TEST REPORT

CERTIFICATE OF CONFORMITY

Standard:	**47 CFR FCC Part 15, Subpart E (Section 15.407)**
Report No.:	RFBCUN-WTW-P23080475-1
FCC ID:	H8NNCM2000B2
Product:	5G Home Router
Brand:	ASKEY
Model No.:	NCM2000B2-D299
Received Date:	2023/8/23
Test Date:	2023/8/24 ~ 2023/9/9
Issued Date:	2023/10/25
Applicant:	ASKEY COMPUTER CORP.
Address:	10F, No.119, Jiankang Rd., Zhonghe Dist., New Taipei City, Taiwan
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Lin Kou Laboratories
Lab Address:	No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan
Test Location:	No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kewi Shan Dist., Taoyuan City 33383, Taiwan
FCC Registration / Designation Number:	788550 / TW0003

Approved by: Jeremy Lin , **Date:** 2023/10/25

Jeremy Lin / Project Engineer

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Prepared by : Pettie Chen / Senior Specialist

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Release Control Record

Issue No.	Description	Date Issued
RFBCUN-WTW-P23080475-1	Original release.	2023/10/25

1 Certificate

Product:	5G Home Router
Brand:	ASKEY
Test Model:	NCM2000B2-D299
Sample Status:	Engineering sample
Applicant:	ASKEY COMPUTER CORP.
Test Date:	2023/8/24 ~ 2023/9/9
Standard:	47 CFR FCC Part 15, Subpart E (Section 15.407)
Measurement procedure:	ANSI C63.10-2013 KDB 789033 D02 General UNII Test Procedure New Rules v02r01 KDB 662911 D01 Multiple Transmitter Output v02r01

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

2 Summary of Test Results

47 CFR FCC Part 15, Subpart E (Section 15.407)			
Clause	Test Item	Result	Remark
15.407(a)(2)	26 dB Bandwidth	Pass	For U-NII-2A Band output power limitation is determined based on 26dBc bandwidth.
15.407(a)(1) 15.407(a)(2) 15.407(a)(3)	RF Output Power	Pass	Meet the requirement of limit.
15.407(a)(1) 15.407(a)(2) 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 -14.61 dB at 0.43400 MHz
15.407(b)(9)	Unwanted Emissions below 1 GHz	Pass	Minimum passing margin is -7.0 dB at 61.04 MHz
15.407(b) (1/10) 15.407(b) (2/10) 15.407(b) (4(i)/10)	Unwanted Emissions above 1 GHz	Pass	Minimum passing margin is -0.2 dB at 5350.00 MHz
15.203	Antenna Requirement	Pass	Antenna connector is Ipex not a standard connector.

Notes:

1. Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.
2. The “Dynamic Frequency Selection measurement” was recorded in DFS test report.

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) (±)
Occupied Bandwidth	-	491.896 Hz
AC Power Conducted Emissions	9 kHz ~ 30 MHz	2.99 dB
Unwanted Emissions below 1 GHz	9 kHz ~ 30 MHz	2.44 dB
	30 MHz ~ 1 GHz	2.95 dB
Unwanted Emissions above 1 GHz	1 GHz ~ 18 GHz	2.26 dB
	18 GHz ~ 40 GHz	1.94 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	5G Home Router
Brand	ASKEY
Test Model	NCM2000B2-D299
Status of EUT	Engineering sample
Power Supply Rating	12Vdc from adapter
Modulation Type	64QAM, 16QAM, QPSK, BPSK for OFDM 256QAM for OFDM in 11ac mode 1024QAM for OFDMA in 11ax mode
Modulation Technology	OFDM, OFDMA
Transfer Rate	Up to 1201.0 Mbps
Operating Frequency	5.18 GHz ~ 5.24 GHz 5.26 GHz ~ 5.32 GHz 5.745 GHz ~ 5.825 GHz
Number of Channel	802.11a, 802.11n (HT20), 802.11ac (VHT20), 802.11ax (HE20): 13 802.11n (HT40), 802.11ac (VHT40), 802.11ax (HE40): 6 802.11ac (VHT80), 802.11ax (HE80): 3
Output Power	CDD Mode: 5.18 GHz ~ 5.24 GHz: 690.646 mW (28.39 dBm) 5.26 GHz ~ 5.32 GHz: 245.654 mW (23.90 dBm) 5.745 GHz ~ 5.825 GHz: 896.772 mW (29.53 dBm) Beamforming Mode: 5.18 GHz ~ 5.24 GHz: 588.379 mW (27.70 dBm) 5.26 GHz ~ 5.32 GHz: 130.114 mW (21.14 dBm) 5.745 GHz ~ 5.825 GHz: 582.984 mW (27.66 dBm)
EUT Category	Indoor Access Point

Note:

1. The EUT uses following accessories.

RJ45 Cable		
Brand	Model	Specification
TLE TUNG-LI	M20483	Signal Line: 1.5m

2. The EUT consumes power from the following adapter.

Adapter	
Brand	MASS POWER
Model	S024-1E120200VU-H
Input Power	100-240Vac~50/60Hz, 0.6A
Output Power	12.0Vdc, 2.0A
Power Line	1.5m cable without core attached on adapter

3. 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.

Antenna No.	Frequency Range	Gain (dBi)	Antenna Type	Connector Type
11	2400 ~ 2483.5 MHz	5.6	PCB	Ipex
	5180 ~ 5240 MHz	5.1	PCB	Ipex
	5260 ~ 5320 MHz	5.6	PCB	Ipex
	5745 ~ 5825 MHz	4.3	PCB	Ipex
12	2400 ~ 2483.5 MHz	4.1	PCB	Ipex
	5180 ~ 5240 MHz	5.3	PCB	Ipex
	5260 ~ 5320 MHz	6	PCB	Ipex
	5745 ~ 5825 MHz	6.1	PCB	Ipex
1	703 ~ 960 MHz	3.2	FPC	Ipex
	1710 ~ 2690 MHz	4.0	FPC	Ipex
7	703 ~ 960 MHz	2.2	FPC	Ipex
	1710 ~ 2690 MHz	3.3	FPC	Ipex
0	3300 ~ 4200 MHz	6.5	PCB	Ipex
6	3300 ~ 4200 MHz	4.4	PCB	Ipex

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

2. The EUT incorporates a MIMO function:

5 GHz Band		
Modulation Mode	TX & RX Configuration	
802.11a	2TX	2RX
802.11n (HT20)	2TX	2RX
802.11n (HT40)	2TX	2RX
802.11ac (VHT20)	2TX	2RX
802.11ac (VHT40)	2TX	2RX
802.11ac (VHT80)	2TX	2RX
802.11ax (HE20)	2TX	2RX
802.11ax (HE40)	2TX	2RX
802.11ax (HE80)	2TX	2RX

Note:
1. All of modulation mode support beamforming function except 802.11a modulation mode.
2. The EUT support Beamforming and CDD mode, therefore both mode were investigated and the worst case scenario was identified. The worst case data were presented in test report.
3. The modulation and bandwidth are similar for 802.11n mode for 20 MHz (40 MHz) and 802.11ac mode for 20 MHz (40 MHz/80MHz) and 802.11ax mode for 20 MHz (40 MHz/80MHz), therefore the manufacturer will control the power for 802.11n/802.11ac mode is same as the 802.11ax mode or more lower than it and investigated worst case to representative mode in test report.
4. The EUT device modulation technique OFDMA does not support partial RUs (resource units) and channel puncturing/bandwidth reduction mechanisms.

3.3 Channel List

FOR 5180 ~ 5320 MHz

8 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20), 802.11ax (HE20):

Channel	Frequency	Channel	Frequency
36	5180 MHz	52	5260 MHz
40	5200 MHz	56	5280 MHz
44	5220 MHz	60	5300 MHz
48	5240 MHz	64	5320 MHz

4 channels are provided for 802.11n (HT40), 802.11ac (VHT40), 802.11ax (HE40):

Channel	Frequency	Channel	Frequency
38	5190 MHz	54	5270 MHz
46	5230 MHz	62	5310 MHz

2 channels are provided for 802.11ac (VHT80), 802.11ax (HE80):

Channel	Frequency	Channel	Frequency
42	5210 MHz	58	5290 MHz

FOR 5745 ~ 5825 MHz:

5 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20), 802.11ax (HE20):

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), 802.11ax (HE40):

Channel	Frequency	Channel	Frequency
151	5755 MHz	159	5795 MHz

1 channel is provided for 802.11ac (VHT80), 802.11ax (HE80):

Channel	Frequency
155	5775 MHz

3.4 Test Mode Applicability and Tested Channel Detail

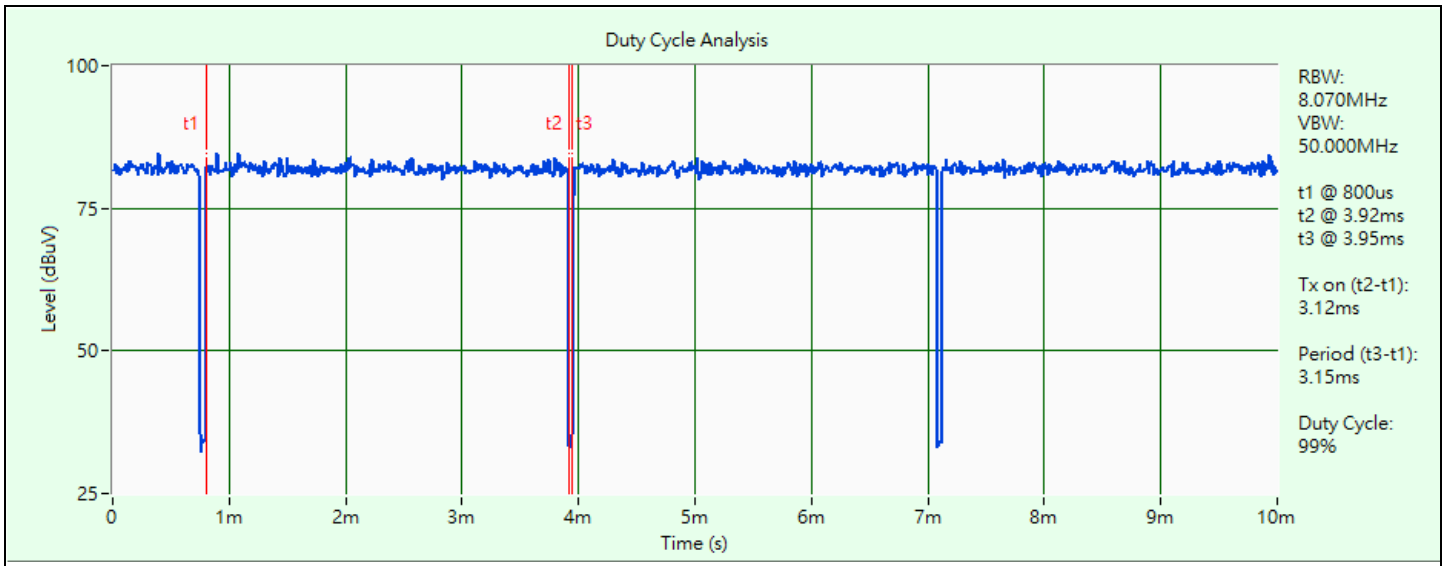
Worst Case:	The EUT is designed to be positioned on the Z-axis only.

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

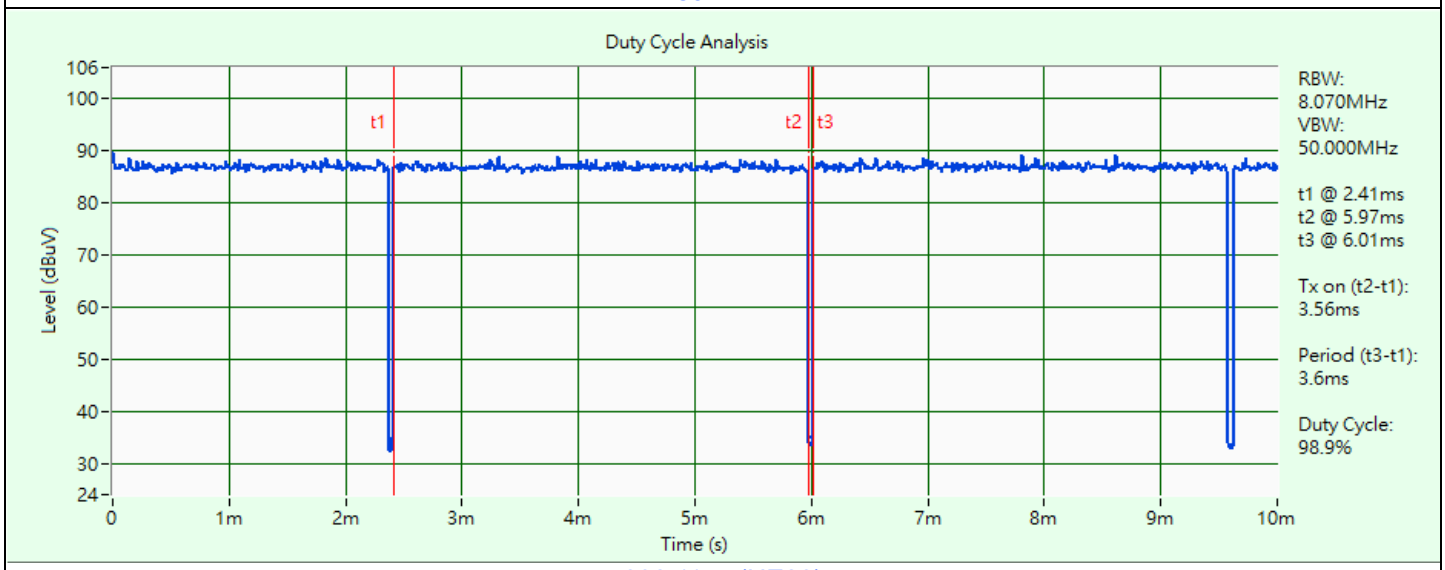
Test Item	Mode	Signal Mode	Tested Channel	Modulation	Data Rate Parameter
26 dB Bandwidth	802.11a	CDD	52, 60, 64	BPSK	6Mb/s
	802.11ax (HE20)	CDD	52, 60, 64	BPSK	MCS0
	802.11ax (HE40)	CDD	54, 62	BPSK	MCS0
	802.11ax (HE80)	CDD	58	BPSK	MCS0
RF Output Power	802.11a	CDD	36, 40, 48, 52, 60, 64, 149, 157, 165	BPSK	6Mb/s
	802.11ax (HE20)	CDD & Beamforming	36, 40, 48, 52, 60, 64, 149, 157, 165	BPSK	MCS0
	802.11ax (HE40)	CDD & Beamforming	38, 46, 54, 62, 151, 159	BPSK	MCS0
	802.11ax (HE80)	CDD & Beamforming	42, 58, 155	BPSK	MCS0
Power Spectral Density / 6 dB Bandwidth	802.11a	CDD	149, 157, 165	BPSK	6Mb/s
	802.11ax (HE20)	CDD	149, 157, 165	BPSK	MCS0
	802.11ax (HE40)	CDD	151, 159	BPSK	MCS0
	802.11ax (HE80)	CDD	155	BPSK	MCS0
Occupied Bandwidth	802.11a	CDD	36, 40, 48, 52, 60, 64, 149, 157, 165	BPSK	6Mb/s
	802.11ax (HE20)	CDD	36, 40, 48, 52, 60, 64, 149, 157, 165	BPSK	MCS0
	802.11ax (HE40)	CDD	38, 46, 54, 62, 151, 159	BPSK	MCS0
	802.11ax (HE80)	CDD	42, 58, 155	BPSK	MCS0
Frequency Stability	802.11a	CDD	36	unmodulated	-
AC Power Conducted Emissions	802.11ax (HE20)	CDD	157	BPSK	MCS0
Unwanted Emissions below 1 GHz	802.11ax (HE20)	CDD	157	BPSK	MCS0
Unwanted Emissions above 1 GHz	802.11a	CDD	36, 40, 48, 52, 60, 64, 149, 157, 165	BPSK	6Mb/s
	802.11ax (HE20)	CDD	36, 40, 48, 52, 60, 64, 149, 157, 165	BPSK	MCS0
	802.11ax (HE40)	CDD	38, 46, 54, 62, 151, 159	BPSK	MCS0
	802.11ax (HE80)	CDD	42, 58, 155	BPSK	MCS0

3.5 Duty Cycle of Test Signal

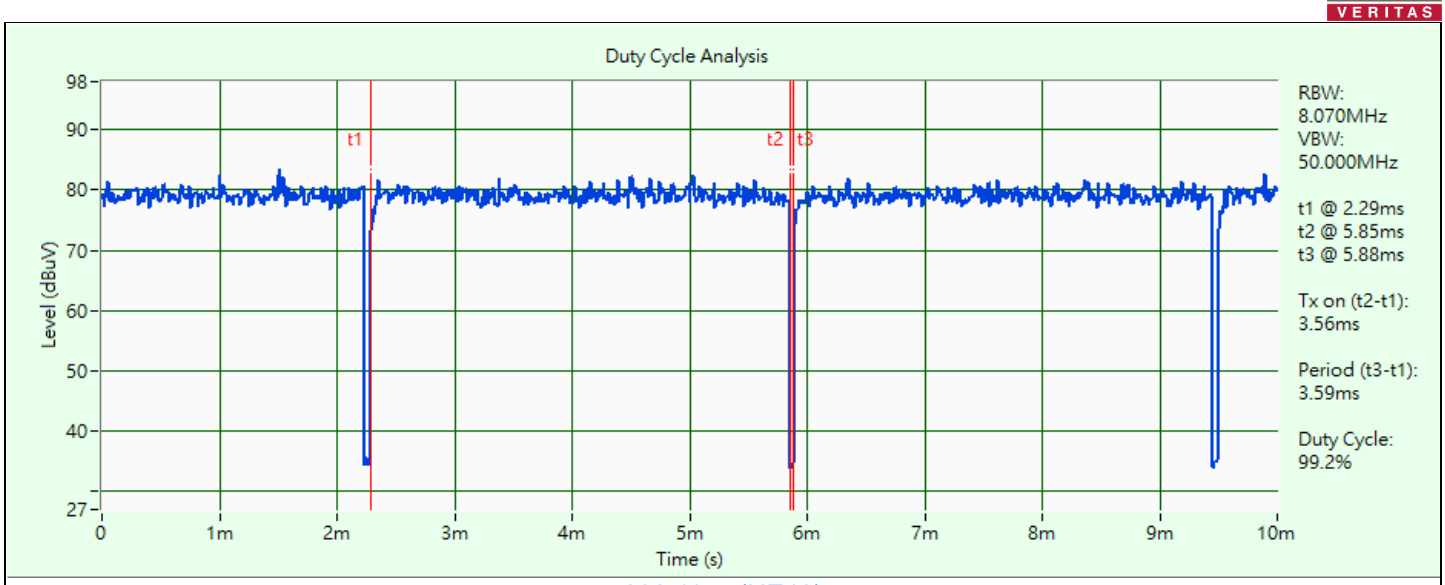
802.11a: Duty cycle = 3.12 ms / 3.15 ms x 100% = 99.0%
802.11ax (HE20): Duty cycle = 3.56 ms / 3.6 ms x 100% = 98.9%
802.11ax (HE40): Duty cycle = 3.56 ms / 3.59 ms x 100% = 99.2%
802.11ax (HE80): Duty cycle = 4.725 ms / 4.755 ms x 100% = 99.4%



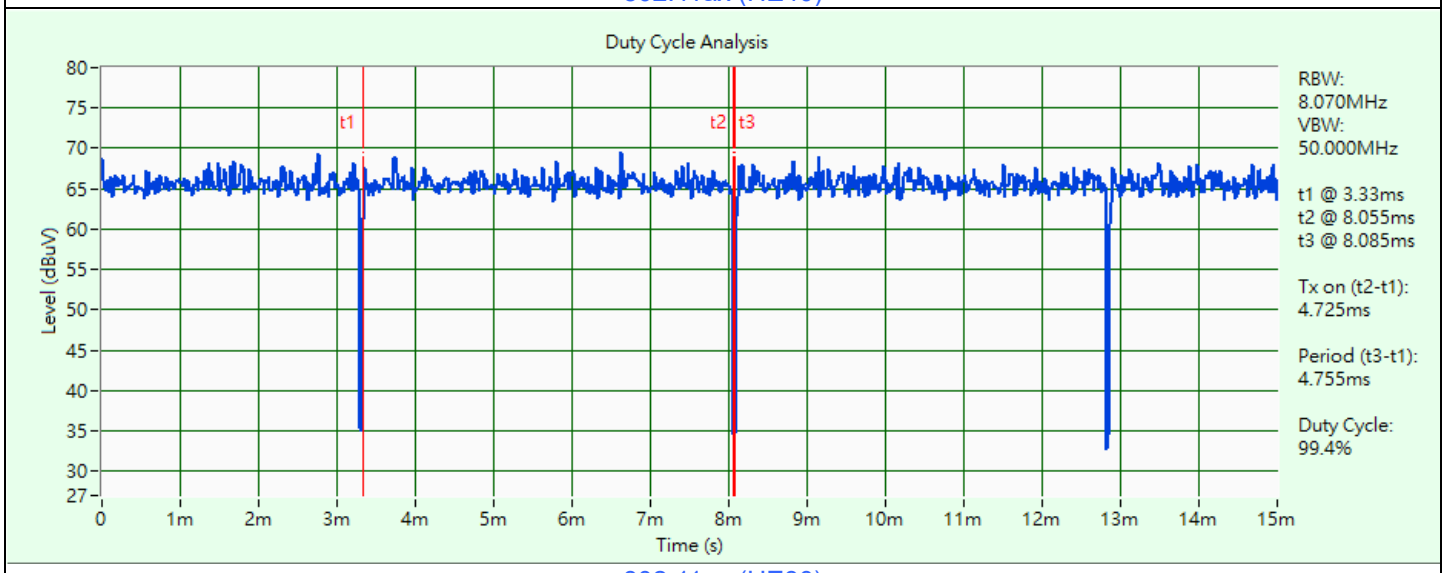
802.11a



802.11ax (HE20)



