

TEST REPORT

CERTIFICATE OF CONFORMITY

Standard: 47 CFR FCC Part 15, Subpart E (Section 15.407)

Report No.: RFBEMI-WTW-P23040655-3

FCC ID: NOIKBN428

Product: Electronic Display Device

Brand: Rakuten kobo

Model No.: N428

Received Date: 2023/5/4

Test Date: 2023/5/16 ~ 2023/6/1

Issued Date: 2023/10/6

Applicant: NETRONIX, INC.

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Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
Lin Kou Laboratories

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Test Location: No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan

FCC Registration / 198487 / TW2021

Designation Number:

Approved by: Jeremy Lin, **Date:** 2023/10/6
Jeremy Lin / Project Engineer

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Prepared by : Jessica Cheng / Senior Specialist

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Release Control Record

Issue No.	Description	Date Issued
RFBEMI-WTW-P23040655-3	Original release.	2023/10/6

1 Certificate

Product: Electronic Display Device

Brand: Rakuten kobo

Test Model: N428

Sample Status: Engineering sample

Applicant: NETRONIX, INC.

Test Date: 2023/5/16 ~ 2023/6/1

Standard: 47 CFR FCC Part 15, Subpart E (Section 15.407)

Measurement ANSI C63.10-2013

procedure: 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) 15.407(a)(3)	RF Output Power	Pass	Meet the requirement of limit.
15.407(a)(1) 15.407(a)(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 -11.26 dB at 0.56868 MHz
15.407(b)(9)	Unwanted Emissions below 1 GHz	Pass	Minimum passing margin is -4.0 dB at 32.81 MHz
15.407(b) (1/10) 15.407(b) (4(i)/10)	Unwanted Emissions above 1 GHz	Pass	Minimum passing margin is -0.6 dB at 5649.60 MHz
15.203	Antenna Requirement	Pass	No antenna connector is used.

Notes: 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	9 kHz ~ 30 MHz	3.00 dB
Unwanted Emissions below 1 GHz	9 kHz ~ 30 MHz	2.38 dB
	30 MHz ~ 1 GHz	5.7 dB
Unwanted Emissions above 1 GHz	1 GHz ~ 6 GHz	4.83 dB
	6 GHz ~ 18 GHz	5.37 dB
	18 GHz ~ 40 GHz	5.24 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	N428
Status of EUT	Engineering sample
Power Supply Rating	3.87Vdc from Battery or 5Vdc from USB port
Modulation Type	64QAM, 16QAM, QPSK, BPSK for OFDM 256QAM for OFDM in 11ac mode
Modulation Technology	OFDM
Transfer Rate	Up to 433.3 Mbps
Operating Frequency	5.18 GHz ~ 5.24 GHz 5.745 GHz ~ 5.825 GHz
Number of Channel	802.11a, 802.11n (HT20), 802.11ac (VHT20):9 802.11n (HT40), 802.11ac (VHT40):4 802.11ac (VHT80):2
Output Power	5.18 GHz ~ 5.24 GHz : 17.742 mW (12.49 dBm) 5.745 GHz ~ 5.825 GHz : 15.668 mW (11.95 dBm)
EUT Category	Client device

Note:

- The EUT has black & white, which are electrically identical to each other except for exterior color.
- The EUT could be supplied with USB cable and different models could be chosen:

Brand	Model	Material	Color	Remark
Yih Fone	SH-0418	TPE	Black	Shielded:Y, 1.0M, Core:N/A
	SH-0420		White	

Both USB cables are identical to each other except for exterior color and model names

- The EUT has two eMMC as below table:

No	Model	Remark
1	PTE7A0YJ-32GE	1st source eMMC
2	MKEMF032GT1E-C	2nd source eMMC

From the above eMMC, the worst case was found in **No. 1**. Therefore only the test data of mode was recorded in this report.

- There are Bluetooth and WLAN (2.4 GHz & 5 GHz) technology used for the EUT.
- Simultaneously transmission condition.

Condition	Technology	
1	WLAN (2.4 GHz)	Bluetooth
2	WLAN (5 GHz)	Bluetooth

Note: The emission of the simultaneous operation has been evaluated and no non-compliance was found.

- The above EUT information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or User's Manual.

3.2 Antenna Description of EUT

1. The antenna information is listed as below.

Gain (dBi)	Antenna Type	Connector Type
3.41	Chip	none

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

2. The EUT incorporates a SISO function:

5 GHz 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

Note:

- The modulation and bandwidth are similar for 802.11n mode for 20 MHz (40 MHz), 802.11ac mode for 20 MHz (40 MHz) therefore the manufacturer will control the power for 802.11n mode is same as the 802.11ac mode or more lower than it and investigated worst case to representative mode in test report.

3.3 Channel List

FOR 5180 ~ 5240 MHz

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

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

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

Channel	Frequency	Channel	Frequency
38	5190 MHz	46	5230 MHz

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency
42	5210 MHz

FOR 5745 ~ 5825 MHz:

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

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

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

Channel	Frequency	Channel	Frequency
151	5755 MHz	159	5795 MHz

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency
155	5775 MHz

3.4 Test Mode Applicability and Tested Channel Detail

Pre-Scan:	<p>1. The eMMC has the following models: PTE7A0YJ-32GE/MKEMF032GT1E-C. Pre-scan these models of eMMC and find the worst case as a representative test condition.</p> <p>2. For Radiated, pre-scan AC Adapter via USB Cable/Laptop via USB Cable/Battery and find the worst case as a representative test condition.</p> <p>3. EUT can be used in the following ways: X-axis/ Y-axis/ Z-axis. Pre-scan these ways and find the worst case as a representative test condition.</p> <p>4. 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).</p>
Worst Case:	<p>1. eMMC Worst Condition: PTE7A0YJ-32GE.</p> <p>2. For Radiated Worst Condition: Laptop via USB Cable.</p> <p>3. X-axis/ Y-axis/ Z-axis Worst Condition: X-axis.</p>

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

Test Item	EUT Configure Mode	Mode	Tested Channel	Modulation	Data Rate Parameter
RF Output Power / Power Spectral Density	A	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, 151, 159	BPSK	MCS0
		802.11ac (VHT80)	42, 155	BPSK	MCS0
6 dB Bandwidth	A	802.11a	149, 157, 165	BPSK	6Mb/s
		802.11ac (VHT20)	149, 157, 165	BPSK	MCS0
		802.11ac (VHT40)	151, 159	BPSK	MCS0
		802.11ac (VHT80)	155	BPSK	MCS0
Occupied Bandwidth	A	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, 151, 159	BPSK	MCS0
		802.11ac (VHT80)	42, 155	BPSK	MCS0
Frequency Stability	A	802.11a	36	unmodulated	-
AC Power Conducted Emissions	A	802.11a	36	BPSK	6Mb/s
	B	802.11a	36	BPSK	6Mb/s
Unwanted Emissions below 1 GHz	A	802.11a	36	BPSK	6Mb/s
Unwanted Emissions above 1 GHz	A	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, 151, 159	BPSK	MCS0
		802.11ac (VHT80)	42, 155	BPSK	MCS0
EUT Configure Mode:	A	Laptop via USB Cable			
	B	AC Adapter via USB Cable			

Note: The USB Cable has the following models: SH-0418.

3.5 Duty Cycle of Test Signal

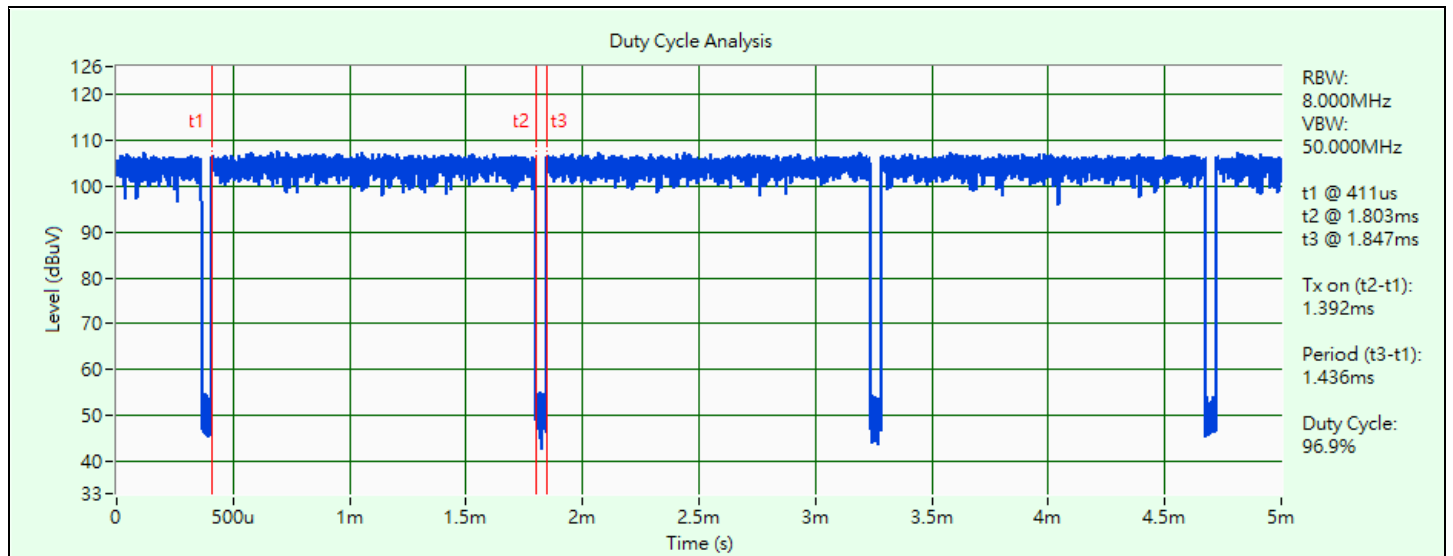
Mode A

802.11a: Duty cycle = 1.392 ms / 1.436 ms x 100% = 96.9%, duty factor = $10 \cdot \log(1/\text{Duty cycle}) = 0.14$ dB

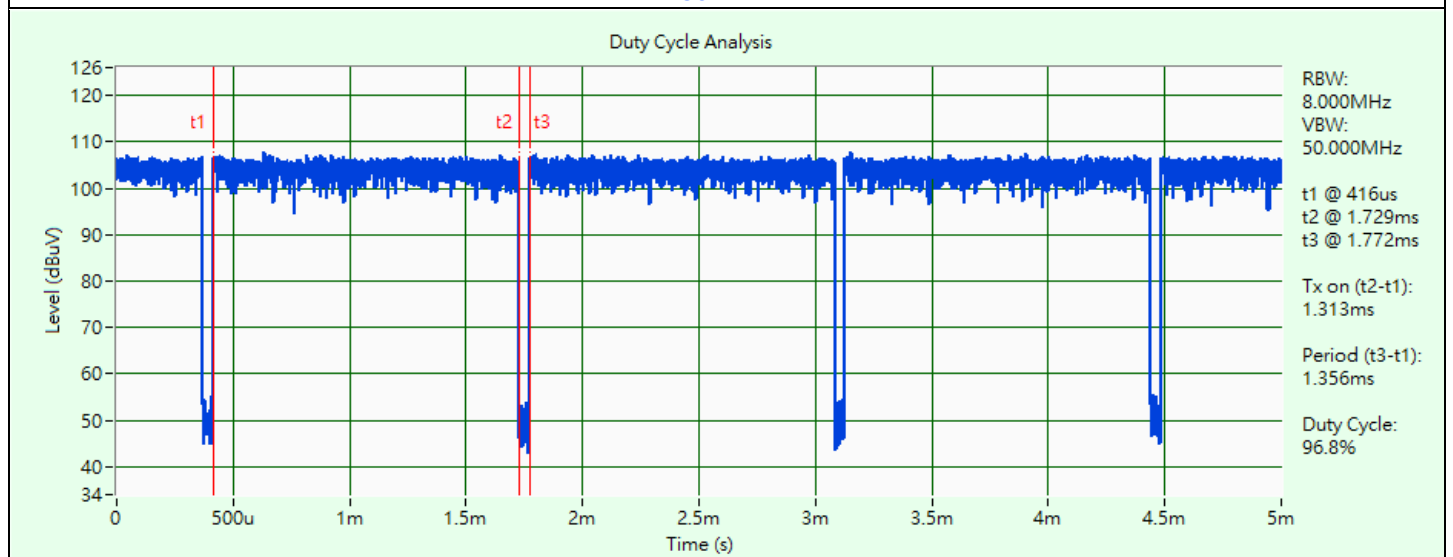
802.11ac (VHT20): Duty cycle = 1.313 ms / 1.356 ms x 100% = 96.8%, duty factor = $10 \cdot \log(1/\text{Duty cycle}) = 0.14$ dB

802.11ac (VHT40): Duty cycle = 0.652 ms / 0.696 ms x 100% = 93.7%, duty factor = $10 \cdot \log(1/\text{Duty cycle}) = 0.28$ dB

802.11ac (VHT80): Duty cycle = 0.322 ms / 0.367 ms x 100% = 87.7%, duty factor = $10 \cdot \log(1/\text{Duty cycle}) = 0.57$ dB



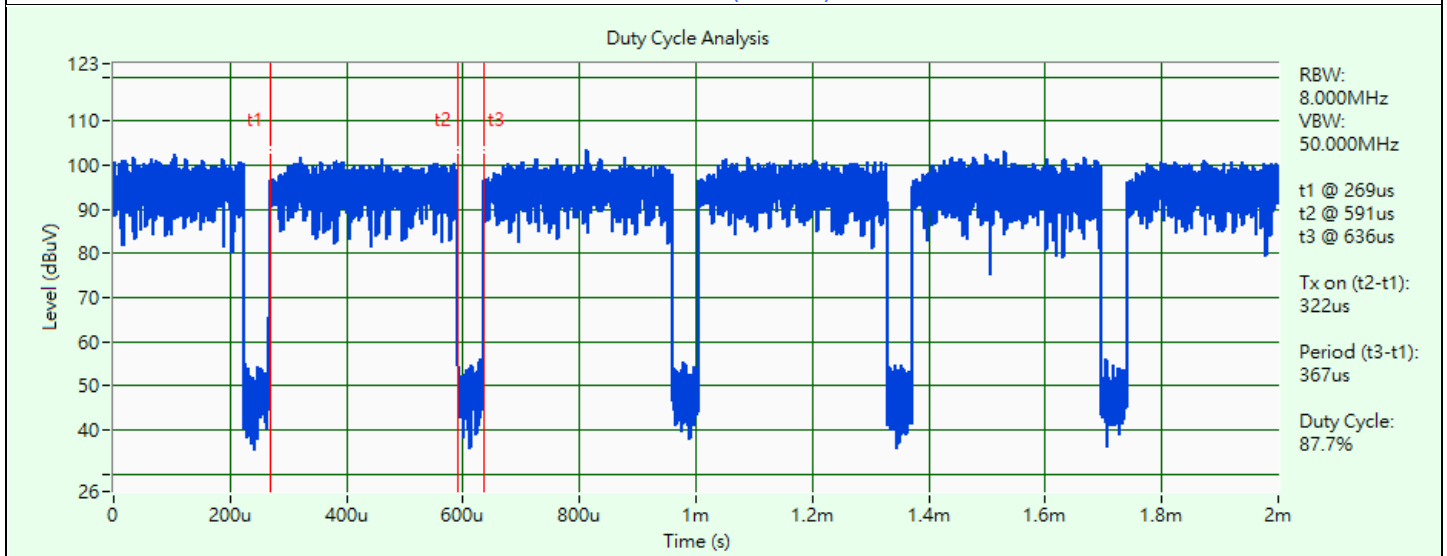
802.11a



802.11ac (VHT20)



802.11ac (VHT40)



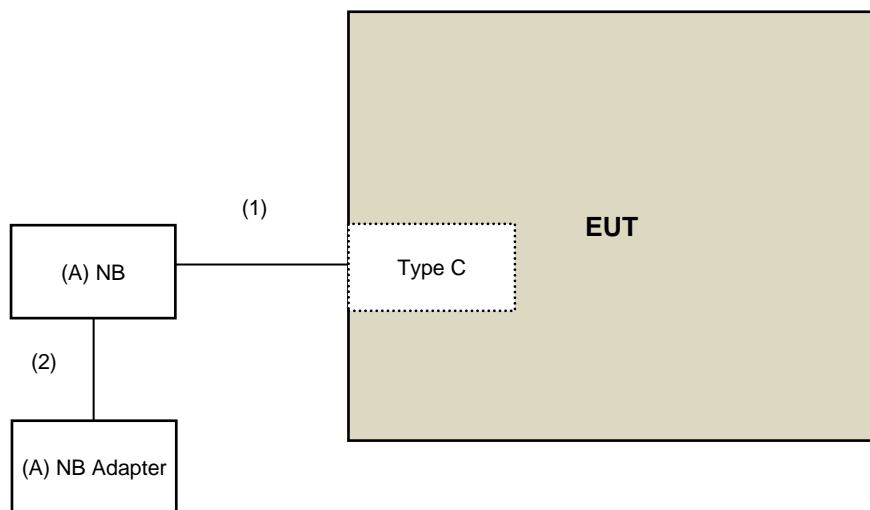
802.11ac (VHT80)

3.6 Test Program Used and Operation Descriptions

Controlling software (Tera Term V4.8) has been activated to set the EUT under transmission condition continuously at specific channel frequency.

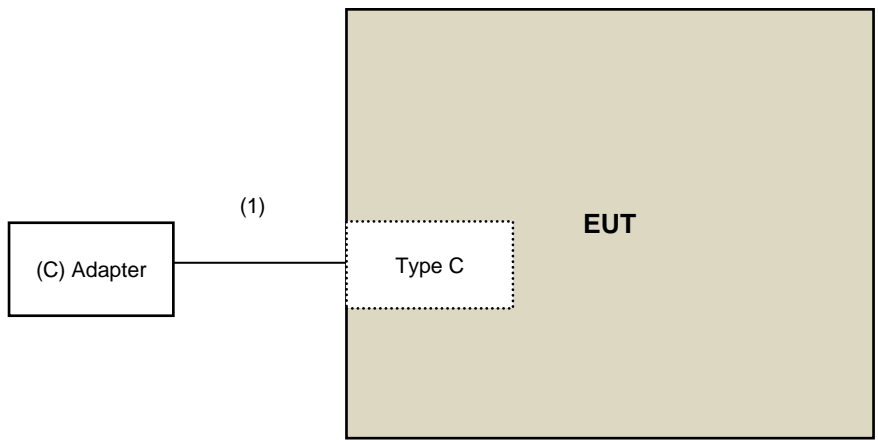
3.7 Connection Diagram of EUT and Peripheral Devices

Mode A



Remote Site

Mode B



Remote Site

3.8 Configuration of Peripheral Devices and Cable Connections

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A	NB	LENOVO	IdeaPad 5 15ITL05	N/A	N/A	Provided by Lab
B	NB Adapter	LENOVO	ADLX65CLGU2A	N/A	N/A	Provided by Lab
C	Adapter	APPLE	A1385	N/A	N/A	Provided by Lab

ID	Cable Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1	Type-A to C Cable	1	1	Y	0	Supplied by applicant
2	DC Cable	1	2	N	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
Power Meter Anritsu	ML2495A	0842014	2023/5/5	2024/5/4
Pulse Power Sensor Anritsu	MA2411B	0738404	2023/5/5	2024/5/4
USB Wideband Power Sensor Keysight	U2021XA	U2021XA_001	2022/6/13	2023/6/12

Notes:

1. The test was performed in LK - Oven
2. Tested Date: 2023/6/1

4.2 Power Spectral Density

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
PXA Signal Analyzer Keysight	N9030A	MY54490260	2022/7/14	2023/7/13
Signal Analyzer R&S	FSV40	101042	2022/9/5	2023/9/4
		101544	2023/5/9	2024/5/8
Software	ADT_RF Test Software V6.6.5.4	N/A	N/A	N/A

Notes:

1. The test was performed in LK - Oven
2. Tested Date: 2023/6/1

4.3 6 dB Bandwidth

Refer to section 4.2 to get information of the instruments.

