ac: OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM)
Data Rate (Mbps)	IEEE 802.11a: OFDM (6/9/12/18/24/36/48/54) IEEE 802.11n/ac: see the below table
Frequency Range	5250 ~ 5350MHz / 5470 ~ 5725MHz
Channel Number	12 for 20MHz bandwidth ; 5 for 40MHz bandwidth 2 for 80MHz bandwidth
Channel Bandwidth (99%)	Band 2: IEEE 802.11a: 16.85 MHz IEEE 802.11ac MCS0/Nss1 (VHT20): 17.54 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 36.76 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 75.25 MHz Band 3: IEEE 802.11a: 16.76 MHz IEEE 802.11ac MCS0/Nss1 (VHT20): 17.28 MHz IEEE 802.11ac MCS0/Nss1 (VHT40): 36.63 MHz IEEE 802.11ac MCS0/Nss1 (VHT80): 74.96 MHz
Maximum Conducted Output Power	Band 2: IEEE 802.11a: 23.63 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 23.79 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 23.96 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 19.60 dBm Band 3: IEEE 802.11a: 23.72 dBm IEEE 802.11ac MCS0/Nss1 (VHT20): 23.78 dBm IEEE 802.11ac MCS0/Nss1 (VHT40): 23.88 dBm IEEE 802.11ac MCS0/Nss1 (VHT80): 19.03 dBm
Carrier Frequencies	Please refer to section 3.4
Antenna	Please refer to section 3.3

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

Antenna and Bandwidth

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

IEEE 11n/ac Spec.

Protocol	Number of Transmit Chains (NTX)	Data Rate / MCS
802.11n (HT20)	3	MCS 0-23
802.11n (HT40)	3	MCS 0-23
802.11ac (VHT20)	3	MCS 0-9/Nss1-3
802.11ac (VHT40)	3	MCS 0-9/Nss1-3
802.11ac (VHT80)	3	MCS 0-9/Nss1-3

Note 1: IEEE Std. 802.11n modulation consists of HT20 and HT40 (HT: High Throughput). Then EUT supports HT20 and HT40.

Note 2: IEEE Std. 802.11ac modulation consists of VHT20, VHT40, VHT80 and VHT160 (VHT: Very High Throughput). Then EUT supports VHT20, VHT40 and VHT80.

Note 3: Modulation modes consist of below configuration:
HT20/HT40: IEEE 802.11n, VHT20/VHT40/VHT80: IEEE 802.11ac

3.2. Accessories

Power line*1: Non-shielded, 2m

3.3. Table for Filed Antenna

Ant.	Brand	Model Name	P/N	Antenna Type	Connector	Gain (dBi)	
						2.4GHz	5GHz
1	Wanshih	WPB263	UC3WF10087	PCB Antenna	I-PEX	2.03	-
2	Wanshih	WPB265	UC3WF10089	PCB Antenna	I-PEX	1.73	-
3	Wanshih	WPB264	UC3WF10088	PCB Antenna	I-PEX	2.11	-
4	ACON	Cisco_DPC_3941	APP6P-701222	PCB Antenna	I-PEX	-	1.95
5	ACON	Cisco_DPC_3941	APP6P-701221	PCB Antenna	I-PEX	-	1.34
6	ACON	Cisco_DPC_3941	APP6P-701220	PCB Antenna	I-PEX		2.03

Note: The EUT has six antennas.

For 2.4GHz function:

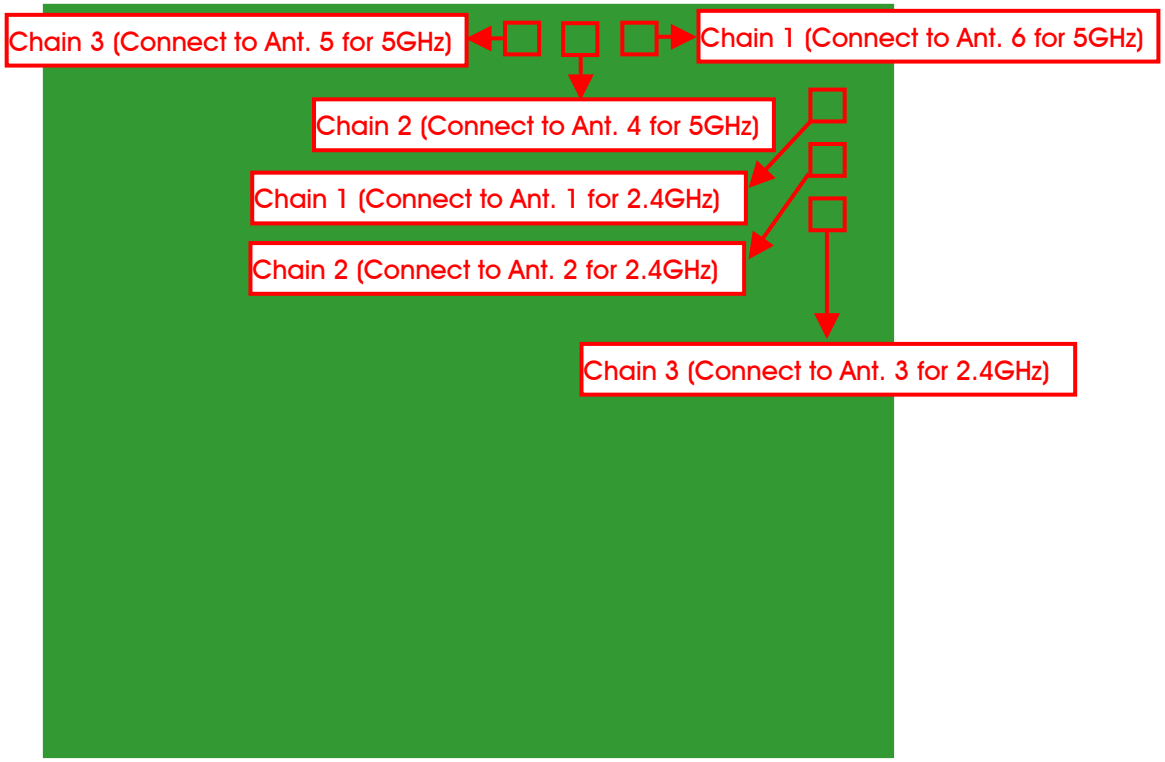
For IEEE 802.11b/g/n mode:

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

For 5GHz function:

For IEEE 802.11a/n/ac mode (3TX/3RX):

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



3.4. Table for Carrier Frequencies

There are three bandwidth systems.

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

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

For 80MHz bandwidth systems, use Channel 58, 106.

Frequency Band	Channel No.	Frequency	Channel No.	Frequency
5250~5350 MHz Band 2	52	5260 MHz	60	5300 MHz
	54	5270 MHz	62	5310 MHz
	56	5280 MHz	64	5320 MHz
	58	5290 MHz	-	-
5470~5725 MHz Band 3	100	5500 MHz	112	5560 MHz
	102	5510 MHz	116	5580 MHz
	104	5520 MHz	132	5660 MHz
	106	5530 MHz	134	5670 MHz
	108	5540 MHz	136	5680 MHz
	110	5550 MHz	140	5700 MHz

3.5. Table for Test Modes

Preliminary tests were performed in different data rate to find the worst radiated emission. The data rate shown in the table below is the worst-case rate with respect to the specific test item. The following table is a list of the test modes shown in this test report.

Test Items	Mode		Data Rate	Channel	Chain
Max. Conducted Output Power	11a/BPSK	Band 2-3	6Mbps	52/60/64/100/116/140	1+2+3
	11ac VHT20	Band 2-3	MCS0/Nss1	52/60/64/100/116/140	1+2+3
	11ac VHT40	Band 2-3	MCS0/Nss1	54/62/102/110/134	1+2+3
	11ac VHT80	Band 2-3	MCS0/Nss1	58/106	1+2+3
Power Spectral Density	11a/BPSK	Band 2-3	6Mbps	52/60/64/100/116/140	1+2+3
	11ac VHT20	Band 2-3	MCS0/Nss1	52/60/64/100/116/140	1+2+3
	11ac VHT40	Band 2-3	MCS0/Nss1	54/62/102/110/134	1+2+3
	11ac VHT80	Band 2-3	MCS0/Nss1	58/106	1+2+3
26dB Spectrum Bandwidth 99% Occupied Bandwidth Measurement	11a/BPSK	Band 2-3	6Mbps	52/60/64/100/116/140	1+2+3
	11ac VHT20	Band 2-3	MCS0/Nss1	52/60/64/100/116/140	1+2+3
	11ac VHT40	Band 2-3	MCS0/Nss1	54/62/102/110/134	1+2+3
	11ac VHT80	Band 2-3	MCS0/Nss1	58/106	1+2+3
Radiated Emission Above 1GHz	11a/BPSK	Band 2-3	6Mbps	52/60/64/100/116/140	1+2+3
	11ac VHT20	Band 2-3	MCS0/Nss1	52/60/64/100/116/140	1+2+3
	11ac VHT40	Band 2-3	MCS0/Nss1	54/62/102/110/134	1+2+3
	11ac VHT80	Band 2-3	MCS0/Nss1	58/106	1+2+3
Band Edge Emission	11a/BPSK	Band 2-3	6Mbps	52/60/64/100/116/140	1+2+3
	11ac VHT20	Band 2-3	MCS0/Nss1	52/60/64/100/116/140	1+2+3
	11ac VHT40	Band 2-3	MCS0/Nss1	54/62/102/110/134	1+2+3

	11ac VHT80	Band 2-3	MCS0/Nss1	58/106	1+2+3
Frequency Stability	20 MHz	Band 2-3	-	60/116	1
	40 MHz	Band 2-3	-	62/110	1
	80 MHz	Band 2-3	-	58/106	1

Note: 1. The EUT can only be used at Y axis position.

2. 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.

The following test modes were performed for all tests:

For Co-location MPE test:

The EUT could be applied with 2.4GHz WLAN function, 5GHz WLAN function and DECT; therefore Co-location Maximum Permissible Exposure (Please refer to FA3D1632-06) tests are added for simultaneously transmit between 2.4GHz WLAN function, 5GHz WLAN function and DECT.

3.6. Table for Testing Locations

Test Site Location					
Address:	No.8, Lane 724, Bo-ai St., Jhubei City, Hsinchu County 302, Taiwan, R.O.C.				
TEL:	886-3-656-9065				
FAX:	886-3-656-9085				
Test Site No.	**Site Category**	**Location**	**FCC Designation No.**	**IC File No.**	**VCCI Reg. No**
03CH01-CB	SAC	Hsin Chu	TW0006	IC 4086D	-
TH01-CB	OVEN Room	Hsin Chu	-	-	-

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

3.7. Table for Multiple Listing

The EUT has three model names, which are identical to each other in all aspects except for the following table:

Model Name	Information of Tuner Chip
DPC3941	1. Mxl267, Upstream channels (24 x 8) 2. Mxl267D, Upstream channels (24 x 8)
DPC3941T	1. Mxl267, Upstream channels (24 x 8) 2. Mxl267D, Upstream channels (24 x 8)
DCP3941XXXX (X can be 0-9, A-Z, a-z or blank)	1. Mxl267, Upstream channels (24 x 8) 2. Mxl267D, Upstream channels (24 x 8)

Note: 1. The different model name of the tuner chip serves as marketing strategy

2. According to above, there is only model: DPC3941T were selected to test and record in the report as a result.

3.8. Table for Class II Change

This product is an extension of original one reported under Sporton project number: FR3D1632-04

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

Modifications	Performance Checking
1. Adding 5GHz band 2 and band 3 (5250~5350 MHz, 5470~5725 MHz) for this device.	1. 26dB Spectrum Bandwidth and 99% Occupied Bandwidth. 2. Maximum Conducted Output Power. 3. Power Spectral Density. 4. Radiated Emission Above 1GHz. 5. Band Edge Emissions. 6. Frequency Stability.
2. Revising the applicant address to "5F., NO. 76, LIGONG ST., BEITOU DISTRICT, TAIPEI CITY 11259 Taiwan".	It does not affect the test.

3.9. Table for Supporting Units

Support Unit	Brand	Model	FCC ID
Notebook	DELL	E4300	DoC

3.10. Table for Parameters of Test Software Setting

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

Test Software Version	ART (Cart Version4.9)					
Mode	Test Frequency (MHz)					
	NCB: 20MHz					
	5260 MHz	5300 MHz	5320 MHz	5500 MHz	5580 MHz	5700 MHz
802.11a	19	19	19.5	19	19	19
802.11ac MCS0/Nss1 VHT20	19	19.5	19.5	19	19	19
Mode	NCB: 40MHz					
802.11ac MCS0/Nss1 VHT40	5270 MHz	5310 MHz	5510 MHz	5550 MHz	5670 MHz	
	20	20	17	19.5	19	
Mode	NCB: 80MHz					
802.11ac MCS0/Nss1 VHT80	5290 MHz		5530 MHz			
	16		15			

3.11. EUT Operation during Test

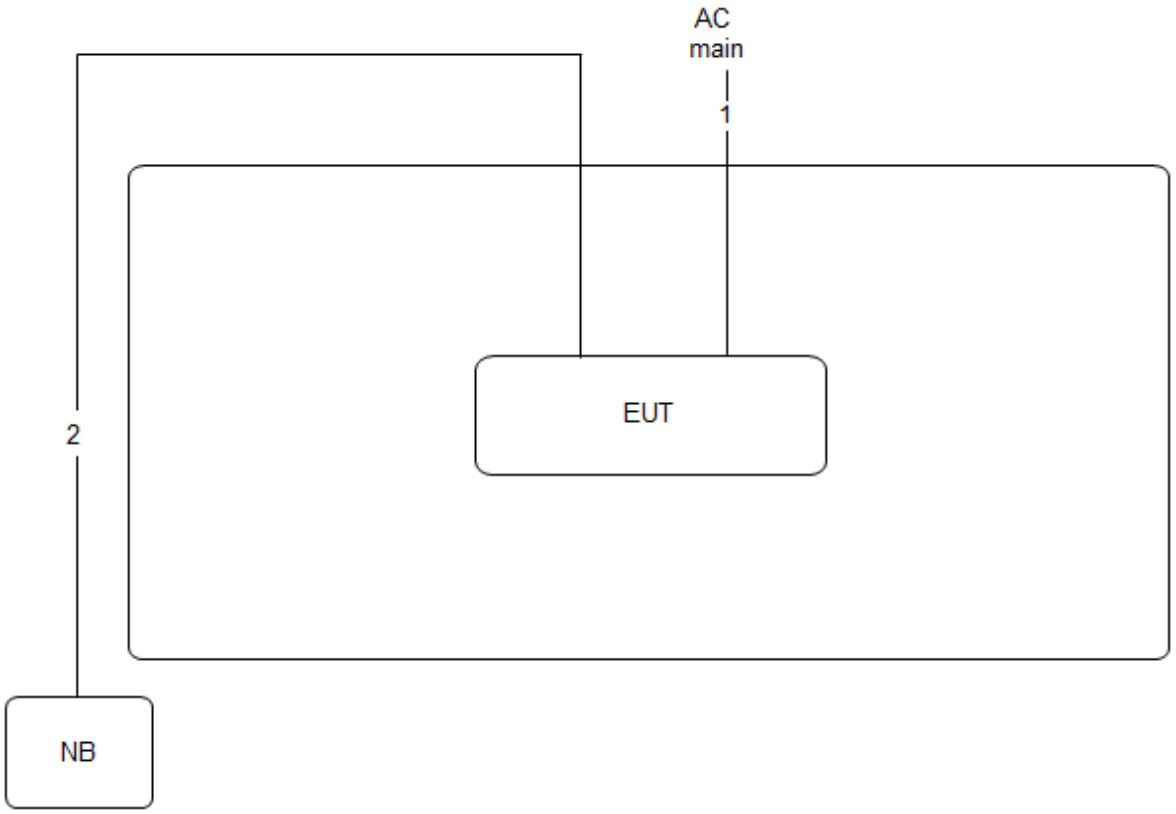
The EUT was programmed to be in continuously transmitting mode.

3.12. Duty Cycle

Mode	On Time (ms)	On+Off Time (ms)	Duty Cycle (%)	Duty Factor (dB)	1/T Minimum VBW (kHz)
802.11a	2.020	2.090	96.65	0.15	0.50
802.11ac MCS0/Nss1 VHT20	1.900	1.970	96.45	0.16	0.53
802.11ac MCS0/Nss1 VHT40	0.900	1.000	90.00	0.46	1.11
802.11ac MCS0/Nss1 VHT80	0.440	0.510	86.27	0.64	2.27

3.13. Test Configurations

3.13.1. Radiation Emissions Test Configuration



Item	Connection	Shielded	Length
1	Power cable	No	2m
2	RJ-45 cable	No	10m

4. TEST RESULT

4.1. 26dB Bandwidth and 99% Occupied Bandwidth Measurement

4.1.1. Limit

No restriction limits.

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 spectrum analyzer.

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

4.1.3. Test Procedures

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

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

4.1.4. Test Setup Layout

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

This test setup layout is the same as that shown in section 4.4.4.

4.1.5. Test Deviation

There is no deviation with the original standard.

4.1.6. EUT Operation during Test

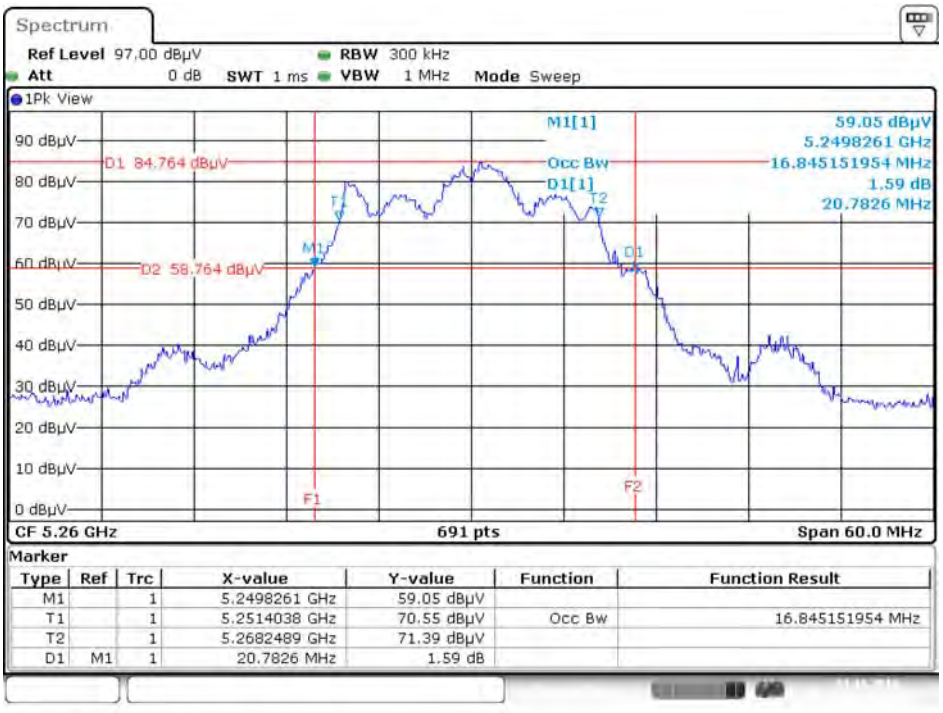
The EUT was programmed to be in continuously transmitting mode.