802.11ax (HE40)

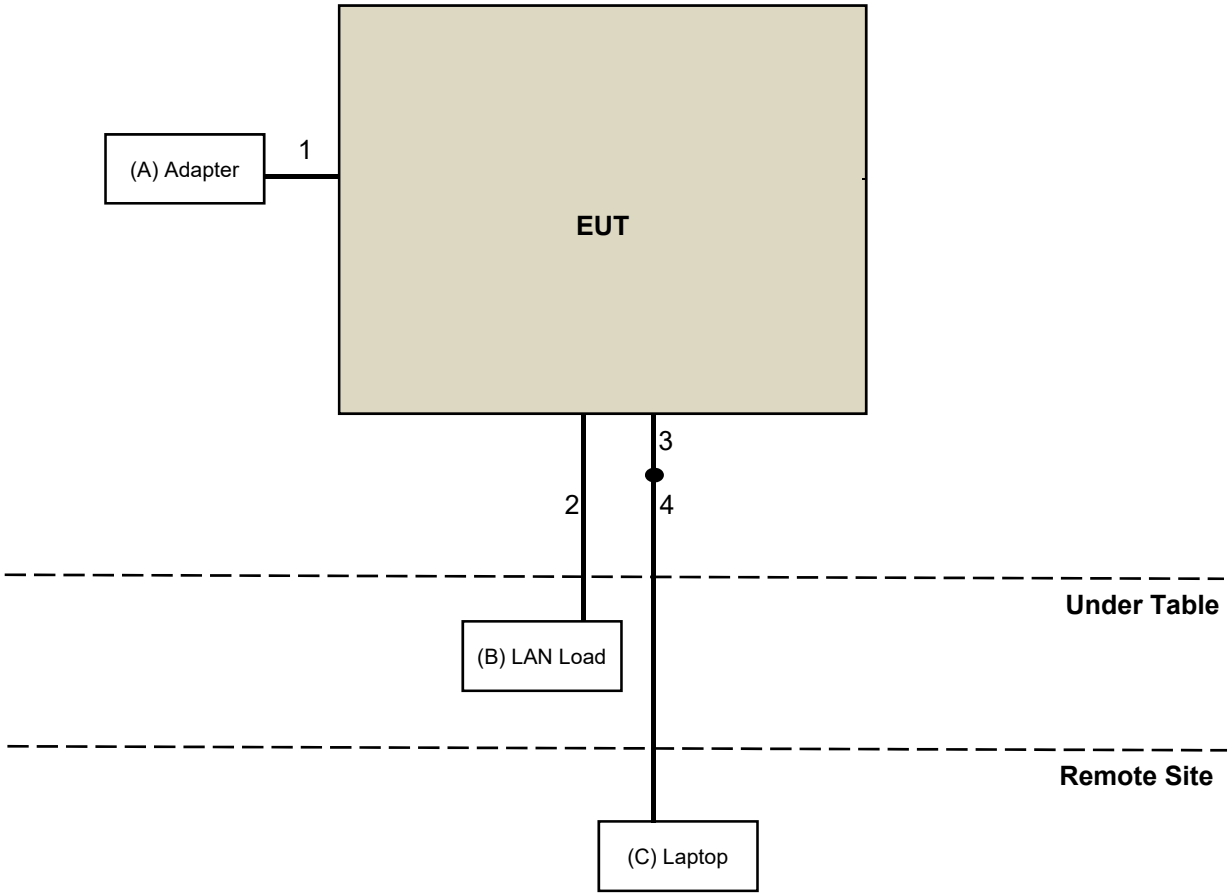


802.11ax (HE80)

3.6 Test Program Used and Operation Descriptions

Controlling software (MT7915 QA 0.0.2.33) has been activated to set the EUT under transmission condition continuously at specific channel frequency.

3.7 Connection Diagram of EUT and Peripheral Devices



3.8 Configuration of Peripheral Devices and Cable Connections

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Adapter	MASS POWER	S024-1E120200VU-H	NA	NA	Supplied by applicant
B.	LAN Load	BV	LP-4	NA	NA	Provided by Lab
C.	Laptop	DELL	Inspiron 14R	8LRKKW1	NA	Provided by Lab

ID	Cable Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	DC Cable	1	1.5	N	0	Accessory of EUT
2.	RJ45 Cable	1	1.8	N	0	Provided by Lab
3.	RJ45 Cable	1	1.5	Y	0	Accessory of EUT
4.	RJ45 Cable	1	10	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 26 dB Bandwidth

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Signal & Spectrum Analyzer R&S	FSV3044	101105	2023/2/22	2024/2/21
Software BV	ADT_RF Test Software V7.6.5.4	N/A	N/A	N/A

Notes:

1. The test was performed in Oven room.
2. Tested Date: 2023/9/9

4.2 RF Output Power

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Peak Power Analyzer Keysight	8990B	MY51000485	2023/1/19	2024/1/18
Wideband Power Sensor Keysight	N1923A	MY58020002	2023/1/18	2024/1/17
		MY58140009	2023/1/18	2024/1/17

Notes:

1. The test was performed in Oven room.
2. Tested Date: 2023/9/9

4.3 Power Spectral Density

Refer to section 4.1 to get information of the instruments.

4.4 6 dB Bandwidth

Refer to section 4.1 to get information of the instruments.

4.5 Occupied Bandwidth

Refer to section 4.1 to get information of the instruments.

4.6 Frequency Stability

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
AC Power Supply JIN YIH Technology	6905S	1720444	N/A	N/A
Digital Multimeter Fluke	87-III	70360742	2023/7/6	2024/7/5
Signal & Spectrum Analyzer R&S	FSV3044	101105	2023/2/22	2024/2/21
Software BV	ADT_RF Test Software V7.6.5.4	N/A	N/A	N/A
Temperature & Humidity Chamber Terchy	HRM-120RF	931022	2022/12/27	2023/12/26

Notes:

1. The test was performed in Oven room.
2. Tested Date: 2023/9/9

4.7 AC Power Conducted Emissions

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
EMI Test Receiver R&S	ESCI	100613	2022/12/5	2023/12/4
Fixed Attenuator Mini-Circuits	HAT-10+	PAD-COND1-01	2023/1/7	2024/1/6
LISN R&S	ENV216	101826	2023/3/23	2024/3/22
	ESH3-Z5	100311	2022/9/12	2023/9/11
RF Coaxial Cable Woken	5D-FB	Cable-cond1-01	2023/1/7	2024/1/6
Software BVADT	BVADT_Cond_ V7.3.7.4	N/A	N/A	N/A

Notes:

1. The test was performed in HY - Conduction 1.
2. Tested Date: 2023/8/30

4.8 Unwanted Emissions below 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Antenna Tower &Turn Max-Full	MFA-440H	AT93021705	N/A	N/A
Bi_Log Antenna Schwarzbeck	VULB 9168	9168-472	2022/10/21	2023/10/20
EXA Signal Analyzer Agilent	N9010A	MY52220207	2023/1/3	2024/1/2
Loop Antenna Electro-Metrics	EM-6879	269	2022/9/19	2023/9/18
Loop Antenna TESEQ	HLA 6121	45745	2023/8/8	2024/8/7
MXE EMI Receiver Keysight	N9038A	MY55420137	2023/5/3	2024/5/2
Preamplifier EMCI	EMC 330H	980112	2022/10/1	2023/9/30
	EMC001340	980201	2022/9/23	2023/9/22
RF Coaxial Cable EMCI	5D-NM-BM	140903+140902	2023/1/7	2024/1/6
RF Coaxial Cable Woken	8D-FB	Cable-Ch10-01	2022/10/1	2023/9/30
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	N/A	N/A	N/A
Turn Table Max-Full	MFT-201SS	N/A	N/A	N/A
Turn Table Controller Max-Full	MG-7802	N/A	N/A	N/A

Notes:

1. The test was performed in HY - 966 chamber 5.
2. Tested Date: 2023/8/30

4.9 Unwanted Emissions above 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Antenna Tower &Turn Max-Full	MFA-440H	AT93021705	N/A	N/A
Boresight antenna tower fixture BV	BAF-02	7	N/A	N/A
EXA Signal Analyzer Agilent	N9010A	MY52220207	2023/1/3	2024/1/2
Horn Antenna Schwarzbeck	BBHA 9120D	9120D-969	2022/11/13	2023/11/12
	BBHA 9170	148	2022/11/13	2023/11/12
MXE EMI Receiver Keysight	N9038A	MY55420137	2023/5/3	2024/5/2
Notch Filter Micro-Tronics	BRM17690	004	2023/1/11	2024/1/10
	BRM50716	060	2023/1/11	2024/1/10
Preamplifier EMCI	EMC 012645	980115	2022/10/1	2023/9/30
	EMC 184045	980116	2022/10/1	2023/9/30
RF Coaxial Cable EMCI	EMC102-KM-KM-600	150928	2023/7/8	2024/7/7
	EMC102-KM-KM-3000	150929	2023/7/8	2024/7/7
	EMC104-SM-SM-8000+3000	171005	2022/10/1	2023/9/30
RF Coaxial Cable HUBER+SUHNER	SUCOFLEX 104	EMC104-SM-SM-1000(140807)	2022/10/1	2023/9/30
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	N/A	N/A	N/A
Turn Table Max-Full	MFT-201SS	N/A	N/A	N/A
Turn Table Controller Max-Full	MG-7802	N/A	N/A	N/A

Notes:

1. The test was performed in HY - 966 chamber 5.
2. Tested Date: 2023/8/24 ~ 2023/8/28

5 Limits of Test Items

5.1 26 dB Bandwidth

The results are for reference only.

5.2 RF Output Power

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

Operation Band	Limit
U-NII-2A	250 mW (24 dBm) or 11 dBm+10 log B*
U-NII-3	1 Watt (30 dBm)

*B is the 26 dB emission bandwidth in megahertz

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

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

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

5.3 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-2A	11 dBm/MHz
U-NII-3	30 dBm/500 kHz

5.4 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.

5.5 Occupied Bandwidth

The results are for reference only.

5.6 Frequency Stability

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

5.7 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.

5.8 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).

5.9 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 5.25-5.35 GHz band:

Applicable To	EIRP Limit	Equivalent Field Strength at 3 m
15.407(b)(2)	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.		

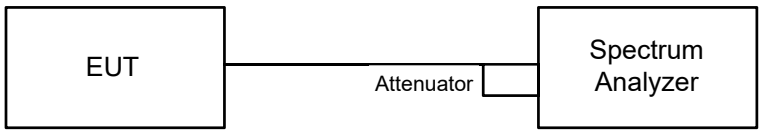
Note: The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength:

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

6 Test Arrangements

6.1 26 dB Bandwidth

6.1.1 Test Setup



6.1.2 Test Procedure

a. Set RBW = approximately 1% of the emission bandwidth.
b. Set the VBW > RBW.
c. Detector = Peak.
d. Trace mode = max hold.
e. Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

6.2 RF Output Power

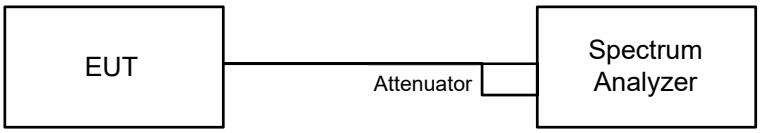
6.2.1 Test Setup

6.2.2 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.

6.3 Power Spectral Density

6.3.1 Test Setup



6.3.2 Test Procedure

For specified measurement bandwidth 1 MHz:
Method SA-1

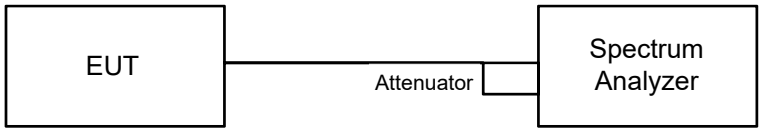
a. Set span to encompass the entire emission bandwidth (EBW) of the signal.
b. Set RBW = 1 MHz, Set VBW ≥ 3 MHz, Detector = RMS
c. Sweep points ≥ [2 × span / RBW]. (This gives bin-to-bin spacing ≤ RBW / 2, so that narrowband signals are not lost between frequency bins.)
d. Sweep time = auto, trigger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

For specified measurement bandwidth 500 kHz:
Method SA-1

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

6.4 6 dB Bandwidth

6.4.1 Test Setup

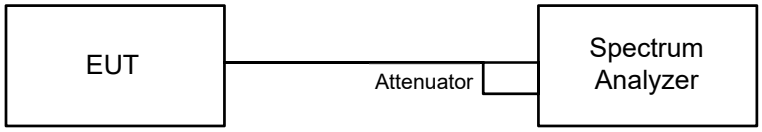


6.4.2 Test Procedure

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

6.5 Occupied Bandwidth

6.5.1 Test Setup

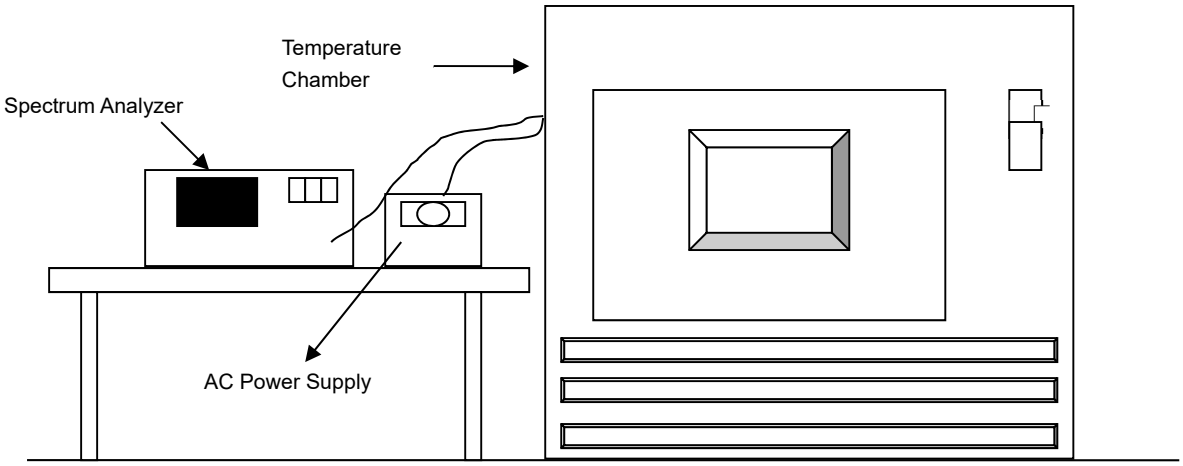


6.5.2 Test Procedure

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.

6.6 Frequency Stability

6.6.1 Test Setup

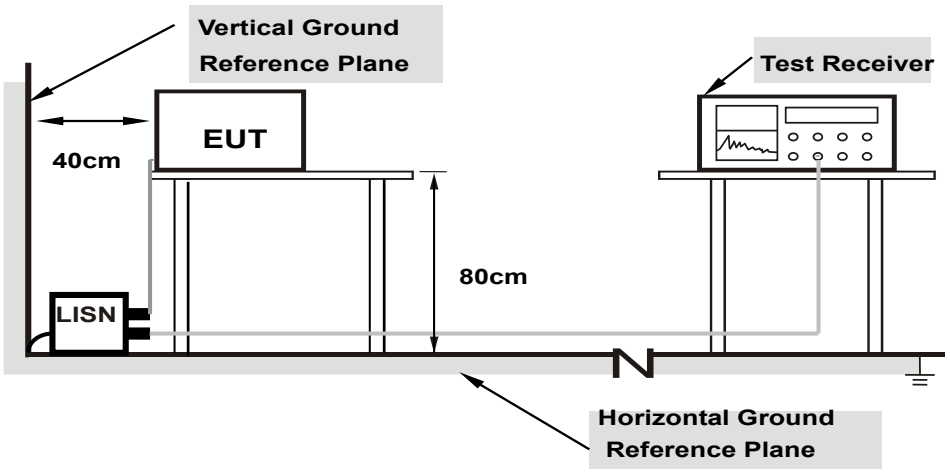


6.6.2 Test Procedure

a. The EUT was placed inside the environmental test chamber and powered by nominal AC voltage.
b. Turn the EUT on and couple its output to a spectrum analyzer.
c. Turn the EUT off and set the chamber to the highest temperature specified.
d. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 2, 5, and 10 Minutes.
e. Repeat step (d) with the temperature chamber set to the next desired temperature until measurements down to the lowest specified temperature have been completed.
f. The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 Minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.

6.7 AC Power Conducted Emissions

6.7.1 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).

6.7.2 Test Procedure

a. 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.

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

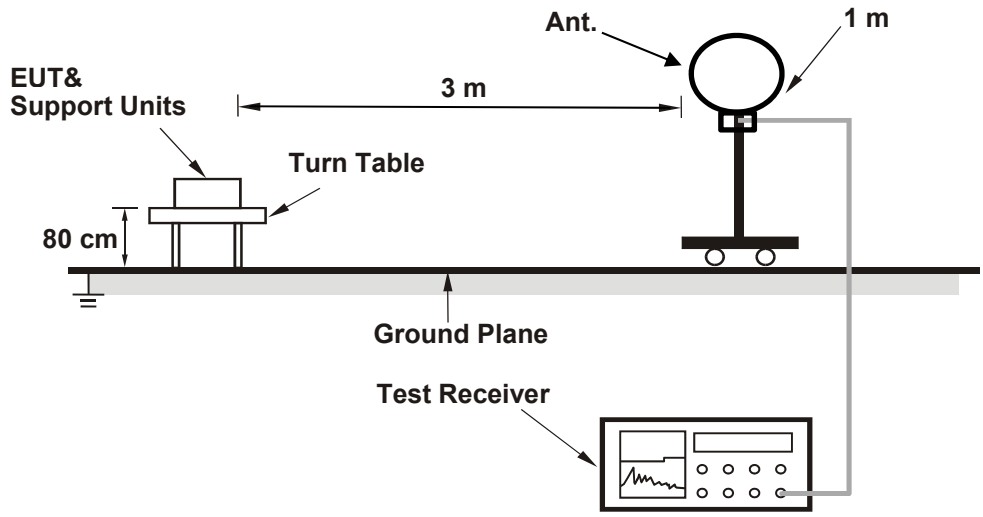
c. The frequency range from 150 kHz to 30 MHz was searched. Emission levels under (Limit – 20 dB) was not recorded.

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

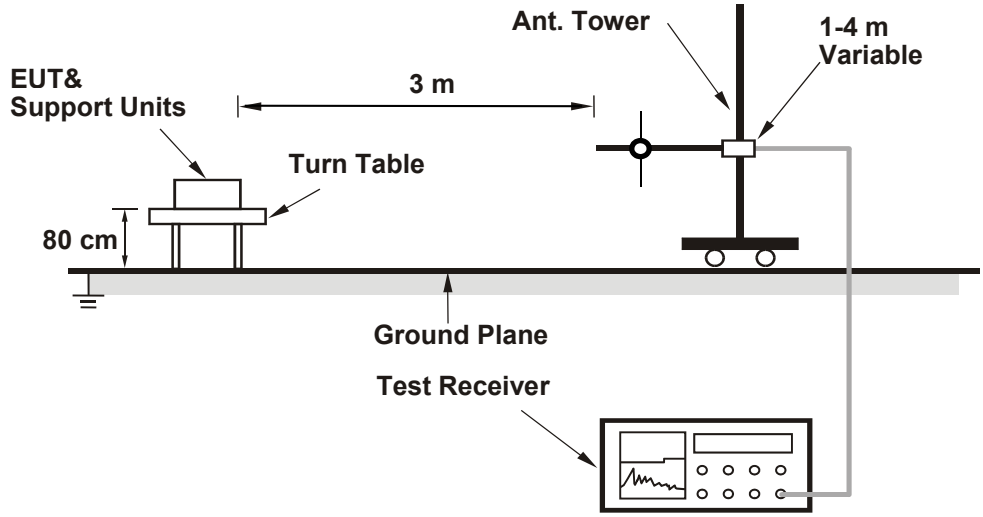
6.8 Unwanted Emissions below 1 GHz

6.8.1 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).

6.8.2 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.

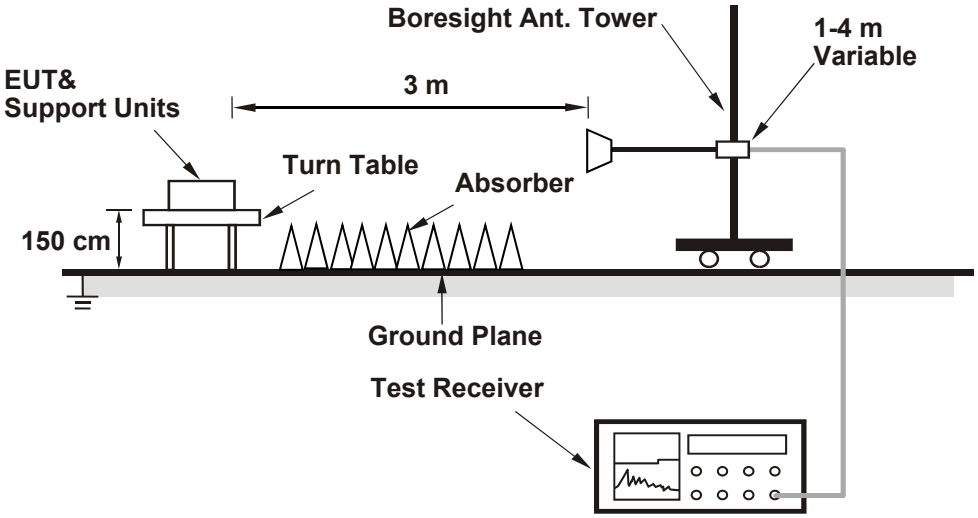
e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.

