TEST REPORT

CERTIFICATE OF CONFORMITY

Standard:	**47 CFR FCC Part 15, Subpart E (Section 15.407)**
Report No.:	RFBAOZ-WTW-P22061108-1
FCC ID:	W59AP3025
Product:	AC1300 Dual-Band Outdoor Wireless Access Point
Brand:	LUXUL
Model No.:	AP-3025
Received Date:	2022/7/27
Test Date:	2022/10/1 ~ 2022/11/11
Issued Date:	2022/12/14
Applicant:	Legrand AV Inc.
Address:	6436 City West Pkwy, Eden Prairie, MN 55344 USA
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Hsin Chu Laboratory
Lab Address:	E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan
Test Location:	E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan
FCC Registration / Designation Number:	723255 / TW2022

Approved by: _____ , **Date:** 2022/12/14

May Chen / Manager

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Prepared by : Vivian Huang / Specialist

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Release Control Record

Issue No.	Description	Date Issued
RFBAOZ-WTW-P22061108-1	Original release.	2022/12/14

1 Certificate

Product:	AC1300 Dual-Band Outdoor Wireless Access Point
Brand:	LUXUL
Test Model:	AP-3025
Sample Status:	Engineering sample
Applicant:	Legrand AV Inc.
Test Date:	2022/10/1 ~ 2022/11/11
Standard:	47 CFR FCC Part 15, Subpart E (Section 15.407)
Measurement procedure:	ANSI C63.10-2013 KDB 789033 D02 General UNII Test Procedure New Rules v02r01 KDB 662911 D01 Multiple Transmitter Output v02r01

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's RF characteristics under the conditions specified in this report.

2 Summary of Test Results

47 CFR FCC Part 15, Subpart E (Section 15.407)			
Clause	Test Item	Result	Remark
15.407(a)(1/2/3)	RF Output Power	Pass	Meet the requirement of limit.
15.407(a)(1/2/3)	Power Spectral Density	Pass	Meet the requirement of limit.
15.407(e)	6 dB Bandwidth	Pass	Meet the requirement of limit. (U-NII-3 Band only)
---	Occupied Bandwidth	-	Reference only.
15.407(g)	Frequency Stability	Pass	Meet the requirement of limit.
15.407(b)(9)	AC Power Conducted Emissions	Pass	Minimum passing margin is -4.41 dB at 0.38828 MHz
15.407(b)(9)	Unwanted Emissions below 1 GHz	Pass	Minimum passing margin is -6.2 dB at 42.80 MHz
15.407(b) (1/2/3/4(i)/10)	Unwanted Emissions above 1 GHz	Pass	Minimum passing margin is -0.4 dB at 5150.00 MHz
15.203	Antenna Requirement	Pass	Antenna connector is ipex(MHF) not a standard connector.

Note: Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

2.1 Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

Measurement	Specification	Expanded Uncertainty (k=2) (±)
AC Power Conducted Emissions	150 kHz ~ 30 MHz	1.9 dB
Unwanted Emissions below 1 GHz	9 kHz ~ 30 MHz	3.1 dB
	30 MHz ~ 1 GHz	5.1 dB
Unwanted Emissions above 1 GHz	1 GHz ~ 18 GHz	5.1 dB
	18 GHz ~ 40 GHz	5.3 dB

The other instruments specified are routine verified to remain within the calibrated levels, no measurement uncertainty is required to be calculated.

2.2 Supplementary Information

There is not any deviation from the test standards for the test method, and no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	AC1300 Dual-Band Outdoor Wireless Access Point
Brand	LUXUL
Test Model	AP-3025
Status of EUT	Engineering sample
Power Supply Rating	56Vdc from POE adapter
Modulation Type	64QAM, 16QAM, QPSK, BPSK for OFDM 256QAM for OFDM in 11ac mode
Modulation Technology	OFDM
Transfer Rate	802.11a: up to 54Mbps 802.11n: up to 300Mbps 802.11ac: up to 866.7 Mbps
Operating Frequency	5.18 GHz ~ 5.24 GHz 5.745 GHz ~ 5.825 GHz
Number of Channel	802.11a, 802.11n (HT20), 802.11ac (VHT20): 9 802.11n (HT40), 802.11ac (VHT40): 4 802.11ac (VHT80): 2
Output Power	**CDD Mode:** 5.18 GHz ~ 5.24 GHz : 77.542 mW (18.9 dBm) 5.745 GHz ~ 5.825 GHz : 825.434 mW (29.17 dBm) **Beamforming Mode:** 5.18 GHz ~ 5.24 GHz : 38.321 mW (15.83 dBm) 5.745 GHz ~ 5.825 GHz : 606.486 mW (27.83 dBm)
EUT Category	Outdoor Access Point

Note:

1. Simultaneously transmission condition.

Condition	Technology	
1	WLAN 2.4GHz	WLAN 5GHz
Note: The emission of the simultaneous operation has been evaluated and no non-compliance was found.		

2. The EUT uses following accessories.

Ethernet Cable		
Brand	Model	Specification
Nien-Yi	NYS1389	Signal Line : 1m, un-shielded
Ground wire		
Brand	Model	Specification
Dong Wei (Shen Zhen) Lead Enterprise Co., Ltd	DWE-MT-070	Signal Line : 106cm

3. The above EUT information is declared by manufacturer and for more detailed features description, please refers to the manufacturer's specifications or user's manual.

3.2 Antenna Description of EUT

1. The antenna information is listed as below.

Ant. No.	RF Chain No.	Brand	Model No.	Ant. Net Gain (dBi)	Freq. Range (GHz)	Ant. Type	Connector Type	Cable Length (mm)
1	Chain 0	Nienyi Industrial Corp	NYS5390	6.5	2400~2500	Dipole	ipex(MHF)	30
2	Chain 1	Nienyi Industrial Corp	NYS5390	6.5	2400~2500	Dipole	ipex(MHF)	30
3	Chain 0	Nienyi Industrial Corp	NYS5390	5	5150~5850	Dipole	ipex(MHF)	30
4	Chain 1	Nienyi Industrial Corp	NYS5390	5	5150~5850	Dipole	ipex(MHF)	30

The EUT will install at outdoor area, the highest antenna gain from the horizon above 30 degrees as below.

Antenna No.	Antenna gain	Antenna install degree
3, 4	1.93 dBi	
Since device installation is limited to above configuration, the highest antenna gain above 30 degrees from the horizon are chosen from antenna specification exhibits from 30 to 150 degrees for U-NII-1 band.		

* Detail antenna specification please refer to antenna datasheet and/or antenna measurement report.

2. The EUT incorporates a MIMO function:

5 GHz Band		
Modulation Mode	**TX & RX Configuration**	
802.11a	2TX	2RX
802.11n (HT20)	2TX	2RX
802.11n (HT40)	2TX	2RX
802.11ac (VHT20)	2TX	2RX
802.11ac (VHT40)	2TX	2RX
802.11ac (VHT80)	2TX	2RX

Note:
1. All of modulation mode support beamforming function except 802.11a modulation mode.
2. The EUT support Beamforming and CDD mode, therefore both mode were investigated and the worst case scenario was identified. The worst case data were presented in test report.
3. The modulation and bandwidth are similar for 802.11n mode for 20 MHz (40 MHz), 802.11ac mode for 20 MHz (40 MHz), therefore the manufacturer will control the power for 802.11n mode is the same as the 802.11ac or more lower than it and investigated worst case to representative mode in test report.

3.3 Channel List

FOR 5180 ~ 5240MHz

4 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20):

Channel	Frequency	Channel	Frequency
36	5180 MHz	44	5220 MHz
40	5200 MHz	48	5240 MHz

2 channels are provided for 802.11n (HT40), 802.11ac (VHT40):

Channel	Frequency	Channel	Frequency
38	5190 MHz	46	5230 MHz

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency
42	5210 MHz

FOR 5745 ~ 5825 MHz:

5 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20):

Channel	Frequency	Channel	Frequency
149	5745 MHz	161	5805 MHz
153	5765 MHz	165	5825 MHz
157	5785 MHz		

2 channels are provided for 802.11n (HT40), 802.11ac (VHT40):

Channel	Frequency	Channel	Frequency
151	5755 MHz	159	5795 MHz

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency
155	5775 MHz

3.4 Test Mode Applicability and Tested Channel Detail

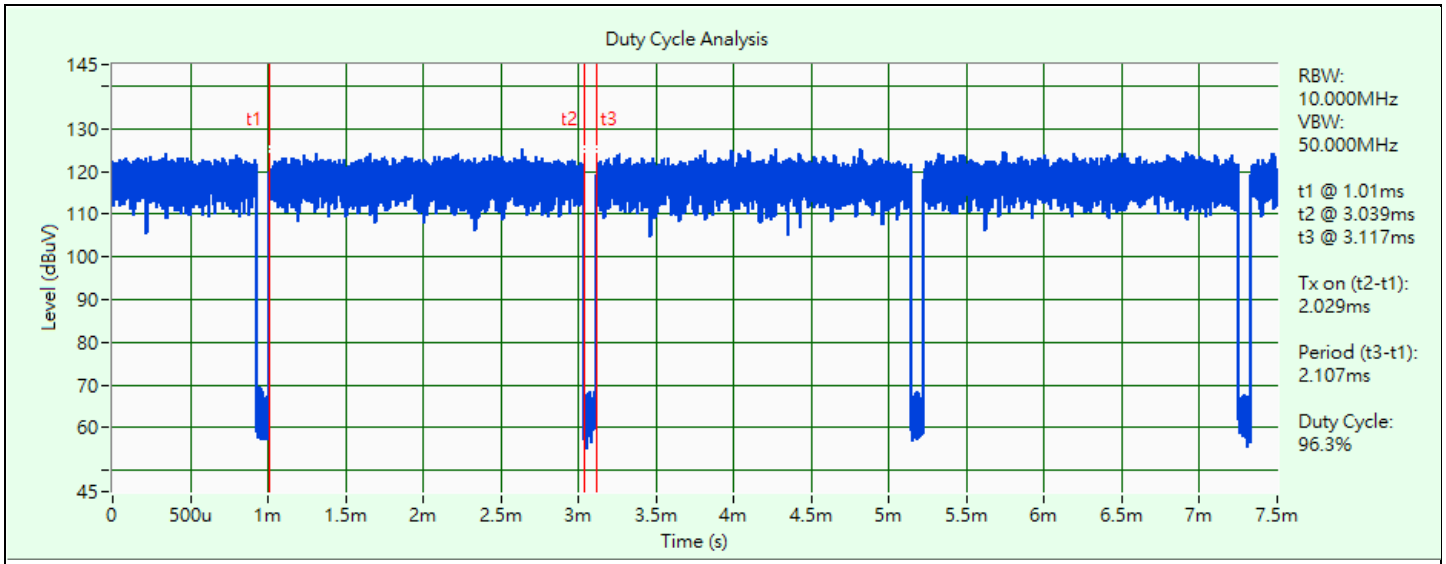
Pre-Scan:	Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

Following channel(s) was (were) selected for the final test as listed below:

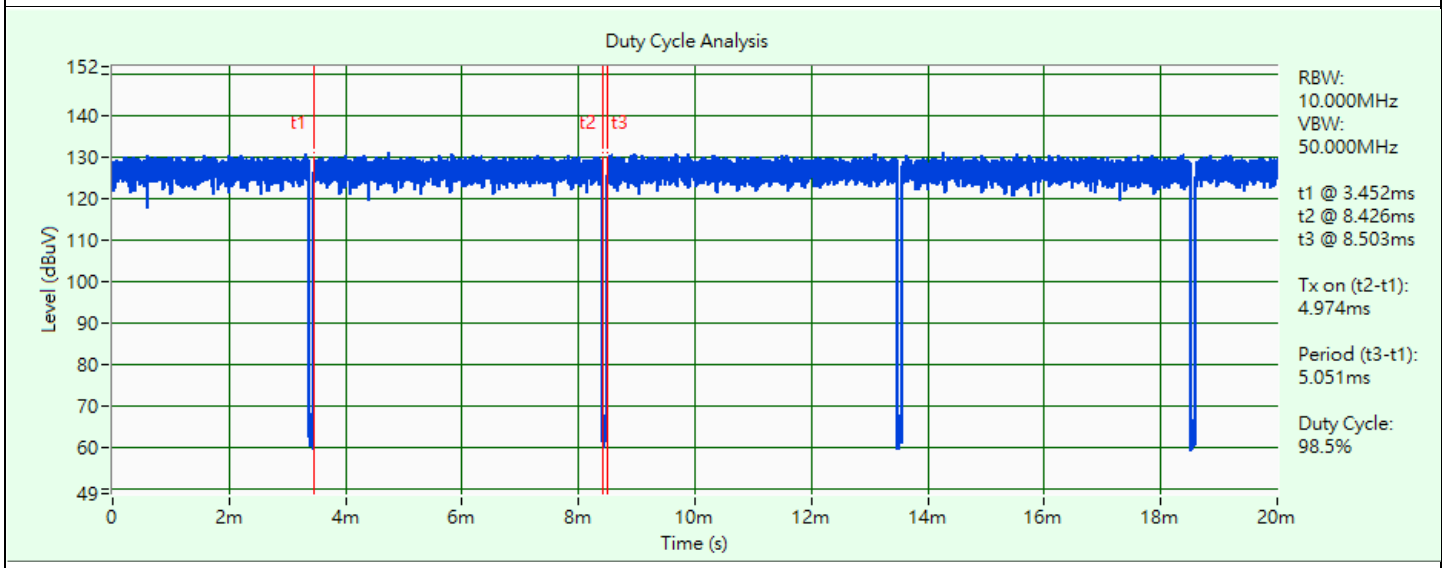
Test Item	Mode	Signal Mode	Tested Channel	Modulation	Data Rate Parameter
RF Output Power	802.11a	CDD	36, 40, 48, 149, 157, 165	BPSK	6Mb/s
	802.11ac (VHT20)	CDD & Beamforming	36, 40, 48, 149, 157, 165	BPSK	MCS0
	802.11ac (VHT40)	CDD & Beamforming	38, 46, 151, 159	BPSK	MCS0
	802.11ac (VHT80)	CDD & Beamforming	42, 155	BPSK	MCS0
6 dB Bandwidth	802.11a	CDD	149, 157, 165	BPSK	6Mb/s
	802.11ac (VHT20)	CDD	149, 157, 165	BPSK	MCS0
	802.11ac (VHT40)	CDD	151, 159	BPSK	MCS0
	802.11ac (VHT80)	CDD	155	BPSK	MCS0
Power Spectral Density / Occupied Bandwidth	802.11a	CDD	36, 40, 48, 149, 157, 165	BPSK	6Mb/s
	802.11ac (VHT20)	CDD	36, 40, 48, 149, 157, 165	BPSK	MCS0
	802.11ac (VHT40)	CDD	38, 46, 151, 159	BPSK	MCS0
	802.11ac (VHT80)	CDD	42, 155	BPSK	MCS0
Frequency Stability	802.11a	-	36	un-modulation	-
AC Power Conducted Emissions	802.11ac (VHT20)	CDD	165	BPSK	MCS0
Unwanted Emissions below 1 GHz	802.11ac (VHT20)	CDD	165	BPSK	MCS0
Unwanted Emissions above 1 GHz	802.11a	CDD	36, 40, 48, 149, 157, 165	BPSK	6Mb/s
	802.11ac (VHT20)	CDD	36, 40, 48, 149, 157, 165	BPSK	MCS0
	802.11ac (VHT40)	CDD	38, 46, 151, 159	BPSK	MCS0
	802.11ac (VHT80)	CDD	42, 155	BPSK	MCS0

3.5 Duty Cycle of Test Signal

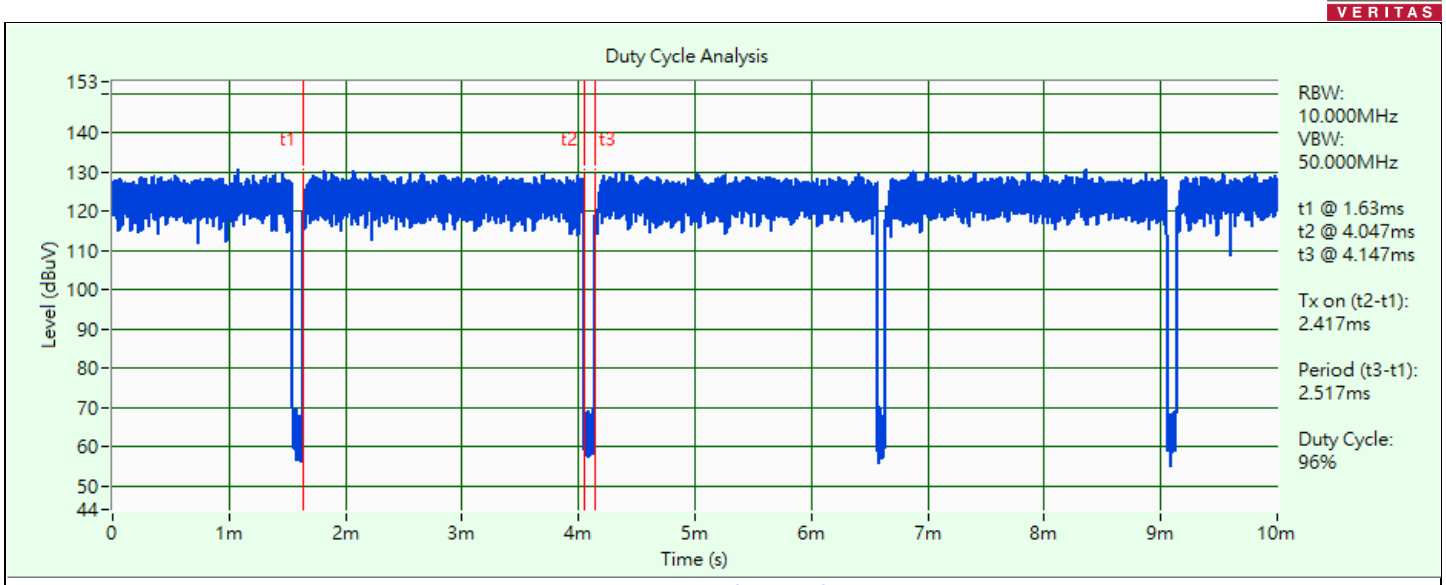
802.11a: Duty cycle = 2.029 ms / 2.107 ms x 100% = 96.3%, duty factor = 10 * log (1/Duty cycle) = 0.16 dB
802.11ac (VHT20): Duty cycle = 4.974 ms / 5.051 ms x 100% = 98.5%
802.11ac (VHT40): Duty cycle = 2.417 ms / 2.517 ms x 100% = 96.0%, duty factor = 10 * log (1/Duty cycle) = 0.18 dB
802.11ac (VHT80): Duty cycle = 1.136 ms / 1.213 ms x 100% = 93.7%, duty factor = 10 * log (1/Duty cycle) = 0.28 dB



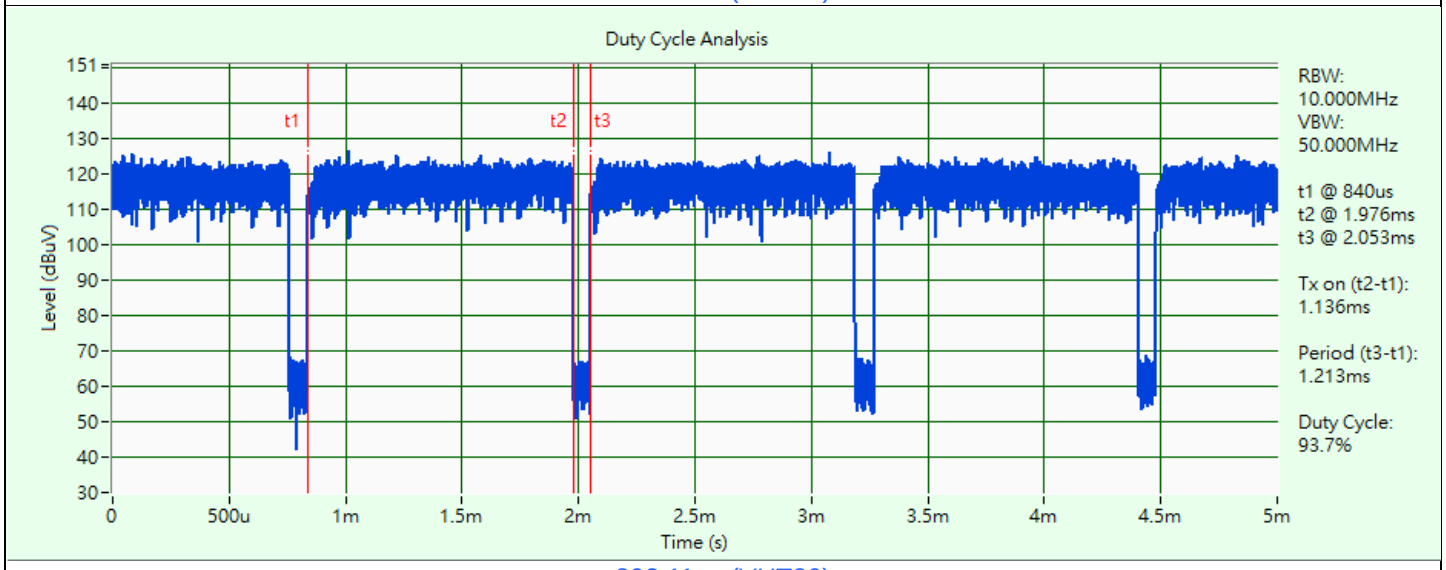
802.11a



802.11ac (VHT20)



802.11ac (VHT40)



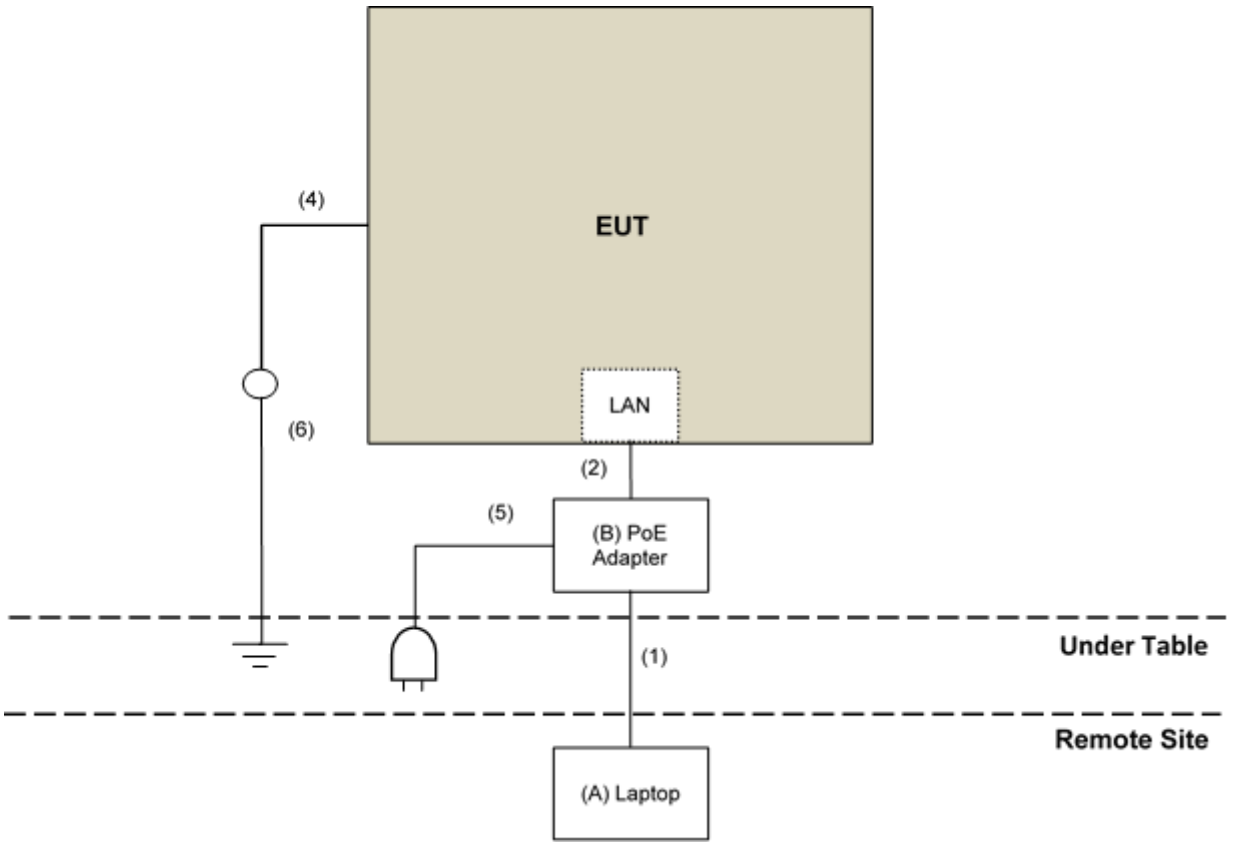
802.11ac (VHT80)

3.6 Test Program Used and Operation Descriptions

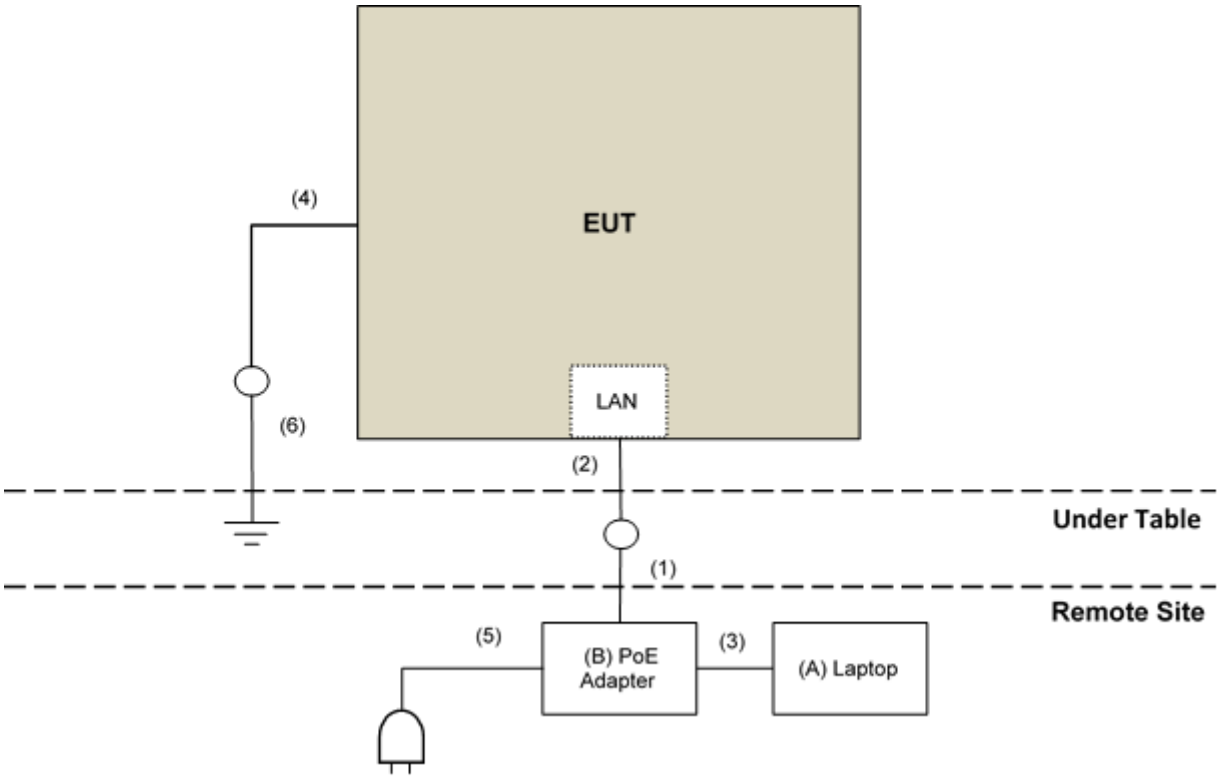
Controlling software (qdart_conn.win.1.0_installer_00084.1) has been activated to set the EUT under transmission condition continuously at specific channel frequency.