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

Temperature	25℃	Humidity	45%
Test Engineer	Gary Chu		

Mode	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
802.11a	5260 MHz	20.78	16.85
	5300 MHz	18.78	15.72
	5320 MHz	19.39	15.63
	5500 MHz	19.65	15.98
	5580 MHz	20.00	16.76
	5700 MHz	19.65	16.67
802.11ac MCS0/Nss1 VHT20	5260 MHz	20.87	17.54
	5300 MHz	19.48	17.28
	5320 MHz	20.78	17.37
	5500 MHz	20.35	17.28
	5580 MHz	20.44	17.19
	5700 MHz	20.09	17.28
802.11ac MCS0/Nss1 VHT40	5270 MHz	44.64	36.76
	5310 MHz	40.58	35.02
	5510 MHz	41.88	35.46
	5550 MHz	45.22	37.63
	5670 MHz	44.06	37.63
802.11ac MCS0/Nss1 VHT80	5290 MHz	81.45	75.25
	5530 MHz	82.61	74.96

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



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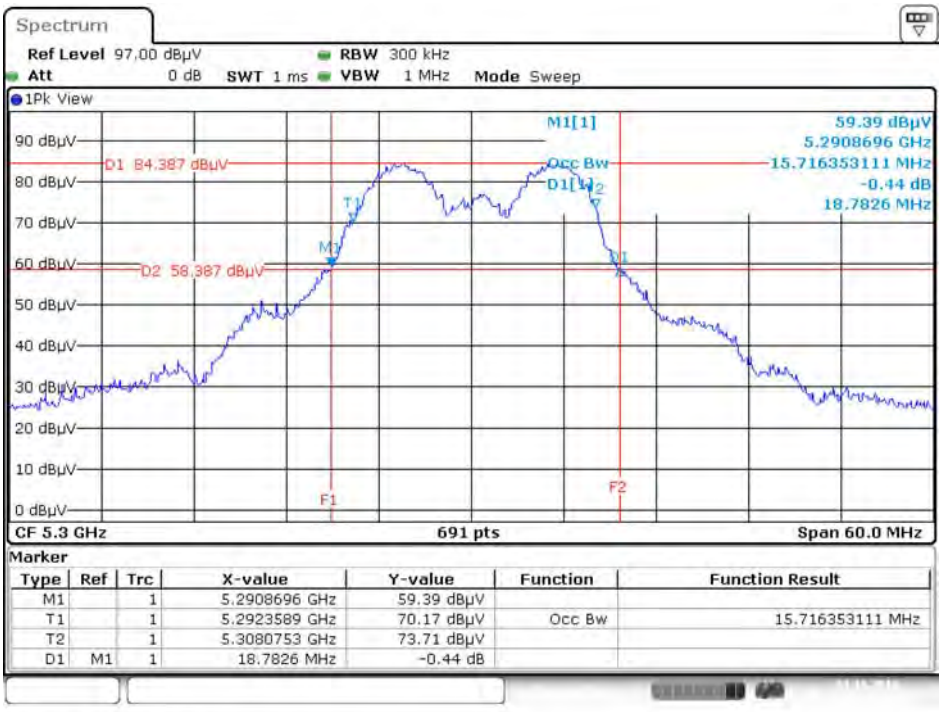
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 / 5300 MHz



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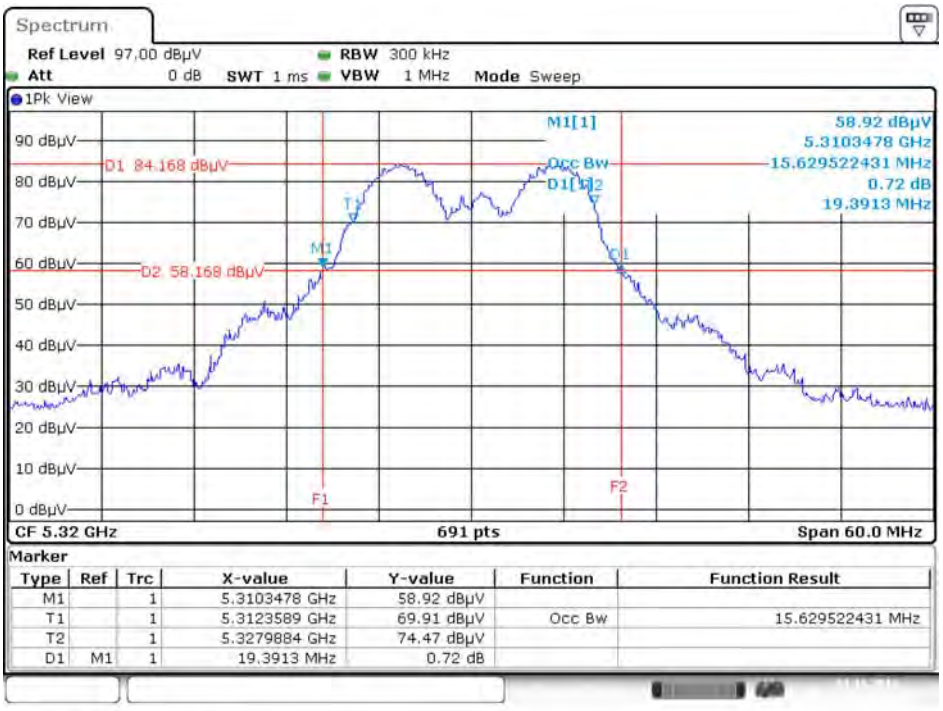

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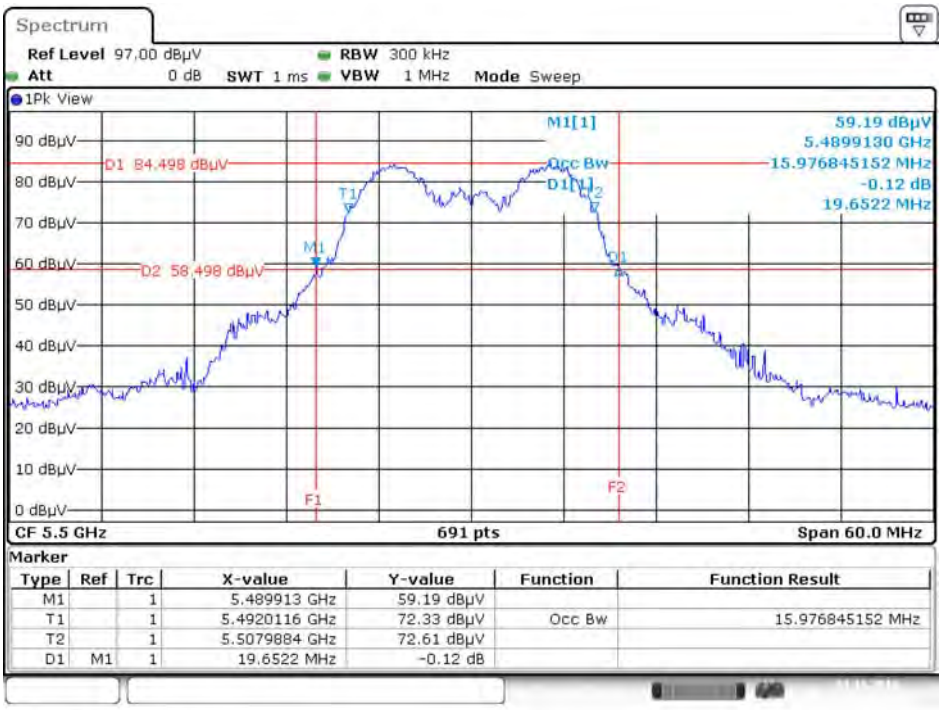
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 / 5500 MHz



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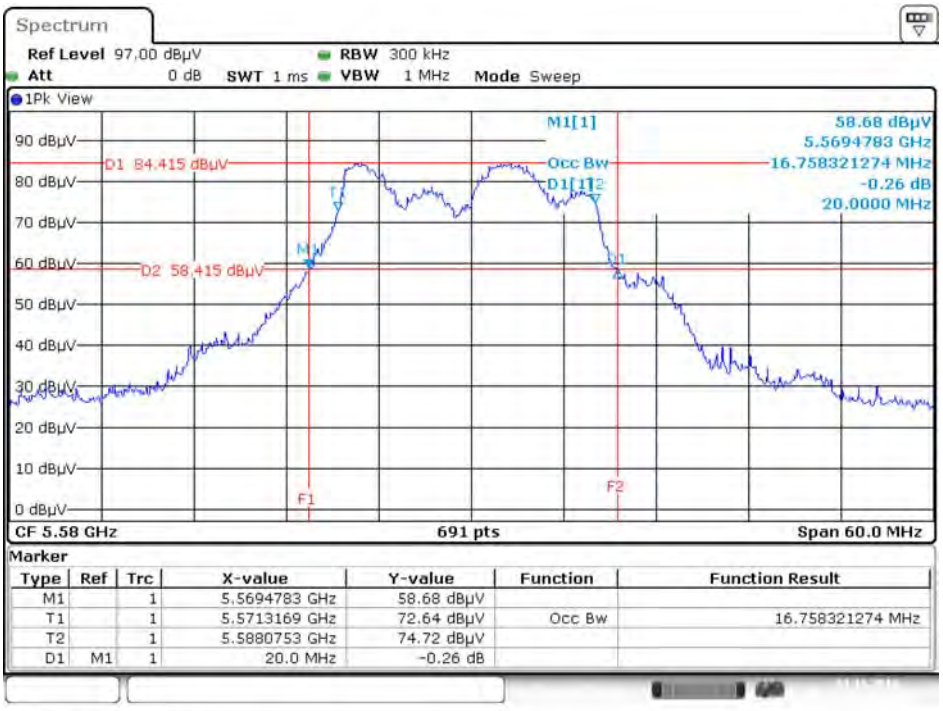
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 / 5580 MHz



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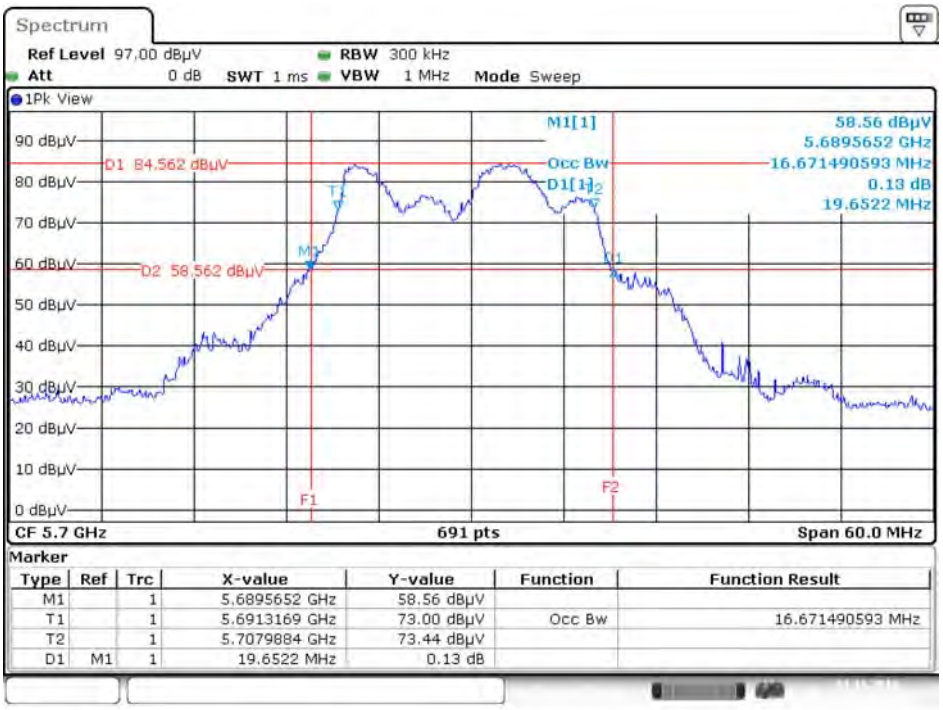
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 / 5700 MHz



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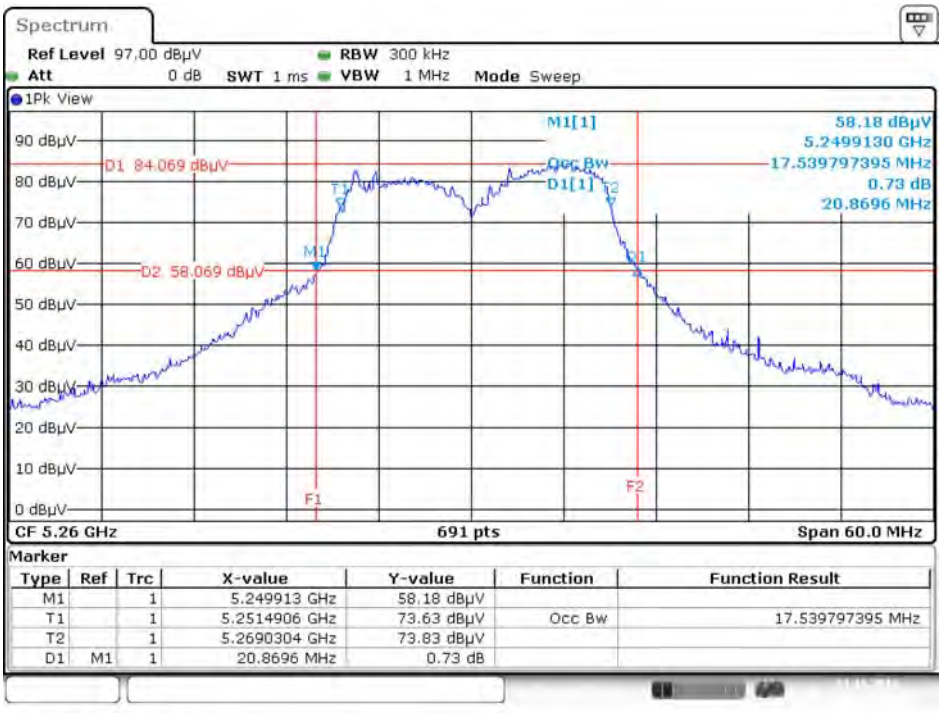
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 / 5260 MHz



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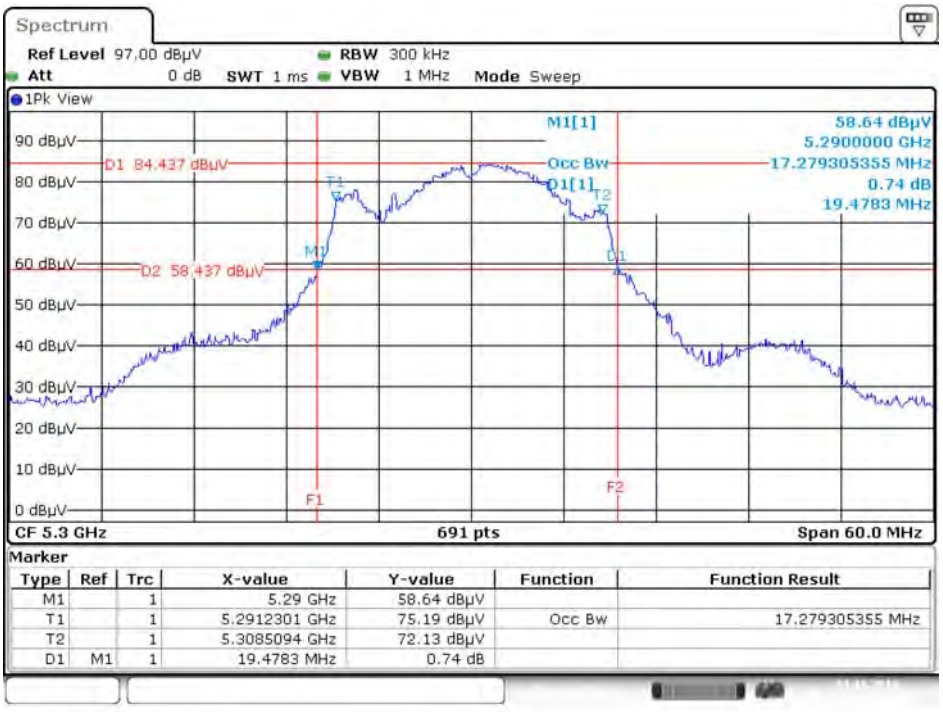
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 / 5300 MHz



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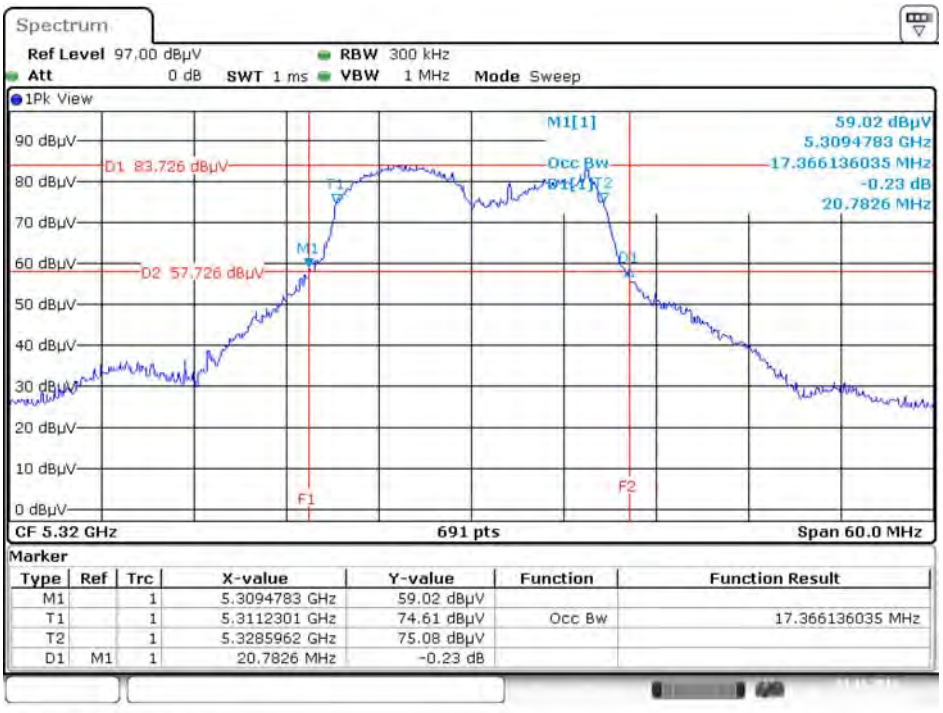
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 / 5320 MHz



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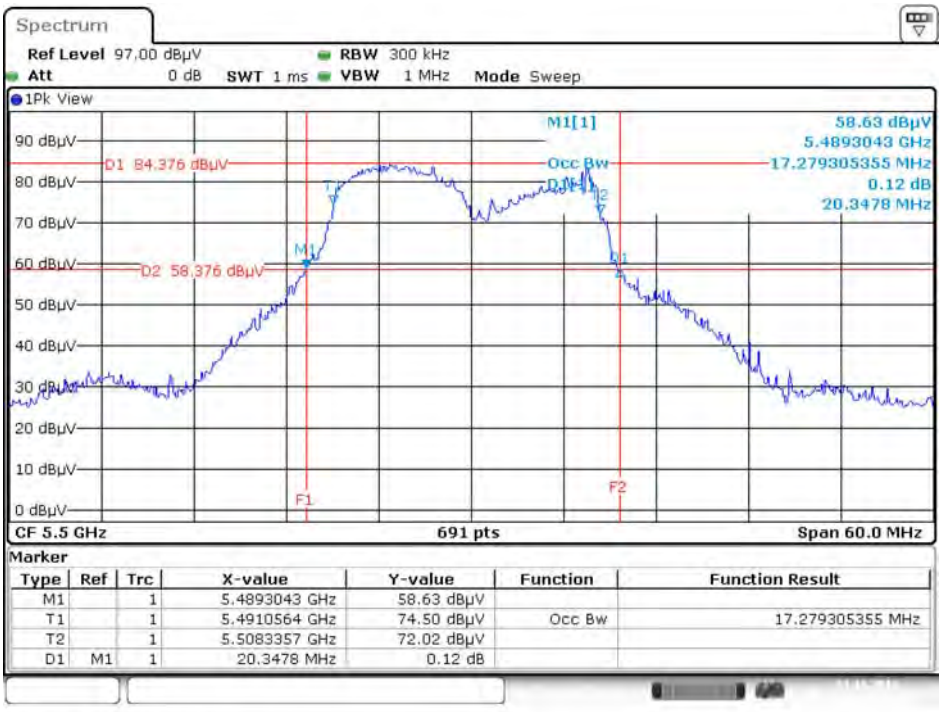
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 / 5500 MHz



