TEST REPORT

CERTIFICATE OF CONFORMITY

Standard:	**47 CFR FCC Part 15, Subpart E (Section 15.407)**
Report No.:	RFBEMI-WTW-P22010621-1
FCC ID:	NOIKBN506
Model No.:	N506
Received Date:	2022/1/18
Test Date:	2022/3/26 ~ 2022/3/31
Issued Date:	2022/5/13
Applicant:	NETRONIX, INC.
Address:	No 945, Boai St, Jubei City. Hsinchu, 30265 Taiwan
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:** 2022/5/13

May Chen / Manager

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Prepared by : Vivian Huang / Specialist

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Release Control Record

Issue No.	Description	Date Issued
RFBEMI-WTW-P22010621-1	Original release.	2022/5/13

1 Certificate

Product:	Electronic Display Device
Brand:	Rakuten kobo
Test Model:	N506
Sample Status:	Engineering sample
Applicant:	NETRONIX, INC.
Test Date:	2022/3/26 ~ 2022/3/31
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

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 -13.60 dB at 0.15391 MHz
15.407(b)(9)	Unwanted Emissions below 1 GHz	Pass	Minimum passing margin is -9.8 dB at 302.09 MHz
15.407(b) (1/2/3/4(i)/10)	Unwanted Emissions above 1 GHz	Pass	Minimum passing margin is -2.1 dB at 17325.00, 5150.00 MHz
15.203	Antenna Requirement	Pass	No antenna connector is used.

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	5.4 dB
Unwanted Emissions above 1 GHz	1 GHz ~ 18 GHz	5.0 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	Electronic Display Device
Brand	Rakuten kobo
Test Model	N506
FW Version	64214-3202-r12675
Status of EUT	Engineering sample
Power Supply Rating	3.7Vdc from battery or 5 Vdc from USB interface
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 150Mbps 802.11ac: up to 433.3Mbps
Operating Frequency	5180 ~ 5240 MHz 5745 ~ 5825 MHz
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	5180 ~ 5240 MHz : 12.531 mW (10.98 dBm) 5745 ~ 5825 MHz : 3.954 mW (5.97 dBm)
EUT Category	Client device
Accessory Device	NA
Cable Supplied	Refer to Note

Note:

1. There are WLAN and Bluetooth technology used for the EUT.
2. Simultaneously transmission condition.

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

3. The EUT could be supplied with USB cable as following table:

Brand	Material	Model	Signal Line
Yih Fone	PVC	SH-0422	Shielded : Y , 1.0M , Core: N/A
Yih Fone	TPE	SH-0418	
Note: From the above models, the worst model was found in **Model: SH-0418**. Therefore only the test data of the modes were recorded in this report.			

4. The EUT could be supplied with MicroSD card and following different models could be chosen:

No.	Model	Remark
1	SDSDQAB-016G	1st source MicroSD
2	SDSDQAB-032G-1	2nd source MicroSD

5. 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.

Brand	Model	Antenna Gain (dBi)	Frequency Range (GHz)	Antenna Type	Connector Type	Cable Length (mm)
INPAQ	ACM3-3216-P1-CC-S	0.6	2.4~2.4835	Chip Ant.	NA	NA
		2	5.15~5.85			

*The above Antenna information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications, the laboratory shall not be held responsible.

2. The EUT incorporates a SISO function:

5GHz Band		
MODULATION MODE	**TX & RX CONFIGURATION**	
802.11a	1TX	1RX
802.11n (HT20)	1TX	1RX
802.11n (HT40)	1TX	1RX
802.11ac (VHT20)	1TX	1RX
802.11ac (VHT40)	1TX	1RX
802.11ac (VHT80)	1TX	1RX

3.3 Channel List

FOR 5180 ~ 5240 MHz

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

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

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

Channel	Frequency
38	5190 MHz
46	5230 MHz

1 channels are 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:	1. EUT can be used in the following ways: X/ Y/ Z. Pre-scan in these ways and find the worst case as a representative test condition. 2. EUT has the following operations/ usages: With USB Adapter/With Laptop. For CE (LISN) Pre-scan these operations/ usages and find the worst case as a representative test condition. 3. EUT has the following operations/ usages: Battery/With USB Adapter. For RE Pre-scan these operations/ usages and find the worst case as a representative test condition. 4. EUT has the following operations/ usages: MicroSD Sandisk 16G/Sandisk 32G. Pre-scan these operations/ usages and find the worst case as a representative test condition.
Worst Case:	1. X/ Y/ Z Worst Condition: RE Below 1GHz Y worst； RE Above 1GHz Z worst 2. With USB Adapter/With Laptop for CE (LISN) Worst Condition: With Laptop for CE (LISN) worst 3. Battery/With USB Adapter for RE Worst Condition: With USB Adapter For RE Worst 4. MicroSD Sandisk 16G/Sandisk 32G Worst Condition: Sandisk 16G Worst 5. 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).

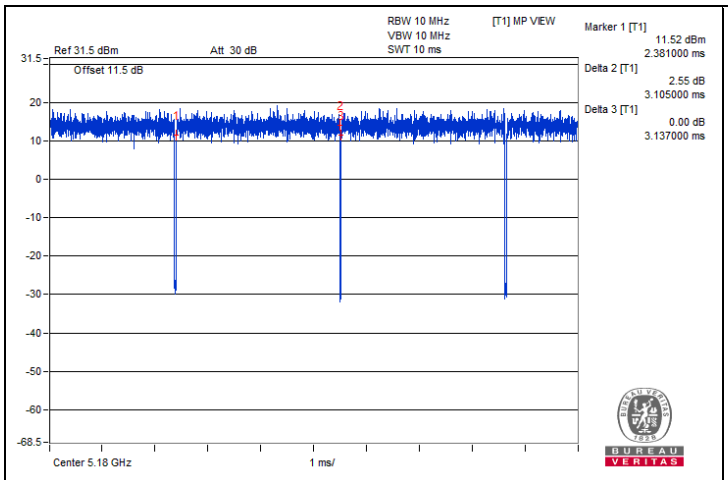
Following channel(s) was (were) selected for the final test as listed below:

Test Item	Mode	Tested Channel	Modulation	Data Rate Parameter
AC Power Conducted Emissions	802.11ac (VHT80)	42	BPSK	MCS0
Unwanted Emissions below 1 GHz	802.11ac (VHT80)	42	BPSK	MCS0
Unwanted Emissions above 1 GHz	802.11a	36, 40, 48, 149, 157, 165	BPSK	6Mb/s
	802.11ac (VHT20)	36, 40, 48, 149, 157, 165	BPSK	MCS0
	802.11ac (VHT40)	38, 46, 54, 151, 159	BPSK	MCS0
	802.11ac (VHT80)	42, 155	BPSK	MCS0
RF Output Power / Power Spectral Density	802.11a	36, 40, 48, 149, 157, 165	BPSK	6Mb/s
	802.11ac (VHT20)	36, 40, 48, 149, 157, 165	BPSK	MCS0
	802.11ac (VHT40)	38, 46, 54, 151, 159	BPSK	MCS0
	802.11ac (VHT80)	42, 155	BPSK	MCS0
Occupied Bandwidth	802.11a	36, 40, 48, 149, 157, 165	BPSK	6Mb/s
	802.11ac (VHT20)	36, 40, 48, 149, 157, 165	BPSK	MCS0
	802.11ac (VHT40)	38, 46, 54, 151, 159	BPSK	MCS0
	802.11ac (VHT80)	42, 155	BPSK	MCS0
6 dB Bandwidth	802.11a	36, 40, 48, 149, 157, 165	BPSK	6Mb/s
	802.11ac (VHT20)	36, 40, 48, 149, 157, 165	BPSK	MCS0
	802.11ac (VHT40)	38, 46, 54, 151, 159	BPSK	MCS0
	802.11ac (VHT80)	42, 155	BPSK	MCS0
Frequency Stability	802.11a	36	un-modulation	-

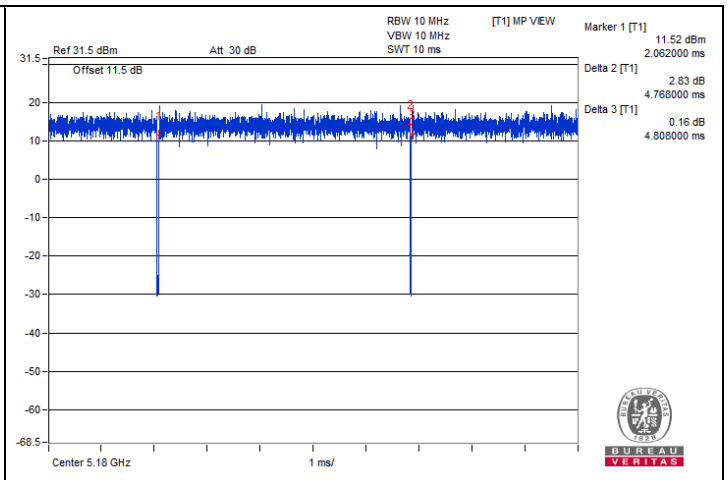
3.5 Duty Cycle of Test Signal

Duty cycle of test signal is >= 98 %, duty factor is not required.
Duty cycle of test signal is < 98 %, duty factor shall be considered.

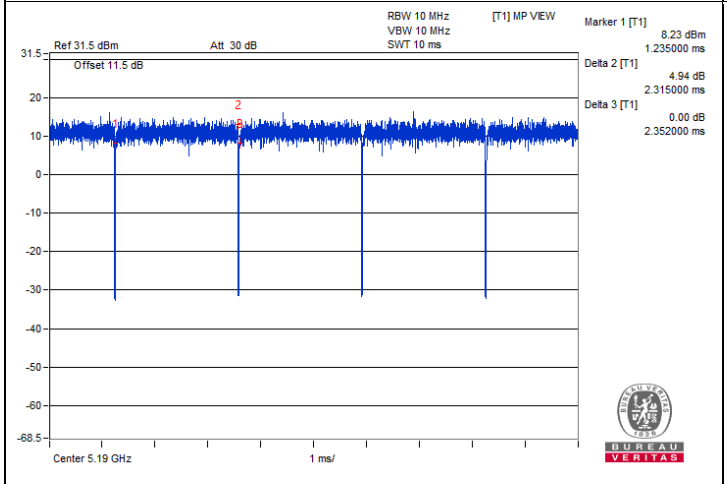
802.11a: Duty cycle = 3.105 ms / 3.137 ms x 100 % = 99.0 %
802.11ac (VHT20): Duty cycle = 4.768 ms / 4.808 ms x 100 % = 99.2 %
802.11ac (VHT40): Duty cycle = 2.315 ms / 2.352 ms x 100 % = 98.4 %
802.11ac (VHT80): Duty cycle = 1.094 ms / 1.135 ms x 100 % = 96.4 %, duty factor = 10 * log (1/Duty cycle) = 0.16 dB



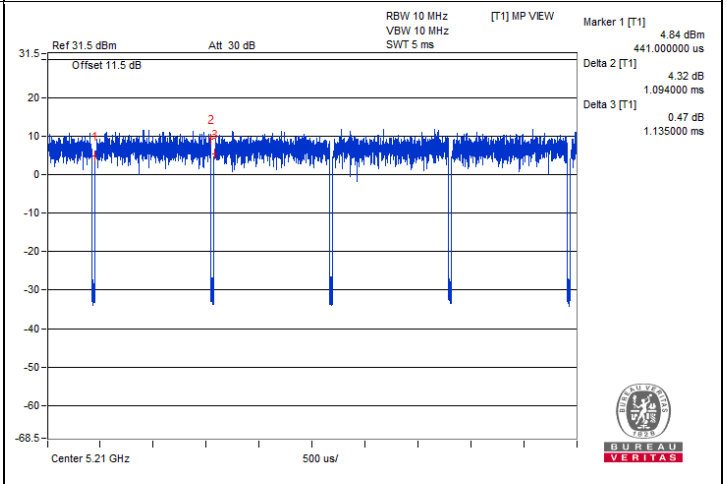
802.11a



802.11ac (VHT20)



802.11ac (VHT40)



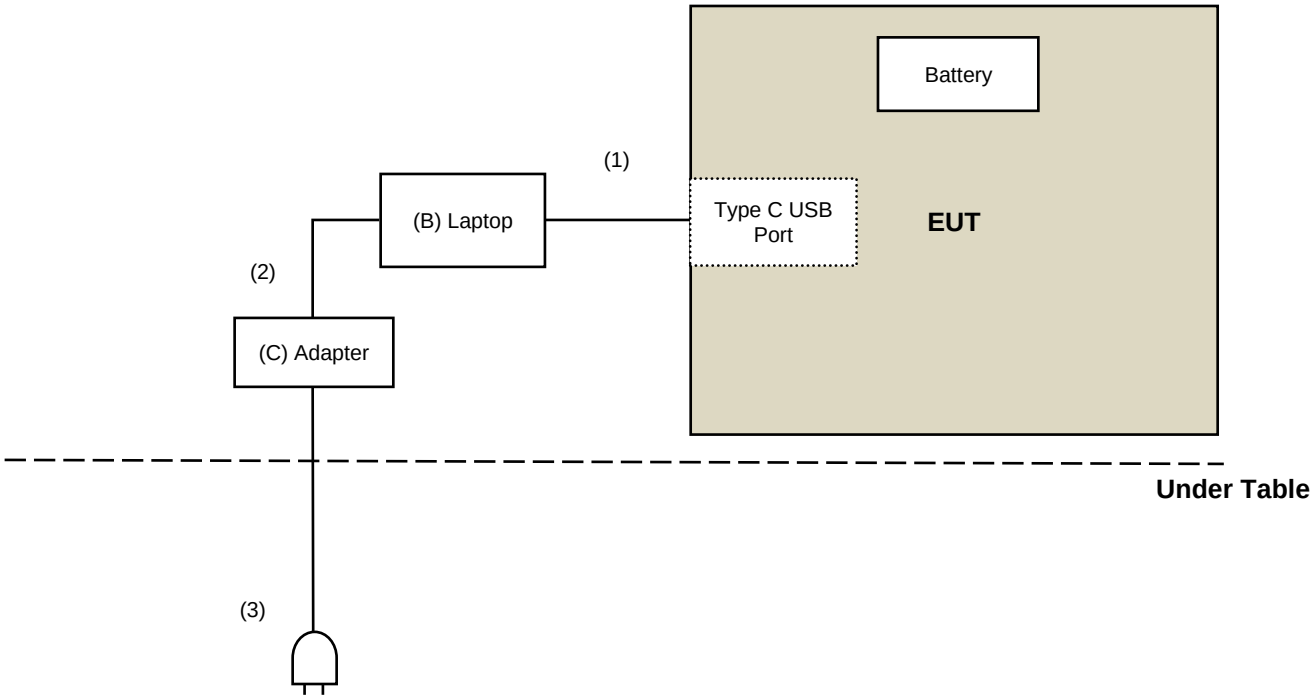
802.11ac (VHT80)

3.6 Test Program Used and Operation Descriptions

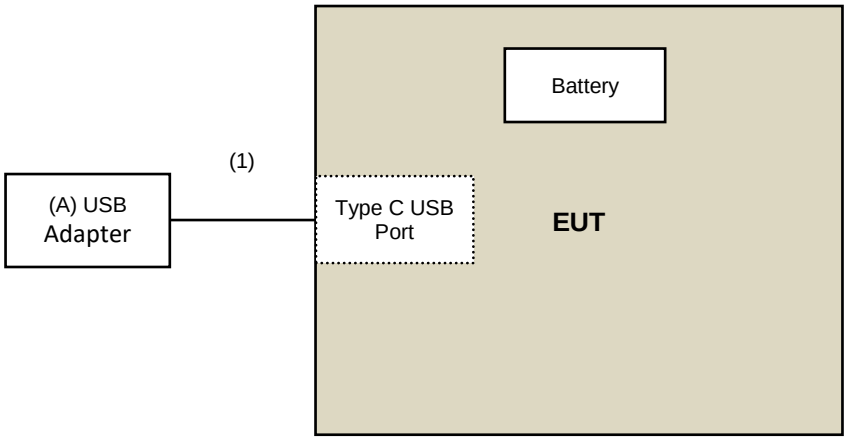
Controlling software (Run Tera Term Ver 4.77.0.0) has been activated to set the EUT under transmission condition continuously at specific channel frequency.

3.7 Connection Diagram of EUT and Peripheral Devices

For AC Power Conducted Emission test



For Radiated Emission test



3.8 Configuration of Peripheral Devices and Cable Connections

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A	USB Adapter	ASUS	EXA1205UA	N/A	N/A	Provided by Lab
B	Laptop	Lenovo	20U5S01X00 L14	PF-28LKK7	N/A	Provided by Lab
C	Adapter	Lenovo	ADLX45YLC3D	N/A	N/A	Provided by Lab

ID	Cable Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1	USB Cable	1	1	Yes	0	Supplied by applicant
2	DC Cable	1	1.8	No	0	Provided by Lab
3	AC Power Cable	1	1	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	2021/4/13	2022/4/12
Power Meter Anritsu	ML2495A	1529002	2021/6/21	2022/6/20
Pulse Power Sensor Anritsu	MA2411B	1339443	2021/5/31	2022/5/30
Software	ADT_RF Test Software V6.6.5.4	N/A	N/A	N/A
Spectrum Analyzer R&S	FSV40	100964	2021/5/31	2022/5/30

Notes:

1. The test was performed in Oven room 2.
2. Tested Date: 2022/3/26

4.2 Power Spectral Density

Refer to section 4.1 to get information of the instruments.

4.3 6 dB Bandwidth

Refer to section 4.1 to get information of the instruments.

4.4 Occupied Bandwidth

Refer to section 4.1 to get information of the instruments.

4.5 Frequency Stability

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
AC Power Source GOOD WILL	6905S	1991551	N/A	N/A
Attenuator WOKEN	MDCS18N-10	MDCS18N-10-01	2021/4/13	2022/4/12
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 R&S	FSV40	100964	2021/5/31	2022/5/30
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	2021/6/2	2022/6/1

Notes:

1. The test was performed in Oven room 2.
2. Tested Date: 2022/3/26

4.6 AC Power Conducted Emissions

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
50 ohms Terminator	50	3	2021/10/27	2022/10/26
Fixed attenuator STI	STI02-2200-10	005	2021/8/27	2022/8/26
LISN R&S	ESH3-Z5	848773/004	2021/10/29	2022/10/28
RF Coaxial Cable JYEBO	5D-FB	COCCAB-001	2021/9/25	2022/9/24
Software BVADT	BVADT_Cond_V7.3.7.4	N/A	N/A	N/A
TEST RECEIVER R&S	ESCS 30	847124/029	2021/10/13	2022/10/12

Notes:

1. The test was performed in Conduction 1
2. Tested Date: 2022/3/31

4.7 Unwanted Emissions below 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Antenna Tower & Turn Table Max-Full	MF-7802	MF780208406	N/A	N/A
Fixed attenuator Mini-Circuits	UNAT-5+	PAD-3m-3-01	2021/9/23	2022/9/22
Loop Antenna TESEQ	HLA 6121	45745	2021/7/21	2022/7/20
MXE EMI Receiver(20 Hz to 44 GHz) Keysight	N9038A	MY54450088	2021/7/6	2022/7/5
Pre_Amplifier EMCI	EMC001340	980142	2021/5/24	2022/5/23
Pre_Amplifier Mini-Circuits	ZFL-1000VH2	QA0838008	2021/10/19	2022/10/18
RF Coaxial Cable JYEBO	5D-FB	LOOPCAB-001	2022/1/6	2023/1/5
		LOOPCAB-002	2022/1/6	2023/1/5
RF Coaxial Cable COMMATE/PEWC	8D	001	2022/2/26	2023/2/25
		966-3-2	2022/2/26	2023/2/25
		966-3-3	2022/2/26	2023/2/25
Software	ADT_Radiated_V8.7.08	N/A	N/A	N/A
Spectrum Analyzer KEYSIGHT	N9030B	MY57142938	2021/4/26	2022/4/25
Trilog Broadband Antenna Schwarzbeck	VULB 9168	9168-361	2021/10/26	2022/10/25

Notes:

1. The test was performed in 966 Chamber No. 3.
2. Tested Date: 2022/3/30

4.8 Unwanted Emissions above 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Antenna Tower & Turn Table Max-Full	MF-7802	MF780208406	N/A	N/A
Fix tool for Boresight antenna tower BV	FBA-01	FBA_SIP01	N/A	N/A
Horn Antenna Schwarzbeck	BBHA9120-D	9120D-406	2021/11/14	2022/11/13
	BBHA 9170	9170-739	2021/11/14	2022/11/13
MXE EMI Receiver(20 Hz to 44 GHz) Keysight	N9038A	MY54450088	2021/7/6	2022/7/5
Pre_Amplifier EMCI	EMC12630SE	980384	2022/1/10	2023/1/9
	EMC184045SE	980387	2022/1/10	2023/1/9
RF Cable EMCI	EMC104-SM-SM-6000	210201	2021/5/13	2022/5/12
RF Cable-Frequency range: 1-40GHz EMCI	EMC102-KM-KM-1200	160924	2022/1/10	2023/1/9
RF Coaxial Cable EMCI	EMC104-SM-SM-1500	180504	2021/4/26	2022/4/25
	EMC104-SM-SM-2000	180601	2021/6/8	2022/6/7
	EMC-KM-KM-4000	200214	2022/3/8	2023/3/7
Software	ADT_Radiated_V8.7.08	N/A	N/A	N/A
Spectrum Analyzer KEYSIGHT	N9030B	MY57142938	2021/4/26	2022/4/25
Spectrum Analyzer Keysight	N9030A	MY54490679	2021/7/9	2022/7/8

Notes:

1. The test was performed in 966 Chamber No. 3.
2. Tested Date: 2022/3/26 ~ 2022/3/30

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><td>Frequency Band</td><td>Applicable To</td><td>EIRP Limit</td><td>Equivalent Field Strength at 3 m</td></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>

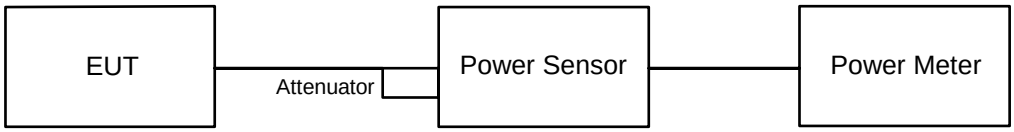
Note: The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength:

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

6 Test Arrangements

6.1 RF Output Power

6.1.1 Test Setup

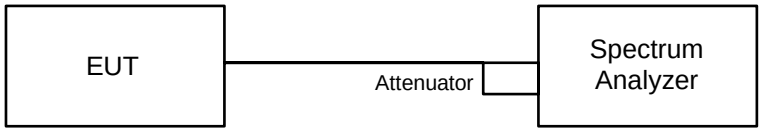


6.1.2 Test Procedure

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”.