4.4 Occupied Bandwidth

Refer to section 4.2 to get information of the instruments.

4.5 Frequency Stability

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
AC Power Source Schaffner	Proflin2105- 208NSG1007	55616	N/A	N/A
PXA Signal Analyzer Keysight	N9030A	MY54490260	2022/7/14	2023/7/13
Signal Analyzer R&S	FSV40	101042	2022/9/5	2023/9/4
		101544	2023/5/9	2024/5/8
Software	ADT_RF Test Software V6.6.5.4	N/A	N/A	N/A
Temperature & Humidity Chamber Terchy	MHU-225AU	920409	2022/6/27	2023/6/26

Notes:

1. The test was performed in LK - Oven
2. Tested Date: 2023/6/1

4.6 AC Power Conducted Emissions

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
50 ohm terminal resistance LYNICS	0900510	E1-01-305	2023/2/13	2024/2/12
		E1-011285	2022/9/19	2023/9/18
		E1-011286	2022/9/19	2023/9/18
Coupling / Decoupling Network Schwarzbeck	CDNE-M2	00097	2022/6/1	2023/5/31
	CDNE-M3	00091	2022/6/1	2023/5/31
Coupling / Decoupling Network TESEQ	CDN A201A	44601	2022/12/14	2023/12/13
DC LISN R&S	ESH3-Z6	100219	2022/8/2	2023/8/1
		844950/018	2022/8/2	2023/8/1
EMI Test Receiver R&S	ESR3	102413	2023/2/7	2024/2/6
Fixed Attenuator STI	STI02-2200-10	NO.3	2022/10/21	2023/10/20
High Voltage Probe Schwarzbeck	TK9420	00982	2022/12/14	2023/12/13
Isolation Transformer Erika Fiedler	D-65396	017	2022/9/8	2023/9/7
LISN EMCO	3825/2	9204-1964	2022/6/17	2023/6/16
		9504-2359	2022/8/2	2023/8/1
LISN R&S	ENV216	101195	2022/8/1	2023/7/31
		101196	2022/5/24	2023/5/23
		101197	2022/7/5	2023/7/4
LISN Schwarzbeck	NNLK 8121	8121-731	2022/5/26	2023/5/25
		8121-00759	2022/8/18	2023/8/17
	NNLK 8129	8129229	2022/6/8	2023/6/7
RF Coaxial Cable PEWC	5D-FB	Cable-CO3-01	2022/9/14	2023/9/13
Software BVADT	Cond_V7.3.7.4	N/A	N/A	N/A

Notes:

1. The test was performed in Linkou Conduction 3.
2. Tested Date: 2023/5/16

4.7 Unwanted Emissions below 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
* Loop Antenna EMCI	LPA600	270	2021/9/2	2023/9/1
Bi_Log Antenna Schwarzbeck	VULB 9168	137	2022/10/21	2023/10/20
Coupling / Decoupling Network Schwarzbeck	CDNE-M2	00097	2022/6/1	2023/5/31
	CDNE-M3	00091	2022/6/1	2023/5/31
MXE EMI Receiver Agilent	N9038A	MY51210129	2023/3/24	2024/3/23
		MY51210137	2022/6/9	2023/6/8
Preamplifier EMCI	EMC001340	980269	2022/6/28	2023/6/27
Preamplifier HP	8447D	2432A03504	2023/2/16	2024/2/15
RF Coaxial Cable Pacific	8D-FB	Cable-CH6-02	2022/6/30	2023/6/29
Signal Analyzer R&S	FSV40	101544	2023/5/9	2024/5/8
Software BVADT	Radiated_V8.7.08	N/A	N/A	N/A
Tower ADT	AT100	0306	N/A	N/A
Turn Table ADT	TT100	0306	N/A	N/A

Notes:

- * The calibration interval of the above test instruments is 24 months and the calibrations are traceable to NML/ROC and NIST/USA
- The test was performed in Linkou 966 Chamber 6 (CH 6).
- Tested Date: 2023/5/16

4.8 Unwanted Emissions above 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Band Pass Filter Micro-Tronics	BRM17690	005	2022/5/26 2023/5/25	2023/5/25 2024/5/24
Boresight antenna tower fixture BV	BAF-02	6	N/A	N/A
High Pass Filter Wainwright	WHK 3.1/18G-10SS	SN 8	2022/5/26 2023/5/25	2023/5/25 2024/5/24
Horn Antenna EMCO	3115	00028257	2022/11/13	2023/11/12
Horn Antenna ETS-Lindgren	3117-PA	00215857	2022/11/13	2023/11/12
Horn Antenna Schwarzbeck	BBHA 9170	212	2022/10/20	2023/10/19
MXE EMI Receiver Agilent	N9038A	MY51210129	2023/3/24	2024/3/23
		MY51210137	2022/6/9	2023/6/8
Notch Filter Micro-Tronics	BRC50703-01	010	2022/5/26 2023/5/25	2023/5/25 2024/5/24
Preamplifier EMCI	EMC0126545 EMC184045B	980076	2023/2/16	2024/2/15
		980175	2022/9/3	2023/9/2
		980235	2023/2/16	2024/2/15
Preamplifier HP	8449B	3008A01201	2023/2/16	2024/2/15
RF Coaxial Cable EM	EM102-KMKM-3.5+1M	EM102-KMKM-3.5+1M-01	2022/7/7	2023/7/6
RF Coaxial Cable EMCI	EMC104	190801	2022/9/20	2023/9/19
		190804	2022/9/20	2023/9/19
RF Coaxial Cable HUBER+SUHNER	SF-104	Cable-CH6-01	2022/9/20	2023/9/19
Signal Analyzer R&S	FSV40	101042	2022/9/5	2023/9/4
		101544	2023/5/9	2024/5/8
Software BVADT	Radiated_V7.7.1.1.1	N/A	N/A	N/A
Tower ADT	AT100	0306	N/A	N/A
Turn Table ADT	TT100	0306	N/A	N/A

Notes:

1. The test was performed in Linkou 966 Chamber 6 (CH 6).
2. Tested Date: 2023/5/24 ~ 2023/5/26

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 \leq 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	250mW (24 dBm)

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

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

Applicable To	Limit	
789033 D02 General UNII Test Procedure New Rules v02r01	Field Strength at 3 m	
	PK: 74 (dBμV/m)	AV: 54 (dBμV/m)

For transmitters operating in the 5.15-5.25 GHz band:

Applicable To	EIRP Limit	Equivalent Field Strength at 3 m
15.407(b)(1)	PK: -27 (dBm/MHz)	PK: 68.2 (dBμV/m)

For transmitters operating in the 5.725-5.850 GHz band:

Applicable To	EIRP Limit	Equivalent Field Strength at 3 m
15.407(b)(4)(i)	PK: -27 (dBm/MHz) ^{*1} PK: 10 (dBm/MHz) ^{*2} PK: 15.6 (dBm/MHz) ^{*3} PK: 27 (dBm/MHz) ^{*4}	PK: 68.2 (dBμV/m) ^{*1} PK: 105.2 (dBμV/m) ^{*2} PK: 110.8 (dBμV/m) ^{*3} PK: 122.2 (dBμV/m) ^{*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.

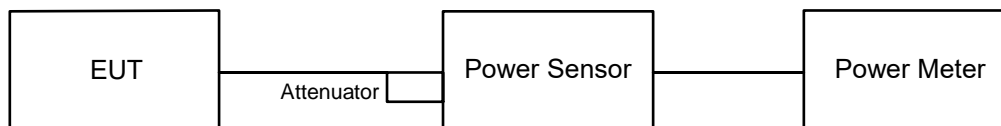
Note: The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength:

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

6 Test Arrangements

6.1 RF Output Power

6.1.1 Test Setup

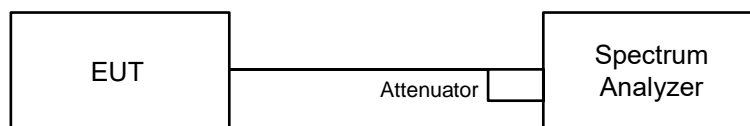


6.1.2 Test Procedure

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-2

- Set span to encompass the entire emission bandwidth (EBW) of the signal.
- Set RBW = 1 MHz, Set VBW \geq 3 MHz, Detector = RMS
- Sweep points \geq $[2 \times \text{span} / \text{RBW}]$. (This gives bin-to-bin spacing \leq RBW / 2, so that narrowband signals are not lost between frequency bins.)
- Sweep time = auto, trigger set to "free run".
- Trace average at least 100 traces in power averaging mode.
- Use the peak search function on the instrument to find the peak of the spectrum and record its value.
- Record the max value and add $10 \log (1/\text{duty cycle})$.

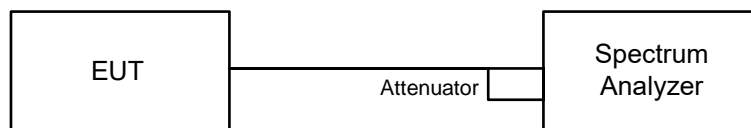
For specified measurement bandwidth 500 kHz:

Method SA-2

- Set span to encompass the entire emission bandwidth (EBW) of the signal.
- Set RBW = 300 kHz, Set VBW \geq 1 MHz, Detector = RMS
- 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 $\text{BWCF} = 10 \log(500 \text{ kHz}/300 \text{ kHz})$
- Sweep points \geq $[2 \times \text{span} / \text{RBW}]$. (This gives bin-to-bin spacing \leq RBW / 2, so that narrowband signals are not lost between frequency bins.)
- Sweep time = auto, trigger set to "free run".
- Trace average at least 100 traces in power averaging mode.
- Use the peak search function on the instrument to find the peak of the spectrum and record its value.
- Record the max value and add $10 \log (1/\text{duty cycle})$.

6.3 6 dB Bandwidth

6.3.1 Test Setup

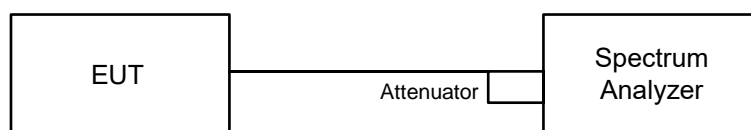


6.3.2 Test Procedure

- Set resolution bandwidth (RBW) = 100 kHz.
- Set the video bandwidth (VBW) $\geq 3 \times$ RBW, Detector = Peak.
- Trace mode = max hold.
- Sweep = auto couple.
- 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

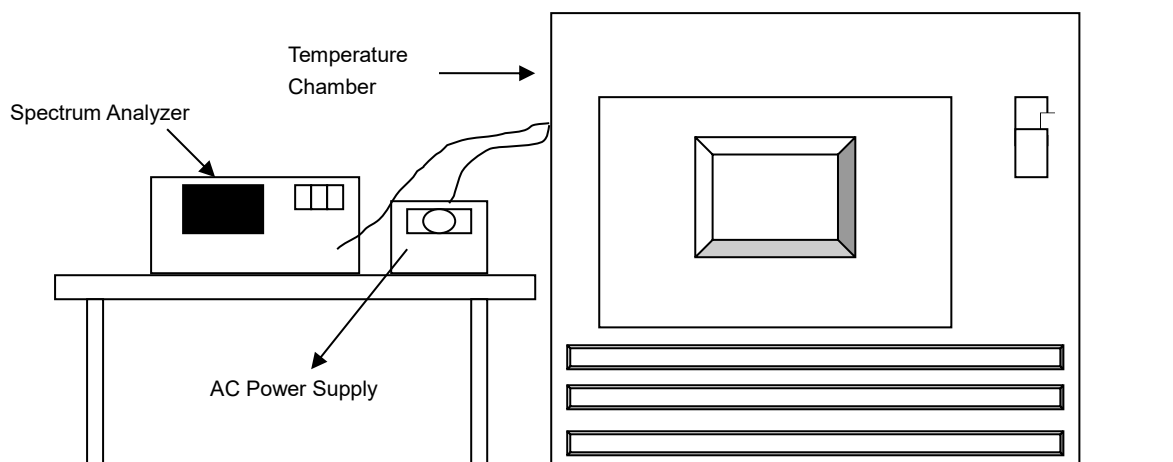


6.4.2 Test Procedure

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

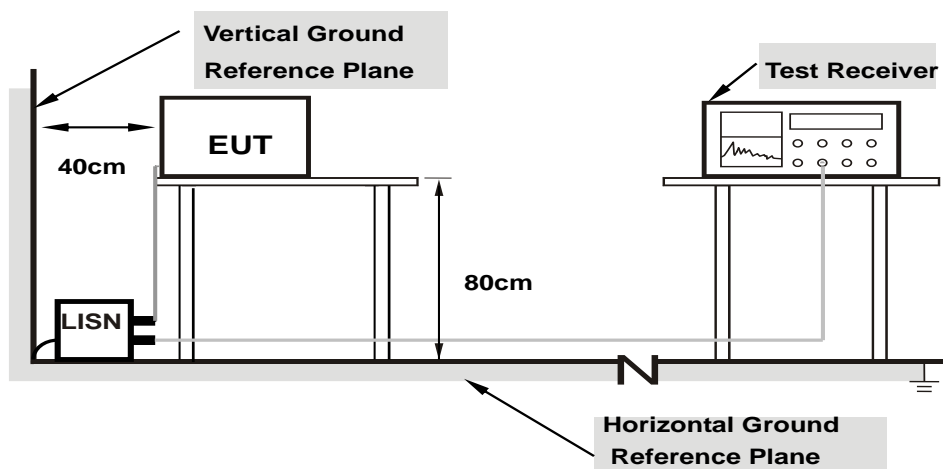


6.5.2 Test Procedure

- The EUT was placed inside the environmental test chamber and powered by nominal AC voltage.
- Turn the EUT on and couple its output to a spectrum analyzer.
- Turn the EUT off and set the chamber to the highest temperature specified.
- 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.
- Repeat step (d) with the temperature chamber set to the next desired temperature until measurements down to the lowest specified temperature have been completed.
- 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

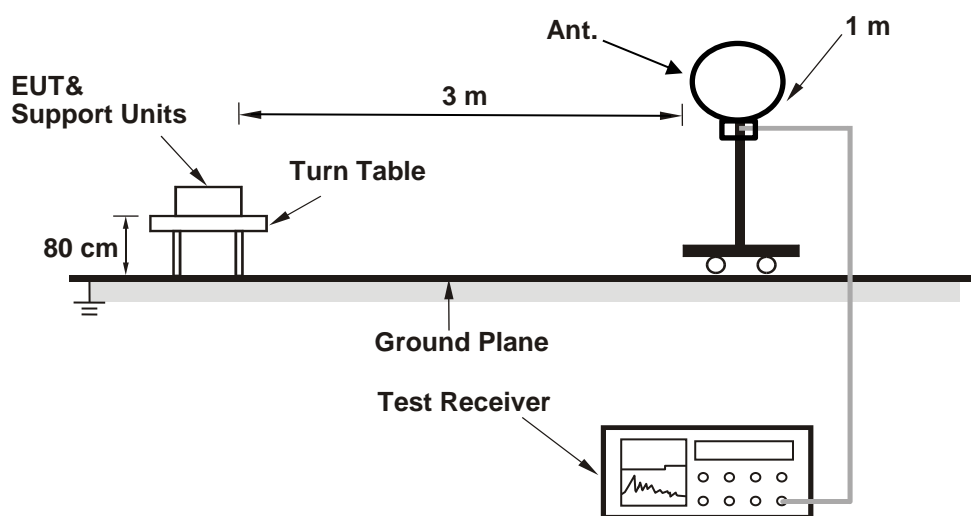
- The EUT was placed on a 0.8 meter to the top of table and placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50 uH of coupling impedance for the measuring instrument.
- Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- The frequency range from 150 kHz to 30 MHz was searched. Emission levels under (Limit – 20 dB) was not recorded.

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

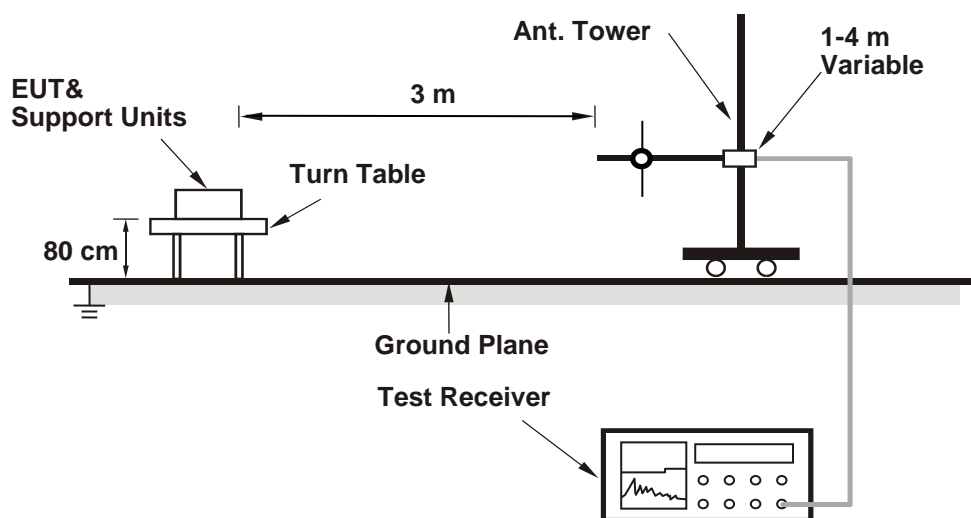
6.7 Unwanted Emissions below 1 GHz

6.7.1 Test Setup

For Radiated emission below 30 MHz



For Radiated emission above 30 MHz



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

6.7.2 Test Procedure

For Radiated emission below 30 MHz

- 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, except for the frequency band (9 kHz to 90 kHz and 110 kHz to 490 kHz) set to average detect function and peak detect function.

Notes:

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

For Radiated emission above 30 MHz

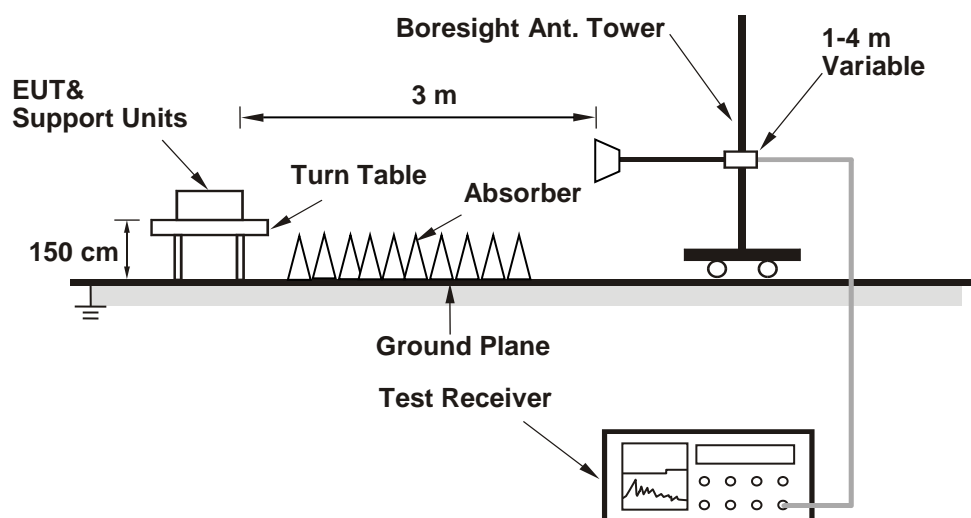
- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the 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 the actual test configuration, please refer to the attached file (Test Setup Photo).