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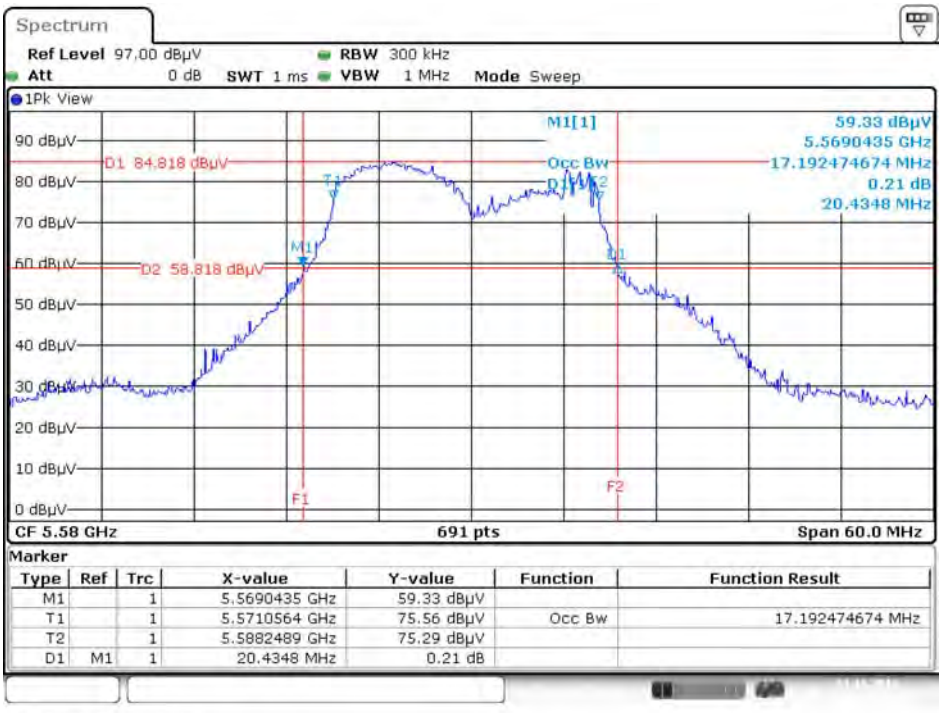
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 / 5580 MHz



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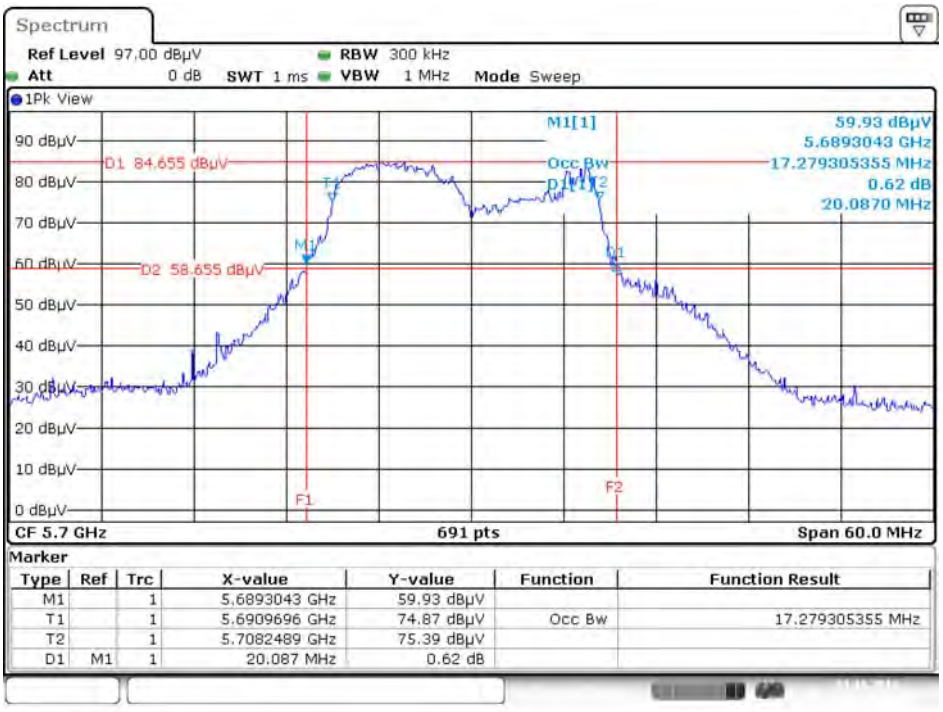
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 / 5700 MHz



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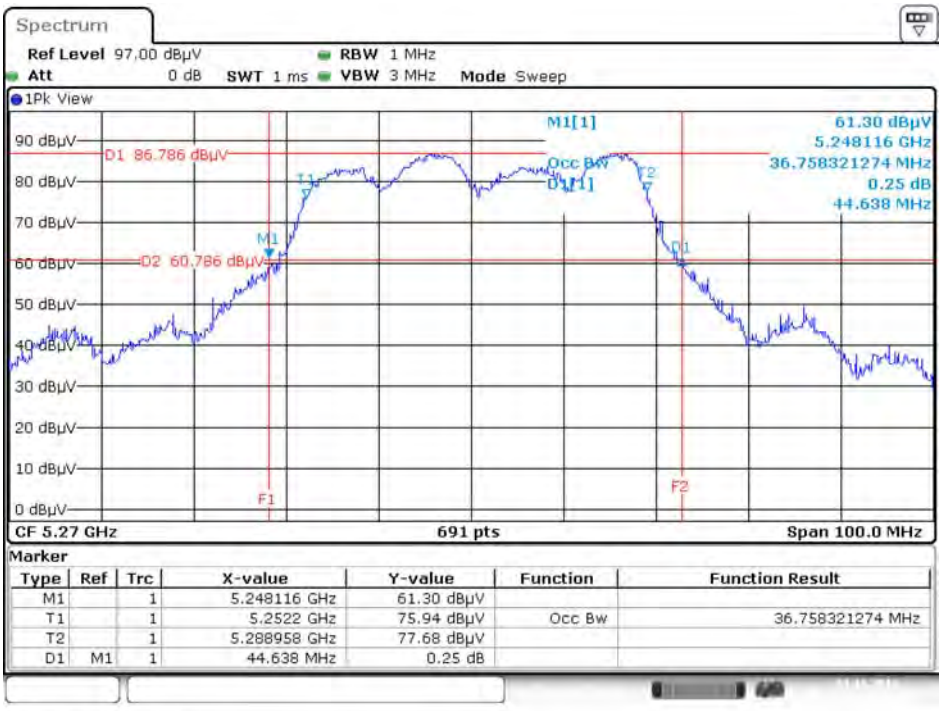
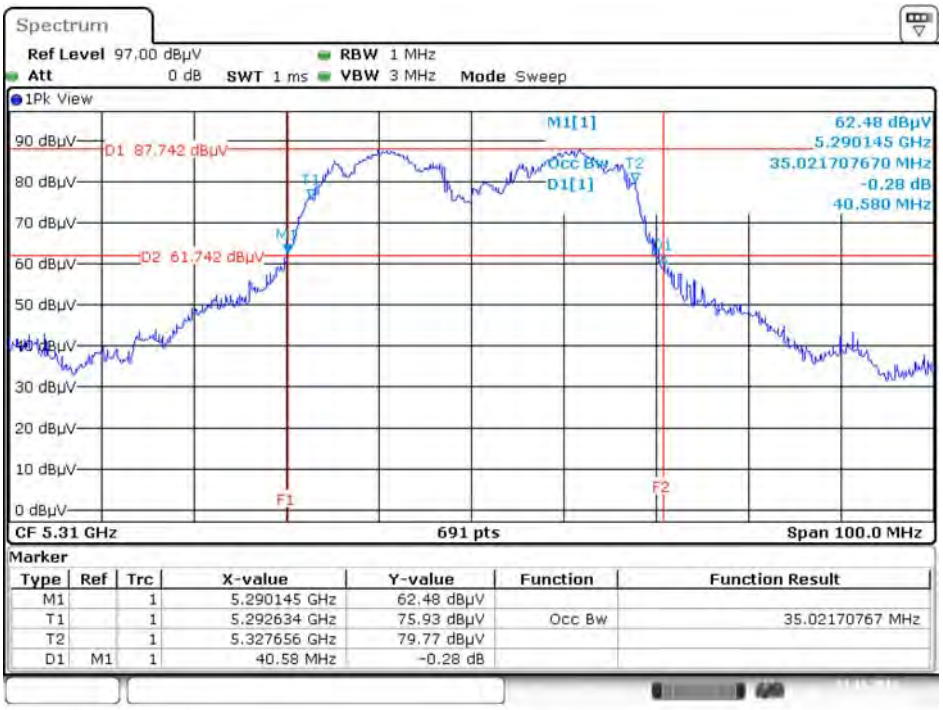
26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 / 5270 MHz



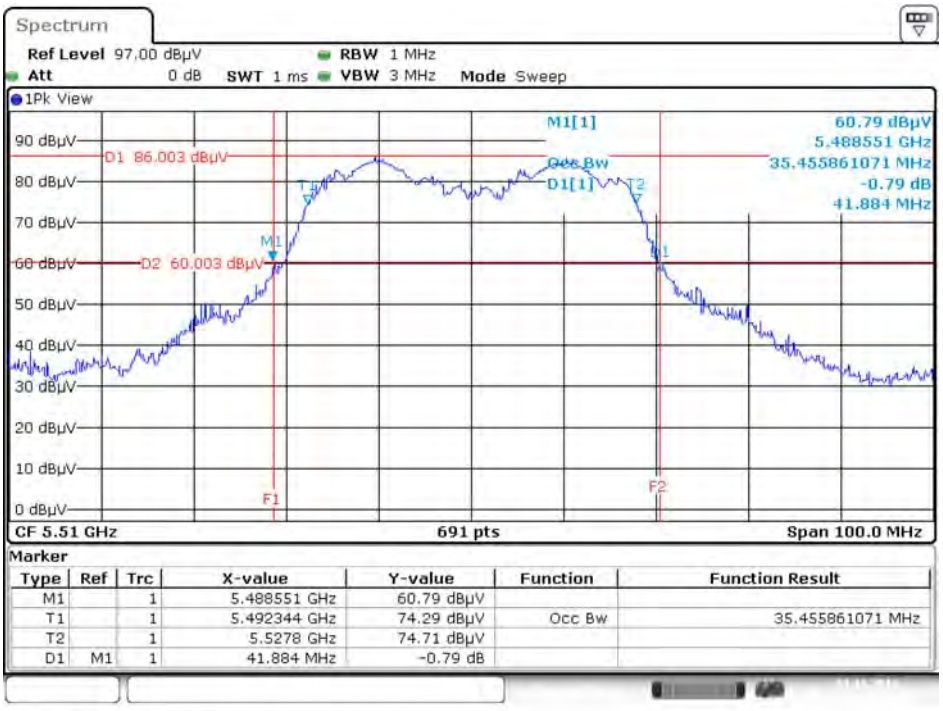
Date: 3.NOV.2016 19:17:09

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 / 5310 MHz



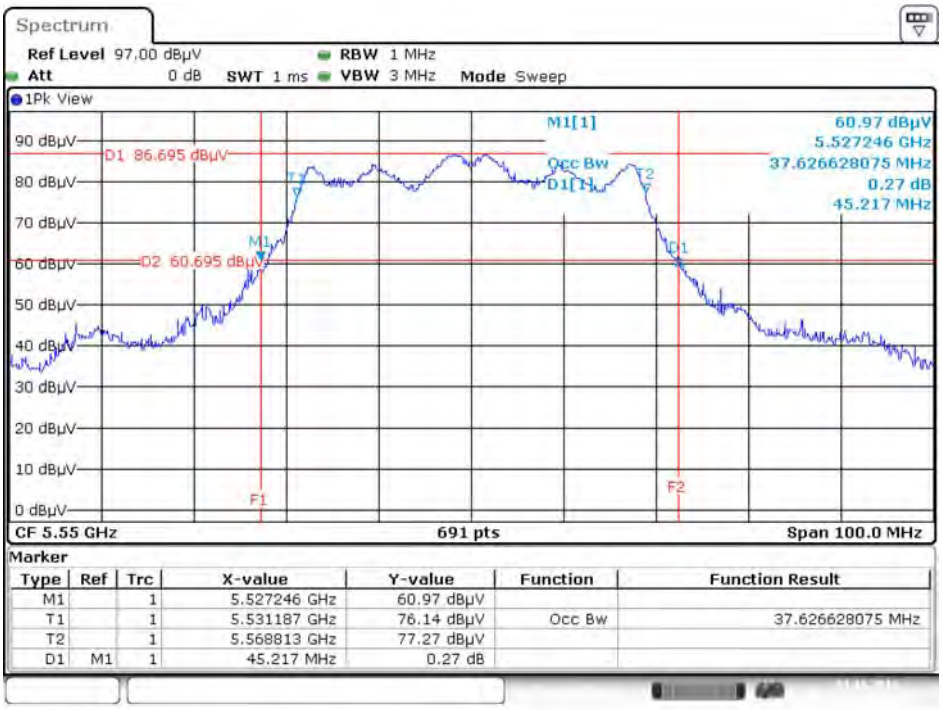
Date: 3.NOV.2016 19:18:12

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 / 5510 MHz



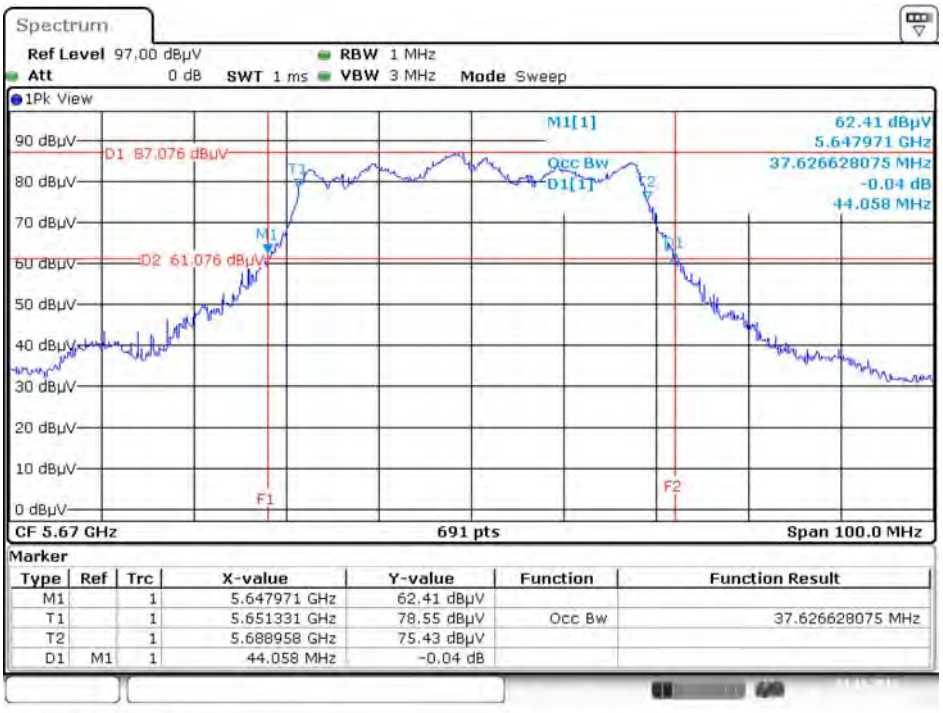
Date: 3.NOV.2016 19:19:09

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 / 5550 MHz



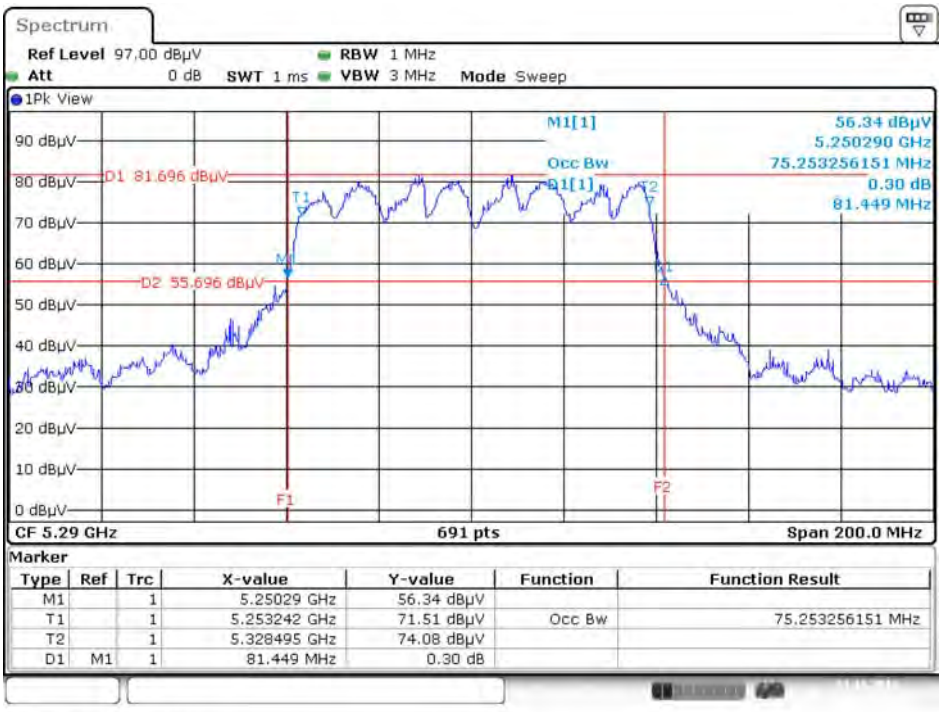
Date: 3.NOV.2016 19:20:02

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 / 5670 MHz



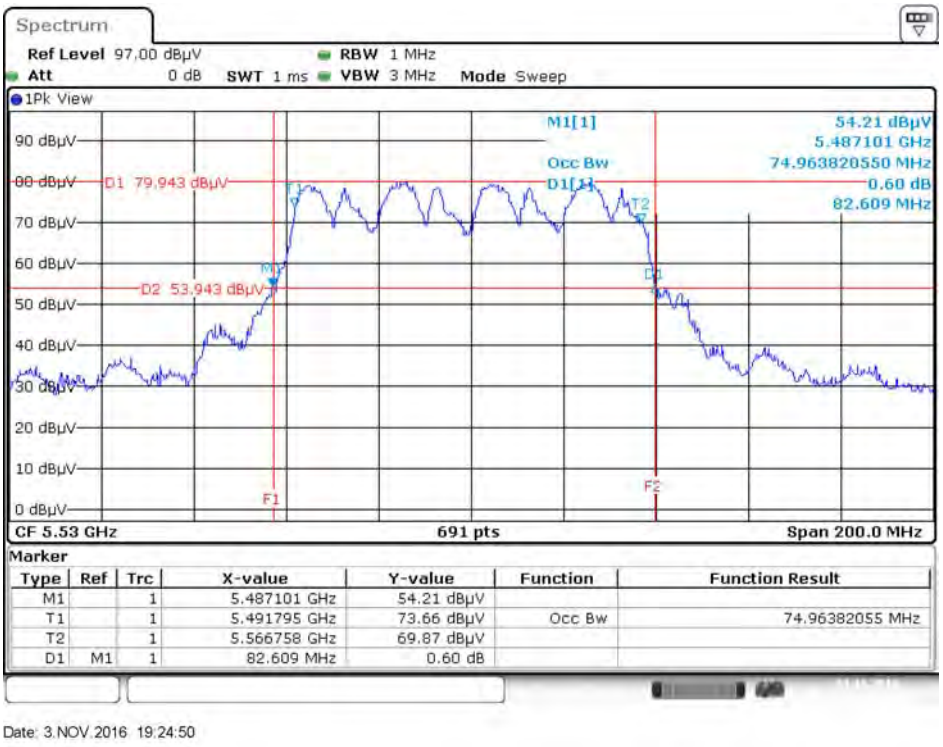
Date: 3.NOV.2016 19:21:07

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 / 5290 MHz



Date: 3.NOV.2016 19:24:06

26dB Bandwidth and 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 / 5530 MHz



4.2. Maximum Conducted Output Power Measurement

4.2.1. Limit

Frequency Band		Limit
☒	5.25-5.35 GHz	The maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW (24dBm) or 11 dBm 10 log B, where B is the 26 dB emission bandwidth in megahertz. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
☒	5.470-5.725 GHz	

4.2.2. Measuring Instruments and Setting

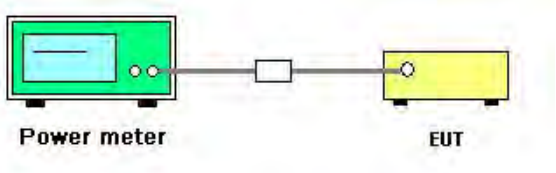
Please refer to section 5 of equipments list in this report The following table is the setting of the power meter.