3.7 Connection Diagram of EUT and Peripheral Devices

For AC Power Conducted Emission test



For Unwanted Emission test



3.8 Configuration of Peripheral Devices and Cable Connections

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A	Laptop	Lenovo	20U5S01X00 L14	PF-28LKK7	N/A	Provided by Lab
B	POE Adapter	PHIHONG	POE29U-560	N/A	N/A	Supplied by applicant

ID	Cable Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1	RJ-45 Cable	1	10	No	0	Provided by Lab
2	RJ-45 Cable	1	1	No	0	Supplied by applicant
3	RJ-45 Cable	1	10	No	0	Provided by Lab
4	GND Cable	1	1.6	No	0	Supplied by applicant
5	AC Cable	1	1.8	No	0	Provided by Lab
6	GND Cable	1	2.5	No	0	Provided by Lab

4 Test Instruments

The calibration interval of the all test instruments are 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

4.1 RF Output Power

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Attenuator WOKEN	MDCS18N-10	MDCS18N-10-01	2022/4/5	2023/4/4
Power Meter Anritsu	ML2495A	1529002	2022/6/22	2023/6/21
Pulse Power Sensor Anritsu	MA2411B	1726434	2022/6/22	2023/6/21
Software	ADT_RF Test Software V6.6.5.4	N/A	N/A	N/A

Notes:

1. The test was performed in Oven room 2.
2. Tested Date: 2022/11/4

4.2 Power Spectral Density

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Attenuator WOKEN	MDCS18N-10	MDCS18N-10-01	2022/4/5	2023/4/4
Software	ADT_RF Test Software V6.6.5.4	N/A	N/A	N/A
Spectrum Analyzer Keysight	N9020B	MY60112409	2022/3/11	2023/3/10

Notes:

1. The test was performed in Oven room 2.
2. Tested Date: 2022/11/4

4.3 6 dB Bandwidth

Refer to section 4.2 to get information of the instruments.

4.4 Occupied Bandwidth

Refer to section 4.2 to get information of the instruments.

4.5 Frequency Stability

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Attenuator WOKEN	MDCS18N-10	MDCS18N-10-01	2022/4/5	2023/4/4
DC POWER SUPPLY Topward	6603D	795558	N/A	N/A
Software	ADT_RF Test Software V6.6.5.4	N/A	N/A	N/A
Spectrum Analyzer Keysight	N9020B	MY60112409	2022/3/11	2023/3/10
Temperature & Humidity Chamber Giant Force	GTH-150-40-SP-AR	MAA0812-008	2022/1/14	2023/1/13
True RMS Clamp Meter Fluke	325	31130711WS	2022/6/9	2023/6/8

Notes:

1. The test was performed in Oven room 2.
2. Tested Date: 2022/11/4

4.6 AC Power Conducted Emissions

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
50 ohm terminal resistance	N/A	EMC-01	2022/9/27	2023/9/26
Fixed attenuator STI	STI02-2200-10	005	2022/8/24	2023/8/23
LISN R&S	ESH3-Z5	848773/004	2022/10/18	2023/10/17
RF Coaxial Cable JYEBO	5D-FB	COCCAB-001	2022/8/24	2023/8/23
Software BVADT	BVADT_Cond_V7.3.7.4	N/A	N/A	N/A
TEST RECEIVER R&S	ESCS 30	847124/029	2022/10/14	2023/10/13

Notes:

1. The test was performed in Conduction 1
2. Tested Date: 2022/11/11

4.7 Unwanted Emissions below 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Bilog Antenna Schwarzbeck	VULB 9168	9168-0842	2021/10/26	2022/10/25
Boresight Antenna Tower & Turn Table Max-Full	MF-7802BS	MF780208530	N/A	N/A
Fixed attenuator Mini-Circuits	UNAT-5+	PAD-ATT5-02	2022/1/10	2023/1/9
LOOP ANTENNA Electro-Metrics	EM-6879	264	2022/3/18	2023/3/17
Pre_Amplifier Agilent	8447D	2944A10636	2022/3/19	2023/3/18
Pre_Amplifier EMCI	EMC330N	980538	2022/4/25	2023/4/24
RF Coaxial Cable COMMATE/PEWC	8D	966-5-1	2022/4/25	2023/4/24
	8D	966-5-2	2022/4/25	2023/4/24
	8D	966-5-3	2022/4/25	2023/4/24
RF Coaxial Cable JYEBO	5D-FB	LOOPCAB-001	2022/1/6	2023/1/5
		LOOPCAB-002	2022/1/6	2023/1/5
Software	ADT_Radiated_V8.7.08	N/A	N/A	N/A
Spectrum Analyzer Keysight	N9020B	MY60112410	2022/3/13	2023/3/12
Test Receiver R&S	ESR3	102528	2022/2/25	2023/2/24

Notes:

1. The test was performed in 966 Chamber No. 5.
2. Tested Date: 2022/10/4

4.8 Unwanted Emissions above 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Boresight Antenna Tower & Turn Table Max-Full	MF-7802BS	MF780208530	N/A	N/A
Horn Antenna Schwarzbeck	BBHA 9120D	9120D-1819	2021/11/14	2022/11/13
	BBHA 9170	9170-739	2021/11/14	2022/11/13
Pre_Amplifier EMCI	EMC12630SE	980509	2022/4/25	2023/4/24
	EMC184045SE	980387	2022/1/10	2023/1/9
RF Cable-Frequency range: 1-40GHz EMCI	EMC102-KM-KM-1200	160924	2022/1/10	2023/1/9
RF Coaxial Cable EMCI	EMC-KM-KM-4000	200214	2022/3/8	2023/3/7
	EMC104-SM-SM-1500	180503	2022/4/25	2023/4/24
	EMC104-SM-SM-2000	180501	2022/4/25	2023/4/24
	EMC104-SM-SM-6000	180506	2022/4/25	2023/4/24
Software	ADT_Radiated_V8.7.08	N/A	N/A	N/A
Spectrum Analyzer Keysight	N9020B	MY60112410	2022/3/13	2023/3/12
Test Receiver R&S	ESR3	102528	2022/2/25	2023/2/24

Notes:

1. The test was performed in 966 Chamber No. 5.
2. Tested Date: 2022/10/1 ~ 2022/11/11

5 Limits of Test Items

5.1 RF Output Power

Operation Band	EUT Category	Limit
U-NII-1	Outdoor Access Point	1 Watt (30 dBm) (Max. e.i.r.p ≦ 125mW(21 dBm) at any elevation angle above 30 degrees as measured from the horizon)
	Fixed point-to-point Access Point	1 Watt (30 dBm)
	Indoor Access Point	1 Watt (30 dBm)
	Mobile and Portable client device	250 mW (24 dBm)

Operation Band	Limit
U-NII-3	1 Watt (30 dBm)

Per KDB 662911 D01 Multiple Transmitter Output Method of conducted output power measurement on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$;
Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{ANT};
Array Gain = 5 log(N_{ANT}/N_{SS}) dB or 3 dB, whichever is less, for 20-MHz channel widths with $N_{ANT} \geq 5$.

For power measurements on all other devices: Array Gain = 10 log(N_{ANT}/N_{SS}) dB.

5.2 Power Spectral Density

Operation Band	EUT Category	Limit
U-NII-1	Outdoor Access Point	17 dBm/ MHz
	Fixed point-to-point Access Point	
	Indoor Access Point	
	Mobile and Portable client device	11 dBm/ MHz

Operation Band	Limit
U-NII-3	30 dBm/ 500 kHz

5.3 6 dB Bandwidth

Within the 5.725-5.850 GHz band, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.

5.4 Occupied Bandwidth

The results are for reference only.

5.5 Frequency Stability

The frequency of the carrier signal shall be maintained within band of operation.

5.6 AC Power Conducted Emissions

Frequency (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15 - 0.5	66 - 56	56 - 46
0.50 - 5.0	56	46
5.0 - 30.0	60	50

Notes:

1. The lower limit shall apply at the transition frequencies.
2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50 MHz.

5.7 Unwanted Emissions below 1 GHz

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table.

Frequencies (MHz)	Field Strength (microvolts/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

Notes:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).

5.8 Unwanted Emissions above 1 GHz

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table.

Frequencies (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
Above 960	500	3

Notes:

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

Limits of unwanted emission out of the restricted bands

<table>
<tr><th colspan="2">Applicable To</th><th colspan="2">Limit</th></tr>
<tr><td colspan="2" rowspan="2">789033 D02 General UNII Test Procedure New Rules v02r01</td><td colspan="2">Field Strength at 3 m</td></tr>
<tr><td>PK: 74 (dBµV/m)</td><td>AV: 54 (dBµV/m)</td></tr>
<tr><th>Frequency Band</th><th>Applicable To</th><th>EIRP Limit</th><th>Equivalent Field Strength at 3 m</th></tr>
<tr><td>5150~5250 MHz</td><td>15.407(b)(1)</td><td rowspan="3">PK: -27 (dBm/MHz)</td><td rowspan="3">PK: 68.2 (dBµV/m)</td></tr>
<tr><td>5250~5350 MHz</td><td>15.407(b)(2)</td></tr>
<tr><td>5470~5725 MHz</td><td>15.407(b)(3)</td></tr>
<tr><td>5725~5850 MHz</td><td>15.407(b)(4)(i)</td><td>PK: -27 (dBm/MHz) *1
PK: 10 (dBm/MHz) *2
PK: 15.6 (dBm/MHz) *3
PK: 27 (dBm/MHz) *4</td><td>PK: 68.2 (dBµV/m) *1
PK: 105.2 (dBµV/m) *2
PK: 110.8 (dBµV/m) *3
PK: 122.2 (dBµV/m) *4</td></tr>
<tr><td colspan="4">*1 beyond 75 MHz or more above of the band edge.
*2 below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above.
*3 below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above.
*4 from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.</td></tr>
</table>

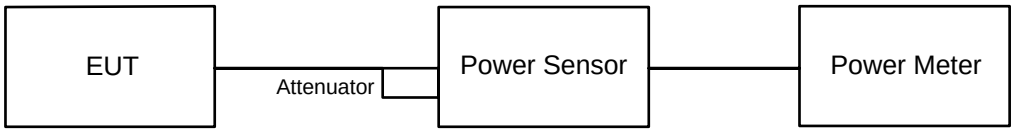
Note: The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength:

$$E = \frac{1000000\sqrt{30P}}{3}$$ µV/m, where P is the eirp (Watts).

6 Test Arrangements

6.1 RF Output Power

6.1.1 Test Setup

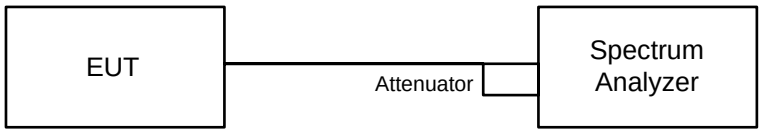


6.1.2 Test Procedure

Method PM is used to perform output power measurement, trigger and gating function of wide band power meter is enabled to measure max output power of TX on burst and set the detector to average. Duty factor is not added to measured value.

6.2 Power Spectral Density

6.2.1 Test Setup



6.2.2 Test Procedure

For specified measurement bandwidth 1 MHz:
Method SA-1

a. Set span to encompass the entire emission bandwidth (EBW) of the signal.
b. Set RBW = 1 MHz, Set VBW ≥ 3 MHz, Detector = RMS
c. Sweep points ≥ [2 × span / RBW]. (This gives bin-to-bin spacing ≤ RBW / 2, so that narrowband signals are not lost between frequency bins.)
d. Sweep time = auto, trigger set to “free run”.
e. Trace average at least 100 traces in power averaging mode.
f. Record the max value

For specified measurement bandwidth 1 MHz:
Method SA-2

a. Set span to encompass the entire emission bandwidth (EBW) of the signal.
b. Set RBW = 1 MHz, Set VBW ≥ 3 MHz, Detector = RMS
c. Sweep points ≥ [2 × span / RBW]. (This gives bin-to-bin spacing ≤ RBW / 2, so that narrowband signals are not lost between frequency bins.)
d. Sweep time = auto, trigger set to “free run”.
e. Trace average at least 100 traces in power averaging mode.
f. Use the peak search function on the instrument to find the peak of the spectrum and record its value.
g. Record the max value and add 10 log (1/duty cycle).

For specified measurement bandwidth 500 kHz:
Method SA-1

a. Set span to encompass the entire emission bandwidth (EBW) of the signal.
b. Set RBW = 300 kHz, Set VBW ≥ 1 MHz, Detector = RMS
c. Scale the observed power level to an equivalent value in 500 kHz by adjusting (increasing) the measured power by a bandwidth correction factor (BWCF) where BWCF = 10log(500 kHz/300 kHz)

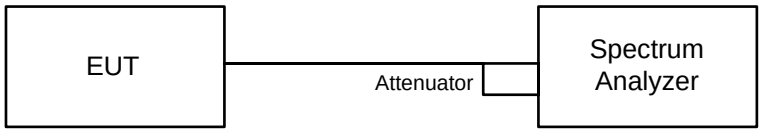
d. Sweep points ≥ [2 × span / RBW]. (This gives bin-to-bin spacing ≤ RBW / 2, so that narrowband signals are not lost between frequency bins.)
e. Sweep time = auto, trigger set to “free run”.
f. Trace average at least 100 traces in power averaging mode.
g. Record the max value

For specified measurement bandwidth 500 kHz:
Method SA-2

a. Set span to encompass the entire emission bandwidth (EBW) of the signal.
b. Set RBW = 300 kHz, Set VBW ≥ 1 MHz, Detector = RMS
c. Scale the observed power level to an equivalent value in 500 kHz by adjusting (increasing) the measured power by a bandwidth correction factor (BWCF) where BWCF = 10log(500 kHz/300 kHz)
d. Sweep points ≥ [2 × span / RBW]. (This gives bin-to-bin spacing ≤ RBW / 2, so that narrowband signals are not lost between frequency bins.)
e. Sweep time = auto, trigger set to “free run”.
f. Trace average at least 100 traces in power averaging mode.
g. Use the peak search function on the instrument to find the peak of the spectrum and record its value.
h. Record the max value and add 10 log (1/duty cycle).

6.3 6 dB Bandwidth

6.3.1 Test Setup

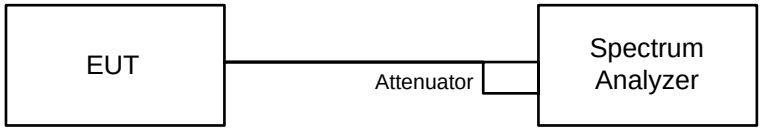


6.3.2 Test Procedure

a. Set resolution bandwidth (RBW) = 100 kHz.
b. Set the video bandwidth (VBW) ≥ 3 x RBW, Detector = Peak.
c. Trace mode = max hold.
d. Sweep = auto couple.
e. Measure the maximum width of the emission that is constrained by the frequencies associated with the two amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

6.4 Occupied Bandwidth

6.4.1 Test Setup

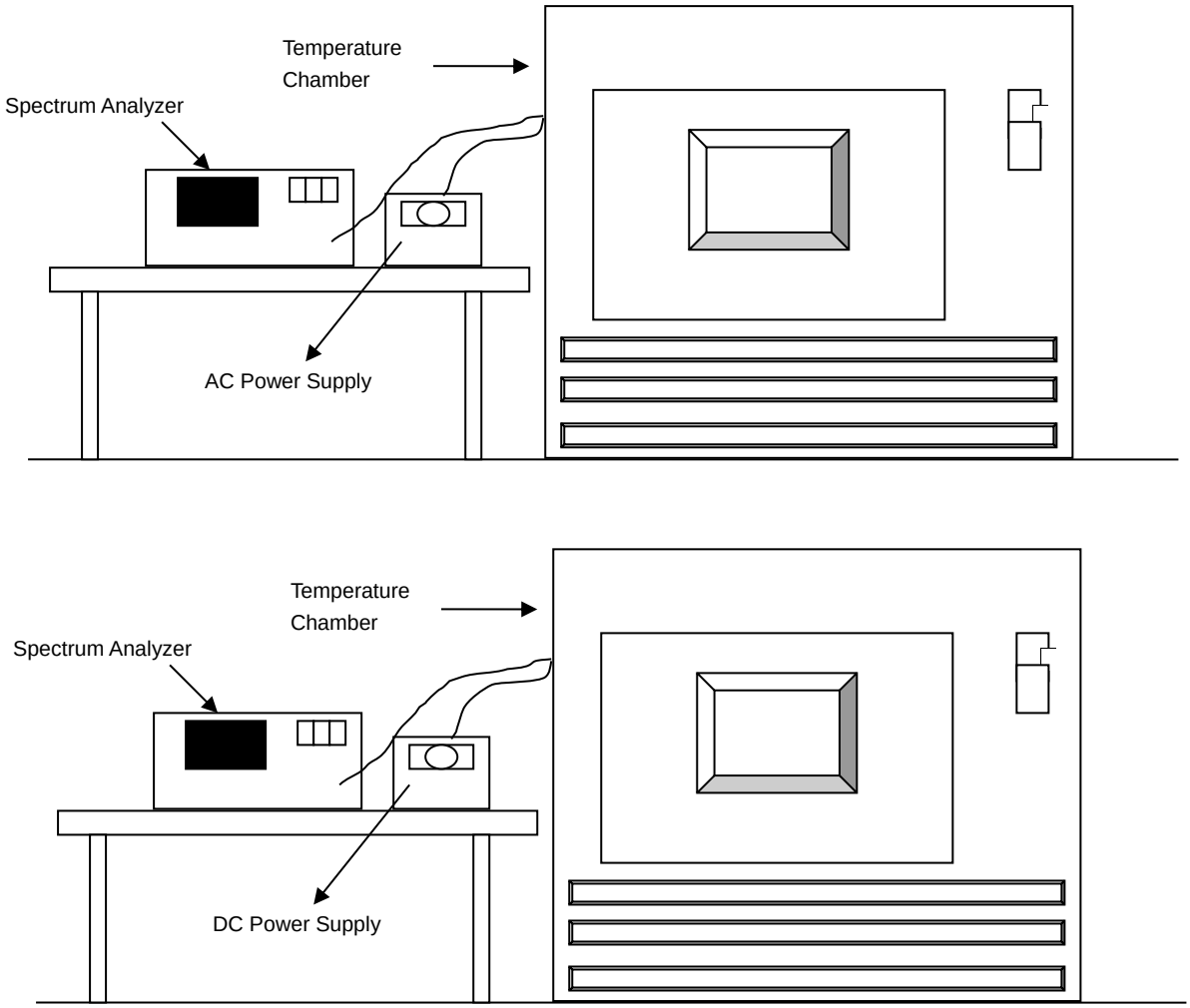


6.4.2 Test Procedure

The transmitter output was connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with resolution bandwidth in the range of 1% to 5% of the anticipated emission bandwidth, and a video bandwidth at least 3x the resolution bandwidth and set the detector to Sampling. The width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5% of the total mean power of a given emission.

6.5 Frequency Stability

6.5.1 Test Setup

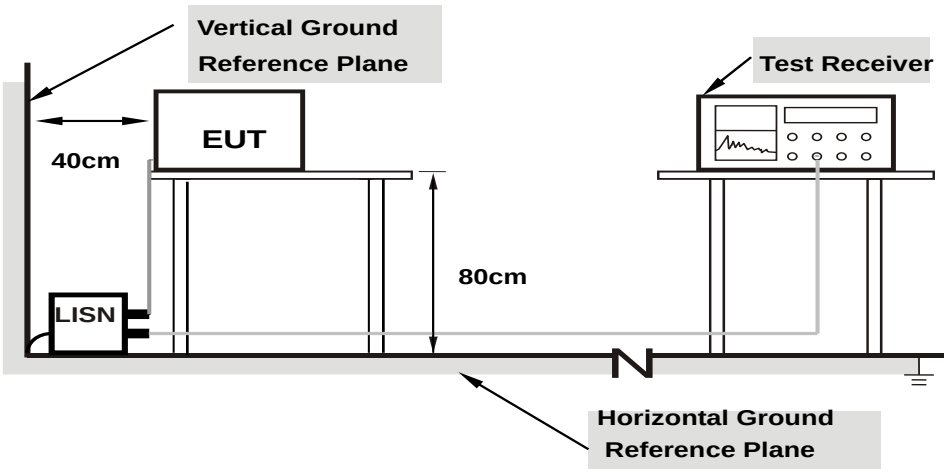


6.5.2 Test Procedure

a. The EUT was placed inside the environmental test chamber and powered by nominal AC voltage.
b. The EUT was placed inside the environmental test chamber and powered by nominal DC voltage.
c. Turn the EUT on and couple its output to a spectrum analyzer.
d. Turn the EUT off and set the chamber to the highest temperature specified.
e. 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.
f. Repeat step (d) with the temperature chamber set to the next desired temperature until measurements down to the lowest specified temperature have been completed.
g. The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 Minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.

6.6 AC Power Conducted Emissions

6.6.1 Test Setup



Note: 1.Support units were connected to second LISN.

For the actual test configuration, please refer to the attached file (Test Setup Photo).

6.6.2 Test Procedure

h. The EUT was placed on a 0.8 meter to the top of table and placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50 uH of coupling impedance for the measuring instrument.

i. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

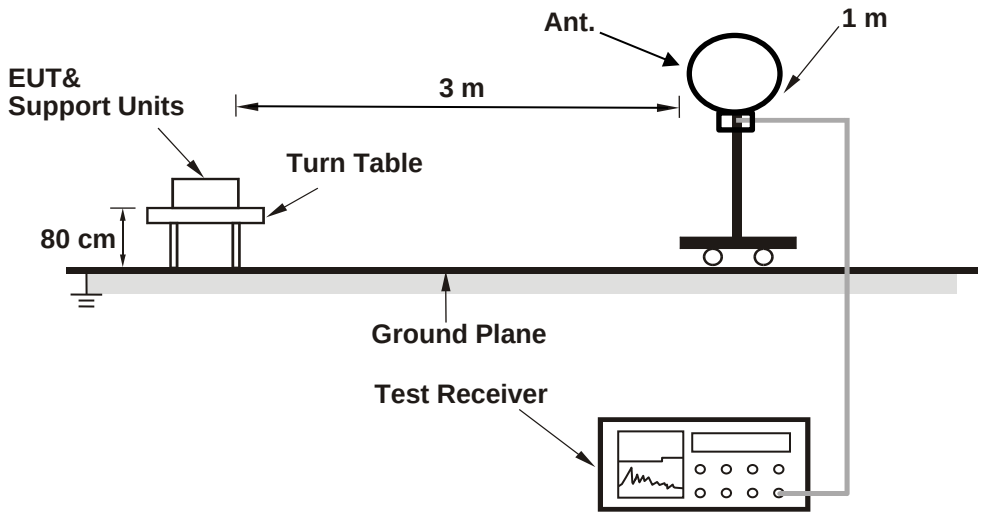
j. The frequency range from 150 kHz to 30 MHz was searched. Emission levels under (Limit – 20 dB) was not recorded.

Note: The resolution bandwidth and video bandwidth of test receiver is 9 kHz for quasi-peak detection (QP) and average detection (AV) at frequency 0.15 MHz-30 MHz.

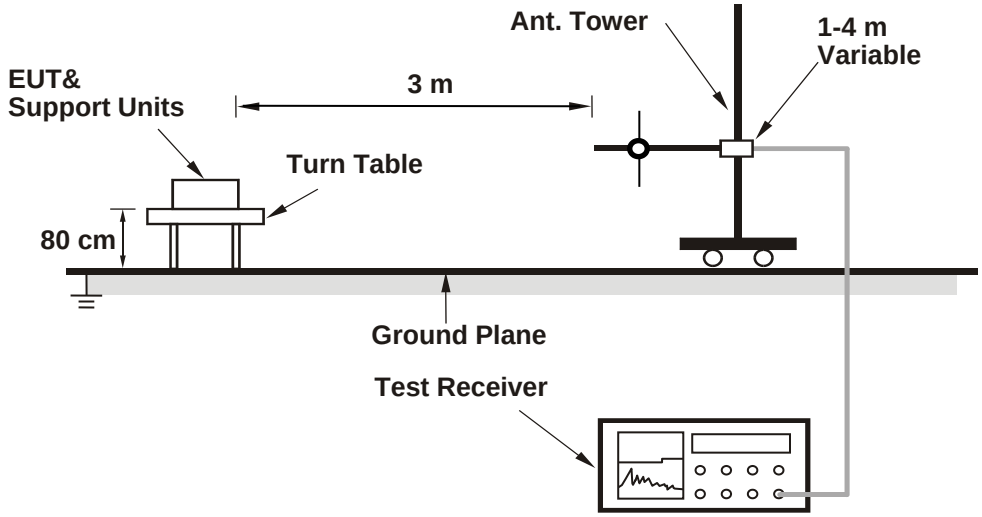
6.7 Unwanted Emissions below 1 GHz

6.7.1 Test Setup

For Radiated emission below 30 MHz



For Radiated emission above 30 MHz



For the actual test configuration, please refer to the attached file (Test Setup Photo).

6.7.2 Test Procedure

For Radiated emission below 30 MHz

k. The EUT was placed on the top of a rotating table 0.8 meters above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.

l. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

m. Parallel, perpendicular, and ground-parallel orientations of the antenna are set to make the measurement.

n. For each suspected emission, the EUT was arranged to its worst case and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

o. The test-receiver system was set to Quasi-Peak Detect Function and Specified Bandwidth with Maximum Hold Mode, except for the frequency band (9 kHz to 90 kHz and 110 kHz to 490 kHz) set to average detect function and peak detect function.

Notes:

4. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 200 Hz at frequency below 150 kHz.
5. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 9 kHz or 10 kHz at frequency (150 kHz to 30 MHz).
6. All modes of operation were investigated and the worst-case emissions are reported.

For Radiated emission above 30 MHz

p. The EUT was placed on the top of a rotating table 0.8 meters above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.

q. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

r. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

s. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

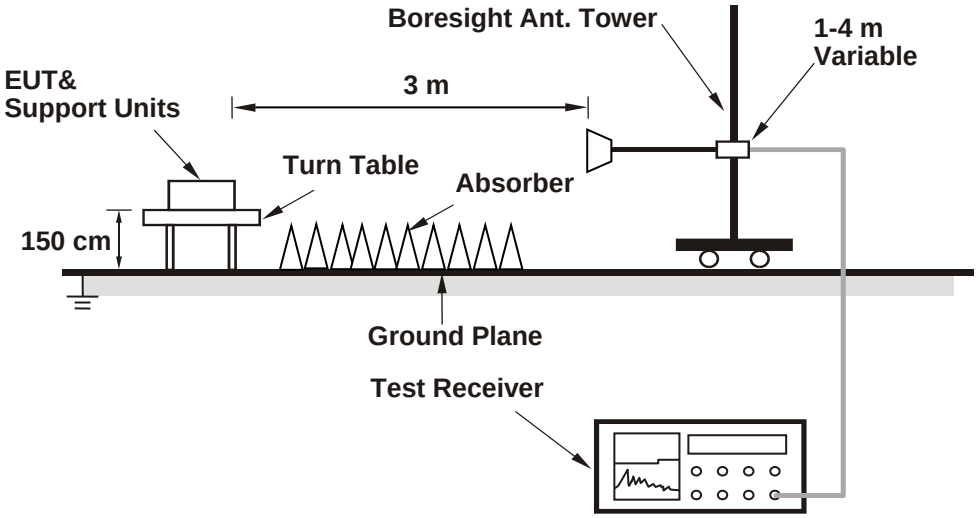
t. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.