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.

6.9 Unwanted Emissions above 1 GHz

6.9.1 Test Setup



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

6.9.2 Test Procedure

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

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

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

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

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

Notes:

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

7 Test Results of Test Item

7.1 26 dB Bandwidth

Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 60% RH	Tested By:	Ivan Tseng

802.11a

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	
		Chain 0	Chain 1
52	5260	20.18	20.04
60	5300	20.39	19.94
64	5320	20.20	19.96

Determined Output Power Limit					
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Power Limit (dBm)		
52	5260	20.04	24.01	>	24
60	5300	19.94	23.99	<	24
64	5320	19.96	24	=	24

Note: For U-NII-2A Band output power limitation is determined based on 26dBc bandwidth.

802.11ax (HE20)

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	
		Chain 0	Chain 1
52	5260	22.04	22.94
60	5300	21.91	22.32
64	5320	22.42	23.30

Determined Output Power Limit					
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Power Limit (dBm)		
52	5260	22.04	24.43	>	24
60	5300	21.91	24.4	>	24
64	5320	22.42	24.5	>	24

Note: For U-NII-2A Band output power limitation is determined based on 26dBc bandwidth.

802.11ax (HE40)

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	
		Chain 0	Chain 1
54	5270	39.94	40.04
62	5310	40.14	40.04

Determined Output Power Limit					
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Power Limit (dBm)		
54	5270	39.94	27.01	>	24
62	5310	40.04	27.02	>	24

Note: For U-NII-2A Band output power limitation is determined based on 26dBc bandwidth.

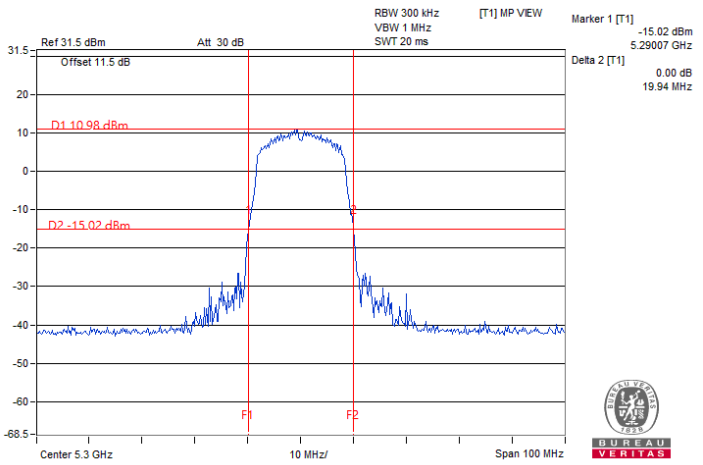
802.11ax (HE80)

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	
		Chain 0	Chain 1
58	5290	80.58	81.04

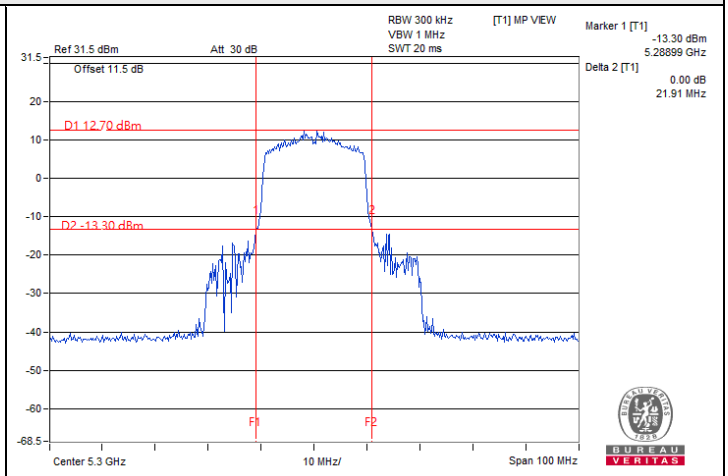
Determined Output Power Limit					
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Power Limit (dBm)		
58	5290	80.58	30.06	>	24

Note: For U-NII-2A Band output power limitation is determined based on 26dBc bandwidth.

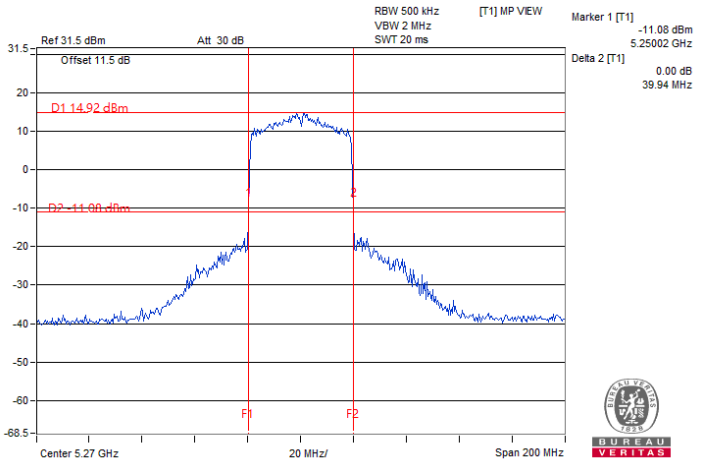
Spectrum Plot of Minimum Value



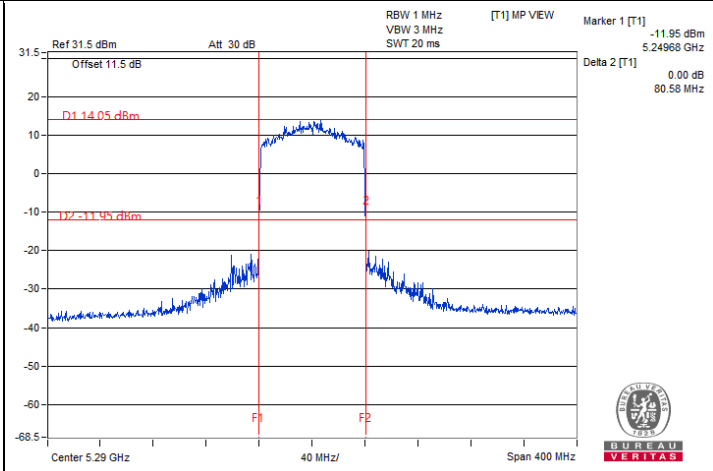
802.11a / Chain 1 : CH 60



802.11ax (HE20) / Chain 0 : CH 60



802.11ax (HE40) / Chain 0 : CH 54



802.11ax (HE80) / Chain 0 : CH 58

7.2 RF Output Power

Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 60% RH	Tested By:	Ivan Tseng

802.11a CDD

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
36	5180	23.32	23.64	445.99	26.49	30	Pass
40	5200	24.26	24.71	562.487	27.50	30	Pass
48	5240	24.29	24.61	557.602	27.46	30	Pass
52	5260	17.49	17.87	117.34	20.69	24	Pass
60	5300	17.61	17.94	119.907	20.79	23.99	Pass
64	5320	17.77	18.16	125.305	20.98	24	Pass
149	5745	25.81	26.15	793.163	28.99	29.9	Pass
157	5785	26.29	26.63	885.855	29.47	29.9	Pass
165	5825	25.93	26.25	813.438	29.10	29.9	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-1, the maximum gain is 5.3 dBi < 6 dBi, so the output power limit shall not be reduced.
3. For U-NII-2A, the maximum gain is 6 dBi = 6 dBi, so the output power limit shall not be reduced.
4. For U-NII-3, the maximum gain is 6.1 dBi > 6 dBi, so the output power limit shall be reduced to 30-(6.1-6) = 29.9 dBm.

802.11ax (HE20) CDD

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
36	5180	21.27	21.60	278.512	24.45	30	Pass
40	5200	24.42	24.70	571.815	27.57	30	Pass
48	5240	24.33	24.65	562.762	27.50	30	Pass
52	5260	17.87	18.25	128.069	21.07	24	Pass
60	5300	17.97	18.29	130.114	21.14	24	Pass
64	5320	17.63	18.00	121.039	20.83	24	Pass
149	5745	25.38	25.60	708.222	28.50	29.9	Pass
157	5785	26.40	26.63	896.772	29.53	29.9	Pass
165	5825	24.88	25.22	640.269	28.06	29.9	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-1, the maximum gain is 5.3 dBi < 6 dBi, so the output power limit shall not be reduced.
3. For U-NII-2A, the maximum gain is 6 dBi = 6 dBi, so the output power limit shall not be reduced.
4. For U-NII-3, the maximum gain is 6.1 dBi > 6 dBi, so the output power limit shall be reduced to 30-(6.1-6) = 29.9 dBm.

802.11ax (HE40) CDD

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
38	5190	19.32	19.68	178.403	22.51	30	Pass
46	5230	25.24	25.52	690.646	28.39	30	Pass
54	5270	20.73	21.05	245.654	23.90	24	Pass
62	5310	19.68	20.03	193.590	22.87	24	Pass
151	5755	24.78	25.06	621.235	27.93	29.9	Pass
159	5795	24.68	24.94	605.654	27.82	29.9	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-1, the maximum gain is 5.3 dBi < 6 dBi, so the output power limit shall not be reduced.
3. For U-NII-2A, the maximum gain is 6 dBi = 6 dBi, so the output power limit shall not be reduced.
4. For U-NII-3, the maximum gain is 6.1 dBi > 6 dBi, so the output power limit shall be reduced to 30-(6.1-6) = 29.9 dBm.

802.11ax (HE80) CDD

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
42	5210	20.42	20.75	229.004	23.60	30	Pass
58	5290	18.50	18.83	147.178	21.68	24	Pass
155	5775	22.08	22.46	337.633	25.28	29.9	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-1, the maximum gain is 5.3 dBi < 6 dBi, so the output power limit shall not be reduced.
3. For U-NII-2A, the maximum gain is 6 dBi = 6 dBi, so the output power limit shall not be reduced.
4. For U-NII-3, the maximum gain is 6.1 dBi > 6 dBi, so the output power limit shall be reduced to 30-(6.1-6) = 29.9 dBm.

802.11ax (HE20) Beamforming

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
36	5180	21.27	21.60	278.512	24.45	27.79	Pass
40	5200	24.42	24.70	571.815	27.57	27.79	Pass
48	5240	24.33	24.65	562.762	27.50	27.79	Pass
52	5260	17.87	18.25	128.069	21.07	21.19	Pass
60	5300	17.97	18.29	130.114	21.14	21.19	Pass
64	5320	17.63	18.00	121.039	20.83	21.19	Pass
149	5745	24.55	24.70	580.223	27.64	27.74	Pass
157	5785	24.53	24.71	579.593	27.63	27.74	Pass
165	5825	24.51	24.75	581.026	27.64	27.74	Pass

Notes:

1. Directional gain = 10 log[$(10^{Chain0/20} + 10^{Chain1/20})^2$ / 2]
2. For U-NII-1, the directional gain is 8.21 dBi > 6 dBi, so the output power limit shall be reduced to 30-(8.21-6) = 27.79 dBm.
3. For U-NII-2A, the directional gain is 8.81 dBi > 6 dBi, so the output power limit shall be reduced to [Determined Conducted Power Limit-(8.81-6)].
4. For U-NII-3, the directional gain is 8.26 dBi > 6 dBi, so the output power limit shall be reduced to 30-(8.26-6) = 27.74 dBm.

802.11ax (HE40) Beamforming

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
38	5190	19.32	19.68	178.403	22.51	27.79	Pass
46	5230	24.58	24.79	588.379	27.70	27.79	Pass
54	5270	17.95	18.19	128.291	21.08	21.19	Pass
62	5310	17.92	18.24	128.625	21.09	21.19	Pass
151	5755	24.54	24.75	582.984	27.66	27.74	Pass
159	5795	24.51	24.72	578.971	27.63	27.74	Pass

Notes:

1. Directional gain = 10 log[$(10^{Chain0/20} + 10^{Chain1/20})^2$ / 2]
2. For U-NII-1, the directional gain is 8.21 dBi > 6 dBi, so the output power limit shall be reduced to 30-(8.21-6) = 27.79 dBm.
3. For U-NII-2A, the directional gain is 8.81 dBi > 6 dBi, so the output power limit shall be reduced to [Determined Conducted Power Limit-(8.81-6)].
4. For U-NII-3, the directional gain is 8.26 dBi > 6 dBi, so the output power limit shall be reduced to 30-(8.26-6) = 27.74 dBm.

802.11ax (HE80) Beamforming

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
42	5210	20.42	20.75	229.004	23.60	27.79	Pass
58	5290	17.94	18.22	128.593	21.09	21.19	Pass
155	5775	22.08	22.46	337.633	25.28	27.74	Pass

Notes:

1. Directional gain = 10 log[$(10^{Chain0/20} + 10^{Chain1/20})^2$ / 2]
2. For U-NII-1, the directional gain is 8.21 dBi > 6 dBi, so the output power limit shall be reduced to 30-(8.21-6) = 27.79 dBm.
3. For U-NII-2A, the directional gain is 8.81 dBi > 6 dBi, so the output power limit shall be reduced to [Determined Conducted Power Limit-(8.81-6)].
4. For U-NII-3, the directional gain is 8.26 dBi > 6 dBi, so the output power limit shall be reduced to 30-(8.26-6) = 27.74 dBm.

7.3 Power Spectral Density

Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 60% RH	Tested By:	Ivan Tseng

802.11a

Chan.	Chan. Freq. (MHz)	PSD (dBm/MHz)		Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Test Result
		Chain 0	Chain 1			
36	5180	10.37	10.66	13.53	14.79	Pass
40	5200	11.22	11.70	14.48	14.79	Pass
48	5240	11.35	11.62	14.50	14.79	Pass
52	5260	4.66	4.87	7.78	8.19	Pass
60	5300	4.67	4.90	7.80	8.19	Pass
64	5320	4.73	4.91	7.83	8.19	Pass

Notes:

1. Method E) 2) a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = 10 log[$(10^{Chain0/20} + 10^{Chain1/20})^2$ / 2]
3. For U-NII-1, the directional gain is 8.21 dBi > 6dBi, so the power density limit shall be reduced to 17-(8.21-6) = 14.79 dBm/MHz.
4. For U-NII-2A, the directional gain is 8.81 dBi > 6 dBi, so the power density limit shall be reduced to 11-(8.81-6) = 8.19 dBm/MHz.

802.11ax (HE20)

Chan.	Chan. Freq. (MHz)	PSD (dBm/MHz)		Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Test Result
		Chain 0	Chain 1			
36	5180	8.26	8.67	11.48	14.79	Pass
40	5200	11.43	11.75	14.60	14.79	Pass
48	5240	11.35	11.79	14.59	14.79	Pass
52	5260	4.91	5.03	7.98	8.19	Pass
60	5300	4.98	5.25	8.13	8.19	Pass
64	5320	4.72	5.11	7.93	8.19	Pass

Notes:

1. Method E) 2) a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = 10 log[$(10^{Chain0/20} + 10^{Chain1/20})^2$ / 2]
3. For U-NII-1, the directional gain is 8.21 dBi > 6dBi, so the power density limit shall be reduced to 17-(8.21-6) = 14.79 dBm/MHz.
4. For U-NII-2A, the directional gain is 8.81 dBi > 6 dBi, so the power density limit shall be reduced to 11-(8.81-6) = 8.19 dBm/MHz.

802.11ax (HE40)

Chan.	Chan. Freq. (MHz)	PSD (dBm/MHz)		Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Test Result
		Chain 0	Chain 1			
38	5190	3.30	3.67	6.50	14.79	Pass
46	5230	9.16	9.42	12.30	14.79	Pass
54	5270	4.71	5.04	7.89	8.19	Pass
62	5310	3.61	4.07	6.86	8.19	Pass

Notes:

1. Method E) 2) a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = 10 log[$(10^{Chain0/20} + 10^{Chain1/20})^2$ / 2]
3. For U-NII-1, the directional gain is 8.21 dBi > 6dBi, so the power density limit shall be reduced to 17-(8.21-6) = 14.79 dBm/MHz.
4. For U-NII-2A, the directional gain is 8.81 dBi > 6 dBi, so the power density limit shall be reduced to 11-(8.81-6) = 8.19 dBm/MHz.

802.11ax (HE80)

Chan.	Chan. Freq. (MHz)	PSD (dBm/MHz)		Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Test Result
		Chain 0	Chain 1			
42	5210	1.52	1.75	4.65	14.79	Pass
58	5290	-0.35	-0.12	2.78	8.19	Pass

Notes:

1. Method E) 2) a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = 10 log[$(10^{Chain0/20} + 10^{Chain1/20})^2$ / 2]
3. For U-NII-1, the directional gain is 8.21 dBi > 6dBi, so the power density limit shall be reduced to 17-(8.21-6) = 14.79 dBm/MHz.
4. For U-NII-2A, the directional gain is 8.81 dBi > 6 dBi, so the power density limit shall be reduced to 11-(8.81-6) = 8.19 dBm/MHz.

802.11a

Chan.	Chan. Freq. (MHz)	PSD (dBm/300kHz)		Total PSD (dBm/300kHz)	Total PSD (dBm/500kHz)	PSD Limit (dBm/500kHz)	Test Result
		Chain 0	Chain 1				
149	5745	5.26	5.30	8.29	10.51	27.74	Pass
157	5785	5.46	5.79	8.64	10.86	27.74	Pass
165	5825	5.40	5.58	8.5	10.72	27.74	Pass

Notes:

1. Method E) 2) b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
2. Directional gain = 10 log[$(10^{Chain0/20} + 10^{Chain1/20})^2$ / 2]
3. For U-NII-3, the directional gain is 8.26 dBi > 6 dBi, so the power density limit shall be reduced to 30-(8.26-6) = 27.74 dBm/500kHz.

802.11ax (HE20)

Chan.	Chan. Freq. (MHz)	PSD (dBm/300kHz)		Total PSD (dBm/300kHz)	Total PSD (dBm/500kHz)	PSD Limit (dBm/500kHz)	Test Result
		Chain 0	Chain 1				
149	5745	4.00	4.07	7.05	9.27	27.74	Pass
157	5785	5.28	5.36	8.33	10.55	27.74	Pass
165	5825	3.49	3.68	6.6	8.82	27.74	Pass

Notes:

1. Method E) 2) b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
2. Directional gain = 10 log[$(10^{Chain0/20} + 10^{Chain1/20})^2$ / 2]
3. For U-NII-3, the directional gain is 8.26 dBi > 6 dBi, so the power density limit shall be reduced to 30-(8.26-6) = 27.74 dBm/500kHz.

802.11ax (HE40)

Chan.	Chan. Freq. (MHz)	PSD (dBm/300kHz)		Total PSD (dBm/300kHz)	Total PSD (dBm/500kHz)	PSD Limit (dBm/500kHz)	Test Result
		Chain 0	Chain 1				
151	5755	0.55	0.75	3.66	5.88	27.74	Pass
159	5795	0.38	0.61	3.51	5.73	27.74	Pass

Notes:

1. Method E) 2) b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
2. Directional gain = 10 log[$(10^{Chain0/20} + 10^{Chain1/20})^2$ / 2]
3. For U-NII-3, the directional gain is 8.26 dBi > 6 dBi, so the power density limit shall be reduced to 30-(8.26-6) = 27.74 dBm/500kHz.

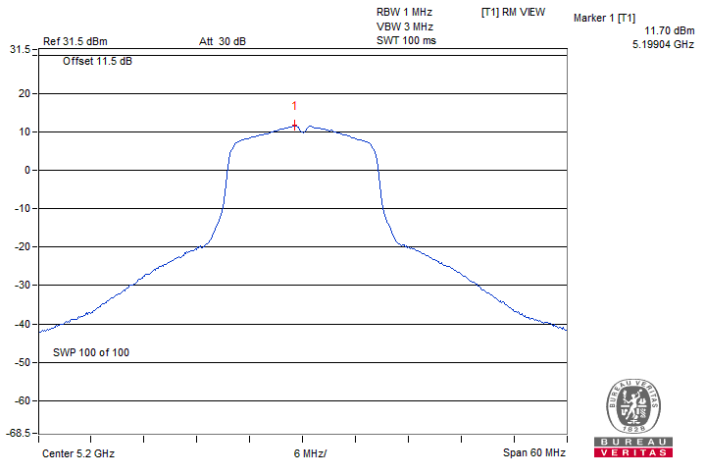
802.11ax (HE80)

Chan.	Chan. Freq. (MHz)	PSD (dBm/300kHz)		Total PSD (dBm/300kHz)	Total PSD (dBm/500kHz)	PSD Limit (dBm/500kHz)	Test Result
		Chain 0	Chain 1				
155	5775	-4.89	-4.63	-1.75	0.47	27.74	Pass

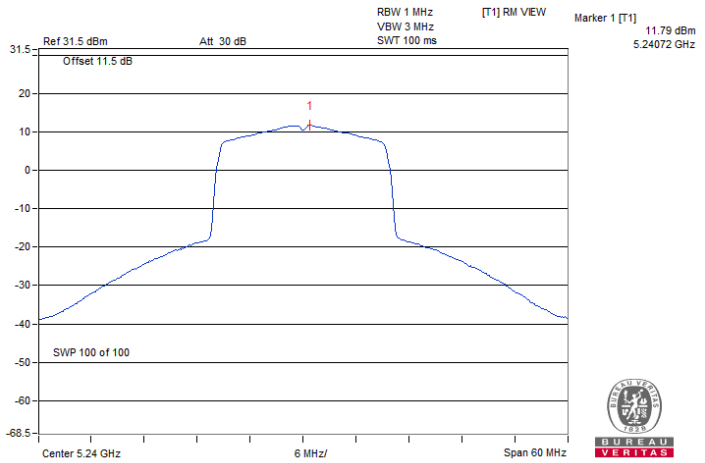
Notes:

1. Method E) 2) b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
2. Directional gain = 10 log[($10^{Chain0/20}$ + $10^{Chain1/20}$)^2 / 2]
3. For U-NII-3, the directional gain is 8.26 dBi > 6 dBi, so the power density limit shall be reduced to 30-(8.26-6) = 27.74 dBm/500kHz.