6.8.2 Test Procedure

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

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

7 Test Results of Test Item

7.1 RF Output Power

Mode A

Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 76% RH	Tested By:	Dalen Dai
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802.11a

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)	Power Limit (dBm)	Test Result
36	5180	17.742	12.49	24	Pass
40	5200	17.701	12.48	24	Pass
48	5240	17.498	12.43	24	Pass
149	5745	13.243	11.22	30	Pass
157	5785	12.589	11.00	30	Pass
165	5825	12.589	11.00	30	Pass

Notes:

1. For U-NII-1, the antenna gain is 3.41 dBi < 6 dBi, so the output power limit shall not be reduced.
2. For U-NII-3, the antenna gain is 3.41 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	17.62	12.46	24	Pass
40	5200	17.539	12.44	24	Pass
48	5240	17.579	12.45	24	Pass
149	5745	12.531	10.98	30	Pass
157	5785	13.397	11.27	30	Pass
165	5825	13.74	11.38	30	Pass

Notes:

1. For U-NII-1, the antenna gain is 3.41 dBi < 6 dBi, so the output power limit shall not be reduced.
2. For U-NII-3, the antenna gain is 3.41 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	17.498	12.43	24	Pass
46	5230	17.418	12.41	24	Pass
151	5755	15.346	11.86	30	Pass
159	5795	15.668	11.95	30	Pass

Notes:

1. For U-NII-1, the antenna gain is 3.41 dBi < 6 dBi, so the output power limit shall not be reduced.
2. For U-NII-3, the antenna gain is 3.41 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	17.338	12.39	24	Pass
155	5775	14.928	11.74	30	Pass

Notes:

1. For U-NII-1, the antenna gain is 3.41 dBi < 6 dBi, so the output power limit shall not be reduced.
2. For U-NII-3, the antenna gain is 3.41 dBi < 6 dBi, so the output power limit shall not be reduced.

7.2 Power Spectral Density

Mode A

Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 76% RH	Tested By:	Dalen Dai
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802.11a

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)	Duty Factor (dB)	PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Test Result
36	5180	-0.45	0.14	-0.31	11	Pass
40	5200	-0.52	0.14	-0.38	11	Pass
48	5240	-0.53	0.14	-0.39	11	Pass

Note: For U-NII-1, the antenna gain is 3.41 dBi < 6dBi, so the power density limit shall not be reduced.

802.11ac (VHT20)

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)	Duty Factor (dB)	PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Test Result
36	5180	-1.22	0.14	-1.08	11	Pass
40	5200	-1.26	0.14	-1.12	11	Pass
48	5240	-1.25	0.14	-1.11	11	Pass

Note: For U-NII-1, the antenna gain is 3.41 dBi < 6dBi, so the power density limit shall not be reduced.

802.11ac (VHT40)

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)	Duty Factor (dB)	PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Test Result
38	5190	-4.21	0.28	-3.93	11	Pass
46	5230	-4.35	0.28	-4.07	11	Pass

Note: For U-NII-1, the antenna gain is 3.41 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	-7.16	0.57	-6.59	11	Pass

Note: For U-NII-1, the antenna gain is 3.41 dBi < 6dBi, so the power density limit shall not be reduced.

802.11a

TX chain	Channel	Freq. (MHz)	PSD w/o Duty Factor (dBm/300kHz)	PSD w/o Duty Factor (dBm/500kHz)	Duty Factor (dB)	Total PSD With Duty Factor (dBm/500kHz)	PSD Limit (dBm/500kHz)	Test Result
Chain 0	149	5745	-8.73	-6.51	0.14	-6.37	30	Pass
	157	5785	-8.55	-6.33	0.14	-6.19	30	Pass
	165	5825	-8.92	-6.7	0.14	-6.56	30	Pass

Note: For U-NII-3, the antenna gain is 3.41 dBi < 6 dBi, so the power density limit shall not be reduced.

802.11ac (VHT20)

TX chain	Channel	Freq. (MHz)	PSD w/o Duty Factor (dBm/300kHz)	PSD w/o Duty Factor (dBm/500kHz)	Duty Factor (dB)	Total PSD With Duty Factor (dBm/500kHz)	PSD Limit (dBm/500kHz)	Test Result
Chain 0	149	5745	-8.16	-5.94	0.14	-5.8	30	Pass
	157	5785	-8.09	-5.87	0.14	-5.73	30	Pass
	165	5825	-9.85	-7.63	0.14	-7.49	30	Pass

Note: For U-NII-3, the antenna gain is 3.41 dBi < 6 dBi, so the power density limit shall not be reduced.

802.11ac (VHT40)

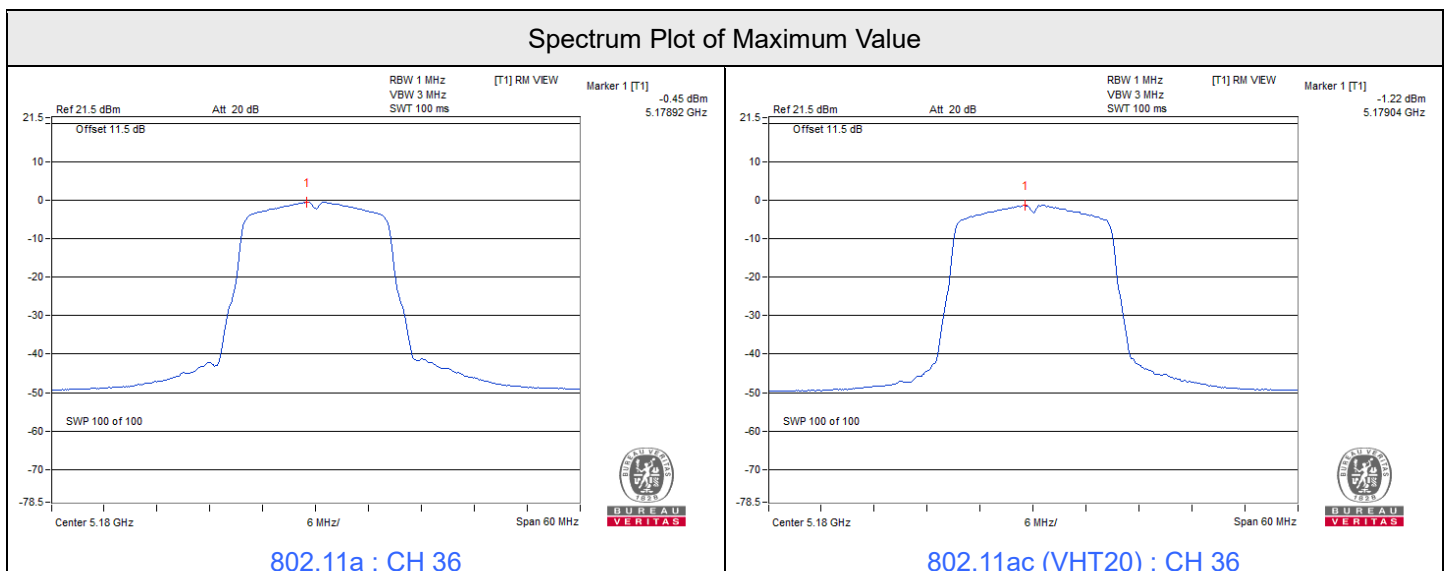
TX chain	Channel	Freq. (MHz)	PSD w/o Duty Factor (dBm/300kHz)	PSD w/o Duty Factor (dBm/500kHz)	Duty Factor (dB)	Total PSD With Duty Factor (dBm/500kHz)	PSD Limit (dBm/500kHz)	Test Result
Chain 0	151	5755	-10.98	-8.76	0.28	-8.48	30	Pass
	159	5795	-10.96	-8.74	0.28	-8.46	30	Pass

Note: For U-NII-3, the antenna gain is 3.41 dBi < 6 dBi, so the power density limit shall not be reduced.

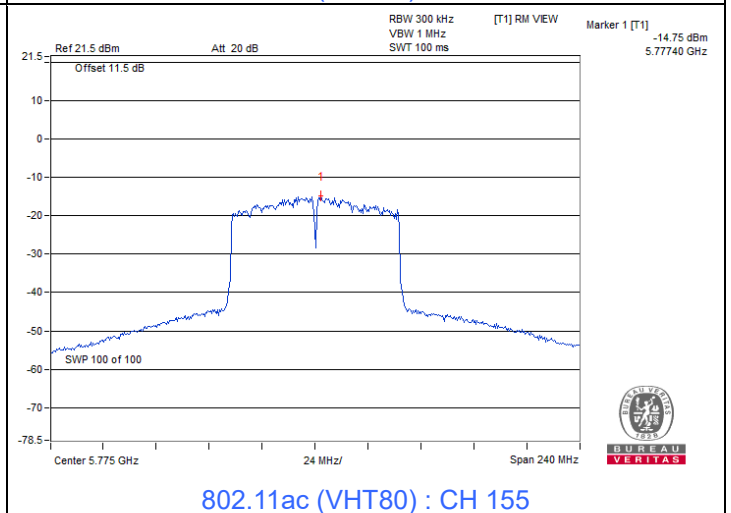
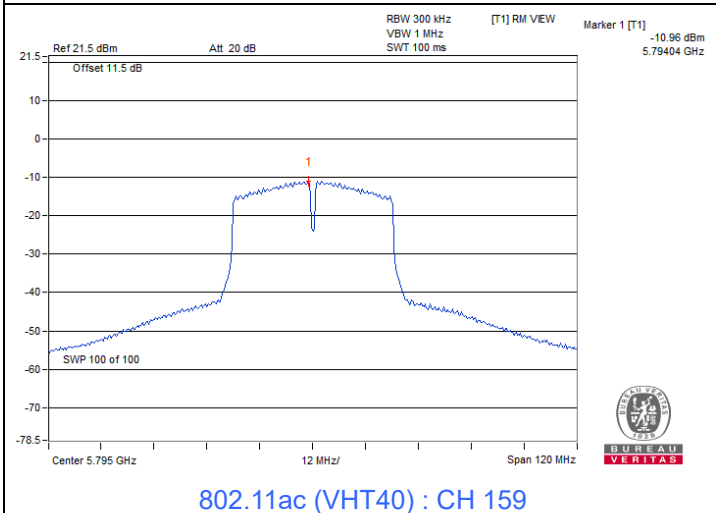
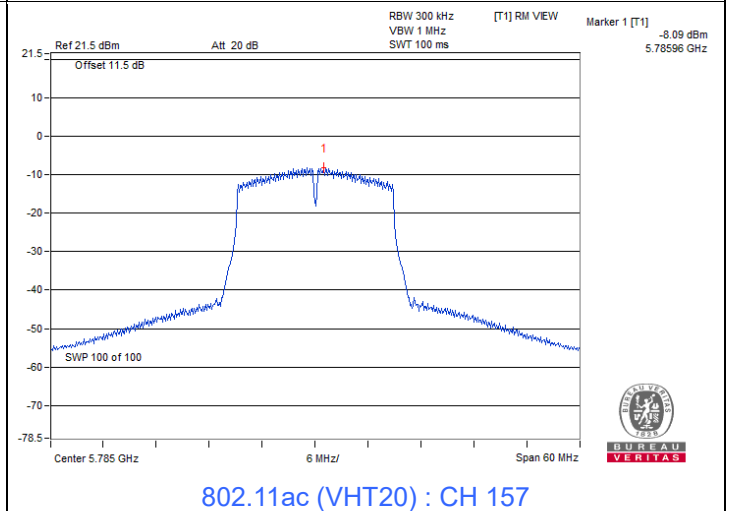
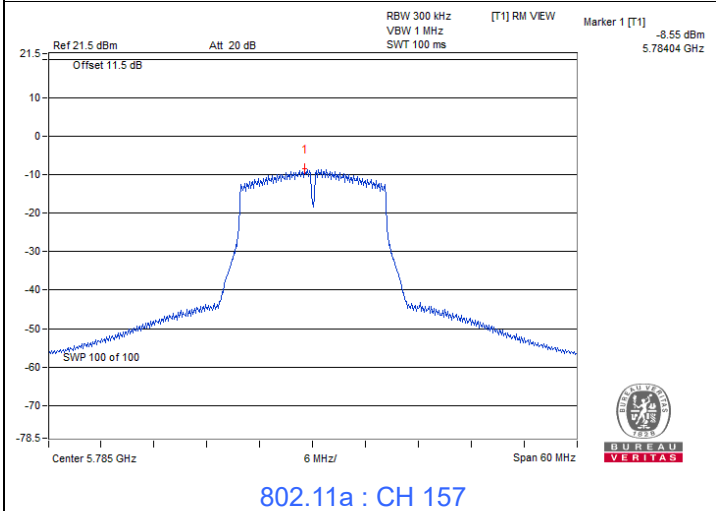
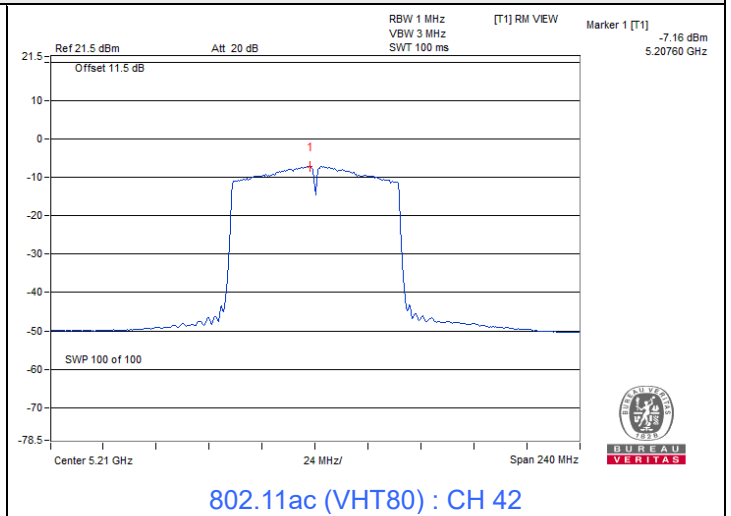
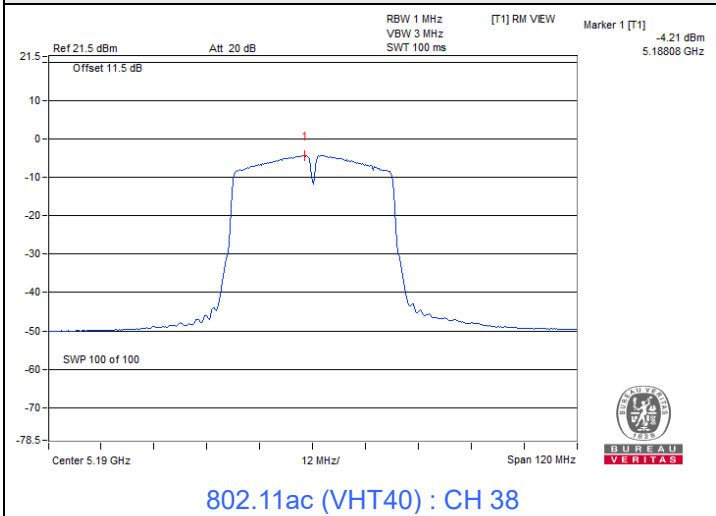
802.11ac (VHT80)

TX chain	Channel	Freq. (MHz)	PSD w/o Duty Factor (dBm/300kHz)	PSD w/o Duty Factor (dBm/500kHz)	Duty Factor (dB)	Total PSD With Duty Factor (dBm/500kHz)	PSD Limit (dBm/500kHz)	Test Result
Chain 0	155	5775	-14.75	-12.53	0.57	-11.96	30	Pass

Note: For U-NII-3, the antenna gain is 3.41 dBi < 6 dBi, so the power density limit shall not be reduced.



Spectrum Plot of Maximum Value



7.3 6 dB Bandwidth

Mode A

Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 76% RH	Tested By:	Dalen Dai
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802.11a

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Test Result
149	5745	15.38	0.5	Pass
157	5785	15.2	0.5	Pass
165	5825	15.17	0.5	Pass

802.11ac (VHT20)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Test Result
149	5745	15.2	0.5	Pass
157	5785	15.5	0.5	Pass
165	5825	15.18	0.5	Pass

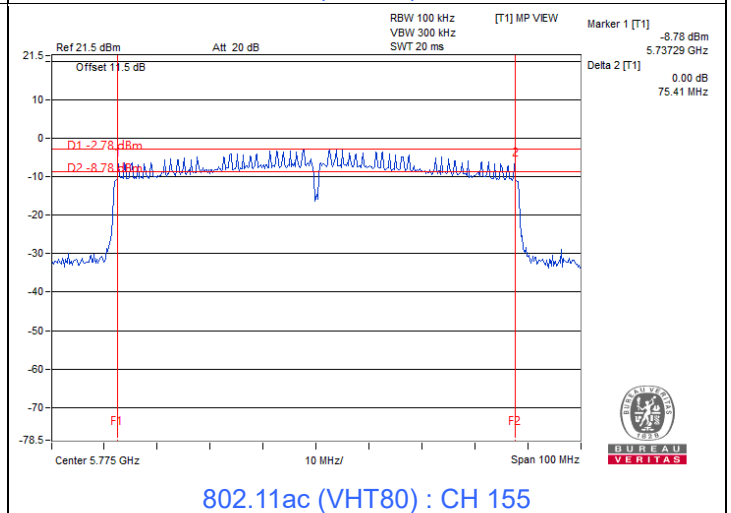
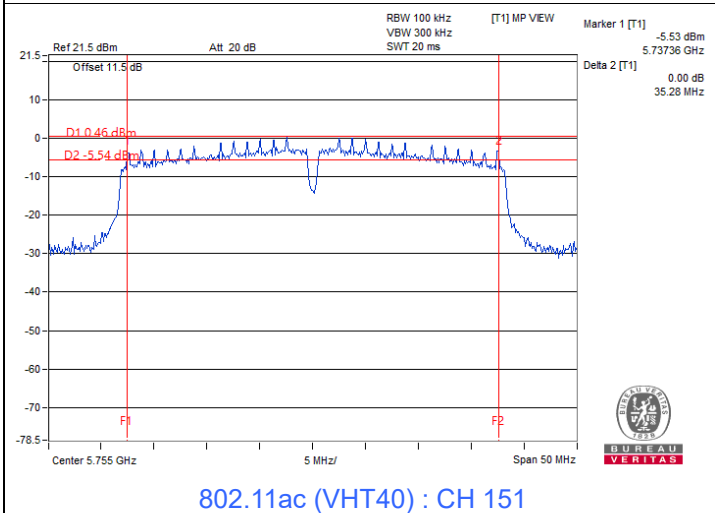
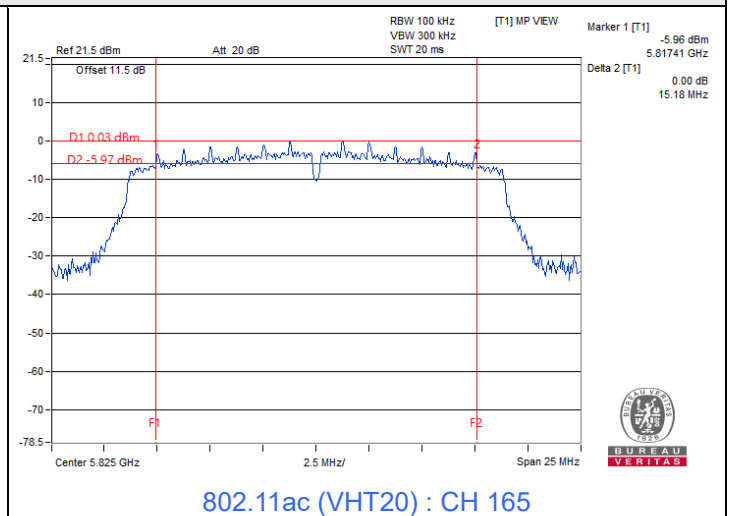
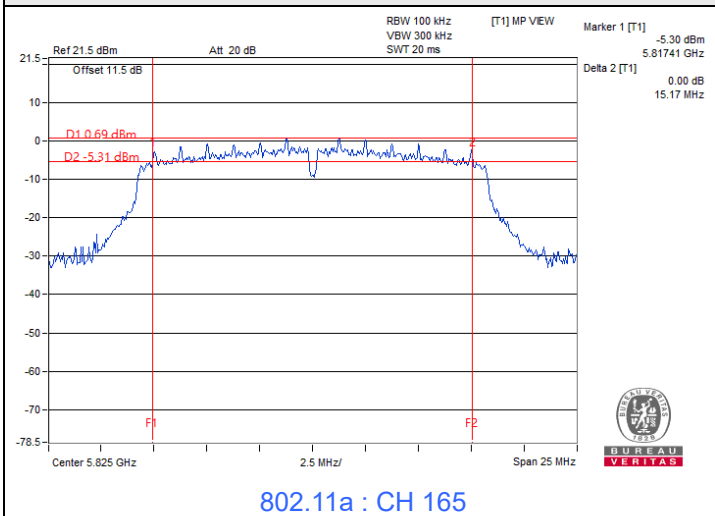
802.11ac (VHT40)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Test Result
151	5755	35.28	0.5	Pass
159	5795	35.29	0.5	Pass