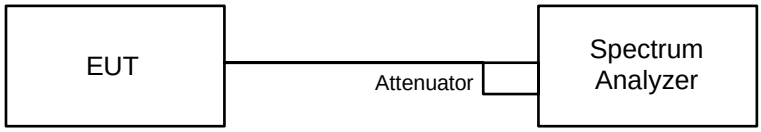
f. Trace average at least 100 traces in power averaging mode.

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.

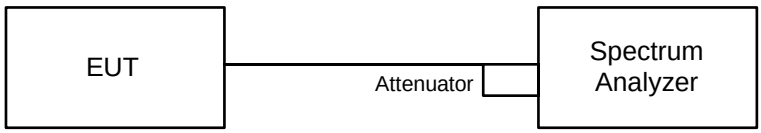
c. Trace mode = max hold.

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

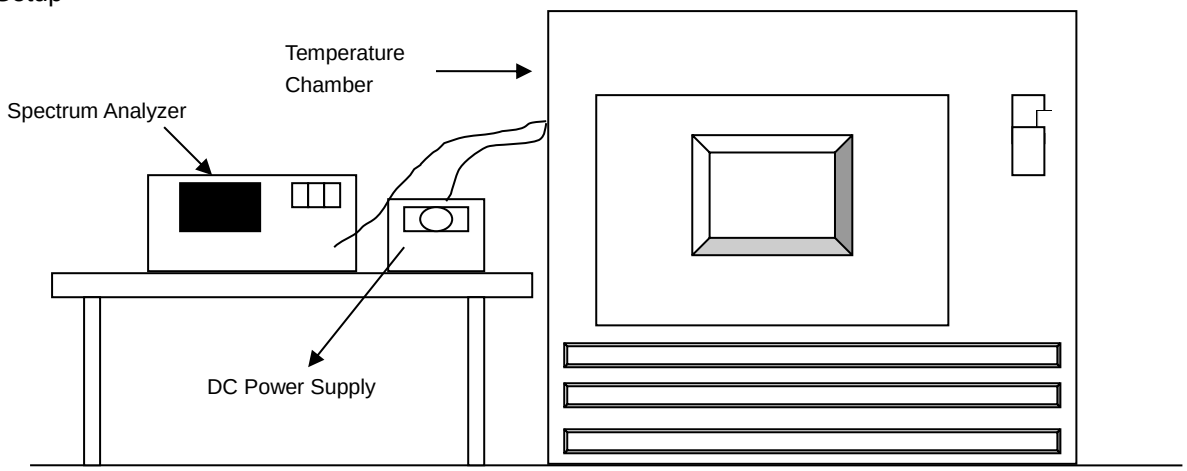


6.4.2 Test Procedure

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 DC voltage.

b. Turn the EUT on and couple its output to a spectrum analyzer.

c. Turn the EUT off and set the chamber to the highest temperature specified.

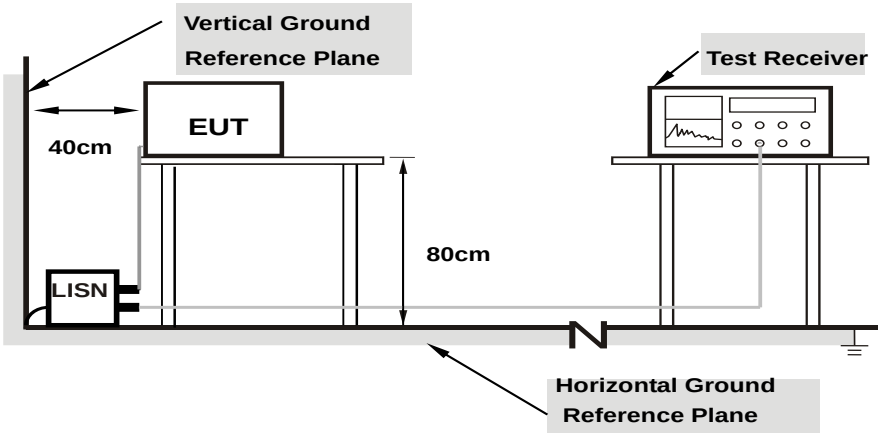
d. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 2, 5, and 10 Minutes.

e. Repeat step (d) with the temperature chamber set to the next desired temperature until measurements down to the lowest specified temperature have been completed.

f. 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

a. The EUT was 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.

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

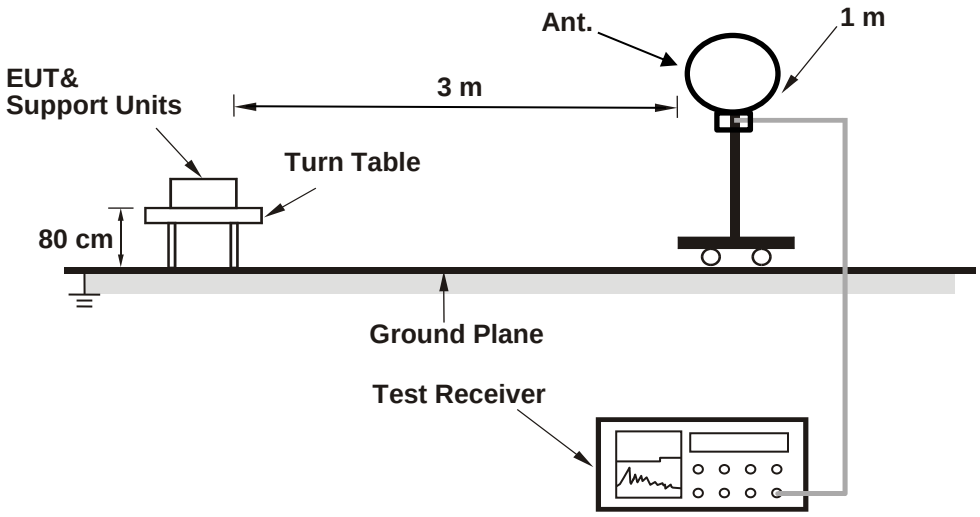
c. The frequency range from 150 kHz to 30 MHz was searched. Emission levels under (Limit – 20 dB) was not recorded.

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.

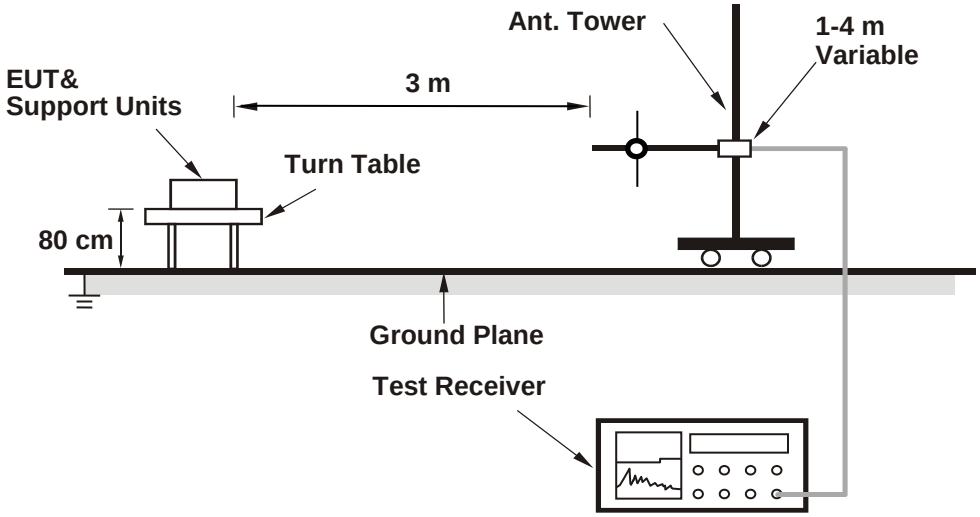
6.7 Unwanted Emissions below 1 GHz

6.7.1 Test Setup

For Radiated emission below 30 MHz



For Radiated emission above 30 MHz



6.7.2 Test Procedure

For Radiated emission below 30 MHz

a. 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.

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

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

d. 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.

e. The test-receiver system was set to Quasi-Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

Notes:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 9 kHz at frequency below 30 MHz.
2. All modes of operation were investigated and the worst-case emissions are reported.

For Radiated emission above 30 MHz

a. 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.

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

c. 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.

d. 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.

e. 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.

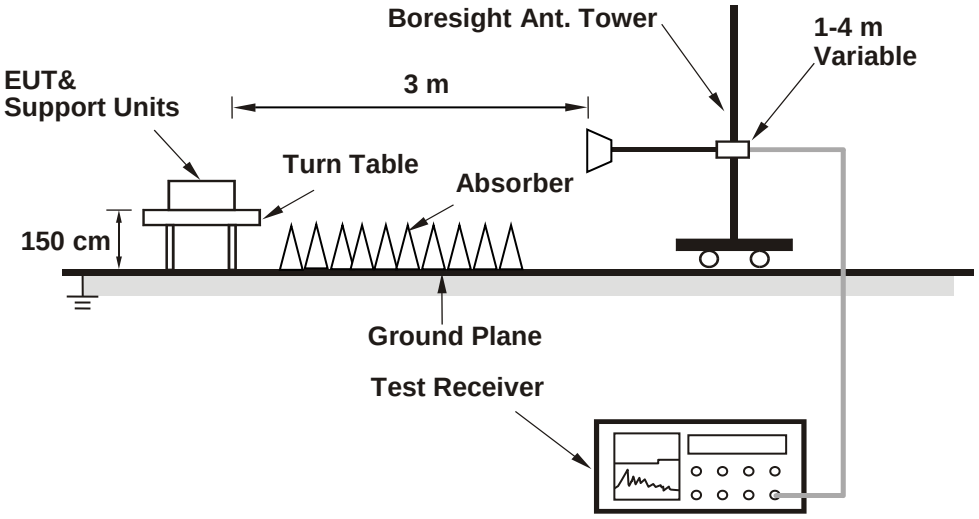
Notes:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasi-peak detection (QP) at frequency below 1 GHz.
2. 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 Radiated emission above 1 GHz



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

6.8.2 Test Procedure

a. 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.

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

c. 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.

d. 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.

e. 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:

1. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1 GHz.
2. 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.
3. 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:	3.7 Vdc	Environmental Conditions:	25 °C, 60 % RH	Tested By:	Gary Cheng

802.11a

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)	Power Limit (dBm)	Test Result
36	5180	12.246	10.88	24	Pass
40	5200	11.94	10.77	24	Pass
48	5240	12.078	10.82	24	Pass
149	5745	3.864	5.87	30	Pass
157	5785	3.707	5.69	30	Pass
165	5825	3.811	5.81	30	Pass

Notes:

1. For U-NII-1, the antenna gain is 2 dBi < 6 dBi, so the output power limit shall not be reduced.
2. For U-NII-3, the antenna gain is 2 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ac (VHT20)

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)	Power Limit (dBm)	Test Result
36	5180	11.858	10.74	24	Pass
40	5200	12.218	10.87	24	Pass
48	5240	11.803	10.72	24	Pass
149	5745	3.707	5.69	30	Pass
157	5785	3.837	5.84	30	Pass
165	5825	3.811	5.81	30	Pass

Notes:

1. For U-NII-1, the antenna gain is 2 dBi < 6 dBi, so the output power limit shall not be reduced.
2. For U-NII-3, the antenna gain is 2 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ac (VHT40)

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)	Power Limit (dBm)	Test Result
38	5190	12.162	10.85	24	Pass
46	5230	11.967	10.78	24	Pass
151	5755	3.899	5.91	30	Pass
159	5795	3.828	5.83	30	Pass

Notes:

1. For U-NII-1, the antenna gain is 2 dBi < 6 dBi, so the output power limit shall not be reduced.
2. For U-NII-3, the antenna gain is 2 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ac (VHT80)

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)	Power Limit (dBm)	Test Result
42	5210	12.531	10.98	24	Pass
155	5775	3.954	5.97	30	Pass

Notes:

1. For U-NII-1, the antenna gain is 2 dBi < 6 dBi, so the output power limit shall not be reduced.
2. For U-NII-3, the antenna gain is 2 dBi < 6 dBi, so the output power limit shall not be reduced.

7.2 Power Spectral Density

Input Power:	3.7 Vdc	Environmental Conditions:	25 °C, 60 % RH	Tested By:	Gary Cheng

802.11a

Chan.	Chan. Freq. (MHz)	PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Test Result
36	5180	-0.24	11.00	Pass
40	5200	-0.25	11.00	Pass
48	5240	-0.24	11.00	Pass

Note: For U-NII-1, the antenna gain is 2 dBi < 6dBi, so the power density limit shall not be reduced.

802.11ac (VHT20)

Chan.	Chan. Freq. (MHz)	PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Test Result
36	5180	-0.38	11.00	Pass
40	5200	-0.32	11.00	Pass
48	5240	-0.32	11.00	Pass

Note: For U-NII-1, the antenna gain is 2 dBi < 6dBi, so the power density limit shall not be reduced.

802.11ac (VHT40)

Chan.	Chan. Freq. (MHz)	PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Test Result
38	5190	-3.19	11.00	Pass
46	5230	-3.19	11.00	Pass

Note: For U-NII-1, the antenna gain is 2 dBi < 6dBi, so the power density limit shall not be reduced.

802.11ac (VHT80)

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)	Duty Factor (dB)	PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Test Result
42	5210	-6.47	0.16	-6.31	11.00	Pass

Note: For U-NII-1, the antenna gain is 2 dBi < 6dBi, so the power density limit shall not be reduced.

802.11a

Chan.	Chan. Freq. (MHz)	PSD (dBm/300kHz)	PSD (dBm/500kHz)	PSD Limit (dBm/500kHz)	Test Result
149	5745	-9.28	-7.06	30	Pass
157	5785	-9.32	-7.10	30	Pass
165	5825	-9.33	-7.11	30	Pass

Note: For U-NII-3, the antenna gain is 2 dBi < 6 dBi, so the power density limit shall not be reduced.

802.11ac (VHT20)

Chan.	Chan. Freq. (MHz)	PSD (dBm/300kHz)	PSD (dBm/500kHz)	PSD Limit (dBm/500kHz)	Test Result
149	5745	-9.31	-7.09	30	Pass
157	5785	-9.36	-7.14	30	Pass
165	5825	-9.4	-7.18	30	Pass

Note: For U-NII-3, the antenna gain is 2 dBi < 6 dBi, so the power density limit shall not be reduced.

802.11ac (VHT40)

Chan.	Chan. Freq. (MHz)	PSD (dBm/300kHz)	PSD (dBm/500kHz)	PSD Limit (dBm/500kHz)	Test Result
151	5755	-12.34	-10.12	30	Pass
159	5795	-12.4	-10.18	30	Pass

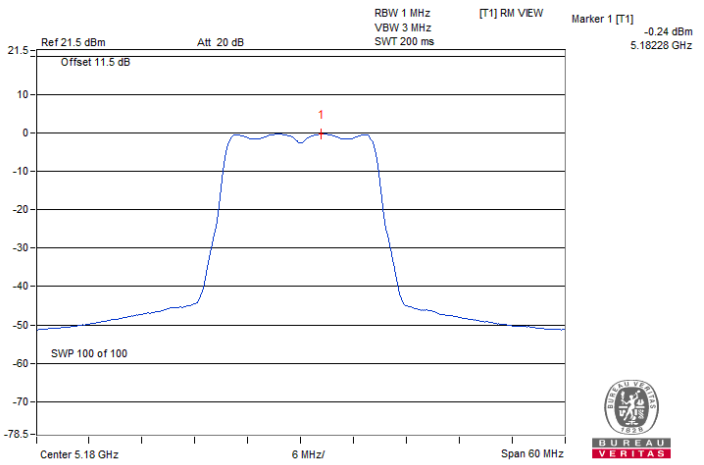
Note: For U-NII-3, the antenna gain is 2 dBi < 6 dBi, so the power density limit shall not be reduced.

802.11ac (VHT80)

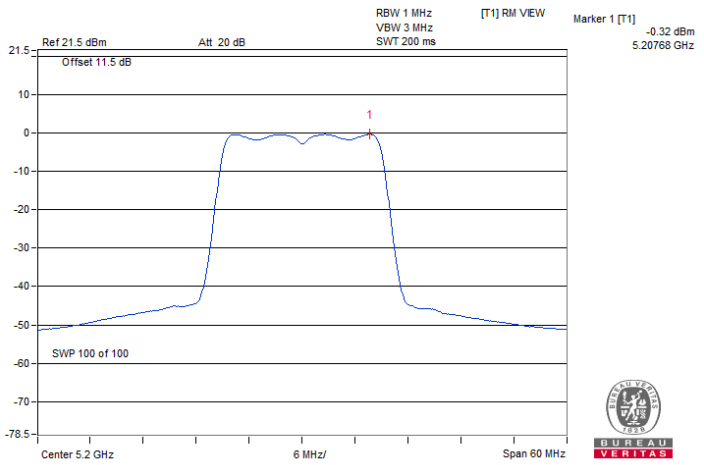
Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/300kHz)	Duty Factor (dB)	PSD (dBm/500kHz)	PSD Limit (dBm/500kHz)	Test Result
155	5775	-15.65	0.16	-13.27	30	Pass

Note: For U-NII-3, the antenna gain is 2 dBi < 6 dBi, so the power density limit shall not be reduced.

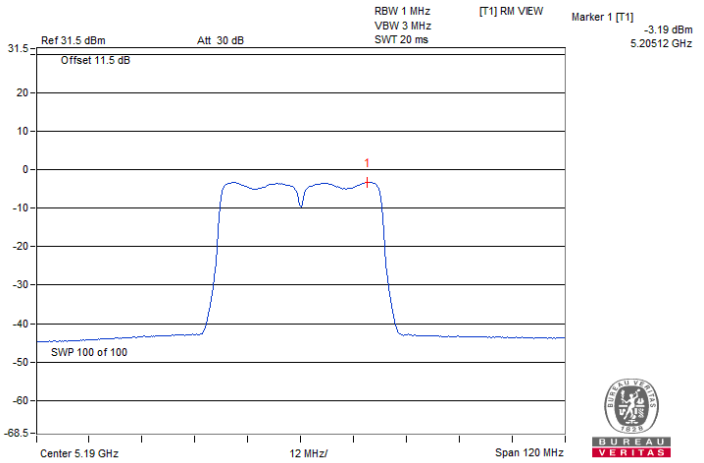
Spectrum Plot of Maximum Value



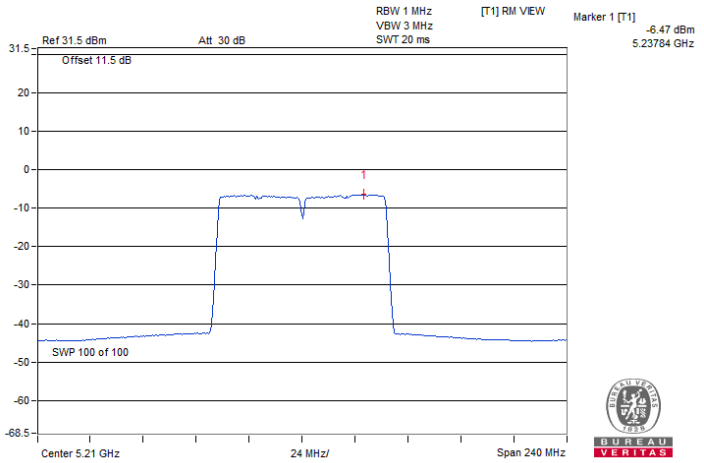
802.11a : CH 36



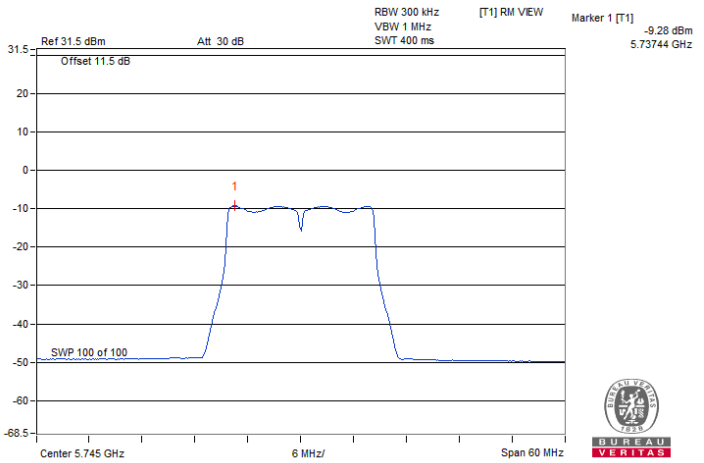
802.11ac (VHT20) : CH 40



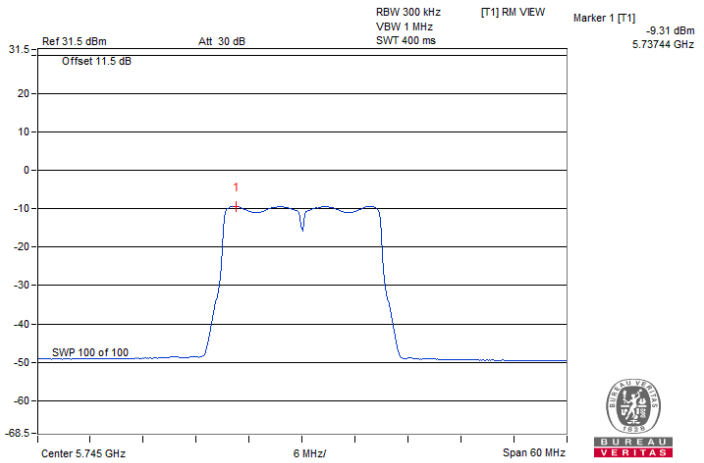
802.11ac (VHT40) : CH 38



802.11ac (VHT80) : CH 42

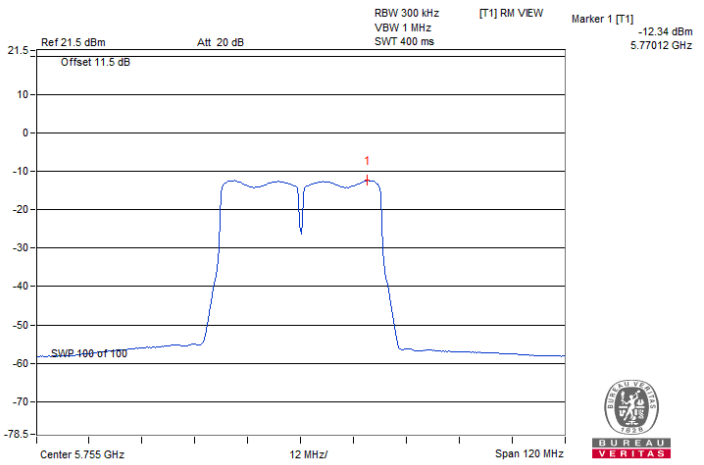


802.11a : CH 149

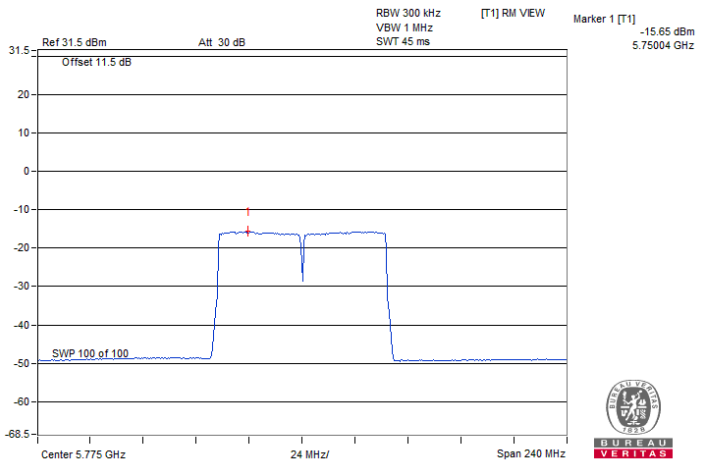


802.11ac (VHT20) : CH 149

Spectrum Plot of Maximum Value



802.11ac (VHT40) : CH 151



802.11ac (VHT80) : CH 155

7.3 6 dB Bandwidth

Input Power:	3.7 Vdc	Environmental Conditions:	25 °C, 60 % RH	Tested By:	Gary Cheng