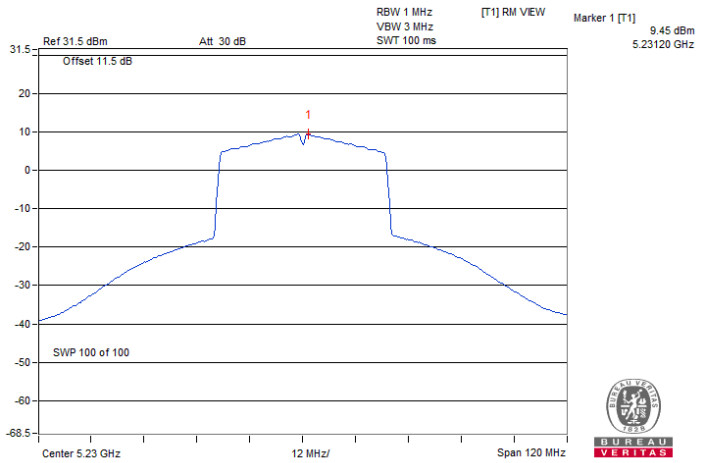
Spectrum Plot of Maximum Value



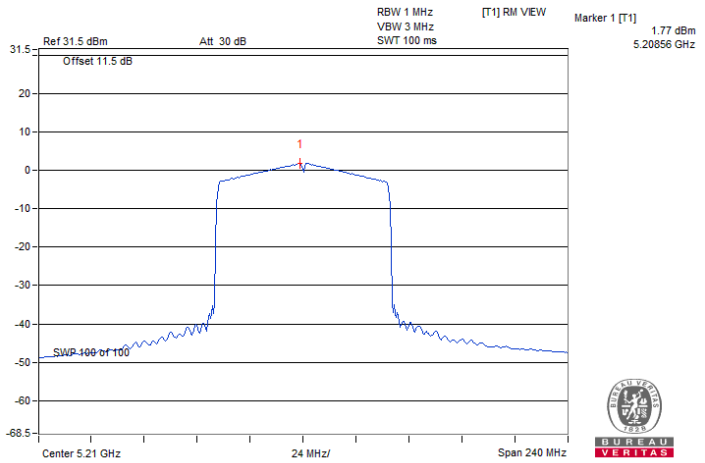
802.11a / Chain 1 : CH 40



802.11ax (HE20) / Chain 1 : CH 48

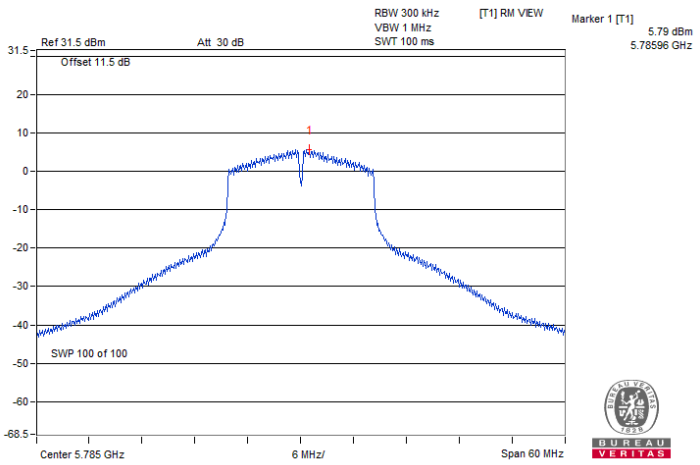


802.11ax (HE40) / Chain 1 : CH 46

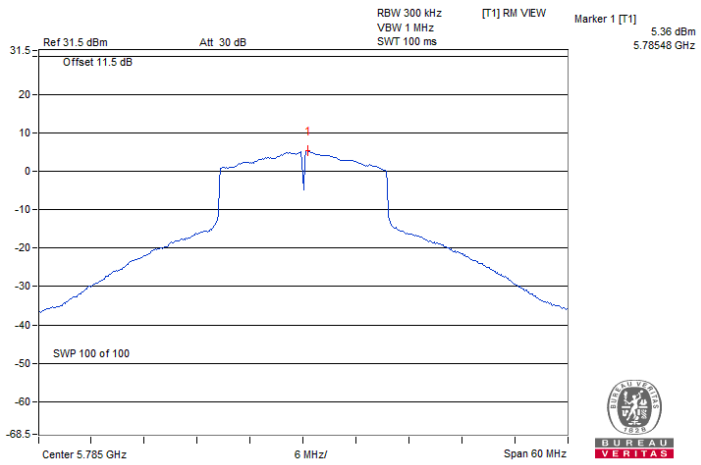


802.11ax (HE80) / Chain 1 : CH 42

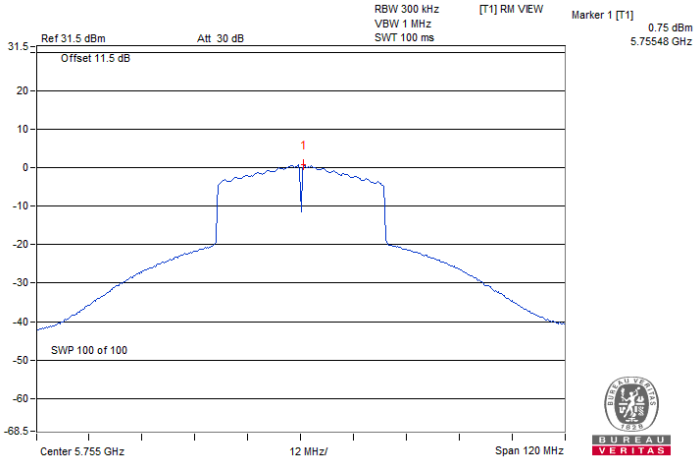
Spectrum Plot of Maximum Value



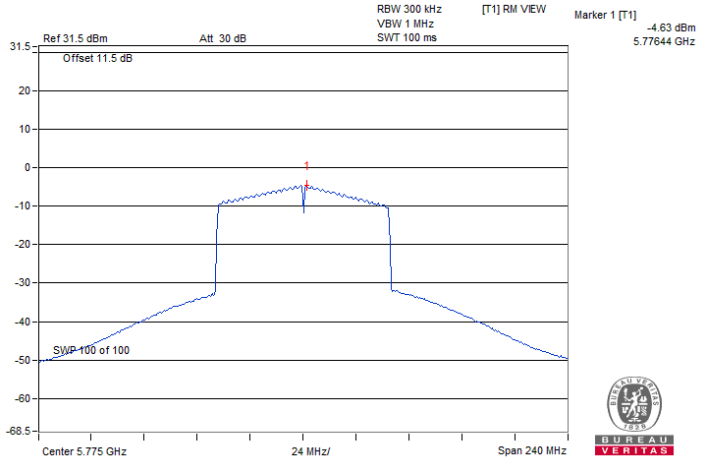
802.11a / Chain 1 : CH 157



802.11ax (HE20) / Chain 1 : CH 157



802.11ax (HE40) / Chain 1 : CH 151



802.11ax (HE80) / Chain 1 : CH 155

7.4 6 dB Bandwidth

Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 60% RH	Tested By:	Ivan Tseng

802.11a

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
149	5745	15.15	15.15	0.5	Pass
157	5785	15.18	15.15	0.5	Pass
165	5825	15.13	16.33	0.5	Pass

802.11ax (HE20)

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
149	5745	15.19	15.17	0.5	Pass
157	5785	16.62	15.18	0.5	Pass
165	5825	16.51	15.18	0.5	Pass

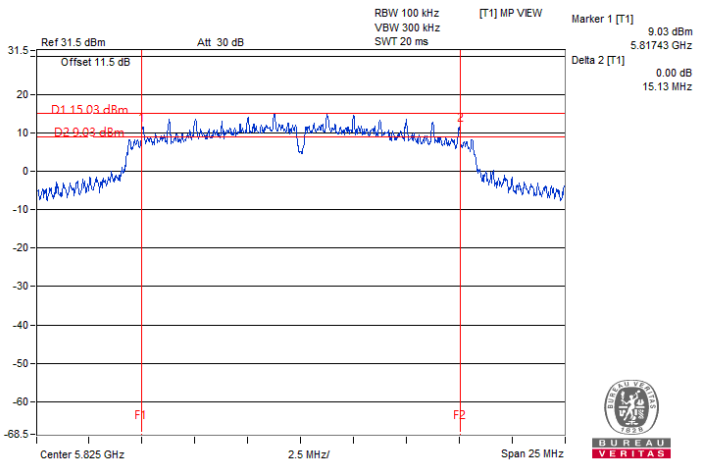
802.11ax (HE40)

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
151	5755	35.14	35.74	0.5	Pass
159	5795	35.21	35.31	0.5	Pass

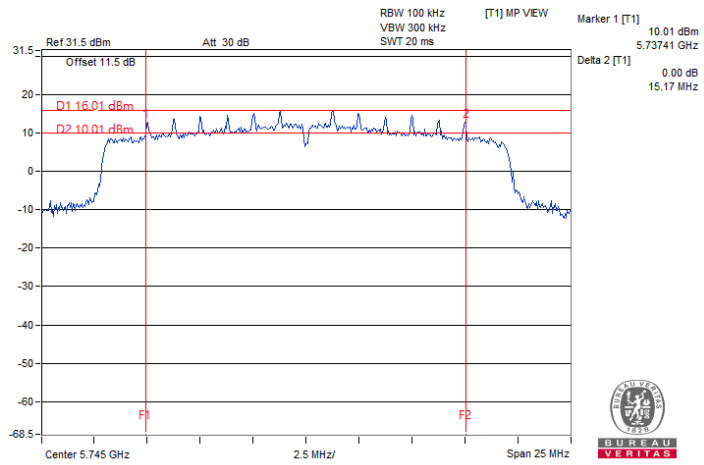
802.11ax (HE80)

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
155	5775	73.98	75.35	0.5	Pass

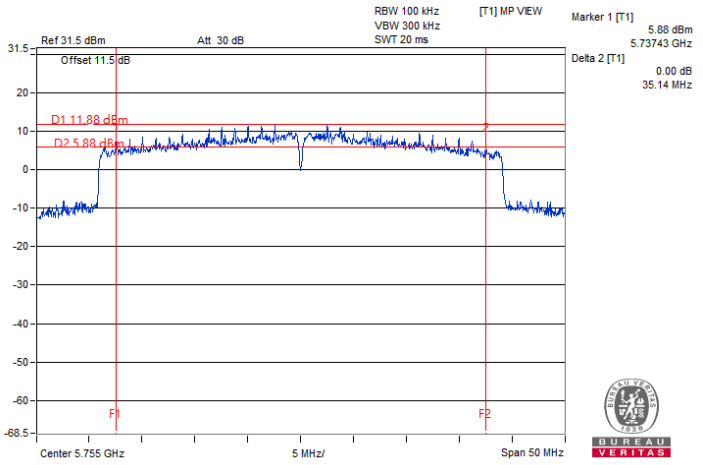
Spectrum Plot of Minimum Value



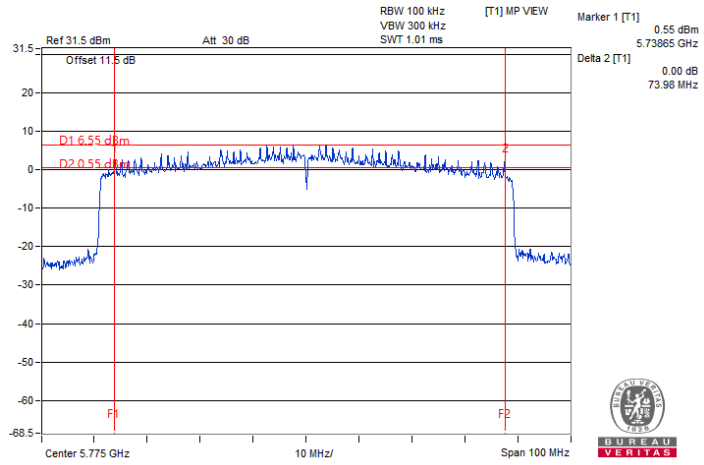
802.11a / Chain 0 : CH 165



802.11ax (HE20) / Chain 1 : CH 149



802.11ax (HE40) / Chain 0 : CH 151



802.11ax (HE80) / Chain 0 : CH 155

7.5 Occupied Bandwidth

Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 60% RH	Tested By:	Ivan Tseng

802.11a

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
36	5180	16.68	16.44
40	5200	16.92	16.68
48	5240	16.92	16.68
52	5260	16.44	16.44
60	5300	16.56	16.44
64	5320	16.44	16.44
149	5745	22.32	22.62
157	5785	27.12	27.84
165	5825	25.62	25.44

802.11ax (HE20)

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
36	5180	18.84	18.84
40	5200	19.08	19.08
48	5240	18.84	18.84
52	5260	18.96	18.96
60	5300	18.84	18.96
64	5320	18.84	18.84
149	5745	23.40	23.64
157	5785	25.14	25.32
165	5825	22.32	22.68

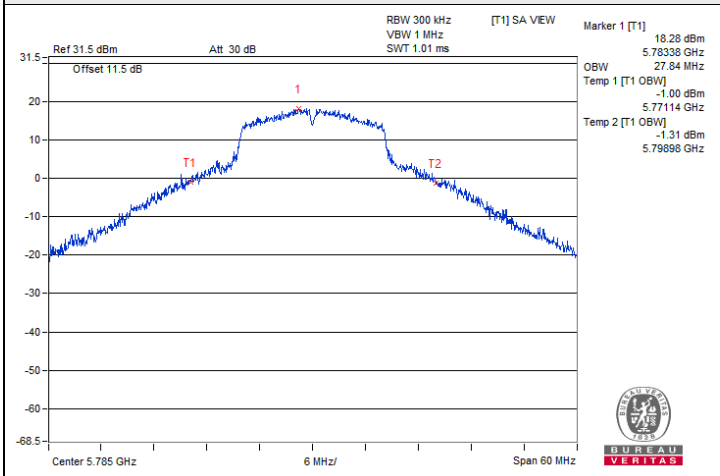
802.11ax (HE40)

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
38	5190	37.68	37.68
46	5230	37.92	38.16
54	5270	37.68	37.68
62	5310	37.68	37.68
151	5755	41.28	41.76
159	5795	46.32	48.96

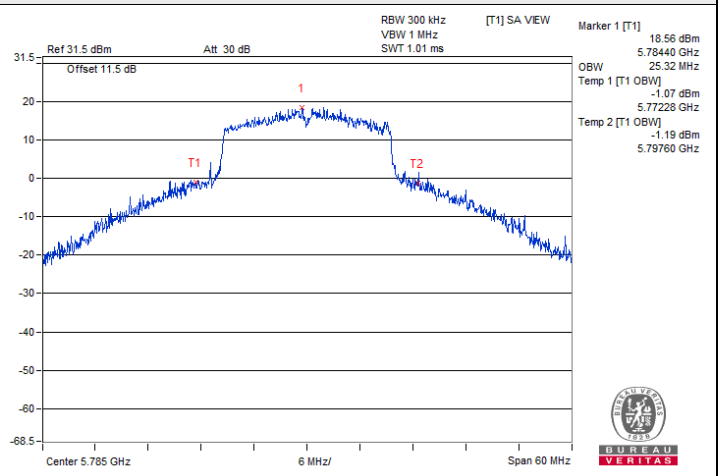
802.11ax (HE80)

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
42	5210	77.28	76.80
58	5290	76.80	76.32
155	5775	77.28	77.28

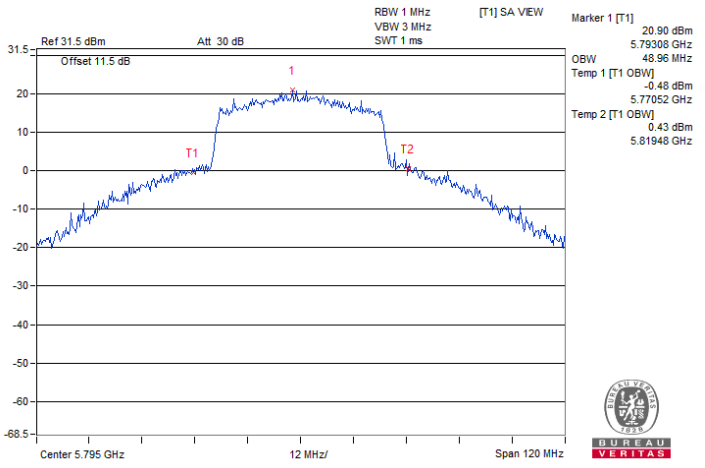
Spectrum Plot of Maximum Value



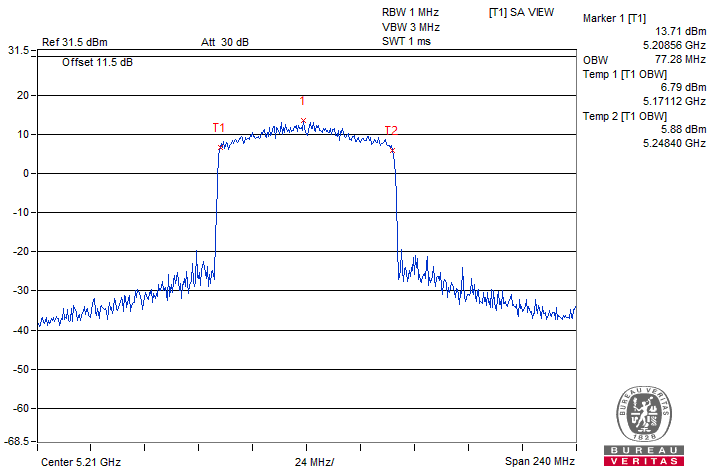
802.11a / Chain 1 : CH 157



802.11ax (HE20) / Chain 1 : CH 157



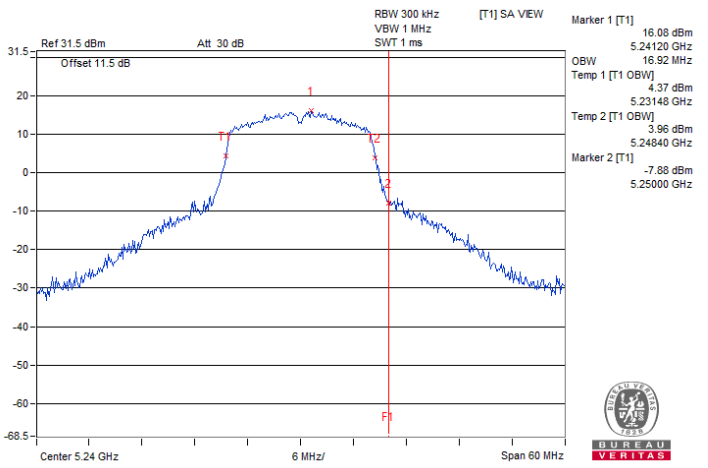
802.11ax (HE40) / Chain 1 : CH 159



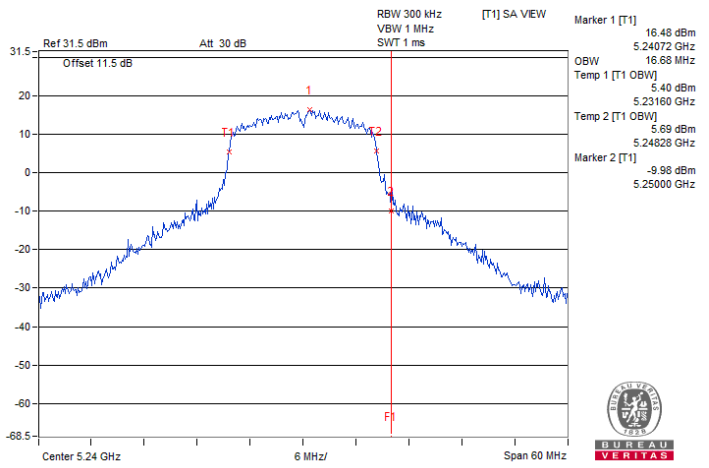
802.11ax (HE80) / Chain 0 : CH 42

Spectrum Plot for nearby DFS band

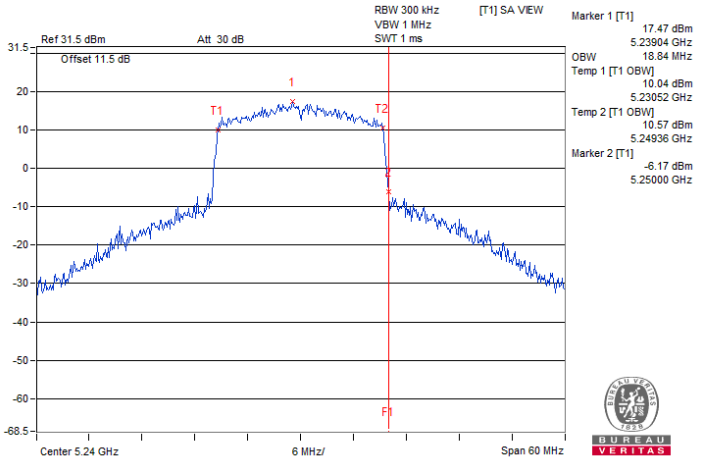
(DFS is required, if 99% OCP straddle into U-NII-2A)