Power Meter Parameter	Setting
Detector	AVERAGE

4.2.3. Test Procedures

1. The transmitter output (antenna port) was connected to the power meter.
2. Test was performed in accordance with KDB789033 D02 v01r04 for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices - section (E) Maximum conducted output power =>3. Measurement using a Power Meter (PM) =>b) Method PM-G (Measurement using a gated RF average power meter).
3. Multiple antenna systems was performed in accordance with KDB662911 D01 v02r01 Emissions Testing of Transmitters with Multiple Outputs in the Same Band.
4. When measuring maximum conducted output power with multiple antenna systems,add every result of the values by mathematic formula.

4.2.4. Test Setup Layout



4.2.5. Test Deviation

There is no deviation with the original standard.

4.2.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

4.2.7. Test Result of Maximum Conducted Output Power

Temperature	25℃	Humidity	45%
Test Engineer	Gary Chu	Test Date	Nov. 03, 2016

Mode	Frequency	Conducted Power (dBm)				Max. Limit (dBm)	Result
		Chain 1	Chain 2	Chain 3	Total		
802.11a	5260 MHz	18.56	18.78	19.22	23.63	23.98	Complies
	5300 MHz	18.51	18.36	19.33	23.53	23.74	Complies
	5320 MHz	18.72	18.07	19.41	23.54	23.88	Complies
	5500 MHz	18.40	18.21	19.31	23.44	23.93	Complies
	5580 MHz	18.81	18.63	19.36	23.72	23.98	Complies
	5700 MHz	18.59	18.51	19.23	23.56	23.93	Complies
802.11ac MCS0/Nss1 VHT20	5260 MHz	18.65	19.05	19.34	23.79	23.98	Complies
	5300 MHz	18.71	18.44	19.39	23.64	23.90	Complies
	5320 MHz	18.76	17.95	19.46	23.54	23.98	Complies
	5500 MHz	18.43	18.36	19.31	23.49	23.98	Complies
	5580 MHz	19.14	18.65	19.21	23.78	23.98	Complies
	5700 MHz	18.90	18.34	19.26	23.62	23.98	Complies
802.11ac MCS0/Nss1 VHT40	5270 MHz	18.79	19.34	19.42	23.96	23.98	Complies
	5310 MHz	18.74	18.86	19.63	23.87	23.98	Complies
	5510 MHz	16.17	16.11	17.37	21.36	23.98	Complies
	5550 MHz	19.12	18.51	19.62	23.88	23.98	Complies
	5670 MHz	18.88	19.07	19.14	23.80	23.98	Complies
802.11ac MCS0/Nss1 VHT80	5290 MHz	14.82	14.49	15.14	19.60	23.98	Complies
	5530 MHz	13.98	13.92	14.83	19.03	23.98	Complies

Note: Power limit=11+10*log(B) or 23.98dBm.

1. 802.11a 5260 MHz power limit=11+10*log(18.78)= 23.74dBm<23.98dBm, so limit=23.74dBm.
2. 802.11a 5320 MHz power limit=11+10*log(19.39)= 23.88dBm<23.98dBm, so limit=23.88dBm.
3. 802.11a 5500 MHz power limit=11+10*log(19.65)= 23.93dBm<23.98dBm, so limit=23.93dBm.
4. 802.11a 5700 MHz power limit=11+10*log(19.65)= 23.93dBm<23.98dBm, so limit=23.93dBm.
5. 802.11ac MCS0/Nss1 VHT20 5300 MHz power limit=11+10*log(19.48)= 23.90dBm<23.98dBm, so limit=23.90dBm.

4.3. Power Spectral Density Measurement

4.3.1. Limit

The following table is power spectral density limits and decrease power density limit rule refer to section 4.2.1.

Frequency Band		Limit
☒	5.25-5.35 GHz	11 dBm/MHz
☒	5.470-5.725 GHz	11 dBm/MHz

4.3.2. Measuring Instruments and Setting

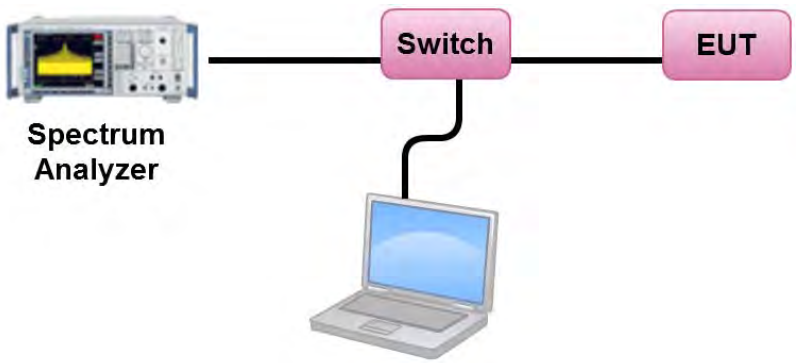
Please refer to section 5 of equipments list in this report. The following table is the setting of the spectrum analyzer.

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

4.3.3. Test Procedures

1. The transmitter output (antenna port) was connected RF switch to the spectrum analyzer.
2. Test was performed in accordance with KDB789033 D02 v01r04 for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices - section (F) Maximum Power Spectral Density (PSD).
3. Multiple antenna systems was performed in accordance KDB662911 D01 v02r01 in-Band Power Spectral Density (PSD) Measurements and sum the spectra across the outputs.

4.3.4. Test Setup Layout



4.3.5. Test Deviation

There is no deviation with the original standard.

4.3.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

4.3.7. Test Result of Power Spectral Density

Temperature	25℃	Humidity	45%
Test Engineer	Gary Chu	Test Date	Nov. 03, 2016

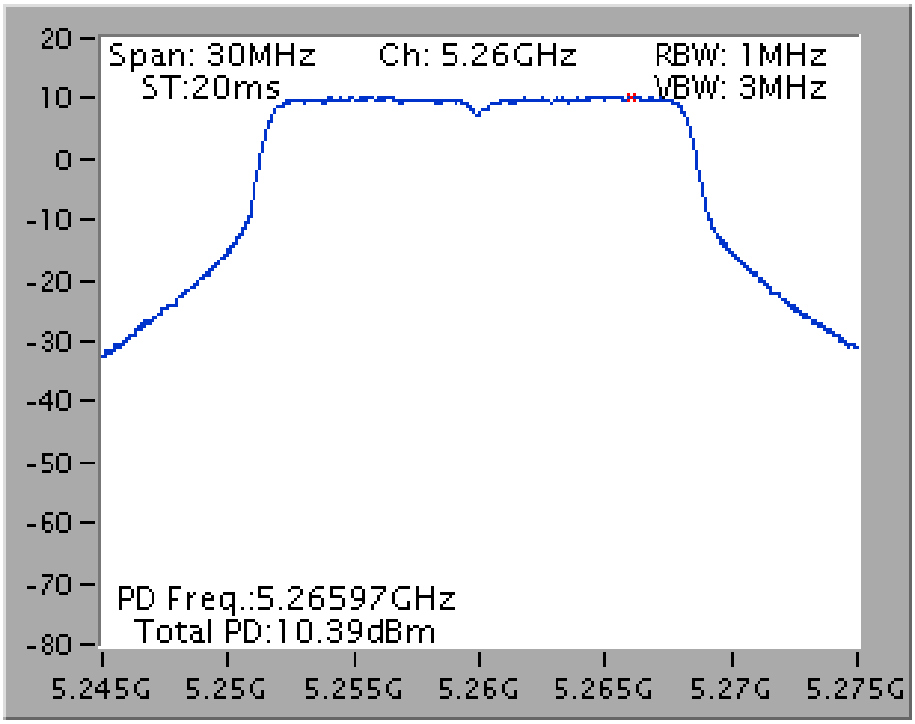
Mode	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
802.11a	5260 MHz	10.39	10.45	Complies
	5300 MHz	10.29	10.45	Complies
	5320 MHz	10.39	10.45	Complies
	5500 MHz	10.21	10.45	Complies
	5580 MHz	10.43	10.45	Complies
	5700 MHz	10.30	10.45	Complies
802.11ac MCS0/Nss1 VHT20	5260 MHz	10.43	10.45	Complies
	5300 MHz	10.38	10.45	Complies
	5320 MHz	10.33	10.45	Complies
	5500 MHz	10.18	10.45	Complies
	5580 MHz	10.40	10.45	Complies
	5700 MHz	10.42	10.45	Complies
802.11ac MCS0/Nss1 VHT40	5270 MHz	7.73	10.45	Complies
	5310 MHz	7.59	10.45	Complies
	5510 MHz	5.26	10.45	Complies
	5550 MHz	7.87	10.45	Complies
	5670 MHz	7.58	10.45	Complies
802.11ac MCS0/Nss1 VHT80	5290 MHz	0.48	10.45	Complies
	5530 MHz	-0.10	10.45	Complies

Note: $Directional\ Gain = 10\log\left[\frac{\sum_{j=1}^{Nss}\left\{\sum_{K=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$ =6.55dBi >6dBi, so limit=11 – (6.55 – 6)=10.45dBm/MHz.

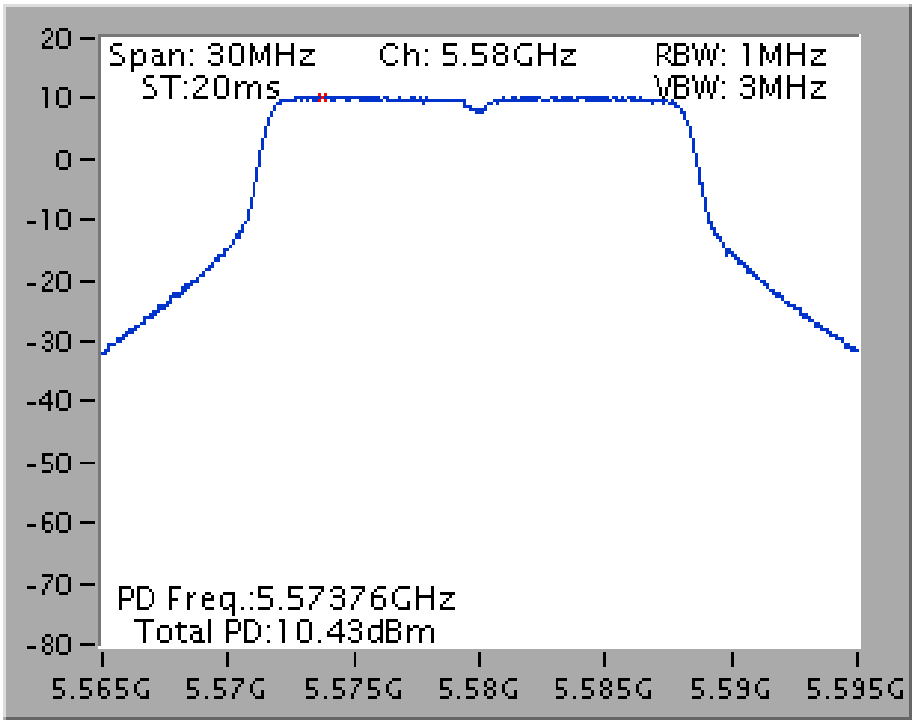
Note: All the test values were listed in the report.

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

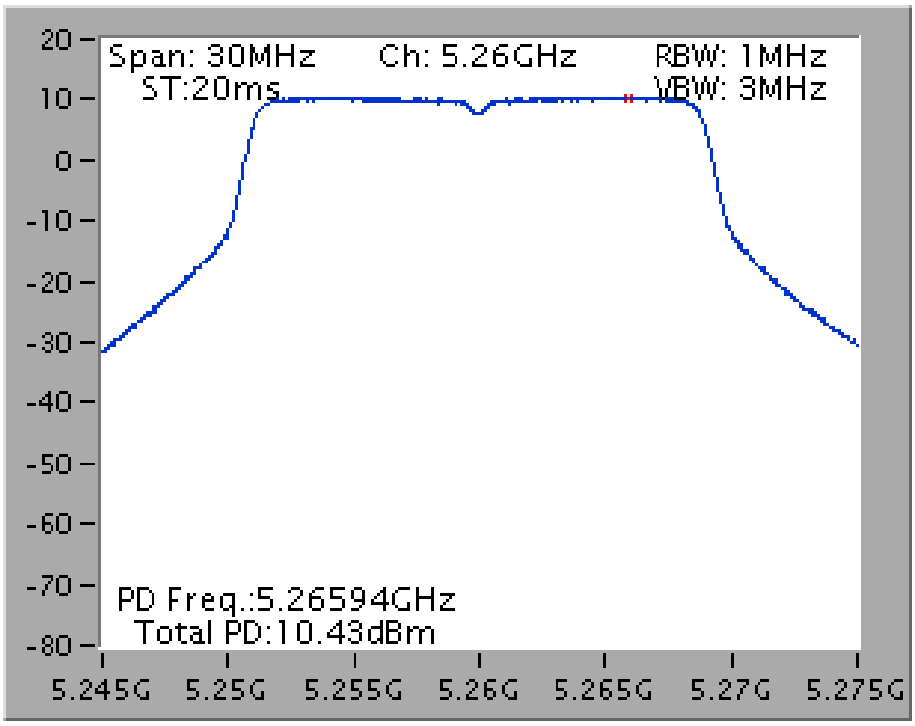
Power Density Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 / 5260 MHz



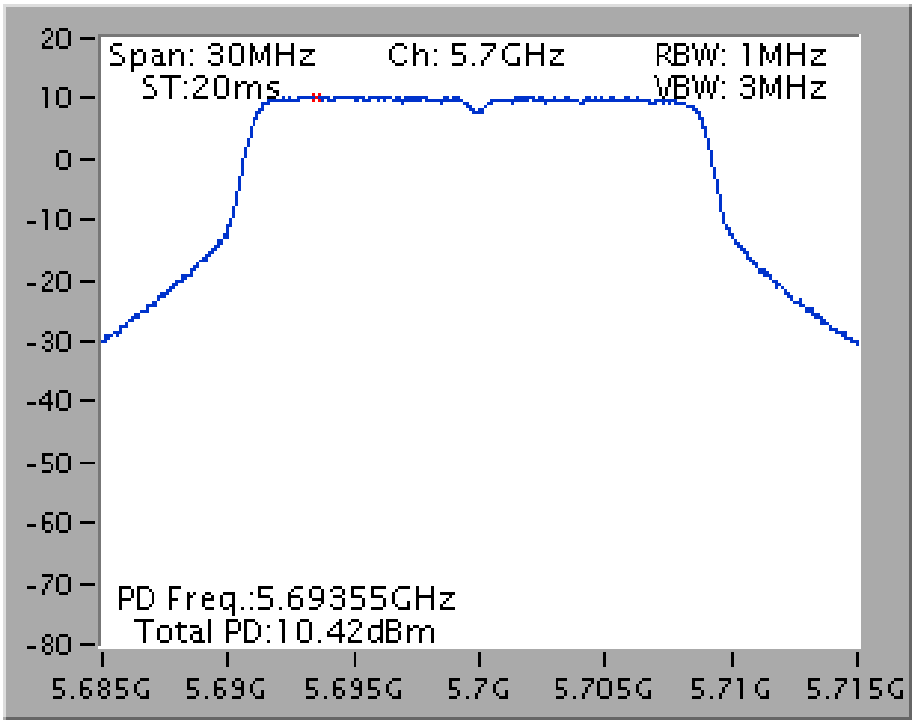
Power Density Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 / 5580 MHz



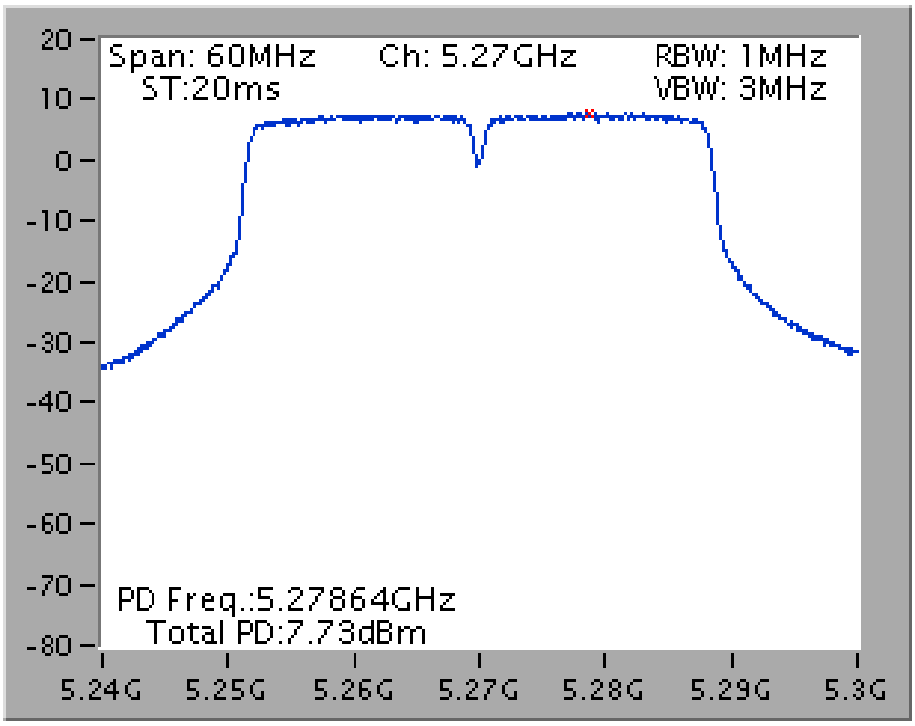
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 / 5260 MHz



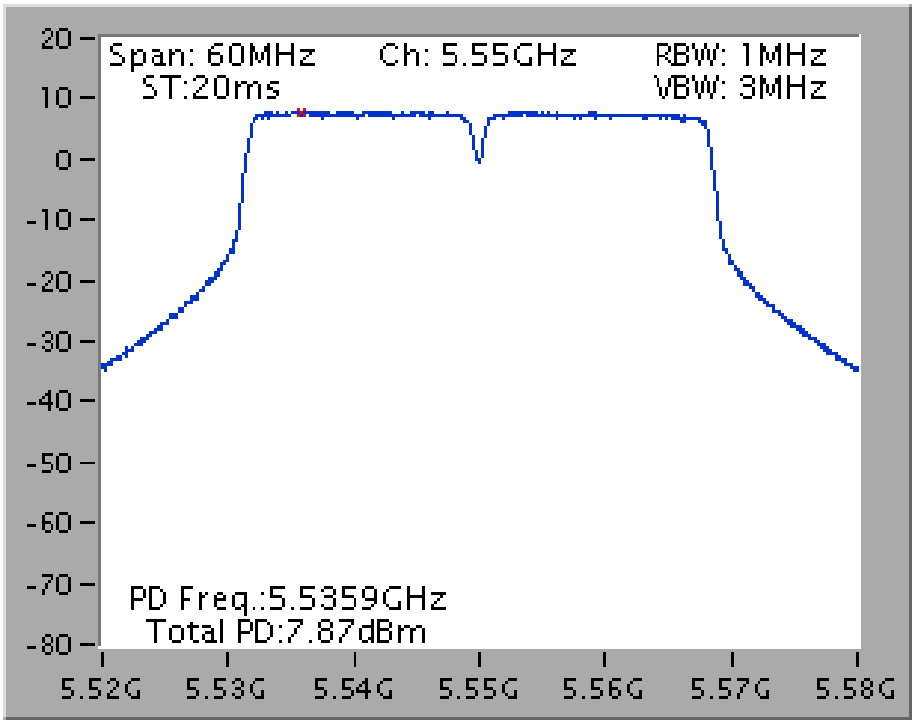
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 / 5700 MHz