802.11a

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Test Result
149	5745	16.42	0.5	Pass
157	5785	16.41	0.5	Pass
165	5825	16.42	0.5	Pass

802.11ac (VHT20)

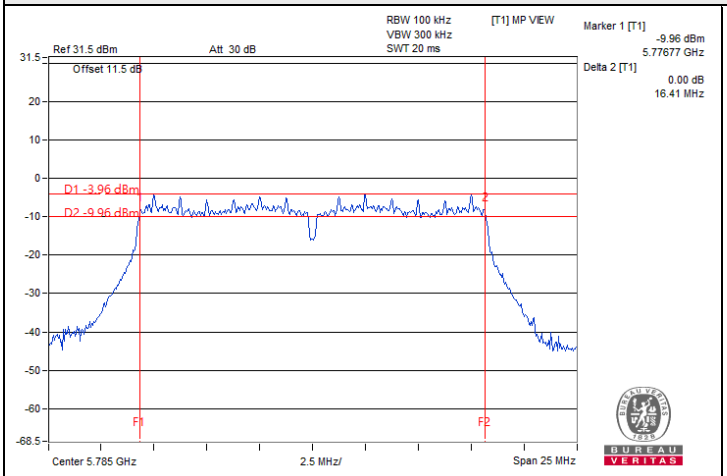
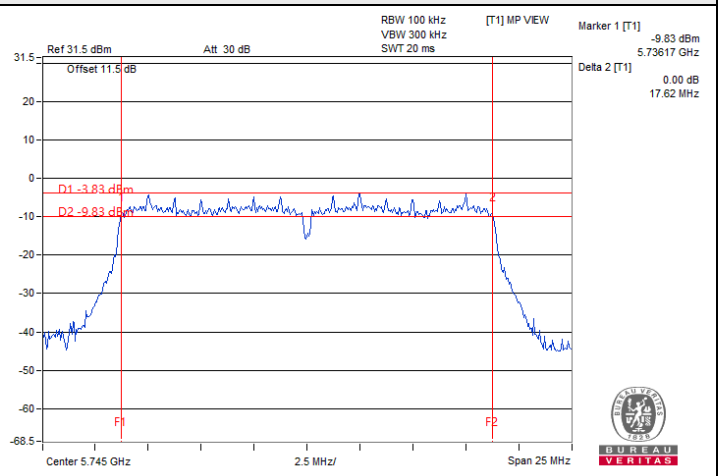
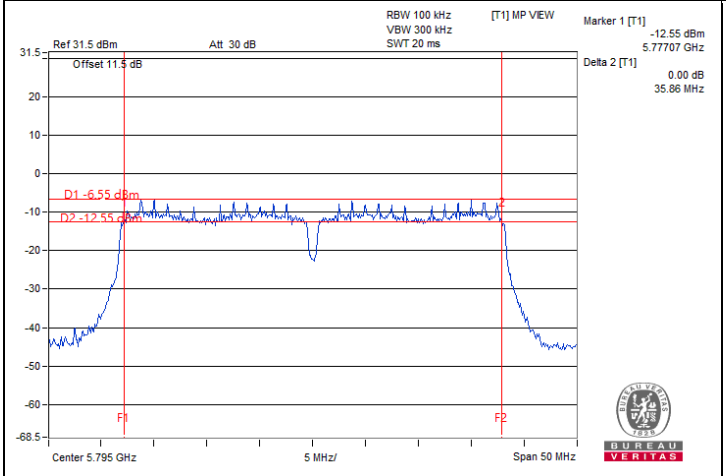
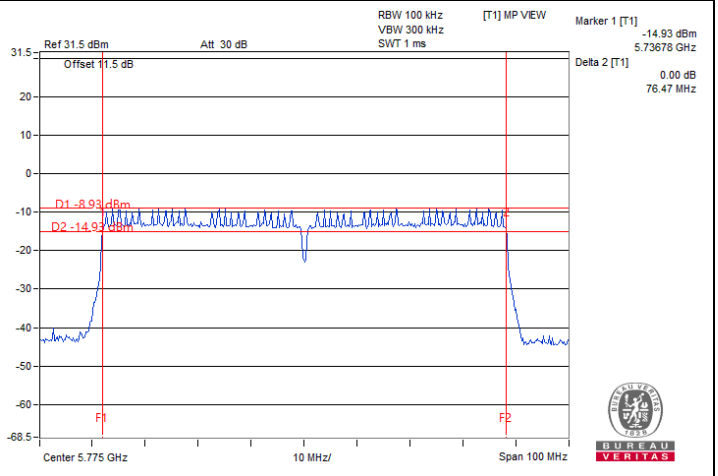
Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Test Result
149	5745	17.62	0.5	Pass
157	5785	17.65	0.5	Pass
165	5825	17.63	0.5	Pass

802.11ac (VHT40)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Test Result
151	5755	35.92	0.5	Pass
159	5795	35.86	0.5	Pass

802.11ac (VHT80)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Test Result
155	5775	76.47	0.5	Pass

Spectrum Plot of Minimum Value	
 802.11a : CH 157	 802.11ac (VHT20) : CH 149
 802.11ac (VHT40) : CH 159	 802.11ac (VHT80) : CH 155

Notes:

1. For U-NII-3 straddle channel = Marker 1 + Delta 2 - 5725MHz

7.4 Occupied Bandwidth

Input Power:	3.7 Vdc	Environmental Conditions:	25 °C, 60 % RH	Tested By:	Gary Cheng

802.11a

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)
36	5180	16.68
40	5200	16.68
48	5240	16.68
149	5745	16.8
157	5785	16.8
165	5825	16.8

802.11ac (VHT20)

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)
36	5180	17.76
40	5200	17.76
48	5240	17.76
149	5745	17.76
157	5785	17.64
165	5825	17.76

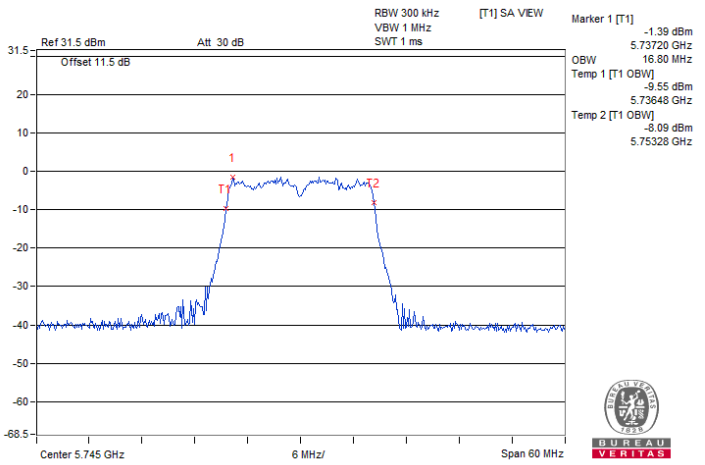
802.11ac (VHT40)

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)
38	5190	36.48
46	5230	36.48
151	5755	36.72
159	5795	36.72

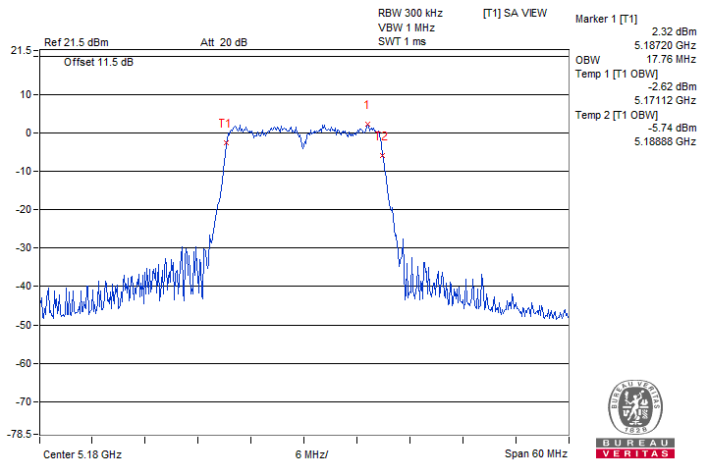
802.11ac (VHT80)

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)
42	5210	75.84
155	5775	76.32

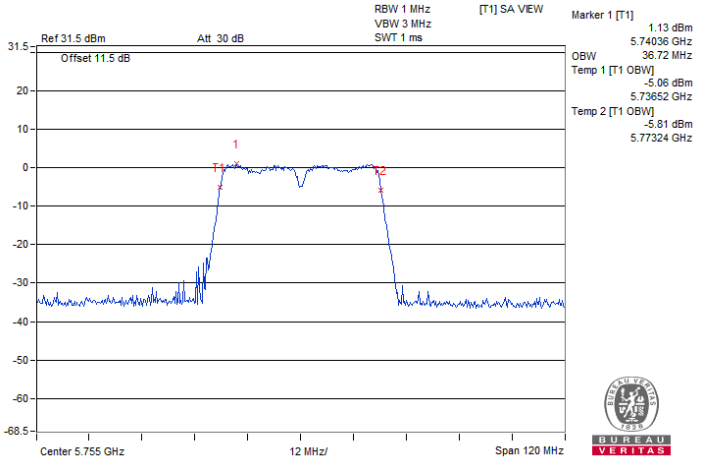
Spectrum Plot of Maximum Value



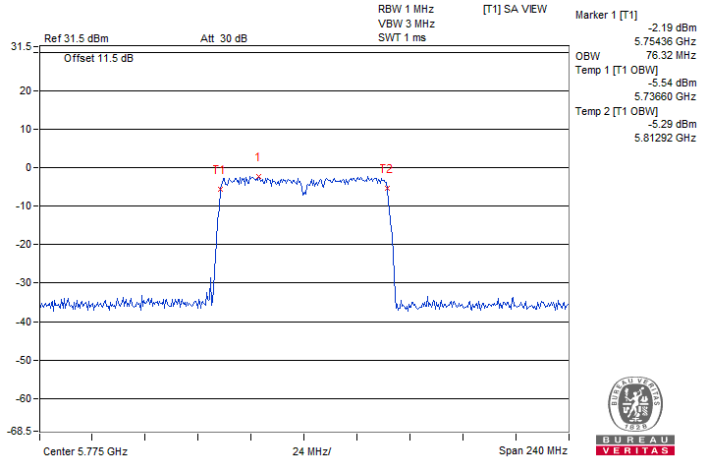
802.11a : CH 149



802.11ac (VHT20) : CH 36



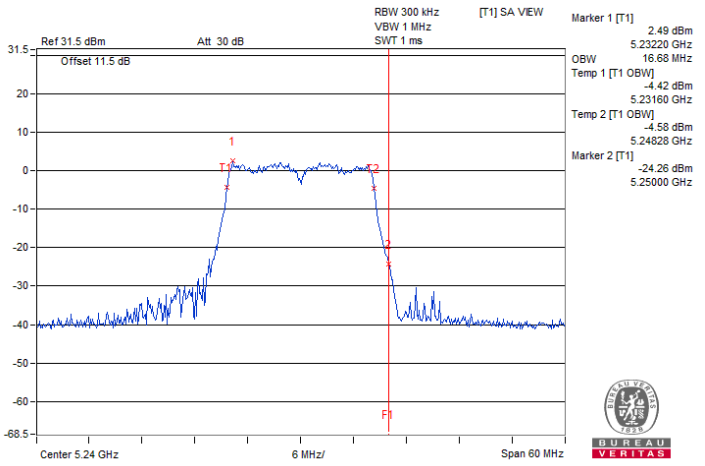
802.11ac (VHT40) : CH 151



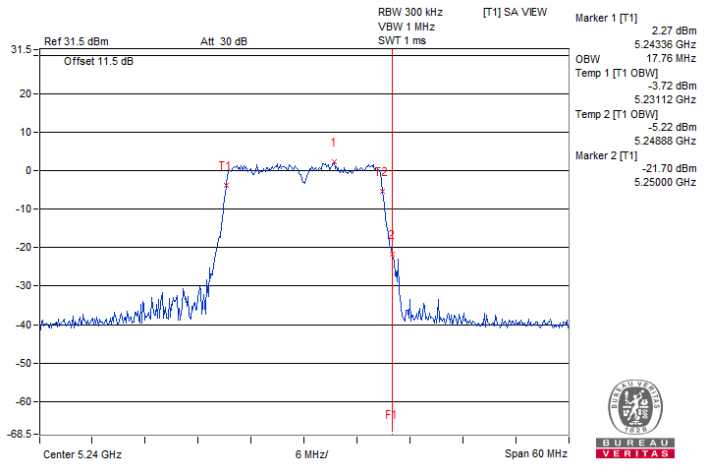
802.11ac (VHT80) : CH 155

Spectrum Plot for nearby DFS band

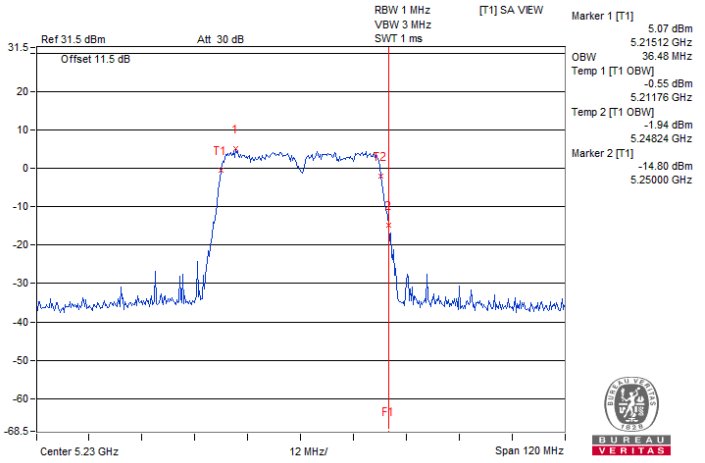
(DFS is required, if 99% OCP straddle into U-NII-2A band)



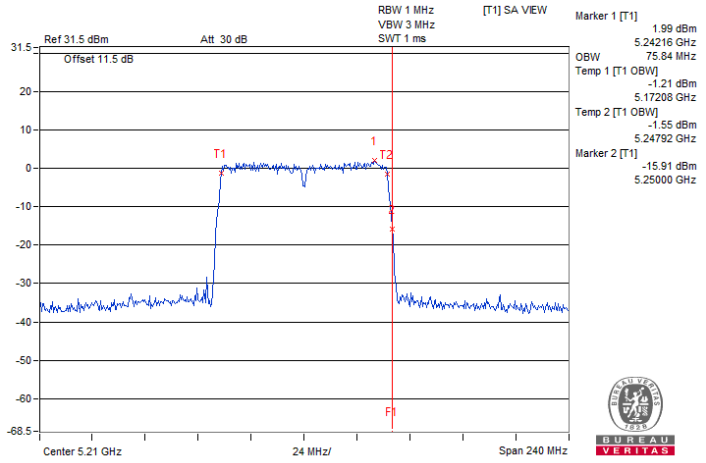
802.11a : CH 48



802.11ac (VHT20) : CH 48



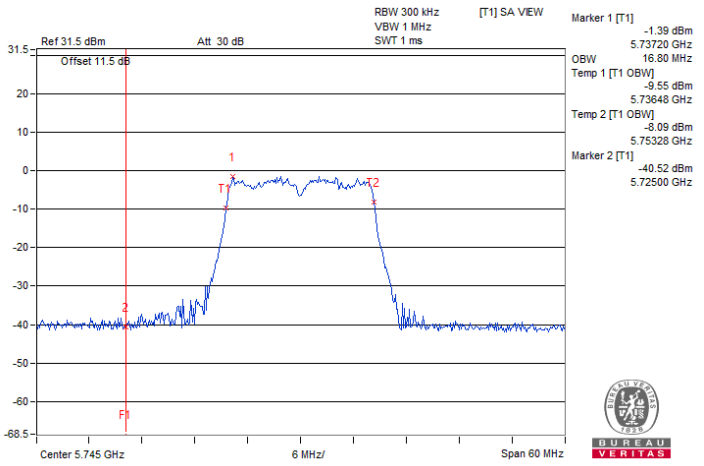
802.11ac (VHT40) : CH 46



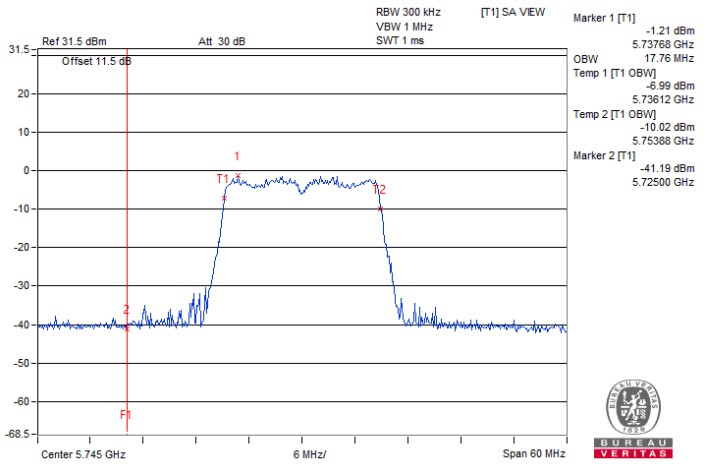
802.11ac (VHT80) : CH 42

Spectrum Plot for nearby DFS band

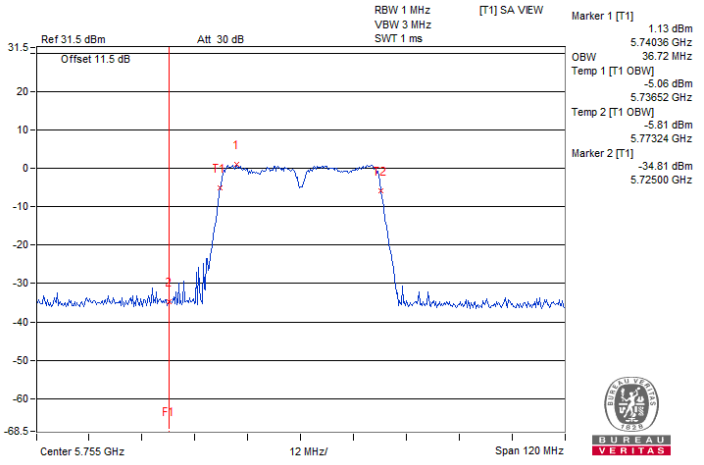
(DFS is required, if 99% OCP straddle into U-NII-2C band)



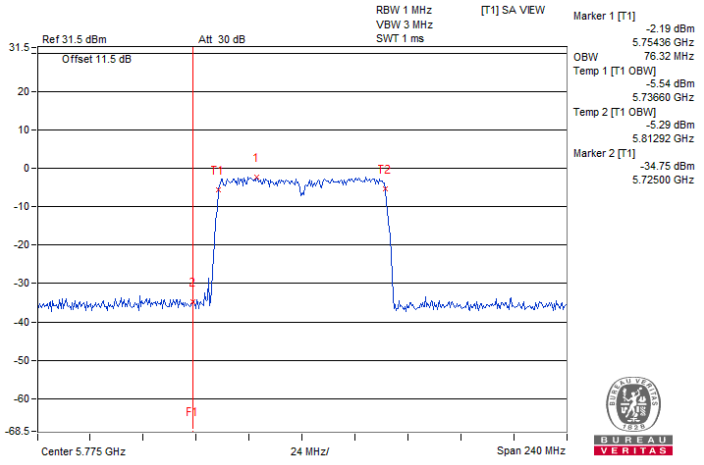
802.11a : CH 149



802.11ac (VHT20) : CH 149



802.11ac (VHT40) : CH 151



802.11ac (VHT80) : CH 155

7.5 Frequency Stability

Input Power:	3.7 Vdc	Environmental Conditions:	25 °C, 60 % RH	Tested By:	Gary Cheng

802.11a

Frequency Stability Versus Temp.									
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
45	3.7	5180.014	Pass	5180.0126	Pass	5180.0153	Pass	5180.015	Pass
40	3.7	5179.9872	Pass	5179.9877	Pass	5179.9846	Pass	5179.9883	Pass
30	3.7	5179.9798	Pass	5179.9807	Pass	5179.9787	Pass	5179.9782	Pass
20	3.7	5180.0195	Pass	5180.0211	Pass	5180.0204	Pass	5180.0225	Pass
10	3.7	5180.0006	Pass	5179.9986	Pass	5180.0009	Pass	5179.9986	Pass
0	3.7	5180.0128	Pass	5180.0085	Pass	5180.0114	Pass	5180.0117	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	4.255	5180.0206	Pass	5180.0176	Pass	5180.0191	Pass	5180.0173	Pass
	3.7	5180.0195	Pass	5180.0211	Pass	5180.0204	Pass	5180.0225	Pass
	3.54	5180.013	Pass	5180.0135	Pass	5180.0095	Pass	5180.0108	Pass