Notes:

7. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasi-peak detection (QP) at frequency below 1 GHz.
8. All modes of operation were investigated and the worst-case emissions are reported.

6.8 Unwanted Emissions above 1 GHz

6.8.1 Test Setup



For the actual test configuration, please refer to the attached file (Test Setup Photo).

6.8.2 Test Procedure

u. The EUT was placed on the top of a rotating table 1.5 meters above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.

v. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

w. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

x. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

y. The test-receiver system was set to peak and average detects function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

Notes:

9. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) and Average detection (AV) at frequency above 1 GHz.
10. For fundamental and harmonic signal measurement, the resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is ≥ 1/T (Duty cycle < 98%) or 10 Hz (Duty cycle ≥ 98%) for Average detection (AV) at frequency above 1 GHz.
11. All modes of operation were investigated and the worst-case emissions are reported.

7 Test Results of Test Item

7.1 RF Output Power

Input Power:	56 Vdc	Environmental Conditions:	25°C, 60% RH	Tested By:	Kevin Ko

802.11a CDD

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	*Maximum Gain (dBi)	EIRP (mW)	EIRP (dBm)	EIRP Limit (dBm)	Test Result
		Chain 0	Chain 1								
36	5180	15.53	16.09	76.372	18.83	30	1.93	119.124	20.76	21	Pass
40	5200	15.41	15.72	72.079	18.58	30	1.93	112.46	20.51	21	Pass
48	5240	15.86	15.91	77.542	18.90	30	1.93	121.06	20.83	21	Pass

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
149	5745	25.73	25.56	733.86	28.66	30	Pass
157	5785	25.65	25.72	740.532	28.70	30	Pass
165	5825	25.37	26.13	754.554	28.78	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-1, the maximum gain is 5 dBi < 6 dBi, so the output power limit shall not be reduced.
3. For U-NII-3, the maximum gain is 5 dBi < 6 dBi, so the output power limit shall not be reduced.
4. * For U-NII-1, the gain of above 30 degrees from the horizon is 1.93 dBi, EIRP (dBm) = Average Power (dBm) + 1.93 dBi

802.11ac (VHT20) CDD

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	*Maximum Gain (dBi)	EIRP (mW)	EIRP (dBm)	EIRP Limit (dBm)	Test Result
		Chain 0	Chain 1								
36	5180	15.49	16.13	76.42	18.83	30	1.93	119.124	20.76	21	Pass
40	5200	15.65	15.73	74.139	18.70	30	1.93	115.611	20.63	21	Pass
48	5240	15.88	15.74	76.223	18.82	30	1.93	118.85	20.75	21	Pass

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
149	5745	25.71	25.41	719.928	28.57	30	Pass
157	5785	25.62	25.63	730.349	28.64	30	Pass
165	5825	25.47	26.14	763.521	28.83	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-1, the maximum gain is 5 dBi < 6 dBi, so the output power limit shall not be reduced.
3. For U-NII-3, the maximum gain is 5 dBi < 6 dBi, so the output power limit shall not be reduced.
4. * For U-NII-1, the gain of above 30 degrees from the horizon is 1.93 dBi, EIRP (dBm) = Average Power (dBm) + 1.93 dBi

802.11ac (VHT40) CDD

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	*Maximum Gain (dBi)	EIRP (mW)	EIRP (dBm)	EIRP Limit (dBm)	Test Result
		Chain 0	Chain 1								
38	5190	15.59	15.75	73.808	18.68	30	1.93	115.08	20.61	21	Pass
46	5230	15.67	15.71	74.137	18.70	30	1.93	115.611	20.63	21	Pass

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
151	5755	25.77	26.18	792.526	28.99	30	Pass
159	5795	26.04	26.27	825.434	29.17	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-1, the maximum gain is 5 dBi < 6 dBi, so the output power limit shall not be reduced.
3. For U-NII-3, the maximum gain is 5 dBi < 6 dBi, so the output power limit shall not be reduced.
4. * For U-NII-1, the gain of above 30 degrees from the horizon is 1.93 dBi, EIRP (dBm) = Average Power (dBm) + 1.93 dBi

802.11ac (VHT80) CDD

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	*Maximum Gain (dBi)	EIRP (mW)	EIRP (dBm)	EIRP Limit (dBm)	Test Result
		Chain 0	Chain 1								
42	5210	15.39	15.63	71.153	18.52	30	1.93	110.917	20.45	21	Pass

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
155	5775	23.51	23.47	446.719	26.50	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-1, the maximum gain is 5 dBi < 6 dBi, so the output power limit shall not be reduced.
3. For U-NII-3, the maximum gain is 5 dBi < 6 dBi, so the output power limit shall not be reduced.
4. * For U-NII-1, the gain of above 30 degrees from the horizon is 1.93 dBi, EIRP (dBm) = Average Power (dBm) + 1.93 dBi

802.11ac (VHT20) Beamforming

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	*Directional Gain (dBi)	EIRP (mW)	EIRP (dBm)	EIRP Limit (dBm)	Test Result
		Chain 0	Chain 1								
36	5180	12.46	13.16	38.321	15.83	27.99	4.94	119.399	20.77	21	Pass
40	5200	12.77	12.87	38.288	15.83	27.99	4.94	119.399	20.77	21	Pass
48	5240	12.75	12.85	38.112	15.81	27.99	4.94	118.85	20.75	21	Pass

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
149	5745	24.71	24.41	571.859	27.57	27.99	Pass
157	5785	24.62	24.63	580.137	27.64	27.99	Pass
165	5825	24.47	25.14	606.486	27.83	27.99	Pass

Notes:

1. Directional gain = gain of antenna element + 10 log (2 of TX antenna elements)
2. For U-NII-1, the directional gain is 8.01 dBi > 6 dBi, so the output power limit shall be reduced to 30-(8.01-6) = 27.99 dBm.
3. For U-NII-3, the directional gain is 8.01 dBi> 6 dBi, so the output power limit shall be reduced to 30-(8.01-6) = 27.99 dBm.
4. * For U-NII-1, the gain of above 30 degrees from the horizon is 1.93 dBi, EIRP (dBm) = Average Power (dBm) + 1.93 dBi + 10 log (2 of TX antenna elements)

802.11ac (VHT40) Beamforming

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	*Directional Gain (dBi)	EIRP (mW)	EIRP (dBm)	EIRP Limit (dBm)	Test Result
		Chain 0	Chain 1								
38	5190	12.48	12.83	36.888	15.67	27.99	4.94	115.08	20.61	21	Pass
46	5230	12.46	12.88	37.029	15.69	27.99	4.94	115.611	20.63	21	Pass

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
151	5755	24.27	24.68	561.066	27.49	27.99	Pass
159	5795	24.54	24.77	584.362	27.67	27.99	Pass

Notes:

1. Directional gain = gain of antenna element + 10 log (2 of TX antenna elements)
2. For U-NII-1, the directional gain is 8.01 dBi > 6 dBi, so the output power limit shall be reduced to 30-(8.01-6) = 27.99 dBm.
3. For U-NII-3, the directional gain is 8.01 dBi> 6 dBi, so the output power limit shall be reduced to 30-(8.01-6) = 27.99 dBm.
4. * For U-NII-1, the gain of above 30 degrees from the horizon is 1.93 dBi, EIRP (dBm) = Average Power (dBm) + 1.93 dBi + 10 log (2 of TX antenna elements)

802.11ac (VHT80) Beamforming

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	*Directional Gain (dBi)	EIRP (mW)	EIRP (dBm)	EIRP Limit (dBm)	Test Result
		Chain 0	Chain 1								
42	5210	12.54	12.94	37.626	15.75	27.99	4.94	117.22	20.69	21	Pass

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
155	5775	23.51	23.47	446.719	26.50	27.99	Pass

Notes:

1. Directional gain = gain of antenna element + 10 log (2 of TX antenna elements)
2. For U-NII-1, the directional gain is 8.01 dBi > 6 dBi, so the output power limit shall be reduced to 30-(8.01-6) = 27.99 dBm.
3. For U-NII-3, the directional gain is 8.01 dBi> 6 dBi, so the output power limit shall be reduced to 30-(8.01-6) = 27.99 dBm.
4. * For U-NII-1, the gain of above 30 degrees from the horizon is 1.93 dBi, EIRP (dBm) = Average Power (dBm) + 1.93 dBi + 10 log (2 of TX antenna elements)

7.2 Power Spectral Density

Input Power:	56 Vdc	Environmental Conditions:	25°C, 60% RH	Tested By:	Kevin Ko

802.11a

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)		Duty Factor (dB)	Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Test Result
		Chain 0	Chain 1				
36	5180	1.75	2.40	0.16	5.26	14.99	Pass
40	5200	1.95	2.31	0.16	5.30	14.99	Pass
48	5240	2.55	2.50	0.16	5.70	14.99	Pass

Notes:

1. Method E) 2) a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = gain of antenna element + 10 log (2 of TX antenna elements)
3. For U-NII-1, the directional gain is 8.01 dBi > 6dBi, so the power density limit shall be reduced to 17-(8.01-6) = 14.99 dBm/MHz.

802.11ac (VHT20)

Chan.	Chan. Freq. (MHz)	PSD (dBm/MHz)		Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Test Result
		Chain 0	Chain 1			
36	5180	1.50	1.98	4.76	14.99	Pass
40	5200	1.72	2.15	4.95	14.99	Pass
48	5240	2.15	2.23	5.20	14.99	Pass

Notes:

1. Method E) 2) a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = gain of antenna element + 10 log (2 of TX antenna elements)
3. For U-NII-1, the directional gain is 8.01 dBi > 6dBi, so the power density limit shall be reduced to 17-(8.01-6) = 14.99 dBm/MHz.

802.11ac (VHT40)

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)		Duty Factor (dB)	Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Test Result
		Chain 0	Chain 1				
38	5190	-1.64	-0.83	0.18	1.97	14.99	Pass
46	5230	-1.07	-0.77	0.18	2.27	14.99	Pass

Notes:

1. Method E) 2) a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = gain of antenna element + 10 log (2 of TX antenna elements)
3. For U-NII-1, the directional gain is 8.01 dBi > 6dBi, so the power density limit shall be reduced to 17-(8.01-6) = 14.99 dBm/MHz.

802.11ac (VHT80)

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)		Duty Factor (dB)	Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Test Result
		Chain 0	Chain 1				
42	5210	-5.14	-4.29	0.28	-1.40	14.99	Pass

Notes:

1. Method E) 2) a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = gain of antenna element + 10 log (2 of TX antenna elements)
3. For U-NII-1, the directional gain is 8.01 dBi > 6dBi, so the power density limit shall be reduced to 17-(8.01-6) = 14.99 dBm/MHz.

802.11a

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/300kHz)		Total PSD w/o Duty Factor (dBm/300kHz)	Duty Factor (dB)	Total PSD (dBm/500kHz)	PSD Limit (dBm/500kHz)	Test Result
		Chain 0	Chain 1					
149	5745	5.66	5.70	8.69	0.16	11.07	27.99	Pass
157	5785	6.12	6.75	9.46	0.16	11.84	27.99	Pass
165	5825	6.09	6.92	9.54	0.16	11.92	27.99	Pass

Notes:

1. Method E) 2) b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
2. Directional gain = gain of antenna element + 10 log (2 of TX antenna elements)
3. For U-NII-3, the directional gain is 8.01 dBi > 6 dBi, so the power density limit shall be reduced to 30-(8.01-6) = 27.99 dBm/500kHz.

802.11ac (VHT20)

Chan.	Chan. Freq. (MHz)	PSD (dBm/300kHz)		Total PSD (dBm/300kHz)	Total PSD (dBm/500kHz)	PSD Limit (dBm/500kHz)	Test Result
		Chain 0	Chain 1				
149	5745	5.39	5.50	8.46	10.68	27.99	Pass
157	5785	5.91	6.40	9.17	11.39	27.99	Pass
165	5825	6.02	6.72	9.39	11.61	27.99	Pass

Notes:

1. Method E) 2) b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
2. Directional gain = gain of antenna element + 10 log (2 of TX antenna elements)
3. For U-NII-3, the directional gain is 8.01 dBi > 6 dBi, so the power density limit shall be reduced to 30-(8.01-6) = 27.99 dBm/500kHz.

802.11ac (VHT40)

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/300kHz)		Total PSD w/o Duty Factor (dBm/300kHz)	Duty Factor (dB)	Total PSD (dBm/500kHz)	PSD Limit (dBm/500kHz)	Test Result
		Chain 0	Chain 1					
151	5755	3.02	3.18	6.11	0.18	8.51	27.99	Pass
159	5795	3.51	4.01	6.78	0.18	9.18	27.99	Pass

Notes:

1. Method E) 2) b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
2. Directional gain = gain of antenna element + 10 log (2 of TX antenna elements)
3. For U-NII-3, the directional gain is 8.01 dBi > 6 dBi, so the power density limit shall be reduced to 30-(8.01-6) = 27.99 dBm/500kHz.

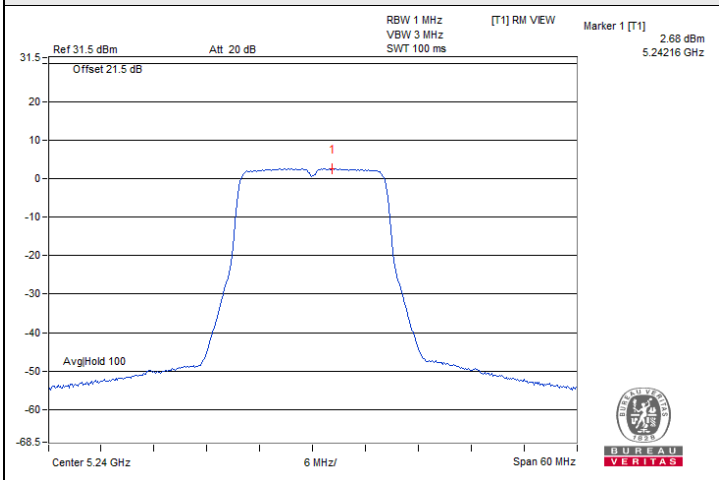
802.11ac (VHT80)

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/300kHz)		Total PSD w/o Duty Factor (dBm/300kHz)	Duty Factor (dB)	Total PSD (dBm/500kHz)	PSD Limit (dBm/500kHz)	Test Result
		Chain 0	Chain 1					
155	5775	-1.43	-1.18	1.71	0.28	4.21	27.99	Pass

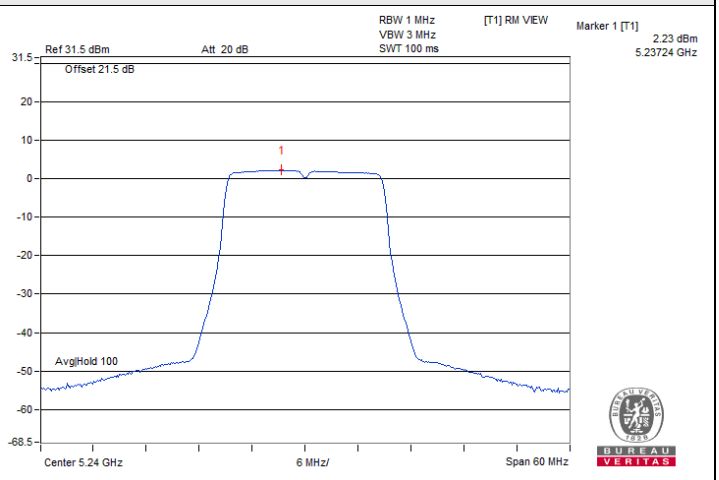
Notes:

1. Method E) 2) b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
2. Directional gain = gain of antenna element + 10 log (2 of TX antenna elements)
3. For U-NII-3, the directional gain is 8.01 dBi > 6 dBi, so the power density limit shall be reduced to 30-(8.01-6) = 27.99 dBm/500kHz.

Spectrum Plot of Maximum Value

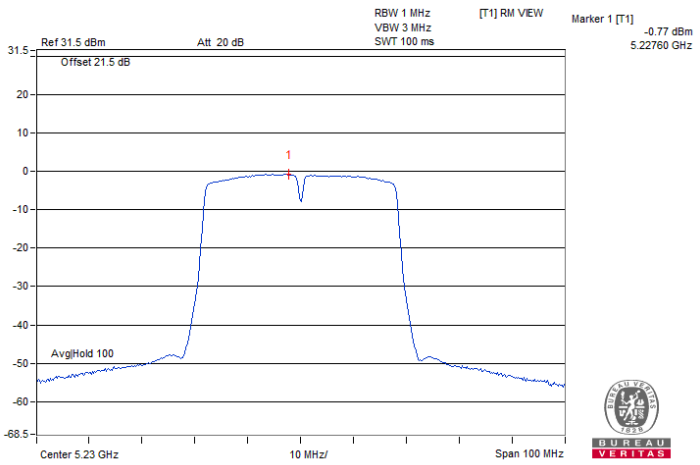


802.11a / Chain 0 : CH 48

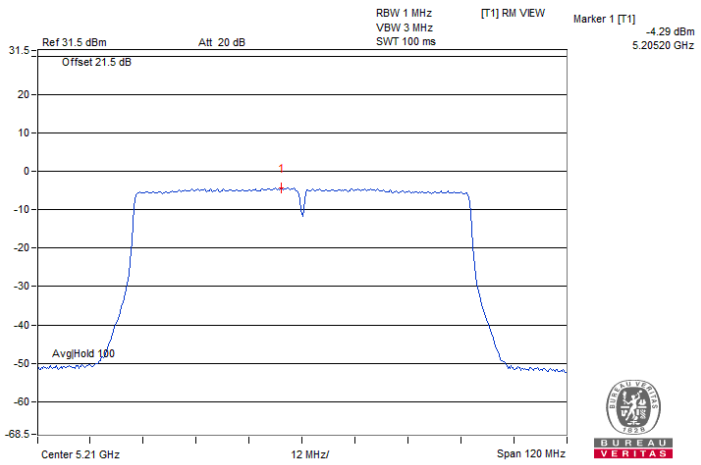


802.11ac (VHT20) / Chain 1 : CH 48

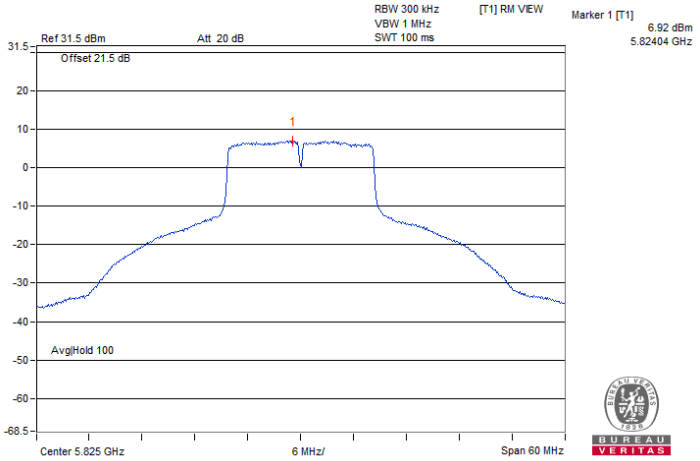
Spectrum Plot of Maximum Value



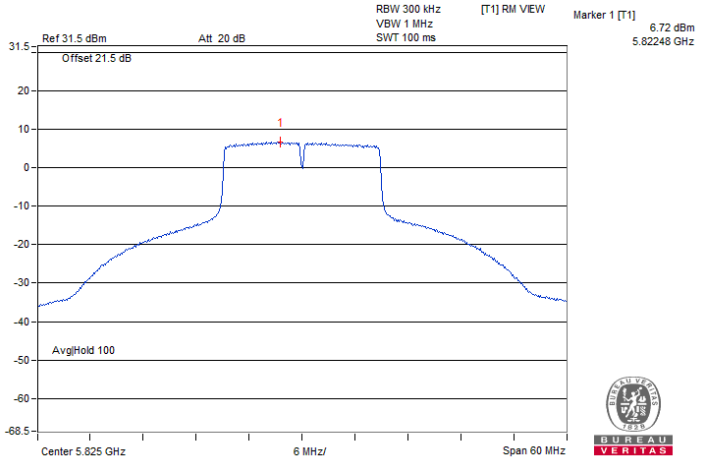
802.11ac (VHT40) / Chain 1 : CH 46



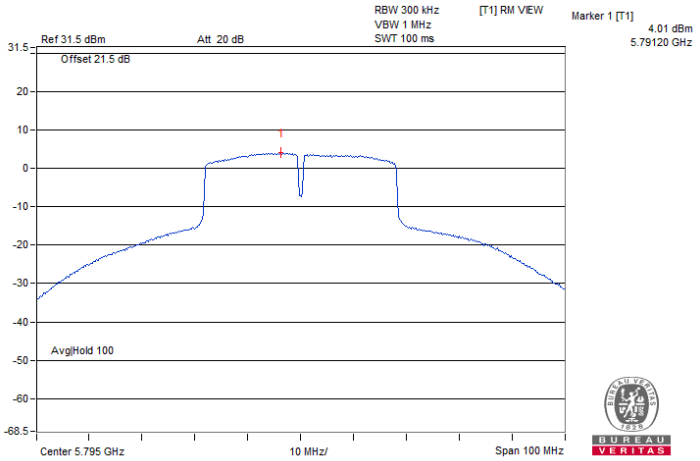
802.11ac (VHT80) / Chain 1 : CH 42



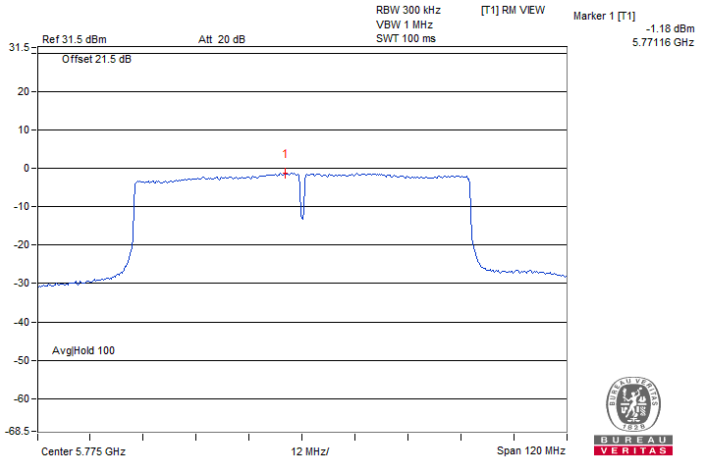
802.11a / Chain 1 : CH 165



802.11ac (VHT20) / Chain 1 : CH 165



802.11ac (VHT40) / Chain 1 : CH 159



802.11ac (VHT80) / Chain 1 : CH 155

7.3 6 dB Bandwidth

Input Power:	56 Vdc	Environmental Conditions:	25°C, 60% RH	Tested By:	Kevin Ko

802.11a

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
149	5745	16.32	16.34	0.5	Pass
157	5785	16.33	16.34	0.5	Pass
165	5825	16.34	16.37	0.5	Pass

802.11ac (VHT20)

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
149	5745	17.58	17.57	0.5	Pass
157	5785	17.57	17.54	0.5	Pass
165	5825	17.56	17.55	0.5	Pass

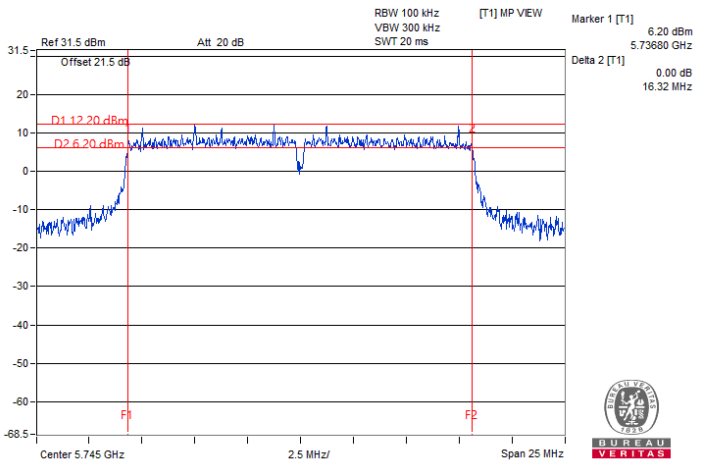
802.11ac (VHT40)

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
151	5755	36.31	35.68	0.5	Pass
159	5795	35.34	34.20	0.5	Pass

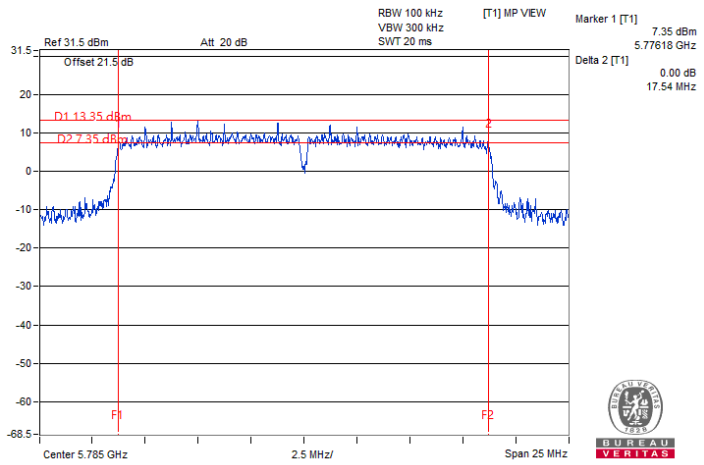
802.11ac (VHT80)

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
155	5775	76.36	76.33	0.5	Pass

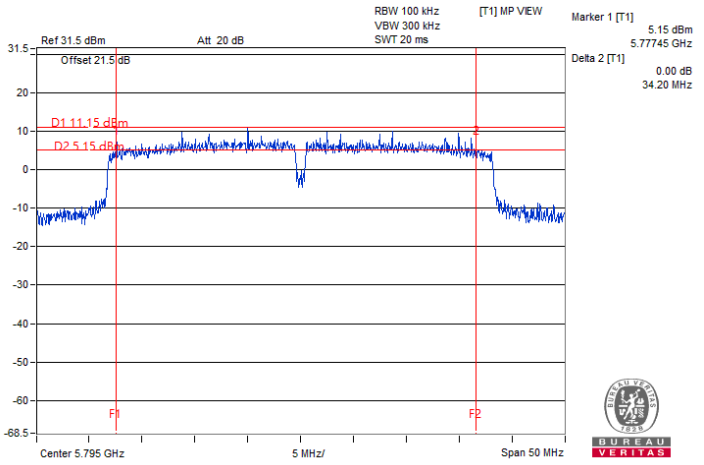
Spectrum Plot of Minimum Value



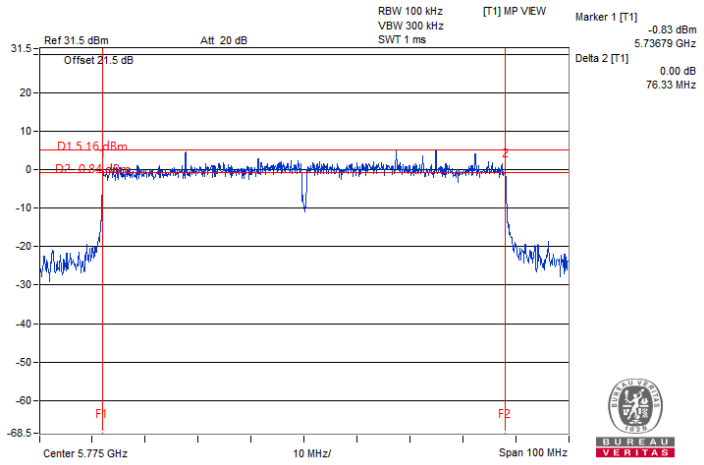
802.11a / Chain 0 : CH 149



802.11ac (VHT20) / Chain 1 : CH 157



802.11ac (VHT40) / Chain 1 : CH 159



802.11ac (VHT80) / Chain 1 : CH 155

7.4 Occupied Bandwidth

Input Power:	56 Vdc	Environmental Conditions:	25°C, 60% RH	Tested By:	Kevin Ko

802.11a

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
36	5180	16.44	16.50
40	5200	16.44	16.44
48	5240	16.50	16.50
149	5745	16.80	16.92
157	5785	17.10	18.12
165	5825	18.30	21.00