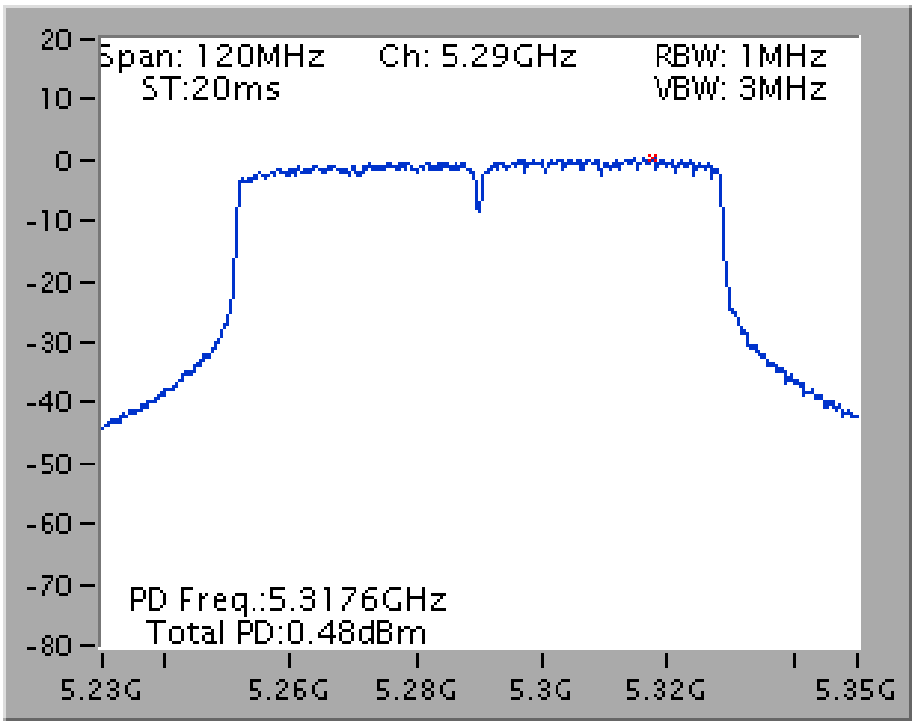
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 / 5270 MHz



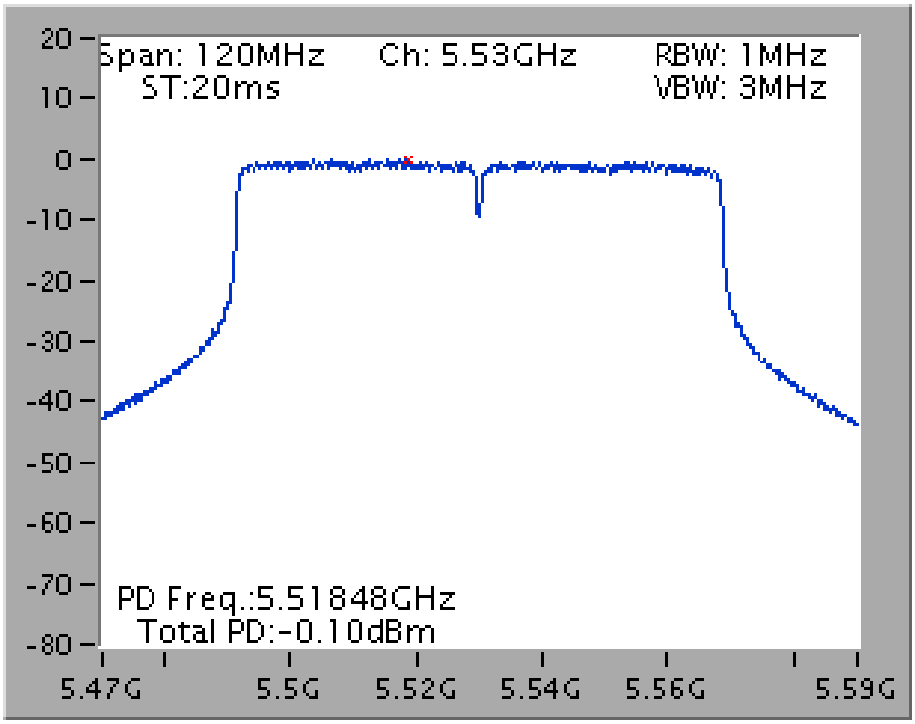
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 / 5550 MHz



Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 / 5290 MHz



Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 / 5530 MHz



4.4. Radiated Emissions Measurement

4.4.1. Limit

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

For transmitters operating in the 5.470-5.725 GHz band: all emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

In addition, In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

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

4.4.2. Measuring Instruments and Setting

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

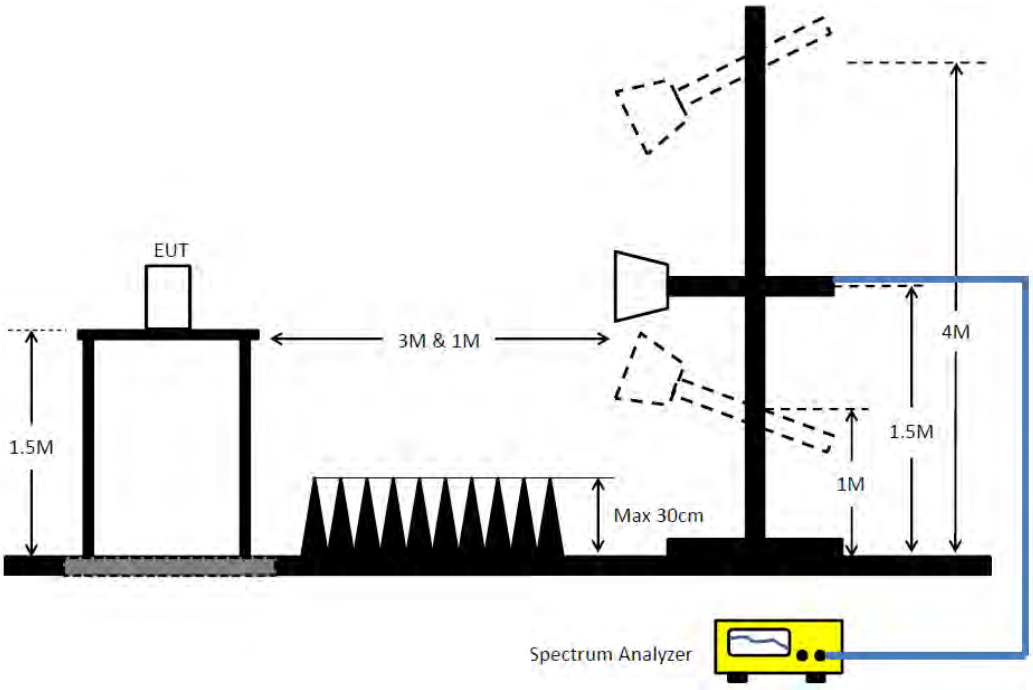
Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	40 GHz
RBW / VBW (Emission in restricted band)	1MHz / 3MHz for Peak, 1MHz / 1/T for Average
RBW / VBW (Emission in non-restricted band)	1MHz / 3MHz for peak

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

4.4.3. 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.

4.4.4. Test Setup Layout



4.4.5. Test Deviation

There is no deviation with the original standard.

4.4.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

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

Temperature	24°C	Humidity	51%
Test Engineer	Lucke Hsieh	Configurations	IEEE 802.11a CH 52 / Chain 1 + Chain 2 + Chain 3
Test Date	Oct. 27, 2016		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	10519.46	65.31	68.20	-2.89	51.13	11.39	38.90	36.11	199	80	Peak	HORIZONTAL
2	15765.24	45.22	54.00	-8.78	30.24	12.62	38.35	35.99	135	152	Average	HORIZONTAL
3	15768.30	57.74	74.00	-16.26	42.76	12.62	38.35	35.99	135	152	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	10514.76	67.67	68.20	-0.53	53.50	11.38	38.90	36.11	143	80	Peak	VERTICAL
2	15770.36	44.77	54.00	-9.23	29.79	12.62	38.35	35.99	226	192	Average	VERTICAL
3	15774.12	58.00	74.00	-16.00	43.02	12.62	38.35	35.99	226	192	Peak	VERTICAL

Temperature	24°C	Humidity	51%
Test Engineer	Lucke Hsieh	Configurations	IEEE 802.11a CH 60 / Chain 1 + Chain 2 + Chain 3
Test Date	Oct. 27, 2016		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	10601.04	65.73	74.00	-8.27	51.43	11.43	38.98	36.11	181	101	Peak	HORIZONTAL
2	10601.12	52.86	54.00	-1.14	38.56	11.43	38.98	36.11	181	101	Average	HORIZONTAL
3	15894.96	45.49	54.00	-8.51	30.52	12.61	38.32	35.96	231	178	Average	HORIZONTAL
4	15912.16	58.20	74.00	-15.80	43.23	12.61	38.32	35.96	231	178	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	10604.32	53.69	54.00	-0.31	39.39	11.43	38.98	36.11	150	61	Average	VERTICAL
2	10604.56	68.09	74.00	-5.91	53.79	11.43	38.98	36.11	150	61	Peak	VERTICAL
3	15889.44	58.73	74.00	-15.27	43.76	12.61	38.32	35.96	144	351	Peak	VERTICAL
4	15897.84	45.53	54.00	-8.47	30.56	12.61	38.32	35.96	144	304	Average	VERTICAL

Temperature	24°C	Humidity	51%
Test Engineer	Lucke Hsieh	Configurations	IEEE 802.11a CH 64 / Chain 1 + Chain 2 + Chain 3
Test Date	Oct. 27, 2016		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	10640.56	60.38	74.00	-13.62	46.05	11.45	39.00	36.12	150	103	Peak	HORIZONTAL
2	10641.20	49.57	54.00	-4.43	35.24	11.45	39.00	36.12	150	103	Average	HORIZONTAL
3	15958.08	58.80	74.00	-15.20	43.84	12.60	38.31	35.95	208	175	Peak	HORIZONTAL
4	15961.12	45.86	54.00	-8.14	30.90	12.60	38.31	35.95	208	175	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	10634.32	65.05	74.00	-8.95	50.71	11.45	39.00	36.11	150	73	Peak	VERTICAL
2	10635.12	51.14	54.00	-2.86	36.80	11.45	39.00	36.11	150	73	Average	VERTICAL
3	15963.20	45.73	54.00	-8.27	30.77	12.60	38.31	35.95	191	145	Average	VERTICAL
4	15972.00	58.83	74.00	-15.17	43.87	12.60	38.30	35.94	191	145	Peak	VERTICAL

Temperature	24°C	Humidity	51%
Test Engineer	Lucke Hsieh	Configurations	IEEE 802.11a CH 100 / Chain 1 + Chain 2 + Chain 3
Test Date	Oct. 28, 2016		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	10999.40	50.14	54.00	-3.86	35.33	11.64	39.30	36.13	101	89	Average	HORIZONTAL
2	11000.00	63.38	74.00	-10.62	48.57	11.64	39.30	36.13	101	89	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	10999.30	48.58	54.00	-5.42	33.77	11.64	39.30	36.13	150	78	Average	VERTICAL
2	10999.90	59.21	74.00	-14.79	44.40	11.64	39.30	36.13	150	78	Peak	VERTICAL

Temperature	24°C	Humidity	51%
Test Engineer	Lucke Hsieh	Configurations	IEEE 802.11a CH 116 / Chain 1 + Chain 2 + Chain 3
Test Date	Oct. 28, 2016		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11154.10	62.96	74.00	-11.04	48.06	11.72	39.27	36.09	150	87	Peak	HORIZONTAL
2	11159.20	50.27	54.00	-3.73	35.37	11.72	39.27	36.09	150	87	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11157.90	61.39	74.00	-12.61	46.49	11.72	39.27	36.09	150	79	Peak	VERTICAL
2	11158.40	50.55	54.00	-3.45	35.65	11.72	39.27	36.09	150	79	Average	VERTICAL

Temperature	24°C	Humidity	51%
Test Engineer	Lucke Hsieh	Configurations	IEEE 802.11a CH 140 / Chain 1 + Chain 2 + Chain 3
Test Date	Oct. 28, 2016		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11402.90	45.57	54.00	-8.43	30.52	11.84	39.22	36.01	151	82	Average	HORIZONTAL
2	11403.50	57.73	74.00	-16.27	42.68	11.84	39.22	36.01	151	82	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11400.00	45.80	54.00	-8.20	30.75	11.84	39.22	36.01	150	77	Average	VERTICAL
2	11400.40	58.16	74.00	-15.84	43.11	11.84	39.22	36.01	150	77	Peak	VERTICAL

Temperature	24°C	Humidity	51%
Test Engineer	Lucke Hsieh	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 52 / Chain 1 + Chain 2 + Chain 3
Test Date	Oct. 28, 2016		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	10521.20	66.81	68.20	-1.39	52.63	11.39	38.90	36.11	184	100	Peak	HORIZONTAL
2	15779.00	57.47	74.00	-16.53	42.49	12.62	38.35	35.99	165	37	Peak	HORIZONTAL
3	15783.26	45.18	54.00	-8.82	30.21	12.62	38.34	35.99	165	37	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	10509.20	67.97	68.20	-0.23	53.80	11.38	38.90	36.11	150	64	Peak	VERTICAL
2	15781.30	58.45	74.00	-15.55	43.47	12.62	38.35	35.99	165	37	Peak	VERTICAL
3	15781.44	45.24	54.00	-8.76	30.26	12.62	38.35	35.99	165	37	Average	VERTICAL

Temperature	24°C	Humidity	51%
Test Engineer	Lucke Hsieh	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 60 / Chain 1 + Chain 2 + Chain 3
Test Date	Oct. 28, 2016		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	10600.20	66.77	74.00	-7.23	52.47	11.43	38.98	36.11	209	96	Peak	HORIZONTAL
2	10600.70	53.50	54.00	-0.50	39.20	11.43	38.98	36.11	209	96	Average	HORIZONTAL
3	15897.72	46.61	54.00	-7.39	31.64	12.61	38.32	35.96	254	141	Average	HORIZONTAL
4	15898.59	59.58	74.00	-14.42	44.61	12.61	38.32	35.96	254	141	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	10608.50	53.80	54.00	-0.20	39.50	11.43	38.98	36.11	150	64	Average	VERTICAL
2	10609.60	66.84	74.00	-7.16	52.54	11.43	38.98	36.11	150	64	Peak	VERTICAL
3	15897.70	46.46	54.00	-7.54	31.49	12.61	38.32	35.96	251	269	Average	VERTICAL
4	15900.41	60.06	74.00	-13.94	45.09	12.61	38.32	35.96	251	269	Peak	VERTICAL

Temperature	24°C	Humidity	51%
Test Engineer	Lucke Hsieh	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 64 / Chain 1 + Chain 2 + Chain 3
Test Date	Oct. 28, 2016		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	10639.70	49.74	54.00	-4.26	35.41	11.45	39.00	36.12	235	82	Average	HORIZONTAL
2	10641.30	62.42	74.00	-11.58	48.09	11.45	39.00	36.12	235	82	Peak	HORIZONTAL
3	15959.38	58.60	74.00	-15.40	43.64	12.60	38.31	35.95	178	290	Peak	HORIZONTAL
4	15964.10	46.48	54.00	-7.52	31.52	12.60	38.31	35.95	178	290	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	10648.60	64.00	74.00	-10.00	49.66	11.46	39.00	36.12	150	73	Peak	VERTICAL
2	10649.30	50.23	54.00	-3.77	35.89	11.46	39.00	36.12	150	73	Average	VERTICAL
3	15942.00	58.74	74.00	-15.26	43.77	12.61	38.31	35.95	194	158	Peak	VERTICAL
4	15959.80	46.43	54.00	-7.57	31.47	12.60	38.31	35.95	194	158	Average	VERTICAL

Temperature	24°C	Humidity	51%
Test Engineer	Lucke Hsieh	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 100 / Chain 1 + Chain 2 + Chain 3
Test Date	Oct. 28, 2016		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	10998.70	49.06	54.00	-4.94	34.25	11.64	39.30	36.13	153	85	Average	HORIZONTAL
2	11000.00	61.91	74.00	-12.09	47.10	11.64	39.30	36.13	153	85	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	10999.00	48.89	54.00	-5.11	34.08	11.64	39.30	36.13	150	80	Average	VERTICAL
2	10999.70	61.90	74.00	-12.10	47.09	11.64	39.30	36.13	150	80	Peak	VERTICAL

Temperature	24°C	Humidity	51%
Test Engineer	Lucke Hsieh	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 116 / Chain 1 + Chain 2 + Chain 3
Test Date	Oct. 28, 2016		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11158.60	62.50	74.00	-11.50	47.60	11.72	39.27	36.09	150	87	Peak	HORIZONTAL
2	11159.10	50.67	54.00	-3.33	35.77	11.72	39.27	36.09	150	87	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11158.90	50.81	54.00	-3.19	35.91	11.72	39.27	36.09	150	81	Average	VERTICAL
2	11159.00	62.81	74.00	-11.19	47.91	11.72	39.27	36.09	150	81	Peak	VERTICAL

Temperature	24°C	Humidity	51%
Test Engineer	Lucke Hsieh	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 140 / Chain 1 + Chain 2 + Chain 3
Test Date	Oct. 28, 2016		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11399.10	45.23	54.00	-8.77	30.18	11.84	39.22	36.01	150	93	Average	HORIZONTAL
2	11408.60	57.91	74.00	-16.09	42.86	11.84	39.22	36.01	150	93	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11398.10	58.37	74.00	-15.63	43.32	11.84	39.22	36.01	150	91	Peak	VERTICAL
2	11398.30	46.32	54.00	-7.68	31.27	11.84	39.22	36.01	150	91	Average	VERTICAL

Temperature	24°C	Humidity	51%
Test Engineer	Lucke Hsieh	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 54 / Chain 1 + Chain 2 + Chain 3
Test Date	Oct. 28, 2016		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	10541.40	62.33	68.20	-5.87	48.11	11.40	38.93	36.11	150	104	Peak	HORIZONTAL
2	15810.85	45.34	54.00	-8.66	30.37	12.62	38.34	35.99	150	105	Average	HORIZONTAL
3	15810.85	58.67	74.00	-15.33	43.70	12.62	38.34	35.99	150	105	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	10531.40	64.77	68.20	-3.43	50.56	11.39	38.93	36.11	149	81	Peak	VERTICAL
2	15809.64	58.02	74.00	-15.98	43.05	12.62	38.34	35.99	144	295	Peak	VERTICAL
3	15809.79	45.47	54.00	-8.53	30.50	12.62	38.34	35.99	144	295	Average	VERTICAL

Temperature	24°C	Humidity	51%
Test Engineer	Lucke Hsieh	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 62 / Chain 1 + Chain 2 + Chain 3
Test Date	Oct. 28, 2016		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	10621.00	44.62	54.00	-9.38	30.31	11.44	38.98	36.11	206	93	Average	HORIZONTAL
2	10621.80	57.12	74.00	-16.88	42.79	11.44	39.00	36.11	206	93	Peak	HORIZONTAL
3	15929.66	45.92	54.00	-8.08	30.95	12.61	38.31	35.95	256	21	Average	HORIZONTAL
4	15931.76	59.48	74.00	-14.52	44.51	12.61	38.31	35.95	256	21	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	10609.40	46.94	54.00	-7.06	32.64	11.43	38.98	36.11	120	75	Average	VERTICAL
2	10629.80	58.93	74.00	-15.07	44.59	11.45	39.00	36.11	120	75	Peak	VERTICAL
3	15929.73	45.77	54.00	-8.23	30.80	12.61	38.31	35.95	145	302	Average	VERTICAL
4	15932.18	58.86	74.00	-15.14	43.89	12.61	38.31	35.95	145	302	Peak	VERTICAL

Temperature	24°C	Humidity	51%
Test Engineer	Lucke Hsieh	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 102 / Chain 1 + Chain 2 + Chain 3
Test Date	Oct. 28, 2016		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11020.00	46.91	54.00	-7.09	32.09	11.65	39.30	36.13	153	88	Average	HORIZONTAL
2	11020.60	58.40	74.00	-15.60	43.58	11.65	39.30	36.13	153	88	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11019.20	46.83	54.00	-7.17	32.01	11.65	39.30	36.13	149	79	Average	VERTICAL
2	11019.60	59.09	74.00	-14.91	44.27	11.65	39.30	36.13	149	79	Peak	VERTICAL

Temperature	24°C	Humidity	51%
Test Engineer	Lucke Hsieh	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 110 / Chain 1 + Chain 2 + Chain 3
Test Date	Oct. 28, 2016		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11099.20	61.27	74.00	-12.73	46.41	11.69	39.28	36.11	150	91	Peak	HORIZONTAL
2	11100.20	49.47	54.00	-4.53	34.61	11.69	39.28	36.11	150	91	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11100.00	61.51	74.00	-12.49	46.65	11.69	39.28	36.11	150	98	Peak	VERTICAL
2	11101.40	49.21	54.00	-4.79	34.34	11.69	39.28	36.10	150	98	Average	VERTICAL

Temperature	24°C	Humidity	51%
Test Engineer	Lucke Hsieh	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 134 / Chain 1 + Chain 2 + Chain 3
Test Date	Oct. 28, 2016		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11348.00	45.08	54.00	-8.92	30.07	11.81	39.23	36.03	150	90	Average	HORIZONTAL
2	11348.40	57.10	74.00	-16.90	42.09	11.81	39.23	36.03	150	90	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11348.80	58.31	74.00	-15.69	43.30	11.81	39.23	36.03	150	84	Peak	VERTICAL
2	11349.80	45.02	54.00	-8.98	30.00	11.82	39.23	36.03	150	84	Average	VERTICAL

Temperature	24°C	Humidity	51%
Test Engineer	Lucke Hsieh	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 58 / Chain 1 + Chain 2 + Chain 3
Test Date	Oct. 28, 2016		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15868.93	59.05	74.00	-14.95	44.07	12.61	38.33	35.96	150	77	Peak	HORIZONTAL
2	15871.78	45.72	54.00	-8.28	30.74	12.61	38.33	35.96	150	77	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	15871.34	45.59	54.00	-8.41	30.61	12.61	38.33	35.96	138	277	Average	VERTICAL
2	15871.68	58.53	74.00	-15.47	43.55	12.61	38.33	35.96	138	277	Peak	VERTICAL

Temperature	24°C	Humidity	51%
Test Engineer	Lucke Hsieh	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 106 / Chain 1 + Chain 2 + Chain 3
Test Date	Oct. 28, 2016		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11057.56	57.77	74.00	-16.23	42.93	11.67	39.29	36.12	298	89	Peak	HORIZONTAL
2	11059.44	43.94	54.00	-10.06	29.10	11.67	39.29	36.12	298	89	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11060.88	57.10	74.00	-16.90	42.26	11.67	39.29	36.12	150	201	Peak	VERTICAL
2	11062.08	44.08	54.00	-9.92	29.24	11.67	39.29	36.12	150	201	Average	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. Band Edge Emissions Measurement

4.5.1. Limit

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

For transmitters operating in the 5.470-5.725 GHz band: all emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

In addition, In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

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

4.5.2. Measuring Instruments and Setting

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

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

4.5.3. Test Procedures

The test procedure is the same as section 4.4.3.