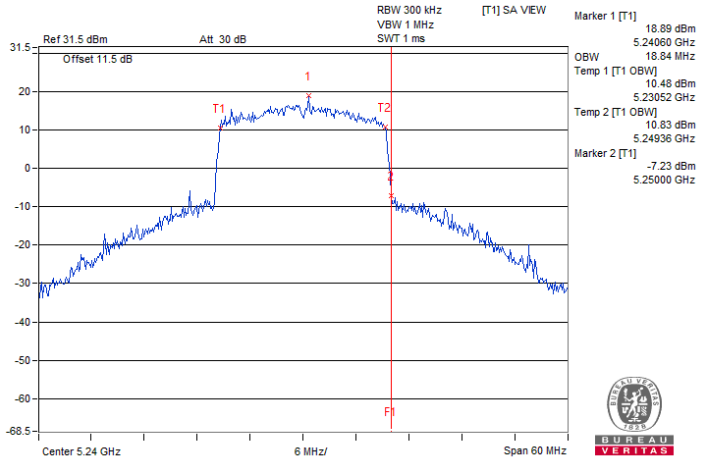
802.11a / Chain 0 : CH 48



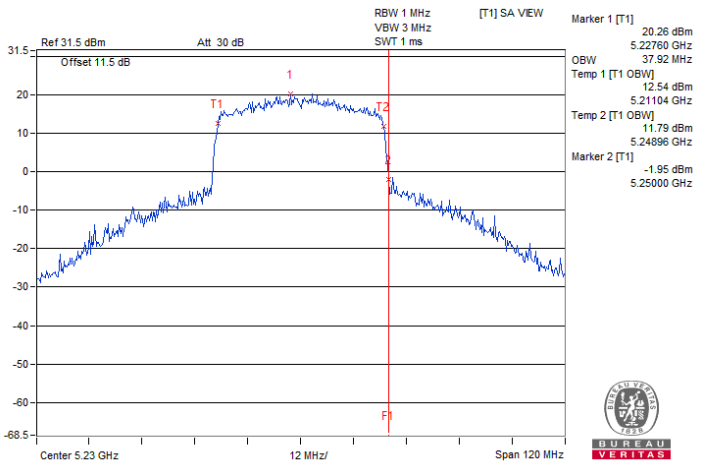
802.11a / Chain 1 : CH 48



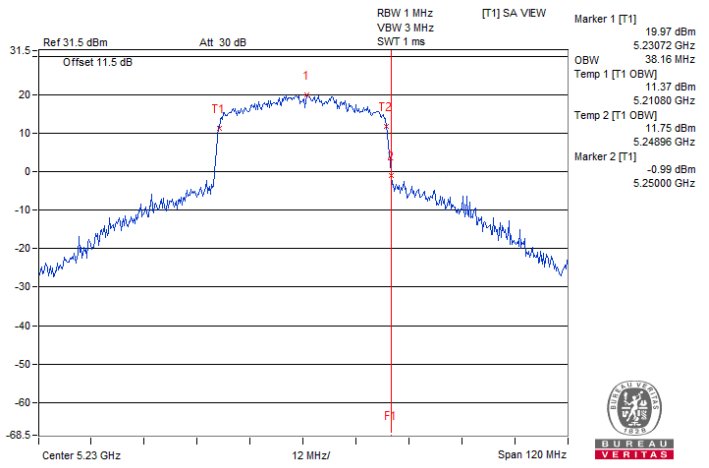
802.11ax (HE20) / Chain 0 : CH 48



802.11ax (HE20) / Chain 1 : CH 48



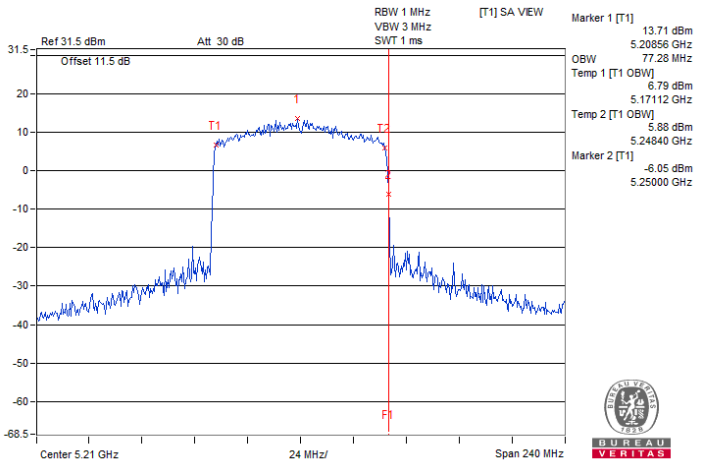
802.11ax (HE40) / Chain 0 : CH 46



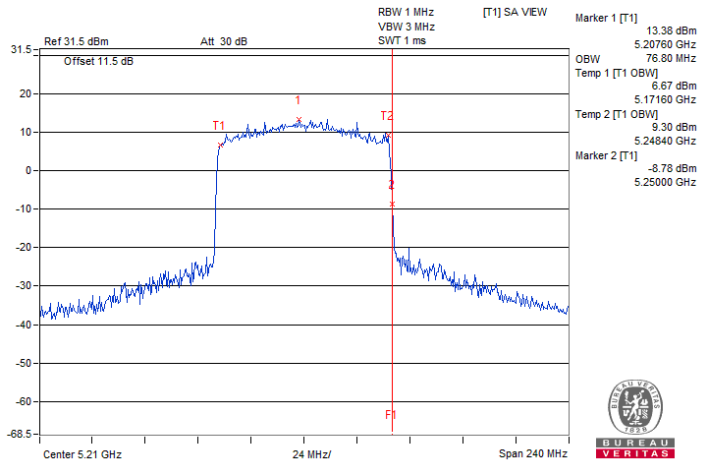
802.11ax (HE40) / Chain 1 : CH 46

Spectrum Plot for nearby DFS band

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



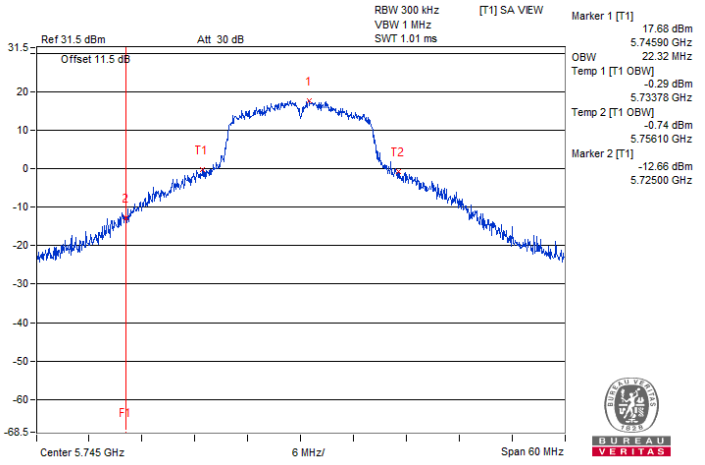
802.11ax (HE80) / Chain 0 : CH 42



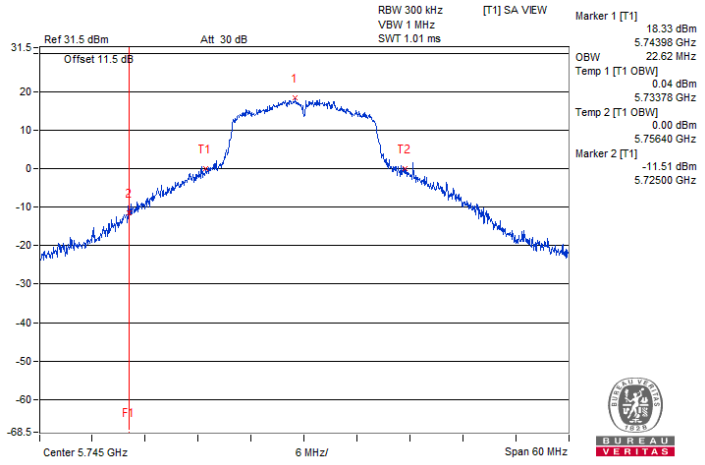
802.11ax (HE80) / Chain 1 : CH 42

Spectrum Plot for nearby DFS band

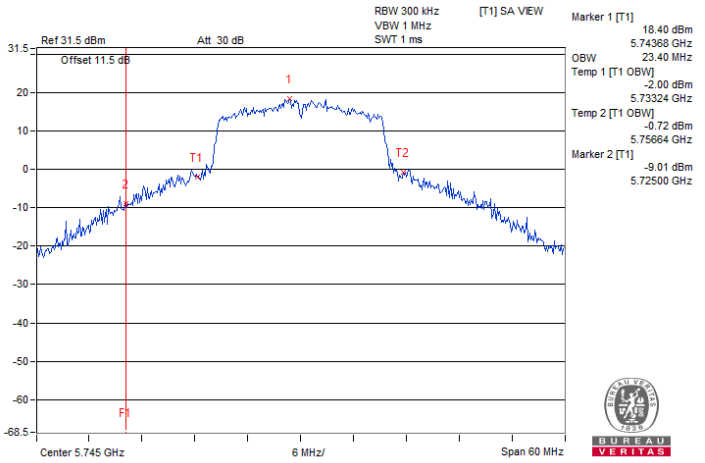
(DFS is required, if 99% OCP straddle into U-NII-2C)



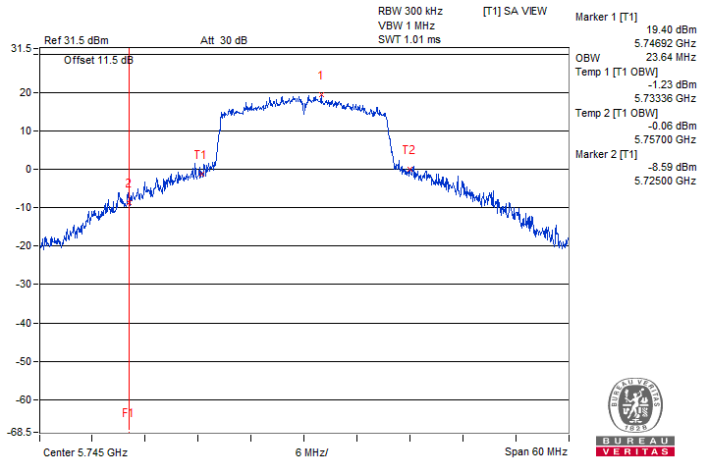
802.11a / Chain 0 : CH 149



802.11a / Chain 1 : CH 149



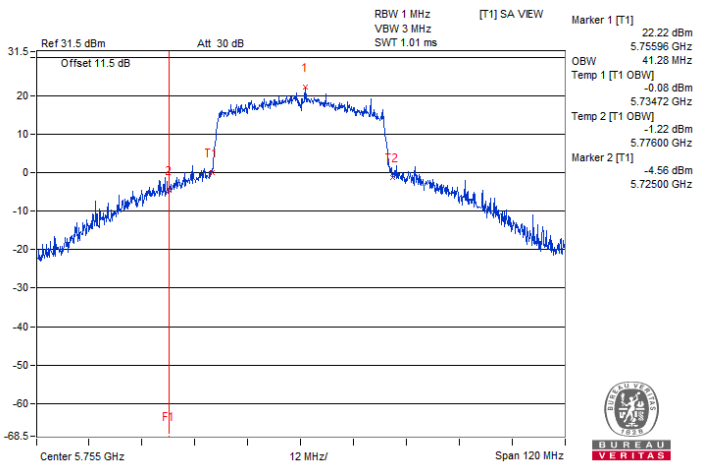
802.11ax (HE20) / Chain 0 : CH 149



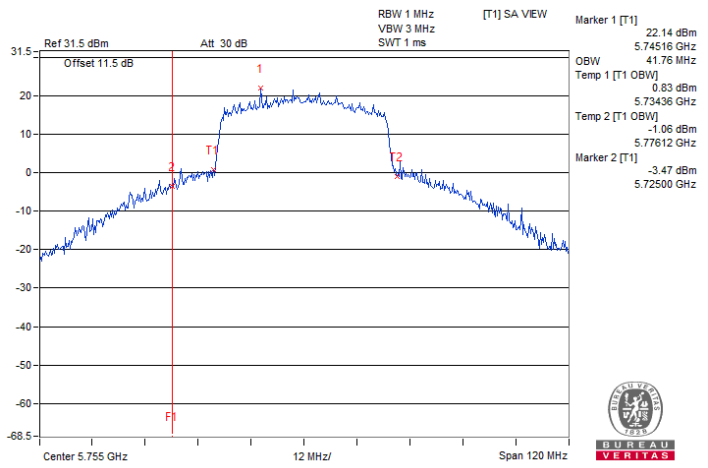
802.11ax (HE20) / Chain 1 : CH 149

Spectrum Plot for nearby DFS band

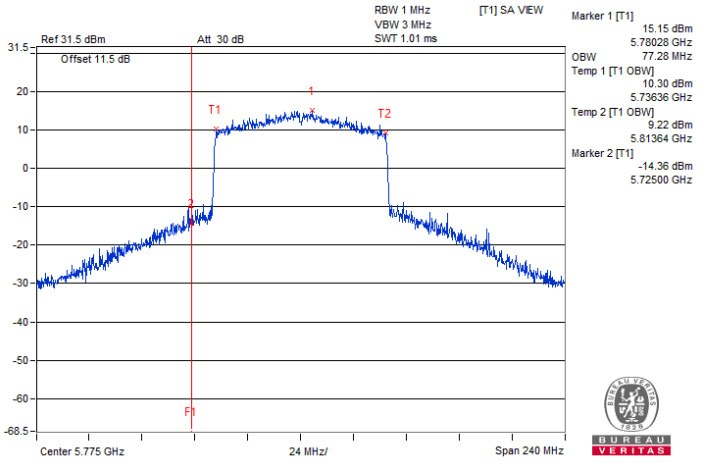
(DFS is required, if 99% OCP straddle into U-NII-2C)



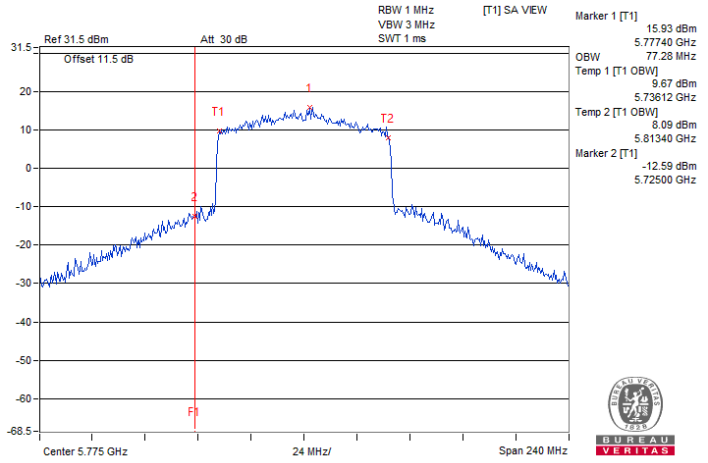
802.11ax (HE40) / Chain 0 : CH 151



802.11ax (HE40) / Chain 1 : CH 151



802.11ax (HE80) / Chain 0 : CH 155



802.11ax (HE80) / Chain 1 : CH 155

7.6 Frequency Stability

Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 60% RH	Tested By:	Ivan Tseng

Frequency Stability Versus Temperature									
Operating Frequency: 5180 MHz									
Temp. (℃)	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
40	120	5179.9804	Pass	5179.9845	Pass	5179.9813	Pass	5179.9832	Pass
30	120	5179.998	Pass	5179.999	Pass	5179.9973	Pass	5179.9973	Pass
20	120	5179.9886	Pass	5179.9913	Pass	5179.9884	Pass	5179.9896	Pass
10	120	5179.9999	Pass	5180.0016	Pass	5180.0002	Pass	5180.0007	Pass
0	120	5180.0167	Pass	5180.0165	Pass	5180.0159	Pass	5180.0177	Pass

Frequency Stability Versus Voltage									
Operating Frequency: 5180 MHz									
Temp. (℃)	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	5179.9912	Pass	5179.9934	Pass	5179.9906	Pass	5179.9912	Pass
	120	5179.9886	Pass	5179.9913	Pass	5179.9884	Pass	5179.9896	Pass
	102	5179.979	Pass	5179.9793	Pass	5179.9808	Pass	5179.9778	Pass

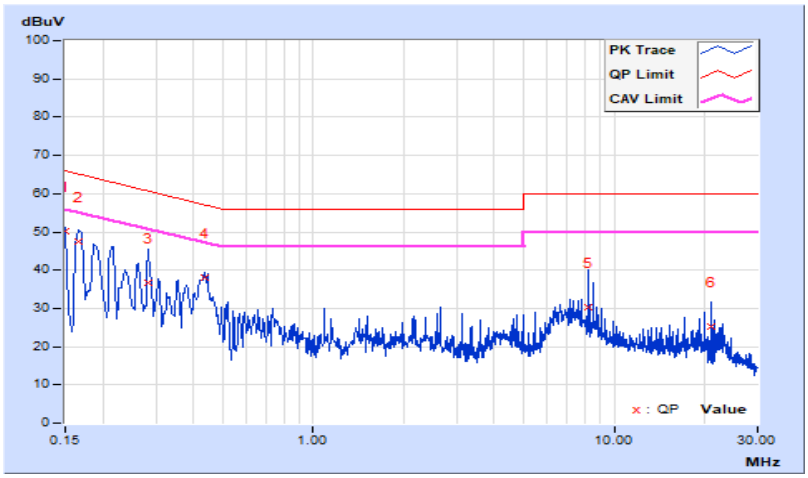
7.7 AC Power Conducted Emissions

RF Mode	802.11ax (HE20)	**Channel**	CH 157：5785 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	Rex Wang		

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	0.15000	9.66	40.46	21.67	50.12	31.33	66.00	56.00	-15.88	-24.67
2	0.16600	9.67	37.76	21.61	47.43	31.28	65.16	55.16	-17.73	-23.88
3	0.28200	9.74	26.94	14.85	36.68	24.59	60.76	50.76	-24.08	-26.17
4	**0.43400**	**9.79**	**28.37**	**22.78**	**38.16**	**32.57**	**57.18**	**47.18**	**-19.02**	**-14.61**
5	8.23800	10.00	20.44	7.39	30.44	17.39	60.00	50.00	-29.56	-32.61
6	21.08600	10.07	15.32	2.42	25.39	12.49	60.00	50.00	-34.61	-37.51

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

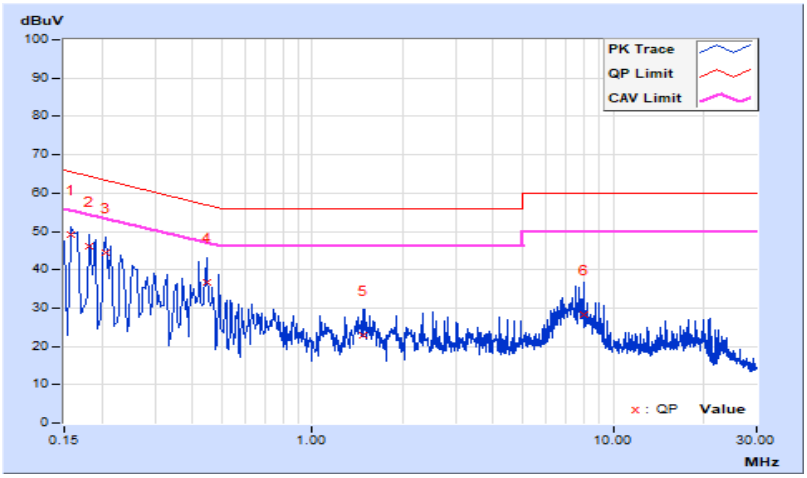


RF Mode	802.11ax (HE20)	Channel	CH 157：5785 MHz
Frequency Range	150 kHz ~ 30 MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 75% RH
Tested By	Rex Wang		

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	0.15800	9.67	39.33	22.16	49.00	31.83	65.57	55.57	-16.57	-23.74
2	0.18200	9.69	36.52	20.93	46.21	30.62	64.39	54.39	-18.18	-23.77
3	0.20600	9.70	34.62	17.42	44.32	27.12	63.37	53.37	-19.05	-26.25
4	0.44600	9.78	27.00	16.10	36.78	25.88	56.95	46.95	-20.17	-21.07
5	1.48200	9.86	13.13	4.95	22.99	14.81	56.00	46.00	-33.01	-31.19
6	7.96200	10.03	18.19	6.70	28.22	16.73	60.00	50.00	-31.78	-33.27

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



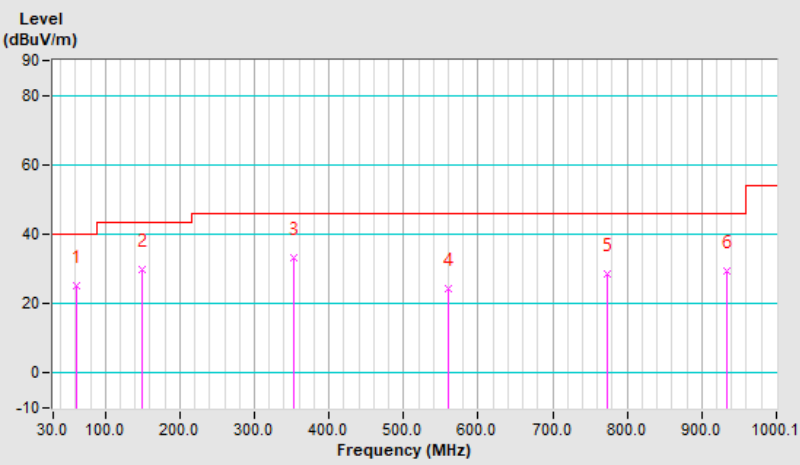
7.8 Unwanted Emissions below 1 GHz

RF Mode	802.11ax (HE20)	**Channel**	CH 157：5785 MHz
Frequency Range	30 MHz ~ 1 GHz	**Detector Function & Bandwidth**	QP: RB=120kHz, DET=Quasi-Peak
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	22°C, 68% RH
Tested By	Vincent Chen		

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	61.04	25.0 QP	40.0	-15.0	2.00 H	43	38.2	-13.2
2	148.35	29.7 QP	43.5	-13.8	2.00 H	108	42.1	-12.4
3	352.07	33.4 QP	46.0	-12.6	1.00 H	153	44.2	-10.8
4	559.68	24.2 QP	46.0	-21.8	1.50 H	70	30.3	-6.1
5	773.10	28.4 QP	46.0	-17.6	2.00 H	18	30.1	-1.7
6	934.13	29.4 QP	46.0	-16.6	1.50 H	293	30.1	-0.7

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 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.