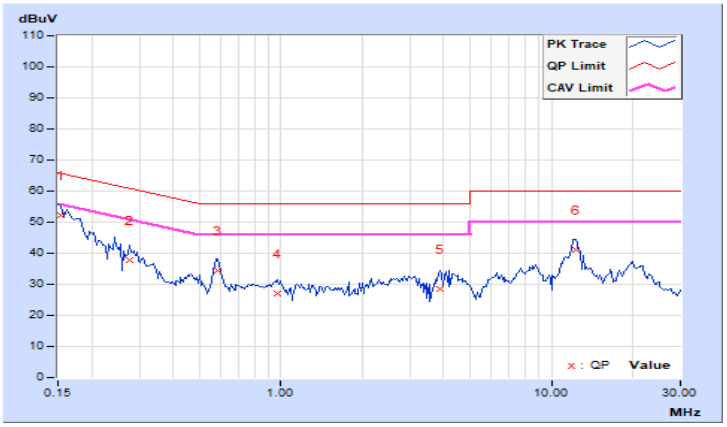
7.6 AC Power Conducted Emissions

RF Mode	TX 802.11ac (VHT80)	**Channel**	CH 42：5210 MHz
Frequency Range	150 kHz ~ 30 MHz	**Detector Function & Resolution Bandwidth**	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power (System)	120Vac, 60Hz	**Environmental Conditions**	25 °C, 66 % RH
Tested By	Tom Yang		

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	**0.15391**	**10.05**	**42.14**	**25.19**	**52.19**	**35.24**	**65.79**	**55.79**	**-13.60**	**-20.55**
2	0.27500	10.06	27.84	13.04	37.90	23.10	60.97	50.97	-23.07	-27.87
3	0.58750	10.08	24.31	18.16	34.39	28.24	56.00	46.00	-21.61	-17.76
4	0.96641	10.11	16.96	12.68	27.07	22.79	56.00	46.00	-28.93	-23.21
5	3.86719	10.25	18.28	9.86	28.53	20.11	56.00	46.00	-27.47	-25.89
6	12.30469	10.75	30.51	24.45	41.26	35.20	60.00	50.00	-18.74	-14.80

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

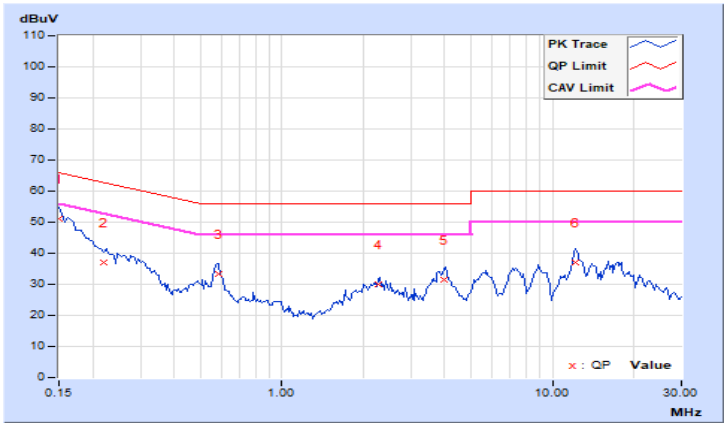


RF Mode	TX 802.11ac (VHT80)	Channel	CH 42：5210 MHz
Frequency Range	150 kHz ~ 30 MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power (System)	120Vac, 60Hz	Environmental Conditions	25 °C, 66 % RH
Tested By	Tom Yang		

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	10.02	40.99	23.97	51.01	33.99	66.00	56.00	-14.99	-22.01
2	0.22031	10.03	27.16	12.59	37.19	22.62	62.81	52.81	-25.62	-30.19
3	0.58359	10.05	23.32	15.92	33.37	25.97	56.00	46.00	-22.63	-20.03
4	2.26953	10.14	19.96	12.70	30.10	22.84	56.00	46.00	-25.90	-23.16
5	3.99219	10.21	21.25	13.82	31.46	24.03	56.00	46.00	-24.54	-21.97
6	12.13672	10.59	26.30	19.54	36.89	30.13	60.00	50.00	-23.11	-19.87

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



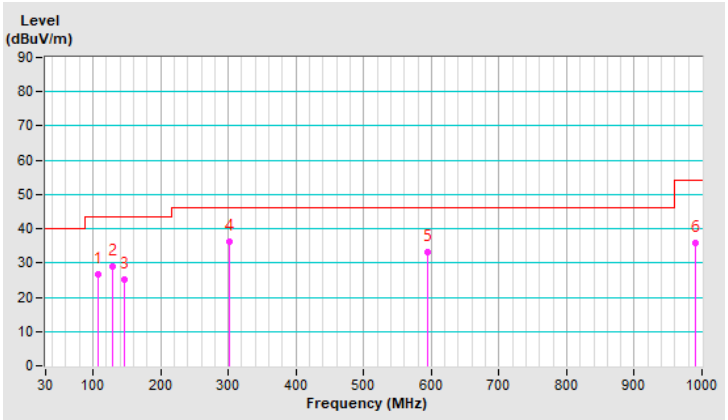
7.7 Unwanted Emissions below 1 GHz

RF Mode	TX 802.11ac (VHT80)	**Channel**	CH 42：5210 MHz
Frequency Range	9 kHz ~ 1 GHz	**Detector Function & Bandwidth**	(QP) RB = 120kHz
Input Power (System)	120Vac, 60Hz	**Environmental Conditions**	25 °C, 65 % RH
Tested By	Nelson Teng		

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	106.84	26.7 QP	43.5	-16.8	1.00 H	3	38.1	-11.4
2	128.23	28.9 QP	43.5	-14.6	1.00 H	258	38.2	-9.3
3	147.30	25.1 QP	43.5	-18.4	3.00 H	287	33.1	-8.0
4	**302.09**	**36.2 QP**	**46.0**	**-9.8**	**1.00 H**	**219**	**43.8**	**-7.6**
5	594.12	33.3 QP	46.0	-12.7	1.00 H	350	33.9	-0.6
6	990.04	35.7 QP	54.0	-18.3	1.00 H	345	30.4	5.3

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.

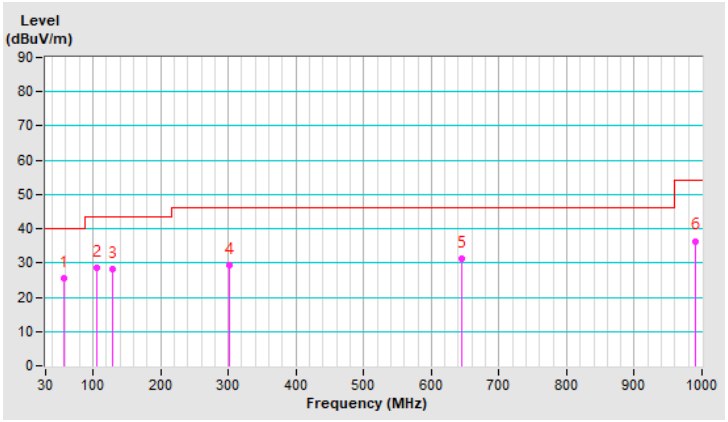


RF Mode	TX 802.11ac (VHT80)	**Channel**	CH 42：5210 MHz
Frequency Range	9 kHz ~ 1 GHz	**Detector Function & Bandwidth**	(QP) RB = 120kHz
Input Power (System)	120Vac, 60Hz	**Environmental Conditions**	25 °C, 65 % RH
Tested By	Nelson Teng		

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	57.05	25.4 QP	40.0	-14.6	2.00 V	15	34.1	-8.7
2	105.74	28.7 QP	43.5	-14.8	3.00 V	330	40.3	-11.6
3	128.19	28.3 QP	43.5	-15.2	2.00 V	0	37.6	-9.3
4	301.83	29.5 QP	46.0	-16.5	3.00 V	302	37.1	-7.6
5	644.38	31.1 QP	46.0	-14.9	3.00 V	360	31.0	0.1
6	990.03	36.4 QP	54.0	-17.6	1.00 V	340	31.1	5.3

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.



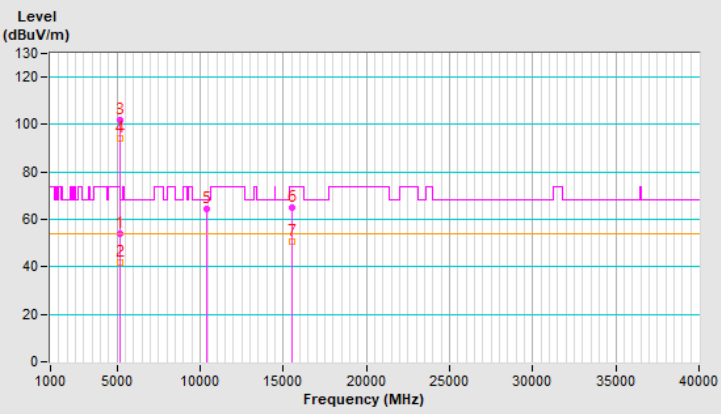
7.8 Unwanted Emissions above 1 GHz

RF Mode	TX 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 = 10 Hz
Input Power (System)	120Vac, 60Hz	Environmental Conditions	25 °C, 65 % RH
Tested By	Spencer Liao		

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	53.9 PK	74.0	-20.1	2.10 H	62	49.3	4.6
2	5150.00	41.8 AV	54.0	-12.2	2.10 H	62	37.2	4.6
3	*5180.00	102.0 PK			2.10 H	62	97.5	4.5
4	*5180.00	94.0 AV			2.10 H	62	89.5	4.5
5	#10360.00	64.6 PK	68.2	-3.6	1.00 H	210	51.0	13.6
6	15540.00	64.9 PK	74.0	-9.1	1.48 H	205	50.8	14.1
7	15540.00	50.7 AV	54.0	-3.3	1.48 H	205	36.6	14.1

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.
6. " # ": The radiated frequency is out of the restricted band.

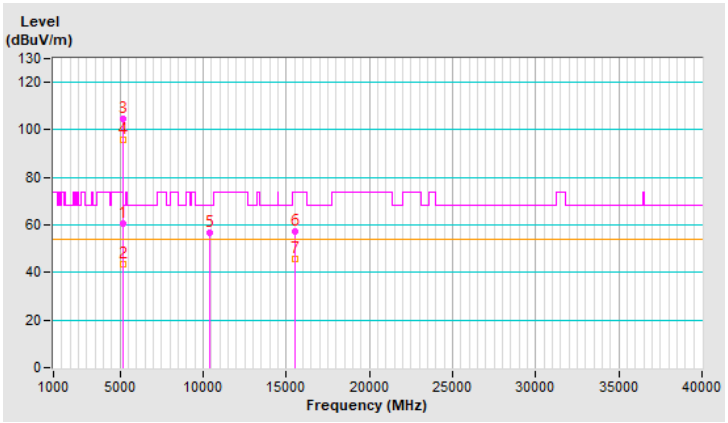


RF Mode	TX 802.11a	Channel	CH 36：5180 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power (System)	120Vac, 60Hz	Environmental Conditions	25 °C, 65 % RH
Tested By	Spencer Liao		

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	60.6 PK	74.0	-13.4	3.18 V	207	56.0	4.6
2	5150.00	43.7 AV	54.0	-10.3	3.18 V	207	39.1	4.6
3	*5180.00	104.4 PK			3.18 V	207	99.9	4.5
4	*5180.00	95.8 AV			3.18 V	207	91.3	4.5
5	#10360.00	56.8 PK	68.2	-11.4	1.00 V	214	43.2	13.6
6	15540.00	57.4 PK	74.0	-16.6	1.68 V	213	43.3	14.1
7	15540.00	45.5 AV	54.0	-8.5	1.68 V	213	31.4	14.1

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.
6. " # ": The radiated frequency is out of the restricted band.

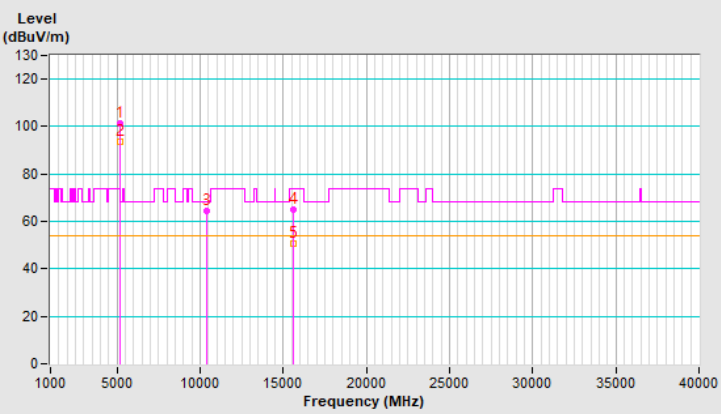


RF Mode	TX 802.11a	Channel	CH 40：5200 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power (System)	120Vac, 60Hz	Environmental Conditions	25 °C, 65 % RH
Tested By	Spencer Liao		

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	101.3 PK			2.13 H	58	96.9	4.4
2	*5200.00	93.5 AV			2.13 H	58	89.1	4.4
3	#10400.00	64.4 PK	68.2	-3.8	1.00 H	224	50.7	13.7
4	15600.00	64.9 PK	74.0	-9.1	1.51 H	218	50.9	14.0
5	15600.00	50.6 AV	54.0	-3.4	1.51 H	218	36.6	14.0

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.
6. " # ": The radiated frequency is out of the restricted band.

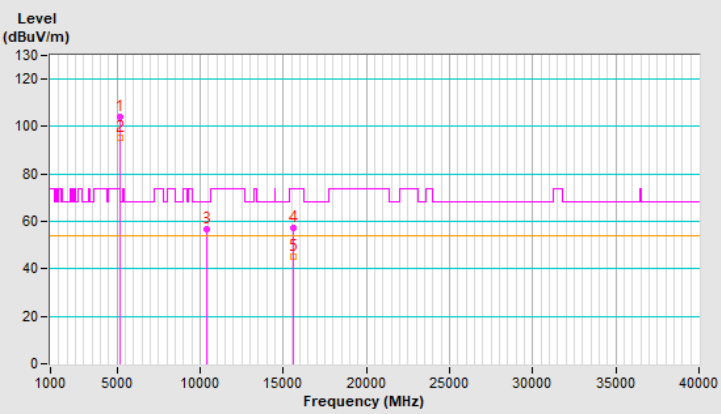


RF Mode	TX 802.11a	**Channel**	CH 40：5200 MHz
Frequency Range	1 GHz ~ 40 GHz	**Detector Function & Bandwidth**	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power (System)	120Vac, 60Hz	**Environmental Conditions**	25 °C, 65 % RH
Tested By	Spencer Liao		

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	103.9 PK			3.24 V	220	99.5	4.4
2	*5200.00	95.3 AV			3.24 V	220	90.9	4.4
3	#10400.00	56.9 PK	68.2	-11.3	1.00 V	219	43.2	13.7
4	15600.00	57.2 PK	74.0	-16.8	1.68 V	217	43.2	14.0
5	15600.00	45.1 AV	54.0	-8.9	1.68 V	217	31.1	14.0

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.
6. " # ": The radiated frequency is out of the restricted band.

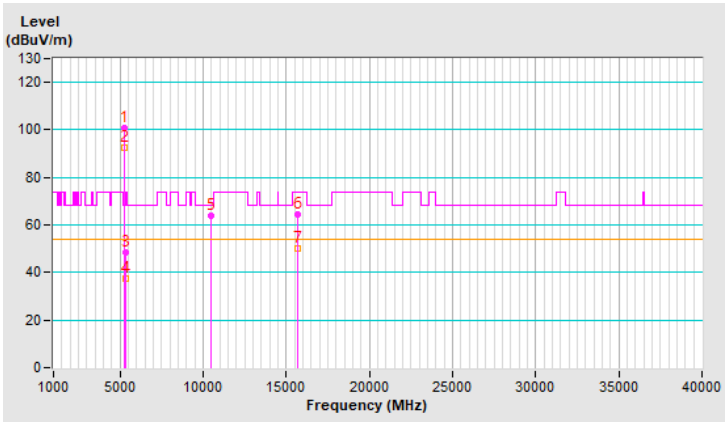


RF Mode	TX 802.11a	Channel	CH 48：5240 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power (System)	120Vac, 60Hz	Environmental Conditions	25 °C, 65 % RH
Tested By	Spencer Liao		

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	100.9 PK			2.16 H	61	96.8	4.1
2	*5240.00	92.3 AV			2.16 H	61	88.2	4.1
3	5350.00	48.2 PK	74.0	-25.8	2.16 H	61	43.9	4.3
4	5350.00	37.4 AV	54.0	-16.6	2.16 H	61	33.1	4.3
5	#10480.00	64.1 PK	68.2	-4.1	1.04 H	210	50.3	13.8
6	15720.00	64.6 PK	74.0	-9.4	1.48 H	220	50.9	13.7
7	15720.00	50.1 AV	54.0	-3.9	1.48 H	220	36.4	13.7

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.
6. " # ": The radiated frequency is out of the restricted band.

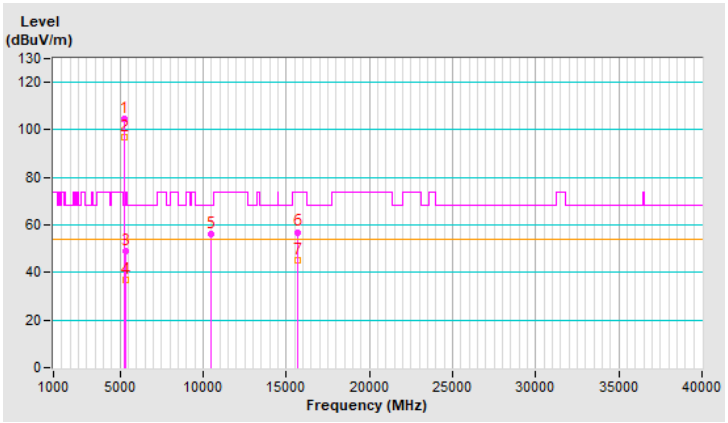


RF Mode	TX 802.11a	Channel	CH 48：5240 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power (System)	120Vac, 60Hz	Environmental Conditions	25 °C, 65 % RH
Tested By	Spencer Liao		

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	104.8 PK			3.33 V	48	100.7	4.1
2	*5240.00	96.8 AV			3.33 V	48	92.7	4.1
3	5350.00	49.0 PK	74.0	-25.0	3.33 V	48	44.7	4.3
4	5350.00	37.0 AV	54.0	-17.0	3.33 V	48	32.7	4.3
5	#10480.00	56.4 PK	68.2	-11.8	1.00 V	210	42.6	13.8
6	15720.00	57.0 PK	74.0	-17.0	1.72 V	211	43.3	13.7
7	15720.00	45.2 AV	54.0	-8.8	1.72 V	211	31.5	13.7

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.
6. " # ": The radiated frequency is out of the restricted band.

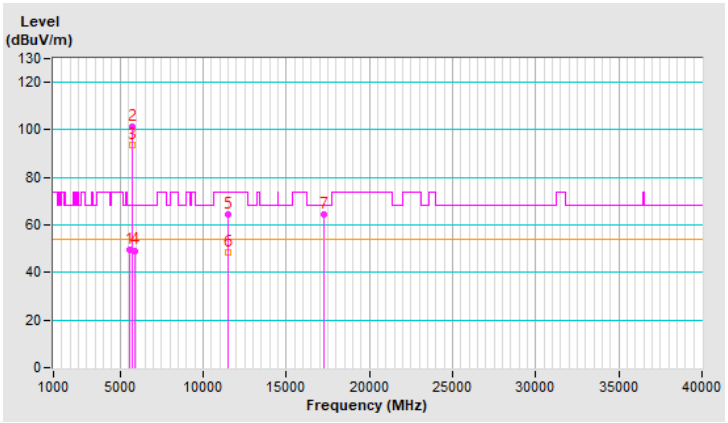


RF Mode	TX 802.11a	Channel	CH 149：5745 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power (System)	120Vac, 60Hz	Environmental Conditions	25 °C, 65 % RH
Tested By	Spencer Liao		

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	#5567.56	49.4 PK	68.2	-18.8	1.31 H	67	44.8	4.6
2	*5745.00	101.4 PK			1.31 H	67	96.5	4.9
3	*5745.00	93.6 AV			1.31 H	67	88.7	4.9
4	#5929.90	49.3 PK	68.2	-18.9	1.31 H	67	44.0	5.3
5	11490.00	64.6 PK	74.0	-9.4	1.00 H	214	49.8	14.8
6	11490.00	48.3 AV	54.0	-5.7	1.00 H	214	33.5	14.8
7	#17235.00	64.5 PK	68.2	-3.7	1.47 H	205	46.3	18.2

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.
6. " # ": The radiated frequency is out of the restricted band.

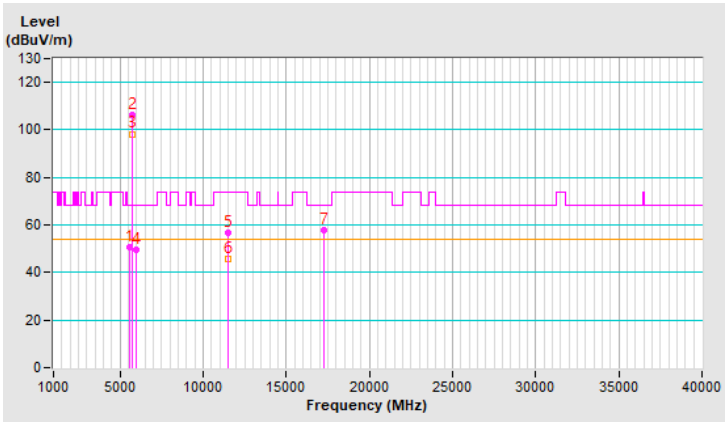


RF Mode	TX 802.11a	Channel	CH 149：5745 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power (System)	120Vac, 60Hz	Environmental Conditions	25 °C, 65 % RH
Tested By	Spencer Liao		

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	#5590.23	50.5 PK	68.2	-17.7	3.82 V	161	45.8	4.7
2	*5745.00	106.4 PK			3.82 V	161	101.5	4.9
3	*5745.00	98.3 AV			3.82 V	161	93.4	4.9
4	#5968.64	49.6 PK	68.2	-18.6	3.82 V	161	44.3	5.3
5	11490.00	56.8 PK	74.0	-17.2	1.65 V	216	42.0	14.8
6	11490.00	45.6 AV	54.0	-8.4	1.65 V	216	30.8	14.8
7	#17235.00	57.8 PK	68.2	-10.4	3.94 V	206	39.6	18.2

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.
6. " # ": The radiated frequency is out of the restricted band.