4.5.4. Test Setup Layout

This test setup layout is the same as that shown in section 4.4.4.

4.5.5. Test Deviation

There is no deviation with the original standard.

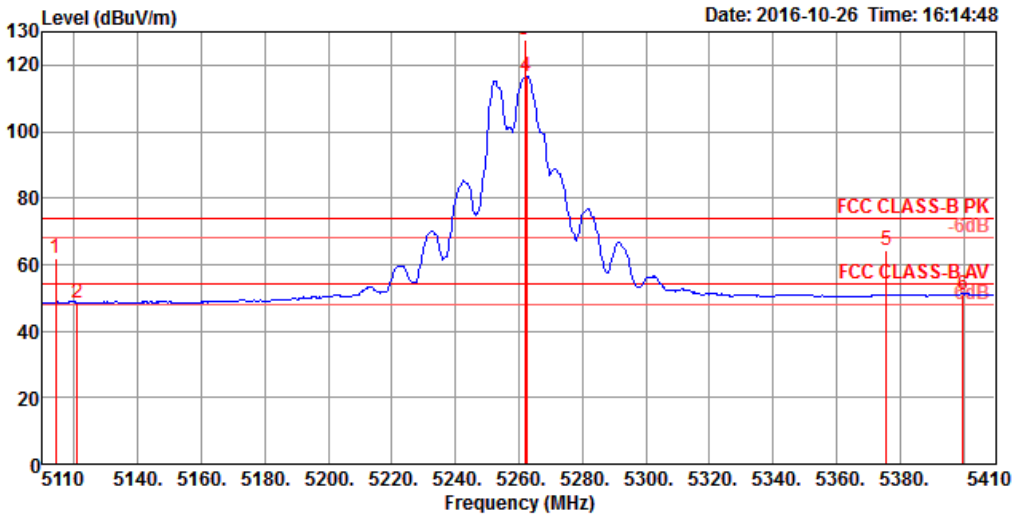
4.5.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

4.5.7. Test Result of Band Edge and Fundamental Emissions

Temperature	24°C	Humidity	51%
Test Engineer	Lucke Hsieh	Configurations	IEEE 802.11a CH 52, 60, 64 / Chain 1 + Chain 2 + Chain 3

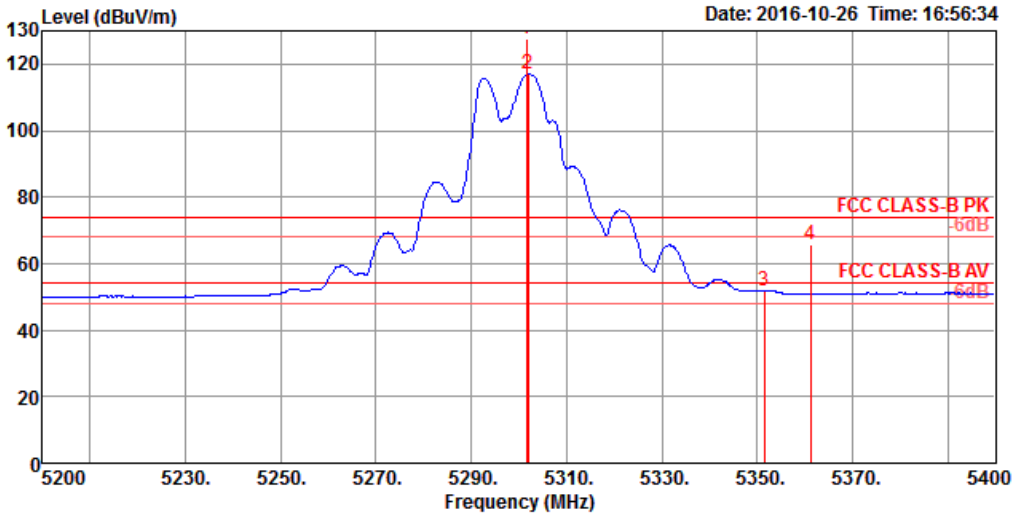
Channel 52



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5114.20	61.81	74.00	-12.19	57.57	9.45	31.42	36.63	150	189	Peak	VERTICAL
2	5120.80	48.56	54.00	-5.44	44.32	9.45	31.42	36.63	150	189	Average	VERTICAL
3	5261.80	127.52			122.93	9.64	31.56	36.61	150	189	Peak	VERTICAL
4	5262.40	116.69			112.08	9.65	31.57	36.61	150	189	Average	VERTICAL
5	5375.80	64.42	74.00	-9.58	59.58	9.76	31.68	36.60	150	189	Peak	VERTICAL
6	5399.80	51.02	54.00	-2.98	46.16	9.77	31.69	36.60	150	189	Average	VERTICAL

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

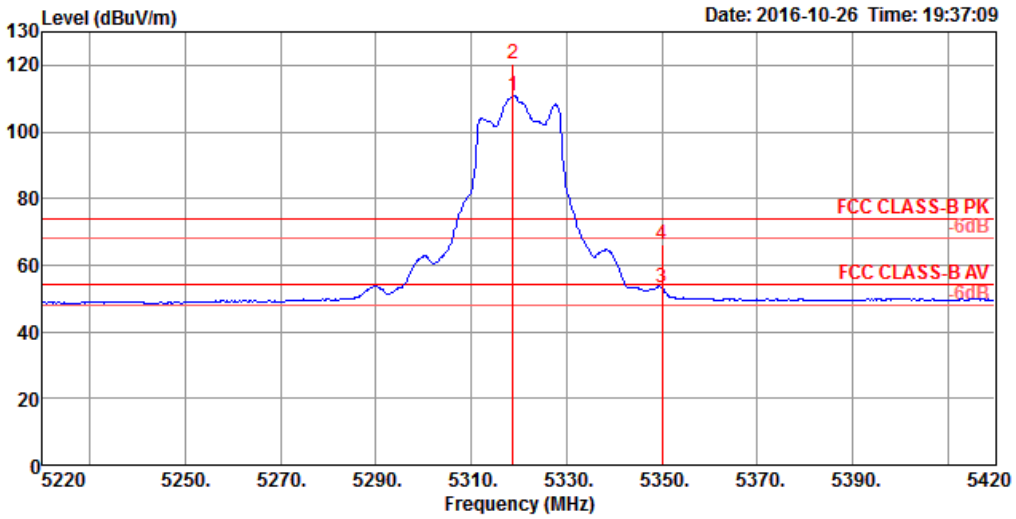
Channel 60



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5301.60	127.83			123.16	9.68	31.60	36.61	151	192	Peak	VERTICAL
2	5302.00	116.96			112.29	9.68	31.60	36.61	151	192	Average	VERTICAL
3	5351.60	51.96	54.00	-2.04	47.18	9.73	31.65	36.60	151	192	Average	VERTICAL
4	5361.20	65.67	74.00	-8.33	60.87	9.74	31.66	36.60	151	192	Peak	VERTICAL

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

Channel 64

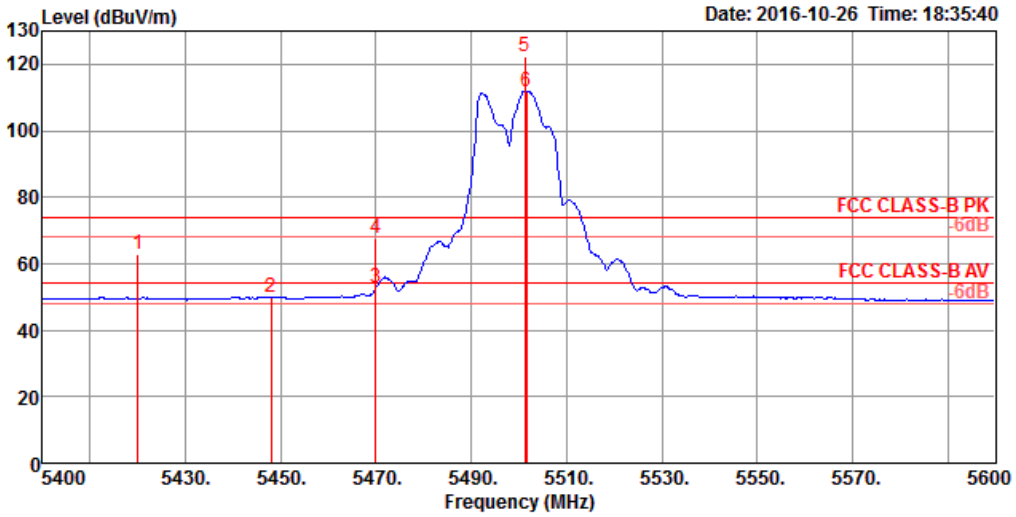


	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5318.80	110.73			106.03	9.70	31.61	36.61	150	198	Average	VERTICAL
2	5318.80	120.23			115.53	9.70	31.61	36.61	150	198	Peak	VERTICAL
3	5350.00	53.09	54.00	-0.91	48.31	9.73	31.65	36.60	150	198	Average	VERTICAL
4	5350.00	66.05	74.00	-7.95	61.27	9.73	31.65	36.60	150	198	Peak	VERTICAL

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

Temperature	24°C	Humidity	51%
Test Engineer	Lucke Hsieh	Configurations	IEEE 802.11a CH 100, 116, 140 / Chain 1 + Chain 2 + Chain 3

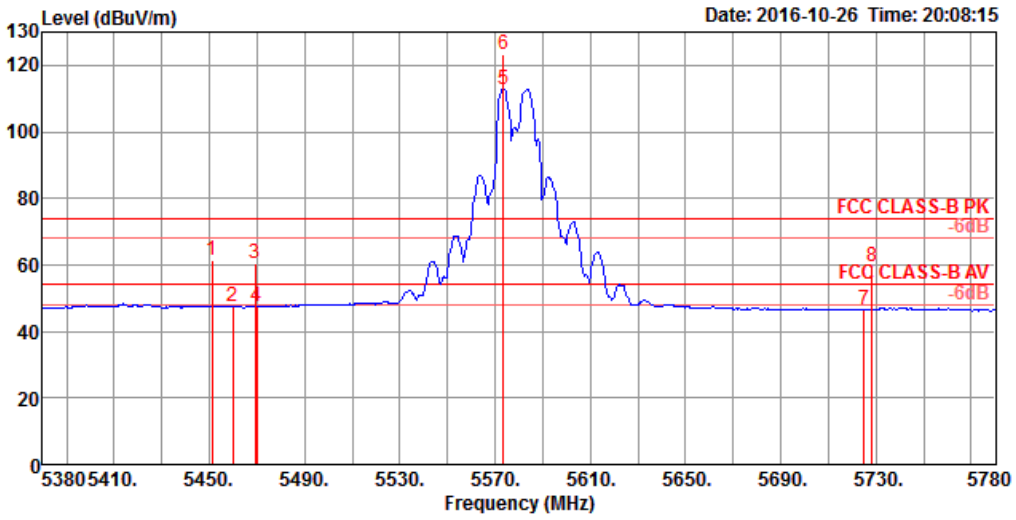
Channel 100



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5420.00	62.84	74.00	-11.16	57.95	9.77	31.72	36.60	150	190	Peak	VERTICAL
2	5448.00	50.06	54.00	-3.94	45.13	9.78	31.75	36.60	150	190	Average	VERTICAL
3	5470.00	52.86	54.00	-1.14	47.90	9.78	31.77	36.59	150	190	Average	VERTICAL
4	5470.00	67.75	74.00	-6.25	62.79	9.78	31.77	36.59	150	190	Peak	VERTICAL
5	5501.20	122.37			117.38	9.78	31.80	36.59	150	190	Peak	VERTICAL
6	5501.60	111.88			106.89	9.78	31.80	36.59	150	190	Average	VERTICAL

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

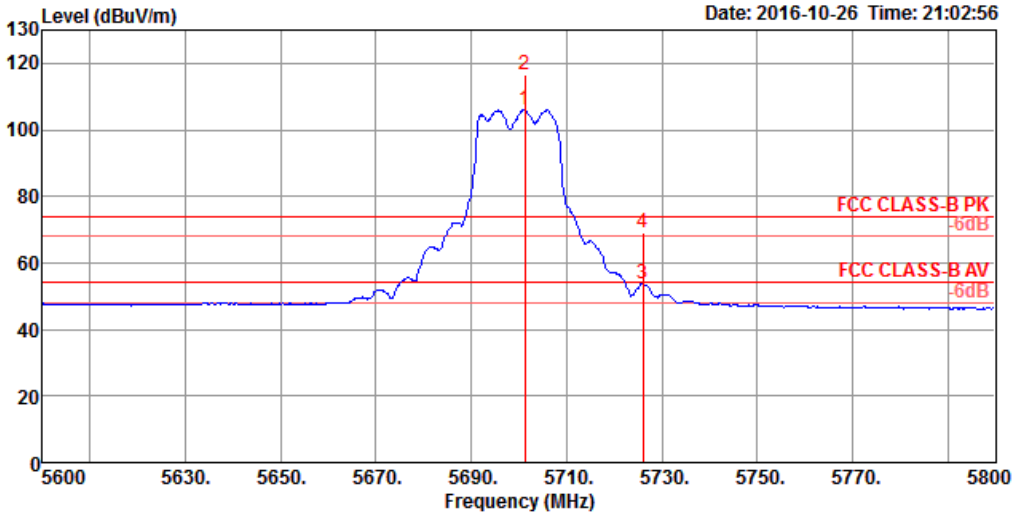
Channel 116



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5451.20	61.38	74.00	-12.62	57.87	8.36	31.75	36.60	151	181	Peak	VERTICAL
2	5460.00	47.59	54.00	-6.41	44.05	8.38	31.75	36.59	151	181	Average	VERTICAL
3	5469.20	60.26	74.00	-13.74	56.67	8.41	31.77	36.59	151	181	Peak	VERTICAL
4	5470.00	47.35	54.00	-6.65	43.76	8.41	31.77	36.59	151	181	Average	VERTICAL
5	5573.60	112.88			108.85	8.72	31.88	36.57	151	181	Average	VERTICAL
6	5573.60	123.08			119.05	8.72	31.88	36.57	151	181	Peak	VERTICAL
7	5725.00	46.51	54.00	-7.49	42.33	8.62	32.08	36.52	151	181	Average	VERTICAL
8	5728.20	59.32	74.00	-14.68	55.14	8.61	32.08	36.51	151	181	Peak	VERTICAL

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

Channel 140

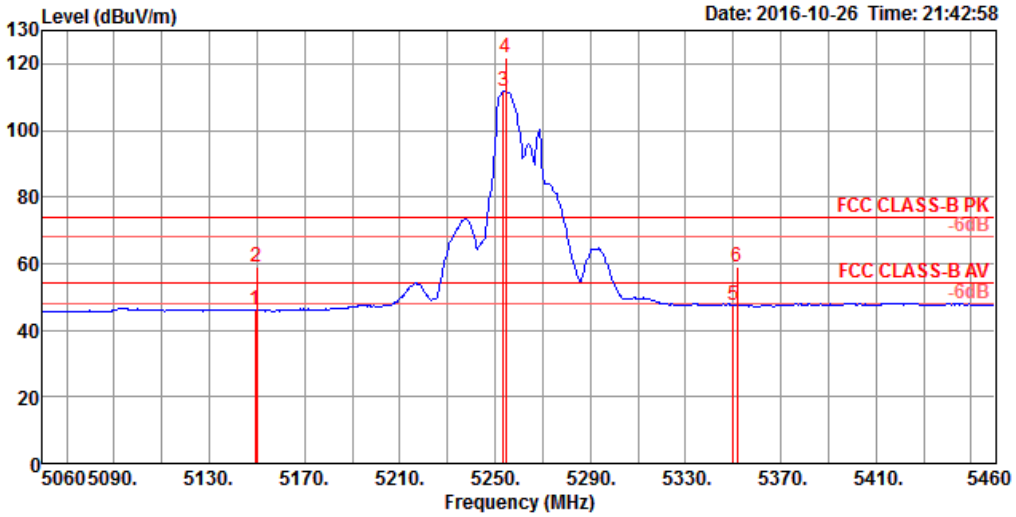


	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5701.20	105.91			101.74	8.65	32.04	36.52	123	184	Average	VERTICAL
2	5701.20	116.63			112.46	8.65	32.04	36.52	123	184	Peak	VERTICAL
3	5726.00	53.90	54.00	-0.10	49.72	8.62	32.08	36.52	123	184	Average	VERTICAL
4	5726.00	69.19	74.00	-4.81	65.01	8.62	32.08	36.52	123	184	Peak	VERTICAL

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

Temperature	24°C	Humidity	51%
Test Engineer	Lucke Hsieh	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 52, 60, 64 / Chain 1 + Chain 2 + Chain 3