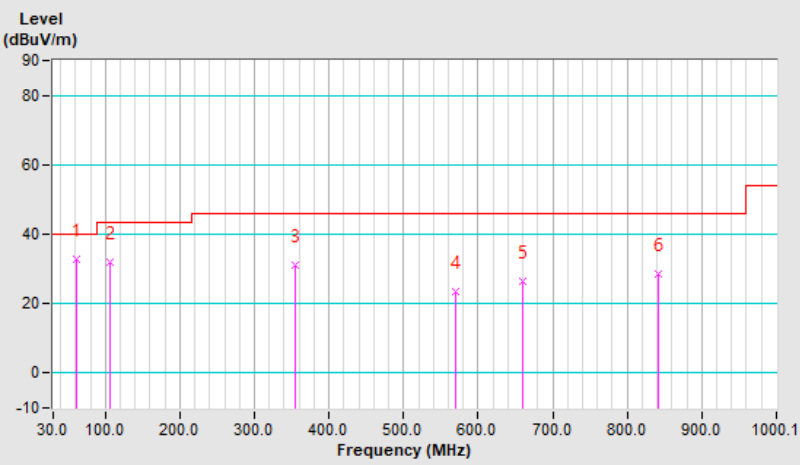


RF Mode	802.11ax (HE20)	**Channel**	CH 157：5785 MHz
Frequency Range	30 MHz ~ 1 GHz	**Detector Function & Bandwidth**	QP: RB=120kHz, DET=Quasi-Peak
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	22°C, 68% RH
Tested By	Vincent Chen		

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	**61.04**	**33.0 QP**	**40.0**	**-7.0**	**1.00 V**	**128**	**46.2**	**-13.2**
2	106.64	31.9 QP	43.5	-11.6	1.50 V	218	47.5	-15.6
3	354.01	31.3 QP	46.0	-14.7	1.00 V	100	41.9	-10.6
4	569.38	23.3 QP	46.0	-22.7	2.00 V	18	29.3	-6.0
5	659.60	26.4 QP	46.0	-19.6	2.00 V	160	30.8	-4.4
6	841.00	28.7 QP	46.0	-17.3	1.00 V	324	30.1	-1.4

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.



7.9 Unwanted Emissions above 1 GHz

RF Mode	802.11a	**Channel**	CH 36：5180 MHz
Frequency Range	1 GHz ~ 40 GHz	**Detector Function & Bandwidth**	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	20.9°C, 71.3% RH
Tested By	Vincent Chen		

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	2.82 H	170	26.1	41.7
2	5150.00	50.3 AV	54.0	-3.7	2.82 H	170	8.6	41.7
3	*5180.00	117.2 PK			2.82 H	170	75.6	41.6
4	*5180.00	109.2 AV			2.82 H	170	67.6	41.6
5	#10360.00	57.9 PK	68.2	-10.3	1.52 H	267	45.4	12.5
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	5150.00	67.6 PK	74.0	-6.4	1.30 V	161	25.9	41.7
2	5150.00	52.9 AV	54.0	-1.1	1.30 V	161	11.2	41.7
3	*5180.00	119.4 PK			1.30 V	161	77.8	41.6
4	*5180.00	111.7 AV			1.30 V	161	70.1	41.6
5	#10360.00	58.8 PK	68.2	-9.4	2.32 V	227	46.3	12.5

Remarks:

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

RF Mode	802.11a	Channel	CH 40：5200 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	20.9°C, 71.3% RH
Tested By	Vincent Chen		

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	67.1 PK	74.0	-6.9	2.79 H	169	25.4	41.7
2	5150.00	51.3 AV	54.0	-2.7	2.79 H	169	9.6	41.7
3	*5200.00	121.0 PK			2.79 H	169	79.6	41.4
4	*5200.00	112.7 AV			2.79 H	169	71.3	41.4
5	#10400.00	57.9 PK	68.2	-10.3	1.52 H	235	45.6	12.3
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	5150.00	69.1 PK	74.0	-4.9	1.24 V	160	27.4	41.7
2	5150.00	53.0 AV	54.0	-1.0	1.24 V	160	11.3	41.7
3	*5200.00	122.9 PK			1.24 V	160	81.5	41.4
4	*5200.00	115.5 AV			1.24 V	160	74.1	41.4
5	#10400.00	58.5 PK	68.2	-9.7	2.32 V	334	46.2	12.3

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	802.11a	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=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	20.9°C, 71.3% RH
Tested By	Vincent Chen		

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	60.1 PK	74.0	-13.9	2.78 H	165	18.4	41.7
2	5150.00	48.4 AV	54.0	-5.6	2.78 H	165	6.7	41.7
3	*5240.00	122.6 PK			2.78 H	165	81.2	41.4
4	*5240.00	114.0 AV			2.78 H	165	72.6	41.4
5	5350.00	58.5 PK	74.0	-15.5	2.78 H	165	17.1	41.4
6	5350.00	47.3 AV	54.0	-6.7	2.78 H	165	5.9	41.4
7	#10480.00	58.1 PK	68.2	-10.1	1.65 H	256	45.1	13.0
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	68.0 PK	74.0	-6.0	1.47 V	158	26.3	41.7
2	5150.00	51.0 AV	54.0	-3.0	1.47 V	158	9.3	41.7
3	*5240.00	125.1 PK			1.47 V	158	83.7	41.4
4	*5240.00	116.4 AV			1.47 V	158	75.0	41.4
5	5350.00	62.7 PK	74.0	-11.3	1.47 V	158	21.3	41.4
6	5350.00	49.4 AV	54.0	-4.6	1.47 V	158	8.0	41.4
7	#10480.00	59.4 PK	68.2	-8.8	2.23 V	268	46.4	13.0

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 52：5260 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	20.9°C, 71.3% RH
Tested By	Vincent Chen		

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	56.9 PK	74.0	-17.1	2.55 H	180	15.2	41.7
2	5150.00	47.6 AV	54.0	-6.4	2.55 H	180	5.9	41.7
3	*5260.00	121.3 PK			2.55 H	180	79.9	41.4
4	*5260.00	113.7 AV			2.55 H	180	72.3	41.4
5	5460.00	58.6 PK	74.0	-15.4	2.55 H	180	16.9	41.7
6	5460.00	47.1 AV	54.0	-6.9	2.55 H	180	5.4	41.7
7	#10520.00	58.6 PK	68.2	-9.6	3.44 H	242	45.5	13.1
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	59.6 PK	74.0	-14.4	1.27 V	160	17.9	41.7
2	5150.00	49.7 AV	54.0	-4.3	1.27 V	160	8.0	41.7
3	*5260.00	125.2 PK			1.27 V	160	83.8	41.4
4	*5260.00	117.1 AV			1.27 V	160	75.7	41.4
5	5350.00	67.2 PK	74.0	-6.8	1.27 V	160	25.8	41.4
6	5350.00	52.9 AV	54.0	-1.1	1.27 V	160	11.5	41.4
7	#10520.00	59.2 PK	68.2	-9.0	2.16 V	272	46.1	13.1

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 60：5300 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	20.9°C, 71.3% RH
Tested By	Vincent Chen		

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	*5300.00	119.0 PK			2.53 H	170	77.7	41.3
2	*5300.00	111.3 AV			2.53 H	170	70.0	41.3
3	5350.00	65.9 PK	74.0	-8.1	2.53 H	170	24.5	41.4
4	5350.00	49.1 AV	54.0	-4.9	2.53 H	170	7.7	41.4
5	10600.00	59.0 PK	74.0	-15.0	2.44 H	7	45.8	13.2
6	10600.00	49.3 AV	54.0	-4.7	2.44 H	7	36.1	13.2
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	*5300.00	122.0 PK			1.21 V	160	80.7	41.3
2	*5300.00	114.2 AV			1.21 V	160	72.9	41.3
3	5350.00	66.2 PK	74.0	-7.8	1.21 V	160	24.8	41.4
4	5350.00	53.0 AV	54.0	-1.0	1.21 V	160	11.6	41.4
5	10600.00	59.6 PK	74.0	-14.4	2.24 V	278	46.4	13.2
6	10600.00	49.6 AV	54.0	-4.4	2.24 V	278	36.4	13.2

Remarks:

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

RF Mode	802.11a	Channel	CH 64：5320 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	20.9°C, 71.3% RH
Tested By	Vincent Chen		

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	*5320.00	116.4 PK			2.71 H	171	75.0	41.4
2	*5320.00	108.5 AV			2.71 H	171	67.1	41.4
3	5350.00	65.5 PK	74.0	-8.5	2.71 H	171	24.1	41.4
4	5350.00	50.2 AV	54.0	-3.8	2.71 H	171	8.8	41.4
5	10640.00	59.5 PK	74.0	-14.5	1.15 H	284	46.0	13.5
6	10640.00	49.5 AV	54.0	-4.5	1.15 H	284	36.0	13.5
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	*5320.00	118.0 PK			1.18 V	159	76.6	41.4
2	*5320.00	110.8 AV			1.18 V	159	69.4	41.4
3	5350.00	69.3 PK	74.0	-4.7	1.18 V	159	27.9	41.4
4	5350.00	53.1 AV	54.0	-0.9	1.18 V	159	11.7	41.4
5	10640.00	60.2 PK	74.0	-13.8	2.48 V	116	46.7	13.5
6	10640.00	49.7 AV	54.0	-4.3	2.48 V	116	36.2	13.5

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.

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=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	20.9°C, 71.3% RH
Tested By	Vincent Chen		

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	#5618.00	58.0 PK	68.2	-10.2	2.46 H	164	16.0	42.0
2	*5745.00	120.5 PK			2.46 H	164	78.2	42.3
3	*5745.00	113.1 AV			2.46 H	164	70.8	42.3
4	#5928.40	56.5 PK	68.2	-11.7	2.46 H	164	13.4	43.1
5	11490.00	61.8 PK	74.0	-12.2	2.61 H	228	46.2	15.6
6	11490.00	49.1 AV	54.0	-4.9	2.61 H	228	33.5	15.6
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	66.5 PK	68.2	-1.7	1.13 V	159	24.5	42.0
2	*5745.00	123.8 PK			1.13 V	159	81.5	42.3
3	*5745.00	115.5 AV			1.13 V	159	73.2	42.3
4	#5975.60	56.2 PK	68.2	-12.0	1.13 V	159	13.2	43.0
5	11490.00	62.3 PK	74.0	-11.7	1.58 V	317	46.7	15.6
6	11490.00	49.4 AV	54.0	-4.6	1.58 V	317	33.8	15.6

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.

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=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	20.9°C, 71.3% RH
Tested By	Vincent Chen		

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	#5637.60	58.9 PK	68.2	-9.3	1.60 H	161	16.9	42.0
2	*5785.00	121.0 PK			1.60 H	161	78.5	42.5
3	*5785.00	113.2 AV			1.60 H	161	70.7	42.5
4	#5938.40	58.7 PK	68.2	-9.5	1.60 H	161	15.6	43.1
5	11570.00	61.8 PK	74.0	-12.2	2.71 H	6	45.9	15.9
6	11570.00	49.1 AV	54.0	-4.9	2.71 H	6	33.2	15.9
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	#5643.20	66.6 PK	68.2	-1.6	2.22 V	161	24.6	42.0
2	*5785.00	124.6 PK			2.22 V	161	82.1	42.5
3	*5785.00	116.6 AV			2.22 V	161	74.1	42.5
4	#5926.40	64.3 PK	68.2	-3.9	2.22 V	161	21.2	43.1
5	11570.00	62.5 PK	74.0	-11.5	2.99 V	229	46.6	15.9
6	11570.00	49.3 AV	54.0	-4.7	2.99 V	229	33.4	15.9

Remarks:

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

RF Mode	802.11a	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=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	20.9°C, 71.3% RH
Tested By	Vincent Chen		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5632.40	55.2 PK	68.2	-13.0	1.62 H	165	13.2	42.0
2	*5825.00	121.4 PK			1.62 H	165	78.8	42.6
3	*5825.00	113.6 AV			1.62 H	165	71.0	42.6
4	#5926.00	61.8 PK	68.2	-6.4	1.62 H	165	18.7	43.1
5	11650.00	61.5 PK	74.0	-12.5	3.13 H	323	46.1	15.4
6	11650.00	49.3 AV	54.0	-4.7	3.13 H	323	33.9	15.4
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	#5649.60	57.5 PK	68.2	-10.7	2.23 V	164	15.5	42.0
2	*5825.00	125.3 PK			2.23 V	164	82.7	42.6
3	*5825.00	117.1 AV			2.23 V	164	74.5	42.6
4	#5929.20	67.2 PK	68.2	-1.0	2.23 V	164	24.1	43.1
5	11650.00	61.9 PK	74.0	-12.1	2.75 V	13	46.5	15.4
6	11650.00	49.6 AV	54.0	-4.4	2.75 V	13	34.2	15.4

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	802.11ax (HE20)	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=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	20.9°C, 71.3% RH
Tested By	Vincent Chen		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	63.2 PK	74.0	-10.8	2.85 H	178	21.5	41.7
2	5150.00	50.2 AV	54.0	-3.8	2.85 H	178	8.5	41.7
3	*5180.00	116.2 PK			2.85 H	178	74.6	41.6
4	*5180.00	106.4 AV			2.85 H	178	64.8	41.6
5	#10360.00	58.5 PK	68.2	-9.7	1.39 H	259	46.0	12.5
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	5150.00	66.5 PK	74.0	-7.5	1.30 V	161	24.8	41.7
2	5150.00	52.7 AV	54.0	-1.3	1.30 V	161	11.0	41.7
3	*5180.00	119.6 PK			1.30 V	161	78.0	41.6
4	*5180.00	109.3 AV			1.30 V	161	67.7	41.6
5	#10360.00	59.0 PK	68.2	-9.2	3.63 V	344	46.5	12.5

Remarks:

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

RF Mode	802.11ax (HE20)	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=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	20.9°C, 71.3% RH
Tested By	Vincent Chen		

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	61.5 PK	74.0	-12.5	2.76 H	168	19.8	41.7
2	5150.00	50.4 AV	54.0	-3.6	2.76 H	168	8.7	41.7
3	*5200.00	120.2 PK			2.76 H	168	78.8	41.4
4	*5200.00	110.2 AV			2.76 H	168	68.8	41.4
5	#10400.00	58.5 PK	68.2	-9.7	2.03 H	228	46.2	12.3
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	5150.00	66.3 PK	74.0	-7.7	1.24 V	161	24.6	41.7
2	5150.00	53.0 AV	54.0	-1.0	1.24 V	161	11.3	41.7
3	*5200.00	123.6 PK			1.24 V	161	82.2	41.4
4	*5200.00	113.4 AV			1.24 V	161	72.0	41.4
5	#10400.00	58.7 PK	68.2	-9.5	3.10 V	107	46.4	12.3

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	802.11ax (HE20)	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=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	20.9°C, 71.3% RH
Tested By	Vincent Chen		

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	60.4 PK	74.0	-13.6	2.71 H	170	18.7	41.7
2	5150.00	49.8 AV	54.0	-4.2	2.71 H	170	8.1	41.7
3	*5240.00	122.8 PK			2.71 H	170	81.4	41.4
4	*5240.00	113.1 AV			2.71 H	170	71.7	41.4
5	5350.00	58.2 PK	74.0	-15.8	2.71 H	170	16.8	41.4
6	5350.00	48.5 AV	54.0	-5.5	2.71 H	170	7.1	41.4
7	#10480.00	59.5 PK	68.2	-8.7	1.87 H	333	46.5	13.0
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	68.1 PK	74.0	-5.9	1.26 V	160	26.4	41.7
2	5150.00	53.1 AV	54.0	-0.9	1.26 V	160	11.4	41.7
3	*5240.00	126.1 PK			1.26 V	160	84.7	41.4
4	*5240.00	116.5 AV			1.26 V	160	75.1	41.4
5	5350.00	63.1 PK	74.0	-10.9	1.26 V	160	21.7	41.4
6	5350.00	51.6 AV	54.0	-2.4	1.26 V	160	10.2	41.4
7	#10480.00	59.8 PK	68.2	-8.4	2.40 V	153	46.8	13.0

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	802.11ax (HE20)	Channel	CH 52：5260 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	20.9°C, 71.3% RH
Tested By	Vincent Chen		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	58.5 PK	74.0	-15.5	2.86 H	169	16.8	41.7
2	5150.00	47.9 AV	54.0	-6.1	2.86 H	169	6.2	41.7
3	*5260.00	122.7 PK			2.86 H	169	81.3	41.4
4	*5260.00	112.8 AV			2.86 H	169	71.4	41.4
5	5350.00	60.1 PK	74.0	-13.9	2.86 H	169	18.7	41.4
6	5350.00	47.6 AV	54.0	-6.4	2.86 H	169	6.2	41.4
7	#10520.00	58.5 PK	68.2	-9.7	1.52 H	287	45.4	13.1
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	63.6 PK	74.0	-10.4	1.42 V	153	21.9	41.7
2	5150.00	49.6 AV	54.0	-4.4	1.42 V	153	7.9	41.7
3	*5260.00	126.4 PK			1.42 V	153	85.0	41.4
4	*5260.00	116.2 AV			1.42 V	153	74.8	41.4
5	5350.00	68.5 PK	74.0	-5.5	1.42 V	153	27.1	41.4
6	5350.00	52.4 AV	54.0	-1.6	1.42 V	153	11.0	41.4
7	#10520.00	59.6 PK	68.2	-8.6	2.31 V	314	46.5	13.1

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	802.11ax (HE20)	Channel	CH 60：5300 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	20.9°C, 71.3% RH
Tested By	Vincent Chen		

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	*5300.00	120.2 PK			2.84 H	172	78.9	41.3
2	*5300.00	110.2 AV			2.84 H	172	68.9	41.3
3	5350.00	62.7 PK	74.0	-11.3	2.84 H	172	21.3	41.4
4	5350.00	49.8 AV	54.0	-4.2	2.84 H	172	8.4	41.4
5	10600.00	58.8 PK	74.0	-15.2	1.56 H	247	45.6	13.2
6	10600.00	48.9 AV	54.0	-5.1	1.56 H	247	35.7	13.2
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	*5300.00	124.2 PK			1.49 V	153	82.9	41.3
2	*5300.00	112.9 AV			1.49 V	153	71.6	41.3
3	5350.00	71.0 PK	74.0	-3.0	1.49 V	153	29.6	41.4
4	5350.00	53.1 AV	54.0	-0.9	1.49 V	153	11.7	41.4
5	10600.00	59.5 PK	74.0	-14.5	2.34 V	352	46.3	13.2
6	10600.00	49.3 AV	54.0	-4.7	2.34 V	352	36.1	13.2

Remarks:

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

RF Mode	802.11ax (HE20)	Channel	CH 64：5320 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	20.9°C, 71.3% RH
Tested By	Vincent Chen		

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	*5320.00	118.9 PK			2.73 H	177	77.5	41.4
2	*5320.00	107.7 AV			2.73 H	177	66.3	41.4
3	5350.00	67.1 PK	74.0	-6.9	2.73 H	177	25.7	41.4
4	5350.00	51.3 AV	54.0	-2.7	2.73 H	177	9.9	41.4
5	10640.00	59.3 PK	74.0	-14.7	1.52 H	269	45.8	13.5
6	10640.00	48.9 AV	54.0	-5.1	1.52 H	269	35.4	13.5
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	*5320.00	121.1 PK			1.48 V	152	79.7	41.4
2	*5320.00	110.5 AV			1.48 V	152	69.1	41.4
3	5350.00	69.7 PK	74.0	-4.3	1.48 V	152	28.3	41.4
4	5350.00	53.7 AV	54.0	-0.3	1.48 V	152	12.3	41.4
5	10640.00	60.0 PK	74.0	-14.0	2.06 V	277	46.5	13.5
6	10640.00	49.8 AV	54.0	-4.2	2.06 V	277	36.3	13.5

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.

RF Mode	802.11ax (HE20)	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=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	20.9°C, 71.3% RH
Tested By	Vincent Chen		

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	#5635.60	57.2 PK	68.2	-11.0	1.67 H	173	15.2	42.0
2	*5745.00	121.9 PK			1.67 H	173	79.6	42.3
3	*5745.00	111.8 AV			1.67 H	173	69.5	42.3
4	#5959.20	55.1 PK	68.2	-13.1	1.67 H	173	12.1	43.0
5	11490.00	61.2 PK	74.0	-12.8	2.32 H	258	45.6	15.6
6	11490.00	49.4 AV	54.0	-4.6	2.32 H	258	33.8	15.6
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	#5644.80	63.2 PK	68.2	-5.0	1.78 V	149	21.2	42.0
2	*5745.00	125.3 PK			1.78 V	149	83.0	42.3
3	*5745.00	115.4 AV			1.78 V	149	73.1	42.3
4	#5926.40	57.2 PK	68.2	-11.0	1.78 V	149	14.1	43.1
5	11490.00	61.9 PK	74.0	-12.1	2.04 V	265	46.3	15.6
6	11490.00	49.7 AV	54.0	-4.3	2.04 V	265	34.1	15.6

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.