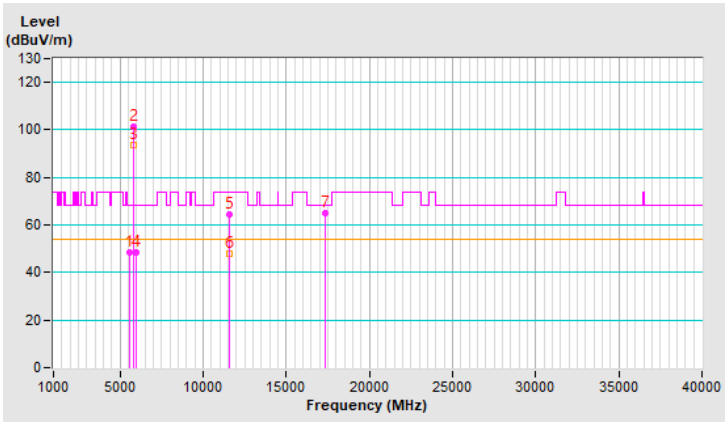


RF Mode	TX 802.11a	Channel	CH 157：5785 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power (System)	120Vac, 60Hz	Environmental Conditions	25 °C, 65 % RH
Tested By	Spencer Liao		

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	#5576.04	48.7 PK	68.2	-19.5	1.29 H	65	44.1	4.6
2	*5785.00	101.5 PK			1.29 H	65	96.5	5.0
3	*5785.00	93.4 AV			1.29 H	65	88.4	5.0
4	#5980.18	48.6 PK	68.2	-19.6	1.29 H	65	43.3	5.3
5	11570.00	64.6 PK	74.0	-9.4	1.01 H	224	49.6	15.0
6	11570.00	48.0 AV	54.0	-6.0	1.01 H	224	33.0	15.0
7	#17355.00	64.9 PK	68.2	-3.3	1.47 H	219	46.3	18.6

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.
6. " # ": The radiated frequency is out of the restricted band.

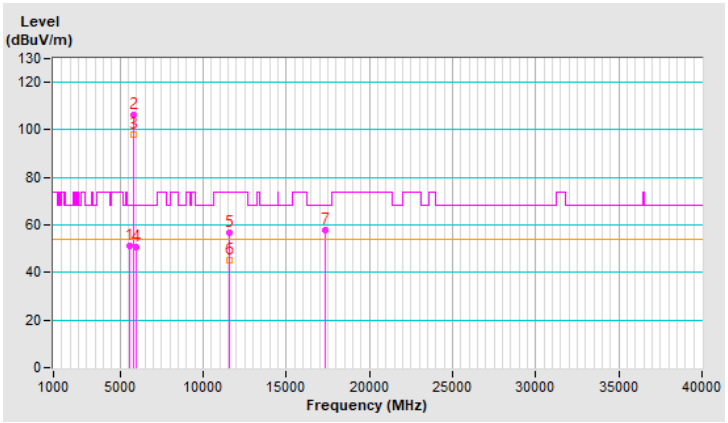


RF Mode	TX 802.11a	**Channel**	CH 157：5785 MHz
Frequency Range	1 GHz ~ 40 GHz	**Detector Function & Bandwidth**	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power (System)	120Vac, 60Hz	**Environmental Conditions**	25 °C, 65 % RH
Tested By	Spencer Liao		

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	#5592.29	51.0 PK	68.2	-17.2	3.82 V	163	46.3	4.7
2	*5785.00	106.2 PK			3.82 V	163	101.2	5.0
3	*5785.00	98.1 AV			3.82 V	163	93.1	5.0
4	#6000.90	50.8 PK	68.2	-17.4	3.82 V	163	45.6	5.2
5	11570.00	56.6 PK	74.0	-17.4	1.05 V	223	41.6	15.0
6	11570.00	45.2 AV	54.0	-8.8	1.05 V	223	30.2	15.0
7	#17355.00	57.8 PK	68.2	-10.4	1.67 V	208	39.2	18.6

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.
6. " # ": The radiated frequency is out of the restricted band.

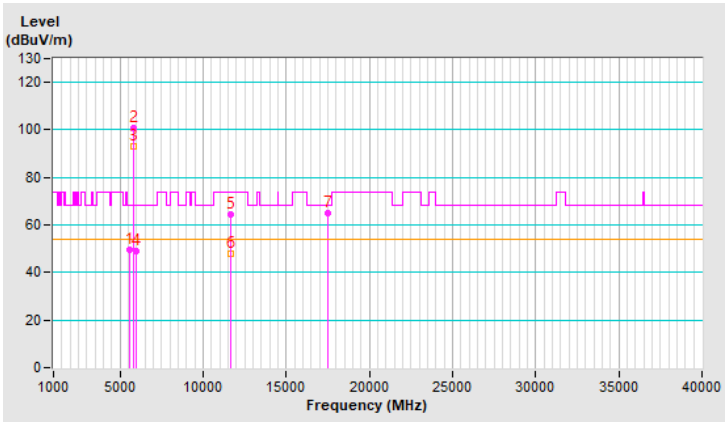


RF Mode	TX 802.11a	Channel	CH 165：5825 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power (System)	120Vac, 60Hz	Environmental Conditions	25 °C, 65 % RH
Tested By	Spencer Liao		

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	#5611.75	49.7 PK	68.2	-18.5	1.30 H	118	45.1	4.6
2	*5825.00	100.9 PK			1.30 H	118	95.8	5.1
3	*5825.00	93.0 AV			1.30 H	118	87.9	5.1
4	#5954.66	49.2 PK	68.2	-19.0	1.30 H	118	43.9	5.3
5	11650.00	64.3 PK	74.0	-9.7	1.04 H	224	49.4	14.9
6	11650.00	47.9 AV	54.0	-6.1	1.04 H	224	33.0	14.9
7	#17475.00	64.8 PK	68.2	-3.4	1.46 H	233	45.8	19.0

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.
6. " # ": The radiated frequency is out of the restricted band.

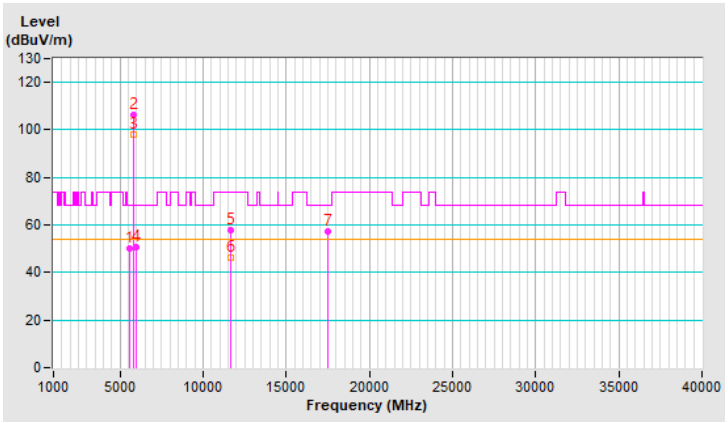


RF Mode	TX 802.11a	Channel	CH 165：5825 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power (System)	120Vac, 60Hz	Environmental Conditions	25 °C, 65 % RH
Tested By	Spencer Liao		

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	#5604.25	50.2 PK	68.2	-18.0	3.80 V	161	45.5	4.7
2	*5825.00	106.1 PK			3.80 V	161	101.0	5.1
3	*5825.00	98.0 AV			3.80 V	161	92.9	5.1
4	#6003.22	50.7 PK	68.2	-17.5	3.80 V	161	45.5	5.2
5	11650.00	57.6 PK	74.0	-16.4	1.00 V	207	42.7	14.9
6	11650.00	46.1 AV	54.0	-7.9	1.00 V	207	31.2	14.9
7	#17475.00	57.5 PK	68.2	-10.7	1.64 V	230	38.5	19.0

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.
6. " # ": The radiated frequency is out of the restricted band.

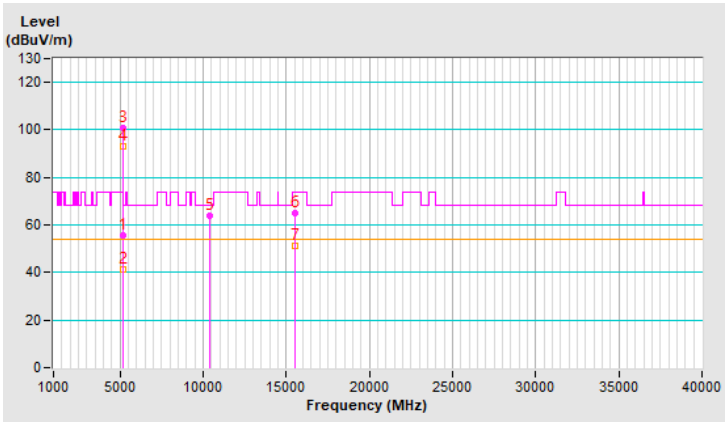


RF Mode	TX 802.11ac (VHT20)	**Channel**	CH 36：5180 MHz
Frequency Range	1 GHz ~ 40 GHz	**Detector Function & Bandwidth**	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power (System)	120Vac, 60Hz	**Environmental Conditions**	25 °C, 65 % RH
Tested By	Spencer Liao		

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	55.8 PK	74.0	-18.2	2.11 H	63	51.2	4.6
2	5150.00	41.1 AV	54.0	-12.9	2.11 H	63	36.5	4.6
3	*5180.00	101.0 PK			2.11 H	63	96.5	4.5
4	*5180.00	92.9 AV			2.11 H	63	88.4	4.5
5	#10360.00	64.0 PK	68.2	-4.2	1.00 H	233	50.4	13.6
6	15540.00	65.1 PK	74.0	-8.9	1.50 H	222	51.0	14.1
7	15540.00	51.0 AV	54.0	-3.0	1.50 H	222	36.9	14.1

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.
6. " # ": The radiated frequency is out of the restricted band.

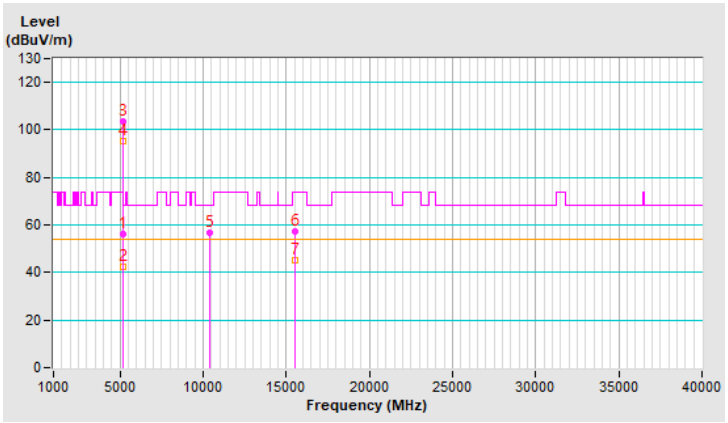


RF Mode	TX 802.11ac (VHT20)	Channel	CH 36：5180 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power (System)	120Vac, 60Hz	Environmental Conditions	25 °C, 65 % RH
Tested By	Spencer Liao		

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	56.1 PK	74.0	-17.9	3.34 V	15	51.5	4.6
2	5150.00	42.3 AV	54.0	-11.7	3.34 V	15	37.7	4.6
3	*5180.00	103.4 PK			3.34 V	15	98.9	4.5
4	*5180.00	95.1 AV			3.34 V	15	90.6	4.5
5	#10360.00	56.9 PK	68.2	-11.3	1.00 V	231	43.3	13.6
6	15540.00	57.5 PK	74.0	-16.5	1.63 V	201	43.4	14.1
7	15540.00	45.4 AV	54.0	-8.6	1.63 V	201	31.3	14.1

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.
6. " # ": The radiated frequency is out of the restricted band.

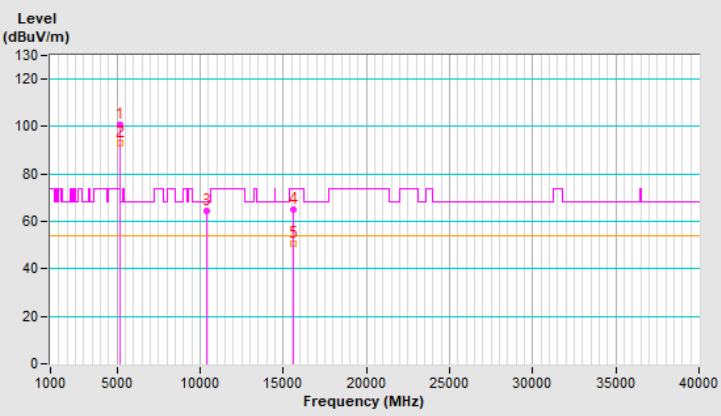


RF Mode	TX 802.11ac (VHT20)	**Channel**	CH 40：5200 MHz
Frequency Range	1 GHz ~ 40 GHz	**Detector Function & Bandwidth**	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power (System)	120Vac, 60Hz	**Environmental Conditions**	25 °C, 65 % RH
Tested By	Spencer Liao		

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	100.8 PK			2.15 H	78	96.4	4.4
2	*5200.00	92.9 AV			2.15 H	78	88.5	4.4
3	#10400.00	64.4 PK	68.2	-3.8	1.00 H	219	50.7	13.7
4	15600.00	64.9 PK	74.0	-9.1	1.56 H	221	50.9	14.0
5	15600.00	50.5 AV	54.0	-3.5	1.56 H	221	36.5	14.0

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.
6. " # ": The radiated frequency is out of the restricted band.

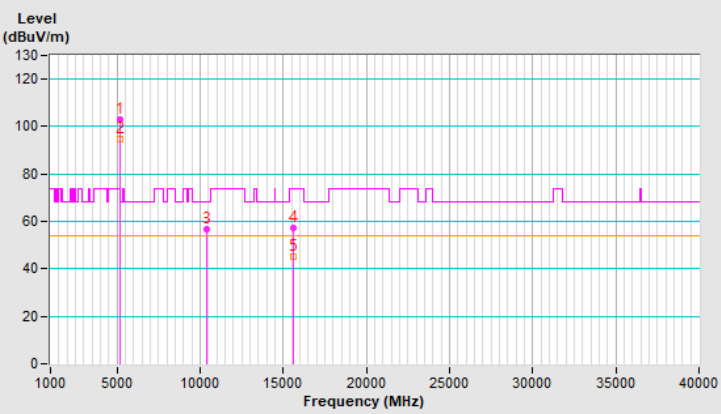


RF Mode	TX 802.11ac (VHT20)	**Channel**	CH 40：5200 MHz
Frequency Range	1 GHz ~ 40 GHz	**Detector Function & Bandwidth**	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power (System)	120Vac, 60Hz	**Environmental Conditions**	25 °C, 65 % RH
Tested By	Spencer Liao		

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	102.8 PK			3.34 V	2	98.4	4.4
2	*5200.00	94.8 AV			3.34 V	2	90.4	4.4
3	#10400.00	56.7 PK	68.2	-11.5	1.02 V	219	43.0	13.7
4	15600.00	57.2 PK	74.0	-16.8	1.62 V	225	43.2	14.0
5	15600.00	45.0 AV	54.0	-9.0	1.62 V	225	31.0	14.0

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.
6. " # ": The radiated frequency is out of the restricted band.

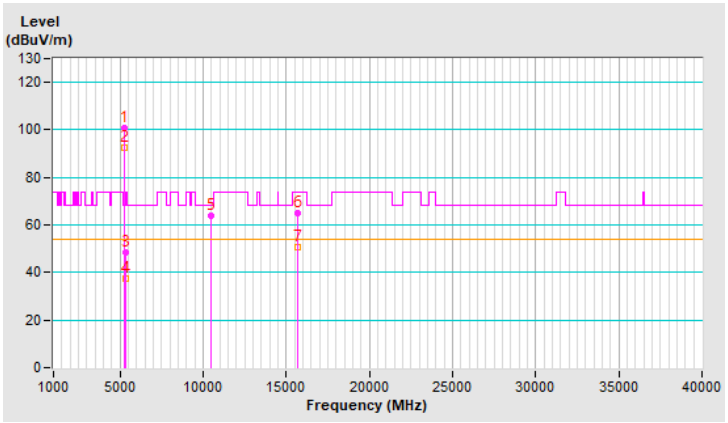


RF Mode	TX 802.11ac (VHT20)	**Channel**	CH 48：5240 MHz
Frequency Range	1 GHz ~ 40 GHz	**Detector Function & Bandwidth**	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power (System)	120Vac, 60Hz	**Environmental Conditions**	25 °C, 65 % RH
Tested By	Spencer Liao		

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	101.0 PK			2.26 H	60	96.9	4.1
2	*5240.00	92.5 AV			2.26 H	60	88.4	4.1
3	5350.00	48.3 PK	74.0	-25.7	2.26 H	60	44.0	4.3
4	5350.00	37.4 AV	54.0	-16.6	2.26 H	60	33.1	4.3
5	#10480.00	64.0 PK	68.2	-4.2	1.05 H	221	50.2	13.8
6	15720.00	64.9 PK	74.0	-9.1	1.50 H	234	51.2	13.7
7	15720.00	50.5 AV	54.0	-3.5	1.50 H	234	36.8	13.7

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.
6. " # ": The radiated frequency is out of the restricted band.

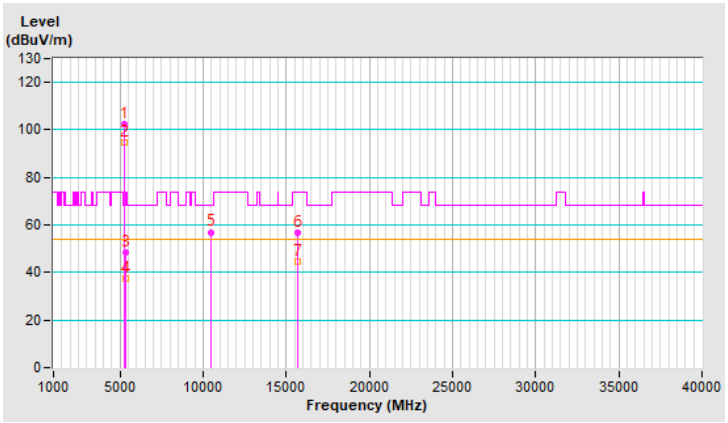


RF Mode	TX 802.11ac (VHT20)	Channel	CH 48：5240 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power (System)	120Vac, 60Hz	Environmental Conditions	25 °C, 65 % RH
Tested By	Spencer Liao		

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	102.6 PK			3.35 V	48	98.5	4.1
2	*5240.00	94.6 AV			3.35 V	48	90.5	4.1
3	5350.00	48.5 PK	74.0	-25.5	3.35 V	48	44.2	4.3
4	5350.00	37.6 AV	54.0	-16.4	3.35 V	48	33.3	4.3
5	#10480.00	57.0 PK	68.2	-11.2	1.02 V	209	43.2	13.8
6	15720.00	56.8 PK	74.0	-17.2	1.66 V	228	43.1	13.7
7	15720.00	44.8 AV	54.0	-9.2	1.66 V	228	31.1	13.7

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.
6. " # ": The radiated frequency is out of the restricted band.

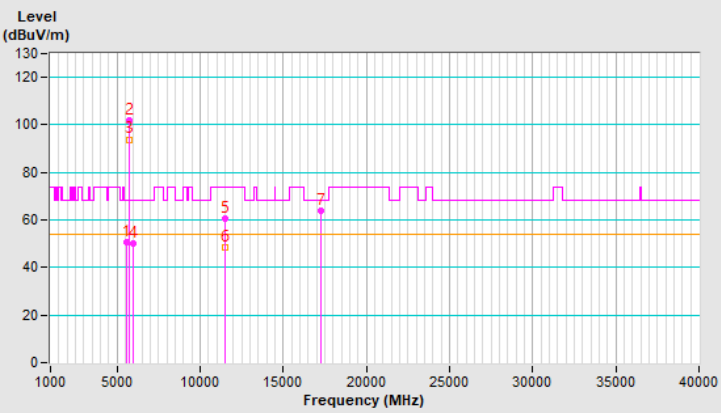


RF Mode	TX 802.11ac (VHT20)	**Channel**	CH 149：5745 MHz
Frequency Range	1 GHz ~ 40 GHz	**Detector Function & Bandwidth**	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power (System)	120Vac, 60Hz	**Environmental Conditions**	25 °C, 65 % RH
Tested By	Spencer Liao		

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	#5562.69	50.8 PK	68.2	-17.4	1.30 H	67	46.2	4.6
2	*5745.00	102.1 PK			1.30 H	67	97.2	4.9
3	*5745.00	93.9 AV			1.30 H	67	89.0	4.9
4	#5980.02	50.1 PK	68.2	-18.1	1.30 H	67	44.8	5.3
5	11490.00	60.5 PK	74.0	-13.5	1.64 H	199	45.7	14.8
6	11490.00	48.4 AV	54.0	-5.6	1.64 H	199	33.6	14.8
7	#17235.00	63.9 PK	68.2	-4.3	1.57 H	145	45.7	18.2

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.
6. " # ": The radiated frequency is out of the restricted band.