802.11ac (VHT80)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Test Result
155	5775	75.41	0.5	Pass

Spectrum Plot of Minimum Value



7.4 Occupied Bandwidth

Mode A

Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 76% RH	Tested By:	Dalen Dai
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802.11a

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)
36	5180	16.68
40	5200	16.56
48	5240	16.68
149	5745	16.8
157	5785	16.92
165	5825	16.68

802.11ac (VHT20)

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)
36	5180	17.76
40	5200	17.64
48	5240	17.76
149	5745	18.12
157	5785	18
165	5825	17.88

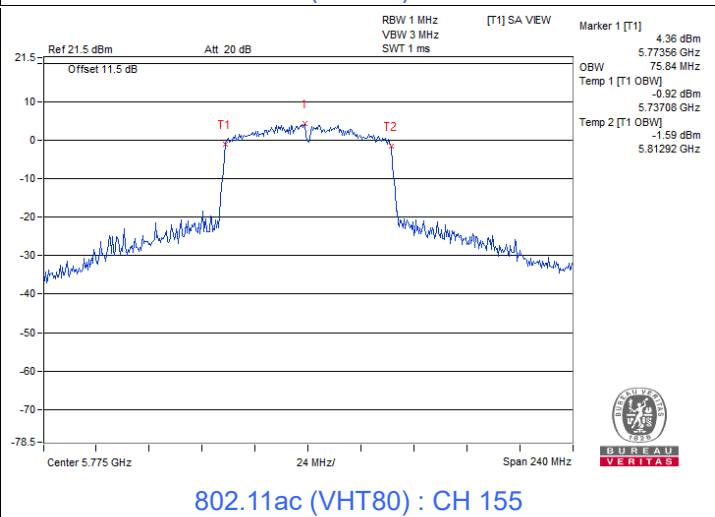
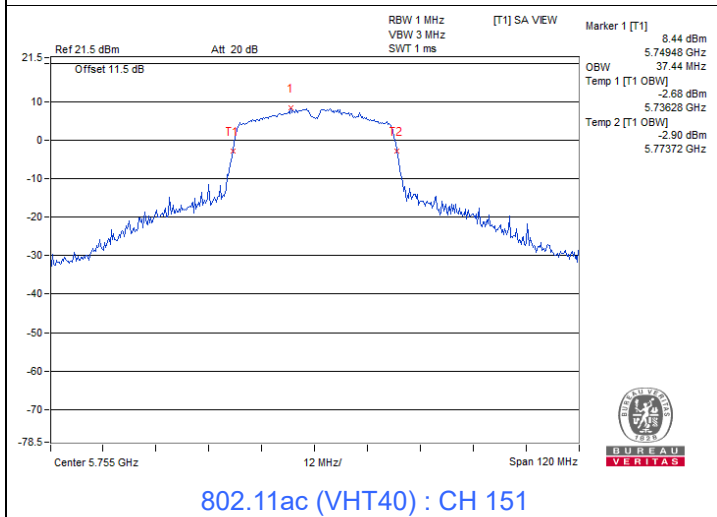
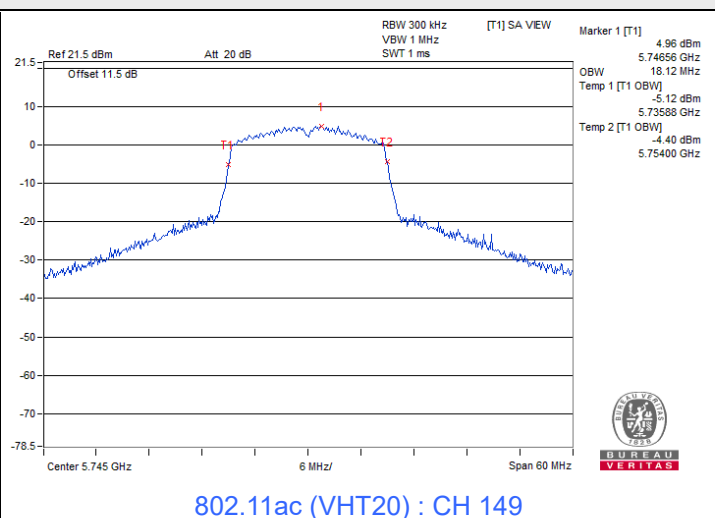
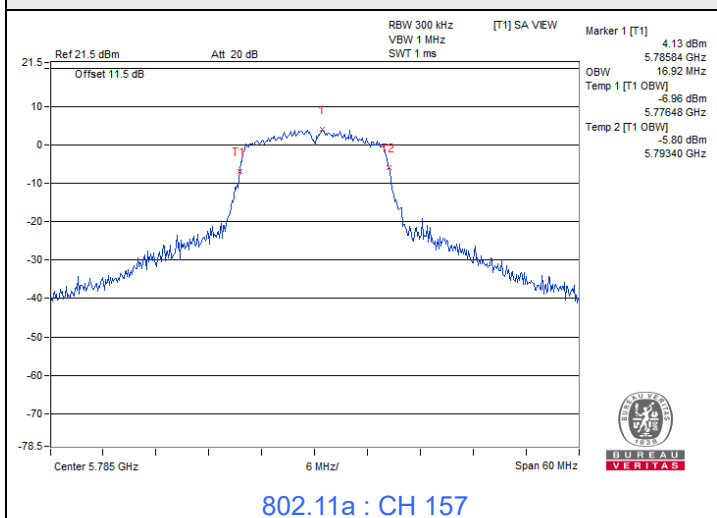
802.11ac (VHT40)

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)
38	5190	36.72
46	5230	36.48
151	5755	37.44
159	5795	36.72

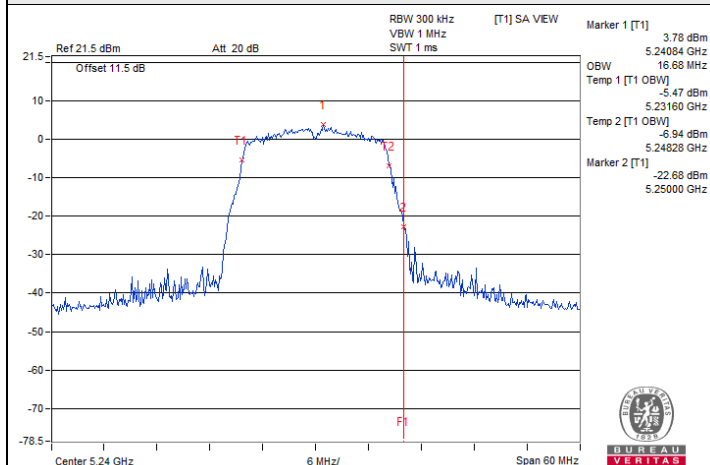
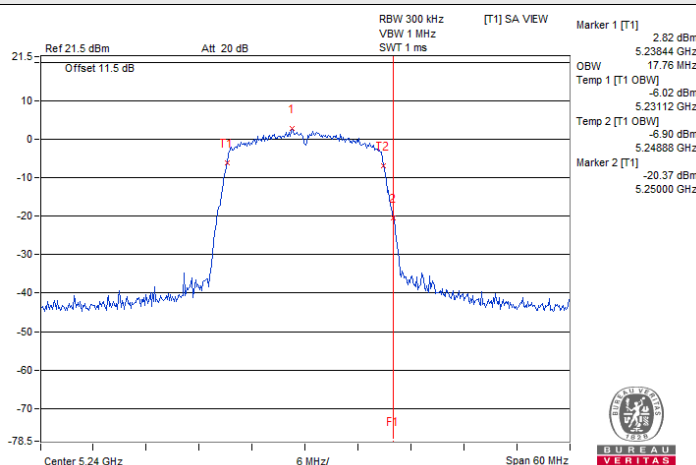
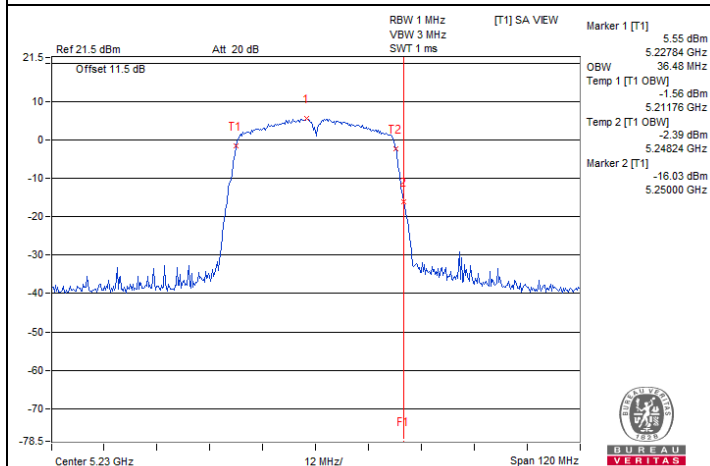
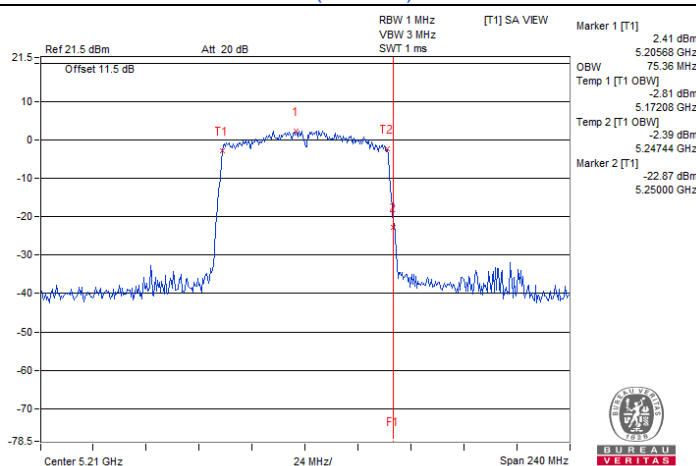
802.11ac (VHT80)

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)
42	5210	75.36
155	5775	75.84

Spectrum Plot of Maximum Value

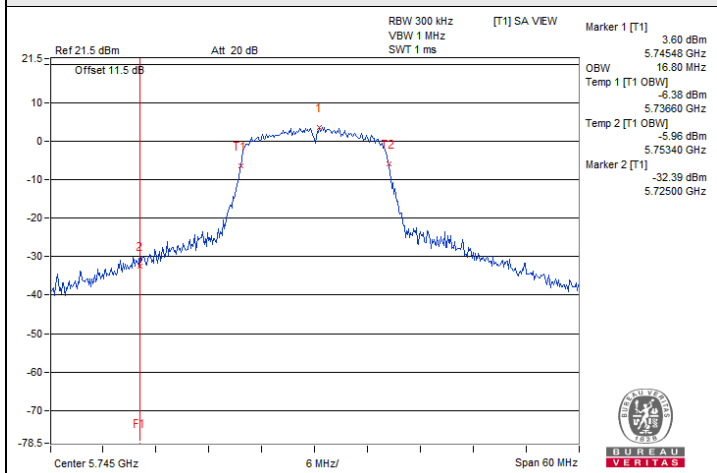


Spectrum Plot for nearby DFS band (DFS is required, if 99% OCP straddle into U-NII-2A)

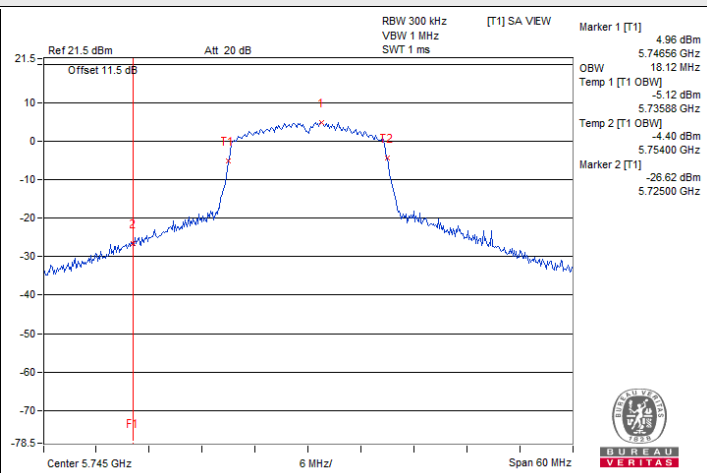
**802.11a : CH 48****802.11ac (VHT20) : CH 48****802.11ac (VHT40) : CH 46****802.11ac (VHT80) : CH 42**



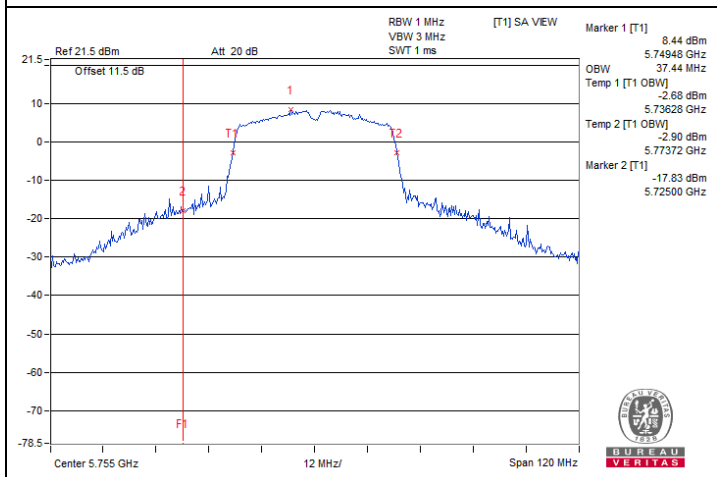
Spectrum Plot for nearby DFS band (DFS is required, if 99% OCP straddle into U-NII-2C)



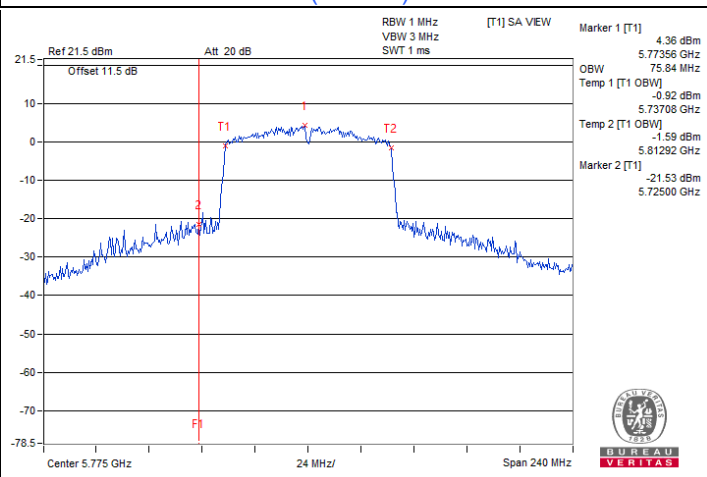
802.11a : CH 149



802.11ac (VHT20) : CH 149



802.11ac (VHT40) : CH 151



802.11ac (VHT80) : CH 155

7.5 Frequency Stability

Mode A

Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 76% RH	Tested By:	Dalen Dai
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802.11a

Frequency Stability Versus Temperature									
Operating Frequency: 5180 MHz									
Temp. (°C)	Power Supply (Vac)	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	120	5179.9795	Pass	5179.9783	Pass	5179.9752	Pass	5179.9794	Pass
40	120	5180.0125	Pass	5180.0135	Pass	5180.017	Pass	5180.0169	Pass
30	120	5180.0082	Pass	5180.0109	Pass	5180.008	Pass	5180.0092	Pass
20	120	5180.0195	Pass	5180.0212	Pass	5180.0198	Pass	5180.0202	Pass
10	120	5179.9845	Pass	5179.9843	Pass	5179.9837	Pass	5179.9803	Pass
0	120	5179.9772	Pass	5179.9794	Pass	5179.9766	Pass	5179.9772	Pass

Frequency Stability Versus Voltage									
Operating Frequency: 5180 MHz									
Temp. (°C)	Power Supply (Vac)	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	138	5180.0213	Pass	5180.0222	Pass	5180.0223	Pass	5180.0221	Pass
	120	5180.0195	Pass	5180.0212	Pass	5180.0198	Pass	5180.0202	Pass
	102	5180.0181	Pass	5180.0174	Pass	5180.0182	Pass	5180.0212	Pass

7.6 AC Power Conducted Emissions

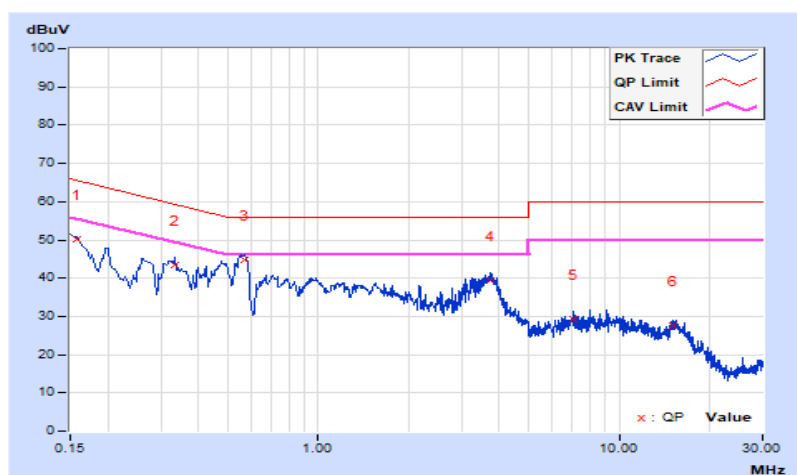
Mode A

RF Mode	802.11a	Channel	CH 36 : 5180 MHz
Frequency Range	150 kHz ~ 30 MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 75% RH
Tested By	Jed Wu		