RF Mode	802.11ax (HE20)	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=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	20.9°C, 71.3% RH
Tested By	Vincent Chen		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5632.00	58.0 PK	68.2	-10.2	1.65 H	172	16.0	42.0
2	*5785.00	122.0 PK			1.65 H	172	79.5	42.5
3	*5785.00	112.4 AV			1.65 H	172	69.9	42.5
4	#5928.00	58.3 PK	68.2	-9.9	1.65 H	172	15.2	43.1
5	11570.00	61.2 PK	74.0	-12.8	2.54 H	236	45.3	15.9
6	11570.00	49.6 AV	54.0	-4.4	2.54 H	236	33.7	15.9
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5644.80	65.3 PK	68.2	-2.9	1.67 V	148	23.3	42.0
2	*5785.00	125.5 PK			1.67 V	148	83.0	42.5
3	*5785.00	115.9 AV			1.67 V	148	73.4	42.5
4	#5936.00	66.4 PK	68.2	-1.8	1.67 V	148	23.3	43.1
5	11570.00	62.4 PK	74.0	-11.6	2.32 V	245	46.5	15.9
6	11570.00	50.0 AV	54.0	-4.0	2.32 V	245	34.1	15.9

Remarks:

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

RF Mode	802.11ax (HE20)	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=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	20.9°C, 71.3% RH
Tested By	Vincent Chen		

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	56.9 PK	68.2	-11.3	1.73 H	160	14.9	42.0
2	*5825.00	122.6 PK			1.73 H	160	80.0	42.6
3	*5825.00	112.2 AV			1.73 H	160	69.6	42.6
4	#5943.60	56.4 PK	68.2	-11.8	1.73 H	160	13.3	43.1
5	11650.00	60.8 PK	74.0	-13.2	2.04 H	341	45.4	15.4
6	11650.00	49.5 AV	54.0	-4.5	2.04 H	341	34.1	15.4
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	#5619.60	58.1 PK	68.2	-10.1	1.72 V	148	16.1	42.0
2	*5825.00	124.2 PK			1.72 V	148	81.6	42.6
3	*5825.00	114.2 AV			1.72 V	148	71.6	42.6
4	#5937.60	59.5 PK	68.2	-8.7	1.72 V	148	16.4	43.1
5	11650.00	61.8 PK	74.0	-12.2	2.52 V	241	46.4	15.4
6	11650.00	49.7 AV	54.0	-4.3	2.52 V	241	34.3	15.4

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	802.11ax (HE40)	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=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	20.9°C, 71.3% RH
Tested By	Vincent Chen		

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	67.6 PK	74.0	-6.4	2.84 H	171	25.9	41.7
2	5150.00	51.3 AV	54.0	-2.7	2.84 H	171	9.6	41.7
3	*5190.00	114.2 PK			2.84 H	171	72.8	41.4
4	*5190.00	103.1 AV			2.84 H	171	61.7	41.4
5	#10380.00	57.6 PK	68.2	-10.6	1.52 H	206	45.3	12.3
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	5150.00	71.0 PK	74.0	-3.0	1.49 V	152	29.3	41.7
2	5150.00	53.0 AV	54.0	-1.0	1.49 V	152	11.3	41.7
3	*5190.00	116.2 PK			1.49 V	152	74.8	41.4
4	*5190.00	105.3 AV			1.49 V	152	63.9	41.4
5	#10380.00	58.7 PK	68.2	-9.5	2.23 V	197	46.4	12.3

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	802.11ax (HE40)	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=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	20.9°C, 71.3% RH
Tested By	Vincent Chen		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	63.8 PK	74.0	-10.2	1.91 H	173	22.1	41.7
2	5150.00	50.8 AV	54.0	-3.2	1.91 H	173	9.1	41.7
3	*5230.00	116.4 PK			1.91 H	173	75.0	41.4
4	*5230.00	106.0 AV			1.91 H	173	64.6	41.4
5	5350.00	58.1 PK	74.0	-15.9	1.91 H	173	16.7	41.4
6	5350.00	46.9 AV	54.0	-7.1	1.91 H	173	5.5	41.4
7	#10460.00	58.1 PK	68.2	-10.1	2.38 H	64	45.3	12.8
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	68.5 PK	74.0	-5.5	1.38 V	152	26.8	41.7
2	5150.00	53.7 AV	54.0	-0.3	1.38 V	152	12.0	41.7
3	*5230.00	120.2 PK			1.38 V	152	78.8	41.4
4	*5230.00	110.1 AV			1.38 V	152	68.7	41.4
5	5350.00	64.9 PK	74.0	-9.1	1.38 V	152	23.5	41.4
6	5350.00	48.9 AV	54.0	-5.1	1.38 V	152	7.5	41.4
7	#10460.00	59.5 PK	68.2	-8.7	2.21 V	305	46.7	12.8

Remarks:

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

RF Mode	802.11ax (HE40)	Channel	CH 54：5270 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	20.9°C, 71.3% RH
Tested By	Vincent Chen		

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	57.7 PK	74.0	-16.3	1.72 H	161	16.0	41.7
2	5150.00	46.5 AV	54.0	-7.5	1.72 H	161	4.8	41.7
3	*5270.00	115.8 PK			1.72 H	161	74.4	41.4
4	*5270.00	106.1 AV			1.72 H	161	64.7	41.4
5	5350.00	61.6 PK	74.0	-12.4	1.72 H	161	20.2	41.4
6	5350.00	49.2 AV	54.0	-4.8	1.72 H	161	7.8	41.4
7	#10540.00	58.6 PK	68.2	-9.6	2.87 H	17	45.4	13.2
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	5150.00	59.1 PK	74.0	-14.9	1.45 V	152	17.4	41.7
2	5150.00	48.9 AV	54.0	-5.1	1.45 V	152	7.2	41.7
3	*5270.00	121.1 PK			1.45 V	152	79.7	41.4
4	*5270.00	109.6 AV			1.45 V	152	68.2	41.4
5	5350.00	68.5 PK	74.0	-5.5	1.45 V	152	27.1	41.4
6	5350.00	52.8 AV	54.0	-1.2	1.45 V	152	11.4	41.4
7	#10540.00	59.5 PK	68.2	-8.7	2.35 V	334	46.3	13.2

Remarks:

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

RF Mode	802.11ax (HE40)	Channel	CH 62：5310 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	20.9°C, 71.3% RH
Tested By	Vincent Chen		

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	*5310.00	113.8 PK			2.70 H	170	72.5	41.3
2	*5310.00	103.5 AV			2.70 H	170	62.2	41.3
3	5350.00	69.7 PK	74.0	-4.3	2.70 H	170	28.3	41.4
4	5350.00	50.6 AV	54.0	-3.4	2.70 H	170	9.2	41.4
5	10620.00	59.0 PK	74.0	-15.0	1.35 H	252	45.7	13.3
6	10620.00	48.8 AV	54.0	-5.2	1.35 H	252	35.5	13.3
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	*5310.00	116.3 PK			1.46 V	153	75.0	41.3
2	*5310.00	105.4 AV			1.46 V	153	64.1	41.3
3	5350.00	72.6 PK	74.0	-1.4	1.46 V	153	31.2	41.4
4	**5350.00**	**53.8 AV**	**54.0**	**-0.2**	**1.46 V**	**153**	**12.4**	**41.4**
5	10620.00	59.6 PK	74.0	-14.4	3.27 V	252	46.3	13.3
6	10620.00	49.8 AV	54.0	-4.2	3.27 V	252	36.5	13.3

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.

RF Mode	802.11ax (HE40)	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=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	20.9°C, 71.3% RH
Tested By	Vincent Chen		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5630.80	64.3 PK	68.2	-3.9	1.83 H	167	55.7	8.6
2	*5755.00	118.8 PK			1.83 H	167	76.5	42.3
3	*5755.00	108.6 AV			1.83 H	167	66.3	42.3
4	#5926.40	63.6 PK	68.2	-4.6	1.83 H	167	53.9	9.7
5	11510.00	61.2 PK	74.0	-12.8	2.35 H	332	45.5	15.7
6	11510.00	49.7 AV	54.0	-4.3	2.35 H	332	34.0	15.7
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	#5644.40	66.7 PK	68.2	-1.5	1.71 V	149	58.1	8.6
2	*5755.00	120.7 PK			1.71 V	149	78.4	42.3
3	*5755.00	111.4 AV			1.71 V	149	69.1	42.3
4	#5929.20	64.9 PK	68.2	-3.3	1.71 V	149	55.2	9.7
5	11510.00	61.9 PK	74.0	-12.1	2.32 V	204	46.2	15.7
6	11510.00	49.9 AV	54.0	-4.1	2.32 V	204	34.2	15.7

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.

RF Mode	802.11ax (HE40)	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=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	20.9°C, 71.3% RH
Tested By	Vincent Chen		

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	#5600.40	63.4 PK	68.2	-4.8	1.78 H	167	55.0	8.4
2	*5795.00	119.0 PK			1.78 H	167	76.5	42.5
3	*5795.00	109.2 AV			1.78 H	167	66.7	42.5
4	#5926.00	65.7 PK	68.2	-2.5	1.78 H	167	56.0	9.7
5	11590.00	61.1 PK	74.0	-12.9	2.35 H	325	45.2	15.9
6	11590.00	49.8 AV	54.0	-4.2	2.35 H	325	33.9	15.9
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	65.4 PK	68.2	-2.8	1.35 V	153	56.8	8.6
2	*5795.00	121.8 PK			1.35 V	153	79.3	42.5
3	*5795.00	111.4 AV			1.35 V	153	68.9	42.5
4	#5924.40	67.1 PK	68.6	-1.5	1.35 V	153	57.4	9.7
5	#5933.60	66.4 PK	68.2	-1.8	1.35 V	153	56.7	9.7
6	11590.00	62.2 PK	74.0	-11.8	2.32 V	207	46.3	15.9
7	11590.00	50.0 AV	54.0	-4.0	2.32 V	207	34.1	15.9

Remarks:

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

RF Mode	802.11ax (HE80)	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=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	20.9°C, 71.3% RH
Tested By	Vincent Chen		

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	68.7 PK	74.0	-5.3	2.06 H	157	27.0	41.7
2	5150.00	53.1 AV	54.0	-0.9	2.06 H	157	11.4	41.7
3	*5210.00	108.2 PK			2.06 H	157	66.7	41.5
4	*5210.00	97.9 AV			2.06 H	157	56.4	41.5
5	#10420.00	58.2 PK	68.2	-10.0	1.65 H	287	45.7	12.5
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	5150.00	70.2 PK	74.0	-3.8	1.39 V	149	28.5	41.7
2	5150.00	53.4 AV	54.0	-0.6	1.39 V	149	11.7	41.7
3	*5210.00	111.9 PK			1.39 V	149	70.4	41.5
4	*5210.00	101.0 AV			1.39 V	149	59.5	41.5
5	#10420.00	58.9 PK	68.2	-9.3	2.34 V	236	46.4	12.5

Remarks:

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

RF Mode	802.11ax (HE80)	Channel	CH 58：5290 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	20.9°C, 71.3% RH
Tested By	Vincent Chen		

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	*5290.00	107.1 PK			1.85 H	177	65.7	41.4
2	*5290.00	96.6 AV			1.85 H	177	55.2	41.4
3	5350.00	65.7 PK	74.0	-8.3	1.85 H	177	24.3	41.4
4	5350.00	50.9 AV	54.0	-3.1	1.85 H	177	9.5	41.4
5	#10580.00	59.1 PK	68.2	-9.1	2.36 H	277	45.8	13.3
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	*5290.00	109.2 PK			1.30 V	147	67.8	41.4
2	*5290.00	99.4 AV			1.30 V	147	58.0	41.4
3	5350.00	69.8 PK	74.0	-4.2	1.30 V	147	28.4	41.4
4	5350.00	53.0 AV	54.0	-1.0	1.30 V	147	11.6	41.4
5	#10580.00	60.0 PK	68.2	-8.2	2.32 V	198	46.7	13.3

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	802.11ax (HE80)	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=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	20.9°C, 71.3% RH
Tested By	Vincent Chen		

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	#5626.40	64.8 PK	68.2	-3.4	2.05 H	174	56.2	8.6
2	*5775.00	112.9 PK			2.05 H	174	70.5	42.4
3	*5775.00	101.9 AV			2.05 H	174	59.5	42.4
4	#5948.80	63.7 PK	68.2	-4.5	2.05 H	174	54.1	9.6
5	11550.00	61.2 PK	74.0	-12.8	1.35 H	265	45.4	15.8
6	11550.00	49.8 AV	54.0	-4.2	1.35 H	265	34.0	15.8
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5646.00	67.8 PK	68.2	-0.4	1.56 V	137	59.2	8.6
2	*5775.00	115.8 PK			1.56 V	137	73.4	42.4
3	*5775.00	104.8 AV			1.56 V	137	62.4	42.4
4	#5929.20	66.8 PK	68.2	-1.4	1.56 V	137	57.1	9.7
5	11550.00	62.3 PK	74.0	-11.7	2.34 V	297	46.5	15.8
6	11550.00	50.0 AV	54.0	-4.0	2.34 V	297	34.2	15.8

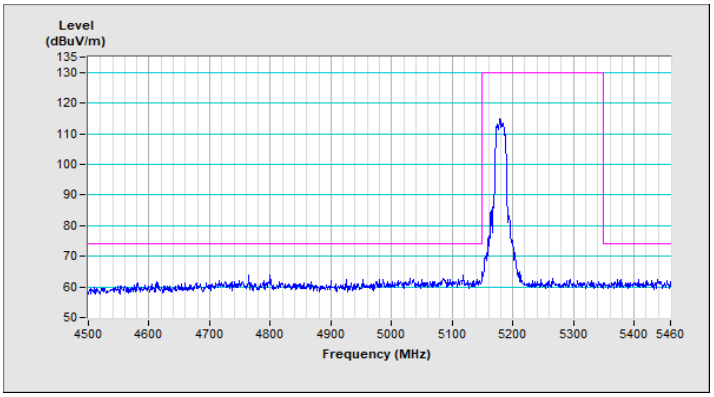
Remarks:

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

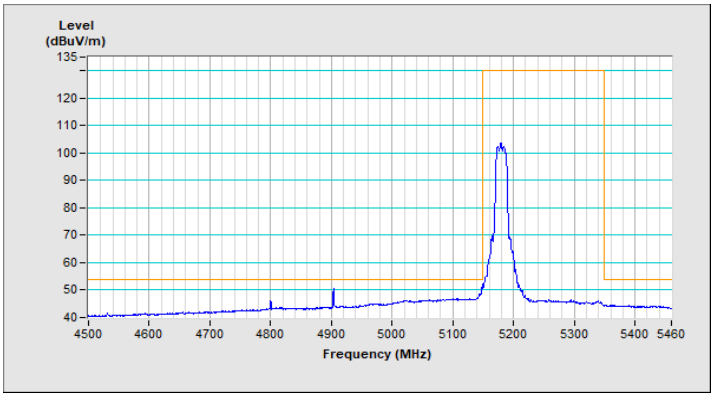
Plot of Band Edge

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=10 Hz, DET=Peak

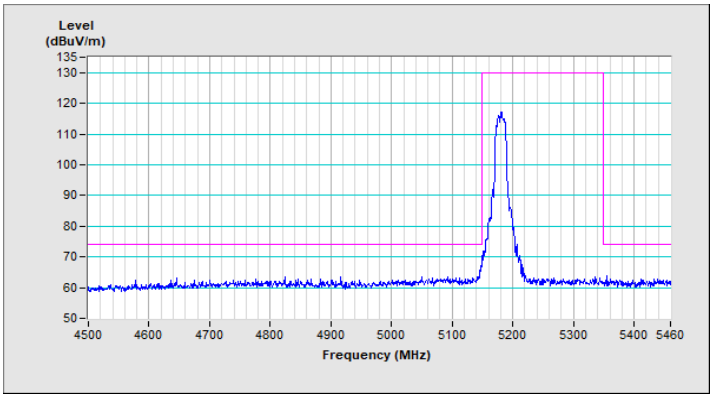
802.11a Channel 36



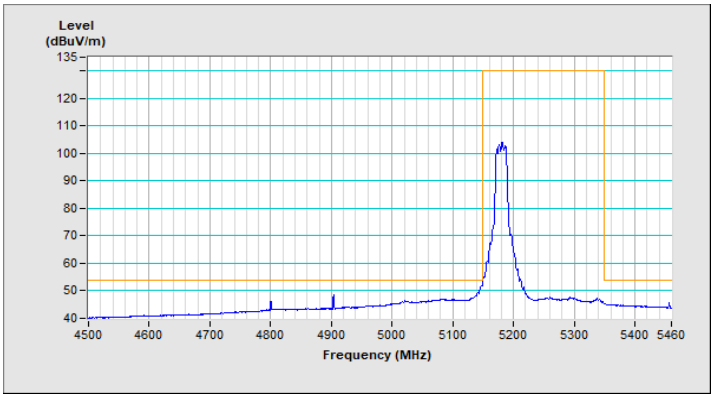
Horizontal (Peak)



Horizontal (Average)

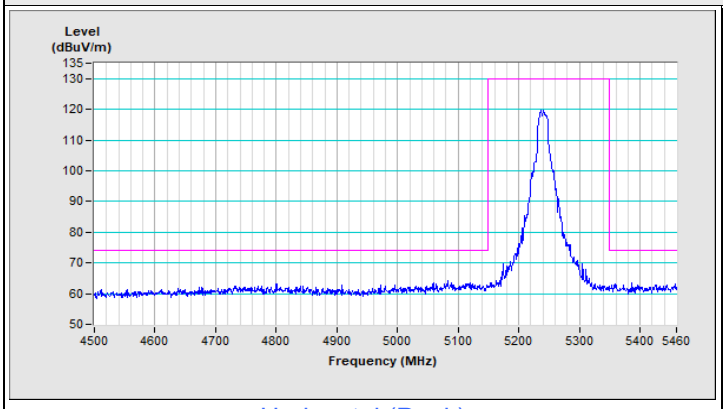


Vertical (Peak)

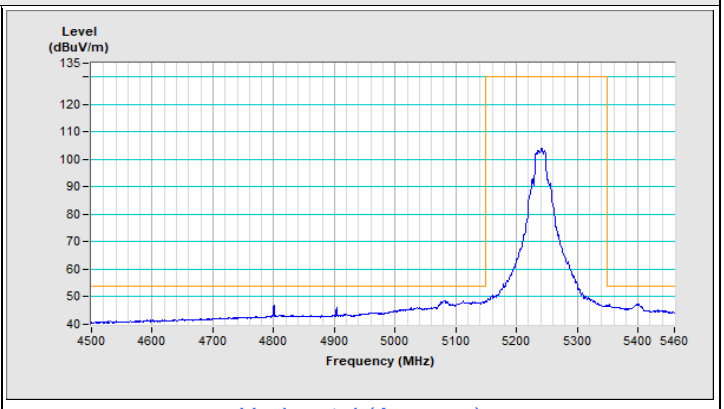


Vertical (Average)

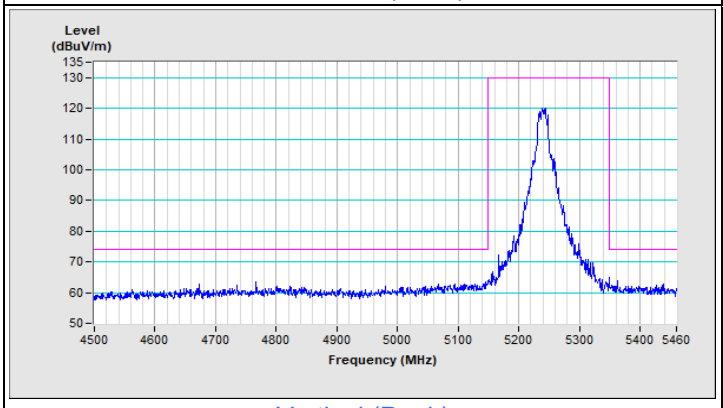
802.11a Channel 48



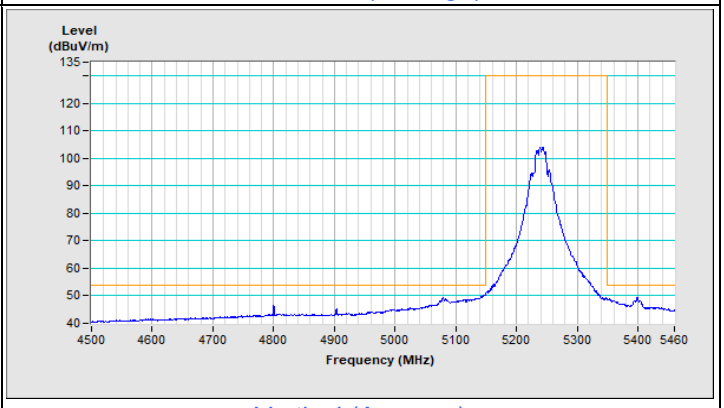
Horizontal (Peak)



Horizontal (Average)