802.11ac (VHT20)

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
36	5180	17.64	17.70
40	5200	17.64	17.64
48	5240	17.64	17.64
149	5745	17.88	17.82
157	5785	18.18	18.30
165	5825	18.48	22.02

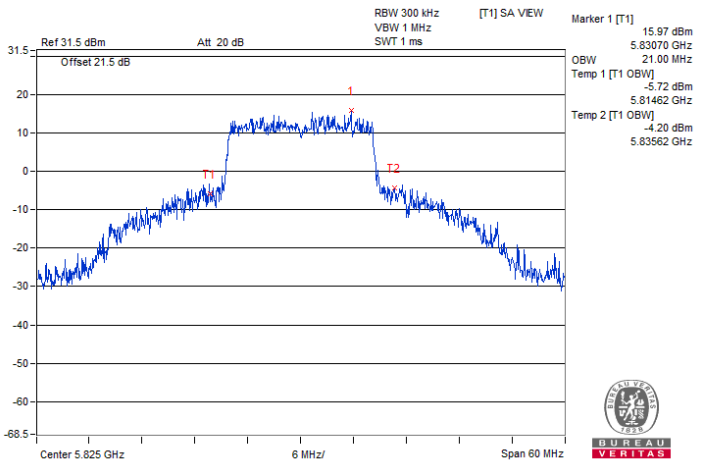
802.11ac (VHT40)

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
38	5190	36.12	36.24
46	5230	36.00	36.12
151	5755	36.84	36.96
159	5795	38.88	42.00

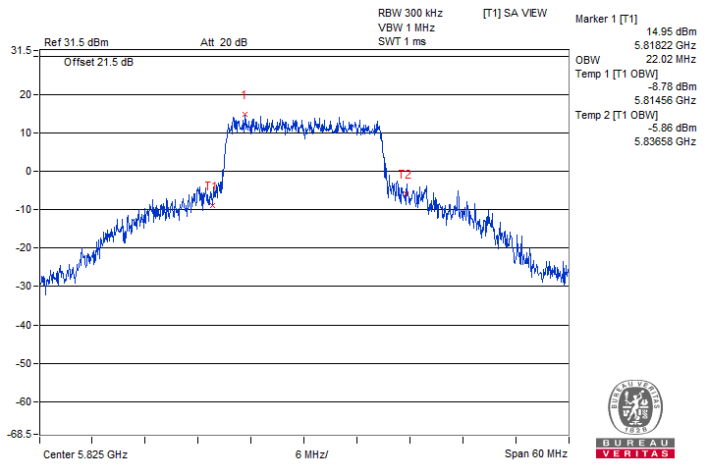
802.11ac (VHT80)

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
42	5210	75.84	75.84
155	5775	76.32	76.08

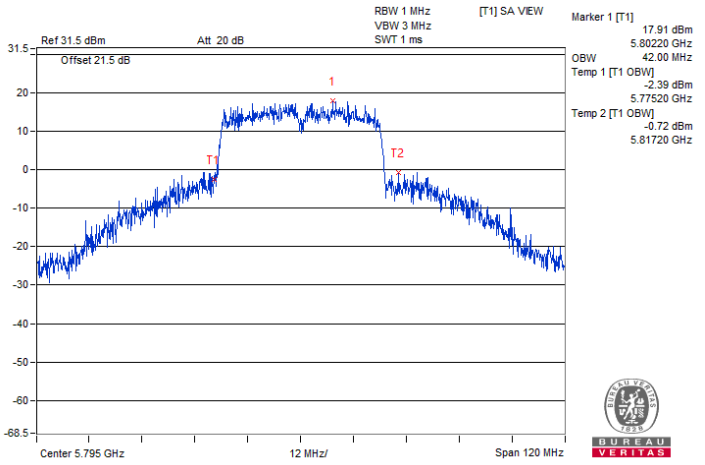
Spectrum Plot of Maximum Value



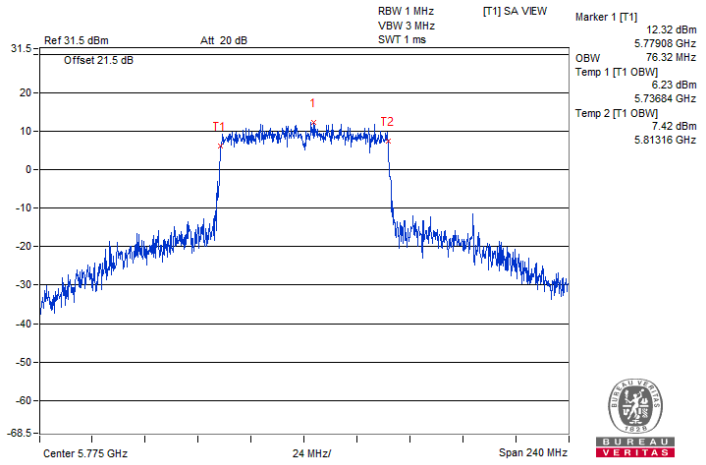
802.11a / Chain 1 : CH 165



802.11ac (VHT20) / Chain 1 : CH 165



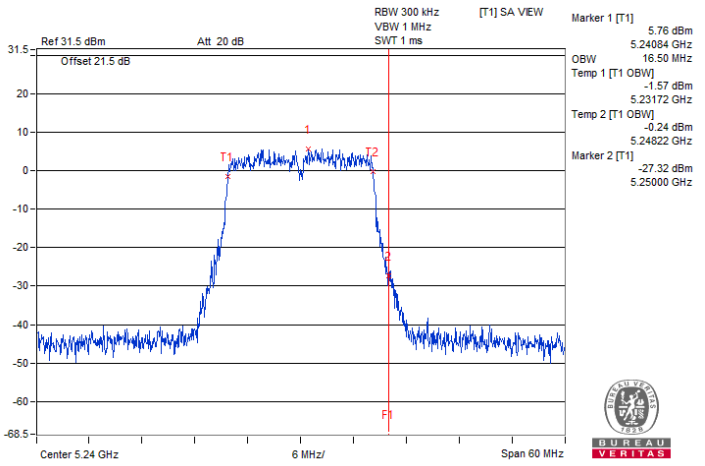
802.11ac (VHT40) / Chain 1 : CH 159



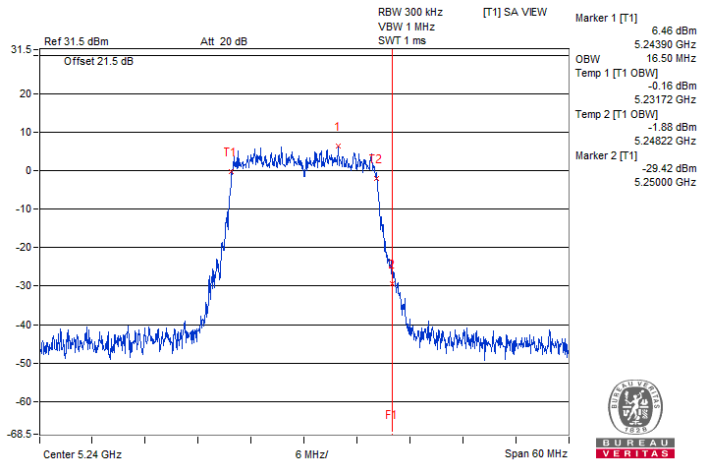
802.11ac (VHT80) / Chain 0 : CH 155

Spectrum Plot for nearby DFS band

(DFS is required, if 99% OCP straddle into U-NII-2A)



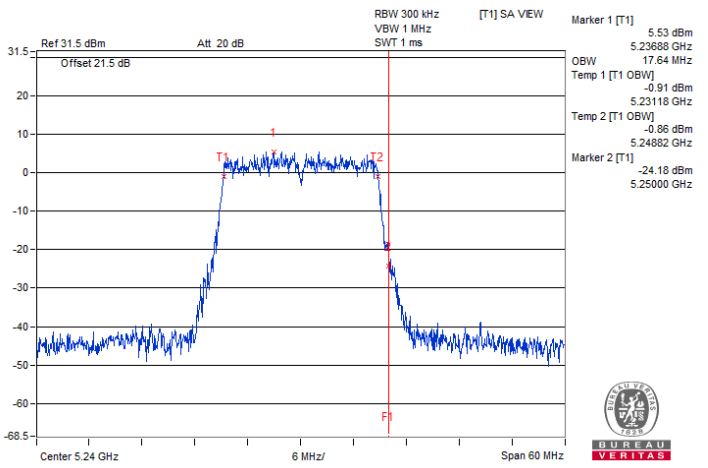
802.11a / Chain 0 : CH 48



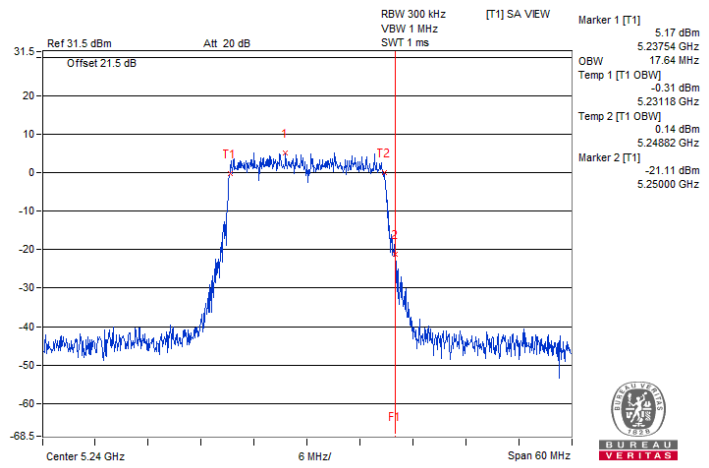
802.11a / Chain 1 : CH 48

Spectrum Plot for nearby DFS band

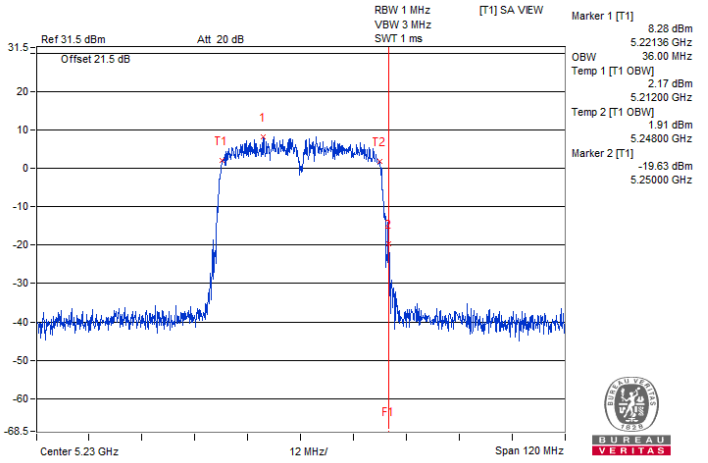
(DFS is required, if 99% OCP straddle into U-NII-2A)



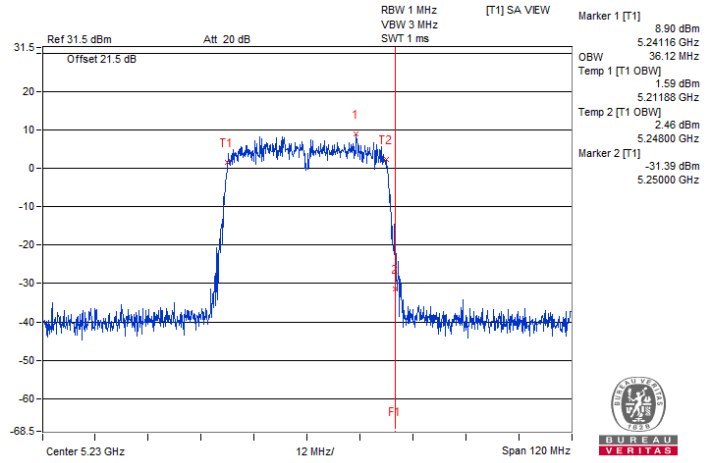
802.11ac (VHT20) / Chain 0 : CH 48



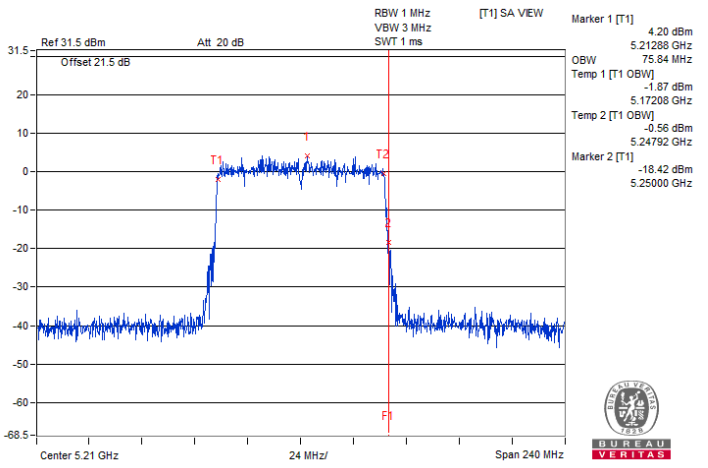
802.11ac (VHT20) / Chain 1 : CH 48



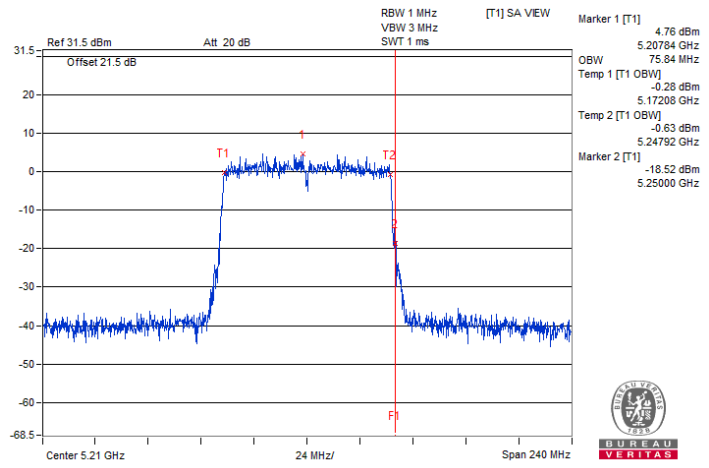
802.11ac (VHT40) / Chain 0 : CH 46



802.11ac (VHT40) / Chain 1 : CH 46



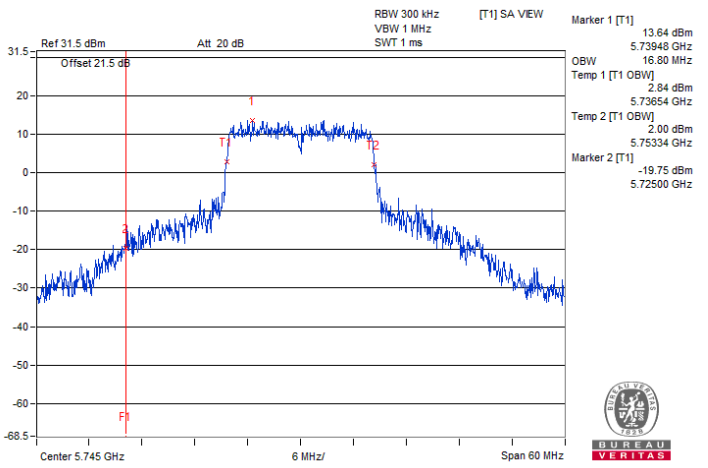
802.11ac (VHT80) / Chain 0 : CH 42



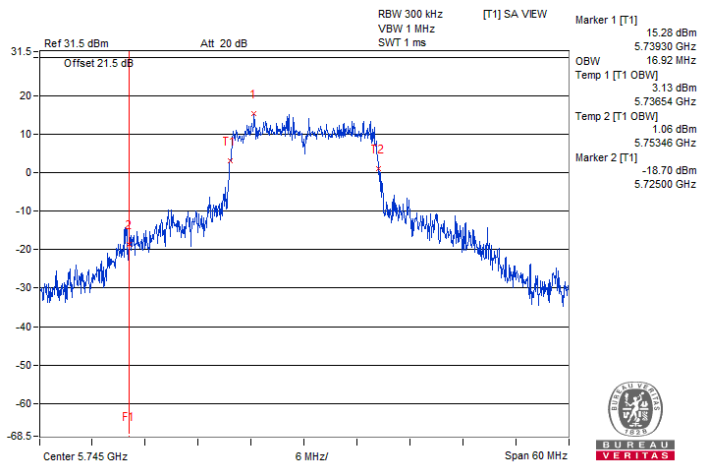
802.11ac (VHT80) / Chain 1 : CH 42

Spectrum Plot for nearby DFS band

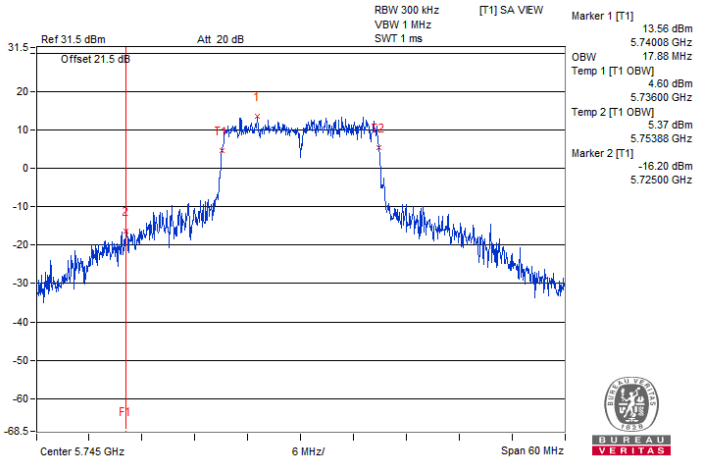
(DFS is required, if 99% OCP straddle into U-NII-2C)



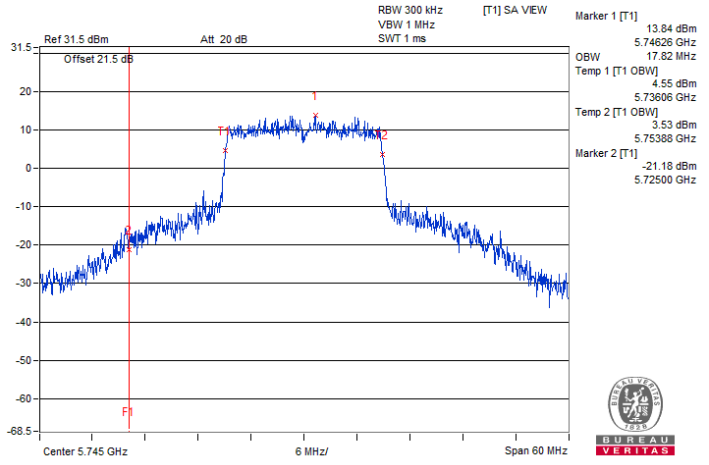
802.11a / Chain 0 : CH 149



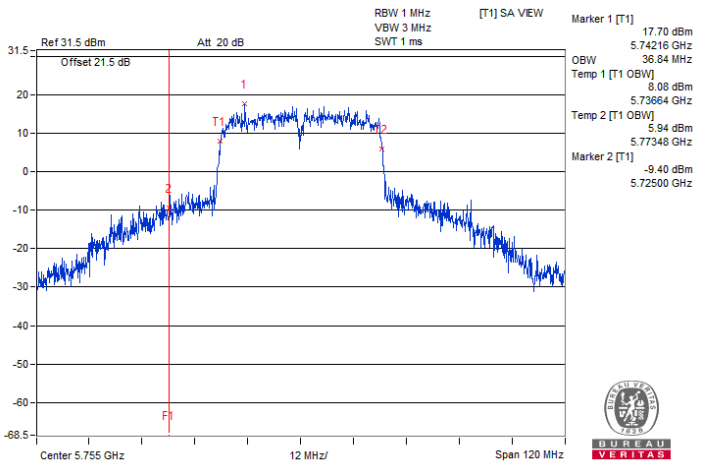
802.11a / Chain 1 : CH 149



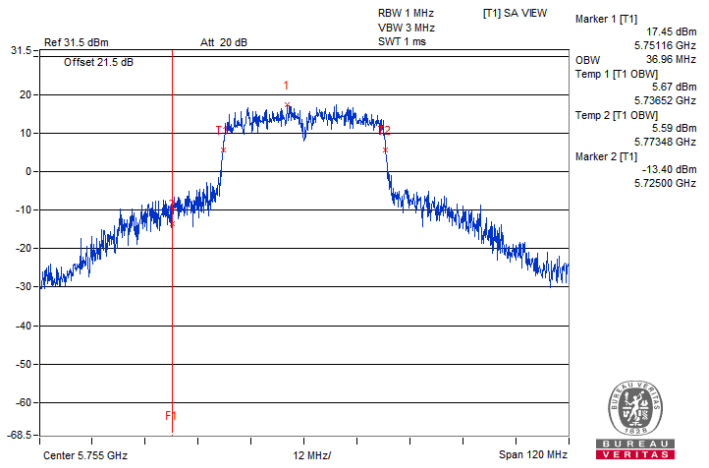
802.11ac (VHT20) / Chain 0 : CH 149



802.11ac (VHT20) / Chain 1 : CH 149



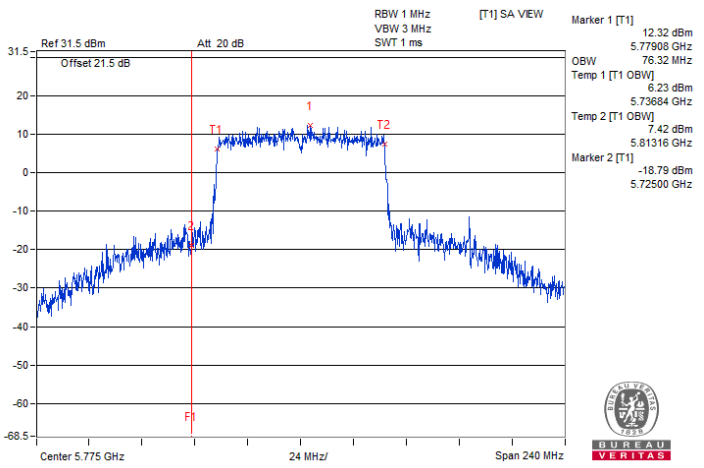
802.11ac (VHT40) / Chain 0 : CH 151



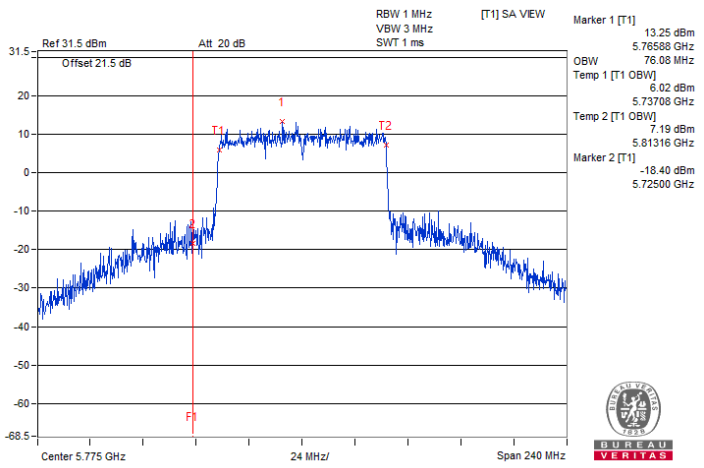
802.11ac (VHT40) / Chain 1 : CH 151

Spectrum Plot for nearby DFS band

(DFS is required, if 99% OCP straddle into U-NII-2C)



802.11ac (VHT80) / Chain 0 : CH 155



802.11ac (VHT80) / Chain 1 : CH 155

7.5 Frequency Stability

Input Power:	56 Vdc	Environmental Conditions:	25°C, 60% RH	Tested By:	Kevin Ko

802.11a

Frequency Stability Versus Temperature									
Operating Frequency: 5180 MHz									
Temp. (℃)	Power Supply (Vdc)	0 Minute		2 Minutes		5 Minutes		10 Minutes	
		Measured Frequency (MHz)	Test Result	Measured Frequency (MHz)	Test Result	Measured Frequency (MHz)	Test Result	Measured Frequency (MHz)	Test Result
50	56	5180.0184	Pass	5180.0172	Pass	5180.0193	Pass	5180.0183	Pass
40	56	5180.0047	Pass	5180.0005	Pass	5180.0026	Pass	5180.0026	Pass
30	56	5179.9853	Pass	5179.9829	Pass	5179.9851	Pass	5179.9812	Pass
20	56	5179.9914	Pass	5179.9932	Pass	5179.9918	Pass	5179.9922	Pass
10	56	5180.0083	Pass	5180.008	Pass	5180.0074	Pass	5180.0092	Pass
0	56	5180.0009	Pass	5180.0031	Pass	5180.0056	Pass	5180.001	Pass
-10	56	5180.0208	Pass	5180.0212	Pass	5180.0226	Pass	5180.0248	Pass
-20	56	5180.0213	Pass	5180.0223	Pass	5180.0217	Pass	5180.0247	Pass

Frequency Stability Versus Voltage									
Operating Frequency: 5180 MHz									
Temp. (℃)	Power Supply (Vdc)	0 Minute		2 Minutes		5 Minutes		10 Minutes	
		Measured Frequency (MHz)	Test Result	Measured Frequency (MHz)	Test Result	Measured Frequency (MHz)	Test Result	Measured Frequency (MHz)	Test Result
20	64.4	5179.9825	Pass	5179.9845	Pass	5179.9813	Pass	5179.9807	Pass
	56	5179.9914	Pass	5179.9932	Pass	5179.9918	Pass	5179.9922	Pass
	47.6	5179.9926	Pass	5179.9935	Pass	5179.9936	Pass	5179.9934	Pass