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	0.15782	9.74	40.55	25.84	50.29	35.58	65.58	55.58	-15.29	-20.00
2	0.33382	9.80	33.58	23.21	43.38	33.01	59.36	49.36	-15.98	-16.35
3	0.56868	9.82	34.92	24.32	44.74	34.14	56.00	46.00	-11.26	-11.86
4	3.74174	10.00	29.55	18.84	39.55	28.84	56.00	46.00	-16.45	-17.16
5	7.04545	10.10	19.08	12.20	29.18	22.30	60.00	50.00	-30.82	-27.70
6	15.10211	10.28	17.22	11.91	27.50	22.19	60.00	50.00	-32.50	-27.81

Remarks:

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

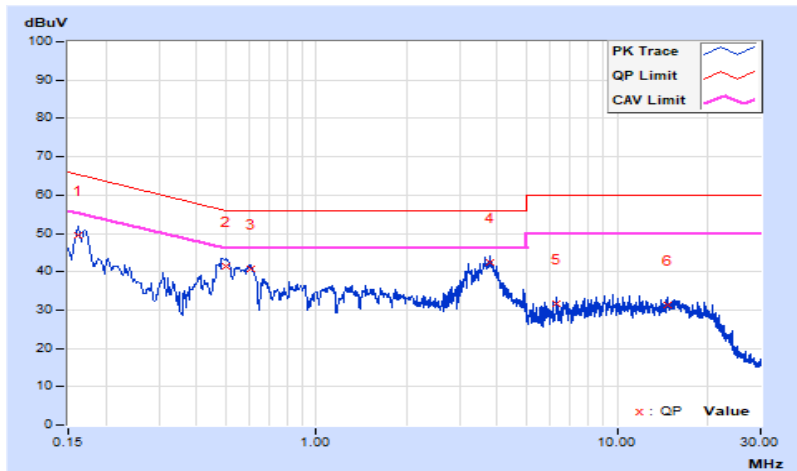


RF Mode	802.11a	Channel	CH 36 : 5180 MHz
Frequency Range	150 kHz ~ 30 MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 75% RH
Tested By	Jed Wu		

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	0.16173	9.75	39.67	27.03	49.42	36.78	65.37	55.37	-15.95	-18.59
2	0.49980	9.80	31.68	18.98	41.48	28.78	56.00	46.00	-14.52	-17.22
3	0.60560	9.81	30.83	18.59	40.64	28.40	56.00	46.00	-15.36	-17.60
4	3.77351	10.01	32.44	20.03	42.45	30.04	56.00	46.00	-13.55	-15.96
5	6.32192	10.10	21.56	14.96	31.66	25.06	60.00	50.00	-28.34	-24.94
6	14.66017	10.34	20.88	15.64	31.22	25.98	60.00	50.00	-28.78	-24.02

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



Mode B

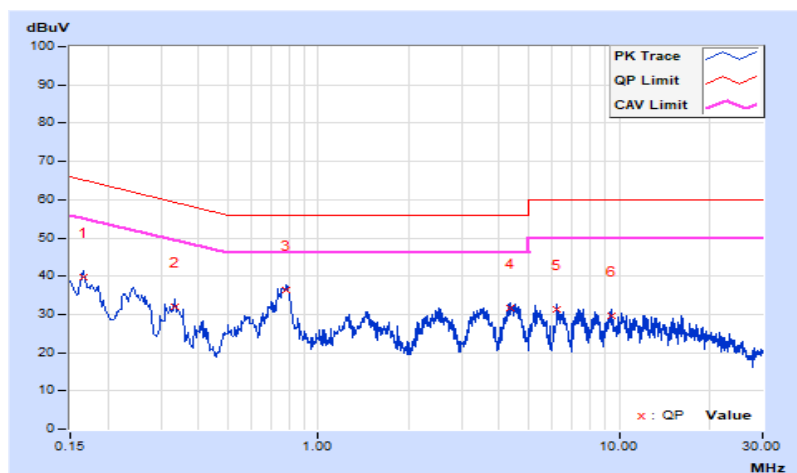
RF Mode	802.11a	Channel	CH 36 : 5180 MHz
Frequency Range	150 kHz ~ 30 MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 75% RH
Tested By	Jed Wu		

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	0.16564	9.75	29.99	10.83	39.74	20.58	65.18	55.18	-25.44	-34.60
2	0.33382	9.80	22.08	8.80	31.88	18.60	59.36	49.36	-27.48	-30.76
3	0.78159	9.84	26.57	20.72	36.41	30.56	56.00	46.00	-19.59	-15.44
4	4.35625	10.02	21.56	15.85	31.58	25.87	56.00	46.00	-24.42	-20.13
5	6.20459	10.08	21.22	14.65	31.30	24.73	60.00	50.00	-28.70	-25.27
6	9.44681	10.17	19.58	13.78	29.75	23.95	60.00	50.00	-30.25	-26.05

Remarks:

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

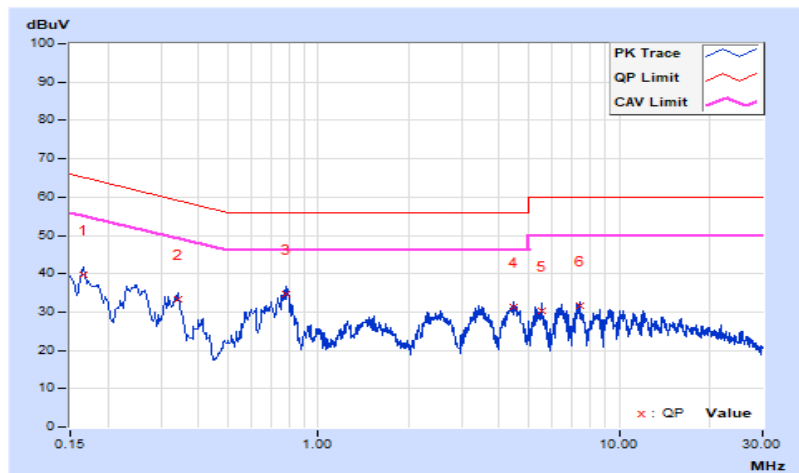


RF Mode	802.11a	Channel	CH 36 : 5180 MHz
Frequency Range	150 kHz ~ 30 MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 75% RH
Tested By	Jed Wu		

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	0.16564	9.75	29.98	10.04	39.73	19.79	65.18	55.18	-25.45	-35.39
2	0.34164	9.78	23.62	7.83	33.40	17.61	59.16	49.16	-25.76	-31.55
3	0.78550	9.83	24.72	18.80	34.55	28.63	56.00	46.00	-21.45	-17.37
4	4.46575	10.04	21.29	15.95	31.33	25.99	56.00	46.00	-24.67	-20.01
5	5.52799	10.07	20.29	15.85	30.36	25.92	60.00	50.00	-29.64	-24.08
6	7.37007	10.13	21.56	16.13	31.69	26.26	60.00	50.00	-28.31	-23.74

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

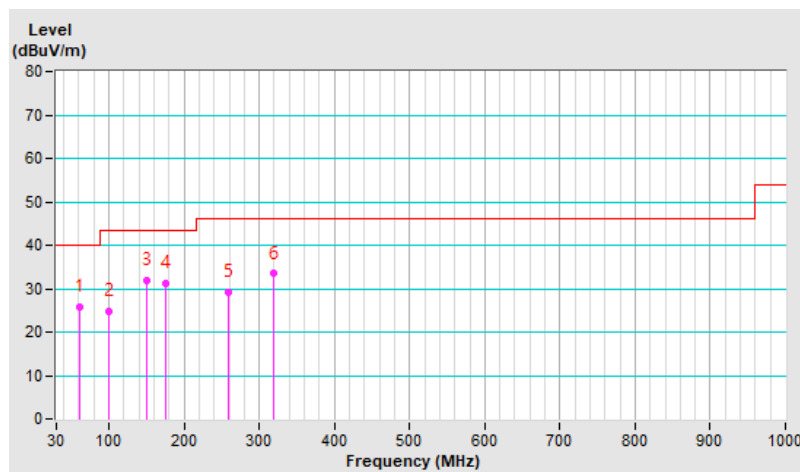
Mode A

RF Mode	802.11a	Channel	CH 36 : 5180 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	QP: RB=120kHz, DET=Quasi-Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 73% RH
Tested By	William Su		

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	60.41	25.7 QP	40.0	-14.3	1.87 H	292	35.1	-9.4
2	99.02	24.8 QP	43.5	-18.7	1.84 H	341	38.0	-13.2
3	149.94	31.8 QP	43.5	-11.7	1.49 H	175	40.1	-8.3
4	175.45	31.2 QP	43.5	-12.3	1.68 H	20	40.2	-9.0
5	258.10	29.2 QP	46.0	-16.8	1.75 H	148	37.2	-8.0
6	319.79	33.4 QP	46.0	-12.6	1.05 H	360	38.8	-5.4

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 frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.

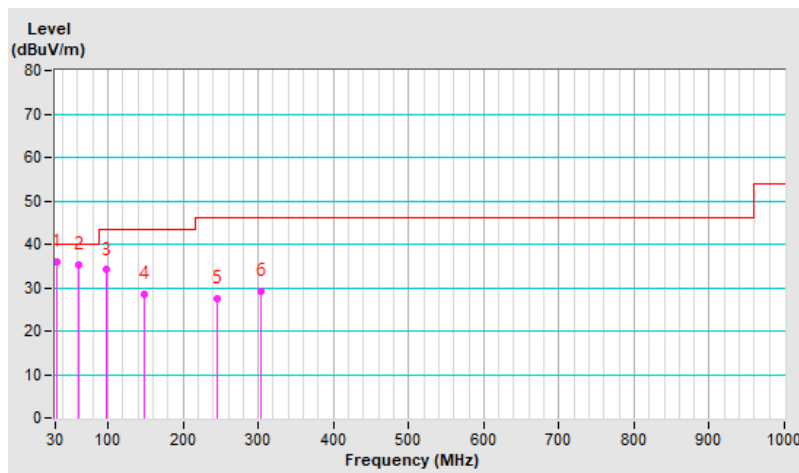


RF Mode	802.11a	Channel	CH 36 : 5180 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	QP: RB=120kHz, DET=Quasi-Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 73% RH
Tested By	William Su		

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	32.81	36.0 QP	40.0	-4.0	1.16 V	242	46.4	-10.4
2	60.51	35.2 QP	40.0	-4.8	1.29 V	242	44.6	-9.4
3	98.82	34.1 QP	43.5	-9.4	1.05 V	276	47.5	-13.4
4	147.56	28.4 QP	43.5	-15.1	1.17 V	232	36.8	-8.4
5	245.10	27.4 QP	46.0	-18.6	1.68 V	81	35.9	-8.5
6	303.64	29.3 QP	46.0	-16.7	1.77 V	325	35.3	-6.0

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 of frequency range 30 MHz ~ 1 GHz.
5. The frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.



7.8 Unwanted Emissions above 1 GHz

Mode A

RF Mode	802.11a	Channel	CH 36 : 5180 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=1 kHz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	16.3°C, 60.2% RH
Tested By	Jed Wu		

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	70.5 PK	74.0	-3.5	1.47 H	241	57.2	13.3
2	5150.00	52.4 AV	54.0	-1.6	1.47 H	241	39.1	13.3
3	*5180.00	111.4 PK			1.47 H	241	98.0	13.4
4	*5180.00	100.4 AV			1.47 H	241	87.0	13.4
5	#10360.00	62.1 PK	68.2	-6.1	1.25 H	224	38.1	24.0
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	69.4 PK	74.0	-4.6	2.94 V	91	56.1	13.3
2	5150.00	51.0 AV	54.0	-3.0	2.94 V	91	37.7	13.3
3	*5180.00	111.1 PK			2.94 V	91	97.7	13.4
4	*5180.00	100.0 AV			2.94 V	91	86.6	13.4
5	#10360.00	61.7 PK	68.2	-6.5	2.34 V	312	37.7	24.0

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, the limit was restricted at the RF Output Power.
6. " # " : The radiated frequency is out of the restricted band.



RF Mode	802.11a	Channel	CH 40 : 5200 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=1 kHz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	16.3°C, 60.2% RH
Tested By	Jed Wu		

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	115.2 PK			1.60 H	240	101.6	13.6
2	*5200.00	104.5 AV			1.60 H	240	90.9	13.6
3	#10400.00	62.1 PK	68.2	-6.1	1.38 H	225	38.0	24.1

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	114.6 PK			3.06 V	92	101.0	13.6
2	*5200.00	103.9 AV			3.06 V	92	90.3	13.6
3	#10400.00	61.7 PK	68.2	-6.5	2.47 V	311	37.6	24.1

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, the limit was restricted at the RF Output Power.
6. " # ": The radiated frequency is out of the restricted band.



RF Mode	802.11a	Channel	CH 48 : 5240 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=1 kHz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	16.3°C, 60.2% RH
Tested By	Jed Wu		

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	116.4 PK			1.60 H	238	102.6	13.8
2	*5240.00	105.5 AV			1.60 H	238	91.7	13.8
3	5350.00	57.1 PK	74.0	-16.9	1.60 H	238	42.8	14.3
4	5350.00	43.6 AV	54.0	-10.4	1.60 H	238	29.3	14.3
5	#10480.00	62.1 PK	68.2	-6.1	1.12 H	221	37.9	24.2

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	115.8 PK			2.81 V	94	102.0	13.8
2	*5240.00	104.7 AV			2.81 V	94	90.9	13.8
3	5350.00	56.8 PK	74.0	-17.2	2.81 V	94	42.5	14.3
4	5350.00	43.3 AV	54.0	-10.7	2.81 V	94	29.0	14.3
5	#10480.00	61.7 PK	68.2	-6.5	2.21 V	309	37.5	24.2

Remarks:

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



RF Mode	802.11a	Channel	CH 149 : 5745 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=1 kHz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	16.3°C, 60.2% RH
Tested By	Jed Wu		

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	#5648.00	55.3 PK	68.2	-12.9	1.89 H	55	41.5	13.8
2	*5745.00	105.2 PK			1.89 H	55	91.4	13.8
3	*5745.00	94.7 AV			1.89 H	55	80.9	13.8
4	#5942.40	56.5 PK	68.2	-11.7	1.89 H	55	42.1	14.4
5	11490.00	66.8 PK	74.0	-7.2	1.90 H	114	39.2	27.6
6	11490.00	53.2 AV	54.0	-0.8	1.90 H	114	25.6	27.6

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	#5600.80	56.0 PK	68.2	-12.2	2.52 V	277	42.1	13.9
2	*5745.00	104.0 PK			2.52 V	277	90.2	13.8
3	*5745.00	93.7 AV			2.52 V	277	79.9	13.8
4	#5994.00	56.0 PK	68.2	-12.2	2.52 V	277	41.5	14.5
5	11490.00	65.8 PK	74.0	-8.2	1.88 V	126	38.2	27.6
6	11490.00	51.9 AV	54.0	-2.1	1.88 V	126	24.3	27.6

Remarks:

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



RF Mode	802.11a	Channel	CH 157 : 5785 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=1 kHz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	16.3°C, 60.2% RH
Tested By	Jed Wu		

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	#5639.60	55.2 PK	68.2	-13.0	2.71 H	165	41.4	13.8
2	*5785.00	106.5 PK			2.71 H	165	92.8	13.7
3	*5785.00	96.1 AV			2.71 H	165	82.4	13.7
4	#5934.00	55.8 PK	68.2	-12.4	2.71 H	165	41.4	14.4
5	11570.00	67.2 PK	74.0	-6.8	1.88 H	119	39.8	27.4
6	11570.00	53.3 AV	54.0	-0.7	1.88 H	119	25.9	27.4

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	#5630.00	55.3 PK	68.2	-12.9	3.34 V	167	41.4	13.9
2	*5785.00	105.9 PK			3.34 V	167	92.2	13.7
3	*5785.00	95.2 AV			3.34 V	167	81.5	13.7
4	#5959.20	56.5 PK	68.2	-11.7	3.34 V	167	42.0	14.5
5	11570.00	65.9 PK	74.0	-8.1	2.70 V	236	38.5	27.4
6	11570.00	52.0 AV	54.0	-2.0	2.70 V	236	24.6	27.4

Remarks:

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



RF Mode	802.11a	Channel	CH 165 : 5825 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=1 kHz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	16.3°C, 60.2% RH
Tested By	Jed Wu		

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	#5622.80	54.8 PK	68.2	-13.4	2.66 H	164	40.9	13.9
2	*5825.00	106.0 PK			2.66 H	164	92.1	13.9
3	*5825.00	95.4 AV			2.66 H	164	81.5	13.9
4	#5964.40	56.2 PK	68.2	-12.0	2.66 H	164	41.7	14.5
5	11650.00	67.4 PK	74.0	-6.6	1.75 H	123	39.7	27.7
6	11650.00	53.3 AV	54.0	-0.7	1.75 H	123	25.6	27.7

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	#5647.20	54.7 PK	68.2	-13.5	3.29 V	168	40.9	13.8
2	*5825.00	105.4 PK			3.29 V	168	91.5	13.9
3	*5825.00	94.7 AV			3.29 V	168	80.8	13.9
4	#5988.80	56.3 PK	68.2	-11.9	3.29 V	168	41.8	14.5
5	11650.00	66.0 PK	74.0	-8.0	2.65 V	235	38.3	27.7
6	11650.00	52.1 AV	54.0	-1.9	2.65 V	235	24.4	27.7

Remarks:

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



RF Mode	802.11ac (VHT20)	Channel	CH 36 : 5180 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=1 kHz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	16.3°C, 60.2% RH
Tested By	Jed Wu		

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	71.2 PK	74.0	-2.8	1.46 H	240	57.9	13.3
2	5150.00	53.0 AV	54.0	-1.0	1.46 H	240	39.7	13.3
3	*5180.00	111.1 PK			1.46 H	240	97.7	13.4
4	*5180.00	100.3 AV			1.46 H	240	86.9	13.4
5	#10360.00	62.0 PK	68.2	-6.2	1.26 H	225	38.0	24.0

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	69.8 PK	74.0	-4.2	2.93 V	90	56.5	13.3
2	5150.00	51.4 AV	54.0	-2.6	2.93 V	90	38.1	13.3
3	*5180.00	110.5 PK			2.93 V	90	97.1	13.4
4	*5180.00	99.6 AV			2.93 V	90	86.2	13.4
5	#10360.00	61.6 PK	68.2	-6.6	2.35 V	313	37.6	24.0

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, the limit was restricted at the RF Output Power.
6. " # ": The radiated frequency is out of the restricted band.



RF Mode	802.11ac (VHT20)	Channel	CH 40 : 5200 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=1 kHz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	16.3°C, 60.2% RH
Tested By	Jed Wu		

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	68.6 PK	74.0	-5.4	1.60 H	240	55.3	13.3
2	5150.00	52.6 AV	54.0	-1.4	1.60 H	240	39.3	13.3
3	*5200.00	113.4 PK			1.60 H	240	99.8	13.6
4	*5200.00	102.9 AV			1.60 H	240	89.3	13.6
5	#10400.00	62.3 PK	68.2	-5.9	1.38 H	225	38.2	24.1

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	66.4 PK	74.0	-7.6	2.81 V	92	53.1	13.3
2	5150.00	51.3 AV	54.0	-2.7	2.81 V	92	38.0	13.3
3	*5200.00	112.0 PK			2.81 V	92	98.4	13.6
4	*5200.00	102.0 AV			2.81 V	92	88.4	13.6
5	#10400.00	61.9 PK	68.2	-6.3	2.21 V	311	37.8	24.1

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, the limit was restricted at the RF Output Power.
6. " # " : The radiated frequency is out of the restricted band.