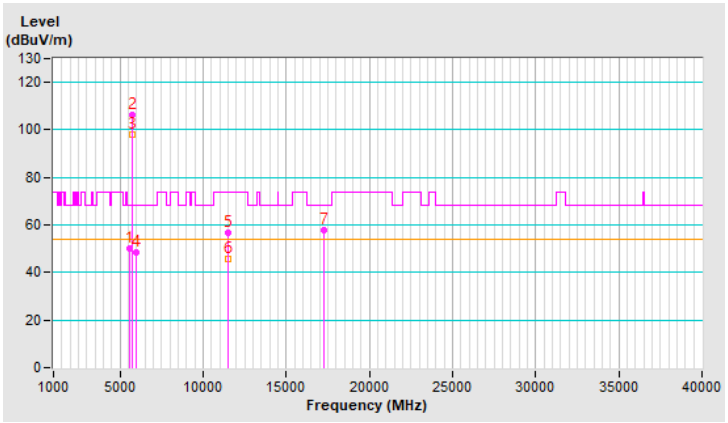


RF Mode	TX 802.11ac (VHT20)	**Channel**	CH 149：5745 MHz
Frequency Range	1 GHz ~ 40 GHz	**Detector Function & Bandwidth**	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power (System)	120Vac, 60Hz	**Environmental Conditions**	25 °C, 65 % RH
Tested By	Spencer Liao		

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	#5611.03	50.3 PK	68.2	-17.9	3.80 V	162	45.7	4.6
2	*5745.00	106.3 PK			3.80 V	162	101.4	4.9
3	*5745.00	98.0 AV			3.80 V	162	93.1	4.9
4	#5976.17	48.7 PK	68.2	-19.5	3.80 V	162	43.4	5.3
5	11490.00	56.6 PK	74.0	-17.4	1.00 V	219	41.8	14.8
6	11490.00	45.5 AV	54.0	-8.5	1.00 V	219	30.7	14.8
7	#17235.00	57.8 PK	68.2	-10.4	1.71 V	209	39.6	18.2

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.
6. " # ": The radiated frequency is out of the restricted band.

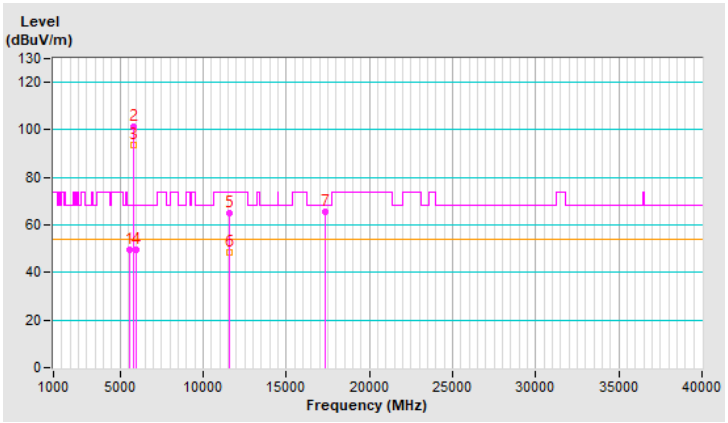


RF Mode	TX 802.11ac (VHT20)	Channel	CH 157：5785 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power (System)	120Vac, 60Hz	Environmental Conditions	25 °C, 65 % RH
Tested By	Spencer Liao		

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	#5606.80	49.6 PK	68.2	-18.6	1.20 H	65	44.9	4.7
2	*5785.00	101.1 PK			1.20 H	65	96.1	5.0
3	*5785.00	93.8 AV			1.20 H	65	88.8	5.0
4	#5988.28	49.6 PK	68.2	-18.6	1.20 H	65	44.3	5.3
5	11570.00	64.9 PK	74.0	-9.1	1.01 H	232	49.9	15.0
6	11570.00	48.4 AV	54.0	-5.6	1.01 H	232	33.4	15.0
7	#17355.00	65.5 PK	68.2	-2.7	1.51 H	213	46.9	18.6

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.
6. " # ": The radiated frequency is out of the restricted band.

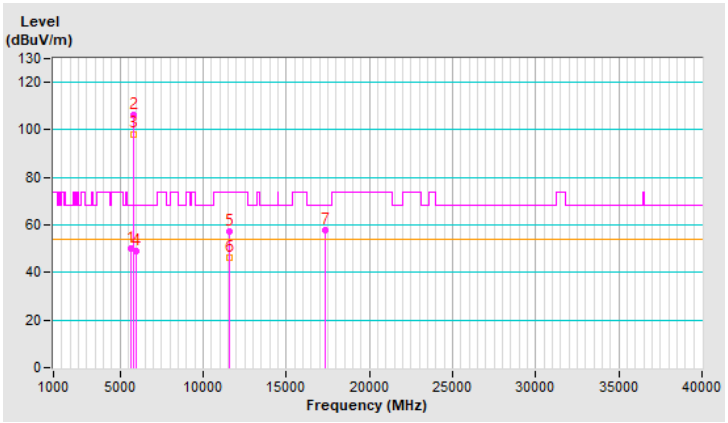


RF Mode	TX 802.11ac (VHT20)	Channel	CH 157：5785 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power (System)	120Vac, 60Hz	Environmental Conditions	25 °C, 65 % RH
Tested By	Spencer Liao		

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	#5629.41	50.0 PK	68.2	-18.2	3.78 V	165	45.4	4.6
2	*5785.00	106.5 PK			3.78 V	165	101.5	5.0
3	*5785.00	98.3 AV			3.78 V	165	93.3	5.0
4	#5992.56	49.1 PK	68.2	-19.1	3.78 V	165	43.9	5.2
5	11570.00	57.5 PK	74.0	-16.5	1.00 V	208	42.5	15.0
6	11570.00	46.0 AV	54.0	-8.0	1.00 V	208	31.0	15.0
7	#17355.00	57.6 PK	68.2	-10.6	1.63 V	202	39.0	18.6

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.
6. " # ": The radiated frequency is out of the restricted band.

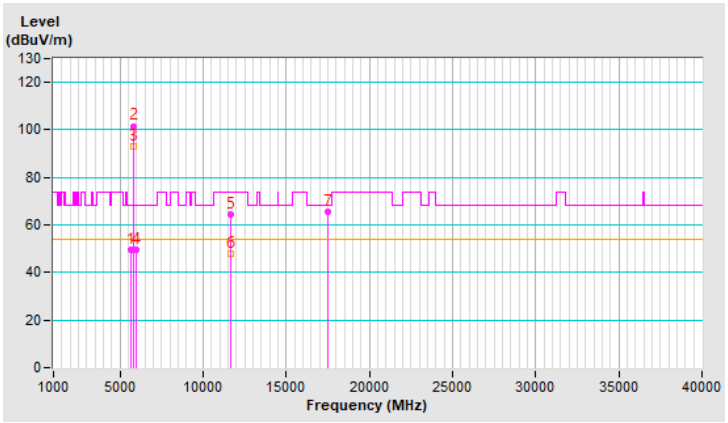


RF Mode	TX 802.11ac (VHT20)	**Channel**	CH 165：5825 MHz
Frequency Range	1 GHz ~ 40 GHz	**Detector Function & Bandwidth**	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power (System)	120Vac, 60Hz	**Environmental Conditions**	25 °C, 65 % RH
Tested By	Spencer Liao		

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	#5638.25	49.8 PK	68.2	-18.4	1.30 H	118	45.2	4.6
2	*5825.00	101.6 PK			1.30 H	118	96.5	5.1
3	*5825.00	93.0 AV			1.30 H	118	87.9	5.1
4	#5953.02	49.5 PK	68.2	-18.7	1.30 H	118	44.2	5.3
5	11650.00	64.5 PK	74.0	-9.5	1.01 H	233	49.6	14.9
6	11650.00	47.9 AV	54.0	-6.1	1.01 H	233	33.0	14.9
7	#17475.00	65.7 PK	68.2	-2.5	1.48 H	228	46.7	19.0

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.
6. " # ": The radiated frequency is out of the restricted band.

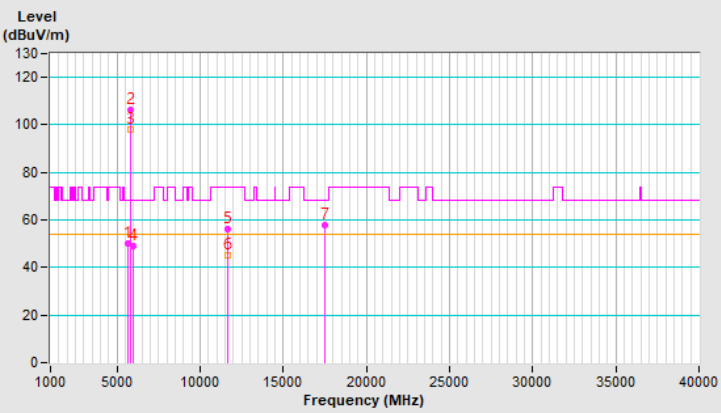


RF Mode	TX 802.11ac (VHT20)	**Channel**	CH 165：5825 MHz
Frequency Range	1 GHz ~ 40 GHz	**Detector Function & Bandwidth**	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power (System)	120Vac, 60Hz	**Environmental Conditions**	25 °C, 65 % RH
Tested By	Spencer Liao		

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	#5627.58	50.1 PK	68.2	-18.1	3.80 V	166	45.5	4.6
2	*5825.00	106.1 PK			3.80 V	166	101.0	5.1
3	*5825.00	97.9 AV			3.80 V	166	92.8	5.1
4	#6005.01	48.8 PK	68.2	-19.4	3.80 V	166	43.6	5.2
5	11650.00	56.4 PK	74.0	-17.6	1.00 V	204	41.5	14.9
6	11650.00	45.1 AV	54.0	-8.9	1.00 V	204	30.2	14.9
7	#17475.00	57.9 PK	68.2	-10.3	1.63 V	226	38.9	19.0

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.
6. " # ": The radiated frequency is out of the restricted band.

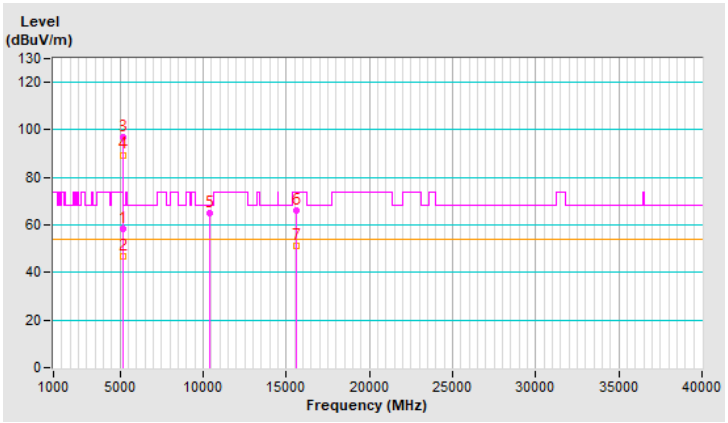


RF Mode	TX 802.11ac (VHT40)	Channel	CH 38：5190 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power (System)	120Vac, 60Hz	Environmental Conditions	25 °C, 65 % RH
Tested By	Spencer Liao		

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	58.4 PK	74.0	-15.6	2.11 H	62	53.8	4.6
2	5150.00	46.7 AV	54.0	-7.3	2.11 H	62	42.1	4.6
3	*5190.00	97.1 PK			2.11 H	62	92.7	4.4
4	*5190.00	89.5 AV			2.11 H	62	85.1	4.4
5	#10380.00	65.0 PK	68.2	-3.2	1.02 H	244	51.4	13.6
6	15570.00	66.1 PK	74.0	-7.9	1.49 H	213	52.1	14.0
7	15570.00	51.4 AV	54.0	-2.6	1.49 H	213	37.4	14.0

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.
6. " # ": The radiated frequency is out of the restricted band.

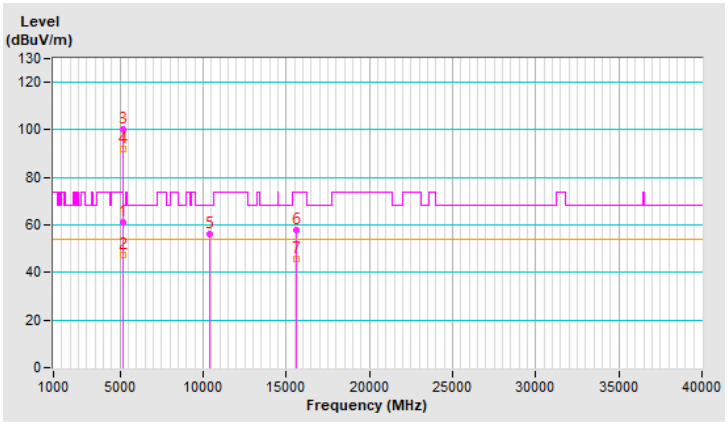


RF Mode	TX 802.11ac (VHT40)	**Channel**	CH 38：5190 MHz
Frequency Range	1 GHz ~ 40 GHz	**Detector Function & Bandwidth**	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power (System)	120Vac, 60Hz	**Environmental Conditions**	25 °C, 65 % RH
Tested By	Spencer Liao		

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	3.50 V	16	56.4	4.6
2	5150.00	47.4 AV	54.0	-6.6	3.50 V	16	42.8	4.6
3	*5190.00	100.1 PK			3.50 V	16	95.7	4.4
4	*5190.00	92.1 AV			3.50 V	16	87.7	4.4
5	#10380.00	56.1 PK	68.2	-12.1	1.00 V	196	42.5	13.6
6	15570.00	57.9 PK	74.0	-16.1	1.68 V	240	43.9	14.0
7	15570.00	45.5 AV	54.0	-8.5	1.68 V	240	31.5	14.0

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.
6. " # ": The radiated frequency is out of the restricted band.

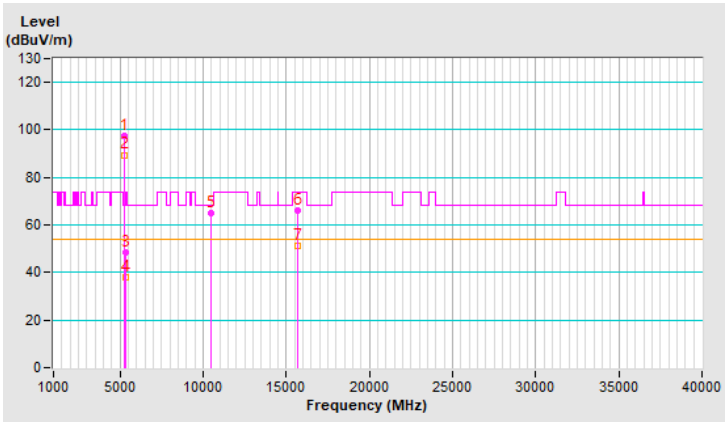


RF Mode	TX 802.11ac (VHT40)	Channel	CH 46：5230 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power (System)	120Vac, 60Hz	Environmental Conditions	25 °C, 65 % RH
Tested By	Spencer Liao		

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	*5230.00	97.5 PK			2.18 H	63	93.3	4.2
2	*5230.00	89.5 AV			2.18 H	63	85.3	4.2
3	5350.00	48.7 PK	74.0	-25.3	2.18 H	63	44.4	4.3
4	5350.00	38.0 AV	54.0	-16.0	2.18 H	63	33.7	4.3
5	#10460.00	64.9 PK	68.2	-3.3	1.01 H	218	51.1	13.8
6	15690.00	66.1 PK	74.0	-7.9	1.47 H	225	52.3	13.8
7	15690.00	51.4 AV	54.0	-2.6	1.47 H	225	37.6	13.8

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.
6. " # ": The radiated frequency is out of the restricted band.

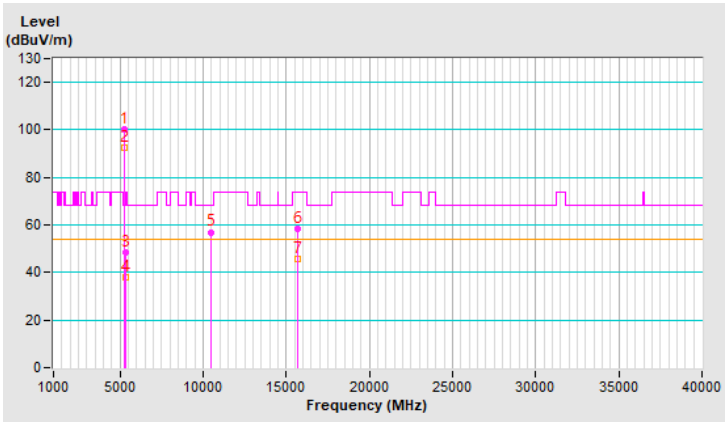


RF Mode	TX 802.11ac (VHT40)	Channel	CH 46：5230 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power (System)	120Vac, 60Hz	Environmental Conditions	25 °C, 65 % RH
Tested By	Spencer Liao		

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	*5230.00	100.4 PK			3.49 V	15	96.2	4.2
2	*5230.00	92.7 AV			3.49 V	15	88.5	4.2
3	5350.00	48.3 PK	74.0	-25.7	3.49 V	15	44.0	4.3
4	5350.00	38.2 AV	54.0	-15.8	3.49 V	15	33.9	4.3
5	#10460.00	57.0 PK	68.2	-11.2	1.00 V	199	43.2	13.8
6	15690.00	58.2 PK	74.0	-15.8	1.61 V	222	44.4	13.8
7	15690.00	45.6 AV	54.0	-8.4	1.61 V	222	31.8	13.8

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.
6. " # ": The radiated frequency is out of the restricted band.

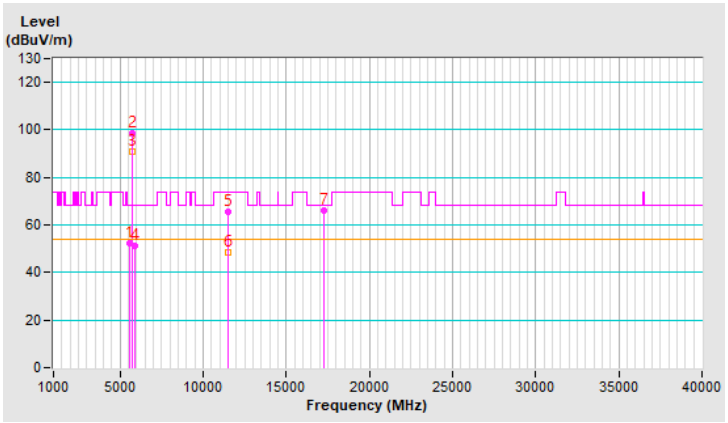


RF Mode	TX 802.11ac (VHT40)	Channel	CH 151：5755 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power (System)	120Vac, 60Hz	Environmental Conditions	25 °C, 65 % RH
Tested By	Spencer Liao		

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	#5601.93	52.3 PK	68.2	-15.9	1.31 H	67	47.6	4.7
2	*5755.00	98.4 PK			1.31 H	67	93.5	4.9
3	*5755.00	90.8 AV			1.31 H	67	85.9	4.9
4	#5932.78	51.0 PK	68.2	-17.2	1.31 H	67	45.7	5.3
5	11510.00	65.5 PK	74.0	-8.5	1.05 H	248	50.7	14.8
6	11510.00	48.7 AV	54.0	-5.3	1.05 H	248	33.9	14.8
7	#17265.00	65.9 PK	68.2	-2.3	1.49 H	206	47.7	18.2

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.
6. " # ": The radiated frequency is out of the restricted band.

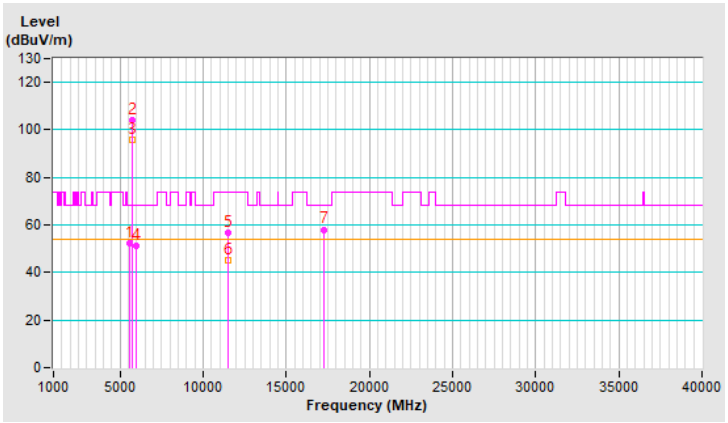


RF Mode	TX 802.11ac (VHT40)	**Channel**	CH 151：5755 MHz
Frequency Range	1 GHz ~ 40 GHz	**Detector Function & Bandwidth**	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power (System)	120Vac, 60Hz	**Environmental Conditions**	25 °C, 65 % RH
Tested By	Spencer Liao		

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	#5603.69	52.4 PK	68.2	-15.8	3.81 V	162	47.7	4.7
2	*5755.00	104.2 PK			3.81 V	162	99.3	4.9
3	*5755.00	95.9 AV			3.81 V	162	91.0	4.9
4	#5956.49	51.2 PK	68.2	-17.0	3.81 V	162	45.9	5.3
5	11510.00	56.5 PK	74.0	-17.5	1.00 V	199	41.7	14.8
6	11510.00	45.1 AV	54.0	-8.9	1.00 V	199	30.3	14.8
7	#17265.00	58.1 PK	68.2	-10.1	1.64 V	237	39.9	18.2

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.
6. " # ": The radiated frequency is out of the restricted band.

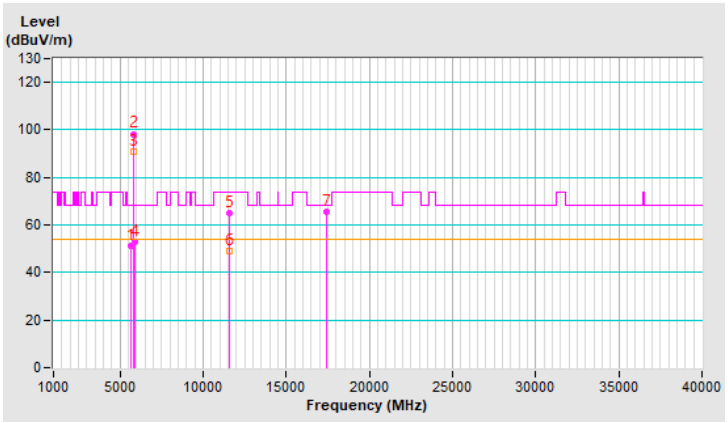


RF Mode	TX 802.11ac (VHT40)	Channel	CH 159：5795 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power (System)	120Vac, 60Hz	Environmental Conditions	25 °C, 65 % RH
Tested By	Spencer Liao		

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	#5639.12	51.3 PK	68.2	-16.9	1.19 H	65	46.7	4.6
2	*5795.00	98.3 PK			1.19 H	65	93.3	5.0
3	*5795.00	90.7 AV			1.19 H	65	85.7	5.0
4	#5929.97	52.8 PK	68.2	-15.4	1.19 H	65	47.5	5.3
5	11590.00	65.2 PK	74.0	-8.8	1.04 H	226	50.1	15.1
6	11590.00	48.9 AV	54.0	-5.1	1.04 H	226	33.8	15.1
7	#17385.00	65.7 PK	68.2	-2.5	1.46 H	214	46.9	18.8

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.
6. " # ": The radiated frequency is out of the restricted band.