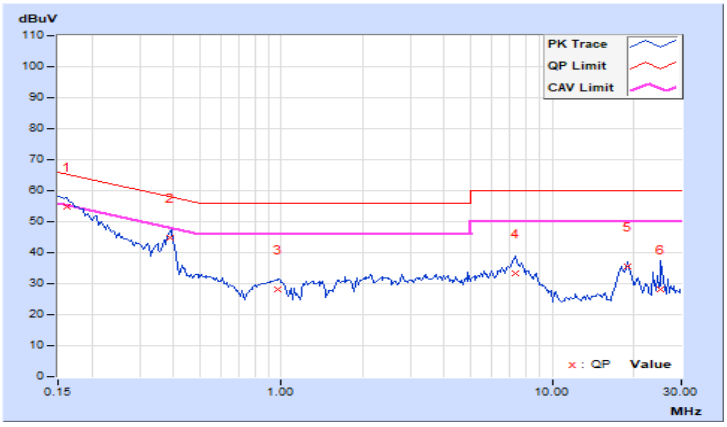
7.6 AC Power Conducted Emissions

RF Mode	802.11ac (VHT20)	**Channel**	CH 165：5825 MHz
Frequency Range	150 kHz ~ 30 MHz	**Detector Function & Resolution Bandwidth**	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power (System)	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 75% RH
Tested By	Carter Lin		

Phase Of Power : Line (L)										
No	**Frequency (MHz)**	**Correction Factor (dB)**	**Reading Value (dBuV)**		**Emission Level (dBuV)**		**Limit (dBuV)**		**Margin (dB)**	
			Q.P.	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**
1	0.16172	9.96	44.98	28.31	54.94	38.27	65.38	55.38	-10.44	-17.11
2	0.38828	9.97	34.85	32.21	44.82	42.18	58.10	48.10	-13.28	-5.92
3	0.96641	10.00	18.12	13.39	28.12	23.39	56.00	46.00	-27.88	-22.61
4	7.28906	10.34	23.09	18.14	33.43	28.48	60.00	50.00	-26.57	-21.52
5	19.08594	11.05	24.57	24.03	35.62	35.08	60.00	50.00	-24.38	-14.92
6	24.97656	11.18	16.85	12.76	28.03	23.94	60.00	50.00	-31.97	-26.06

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value

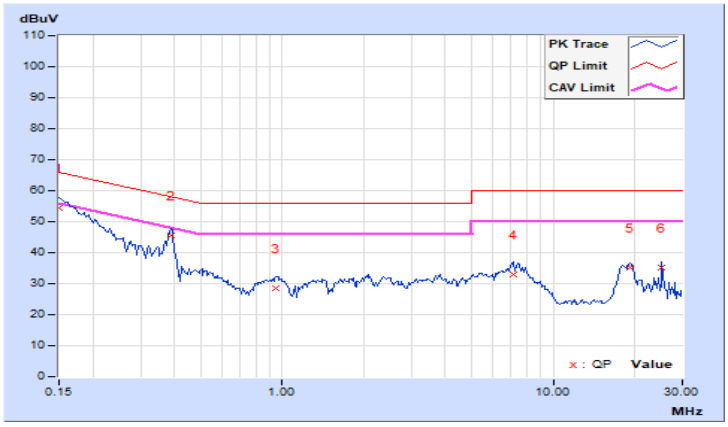


RF Mode	802.11ac (VHT20)	**Channel**	CH 165：5825 MHz
Frequency Range	150 kHz ~ 30 MHz	**Detector Function & Resolution Bandwidth**	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power (System)	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 75% RH
Tested By	Carter Lin		

Phase Of Power : Neutral (N)										
No	**Frequency (MHz)**	**Correction Factor (dB)**	**Reading Value (dBuV)**		**Emission Level (dBuV)**		**Limit (dBuV)**		**Margin (dB)**	
			Q.P.	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**
1	0.15000	9.93	44.42	26.57	54.35	36.50	66.00	56.00	-11.65	-19.50
2	**0.38828**	**9.94**	**35.74**	**33.75**	**45.68**	**43.69**	**58.10**	**48.10**	**-12.42**	**-4.41**
3	0.95078	9.97	18.71	14.53	28.68	24.50	56.00	46.00	-27.32	-21.50
4	7.16016	10.24	22.60	17.52	32.84	27.76	60.00	50.00	-27.16	-22.24
5	19.34766	10.80	24.38	22.61	35.18	33.41	60.00	50.00	-24.82	-16.59
6	25.15106	10.86	24.26	19.37	35.12	30.23	60.00	50.00	-24.88	-19.77

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value



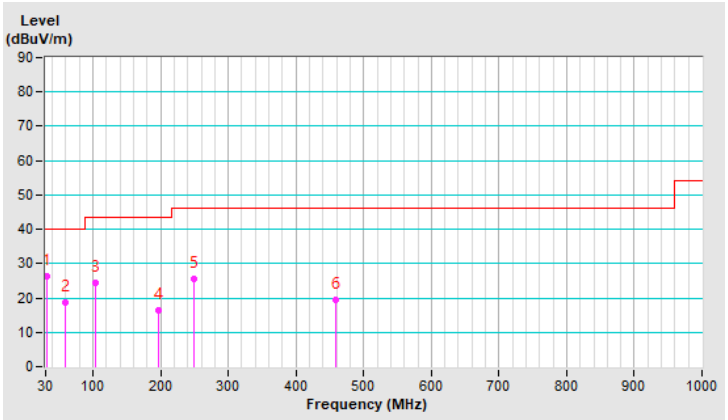
7.7 Unwanted Emissions below 1 GHz

RF Mode	802.11ac (VHT20)	**Channel**	CH 165：5825 MHz
Frequency Range	9 kHz ~ 1 GHz	**Detector Function & Bandwidth**	(QP) RB = 120kHz
Input Power (System)	120 Vac, 60 Hz	**Environmental Conditions**	31°C, 76% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	**Frequency (MHz)**	**Emission Level (dBuV/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	32.28	26.2 QP	40.0	-13.8	1.00 H	246	45.0	-18.8
2	59.44	18.7 QP	40.0	-21.3	2.00 H	294	37.0	-18.3
3	103.87	24.2 QP	43.5	-19.3	2.00 H	103	45.9	-21.7
4	195.98	16.5 QP	43.5	-27.0	1.50 H	67	37.5	-21.0
5	250.01	25.6 QP	46.0	-20.4	1.00 H	284	44.6	-19.0
6	458.52	19.5 QP	46.0	-26.5	2.00 H	64	32.7	-13.2

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The emission levels were very low against the limit of frequency range 9 kHz ~ 30 MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

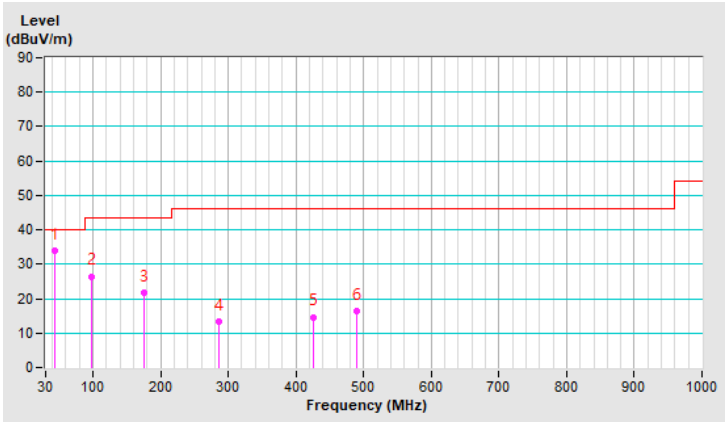


RF Mode	802.11ac (VHT20)	**Channel**	CH 165：5825 MHz
Frequency Range	9 kHz ~ 1 GHz	**Detector Function & Bandwidth**	(QP) RB = 120kHz
Input Power (System)	120 Vac, 60 Hz	**Environmental Conditions**	31°C, 76% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**Emission Level (dBuV/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	**42.80**	**33.8 QP**	**40.0**	**-6.2**	**1.00 V**	**322**	**51.7**	**-17.9**
2	98.05	26.5 QP	43.5	-17.0	1.50 V	360	49.2	-22.7
3	176.19	21.6 QP	43.5	-21.9	1.00 V	353	40.5	-18.9
4	286.29	13.4 QP	46.0	-32.6	2.00 V	328	30.9	-17.5
5	424.86	14.7 QP	46.0	-31.3	1.00 V	201	28.8	-14.1
6	490.63	16.4 QP	46.0	-29.6	1.50 V	360	29.2	-12.8

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The emission levels were very low against the limit of frequency range 9 kHz ~ 30 MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.



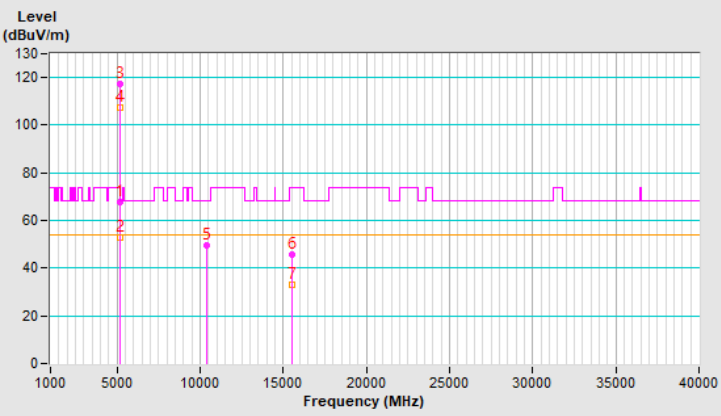
7.8 Unwanted Emissions above 1 GHz

RF Mode	802.11a	**Channel**	CH 36：5180 MHz
Frequency Range	1 GHz ~ 40 GHz	**Detector Function & Bandwidth**	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 510 Hz
Input Power (System)	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 66% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	**Frequency (MHz)**	**Emission Level (dBuV/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	5150.00	67.9 PK	74.0	-6.1	1.38 H	350	65.5	2.4
2	5150.00	53.1 AV	54.0	-0.9	1.38 H	350	50.7	2.4
3	*5180.00	117.1 PK			1.38 H	350	114.9	2.2
4	*5180.00	107.6 AV			1.38 H	350	105.4	2.2
5	#10360.00	49.6 PK	68.2	-18.6	1.63 H	236	37.9	11.7
6	15540.00	45.5 PK	74.0	-28.5	2.57 H	120	33.7	11.8
7	15540.00	33.1 AV	54.0	-20.9	2.57 H	120	21.3	11.8

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. " # ": The radiated frequency is out of the restricted band.

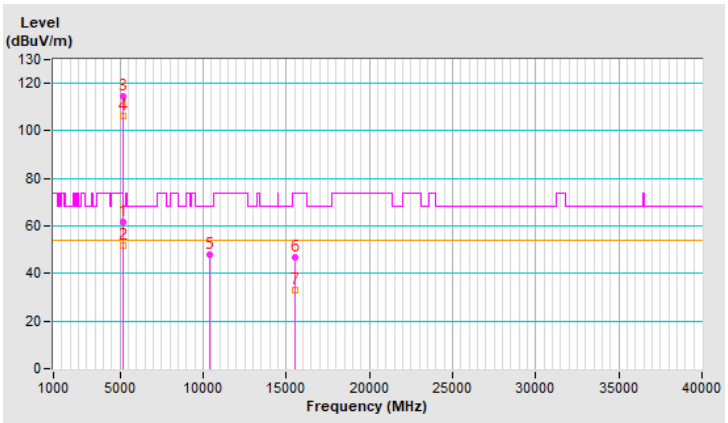


RF Mode	802.11a	**Channel**	CH 36：5180 MHz
Frequency Range	1 GHz ~ 40 GHz	**Detector Function & Bandwidth**	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 510 Hz
Input Power (System)	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 66% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**Emission Level (dBuV/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	5150.00	61.8 PK	74.0	-12.2	3.28 V	360	59.4	2.4
2	5150.00	51.7 AV	54.0	-2.3	3.28 V	360	49.3	2.4
3	*5180.00	114.8 PK			3.28 V	360	112.6	2.2
4	*5180.00	106.1 AV			3.28 V	360	103.9	2.2
5	#10360.00	47.7 PK	68.2	-20.5	1.71 V	20	36.0	11.7
6	15540.00	47.0 PK	74.0	-27.0	3.94 V	360	35.2	11.8
7	15540.00	33.0 AV	54.0	-21.0	3.94 V	360	21.2	11.8

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. " # ": The radiated frequency is out of the restricted band.

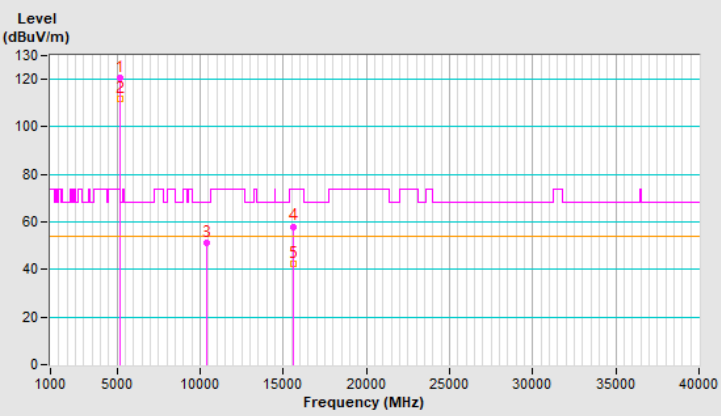


RF Mode	802.11a	**Channel**	CH 40：5200 MHz
Frequency Range	1 GHz ~ 40 GHz	**Detector Function & Bandwidth**	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 510 Hz
Input Power (System)	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 66% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	**Frequency (MHz)**	**Emission Level (dBuV/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	*5200.00	120.8 PK			1.76 H	1	118.7	2.1
2	*5200.00	111.8 AV			1.76 H	1	109.7	2.1
3	#10400.00	51.3 PK	68.2	-16.9	1.65 H	230	39.4	11.9
4	15600.00	58.1 PK	74.0	-15.9	2.57 H	122	46.6	11.5
5	15600.00	42.4 AV	54.0	-11.6	2.57 H	122	30.9	11.5

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. " # ": The radiated frequency is out of the restricted band.

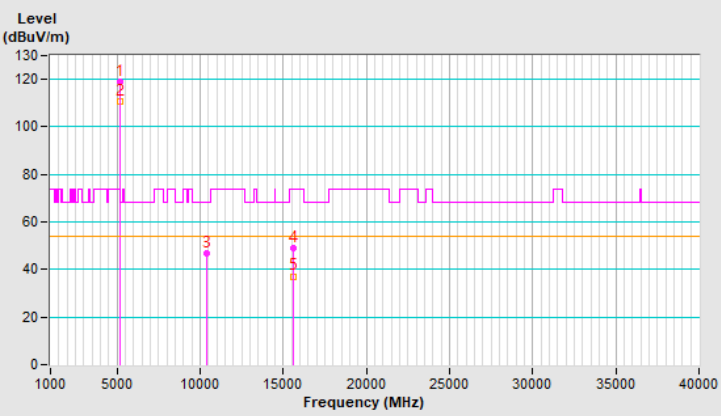


RF Mode	802.11a	Channel	CH 40：5200 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 510 Hz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25°C, 66% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5200.00	119.0 PK			3.30 V	360	116.9	2.1
2	*5200.00	110.6 AV			3.30 V	360	108.5	2.1
3	#10400.00	46.7 PK	68.2	-21.5	1.68 V	16	34.8	11.9
4	15600.00	49.0 PK	74.0	-25.0	3.98 V	360	37.5	11.5
5	15600.00	37.2 AV	54.0	-16.8	3.98 V	360	25.7	11.5

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. " # ": The radiated frequency is out of the restricted band.

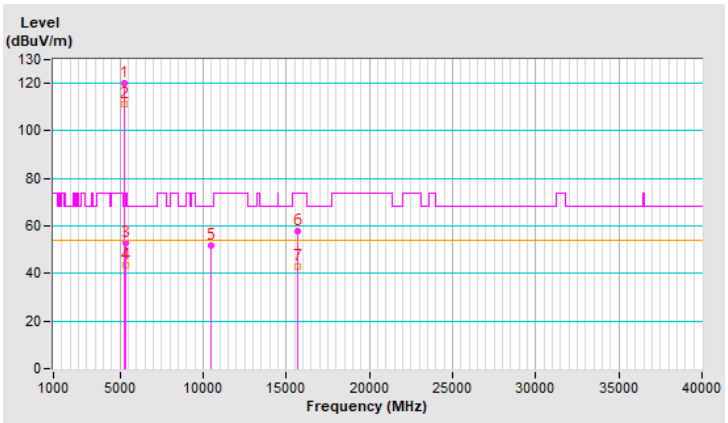


RF Mode	802.11a	**Channel**	CH 48：5240 MHz
Frequency Range	1 GHz ~ 40 GHz	**Detector Function & Bandwidth**	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 510 Hz
Input Power (System)	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 66% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	**Frequency (MHz)**	**Emission Level (dBuV/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	*5240.00	120.1 PK			1.90 H	347	118.2	1.9
2	*5240.00	111.5 AV			1.90 H	347	109.6	1.9
3	5350.00	53.1 PK	74.0	-20.9	1.90 H	347	51.1	2.0
4	5350.00	43.4 AV	54.0	-10.6	1.90 H	347	41.4	2.0
5	#10480.00	51.7 PK	68.2	-16.5	1.58 H	232	39.8	11.9
6	15720.00	57.8 PK	74.0	-16.2	2.58 H	116	46.1	11.7
7	15720.00	42.8 AV	54.0	-11.2	2.58 H	116	31.1	11.7

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. " # ": The radiated frequency is out of the restricted band.

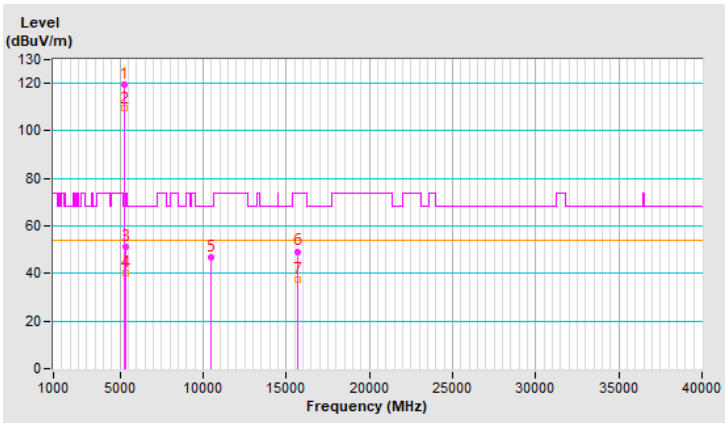


RF Mode	802.11a	Channel	CH 48：5240 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 510 Hz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25°C, 66% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5240.00	119.5 PK			1.78 V	355	117.6	1.9
2	*5240.00	109.3 AV			1.78 V	355	107.4	1.9
3	5350.00	51.1 PK	74.0	-22.9	1.78 V	355	49.1	2.0
4	5350.00	40.0 AV	54.0	-14.0	1.78 V	355	38.0	2.0
5	#10480.00	47.0 PK	68.2	-21.2	1.63 V	18	35.1	11.9
6	15720.00	49.3 PK	74.0	-24.7	3.97 V	354	37.6	11.7
7	15720.00	37.5 AV	54.0	-16.5	3.97 V	354	25.8	11.7

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. " # ": The radiated frequency is out of the restricted band.

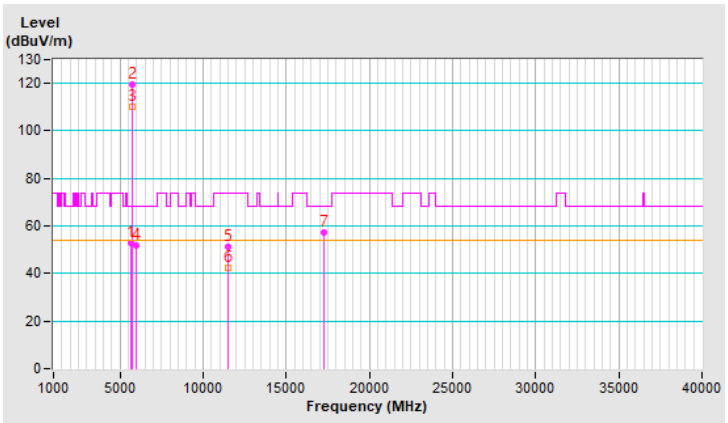


RF Mode	802.11a	Channel	CH 149：5745 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 510 Hz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25°C, 66% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5643.78	52.9 PK	68.2	-15.3	1.73 H	360	50.6	2.3
2	*5745.00	119.6 PK			1.73 H	360	117.1	2.5
3	*5745.00	110.3 AV			1.73 H	360	107.8	2.5
4	#5936.16	51.7 PK	68.2	-16.5	1.73 H	360	48.8	2.9
5	11490.00	51.0 PK	74.0	-23.0	1.57 H	220	38.6	12.4
6	11490.00	42.4 AV	54.0	-11.6	1.57 H	220	30.0	12.4
7	#17235.00	57.5 PK	68.2	-10.7	2.62 H	120	40.8	16.7

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. " # ": The radiated frequency is out of the restricted band.

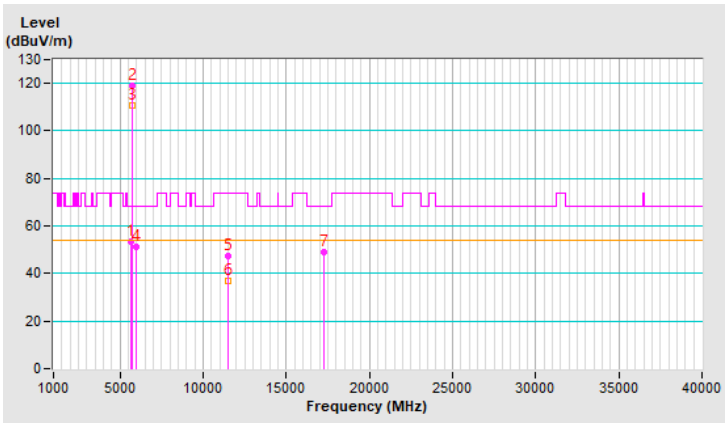


RF Mode	802.11a	**Channel**	CH 149：5745 MHz
Frequency Range	1 GHz ~ 40 GHz	**Detector Function & Bandwidth**	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 510 Hz
Input Power (System)	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 66% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**Emission Level (dBuV/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	#5636.00	53.5 PK	68.2	-14.7	1.84 V	353	51.2	2.3
2	*5745.00	119.1 PK			1.84 V	353	116.6	2.5
3	*5745.00	110.5 AV			1.84 V	353	108.0	2.5
4	#5967.05	51.2 PK	68.2	-17.0	1.84 V	353	48.3	2.9
5	11490.00	47.2 PK	74.0	-26.8	1.59 V	26	34.8	12.4
6	11490.00	36.9 AV	54.0	-17.1	1.59 V	26	24.5	12.4
7	#17235.00	49.2 PK	68.2	-19.0	3.98 V	360	32.5	16.7

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. " # ": The radiated frequency is out of the restricted band.

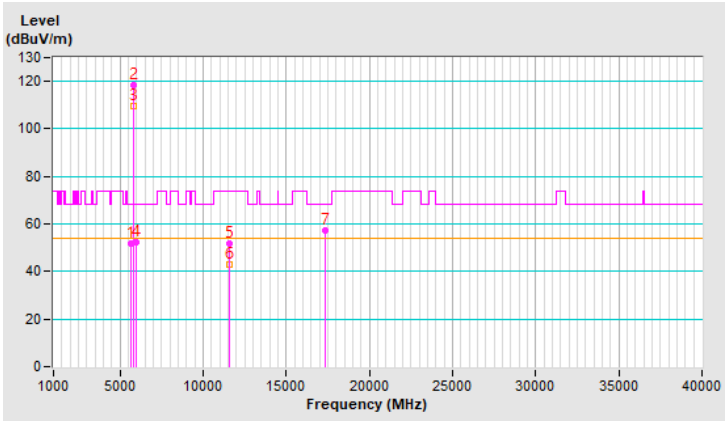


RF Mode	802.11a	Channel	CH 157：5785 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 510 Hz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25°C, 66% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5632.66	51.6 PK	68.2	-16.6	2.15 H	342	49.3	2.3
2	*5785.00	118.3 PK			2.15 H	342	115.6	2.7
3	*5785.00	109.4 AV			2.15 H	342	106.7	2.7
4	#5967.31	52.3 PK	68.2	-15.9	2.15 H	342	49.4	2.9
5	11570.00	51.8 PK	74.0	-22.2	1.58 H	247	39.4	12.4
6	11570.00	43.1 AV	54.0	-10.9	1.58 H	247	30.7	12.4
7	#17355.00	57.5 PK	68.2	-10.7	2.63 H	109	39.9	17.6

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. " # ": The radiated frequency is out of the restricted band.

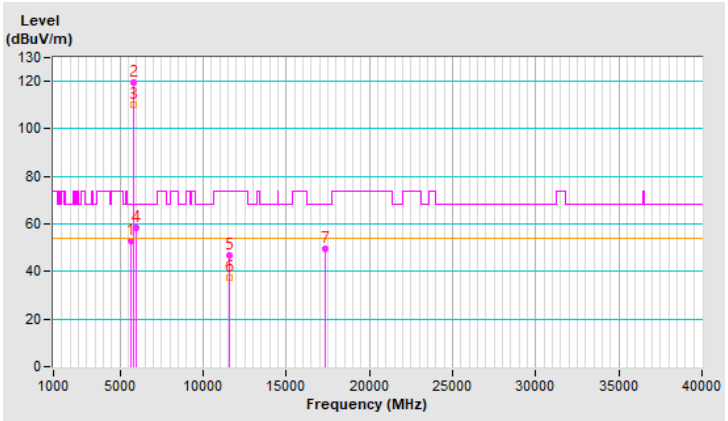


RF Mode	802.11a	**Channel**	CH 157：5785 MHz
Frequency Range	1 GHz ~ 40 GHz	**Detector Function & Bandwidth**	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 510 Hz
Input Power (System)	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 66% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**Emission Level (dBuV/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	#5632.66	52.9 PK	68.2	-15.3	1.89 V	347	50.6	2.3
2	*5785.00	119.5 PK			1.89 V	347	116.8	2.7
3	*5785.00	110.3 AV			1.89 V	347	107.6	2.7
4	#5967.31	58.2 PK	68.2	-10.0	1.89 V	347	55.3	2.9
5	11570.00	47.0 PK	74.0	-27.0	1.68 V	29	34.6	12.4
6	11570.00	37.2 AV	54.0	-16.8	1.68 V	29	24.8	12.4
7	#17355.00	49.7 PK	68.2	-18.5	3.99 V	356	32.1	17.6

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. " # ": The radiated frequency is out of the restricted band.

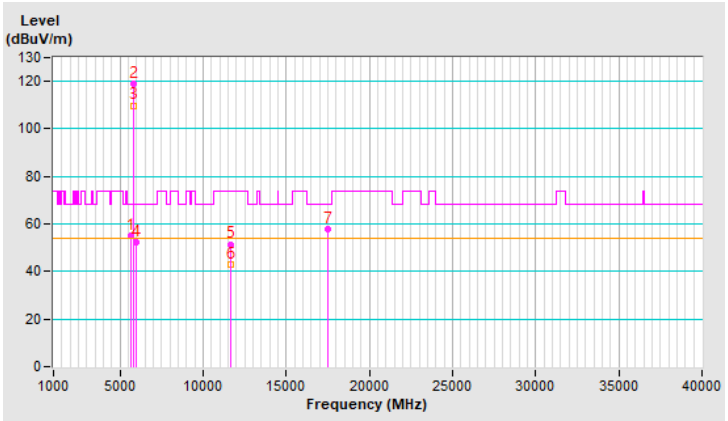


RF Mode	802.11a	Channel	CH 165：5825 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 510 Hz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25°C, 66% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5647.76	55.0 PK	68.2	-13.2	1.75 H	336	52.7	2.3
2	*5825.00	118.7 PK			1.75 H	336	115.9	2.8
3	*5825.00	109.9 AV			1.75 H	336	107.1	2.8
4	#5952.37	52.2 PK	68.2	-16.0	1.75 H	336	49.3	2.9
5	11650.00	51.5 PK	74.0	-22.5	1.59 H	239	39.6	11.9
6	11650.00	43.0 AV	54.0	-11.0	1.59 H	239	31.1	11.9
7	#17475.00	57.7 PK	68.2	-10.5	2.59 H	110	39.2	18.5

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. " # ": The radiated frequency is out of the restricted band.