RF Mode	802.11ac (VHT20)	Channel	CH 48 : 5240 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=1 kHz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	16.3°C, 60.2% RH
Tested By	Jed Wu		

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	116.2 PK			1.59 H	237	102.4	13.8
2	*5240.00	105.2 AV			1.59 H	237	91.4	13.8
3	5350.00	57.3 PK	74.0	-16.7	1.59 H	237	43.0	14.3
4	5350.00	43.5 AV	54.0	-10.5	1.59 H	237	29.2	14.3
5	#10480.00	62.0 PK	68.2	-6.2	1.13 H	228	37.8	24.2

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	115.2 PK			2.82 V	87	101.4	13.8
2	*5240.00	104.3 AV			2.82 V	87	90.5	13.8
3	5350.00	57.1 PK	74.0	-16.9	2.82 V	87	42.8	14.3
4	5350.00	43.3 AV	54.0	-10.7	2.82 V	87	29.0	14.3
5	#10480.00	61.6 PK	68.2	-6.6	2.46 V	308	37.4	24.2

Remarks:

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



RF Mode	802.11ac (VHT20)	Channel	CH 149 : 5745 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=1 kHz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	16.3°C, 60.2% RH
Tested By	Jed Wu		

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	#5638.80	55.1 PK	68.2	-13.1	1.89 H	54	41.3	13.8
2	*5745.00	106.6 PK			1.89 H	54	92.8	13.8
3	*5745.00	95.6 AV			1.89 H	54	81.8	13.8
4	#5993.20	55.7 PK	68.2	-12.5	1.89 H	54	41.2	14.5
5	11490.00	66.8 PK	74.0	-7.2	1.88 H	113	39.2	27.6
6	11490.00	53.1 AV	54.0	-0.9	1.88 H	113	25.5	27.6

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	#5648.80	55.2 PK	68.2	-13.0	2.53 V	278	41.4	13.8
2	*5745.00	105.6 PK			2.53 V	278	91.8	13.8
3	*5745.00	94.9 AV			2.53 V	278	81.1	13.8
4	#5961.20	56.1 PK	68.2	-12.1	2.53 V	278	41.6	14.5
5	11490.00	65.7 PK	74.0	-8.3	1.87 V	125	38.1	27.6
6	11490.00	51.8 AV	54.0	-2.2	1.87 V	125	24.2	27.6

Remarks:

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



RF Mode	802.11ac (VHT20)	Channel	CH 157 : 5785 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=1 kHz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	16.3°C, 60.2% RH
Tested By	Jed Wu		

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	#5618.40	55.4 PK	68.2	-12.8	2.71 H	163	41.5	13.9
2	*5785.00	105.9 PK			2.71 H	163	92.2	13.7
3	*5785.00	95.5 AV			2.71 H	163	81.8	13.7
4	#5984.00	56.4 PK	68.2	-11.8	2.71 H	163	41.9	14.5
5	11570.00	67.2 PK	74.0	-6.8	1.89 H	119	39.8	27.4
6	11570.00	53.1 AV	54.0	-0.9	1.89 H	119	25.7	27.4

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	#5626.80	54.9 PK	68.2	-13.3	3.34 V	169	41.0	13.9
2	*5785.00	105.2 PK			3.34 V	169	91.5	13.7
3	*5785.00	94.9 AV			3.34 V	169	81.2	13.7
4	#5998.40	56.4 PK	68.2	-11.8	3.34 V	169	41.9	14.5
5	11570.00	66.3 PK	74.0	-7.7	2.70 V	234	38.9	27.4
6	11570.00	51.8 AV	54.0	-2.2	2.70 V	234	24.4	27.4

Remarks:

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



RF Mode	802.11ac (VHT20)	Channel	CH 165 : 5825 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=1 kHz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	16.3°C, 60.2% RH
Tested By	Jed Wu		

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	#5617.20	54.5 PK	68.2	-13.7	2.67 H	164	40.6	13.9
2	*5825.00	105.8 PK			2.67 H	164	91.9	13.9
3	*5825.00	94.8 AV			2.67 H	164	80.9	13.9
4	#5978.40	55.4 PK	68.2	-12.8	2.67 H	164	40.9	14.5
5	11650.00	66.6 PK	74.0	-7.4	1.90 H	120	38.9	27.7
6	11650.00	53.1 AV	54.0	-0.9	1.90 H	120	25.4	27.7

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	#5603.60	55.1 PK	68.2	-13.1	3.30 V	168	41.2	13.9
2	*5825.00	105.1 PK			3.30 V	168	91.2	13.9
3	*5825.00	93.9 AV			3.30 V	168	80.0	13.9
4	#5995.20	56.2 PK	68.2	-12.0	3.30 V	168	41.7	14.5
5	11650.00	65.7 PK	74.0	-8.3	1.87 V	120	38.0	27.7
6	11650.00	51.7 AV	54.0	-2.3	1.87 V	120	24.0	27.7

Remarks:

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



RF Mode	802.11ac (VHT40)	Channel	CH 38 : 5190 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=2 kHz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	16.3°C, 60.2% RH
Tested By	Jed Wu		

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	71.3 PK	74.0	-2.7	1.45 H	241	58.0	13.3
2	5150.00	52.4 AV	54.0	-1.6	1.45 H	241	39.1	13.3
3	*5190.00	106.8 PK			1.45 H	241	93.3	13.5
4	*5190.00	96.7 AV			1.45 H	241	83.2	13.5
5	#10380.00	61.8 PK	68.2	-6.4	1.23 H	223	37.8	24.0

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	69.6 PK	74.0	-4.4	2.92 V	90	56.3	13.3
2	5150.00	51.3 AV	54.0	-2.7	2.92 V	90	38.0	13.3
3	*5190.00	105.9 PK			2.92 V	90	92.4	13.5
4	*5190.00	96.0 AV			2.92 V	90	82.5	13.5
5	#10380.00	61.4 PK	68.2	-6.8	2.36 V	313	37.4	24.0

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, the limit was restricted at the RF Output Power.
6. " # ": The radiated frequency is out of the restricted band.



RF Mode	802.11ac (VHT40)	Channel	CH 46 : 5230 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=2 kHz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	16.3°C, 60.2% RH
Tested By	Jed Wu		

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	67.8 PK	74.0	-6.2	1.44 H	239	54.5	13.3
2	5150.00	53.1 AV	54.0	-0.9	1.44 H	239	39.8	13.3
3	*5230.00	111.2 PK			1.44 H	239	97.4	13.8
4	*5230.00	100.5 AV			1.44 H	239	86.7	13.8
5	5350.00	60.9 PK	74.0	-13.1	1.44 H	239	46.6	14.3
6	5350.00	46.3 AV	54.0	-7.7	1.44 H	239	32.0	14.3
7	#10460.00	62.0 PK	68.2	-6.2	1.28 H	226	37.9	24.1

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	66.0 PK	74.0	-8.0	2.91 V	93	52.7	13.3
2	5150.00	52.3 AV	54.0	-1.7	2.91 V	93	39.0	13.3
3	*5230.00	110.3 PK			2.91 V	93	96.5	13.8
4	*5230.00	99.7 AV			2.91 V	93	85.9	13.8
5	5350.00	60.3 PK	74.0	-13.7	2.91 V	93	46.0	14.3
6	5350.00	45.8 AV	54.0	-8.2	2.91 V	93	31.5	14.3
7	#10460.00	61.6 PK	68.2	-6.6	2.37 V	314	37.5	24.1

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, the limit was restricted at the RF Output Power.
6. " # " : The radiated frequency is out of the restricted band.



RF Mode	802.11ac (VHT40)	Channel	CH 151 : 5755 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=2 kHz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	16.3°C, 60.2% RH
Tested By	Jed Wu		

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	#5645.60	55.9 PK	68.2	-12.3	1.89 H	55	42.1	13.8
2	*5755.00	103.8 PK			1.89 H	55	89.9	13.9
3	*5755.00	93.5 AV			1.89 H	55	79.6	13.9
4	#5992.00	55.9 PK	68.2	-12.3	1.89 H	55	41.4	14.5
5	11510.00	66.0 PK	74.0	-8.0	1.88 H	114	38.3	27.7
6	11510.00	53.1 AV	54.0	-0.9	1.88 H	114	25.4	27.7

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	#5634.00	55.2 PK	68.2	-13.0	2.51 V	277	41.3	13.9
2	*5755.00	103.6 PK			2.51 V	277	89.7	13.9
3	*5755.00	92.4 AV			2.51 V	277	78.5	13.9
4	#5994.40	56.1 PK	68.2	-12.1	2.51 V	277	41.6	14.5
5	11510.00	64.8 PK	74.0	-9.2	1.89 V	125	37.1	27.7
6	11510.00	51.8 AV	54.0	-2.2	1.89 V	125	24.1	27.7

Remarks:

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



RF Mode	802.11ac (VHT40)	Channel	CH 159 : 5795 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=2 kHz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	16.3°C, 60.2% RH
Tested By	Jed Wu		

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	#5631.60	55.9 PK	68.2	-12.3	2.71 H	163	42.0	13.9
2	*5795.00	104.2 PK			2.71 H	163	90.4	13.8
3	*5795.00	93.8 AV			2.71 H	163	80.0	13.8
4	#5931.60	56.2 PK	68.2	-12.0	2.71 H	163	41.8	14.4
5	11590.00	65.8 PK	74.0	-8.2	1.90 H	111	38.5	27.3
6	11590.00	53.0 AV	54.0	-1.0	1.90 H	111	25.7	27.3

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	#5643.60	55.9 PK	68.2	-12.3	3.34 V	169	42.1	13.8
2	*5795.00	103.3 PK			3.34 V	169	89.5	13.8
3	*5795.00	93.0 AV			3.34 V	169	79.2	13.8
4	#5925.60	56.9 PK	68.2	-11.3	3.34 V	169	42.6	14.3
5	11590.00	64.8 PK	74.0	-9.2	2.70 V	234	37.5	27.3
6	11590.00	51.7 AV	54.0	-2.3	2.70 V	234	24.4	27.3

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.
5. " * " : Fundamental frequency, the limit was restricted at the RF Output Power.
6. " # " : The radiated frequency is out of the restricted band.



RF Mode	802.11ac (VHT80)	Channel	CH 42 : 5210 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=5.1 kHz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	16.3°C, 60.2% RH
Tested By	Jed Wu		

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	71.7 PK	74.0	-2.3	1.45 H	240	58.4	13.3
2	5150.00	52.4 AV	54.0	-1.6	1.45 H	240	39.1	13.3
3	*5210.00	102.7 PK			1.45 H	240	89.0	13.7
4	*5210.00	92.2 AV			1.45 H	240	78.5	13.7
5	5350.00	58.0 PK	74.0	-16.0	1.45 H	240	43.7	14.3
6	5350.00	44.8 AV	54.0	-9.2	1.45 H	240	30.5	14.3
7	#10420.00	61.4 PK	68.2	-6.8	1.27 H	225	37.3	24.1

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	69.8 PK	74.0	-4.2	2.96 V	92	56.5	13.3
2	5150.00	51.8 AV	54.0	-2.2	2.96 V	92	38.5	13.3
3	*5210.00	101.1 PK			2.96 V	92	87.4	13.7
4	*5210.00	91.0 AV			2.96 V	92	77.3	13.7
5	5350.00	56.9 PK	74.0	-17.1	2.96 V	92	42.6	14.3
6	5350.00	43.6 AV	54.0	-10.4	2.96 V	92	29.3	14.3
7	#10420.00	61.0 PK	68.2	-7.2	2.32 V	311	36.9	24.1

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, the limit was restricted at the RF Output Power.
6. " # " : The radiated frequency is out of the restricted band.



RF Mode	802.11ac (VHT80)	Channel	CH 155 : 5775 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=5.1 kHz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	16.3°C, 60.2% RH
Tested By	Jed Wu		

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	#5649.60	67.6 PK	68.2	-0.6	1.76 H	163	53.8	13.8
2	*5775.00	103.8 PK			1.76 H	163	90.0	13.8
3	*5775.00	93.4 AV			1.76 H	163	79.6	13.8
4	#5932.80	67.2 PK	68.2	-1.0	1.76 H	163	52.8	14.4
5	11550.00	64.9 PK	74.0	-9.1	1.90 H	111	37.4	27.5
6	11550.00	52.1 AV	54.0	-1.9	1.90 H	111	24.6	27.5

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	#5648.80	66.2 PK	68.2	-2.0	2.39 V	169	52.4	13.8
2	*5775.00	103.1 PK			2.39 V	169	89.3	13.8
3	*5775.00	92.8 AV			2.39 V	169	79.0	13.8
4	#5926.80	66.9 PK	68.2	-1.3	2.39 V	169	52.6	14.3
5	11550.00	63.9 PK	74.0	-10.1	1.75 V	234	36.4	27.5
6	11550.00	50.7 AV	54.0	-3.3	1.75 V	234	23.2	27.5

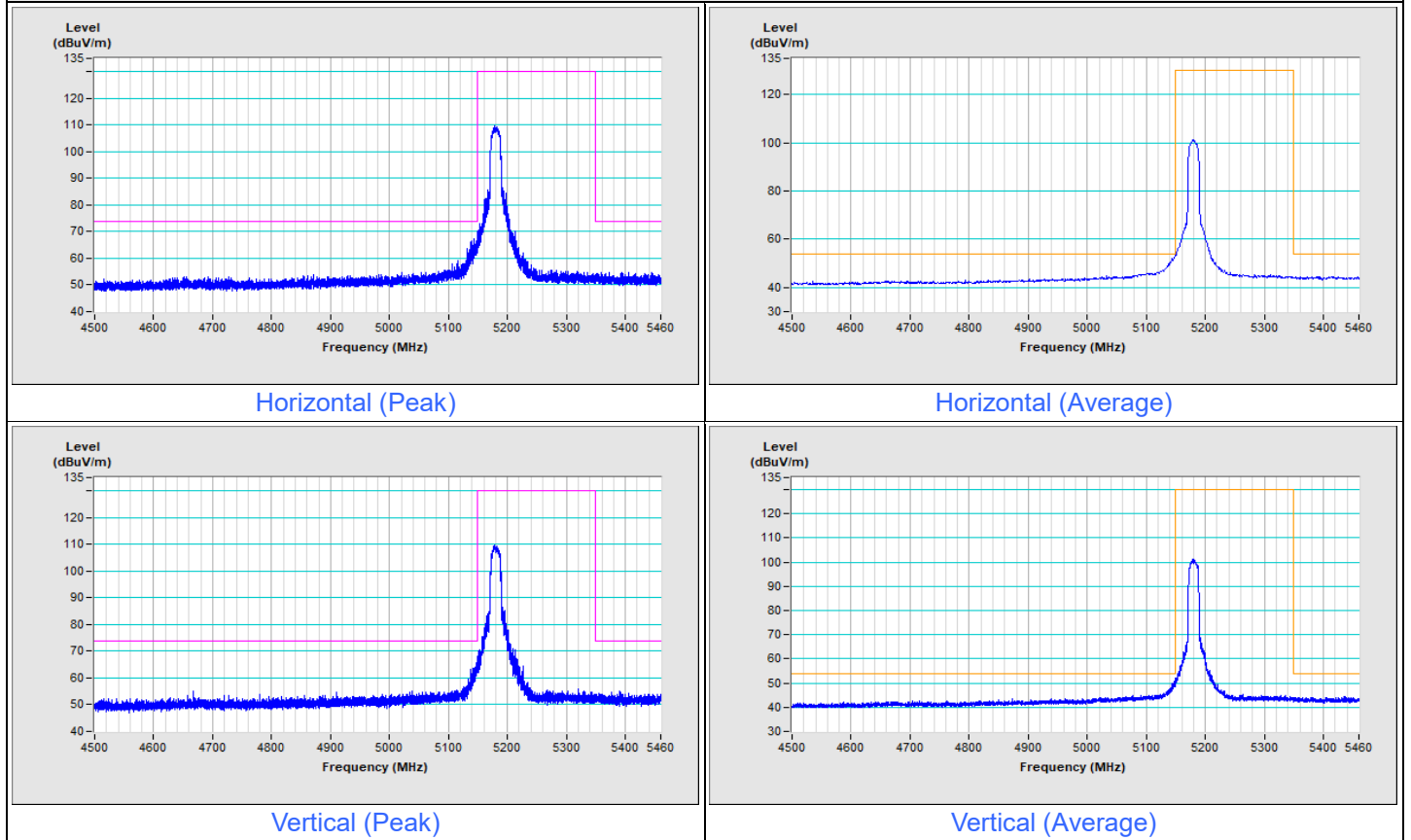
Remarks:

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

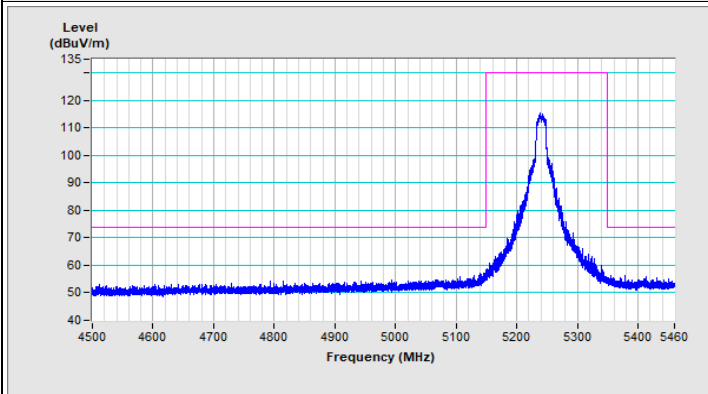
Plot of Band Edge_Mode A

Frequency Range	4.5 GHz ~ 5.46 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=1 kHz, DET=Peak
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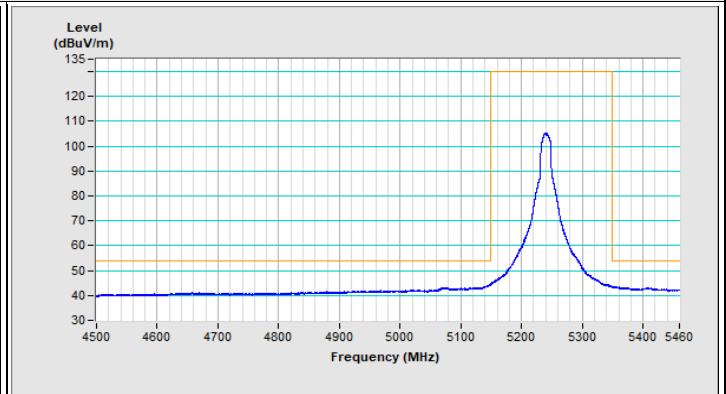
802.11a Channel 36