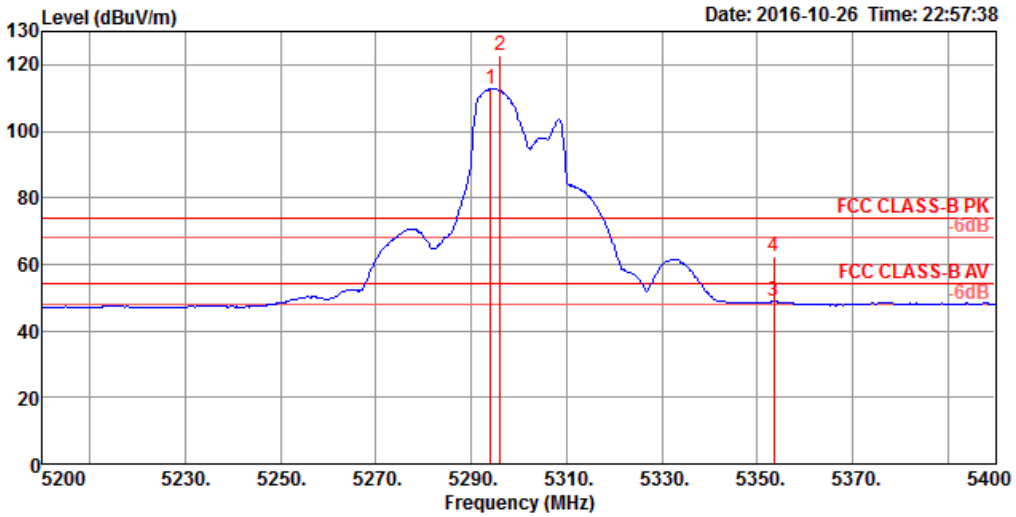
Channel 52



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5149.20	46.01	54.00	-7.99	42.99	8.19	31.45	36.62	150	189	Average	VERTICAL
2	5150.00	58.84	74.00	-15.16	55.83	8.18	31.45	36.62	150	189	Peak	VERTICAL
3	5253.60	111.83			108.72	8.16	31.56	36.61	150	189	Average	VERTICAL
4	5254.40	121.97			118.86	8.16	31.56	36.61	150	189	Peak	VERTICAL
5	5350.00	47.36	54.00	-6.64	44.12	8.19	31.65	36.60	150	189	Average	VERTICAL
6	5351.60	59.09	74.00	-14.91	55.85	8.19	31.65	36.60	150	189	Peak	VERTICAL

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

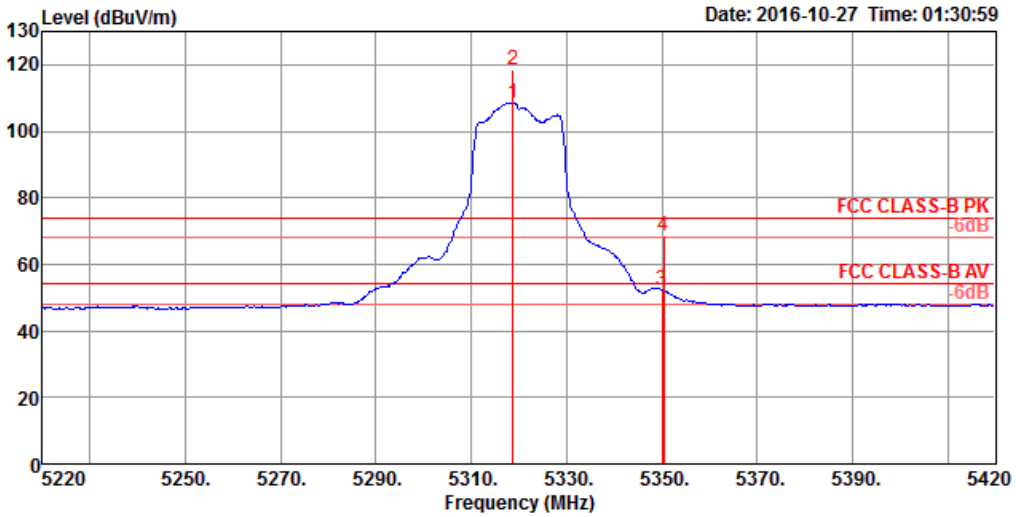
Channel 60



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5294.00	112.72			109.56	8.17	31.60	36.61	150	192	Average	VERTICAL
2	5296.00	122.91			119.75	8.17	31.60	36.61	150	192	Peak	VERTICAL
3	5353.60	48.75	54.00	-5.25	45.51	8.19	31.65	36.60	150	192	Average	VERTICAL
4	5353.60	62.43	74.00	-11.57	59.19	8.19	31.65	36.60	150	192	Peak	VERTICAL

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

Channel 64

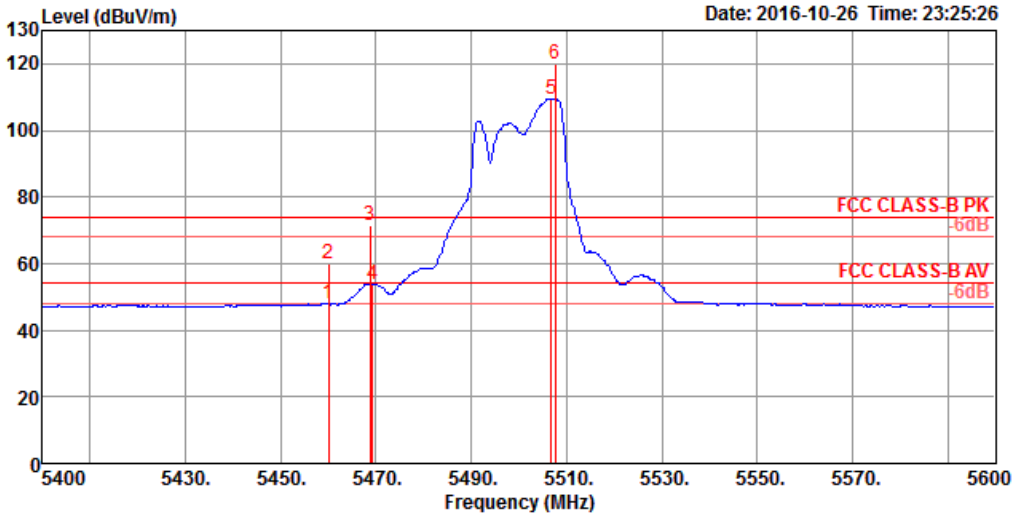


	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5318.80	108.42			105.24	8.18	31.61	36.61	149	193	Average	VERTICAL
2	5318.80	118.37			115.19	8.18	31.61	36.61	149	193	Peak	VERTICAL
3	5350.00	52.13	54.00	-1.87	48.89	8.19	31.65	36.60	149	193	Average	VERTICAL
4	5350.40	68.75	74.00	-5.25	65.51	8.19	31.65	36.60	149	193	Peak	VERTICAL

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

Temperature	24°C	Humidity	51%
Test Engineer	Lucke Hsieh	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 100, 116, 140 / Chain 1 + Chain 2 + Chain 3

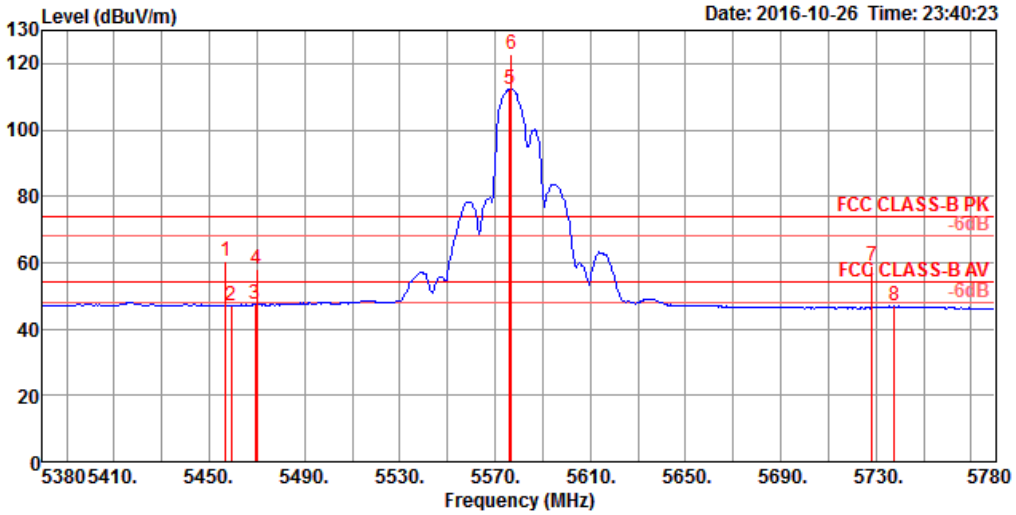
Channel 100



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5460.00	47.87			44.33	8.38	31.75	36.59	150	182	Average	VERTICAL
2	5460.00	60.01			56.47	8.38	31.75	36.59	150	182	Peak	VERTICAL
3	5468.80	71.32	74.00	-2.68	67.73	8.41	31.77	36.59	150	182	Peak	VERTICAL
4	5469.20	53.89	54.00	-0.11	50.30	8.41	31.77	36.59	150	182	Average	VERTICAL
5	5506.80	109.48	54.00	55.48	105.74	8.52	31.80	36.58	150	182	Average	VERTICAL
6	5507.60	119.98	74.00	45.98	116.23	8.53	31.80	36.58	150	182	Peak	VERTICAL

Item 1, 2 are the fundamental frequency at 5500 MHz.

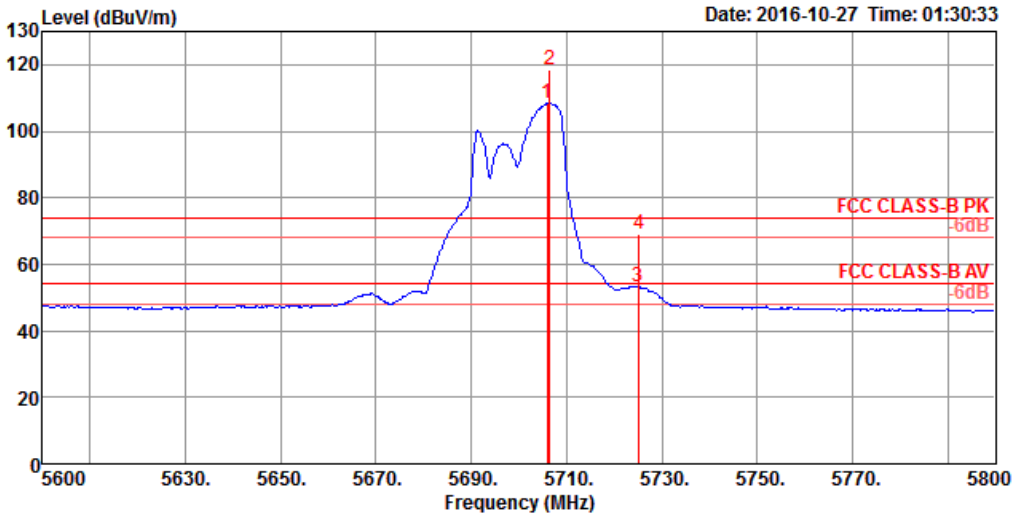
Channel 116



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5456.80	60.24	74.00	-13.76	56.71	8.37	31.75	36.59	150	178	Peak	VERTICAL
2	5459.20	47.06	54.00	-6.94	43.52	8.38	31.75	36.59	150	178	Average	VERTICAL
3	5469.20	47.26	54.00	-6.74	43.67	8.41	31.77	36.59	150	178	Average	VERTICAL
4	5470.00	58.23	74.00	-15.77	54.64	8.41	31.77	36.59	150	178	Peak	VERTICAL
5	5576.00	112.12			108.06	8.73	31.90	36.57	150	178	Average	VERTICAL
6	5576.80	122.57			118.51	8.73	31.90	36.57	150	178	Peak	VERTICAL
7	5728.20	58.95	74.00	-15.05	54.77	8.61	32.08	36.51	150	178	Peak	VERTICAL
8	5737.60	46.78	54.00	-7.22	42.61	8.60	32.08	36.51	150	178	Average	VERTICAL

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

Channel 140

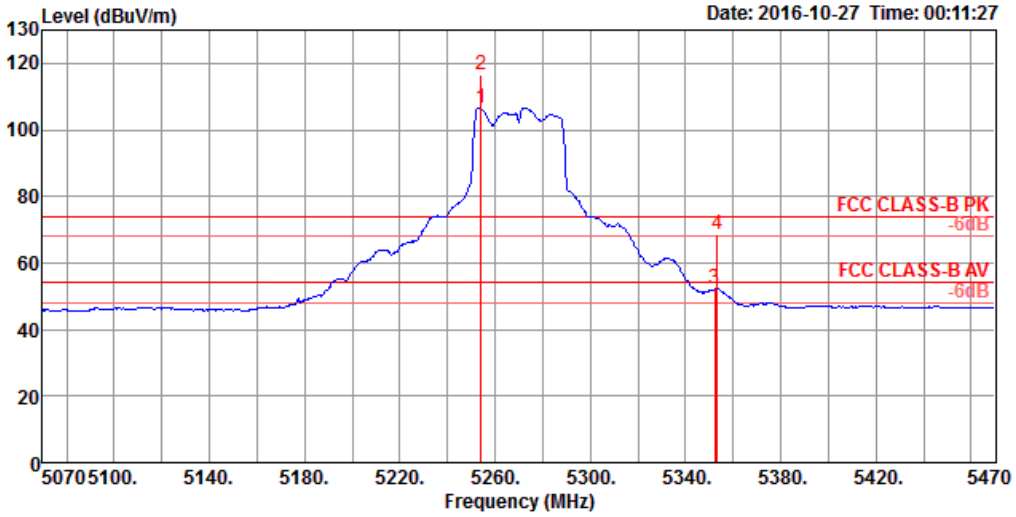


	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5706.00	108.49			104.30	8.65	32.06	36.52	112	183	Average	VERTICAL
2	5706.40	118.61			114.43	8.64	32.06	36.52	112	183	Peak	VERTICAL
3	5725.00	53.28	54.00	-0.72	49.10	8.62	32.08	36.52	112	183	Average	VERTICAL
4	5725.20	68.99	74.00	-5.01	64.81	8.62	32.08	36.52	112	183	Peak	VERTICAL

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

Temperature	24°C	Humidity	51%
Test Engineer	Lucke Hsieh	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 54, 62 / Chain 1 + Chain 2 + Chain 3

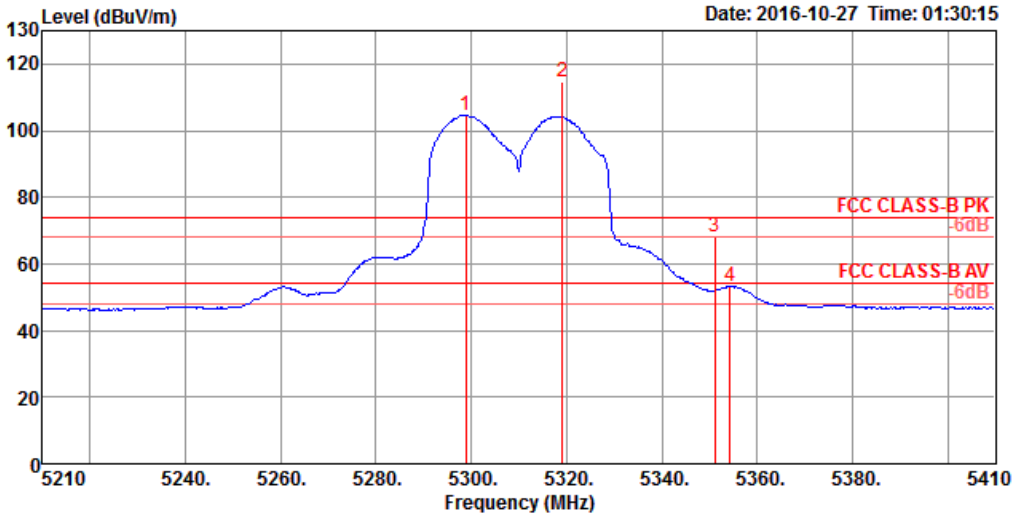
Channel 54



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5254.00	106.44			103.33	8.16	31.56	36.61	150	200	Average	VERTICAL
2	5254.00	116.46			113.35	8.16	31.56	36.61	150	200	Peak	VERTICAL
3	5352.40	52.15	54.00	-1.85	48.91	8.19	31.65	36.60	150	200	Average	VERTICAL
4	5353.20	68.84	74.00	-5.16	65.60	8.19	31.65	36.60	150	200	Peak	VERTICAL

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

Channel 62

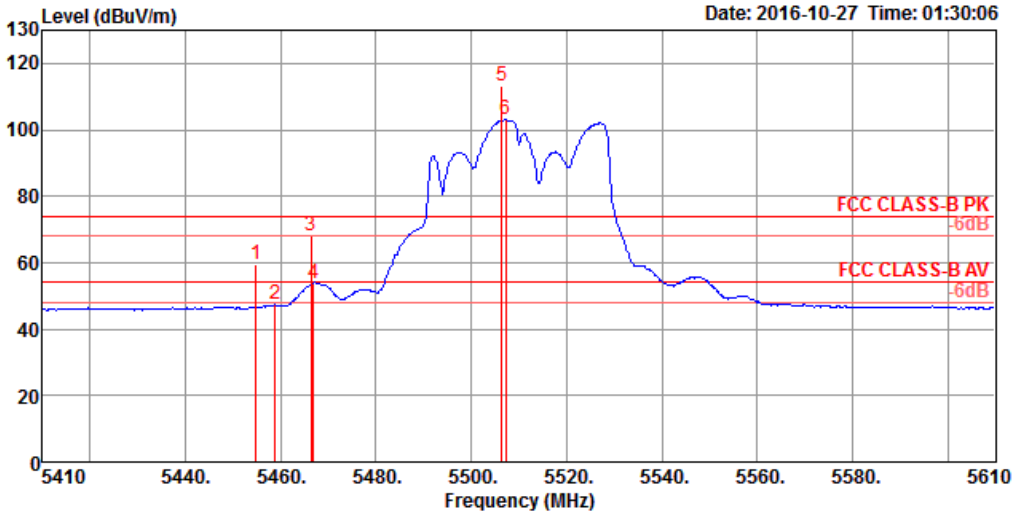


	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5298.80	104.69			101.53	8.17	31.60	36.61	156	200	Average	VERTICAL
2	5319.20	114.60			111.42	8.18	31.61	36.61	156	200	Peak	VERTICAL
3	5351.20	68.34	74.00	-5.66	65.10	8.19	31.65	36.60	156	200	Peak	VERTICAL
4	5354.40	53.09	54.00	-0.91	49.84	8.19	31.66	36.60	156	200	Average	VERTICAL

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

Temperature	24°C	Humidity	51%
Test Engineer	Lucke Hsieh	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 102, 110, 134 / Chain 1 + Chain 2 + Chain 3

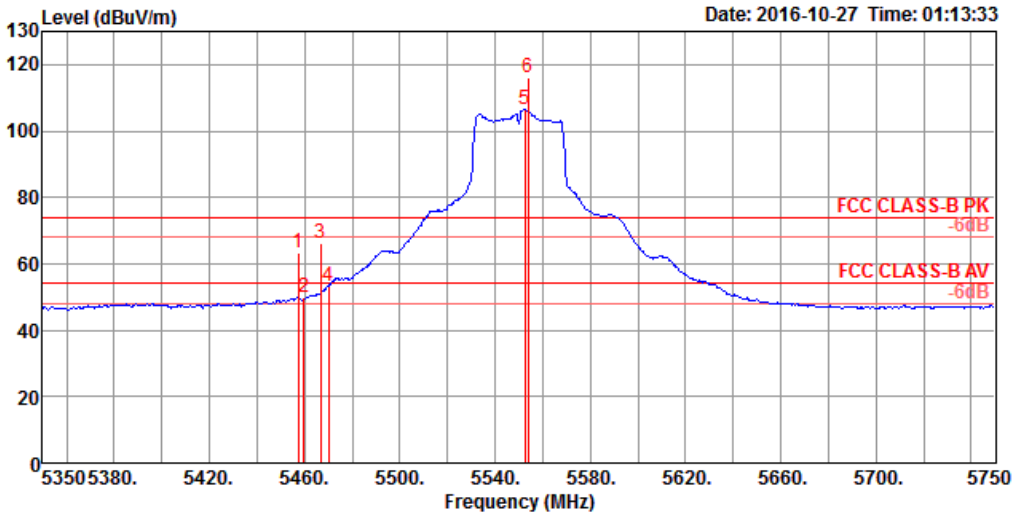
Channel 102



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5454.80	59.67	74.00	-14.33	56.14	8.37	31.75	36.59	150	179	Peak	VERTICAL
2	5458.80	47.25	54.00	-6.75	43.71	8.38	31.75	36.59	150	179	Average	VERTICAL
3	5466.40	68.23	74.00	-5.77	64.65	8.40	31.77	36.59	150	179	Peak	VERTICAL
4	5466.80	53.92	54.00	-0.08	50.34	8.40	31.77	36.59	150	179	Average	VERTICAL
5	5506.40	113.37			109.63	8.52	31.80	36.58	150	179	Peak	VERTICAL
6	5507.20	103.15			99.41	8.52	31.80	36.58	150	179	Average	VERTICAL