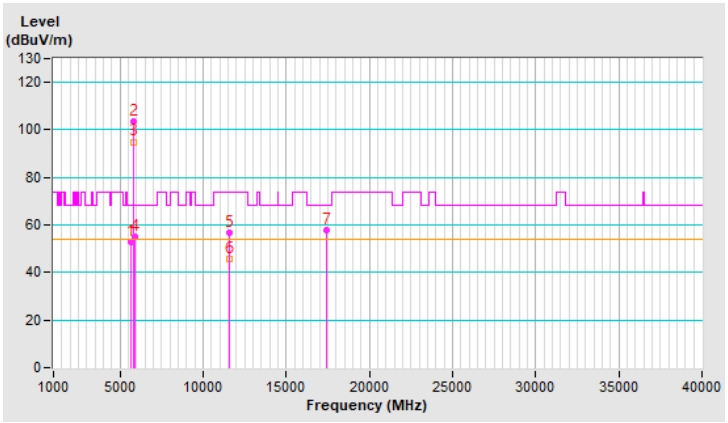


RF Mode	TX 802.11ac (VHT40)	**Channel**	CH 159：5795 MHz
Frequency Range	1 GHz ~ 40 GHz	**Detector Function & Bandwidth**	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power (System)	120Vac, 60Hz	**Environmental Conditions**	25 °C, 65 % RH
Tested By	Spencer Liao		

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	#5642.84	53.1 PK	68.2	-15.1	3.40 V	149	48.5	4.6
2	*5795.00	103.5 PK			3.40 V	149	98.5	5.0
3	*5795.00	95.0 AV			3.40 V	149	90.0	5.0
4	#5930.08	54.9 PK	68.2	-13.3	3.40 V	149	49.6	5.3
5	11590.00	56.8 PK	74.0	-17.2	1.00 V	190	41.7	15.1
6	11590.00	45.5 AV	54.0	-8.5	1.00 V	190	30.4	15.1
7	#17385.00	58.0 PK	68.2	-10.2	1.64 V	239	39.2	18.8

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.
6. " # ": The radiated frequency is out of the restricted band.

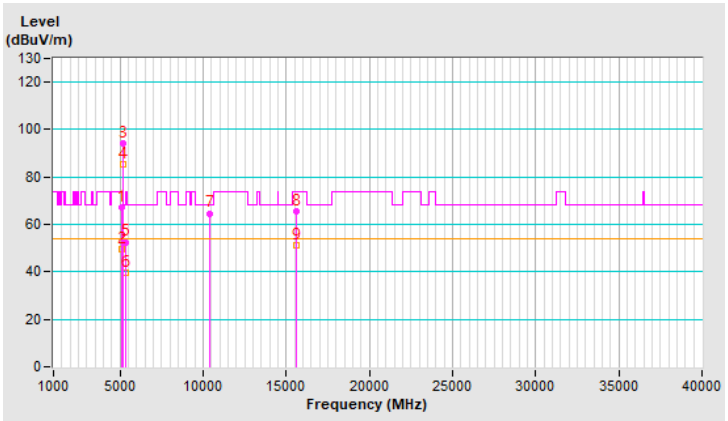


RF Mode	TX 802.11ac (VHT80)	Channel	CH 42：5210 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 1 kHz
Input Power (System)	120Vac, 60Hz	Environmental Conditions	25 °C, 65 % RH
Tested By	Spencer Liao		

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	5142.52	67.1 PK	74.0	-6.9	2.18 H	62	62.5	4.6
2	5142.52	49.6 AV	54.0	-4.4	2.18 H	62	45.0	4.6
3	*5210.00	94.1 PK			2.18 H	62	89.8	4.3
4	*5210.00	85.4 AV			2.18 H	62	81.1	4.3
5	5350.00	52.6 PK	74.0	-21.4	2.18 H	62	48.3	4.3
6	5350.00	39.4 AV	54.0	-14.6	2.18 H	62	35.1	4.3
7	#10420.00	64.7 PK	68.2	-3.5	1.01 H	230	51.0	13.7
8	15630.00	65.6 PK	74.0	-8.4	1.43 H	230	51.7	13.9
9	15630.00	51.2 AV	54.0	-2.8	1.43 H	230	37.3	13.9

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.
6. " # ": The radiated frequency is out of the restricted band.

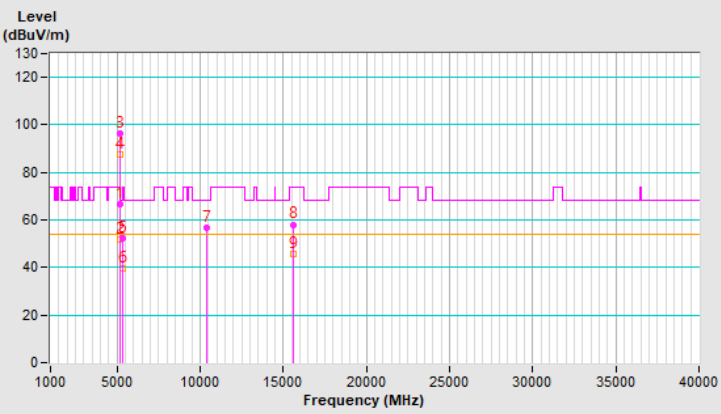


RF Mode	TX 802.11ac (VHT80)	**Channel**	CH 42：5210 MHz
Frequency Range	1 GHz ~ 40 GHz	**Detector Function & Bandwidth**	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 1 kHz
Input Power (System)	120Vac, 60Hz	**Environmental Conditions**	25 °C, 65 % RH
Tested By	Spencer Liao		

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	66.5 PK	74.0	-7.5	3.53 V	16	61.9	4.6
2	**5150.00**	**51.9 AV**	**54.0**	**-2.1**	**3.53 V**	**16**	**47.3**	**4.6**
3	*5210.00	96.2 PK			3.53 V	16	91.9	4.3
4	*5210.00	87.8 AV			3.53 V	16	83.5	4.3
5	5350.00	52.1 PK	74.0	-21.9	3.53 V	16	47.8	4.3
6	5350.00	39.5 AV	54.0	-14.5	3.53 V	16	35.2	4.3
7	#10420.00	56.5 PK	68.2	-11.7	1.00 V	213	42.8	13.7
8	15630.00	58.1 PK	74.0	-15.9	1.69 V	220	44.2	13.9
9	15630.00	45.9 AV	54.0	-8.1	1.69 V	220	32.0	13.9

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.
6. " # ": The radiated frequency is out of the restricted band.

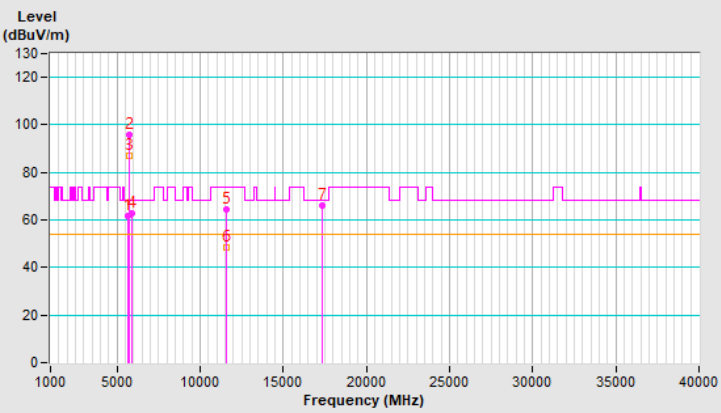


RF Mode	TX 802.11ac (VHT80)	**Channel**	CH 155：5775 MHz
Frequency Range	1 GHz ~ 40 GHz	**Detector Function & Bandwidth**	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 1 kHz
Input Power (System)	120Vac, 60Hz	**Environmental Conditions**	25 °C, 65 % RH
Tested By	Spencer Liao		

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	#5625.82	61.5 PK	68.2	-6.7	1.20 H	66	56.9	4.6
2	*5775.00	96.0 PK			1.20 H	66	91.0	5.0
3	*5775.00	87.2 AV			1.20 H	66	82.2	5.0
4	#5928.32	62.8 PK	68.2	-5.4	1.20 H	66	57.5	5.3
5	11550.00	64.5 PK	74.0	-9.5	1.04 H	216	49.6	14.9
6	11550.00	48.3 AV	54.0	-5.7	1.04 H	216	33.4	14.9
7	**#17325.00**	**66.1 PK**	**68.2**	**-2.1**	**1.45 H**	**224**	**47.6**	**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.
6. " # ": The radiated frequency is out of the restricted band.

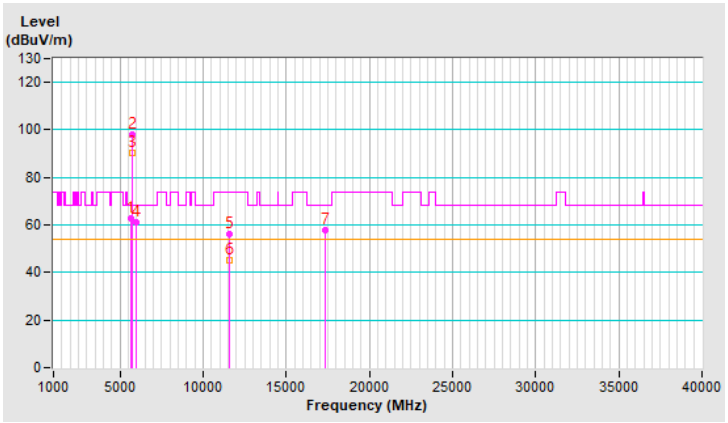


RF Mode	TX 802.11ac (VHT80)	**Channel**	CH 155：5775 MHz
Frequency Range	1 GHz ~ 40 GHz	**Detector Function & Bandwidth**	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 1 kHz
Input Power (System)	120Vac, 60Hz	**Environmental Conditions**	25 °C, 65 % RH
Tested By	Spencer Liao		

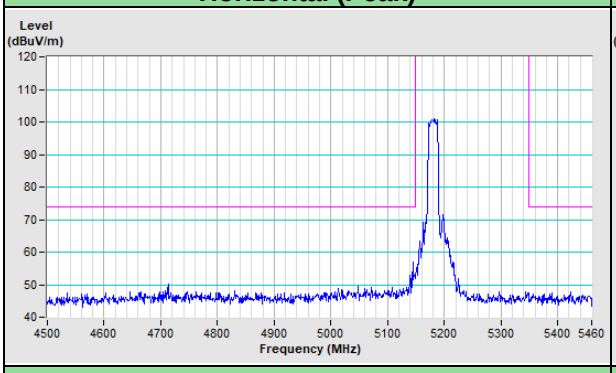
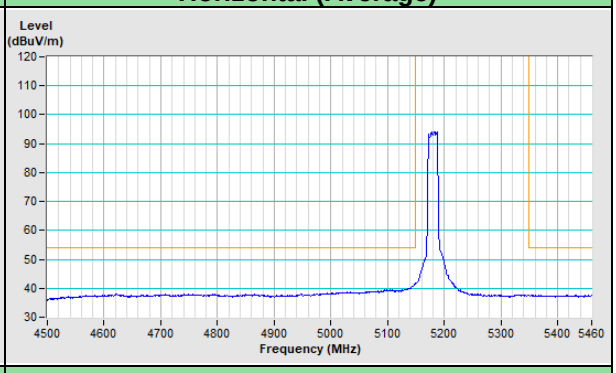
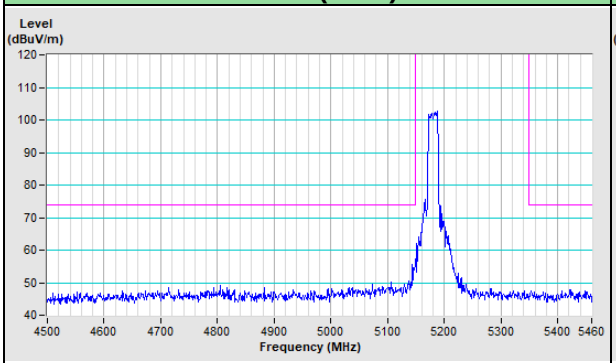
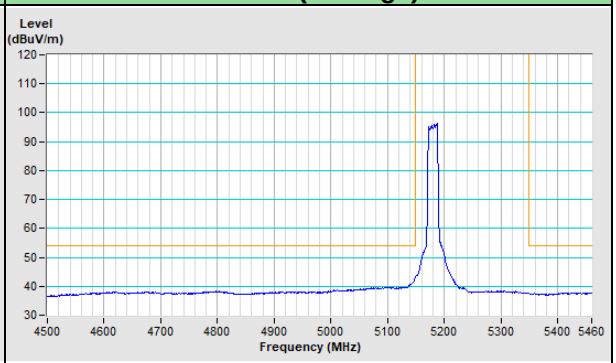
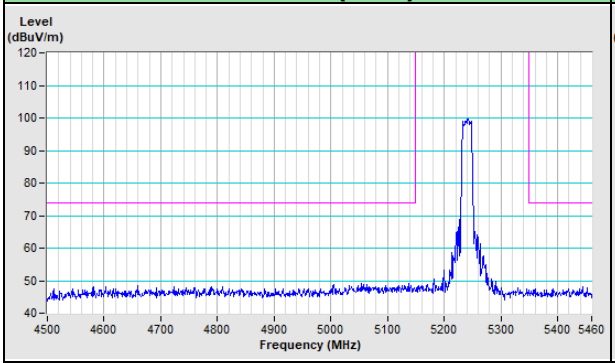
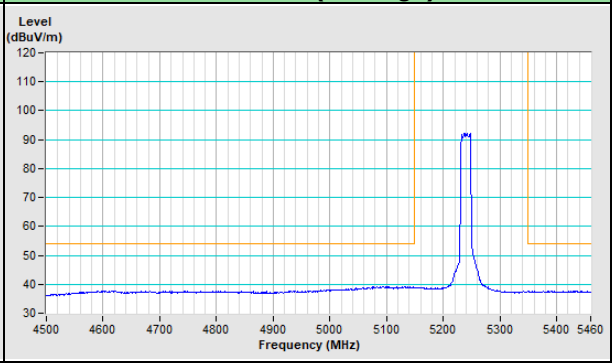
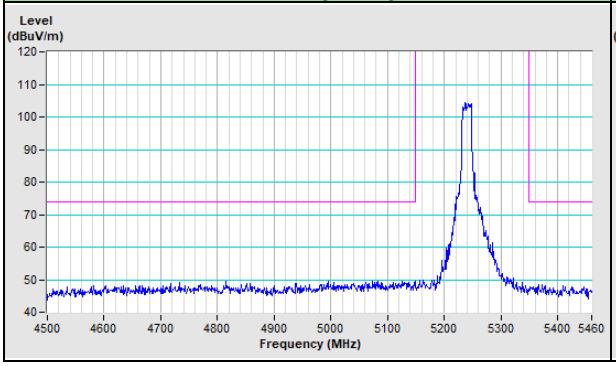
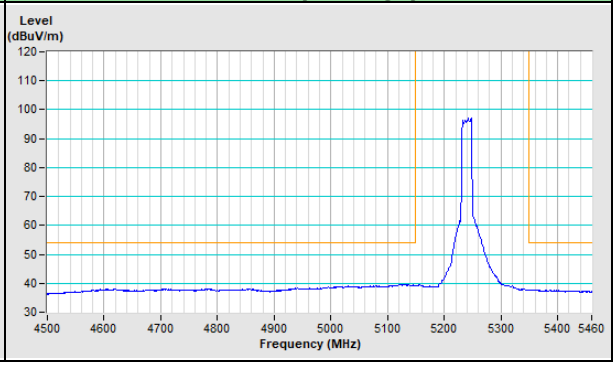
Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**Emission Level (dBuV/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	#5631.68	63.0 PK	68.2	-5.2	3.20 V	227	58.4	4.6
2	*5775.00	98.2 PK			3.20 V	227	93.2	5.0
3	*5775.00	90.2 AV			3.20 V	227	85.2	5.0
4	#5936.17	61.1 PK	68.2	-7.1	3.20 V	227	55.8	5.3
5	11550.00	56.4 PK	74.0	-17.6	1.00 V	206	41.5	14.9
6	11550.00	45.4 AV	54.0	-8.6	1.00 V	206	30.5	14.9
7	#17325.00	57.6 PK	68.2	-10.6	1.69 V	229	39.1	18.5

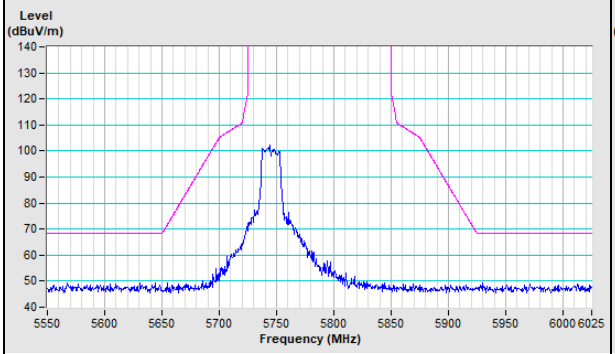
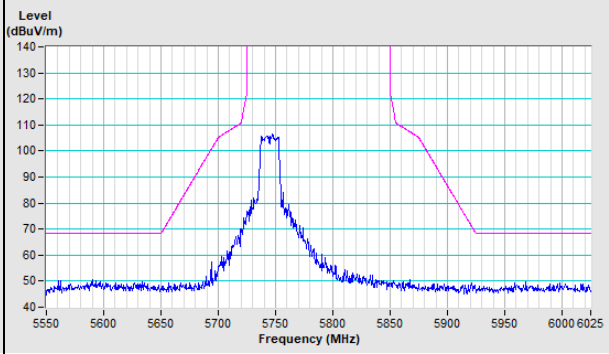
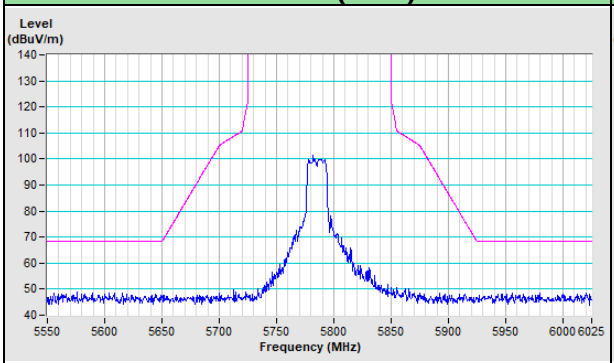
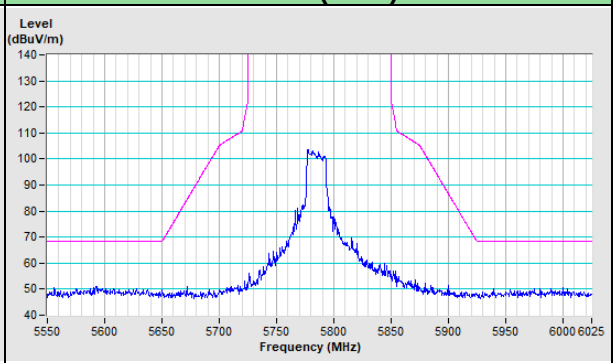
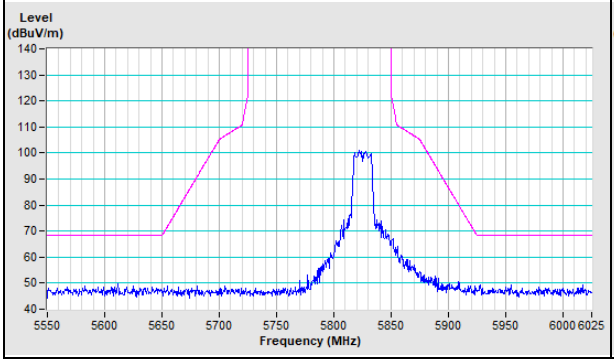
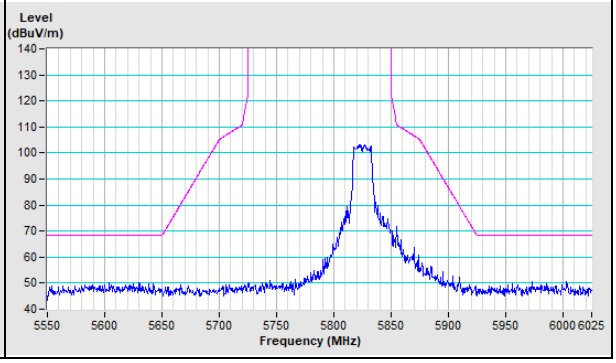
Remarks:

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.
6. " # ": The radiated frequency is out of the restricted band.