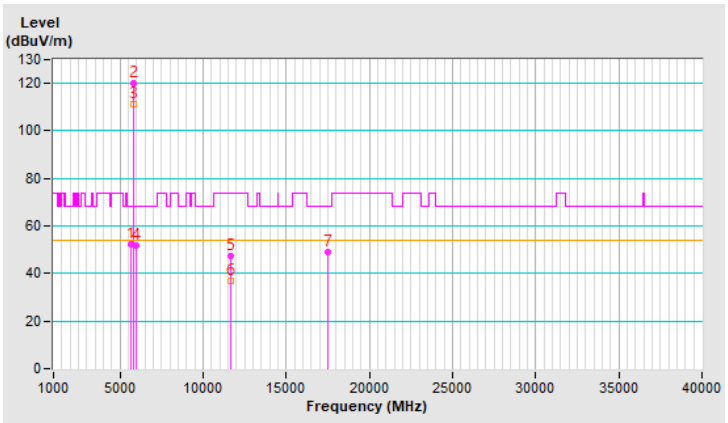


RF Mode	802.11a	Channel	CH 165：5825 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 510 Hz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25°C, 66% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5642.72	52.4 PK	68.2	-15.8	1.82 V	351	50.1	2.3
2	*5825.00	120.1 PK			1.82 V	351	117.3	2.8
3	*5825.00	111.2 AV			1.82 V	351	108.4	2.8
4	#5962.09	52.0 PK	68.2	-16.2	1.82 V	351	49.1	2.9
5	11650.00	47.1 PK	74.0	-26.9	1.68 V	3	35.2	11.9
6	11650.00	37.0 AV	54.0	-17.0	1.68 V	3	25.1	11.9
7	#17475.00	49.0 PK	68.2	-19.2	3.99 V	360	30.5	18.5

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. " # ": The radiated frequency is out of the restricted band.

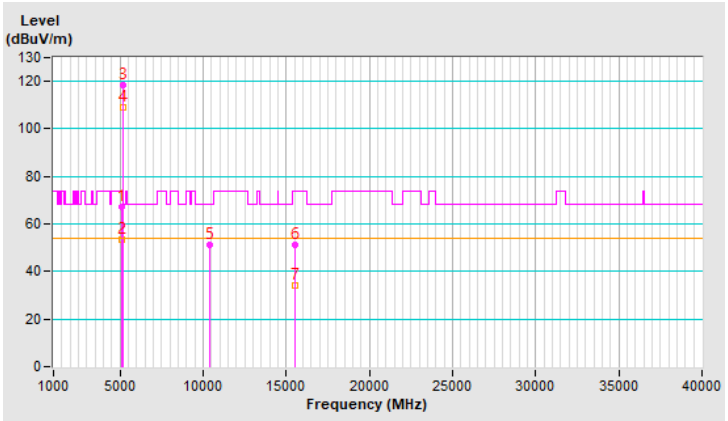


RF Mode	802.11ac (VHT20)	**Channel**	CH 36：5180 MHz
Frequency Range	1 GHz ~ 40 GHz	**Detector Function & Bandwidth**	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power (System)	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 66% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	**Frequency (MHz)**	**Emission Level (dBuV/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	5120.00	67.1 PK	74.0	-6.9	1.61 H	352	64.8	2.3
2	5120.00	53.2 AV	54.0	-0.8	1.61 H	352	50.9	2.3
3	*5180.00	118.5 PK			1.61 H	352	116.3	2.2
4	*5180.00	109.3 AV			1.61 H	352	107.1	2.2
5	#10360.00	51.2 PK	68.2	-17.0	1.54 H	230	39.5	11.7
6	15540.00	51.3 PK	74.0	-22.7	2.34 H	121	39.5	11.8
7	15540.00	34.0 AV	54.0	-20.0	2.34 H	121	22.2	11.8

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. " # ": The radiated frequency is out of the restricted band.

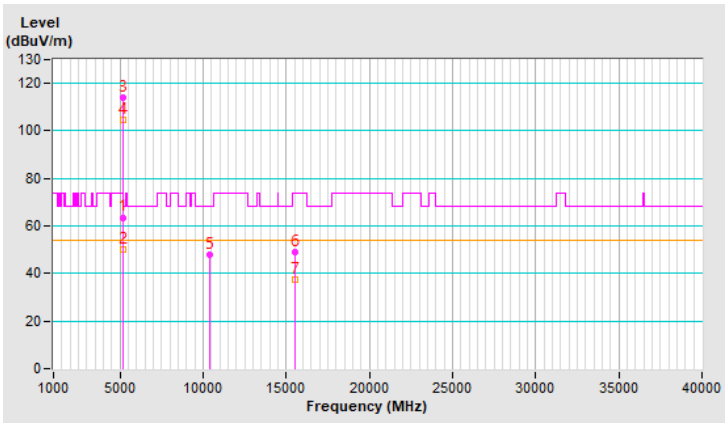


RF Mode	802.11ac (VHT20)	**Channel**	CH 36：5180 MHz
Frequency Range	1 GHz ~ 40 GHz	**Detector Function & Bandwidth**	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power (System)	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 66% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**Emission Level (dBuV/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	5150.00	63.6 PK	74.0	-10.4	3.50 V	345	61.2	2.4
2	5150.00	50.0 AV	54.0	-4.0	3.50 V	345	47.6	2.4
3	*5180.00	113.9 PK			3.50 V	345	111.7	2.2
4	*5180.00	104.4 AV			3.50 V	345	102.2	2.2
5	#10360.00	47.8 PK	68.2	-20.4	2.35 V	10	36.1	11.7
6	15540.00	49.0 PK	74.0	-25.0	3.97 V	356	37.2	11.8
7	15540.00	37.3 AV	54.0	-16.7	3.97 V	356	25.5	11.8

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. " # ": The radiated frequency is out of the restricted band.

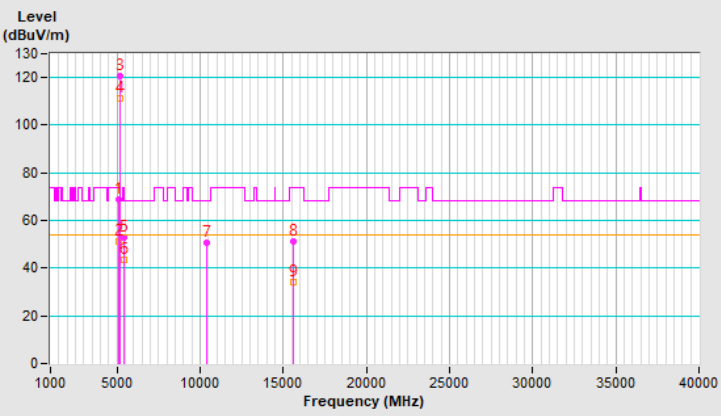


RF Mode	802.11ac (VHT20)	Channel	CH 40：5200 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25°C, 66% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5144.47	68.6 PK	74.0	-5.4	1.59 H	352	66.2	2.4
2	5144.47	51.4 AV	54.0	-2.6	1.59 H	352	49.0	2.4
3	*5200.00	120.8 PK			1.59 H	352	118.7	2.1
4	*5200.00	111.4 AV			1.59 H	352	109.3	2.1
5	5424.00	52.8 PK	74.0	-21.2	1.59 H	352	50.9	1.9
6	5424.00	43.5 AV	54.0	-10.5	1.59 H	352	41.6	1.9
7	#10400.00	50.8 PK	68.2	-17.4	1.57 H	232	38.9	11.9
8	15600.00	51.2 PK	74.0	-22.8	2.29 H	108	39.7	11.5
9	15600.00	34.2 AV	54.0	-19.8	2.29 H	108	22.7	11.5

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. " # ": The radiated frequency is out of the restricted band.

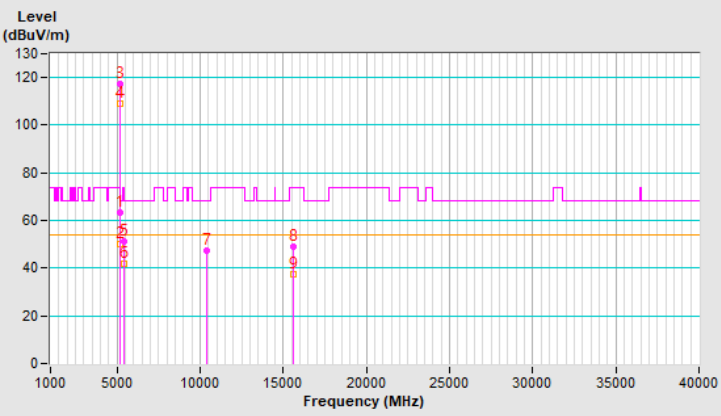


RF Mode	802.11ac (VHT20)	Channel	CH 40：5200 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25°C, 66% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	63.2 PK	74.0	-10.8	1.02 V	351	60.8	2.4
2	5150.00	49.9 AV	54.0	-4.1	1.02 V	351	47.5	2.4
3	*5200.00	117.1 PK			1.02 V	351	115.0	2.1
4	*5200.00	108.9 AV			1.02 V	351	106.8	2.1
5	5424.00	51.2 PK	74.0	-22.8	1.02 V	351	49.3	1.9
6	5424.00	41.8 AV	54.0	-12.2	1.02 V	351	39.9	1.9
7	#10400.00	47.6 PK	68.2	-20.6	2.40 V	1	35.7	11.9
8	15600.00	48.9 PK	74.0	-25.1	3.99 V	360	37.4	11.5
9	15600.00	37.4 AV	54.0	-16.6	3.99 V	360	25.9	11.5

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. " # ": The radiated frequency is out of the restricted band.

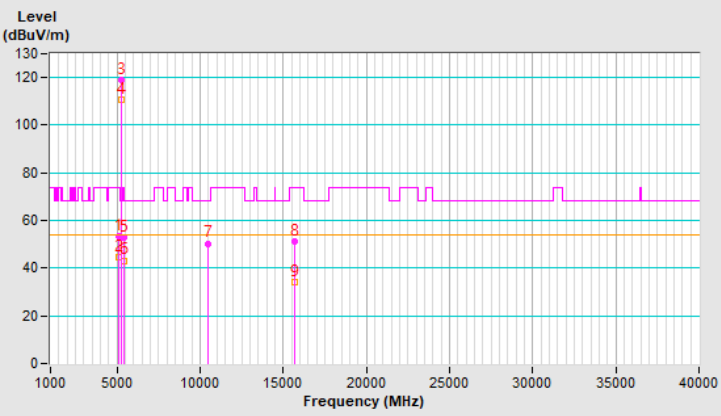


RF Mode	802.11ac (VHT20)	**Channel**	CH 48：5240 MHz
Frequency Range	1 GHz ~ 40 GHz	**Detector Function & Bandwidth**	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power (System)	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 66% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	**Frequency (MHz)**	**Emission Level (dBuV/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	5119.99	53.5 PK	74.0	-20.5	1.45 H	357	51.2	2.3
2	5119.99	44.8 AV	54.0	-9.2	1.45 H	357	42.5	2.3
3	*5240.00	119.1 PK			1.45 H	357	117.2	1.9
4	*5240.00	110.7 AV			1.45 H	357	108.8	1.9
5	5423.98	52.8 PK	74.0	-21.2	1.45 H	357	50.9	1.9
6	5423.98	43.2 AV	54.0	-10.8	1.45 H	357	41.3	1.9
7	#10480.00	50.4 PK	68.2	-17.8	1.51 H	218	38.5	11.9
8	15720.00	51.2 PK	74.0	-22.8	2.33 H	107	39.5	11.7
9	15720.00	34.0 AV	54.0	-20.0	2.33 H	107	22.3	11.7

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. " # ": The radiated frequency is out of the restricted band.

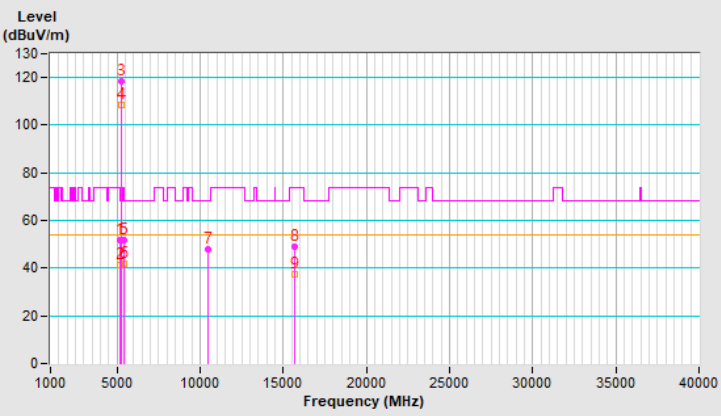


RF Mode	802.11ac (VHT20)	Channel	CH 48：5240 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25°C, 66% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	52.0 PK	74.0	-22.0	1.00 V	353	49.6	2.4
2	5150.00	41.5 AV	54.0	-12.5	1.00 V	353	39.1	2.4
3	*5240.00	118.2 PK			1.00 V	353	116.3	1.9
4	*5240.00	108.7 AV			1.00 V	353	106.8	1.9
5	5424.02	51.7 PK	74.0	-22.3	1.00 V	353	49.8	1.9
6	5424.02	42.0 AV	54.0	-12.0	1.00 V	353	40.1	1.9
7	#10480.00	47.7 PK	68.2	-20.5	2.35 V	6	35.8	11.9
8	15720.00	49.2 PK	74.0	-24.8	3.95 V	360	37.5	11.7
9	15720.00	37.6 AV	54.0	-16.4	3.95 V	360	25.9	11.7

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. " # ": The radiated frequency is out of the restricted band.

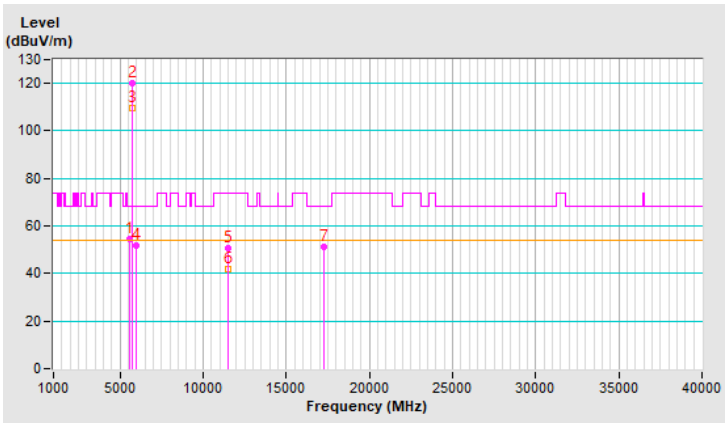


RF Mode	802.11ac (VHT20)	**Channel**	CH 149：5745 MHz
Frequency Range	1 GHz ~ 40 GHz	**Detector Function & Bandwidth**	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power (System)	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 66% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	**Frequency (MHz)**	**Emission Level (dBuV/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	#5611.57	54.4 PK	68.2	-13.8	1.49 H	360	52.2	2.2
2	*5745.00	120.3 PK			1.49 H	360	117.8	2.5
3	*5745.00	109.5 AV			1.49 H	360	107.0	2.5
4	#5973.87	51.6 PK	68.2	-16.6	1.49 H	360	48.7	2.9
5	11490.00	50.9 PK	74.0	-23.1	1.60 H	241	38.5	12.4
6	11490.00	41.6 AV	54.0	-12.4	1.60 H	241	29.2	12.4
7	#17235.00	51.0 PK	68.2	-17.2	2.33 H	114	34.3	16.7

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. " # ": The radiated frequency is out of the restricted band.

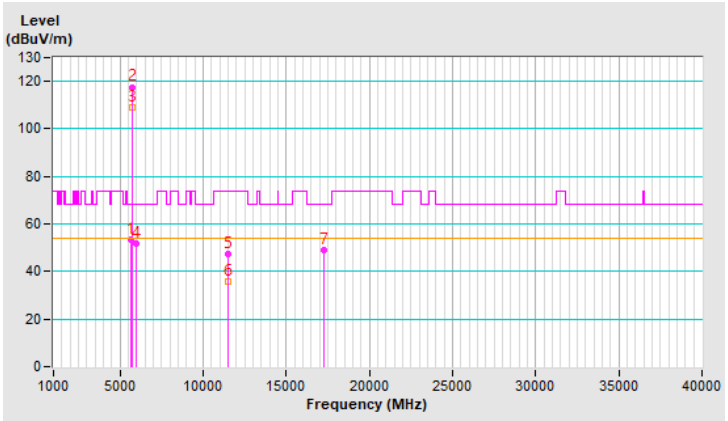


RF Mode	802.11ac (VHT20)	**Channel**	CH 149：5745 MHz
Frequency Range	1 GHz ~ 40 GHz	**Detector Function & Bandwidth**	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power (System)	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 66% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**Emission Level (dBuV/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	#5644.25	53.3 PK	68.2	-14.9	1.92 V	351	51.0	2.3
2	*5745.00	117.6 PK			1.92 V	351	115.1	2.5
3	*5745.00	109.3 AV			1.92 V	351	106.8	2.5
4	#5967.17	51.7 PK	68.2	-16.5	1.92 V	351	48.8	2.9
5	11490.00	47.3 PK	74.0	-26.7	2.37 V	14	34.9	12.4
6	11490.00	35.9 AV	54.0	-18.1	2.37 V	14	23.5	12.4
7	#17235.00	49.2 PK	68.2	-19.0	3.98 V	360	32.5	16.7

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. " # ": The radiated frequency is out of the restricted band.

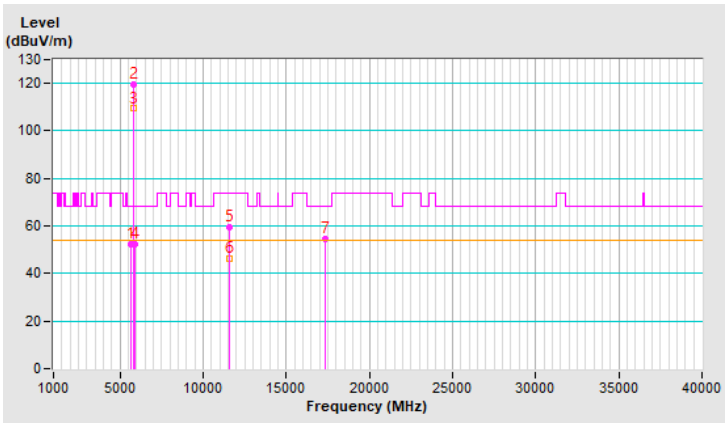


RF Mode	802.11ac (VHT20)	Channel	CH 157：5785 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25°C, 66% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5624.67	52.3 PK	68.2	-15.9	1.97 H	342	50.1	2.2
2	*5785.00	119.3 PK			1.97 H	342	116.6	2.7
3	*5785.00	109.3 AV			1.97 H	342	106.6	2.7
4	#5930.88	52.1 PK	68.2	-16.1	1.97 H	342	49.2	2.9
5	11570.00	59.5 PK	74.0	-14.5	1.60 H	185	47.1	12.4
6	11570.00	46.2 AV	54.0	-7.8	1.60 H	185	33.8	12.4
7	#17355.00	54.7 PK	68.2	-13.5	1.47 H	220	37.1	17.6

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. " # ": The radiated frequency is out of the restricted band.

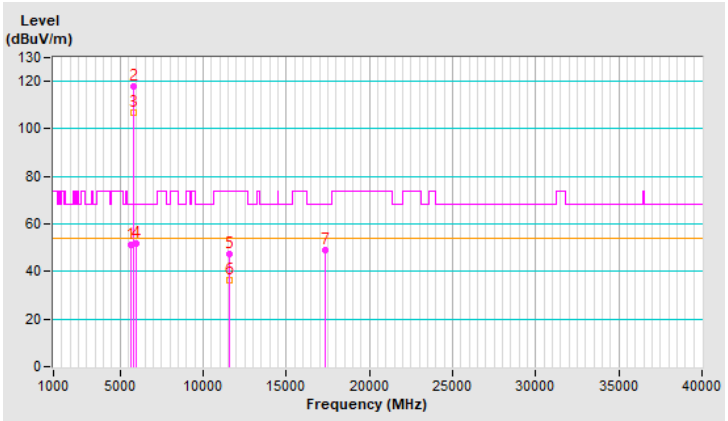


RF Mode	802.11ac (VHT20)	Channel	CH 157：5785 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25°C, 66% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5625.94	51.0 PK	68.2	-17.2	2.04 V	342	48.7	2.3
2	*5785.00	117.8 PK			2.04 V	342	115.1	2.7
3	*5785.00	106.9 AV			2.04 V	342	104.2	2.7
4	#5938.60	51.6 PK	68.2	-16.6	2.04 V	342	48.7	2.9
5	11570.00	47.6 PK	74.0	-26.4	2.44 V	7	35.2	12.4
6	11570.00	36.3 AV	54.0	-17.7	2.44 V	7	23.9	12.4
7	#17355.00	49.0 PK	68.2	-19.2	4.00 V	355	31.4	17.6

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. " # ": The radiated frequency is out of the restricted band.

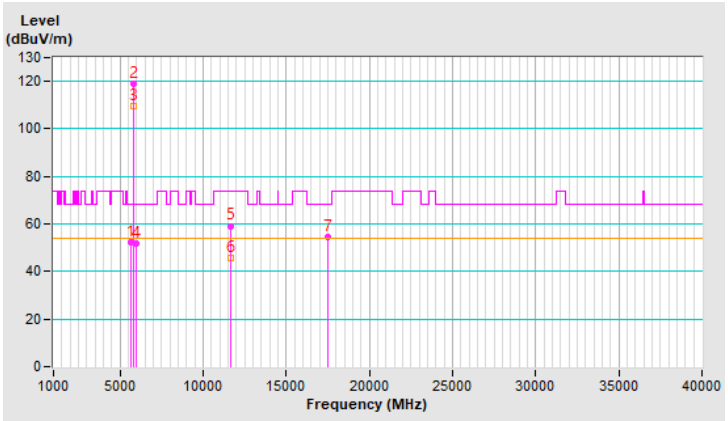


RF Mode	802.11ac (VHT20)	Channel	CH 165：5825 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25°C, 66% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5619.74	52.2 PK	68.2	-16.0	1.93 H	336	50.0	2.2
2	*5825.00	119.0 PK			1.93 H	336	116.2	2.8
3	*5825.00	109.8 AV			1.93 H	336	107.0	2.8
4	#5942.11	51.8 PK	68.2	-16.4	1.93 H	336	48.9	2.9
5	11650.00	59.2 PK	74.0	-14.8	1.59 H	176	47.3	11.9
6	11650.00	45.9 AV	54.0	-8.1	1.59 H	176	34.0	11.9
7	#17475.00	54.3 PK	68.2	-13.9	1.41 H	225	35.8	18.5

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. " # ": The radiated frequency is out of the restricted band.

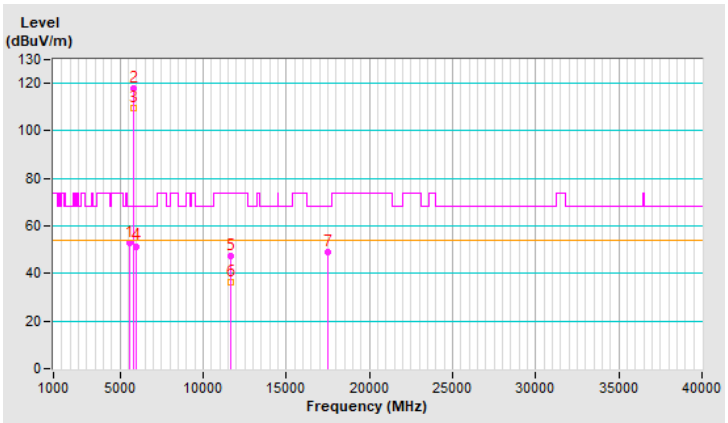


RF Mode	802.11ac (VHT20)	Channel	CH 165：5825 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25°C, 66% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5594.85	52.7 PK	68.2	-15.5	1.80 V	352	50.5	2.2
2	*5825.00	117.9 PK			1.80 V	352	115.1	2.8
3	*5825.00	109.7 AV			1.80 V	352	106.9	2.8
4	#5950.69	51.5 PK	68.2	-16.7	1.80 V	352	48.6	2.9
5	11650.00	47.4 PK	74.0	-26.6	2.48 V	16	35.5	11.9
6	11650.00	36.1 AV	54.0	-17.9	2.48 V	16	24.2	11.9
7	#17475.00	48.9 PK	68.2	-19.3	4.00 V	349	30.4	18.5

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. " # ": The radiated frequency is out of the restricted band.

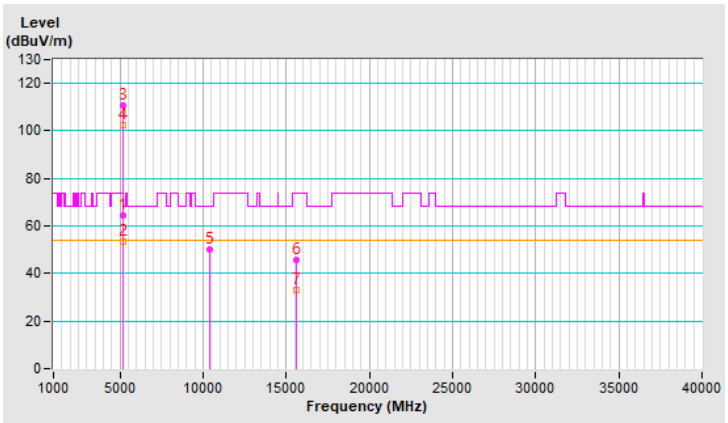


RF Mode	802.11ac (VHT40)	**Channel**	CH 38：5190 MHz
Frequency Range	1 GHz ~ 40 GHz	**Detector Function & Bandwidth**	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 510 Hz
Input Power (System)	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 66% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	**Frequency (MHz)**	**Emission Level (dBuV/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	5150.00	64.2 PK	74.0	-9.8	1.80 H	351	61.8	2.4
2	**5150.00**	**53.6 AV**	**54.0**	**-0.4**	**1.80 H**	**351**	**51.2**	**2.4**
3	*5190.00	110.9 PK			1.80 H	351	108.7	2.2
4	*5190.00	102.5 AV			1.80 H	351	100.3	2.2
5	#10380.00	50.0 PK	68.2	-18.2	1.63 H	226	38.2	11.8
6	15570.00	45.5 PK	74.0	-28.5	2.52 H	110	33.7	11.8
7	15570.00	32.9 AV	54.0	-21.1	2.52 H	110	21.1	11.8

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. " # ": The radiated frequency is out of the restricted band.