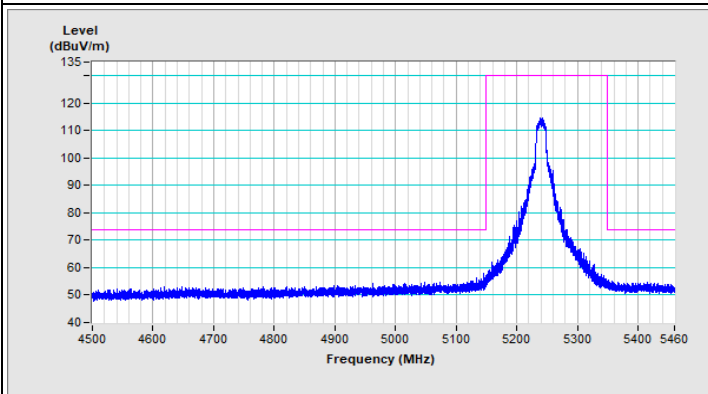
802.11a Channel 48



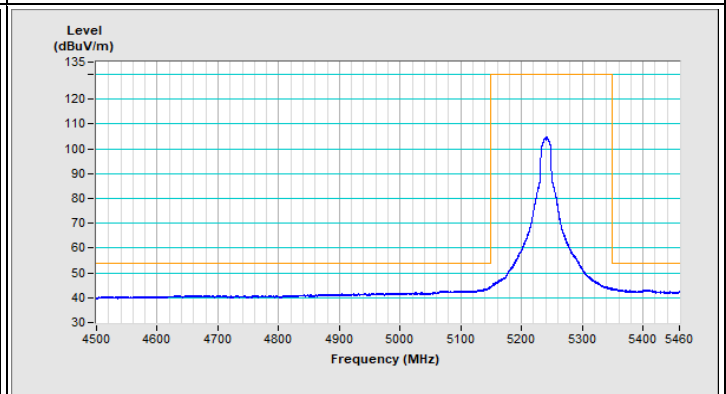
Horizontal (Peak)



Horizontal (Average)



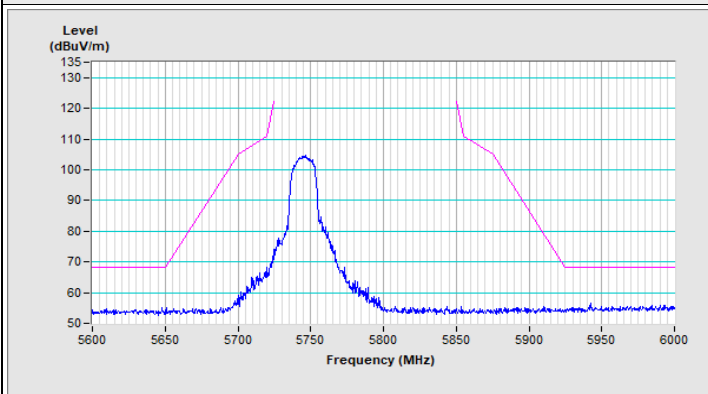
Vertical (Peak)



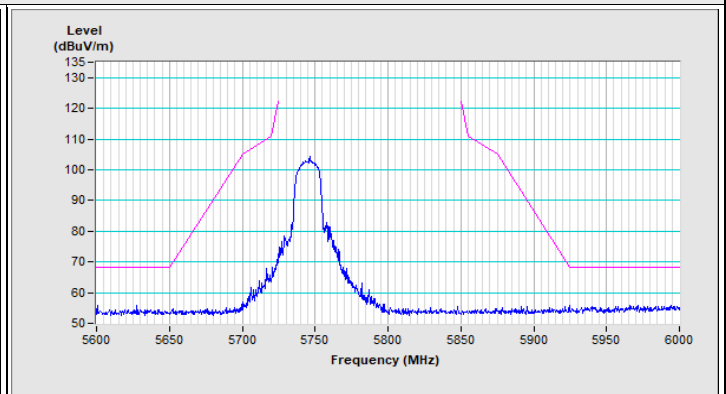
Vertical (Average)

Frequency Range	5.6 GHz ~ 6 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak
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802.11a Channel 149

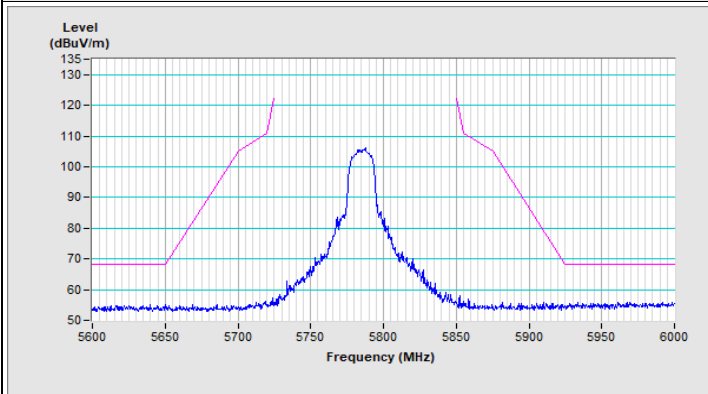


Horizontal (Peak)

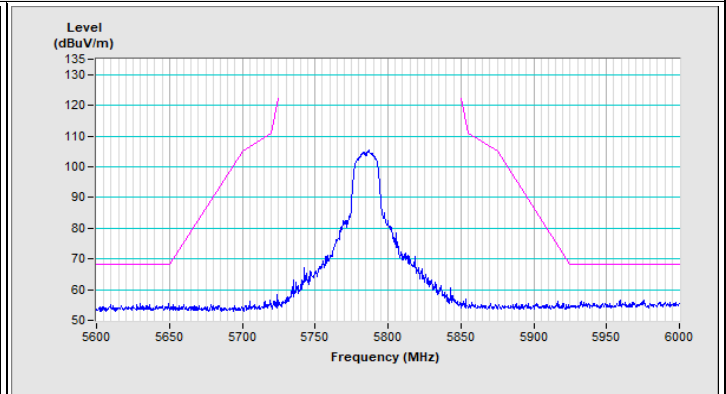


Vertical (Peak)

802.11a Channel 157

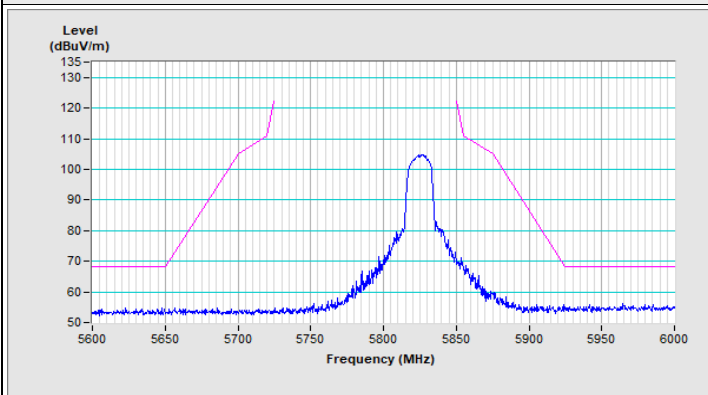


Horizontal (Peak)

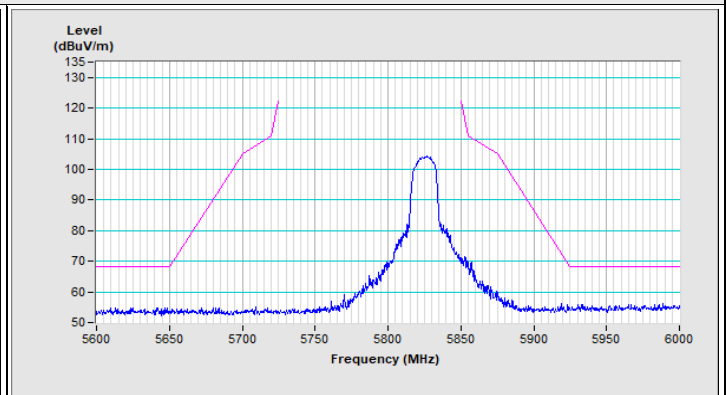


Vertical (Peak)

802.11a Channel 165



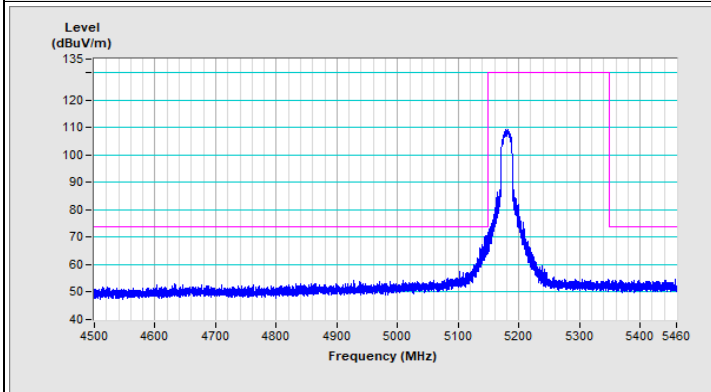
Horizontal (Peak)



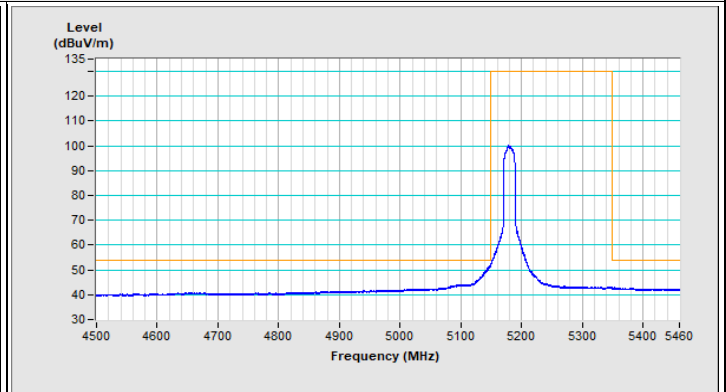
Vertical (Peak)

Frequency Range	4.5 GHz ~ 5.46 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=1 kHz, DET=Peak
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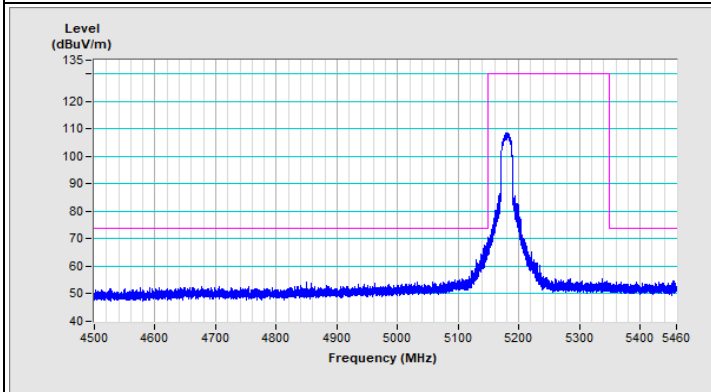
802.11ac (VHT20) Channel 36



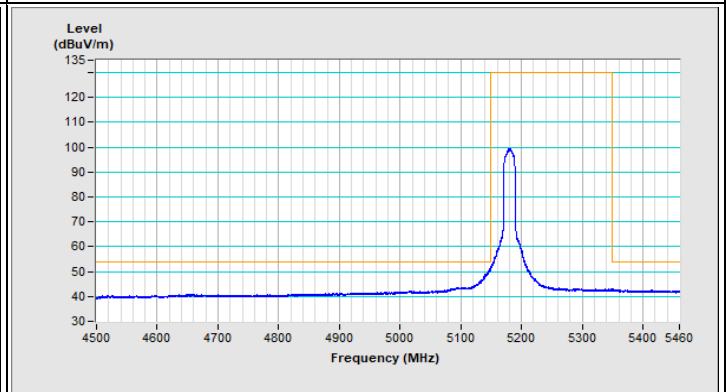
Horizontal (Peak)



Horizontal (Average)

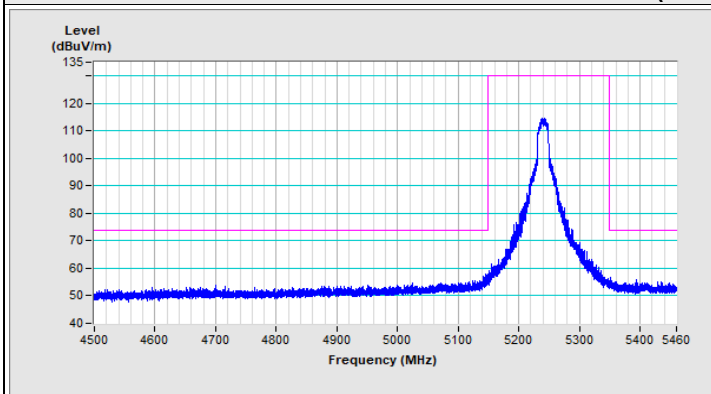


Vertical (Peak)

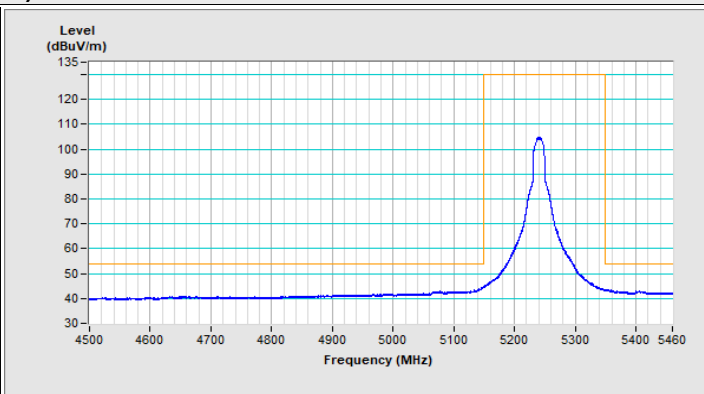


Vertical (Average)

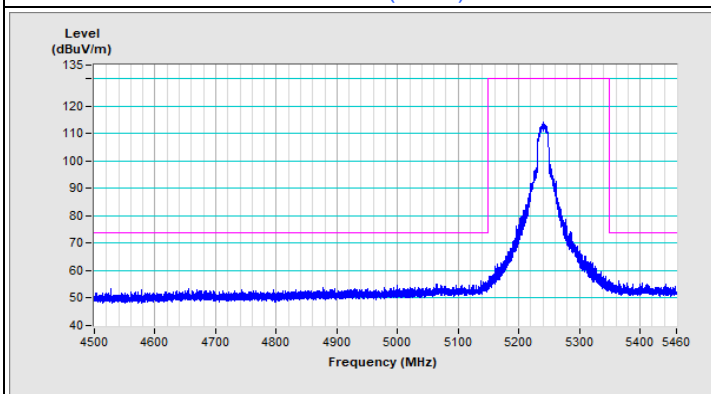
802.11ac (VHT20) Channel 48



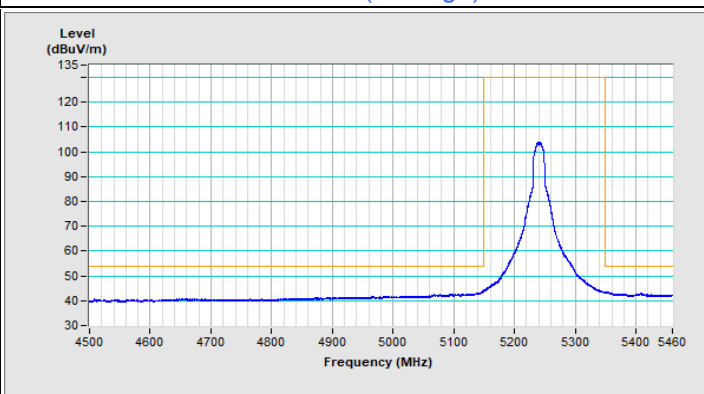
Horizontal (Peak)



Horizontal (Average)



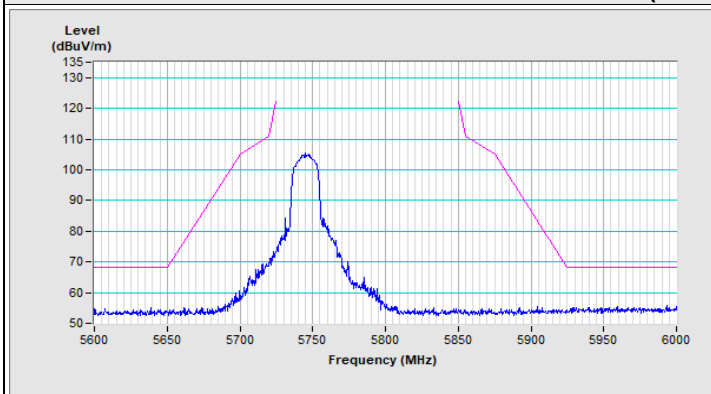
Vertical (Peak)



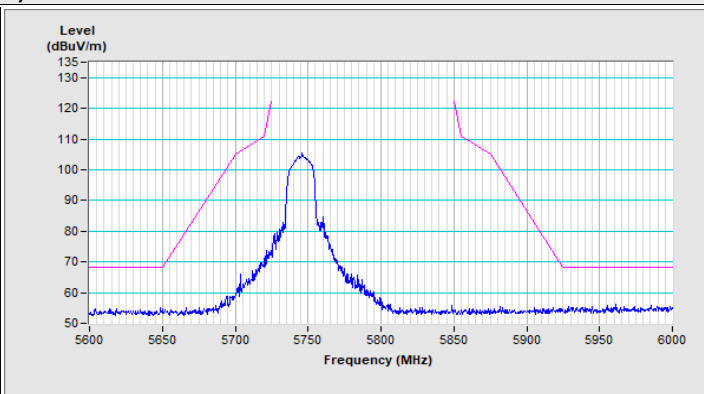
Vertical (Average)

Frequency Range	5.6 GHz ~ 6 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak
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802.11ac (VHT20) Channel 149

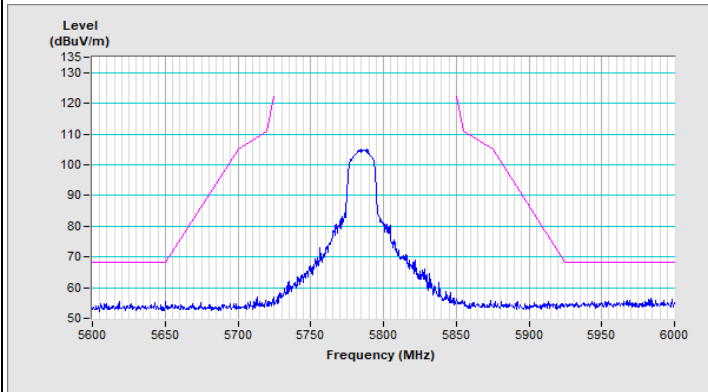


Horizontal (Peak)

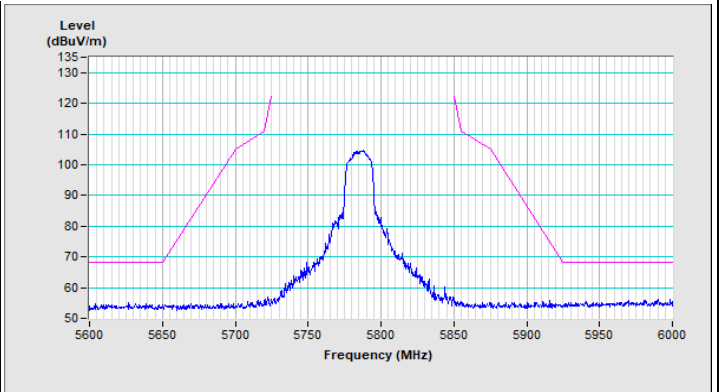


Vertical (Peak)