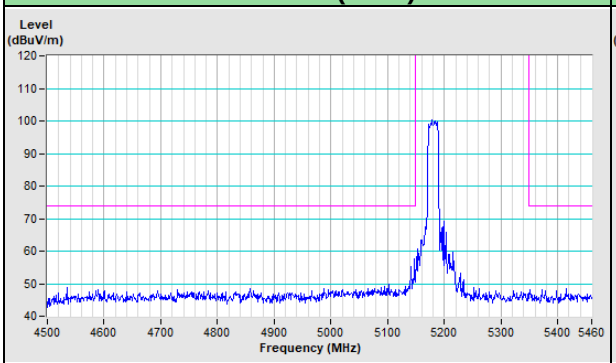
Plot of Band Edge

802.11a Channel 36	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	
802.11a Channel 48	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	

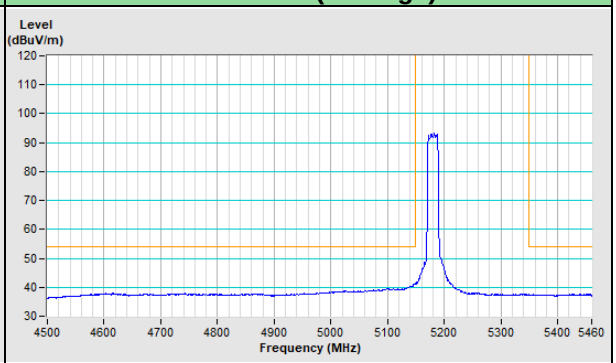
802.11a Channel 149	
Horizontal (Peak)	Vertical (Peak)
	
802.11a Channel 157	
Horizontal (Peak)	Vertical (Peak)
	
802.11a Channel 165	
Horizontal (Peak)	Vertical (Peak)
	

802.11ac (VHT20) Channel 36

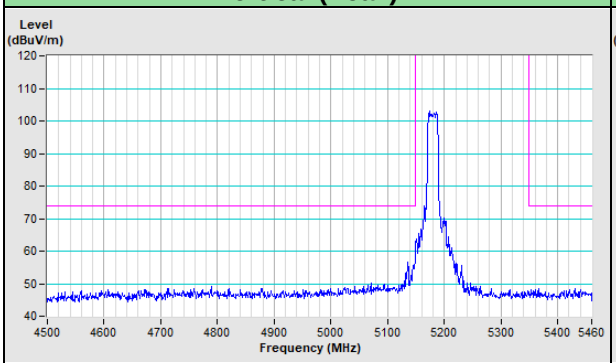
Horizontal (Peak)



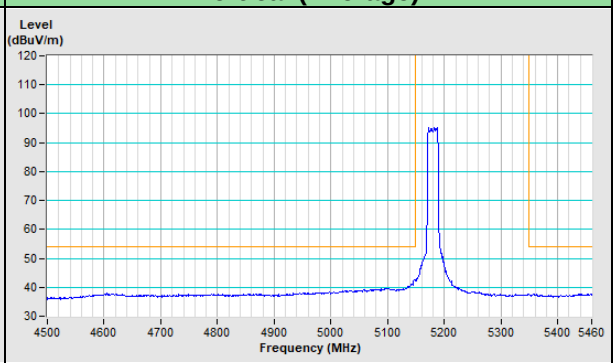
Horizontal (Average)



Vertical (Peak)

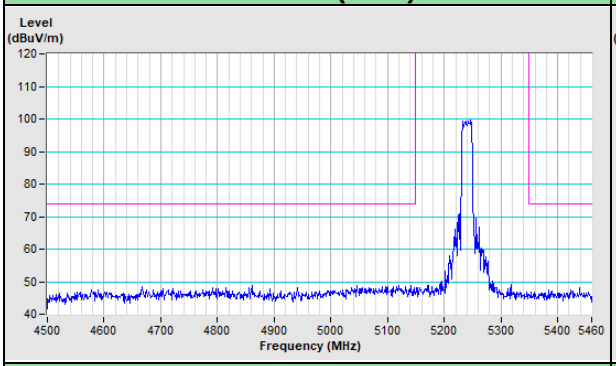


Vertical (Average)

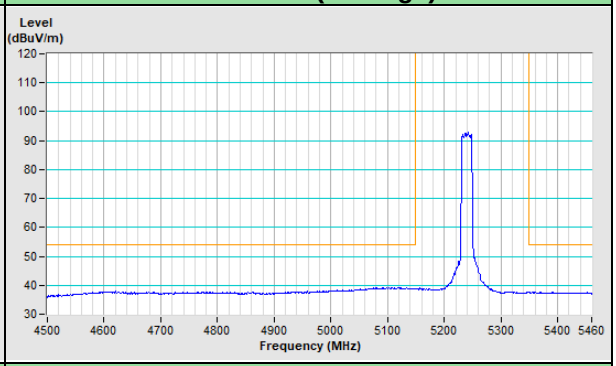


802.11ac (VHT20) Channel 48

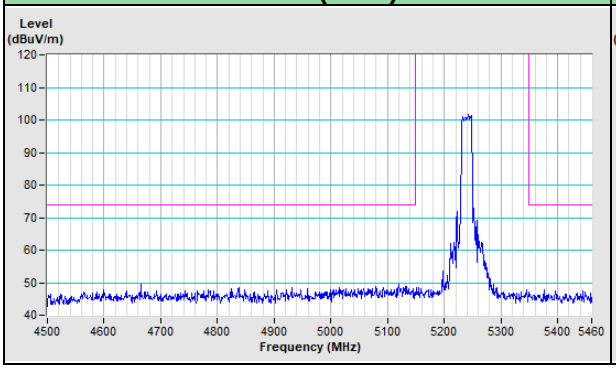
Horizontal (Peak)



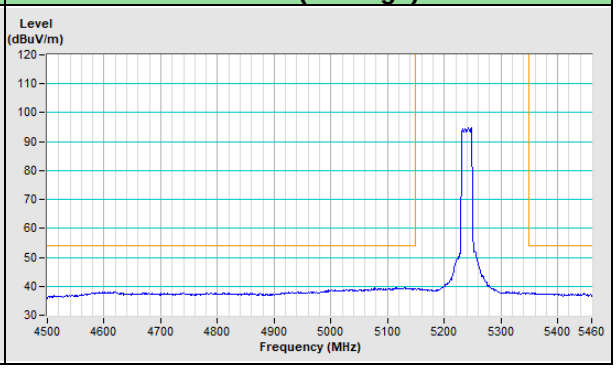
Horizontal (Average)

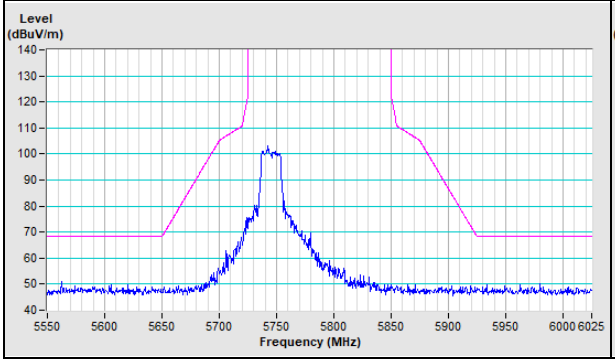
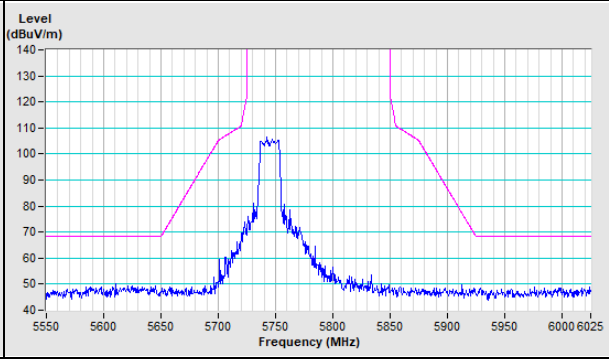
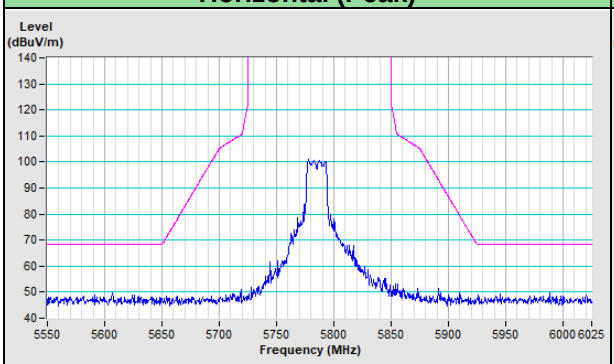
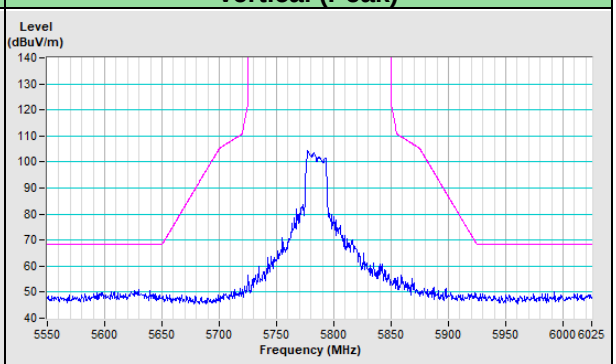
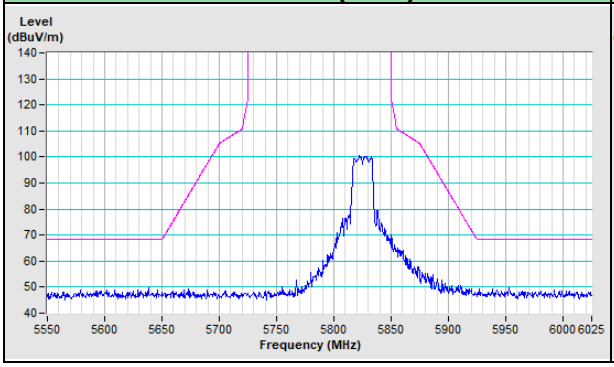
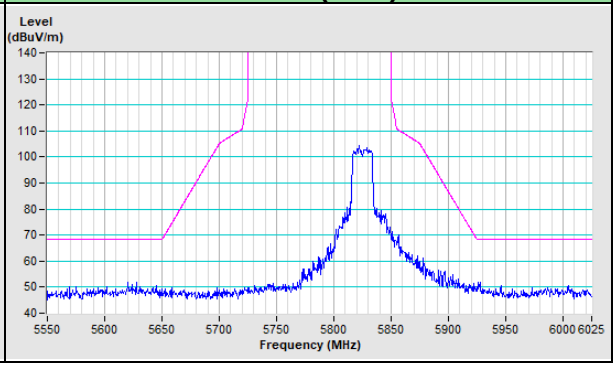


Vertical (Peak)



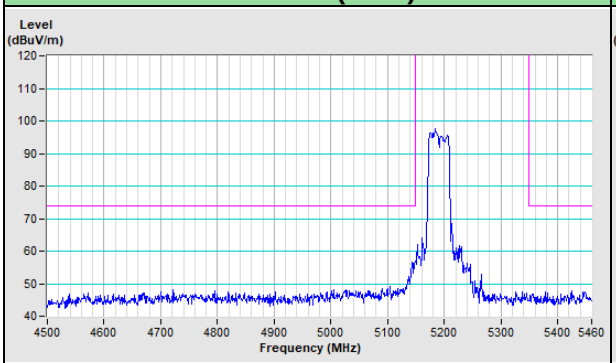
Vertical (Average)



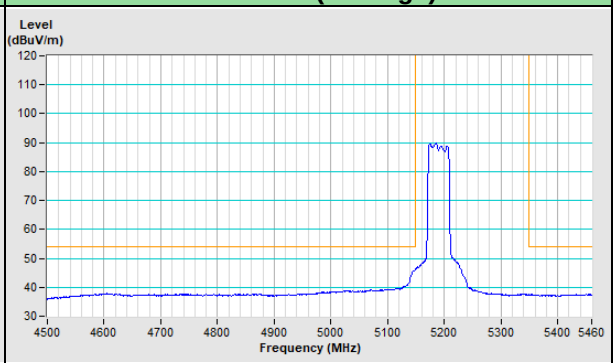
802.11ac (VHT20) Channel 149	
Horizontal (Peak)	Vertical (Peak)
	
802.11ac (VHT20) Channel 157	
Horizontal (Peak)	Vertical (Peak)
	
802.11ac (VHT20) Channel 165	
Horizontal (Peak)	Vertical (Peak)
	

802.11ac (VHT40) Channel 38

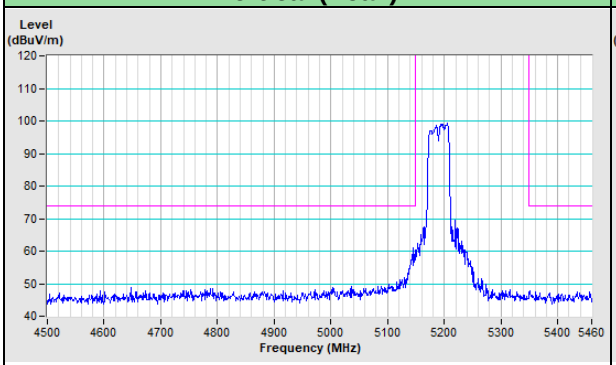
Horizontal (Peak)



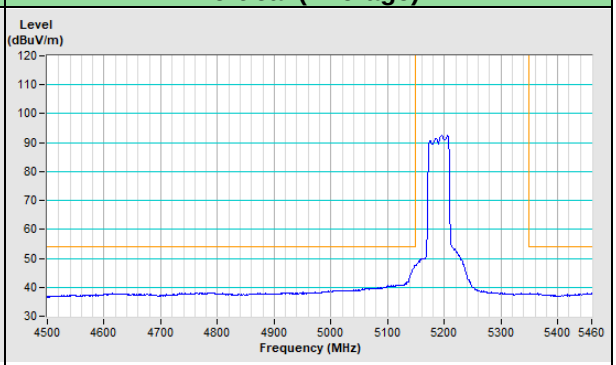
Horizontal (Average)



Vertical (Peak)

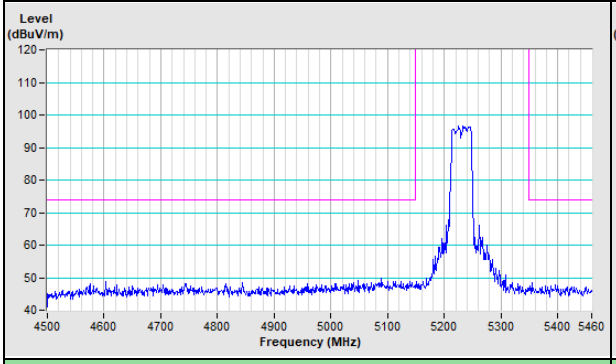


Vertical (Average)

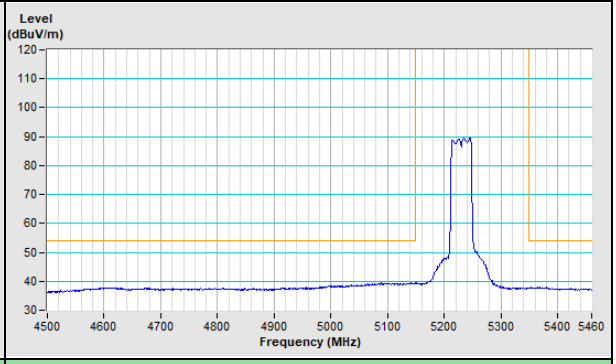


802.11ac (VHT40) Channel 46

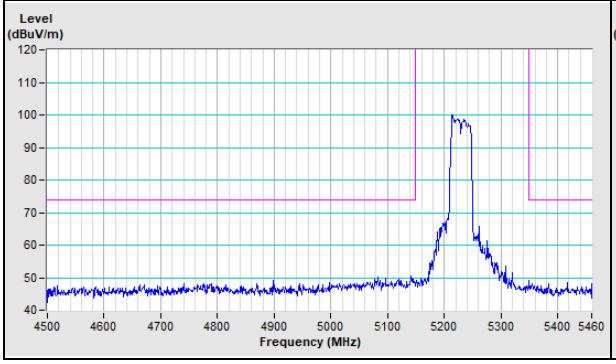
Horizontal (Peak)



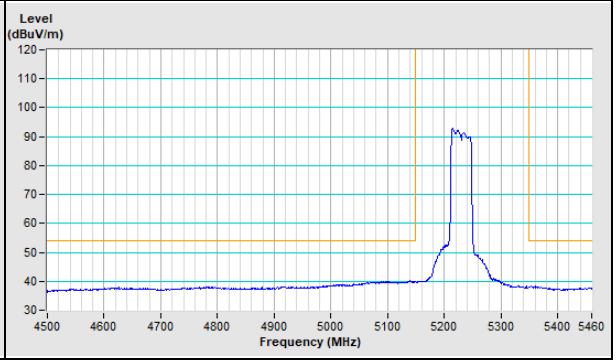
Horizontal (Average)

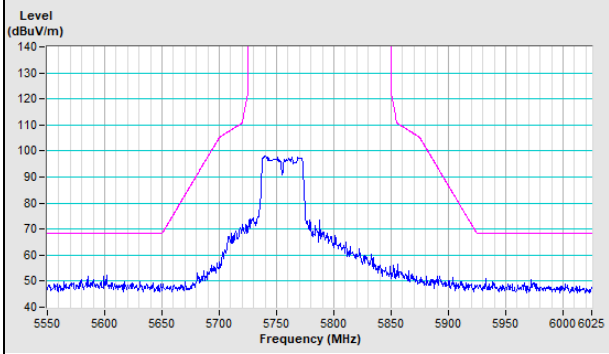
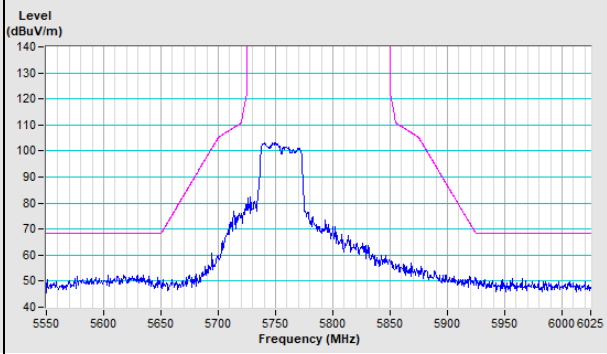


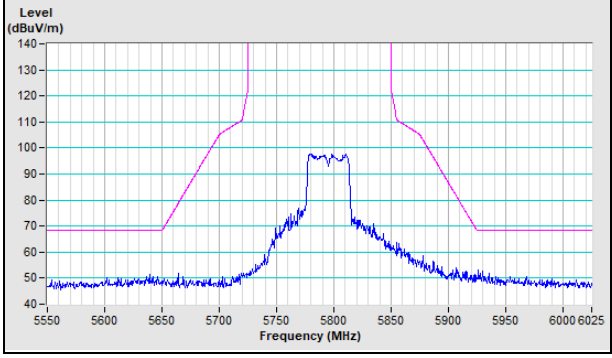
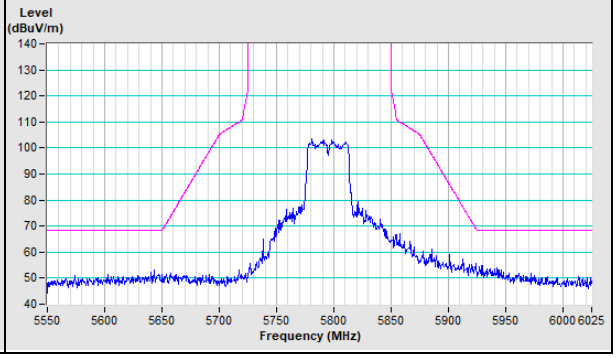
Vertical (Peak)

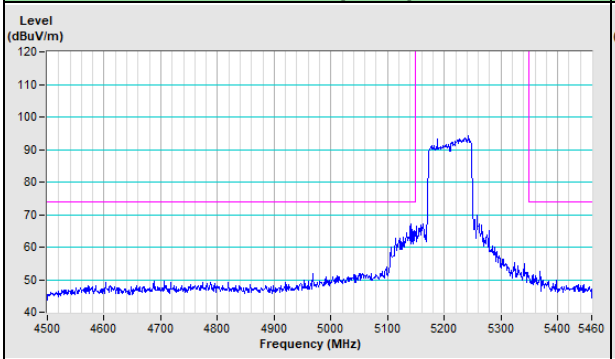
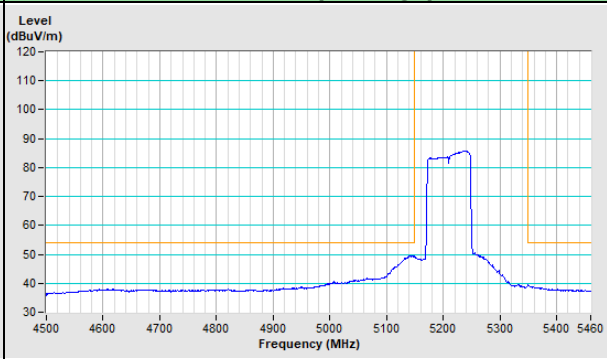
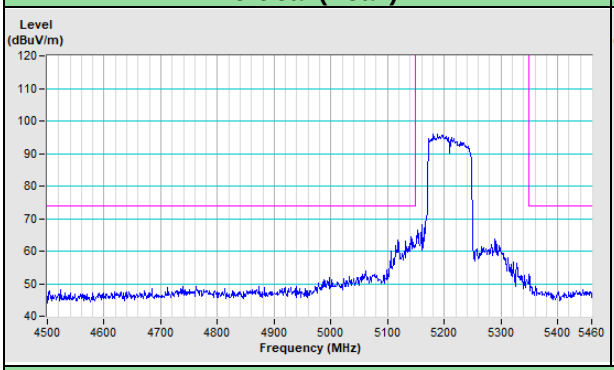
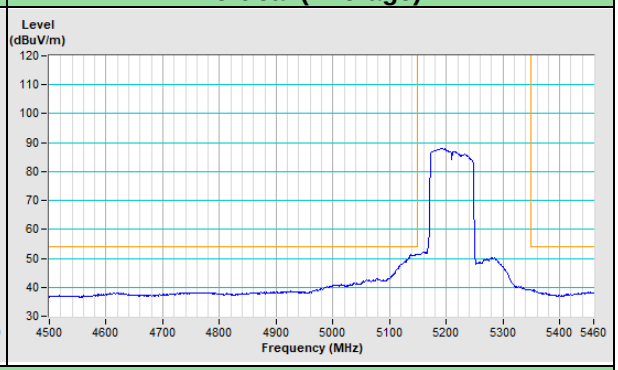
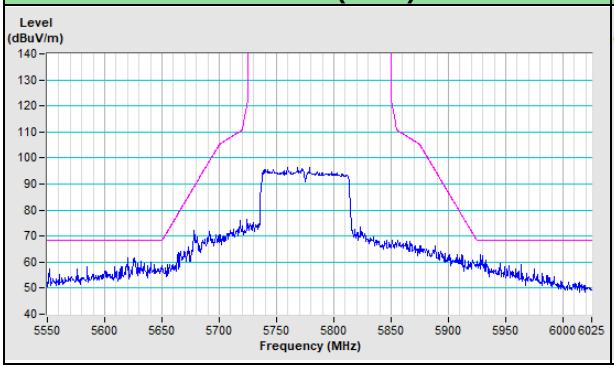
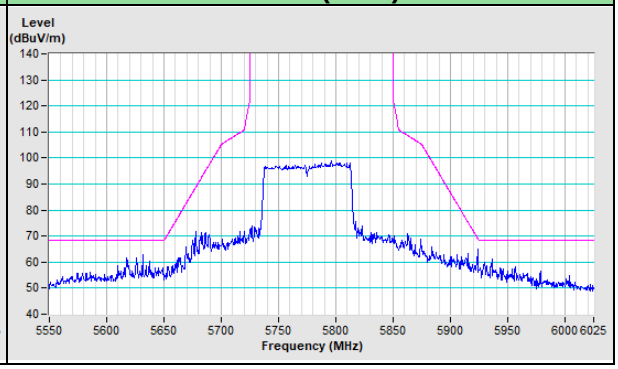


Vertical (Average)



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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