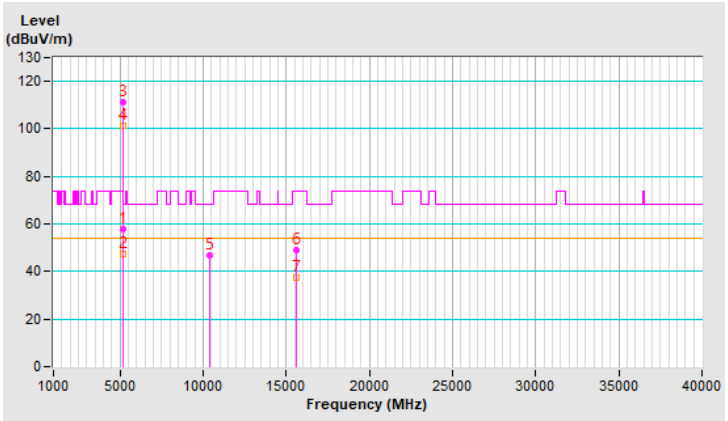


RF Mode	802.11ac (VHT40)	Channel	CH 38：5190 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 510 Hz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25°C, 66% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	57.9 PK	74.0	-16.1	1.49 V	357	55.5	2.4
2	5150.00	47.6 AV	54.0	-6.4	1.49 V	357	45.2	2.4
3	*5190.00	111.4 PK			1.49 V	357	109.2	2.2
4	*5190.00	101.5 AV			1.49 V	357	99.3	2.2
5	#10380.00	46.8 PK	68.2	-21.4	2.49 V	17	35.0	11.8
6	15570.00	49.0 PK	74.0	-25.0	4.00 V	350	37.2	11.8
7	15570.00	37.3 AV	54.0	-16.7	4.00 V	350	25.5	11.8

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. " # ": The radiated frequency is out of the restricted band.

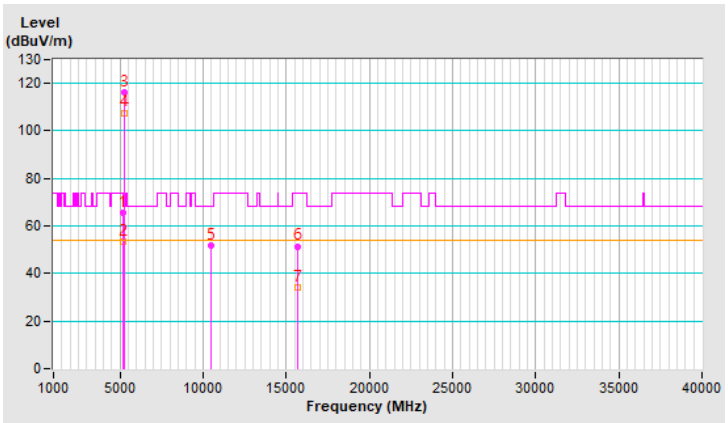


RF Mode	802.11ac (VHT40)	Channel	CH 46：5230 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 510 Hz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25°C, 66% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	65.4 PK	74.0	-8.6	1.85 H	353	63.0	2.4
2	5150.00	53.2 AV	54.0	-0.8	1.85 H	353	50.8	2.4
3	*5230.00	116.1 PK			1.85 H	353	114.1	2.0
4	*5230.00	107.7 AV			1.85 H	353	105.7	2.0
5	#10460.00	51.7 PK	68.2	-16.5	1.54 H	219	39.7	12.0
6	15690.00	51.5 PK	74.0	-22.5	2.36 H	110	39.6	11.9
7	15690.00	34.3 AV	54.0	-19.7	2.36 H	110	22.4	11.9

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. " # ": The radiated frequency is out of the restricted band.

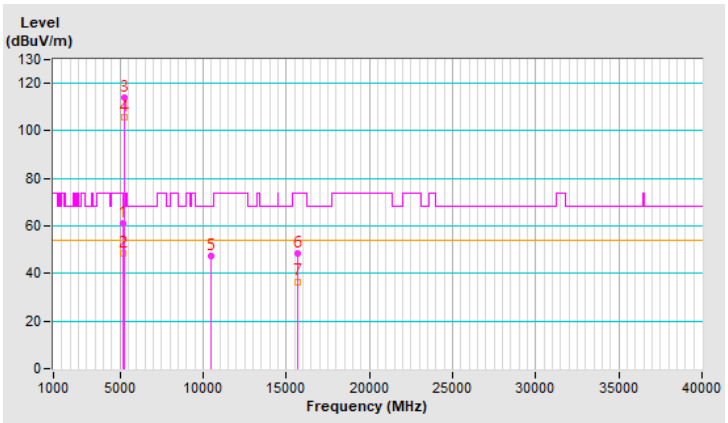


RF Mode	802.11ac (VHT40)	**Channel**	CH 46：5230 MHz
Frequency Range	1 GHz ~ 40 GHz	**Detector Function & Bandwidth**	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 510 Hz
Input Power (System)	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 66% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**Emission Level (dBuV/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	5150.00	61.0 PK	74.0	-13.0	1.41 V	353	58.6	2.4
2	5150.00	48.4 AV	54.0	-5.6	1.41 V	353	46.0	2.4
3	*5230.00	113.9 PK			1.41 V	353	111.9	2.0
4	*5230.00	105.8 AV			1.41 V	353	103.8	2.0
5	#10460.00	47.3 PK	68.2	-20.9	2.45 V	14	35.3	12.0
6	15690.00	48.4 PK	74.0	-25.6	4.00 V	335	36.5	11.9
7	15690.00	36.6 AV	54.0	-17.4	4.00 V	335	24.7	11.9

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. " # ": The radiated frequency is out of the restricted band.

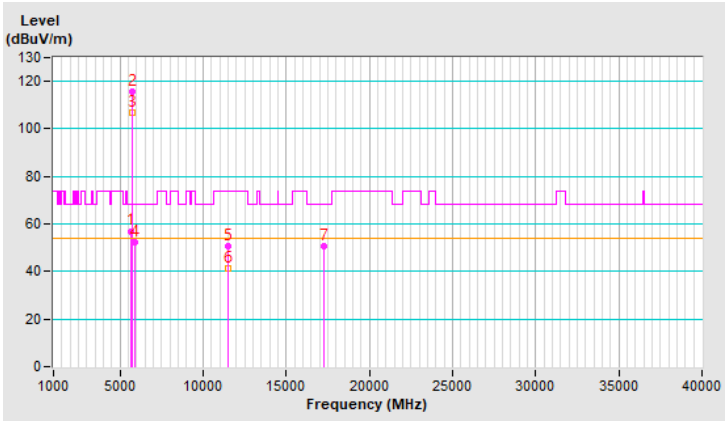


RF Mode	802.11ac (VHT40)	Channel	CH 151：5755 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 510 Hz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25°C, 66% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5634.19	57.0 PK	68.2	-11.2	1.68 H	360	54.7	2.3
2	*5755.00	115.7 PK			1.68 H	360	113.1	2.6
3	*5755.00	106.9 AV			1.68 H	360	104.3	2.6
4	#5927.90	52.2 PK	68.2	-16.0	1.68 H	360	49.3	2.9
5	11510.00	50.9 PK	74.0	-23.1	1.65 H	245	38.5	12.4
6	11510.00	41.5 AV	54.0	-12.5	1.65 H	245	29.1	12.4
7	#17265.00	50.8 PK	68.2	-17.4	2.36 H	109	34.0	16.8

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. " # ": The radiated frequency is out of the restricted band.

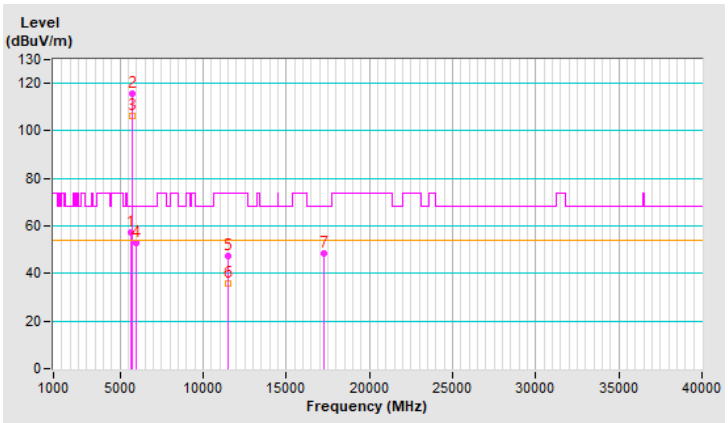


RF Mode	802.11ac (VHT40)	**Channel**	CH 151：5755 MHz
Frequency Range	1 GHz ~ 40 GHz	**Detector Function & Bandwidth**	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 510 Hz
Input Power (System)	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 66% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**Emission Level (dBuV/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	#5640.80	57.4 PK	68.2	-10.8	2.23 V	349	55.1	2.3
2	*5755.00	115.7 PK			2.23 V	349	113.1	2.6
3	*5755.00	106.3 AV			2.23 V	349	103.7	2.6
4	#5942.20	53.0 PK	68.2	-15.2	2.23 V	349	50.1	2.9
5	11510.00	47.1 PK	74.0	-26.9	2.41 V	9	34.7	12.4
6	11510.00	35.7 AV	54.0	-18.3	2.41 V	9	23.3	12.4
7	#17265.00	48.7 PK	68.2	-19.5	3.97 V	360	31.9	16.8

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. " # ": The radiated frequency is out of the restricted band.

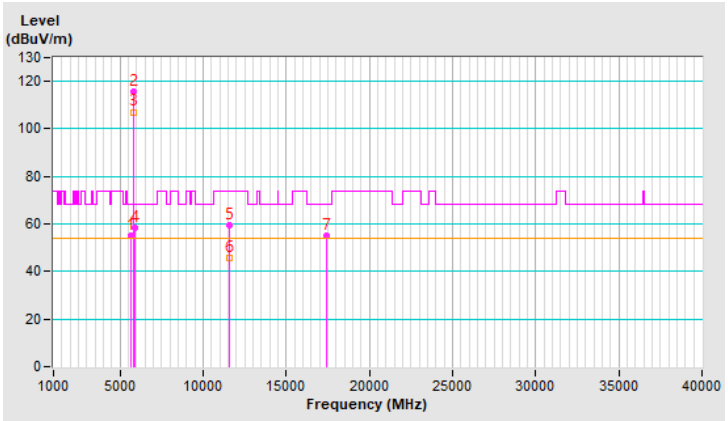


RF Mode	802.11ac (VHT40)	Channel	CH 159：5795 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 510 Hz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25°C, 66% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5630.81	55.0 PK	68.2	-13.2	2.01 H	341	52.7	2.3
2	*5795.00	115.9 PK			2.01 H	341	113.2	2.7
3	*5795.00	107.1 AV			2.01 H	341	104.4	2.7
4	#5925.33	58.3 PK	68.2	-9.9	2.01 H	341	55.4	2.9
5	11590.00	59.4 PK	74.0	-14.6	1.58 H	189	47.1	12.3
6	11590.00	45.9 AV	54.0	-8.1	1.58 H	189	33.6	12.3
7	#17385.00	55.0 PK	68.2	-13.2	1.44 H	228	37.2	17.8

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. " # ": The radiated frequency is out of the restricted band.

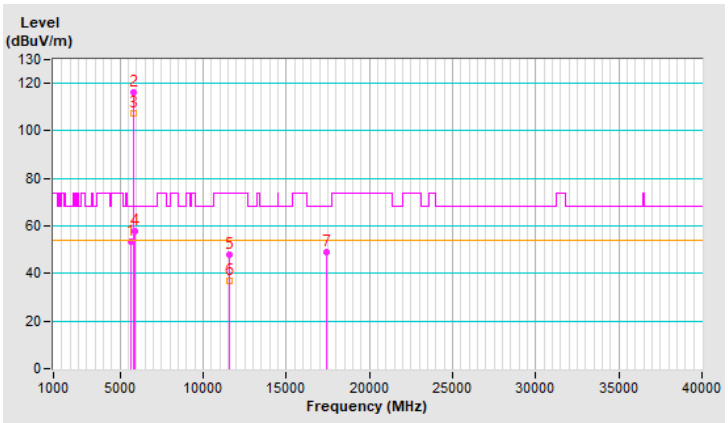


RF Mode	802.11ac (VHT40)	**Channel**	CH 159：5795 MHz
Frequency Range	1 GHz ~ 40 GHz	**Detector Function & Bandwidth**	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 510 Hz
Input Power (System)	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 66% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**Emission Level (dBuV/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	#5645.05	53.6 PK	68.2	-14.6	1.91 V	353	51.3	2.3
2	*5795.00	116.0 PK			1.91 V	353	113.3	2.7
3	*5795.00	107.4 AV			1.91 V	353	104.7	2.7
4	#5925.40	57.8 PK	68.2	-10.4	1.91 V	353	54.9	2.9
5	11590.00	47.8 PK	74.0	-26.2	2.40 V	12	35.5	12.3
6	11590.00	36.7 AV	54.0	-17.3	2.40 V	12	24.4	12.3
7	#17385.00	49.0 PK	68.2	-19.2	4.00 V	360	31.2	17.8

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. " # ": The radiated frequency is out of the restricted band.

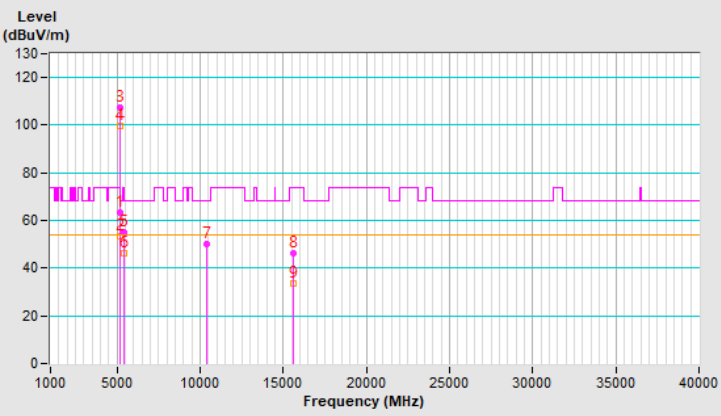


RF Mode	802.11ac (VHT80)	Channel	CH 42：5210 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 1 kHz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25°C, 66% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	63.2 PK	74.0	-10.8	1.79 H	346	60.8	2.4
2	5150.00	53.5 AV	54.0	-0.5	1.79 H	346	51.1	2.4
3	*5210.00	107.5 PK			1.79 H	346	105.5	2.0
4	*5210.00	99.5 AV			1.79 H	346	97.5	2.0
5	5424.00	55.0 PK	74.0	-19.0	1.79 H	346	53.1	1.9
6	5424.00	46.2 AV	54.0	-7.8	1.79 H	346	44.3	1.9
7	#10420.00	50.0 PK	68.2	-18.2	1.67 H	228	38.0	12.0
8	15630.00	46.0 PK	74.0	-28.0	2.48 H	98	34.3	11.7
9	15630.00	33.4 AV	54.0	-20.6	2.48 H	98	21.7	11.7

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. " # ": The radiated frequency is out of the restricted band.

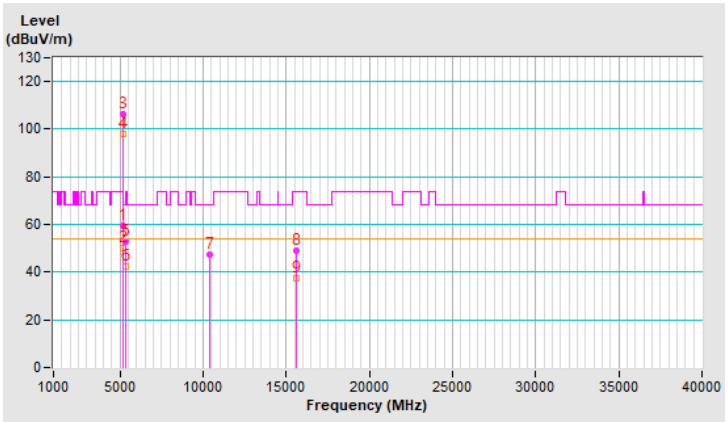


RF Mode	802.11ac (VHT80)	Channel	CH 42：5210 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 1 kHz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25°C, 66% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	59.7 PK	74.0	-14.3	1.85 V	359	57.3	2.4
2	5150.00	49.9 AV	54.0	-4.1	1.85 V	359	47.5	2.4
3	*5210.00	106.5 PK			1.85 V	359	104.5	2.0
4	*5210.00	98.1 AV			1.85 V	359	96.1	2.0
5	5350.00	53.1 PK	74.0	-20.9	1.85 V	359	51.1	2.0
6	5350.00	42.6 AV	54.0	-11.4	1.85 V	359	40.6	2.0
7	#10420.00	47.3 PK	68.2	-20.9	2.45 V	15	35.3	12.0
8	15630.00	49.1 PK	74.0	-24.9	4.00 V	339	37.4	11.7
9	15630.00	37.5 AV	54.0	-16.5	4.00 V	339	25.8	11.7

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. " # ": The radiated frequency is out of the restricted band.

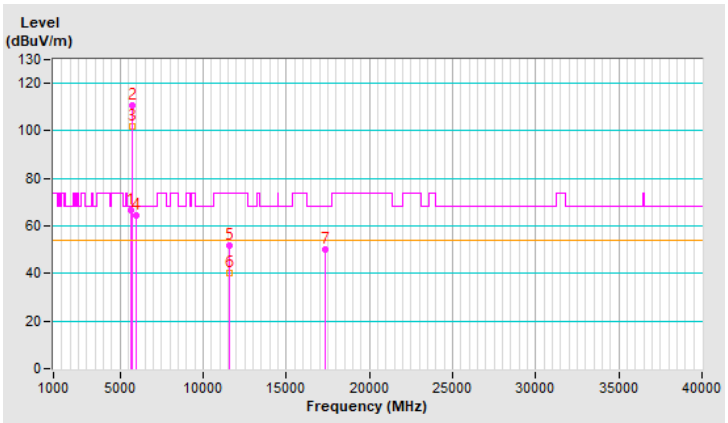


RF Mode	802.11ac (VHT80)	Channel	CH 155：5775 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 1 kHz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	25°C, 66% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5650.26	66.5 PK	68.2	-1.7	1.66 H	360	64.2	2.3
2	*5775.00	110.5 PK			1.66 H	360	107.9	2.6
3	*5775.00	101.9 AV			1.66 H	360	99.3	2.6
4	#5938.75	64.6 PK	68.2	-3.6	1.66 H	360	61.7	2.9
5	11550.00	51.6 PK	74.0	-22.4	1.56 H	234	39.3	12.3
6	11550.00	40.3 AV	54.0	-13.7	1.56 H	234	28.0	12.3
7	#17325.00	50.3 PK	68.2	-17.9	2.37 H	104	33.1	17.2

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. " # ": The radiated frequency is out of the restricted band.

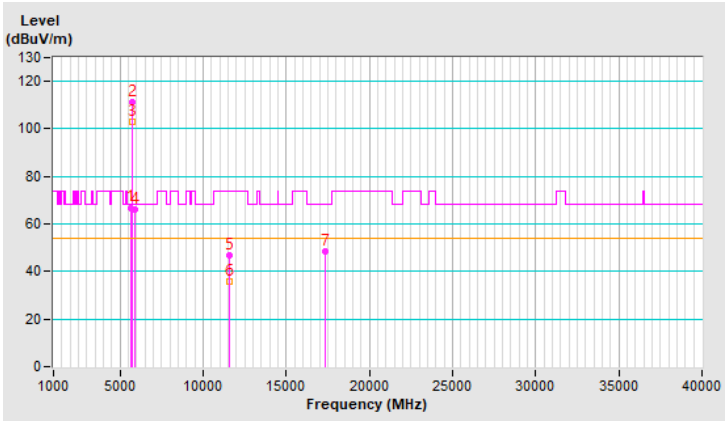


RF Mode	802.11ac (VHT80)	**Channel**	CH 155：5775 MHz
Frequency Range	1 GHz ~ 40 GHz	**Detector Function & Bandwidth**	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 1 kHz
Input Power (System)	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 66% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**Emission Level (dBuV/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	#5646.81	66.9 PK	68.2	-1.3	1.87 V	351	64.6	2.3
2	*5775.00	111.1 PK			1.87 V	351	108.5	2.6
3	*5775.00	103.2 AV			1.87 V	351	100.6	2.6
4	#5926.71	66.0 PK	68.2	-2.2	1.87 V	351	63.1	2.9
5	11550.00	46.7 PK	74.0	-27.3	2.48 V	25	34.4	12.3
6	11550.00	35.6 AV	54.0	-18.4	2.48 V	25	23.3	12.3
7	#17325.00	48.4 PK	68.2	-19.8	4.00 V	347	31.2	17.2

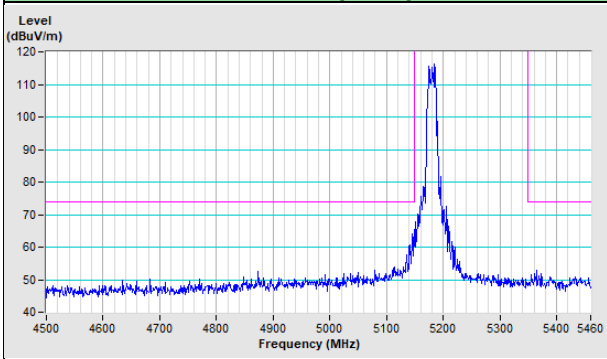
Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. " # ": The radiated frequency is out of the restricted band.

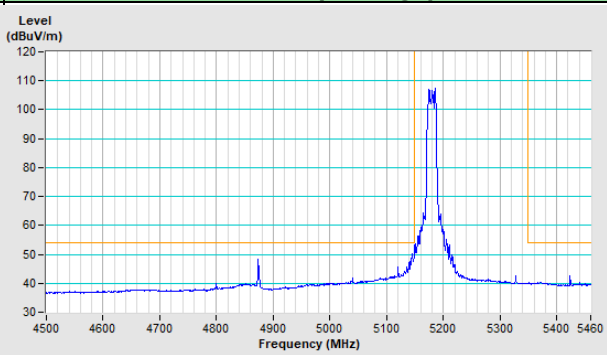


802.11a Channel 36

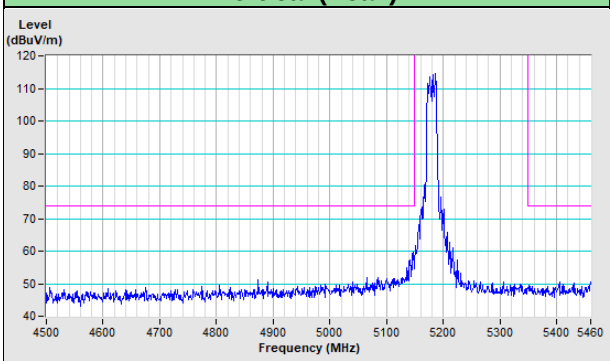
Horizontal (Peak)



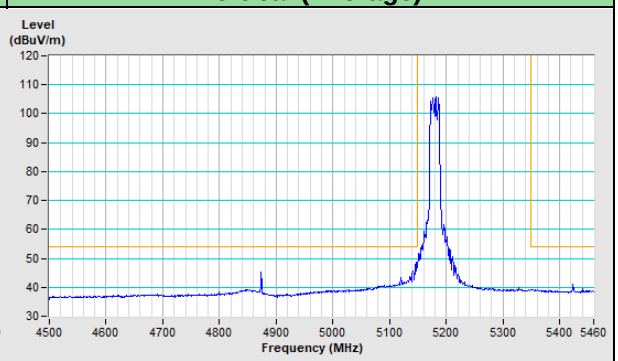
Horizontal (Average)



Vertical (Peak)

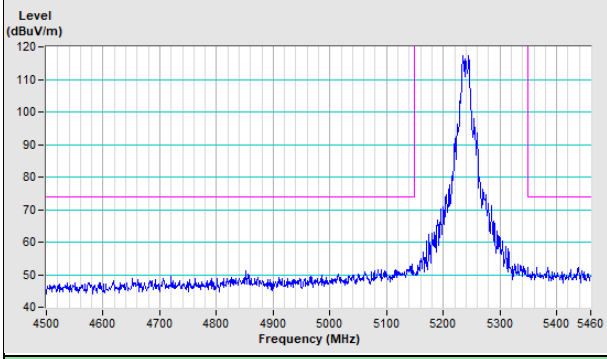


Vertical (Average)

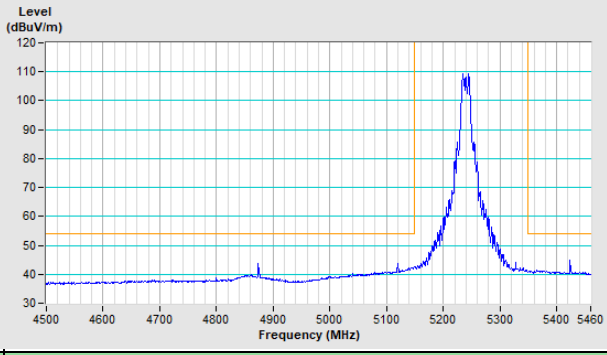


802.11a Channel 48

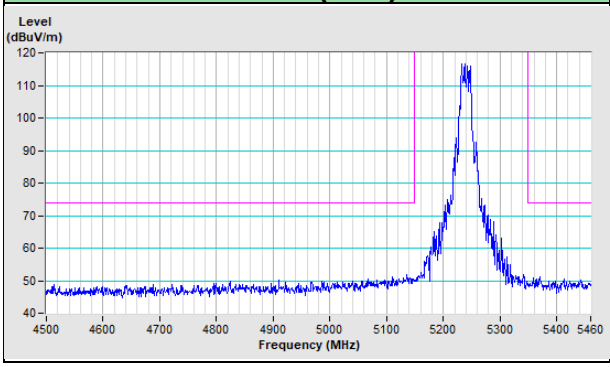
Horizontal (Peak)



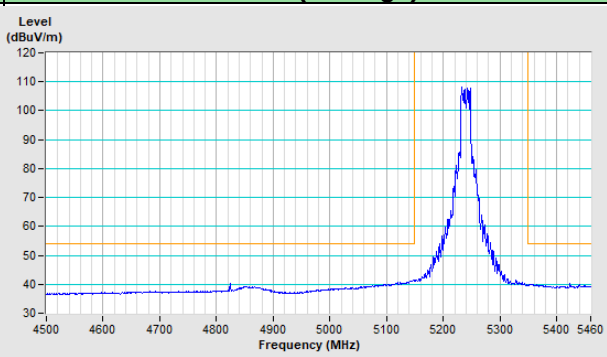
Horizontal (Average)



Vertical (Peak)

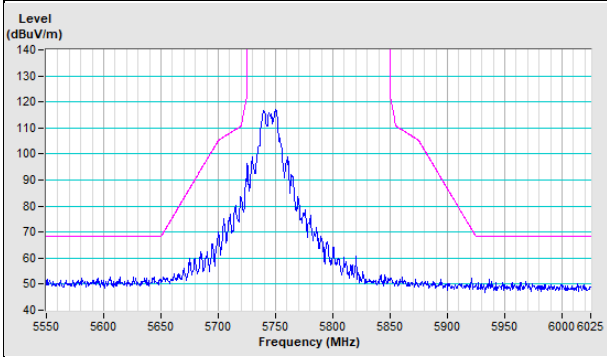


Vertical (Average)

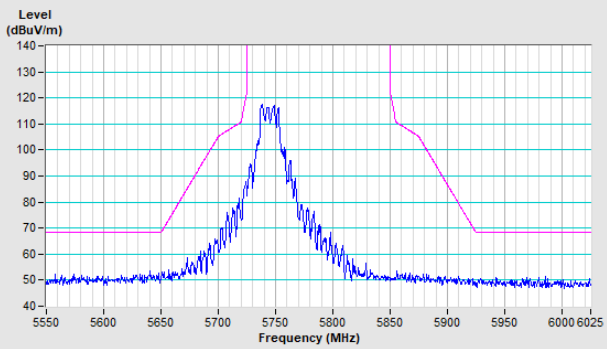


802.11a Channel 149

Horizontal (Peak)