802.11ac (VHT20) Channel 157

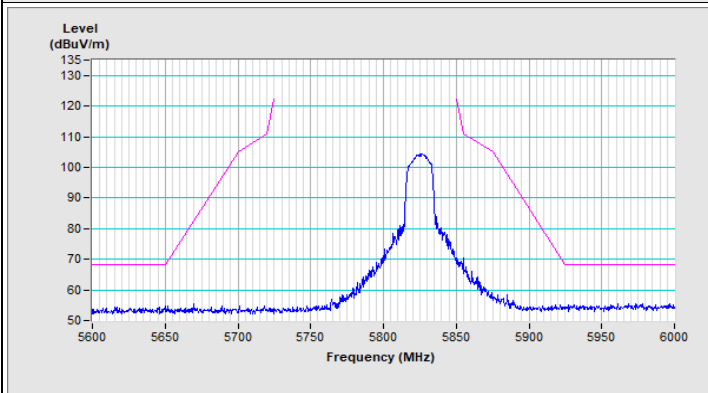


Horizontal (Peak)

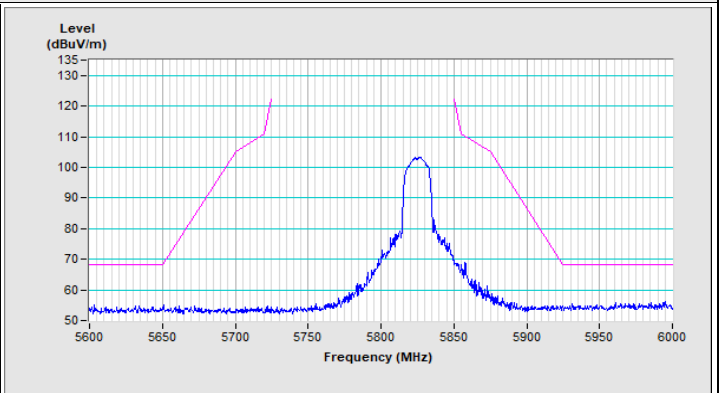


Vertical (Peak)

802.11ac (VHT20) Channel 165



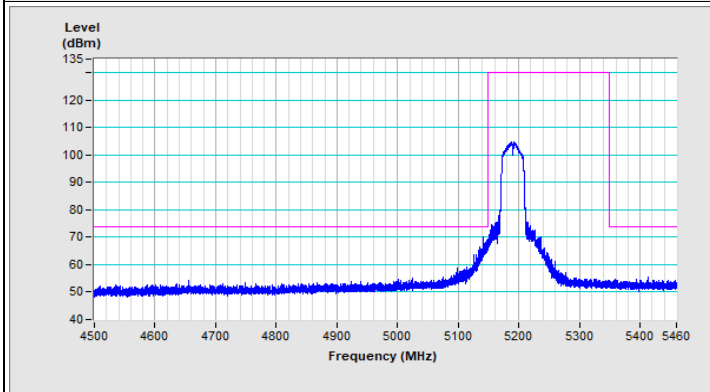
Horizontal (Peak)



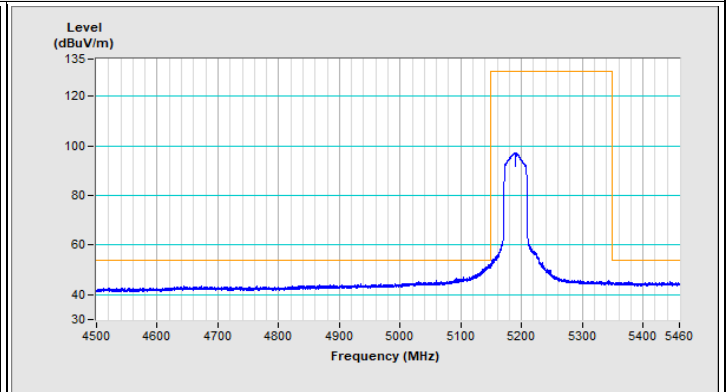
Vertical (Peak)

Frequency Range	4.5 GHz ~ 5.46 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=2 kHz, DET=Peak
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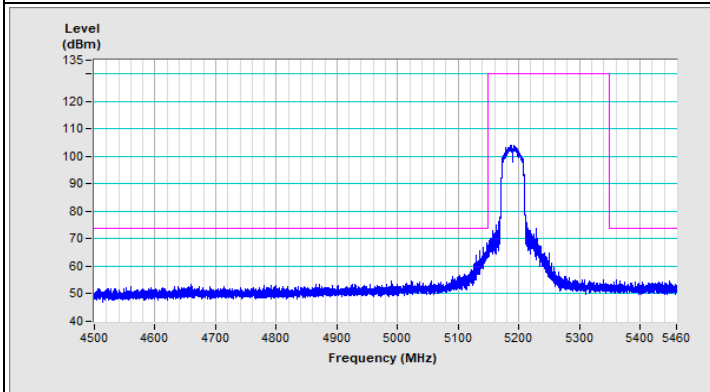
802.11ac (VHT40) Channel 38



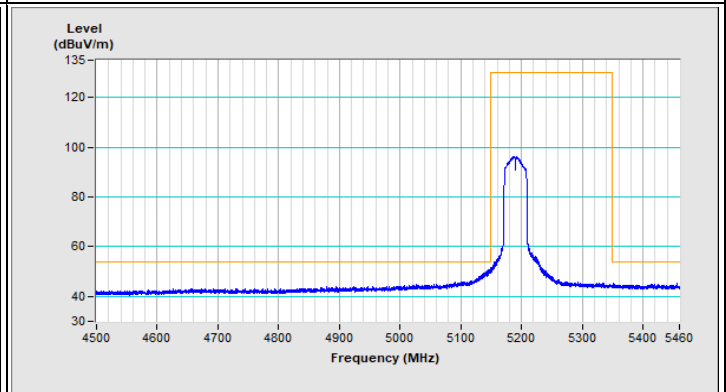
Horizontal (Peak)



Horizontal (Average)

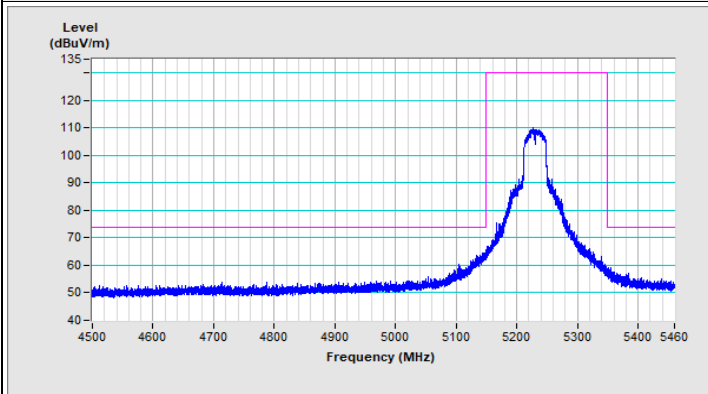


Vertical (Peak)

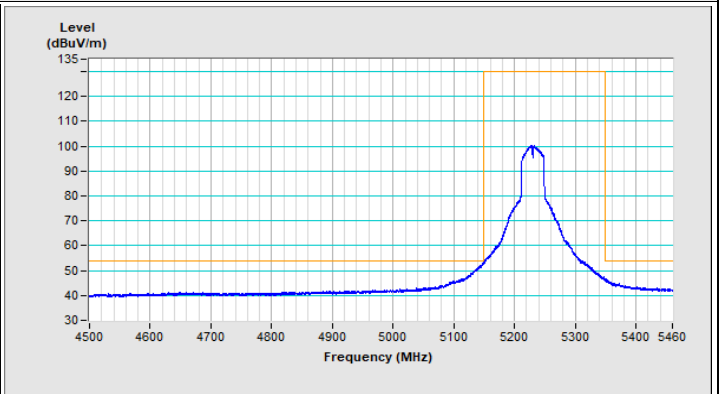


Vertical (Average)

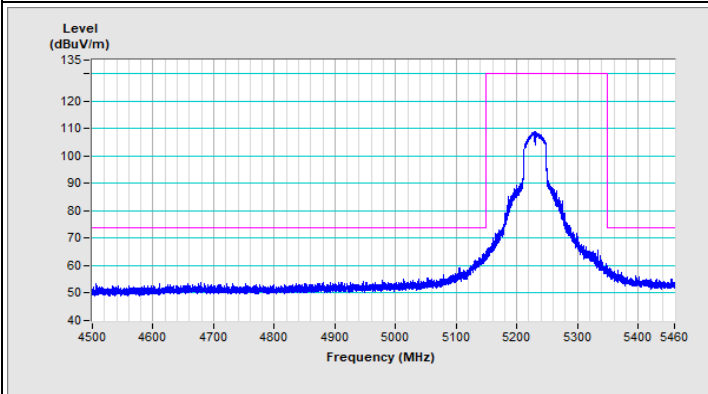
802.11ac (VHT40) Channel 46



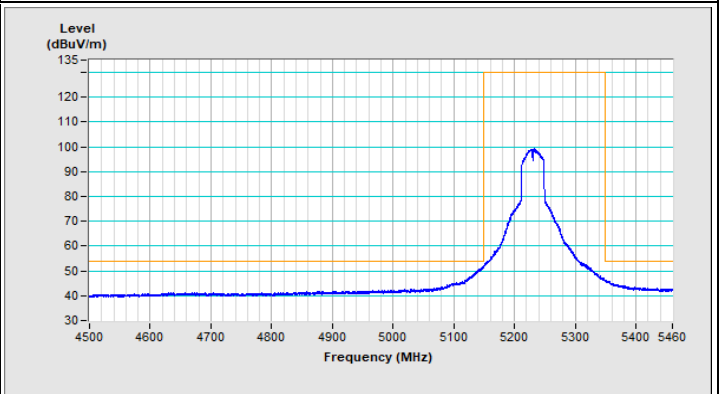
Horizontal (Peak)



Horizontal (Average)



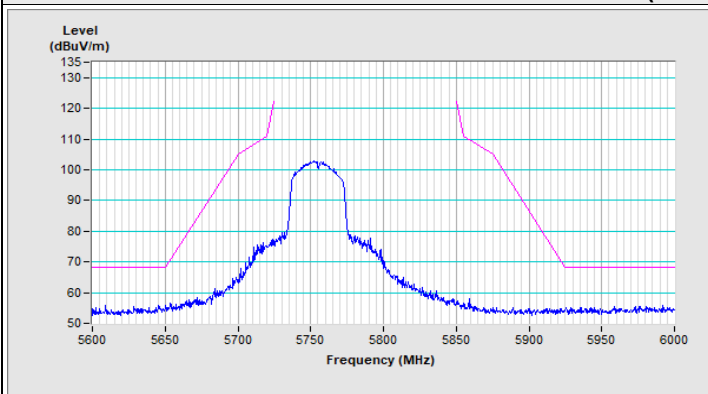
Vertical (Peak)



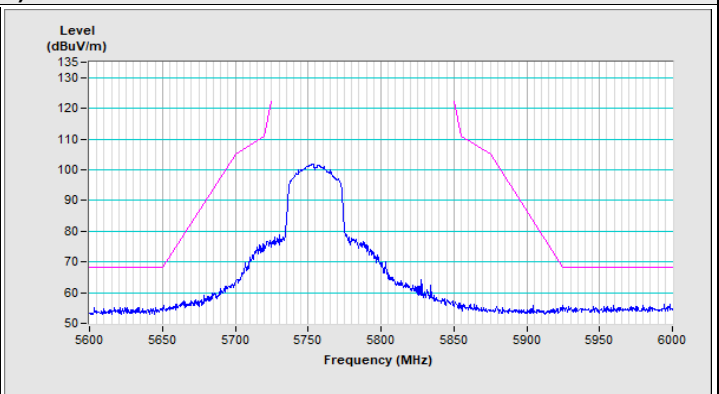
Vertical (Average)

Frequency Range	5.6 GHz ~ 6 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak
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802.11ac (VHT40) Channel 151

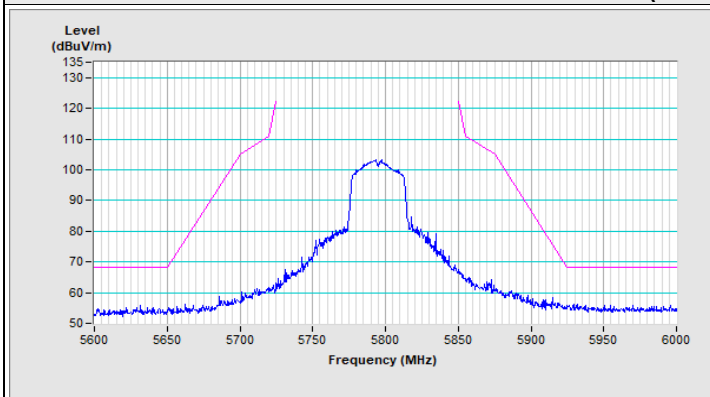


Horizontal (Peak)

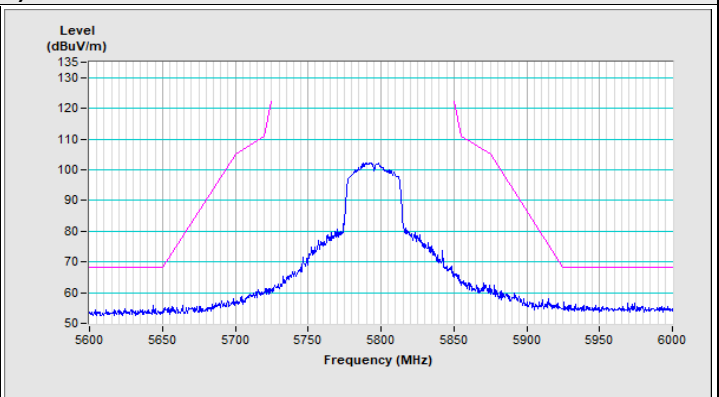


Vertical (Peak)

802.11ac (VHT40) Channel 159



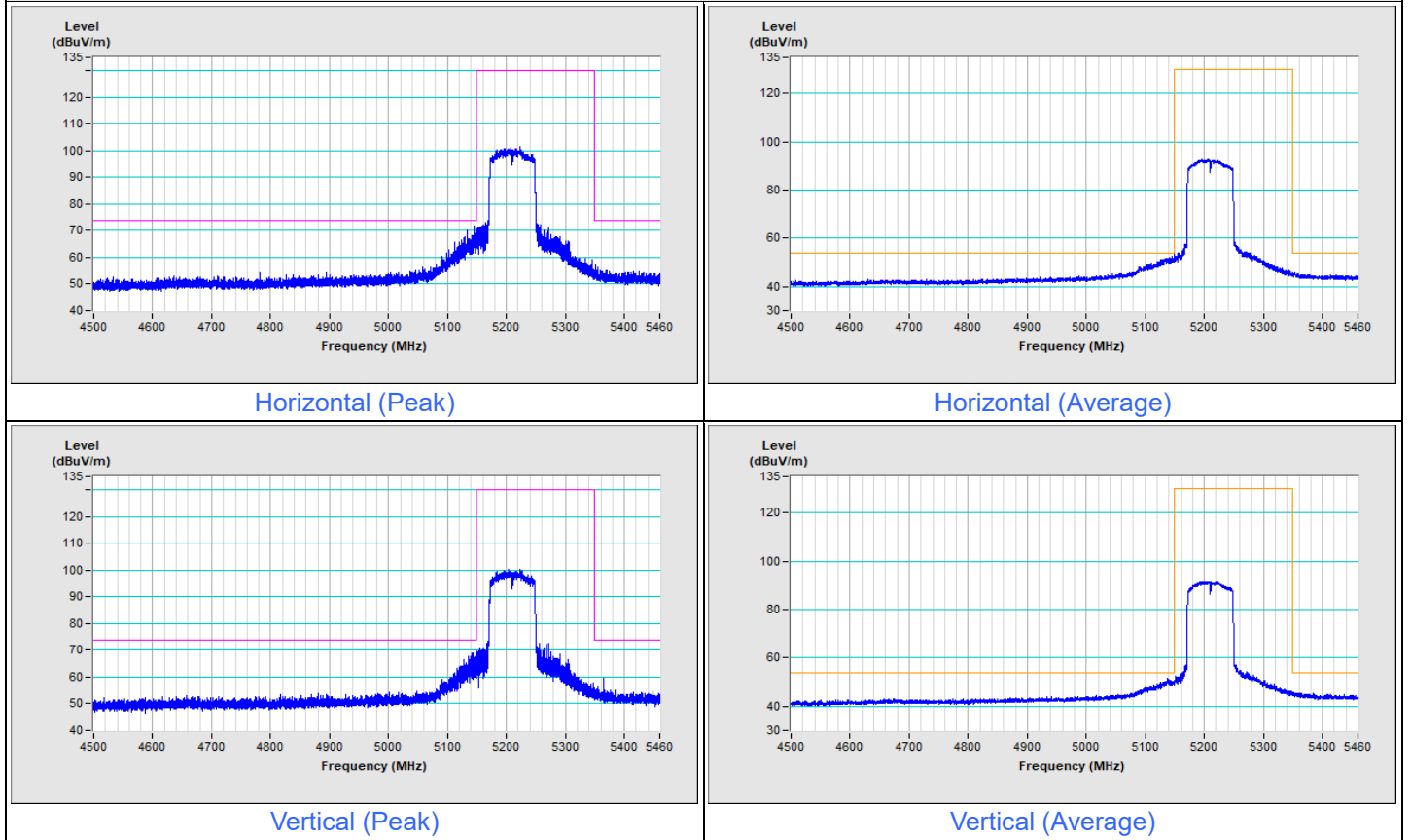
Horizontal (Peak)



Vertical (Peak)

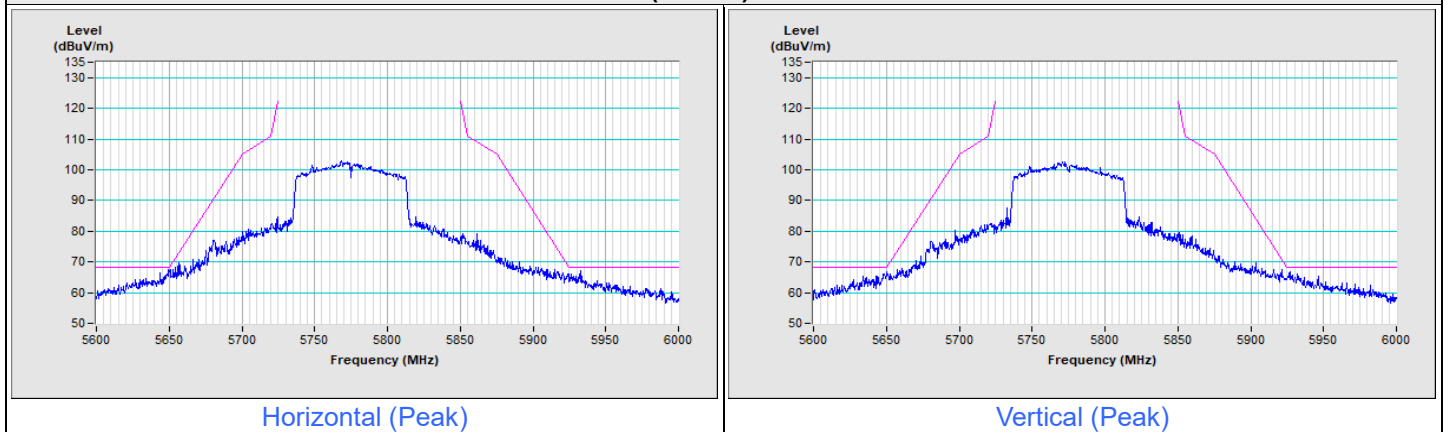
Frequency Range	4.5 GHz ~ 5.46 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=5.1 kHz, DET=Peak
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802.11ac (VHT80) Channel 42



Frequency Range	5.6 GHz ~ 6 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak
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802.11ac (VHT80) Channel 155



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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Web Site: <http://ee.bureauveritas.com.tw>

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

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