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

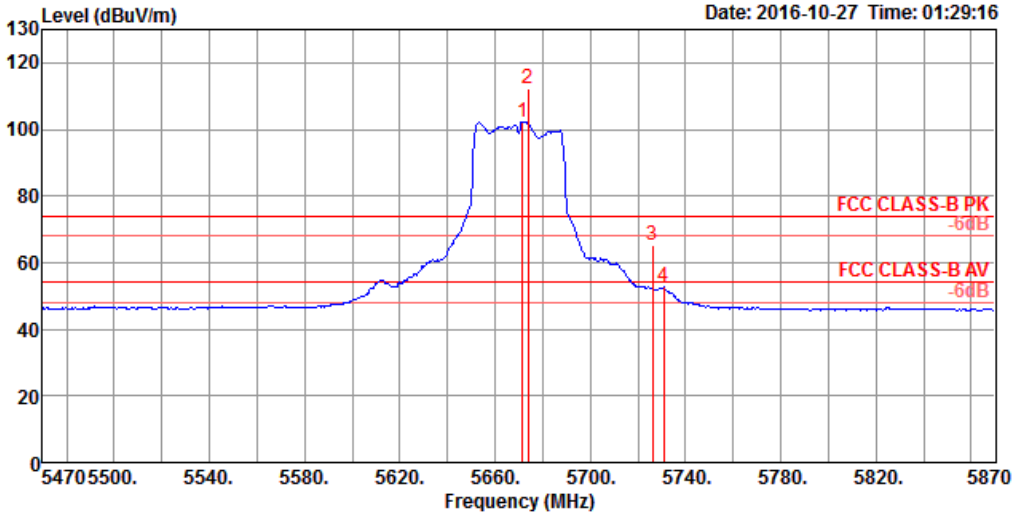
Channel 110



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5457.20	63.17	74.00	-10.83	59.64	8.37	31.75	36.59	103	350	Peak	HORIZONTAL
2	5459.60	49.72	54.00	-4.28	46.18	8.38	31.75	36.59	103	350	Average	HORIZONTAL
3	5466.80	66.40	74.00	-7.60	62.82	8.40	31.77	36.59	103	350	Peak	HORIZONTAL
4	5470.00	53.20	54.00	-0.80	49.61	8.41	31.77	36.59	103	350	Average	HORIZONTAL
5	5552.40	106.41			102.46	8.66	31.86	36.57	103	350	Average	HORIZONTAL
6	5554.00	115.92			111.97	8.66	31.86	36.57	103	350	Peak	HORIZONTAL

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

Channel 134

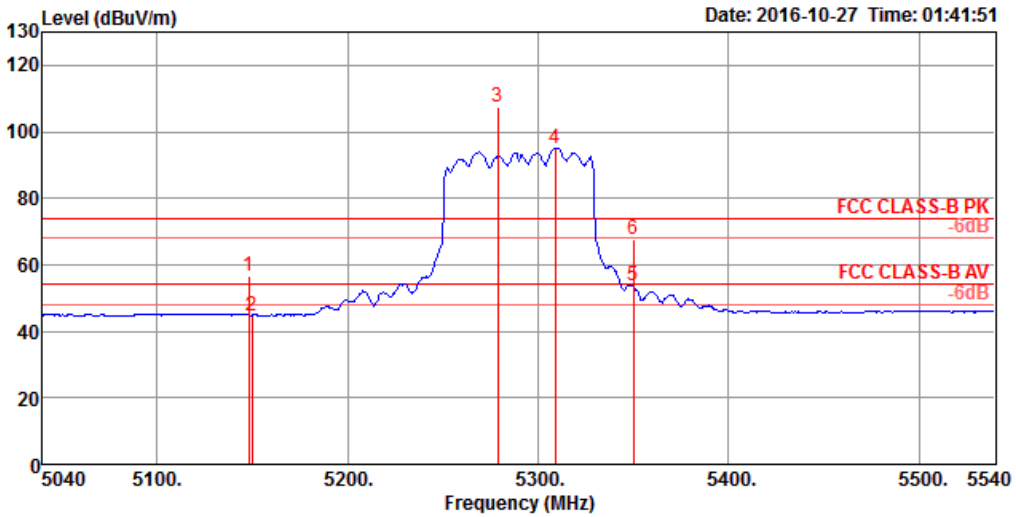


	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5671.60	102.29			98.12	8.70	32.00	36.53	211	180	Average	HORIZONTAL
2	5674.00	112.17			107.99	8.69	32.02	36.53	211	180	Peak	HORIZONTAL
3	5726.00	65.02	74.00	-8.98	60.84	8.62	32.08	36.52	211	180	Peak	HORIZONTAL
4	5730.80	52.54	54.00	-1.46	48.36	8.61	32.08	36.51	211	180	Average	HORIZONTAL

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

Temperature	24°C	Humidity	51%
Test Engineer	Lucke Hsieh	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 58, 106 / Chain 1 + Chain 2 + Chain 3

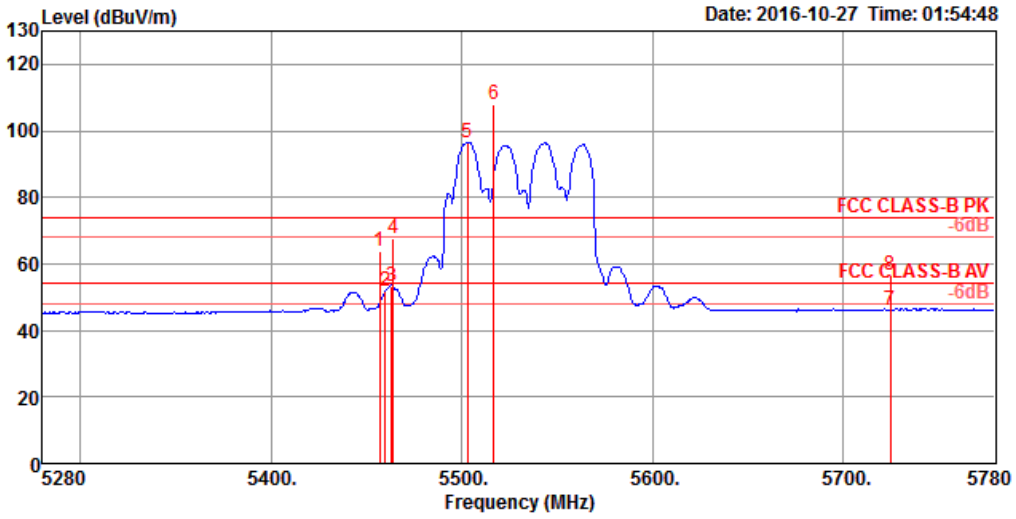
Channel 58



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5148.00	56.68	74.00	-17.32	53.66	8.19	31.45	36.62	150	190	Peak	VERTICAL
2	5150.00	44.79	54.00	-9.21	41.78	8.18	31.45	36.62	150	190	Average	VERTICAL
3	5279.00	107.65			104.50	8.17	31.59	36.61	150	190	Peak	VERTICAL
4	5309.00	94.99			91.81	8.18	31.61	36.61	150	190	Average	VERTICAL
5	5350.00	53.84	54.00	-0.16	50.60	8.19	31.65	36.60	150	190	Average	VERTICAL
6	5350.00	67.85	74.00	-6.15	64.61	8.19	31.65	36.60	150	190	Peak	VERTICAL

Item 3, 4 are the fundamental frequency at 5290 MHz.

Channel 106



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	5457.00	63.99	74.00	-10.01	60.46	8.37	31.75	36.59	139	192	Peak	VERTICAL
2	5460.00	51.99	54.00	-2.01	48.45	8.38	31.75	36.59	139	192	Average	VERTICAL
3	5463.00	53.32	54.00	-0.68	49.77	8.39	31.75	36.59	139	192	Average	VERTICAL
4	5464.00	67.52	74.00	-6.48	63.95	8.39	31.77	36.59	139	192	Peak	VERTICAL
5	5503.00	96.44			92.72	8.51	31.80	36.59	139	192	Average	VERTICAL
6	5517.00	107.92			104.13	8.55	31.82	36.58	139	192	Peak	VERTICAL
7	5725.00	46.26	54.00	-7.74	42.08	8.62	32.08	36.52	139	192	Average	VERTICAL
8	5725.00	56.42	74.00	-17.58	52.24	8.62	32.08	36.52	139	192	Peak	VERTICAL

Item 5, 6 are the fundamental frequency at 5530 MHz.

Note:

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

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

4.6. Frequency Stability Measurement

4.6.1. Limit

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

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

4.6.2. Measuring Instruments and Setting

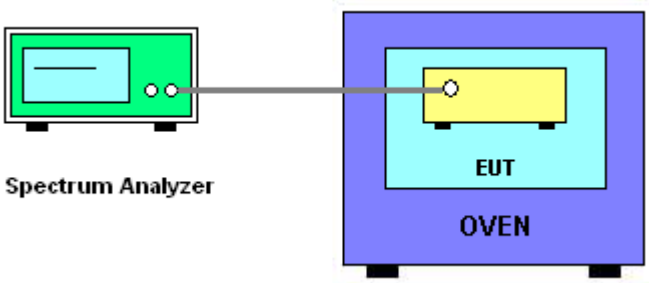
Please refer to section 5 of equipments list in this report. The following table is the setting of the spectrum analyzer.

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

4.6.3. Test Procedures

1. The transmitter output (antenna port) was connected to the spectrum analyzer.
2. EUT have transmitted absence of modulation signal and fixed channelize.
3. Set the spectrum analyzer span to view the entire absence of modulation emissions bandwidth.
4. Set RBW = 10 kHz, VBW = 10 kHz with peak detector and maxhold settings.
5. fc is declaring of channel frequency. Then the frequency error formula is (fc-f)/fc × 10^6 ppm and the limit is less than ±20ppm (IEEE 802.11nspecification).
6. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 2, 5, and 10 minutes.
7. The test extreme voltage is to change the primary supply voltage from 85 to 115 percent of the nominal value
8. Extreme temperature is -20°C~50°C.

4.6.4. Test Setup Layout



4.6.5. Test Deviation

There is no deviation with the original standard.

4.6.6. EUT Operation during Test

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

4.6.7. Test Result of Frequency Stability

Temperature	25℃	Humidity	45%
Test Engineer	Gary Chu	Test Date	Nov. 03, 2016

Mode: 20 MHz / Chain 1

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)			
(V)	5300 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
126.50	5299.9484	5299.9479	5299.9477	5299.9471
110.00	5299.9475	5299.9468	5299.9461	5299.9460
93.50	5299.9472	5299.9469	5299.9467	5299.9461
Max. Deviation (MHz)	0.0528	0.0532	0.0539	0.0540
Max. Deviation (ppm)	9.97	10.04	10.18	10.19
Result	Complies			

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(℃)	5300 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
-20	5299.9442	5299.9441	5299.9437	5299.9432
-10	5299.9452	5299.9445	5299.9435	5299.9430
0	5299.9460	5299.9455	5299.9449	5299.9446
10	5299.9474	5299.9467	5299.9460	5299.9456
20	5299.9475	5299.9474	5299.9465	5299.9459
30	5299.9488	5299.9486	5299.9476	5299.9474
40	5299.9490	5299.9481	5299.9476	5299.9471
50	5299.9491	5299.9486	5299.9483	5299.9474
Max. Deviation (MHz)	0.0558	0.0559	0.0565	0.0570
Max. Deviation (ppm)	10.53	10.55	10.67	10.76
Result	Complies			

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)			
(V)	5580 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
126.50	5579.9482	5579.9473	5579.9467	5579.9457
110.00	5579.9475	5579.9469	5579.9464	5579.9463
93.50	5579.9469	5579.9465	5579.9462	5579.9459
Max. Deviation (MHz)	0.0531	0.0535	0.0538	0.0543
Max. Deviation (ppm)	9.52	9.59	9.65	9.74
Result	Complies			

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(°C)	5580 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
-20	5579.9434	5579.9431	5579.9429	5579.9424
-10	5579.9445	5579.9442	5579.9438	5579.9435
0	5579.9458	5579.9454	5579.9449	5579.9439
10	5579.9463	5579.9458	5579.9455	5579.9448
20	5579.9475	5579.9470	5579.9467	5579.9461
30	5579.9488	5579.9486	5579.9478	5579.9476
40	5579.9508	5579.9500	5579.9497	5579.9494
50	5579.9522	5579.9518	5579.9510	5579.9508
Max. Deviation (MHz)	0.0566	0.0569	0.0571	0.0576
Max. Deviation (ppm)	10.15	10.20	10.24	10.33
Result	Complies			

Mode: 40 MHz / Chain 1

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)			
(V)	5310 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
126.50	5309.9484	5309.9483	5309.9481	5309.9472
110.00	5309.9475	5309.9471	5309.9462	5309.9455
93.50	5309.9473	5309.9471	5309.9465	5309.9460
Max. Deviation (MHz)	0.0527	0.0529	0.0538	0.0545
Max. Deviation (ppm)	9.93	9.97	10.14	10.27
Result	Complies			

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(°C)	5310 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
-20	5309.9437	5309.9429	5309.9422	5309.9417
-10	5309.9449	5309.9441	5309.9439	5309.9431
0	5309.9459	5309.9450	5309.9445	5309.9436
10	5309.9463	5309.9453	5309.9450	5309.9446
20	5309.9475	5309.9470	5309.9460	5309.9454
30	5309.9488	5309.9480	5309.9474	5309.9467
40	5309.9489	5309.9480	5309.9473	5309.9468
50	5309.9500	5309.9490	5309.9486	5309.9483
Max. Deviation (MHz)	0.0563	0.0571	0.0578	0.0583
Max. Deviation (ppm)	10.61	10.76	10.89	10.98
Result	Complies			

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)			
(V)	5550 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
126.50	5549.9476	5549.9467	5549.9466	5549.9462
110.00	5549.9475	5549.9473	5549.9463	5549.9461
93.50	5549.9474	5549.9464	5549.9462	5549.9456
Max. Deviation (MHz)	0.0526	0.0536	0.0538	0.0544
Max. Deviation (ppm)	9.48	9.66	9.70	9.81
Result	Complies			

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(°C)	5550 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
-20	5549.9432	5549.9428	5549.9423	5549.9415
-10	5549.9439	5549.9437	5549.9428	5549.9424
0	5549.9455	5549.9453	5549.9446	5549.9445
10	5549.9461	5549.9460	5549.9459	5549.9454
20	5549.9475	5549.9469	5549.9466	5549.9458
30	5549.9488	5549.9487	5549.9482	5549.9479
40	5549.9496	5549.9486	5549.9476	5549.9467
50	5549.9507	5549.9499	5549.9495	5549.9486
Max. Deviation (MHz)	0.0572	0.0572	0.0577	0.0585
Max. Deviation (ppm)	10.31	10.31	10.40	10.55
Result	Complies			

Mode: 80 MHz / Chain 1

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)			
(V)	5290 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
126.50	5289.9480	5289.9478	5289.9476	5289.9470
110.00	5289.9475	5289.9469	5289.9464	5289.9456
93.50	5289.9465	5289.9459	5289.9451	5289.9442
Max. Deviation (MHz)	0.0535	0.0541	0.0549	0.0558
Max. Deviation (ppm)	10.12	10.23	10.38	10.55
Result	Complies			

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(°C)	5290 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
-20	5289.9418	5289.9416	5289.9415	5289.9413
-10	5289.9432	5289.9425	5289.9418	5289.9409
0	5289.9451	5289.9445	5289.9444	5289.9440
10	5289.9461	5289.9455	5289.9448	5289.9447
20	5289.9475	5289.9466	5289.9461	5289.9456
30	5289.9488	5289.9484	5289.9483	5289.9476
40	5289.9501	5289.9494	5289.9487	5289.9481
50	5289.9521	5289.9517	5289.9514	5289.9504
Max. Deviation (MHz)	0.0582	0.0584	0.0585	0.0591
Max. Deviation (ppm)	11.01	11.05	11.06	11.18
Result	Complies			

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)			
(V)	5530 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
126.50	5529.9478	5529.9474	5529.9468	5529.9462
110.00	5529.9475	5529.9474	5529.9465	5529.9464
93.50	5529.9472	5529.9463	5529.9459	5529.9456
Max. Deviation (MHz)	0.0528	0.0537	0.0541	0.0544
Max. Deviation (ppm)	9.55	9.72	9.79	9.84
Result	Complies			

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(°C)	5530 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
-20	5529.9418	5529.9410	5529.9403	5529.9398
-10	5529.9438	5529.9435	5529.9431	5529.9423
0	5529.9449	5529.9445	5529.9435	5529.9429
10	5529.9469	5529.9460	5529.9456	5529.9453
20	5529.9475	5529.9469	5529.9461	5529.9459
30	5529.9488	5529.9480	5529.9476	5529.9468
40	5529.9507	5529.9501	5529.9493	5529.9488
50	5529.9511	5529.9508	5529.9500	5529.9491
Max. Deviation (MHz)	0.0582	0.0590	0.0597	0.0602
Max. Deviation (ppm)	10.53	10.67	10.80	10.89
Result	Complies			

4.7. Antenna Requirements

4.7.1. Limit

Except for special regulations, the Low-power Radio-frequency Devices must not be equipped with any jacket for installing an antenna with extension cable. An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that the user can replace a broken antenna, but the use of a standard antenna jack or electrical connector is prohibited. Further, this requirement does not apply to intentional radiators that must be professionally installed.

4.7.2. Antenna Connector Construction

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

5. LIST OF MEASURING EQUIPMENTS

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
Horn Antenna	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1370	1GHz~18GHz	Jul. 07, 2016	Jul. 06, 2017	Radiation (03CH01-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Jul. 25, 2016	Jul. 24, 2017	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8449B	3008A02310	1GHz ~ 26.5GHz	Jan. 18, 2016	Jan. 17, 2017	Radiation (03CH01-CB)
Pre-Amplifier	WM	TF-130N-R1	923365	26GHz ~ 40GHz	Nov. 13, 2015	Nov. 11, 2016	Radiation (03CH01-CB)
Spectrum Analyzer	R&S	FSP40	100056	9kHz ~ 40GHz	Oct. 27, 2015	Oct. 26, 2016	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-16	N/A	1 GHz ~ 18 GHz	Nov. 02, 2015	Nov. 01, 2016	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-17	N/A	1 GHz ~ 18 GHz	Nov. 02, 2015	Nov. 01, 2016	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-40G-1	N/A	18GHz ~ 40 GHz	Nov. 02, 2015	Nov. 01, 2016	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-40G-2	N/A	18GHz ~ 40 GHz	Nov. 02, 2015	Nov. 01, 2016	Radiation (03CH01-CB)
Spectrum analyzer	R&S	FSV40	100979	9kHz~40GHz	Dec. 09, 2015	Dec. 08, 2016	Conducted (TH01-CB)
Temp. and Humidity Chamber	Ten Billion	TTH-D3SP	TBN-931011	-30~100 degree	Jun. 03, 2016	Jun. 02, 2017	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-6	1 GHz – 26.5 GHz	Oct. 24, 2016	Oct. 23, 2017	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-7	1 GHz –26.5 GHz	Oct. 24, 2016	Oct. 23, 2017	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-8	1 GHz –26.5 GHz	Oct. 24, 2016	Oct. 23, 2017	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-9	1 GHz –26.5 GHz	Oct. 24, 2016	Oct. 23, 2017	Conducted (TH01-CB)
Power Sensor	Agilent	U2021XA	MY53410001	50MHz~18GHz	Nov. 22, 2016	Nov. 21, 2017	Conducted (TH01-CB)

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

6. MEASUREMENT UNCERTAINTY

Test Items	Uncertainty	Remark
Radiated Emission (1GHz ~ 18GHz)	3.7 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	3.5 dB	Confidence levels of 95%
Conducted Emission	1.7 dB	Confidence levels of 95%
Output Power Measurement	1.33 dB	Confidence levels of 95%
Power Density Measurement	1.27 dB	Confidence levels of 95%
Bandwidth Measurement	9.74×10^{-8}	Confidence levels of 95%
Frequency Stability	6.06×10^{-8}	Confidence levels of 95%