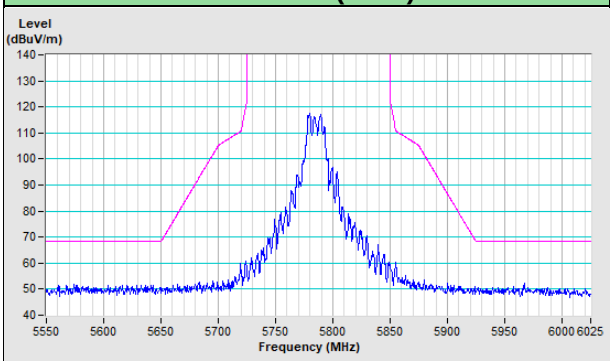


Vertical (Peak)

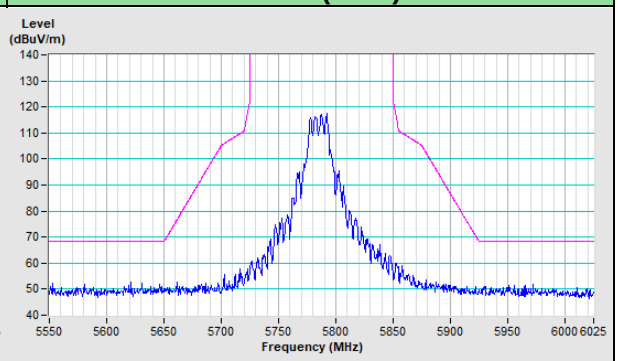


802.11a Channel 157

Horizontal (Peak)

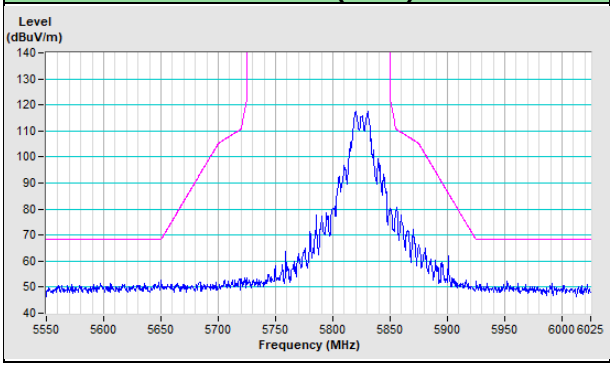


Vertical (Peak)

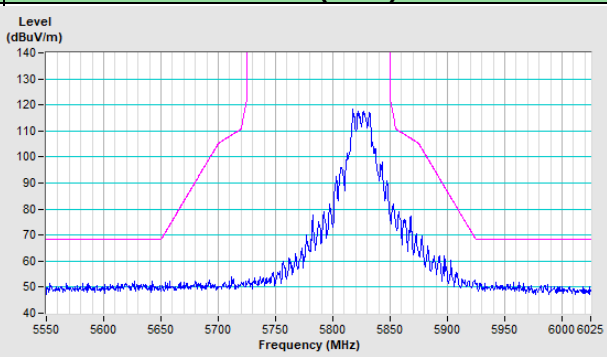


802.11a Channel 165

Horizontal (Peak)

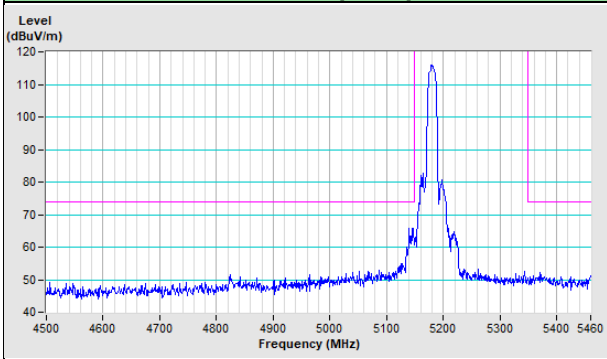


Vertical (Peak)

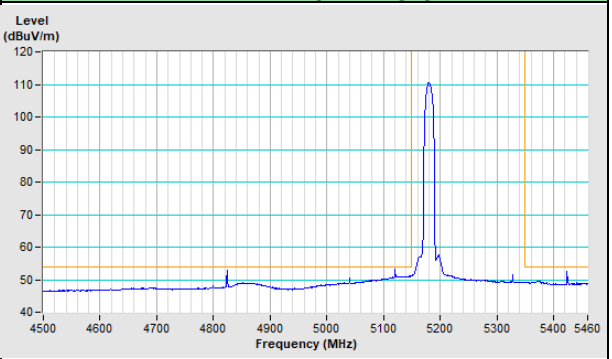


802.11ac (VHT20) Channel 36

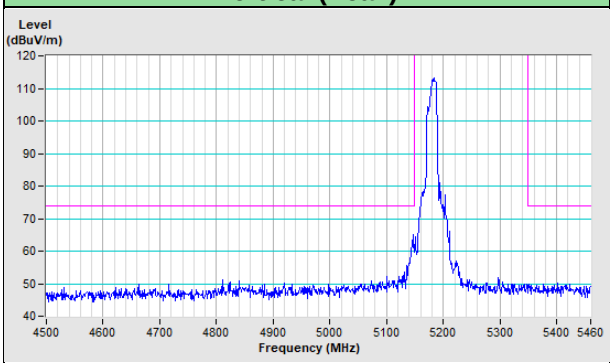
Horizontal (Peak)



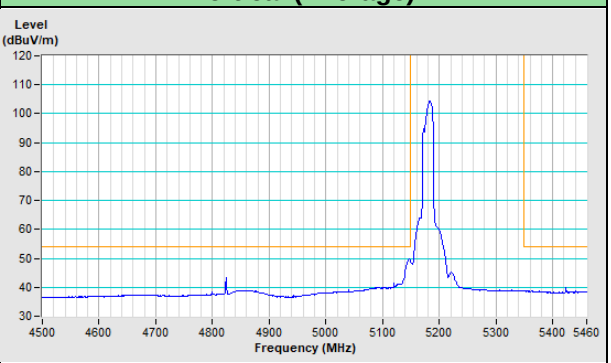
Horizontal (Average)



Vertical (Peak)

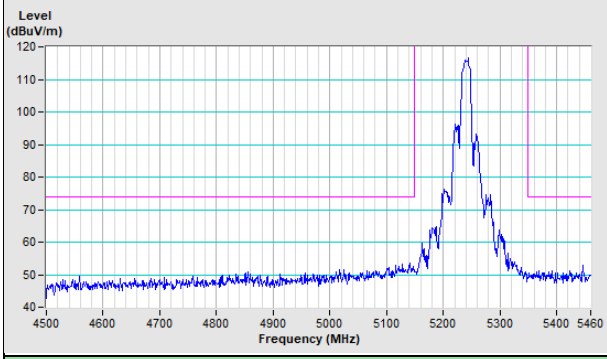


Vertical (Average)

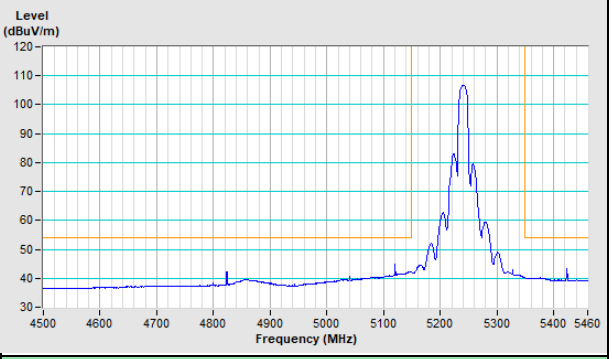


802.11ac (VHT20) Channel 48

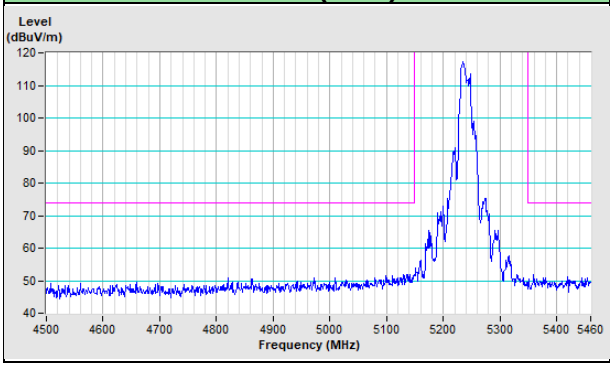
Horizontal (Peak)



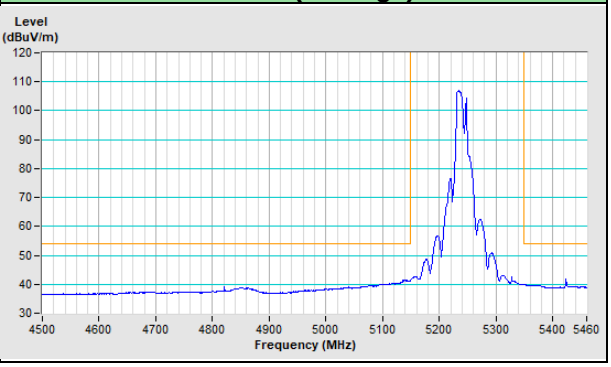
Horizontal (Average)

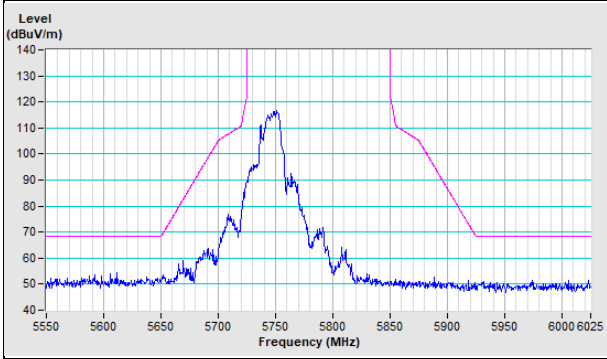
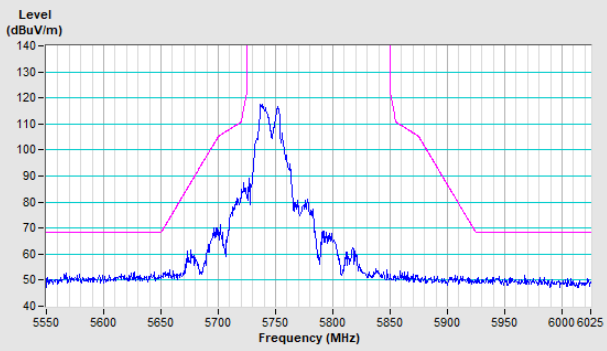


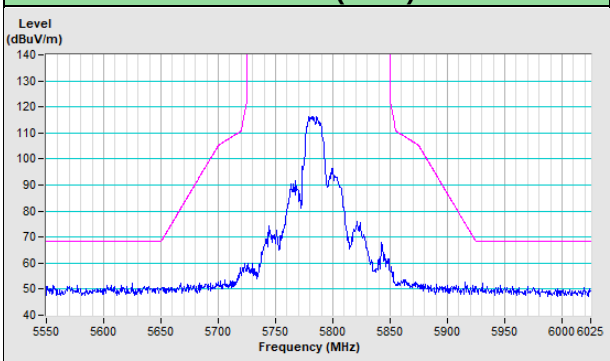
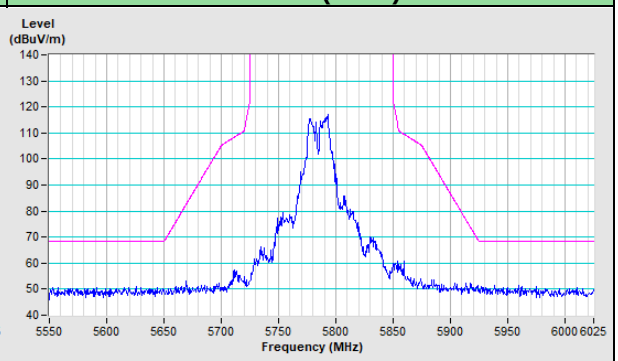
Vertical (Peak)

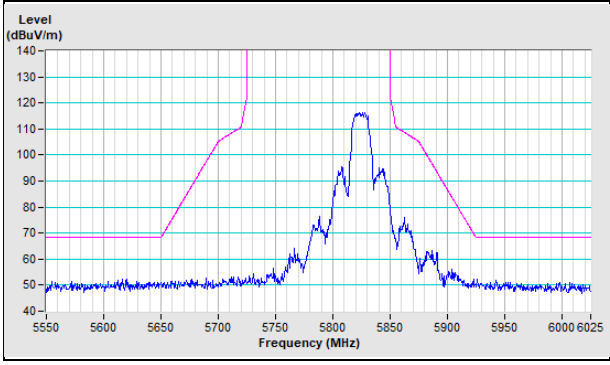
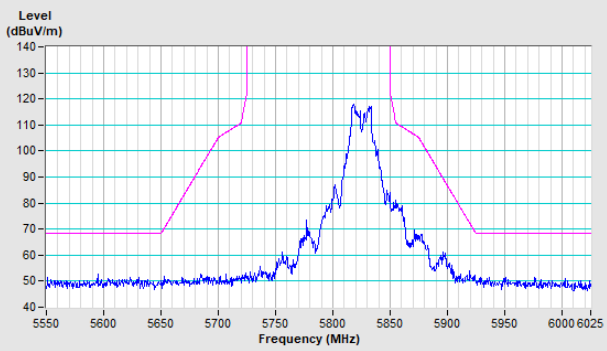


Vertical (Average)



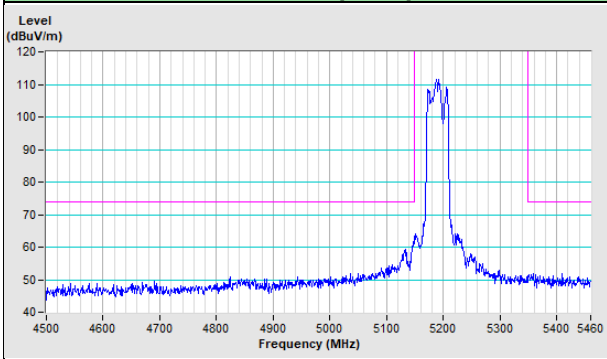
802.11ac (VHT20) Channel 149	
Horizontal (Peak)	Vertical (Peak)
	

802.11ac (VHT20) Channel 157	
Horizontal (Peak)	Vertical (Peak)
	

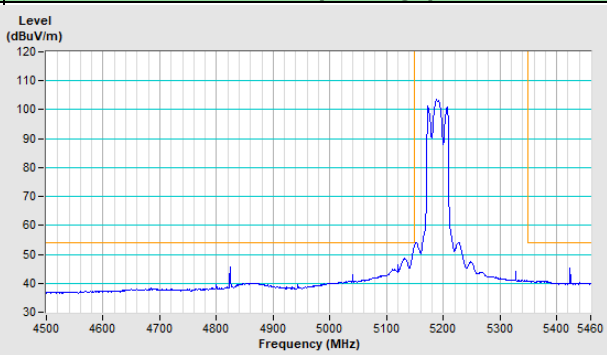
802.11ac (VHT20) Channel 165	
Horizontal (Peak)	Vertical (Peak)
	

802.11ac (VHT40) Channel 38

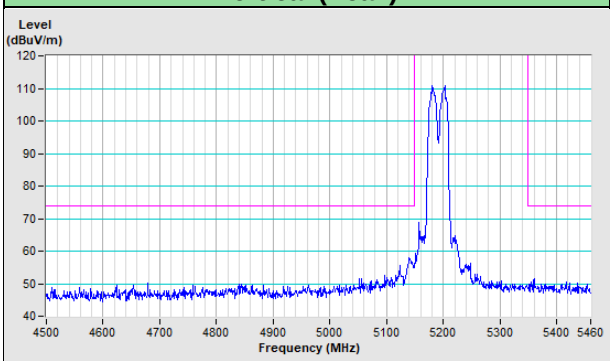
Horizontal (Peak)



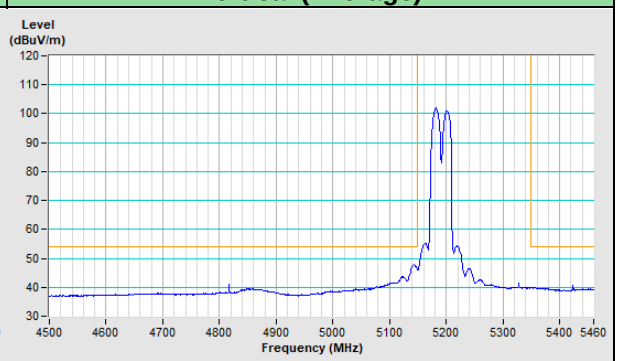
Horizontal (Average)



Vertical (Peak)

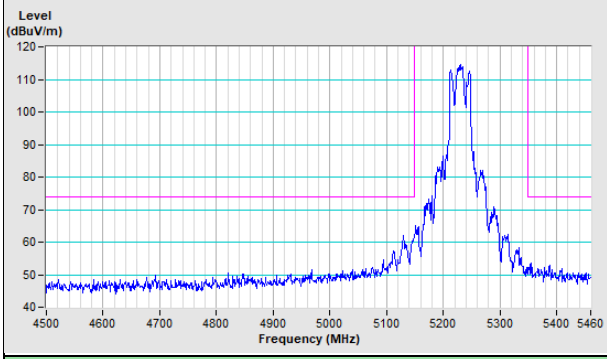


Vertical (Average)

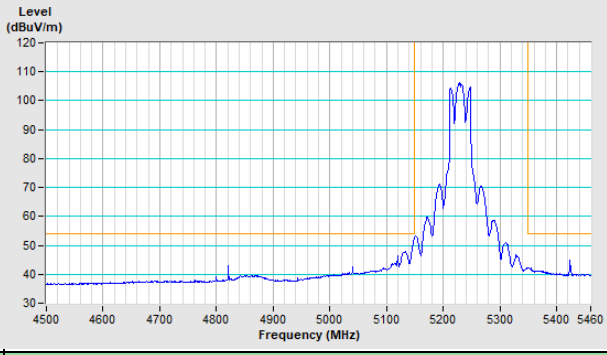


802.11ac (VHT40) Channel 46

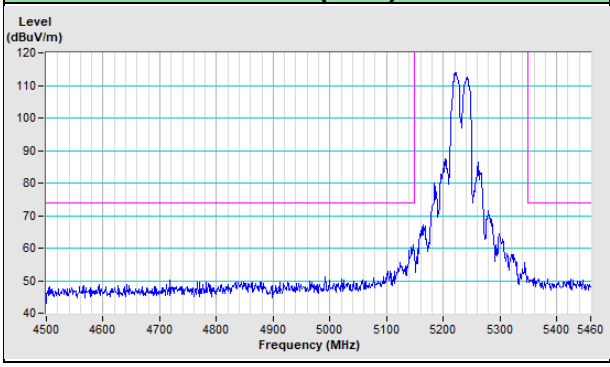
Horizontal (Peak)



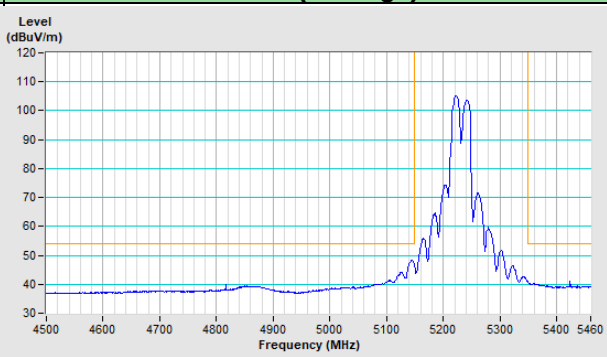
Horizontal (Average)

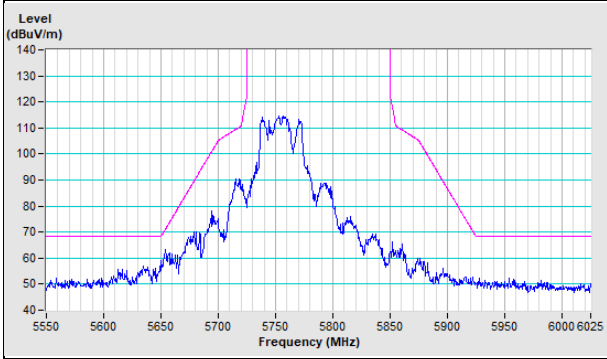
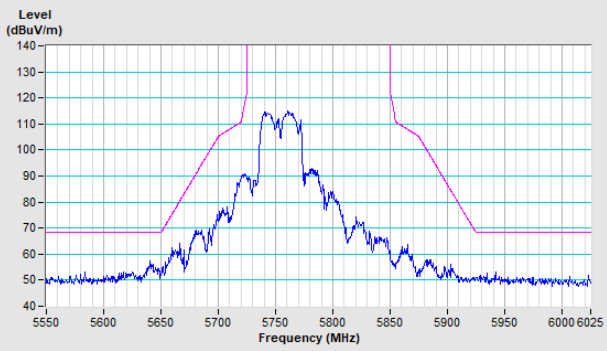


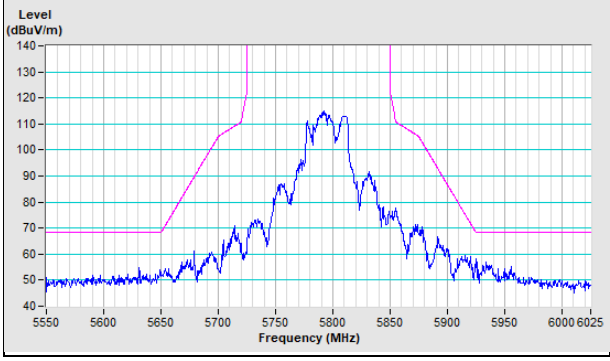
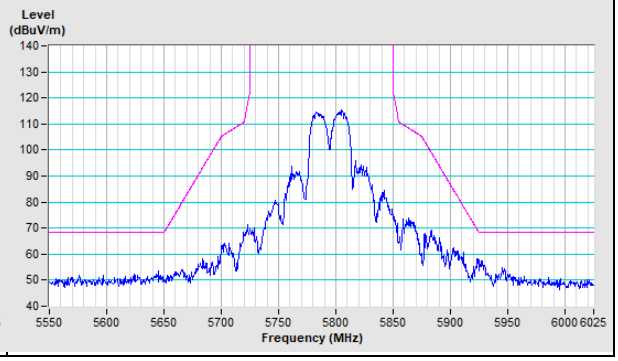
Vertical (Peak)



Vertical (Average)

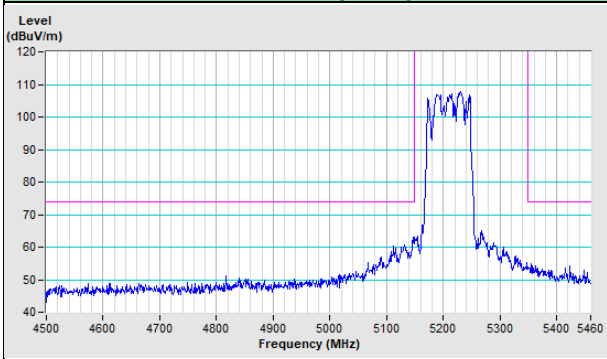


802.11ac (VHT40) Channel 151	
Horizontal (Peak)	Vertical (Peak)
	

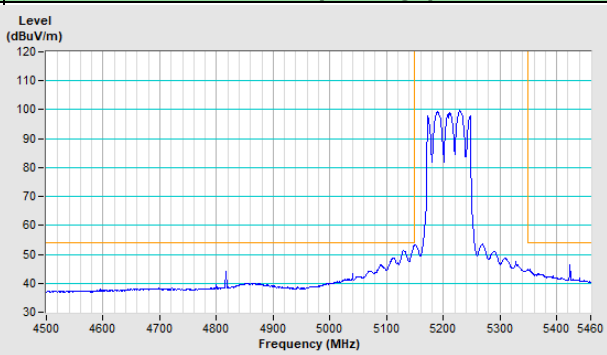
802.11ac (VHT40) Channel 159	
Horizontal (Peak)	Vertical (Peak)
	

802.11ac (VHT80) Channel 42

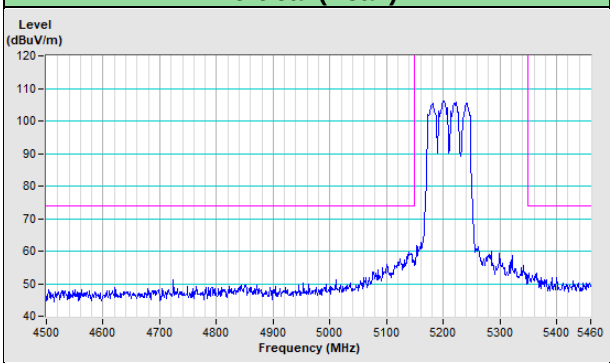
Horizontal (Peak)



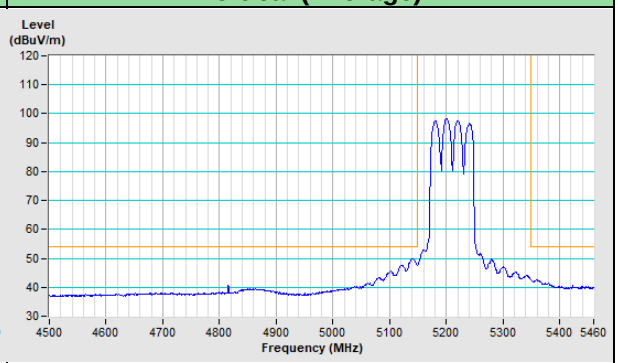
Horizontal (Average)



Vertical (Peak)

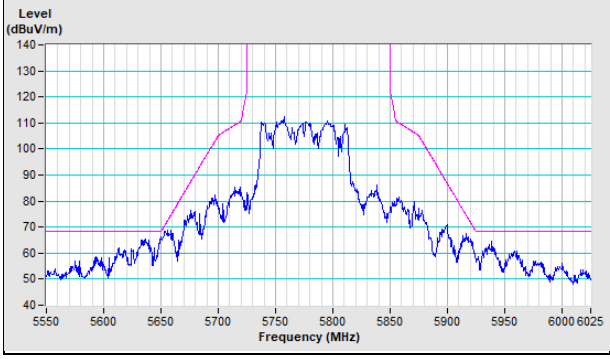


Vertical (Average)

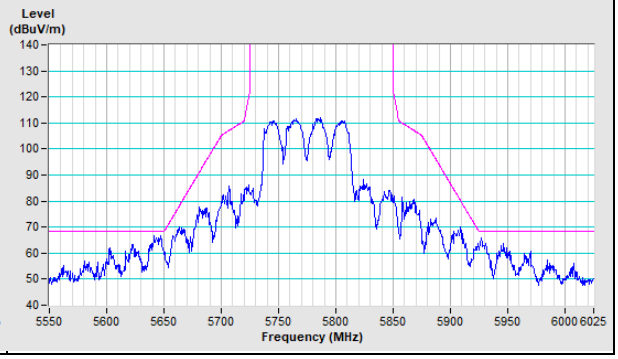


802.11ac (VHT80) Channel 155

Horizontal (Peak)



Vertical (Peak)



8 Pictures of Test Arrangements

Please refer to the attached file (Test Setup Photo)

9 Information of the Testing Laboratories

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are FCC recognized accredited test firms and accredited according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following:

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The address and road map of all our labs can be found in our web site also.

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