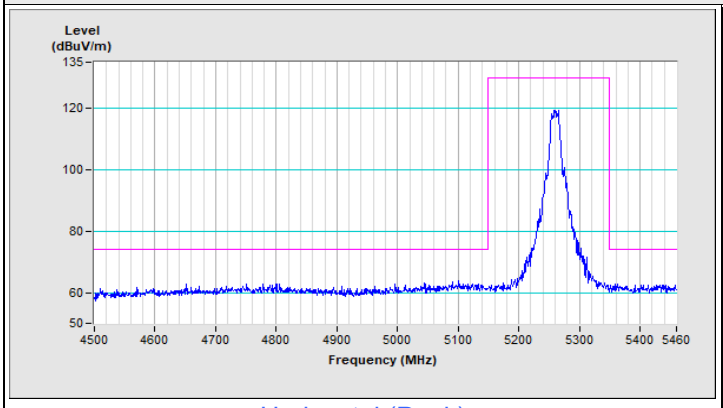


Vertical (Peak)

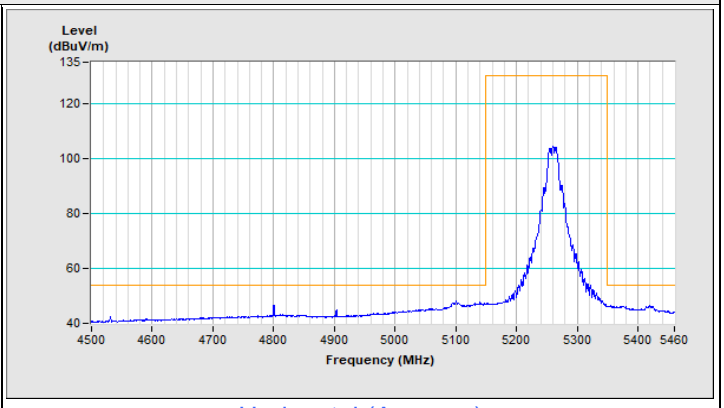


Vertical (Average)

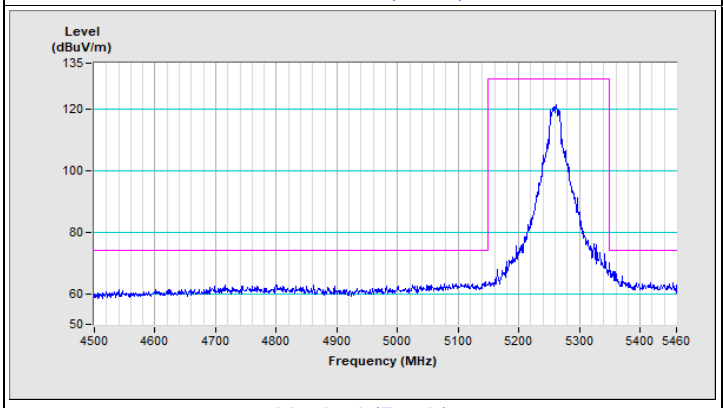
802.11a Channel 52



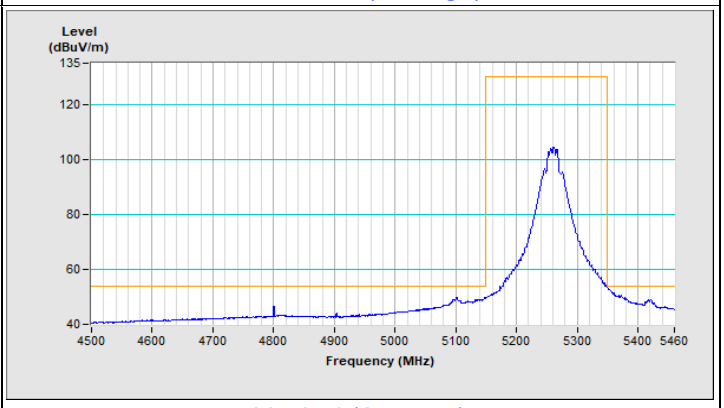
Horizontal (Peak)



Horizontal (Average)

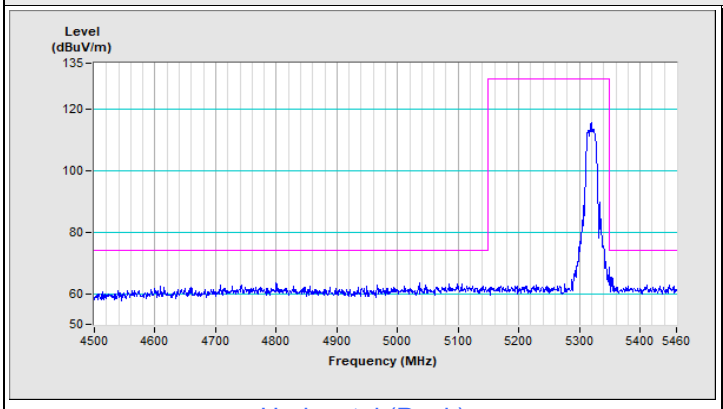


Vertical (Peak)

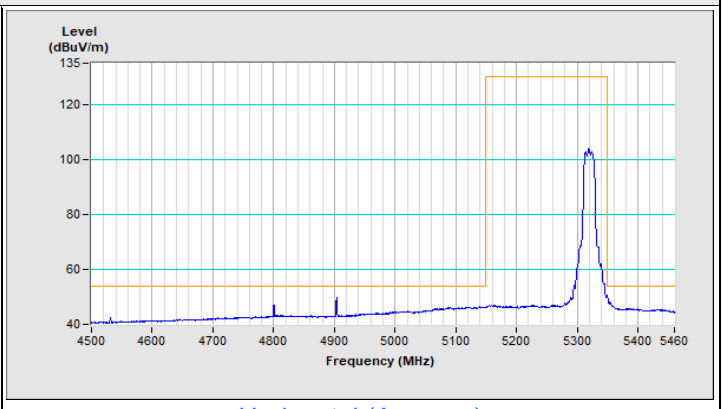


Vertical (Average)

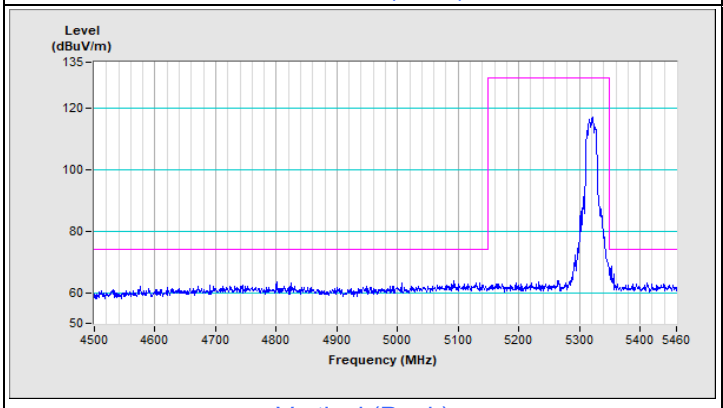
802.11a Channel 64



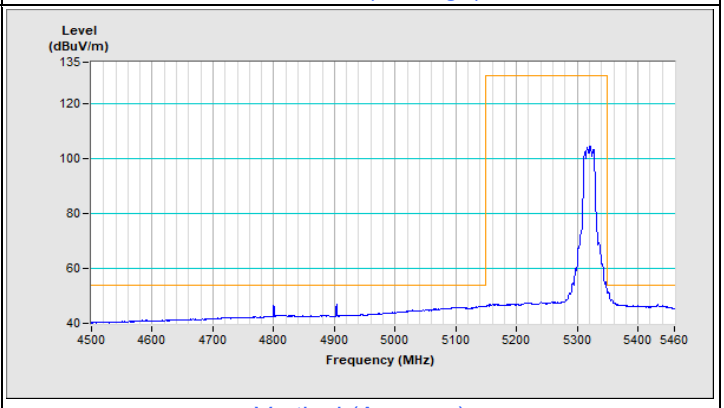
Horizontal (Peak)



Horizontal (Average)



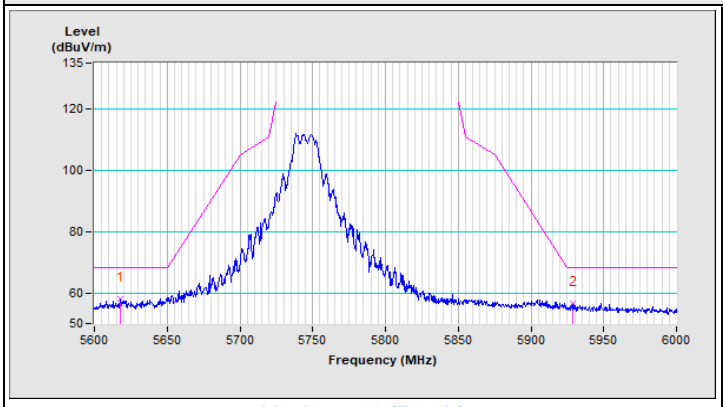
Vertical (Peak)



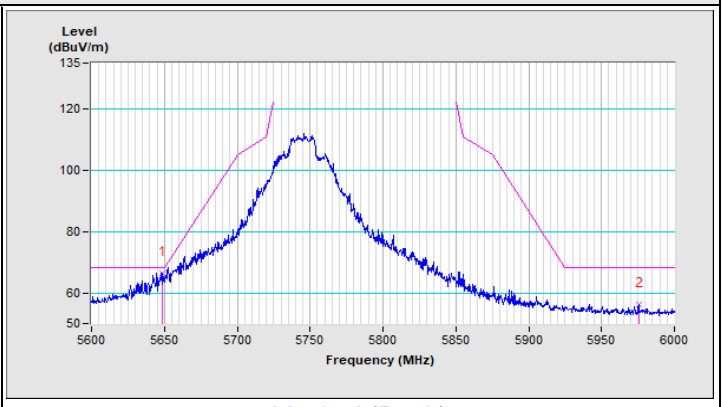
Vertical (Average)

Frequency Range	5.55 GHz ~ 6.025 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak

802.11a Channel 149

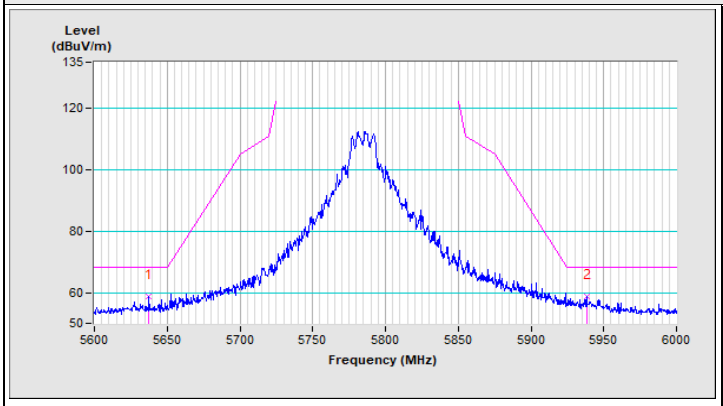


Horizontal (Peak)

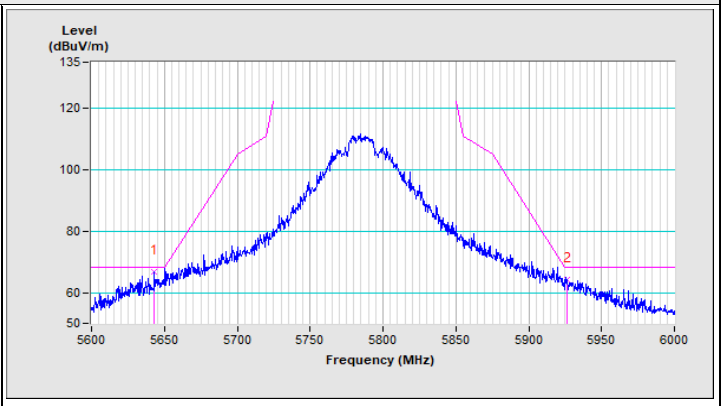


Vertical (Peak)

802.11a Channel 157

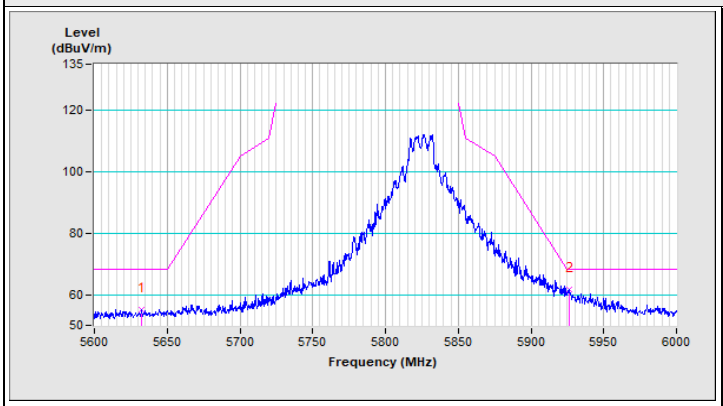


Horizontal (Peak)

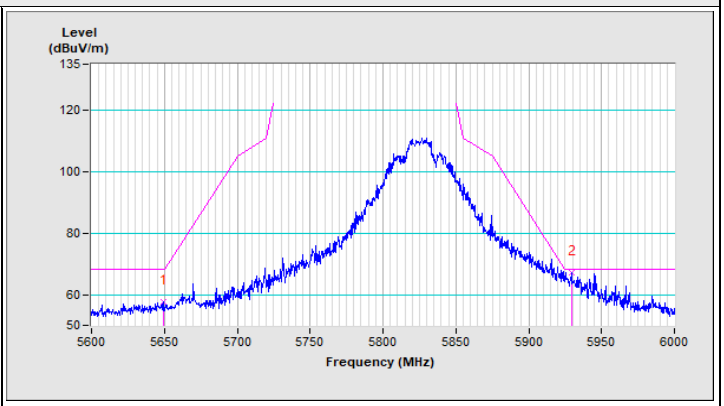


Vertical (Peak)

802.11a Channel 165



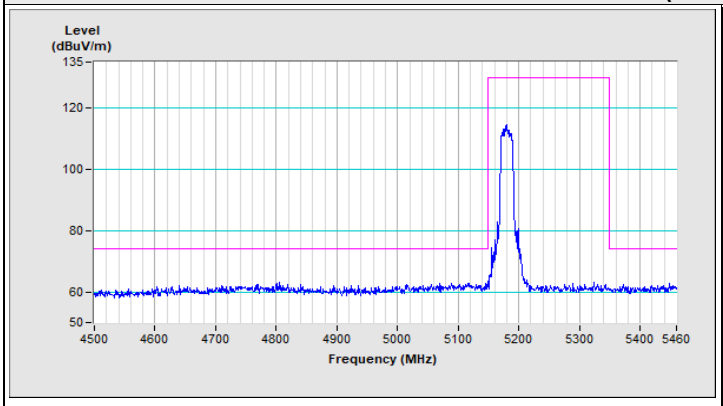
Horizontal (Peak)



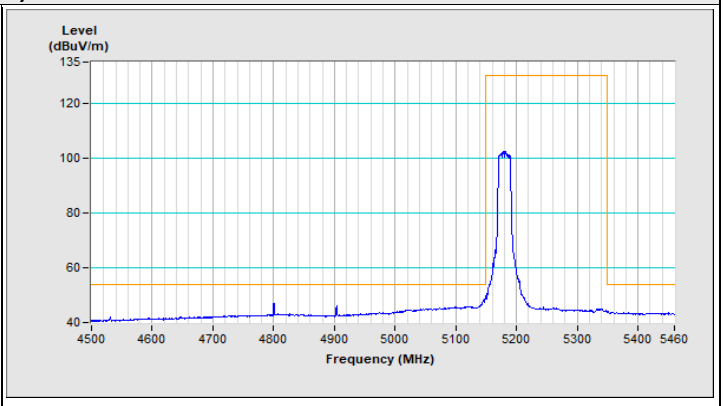
Vertical (Peak)

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=10 Hz, DET=Peak

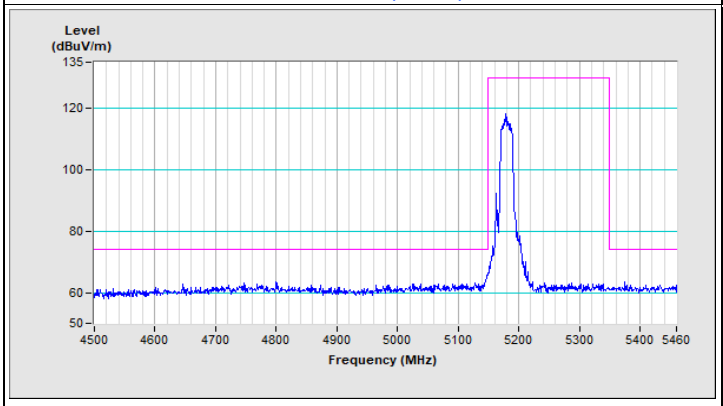
802.11ax (HE20) Channel 36



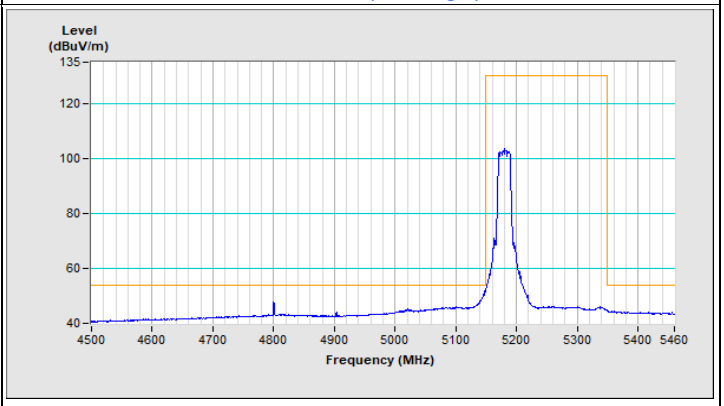
Horizontal (Peak)



Horizontal (Average)

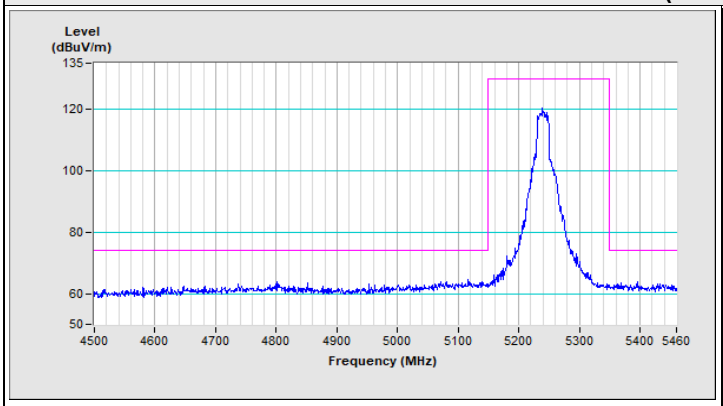


Vertical (Peak)

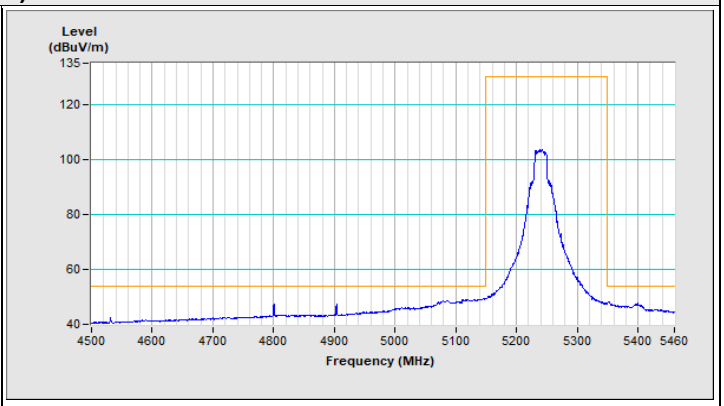


Vertical (Average)

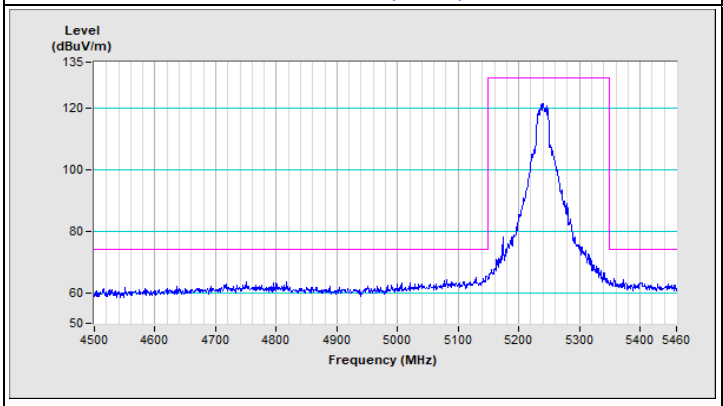
802.11ax (HE20) Channel 48



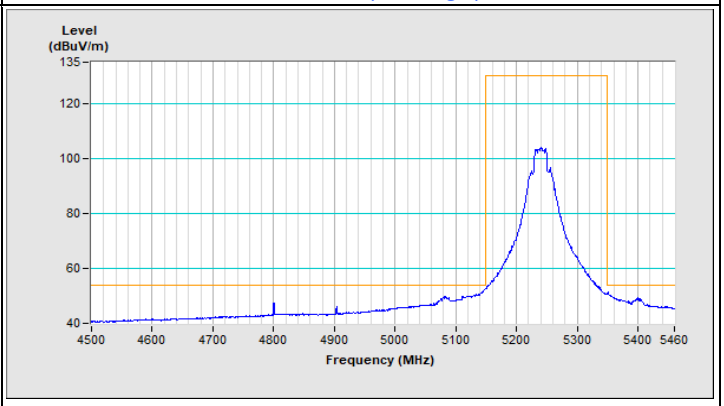
Horizontal (Peak)



Horizontal (Average)

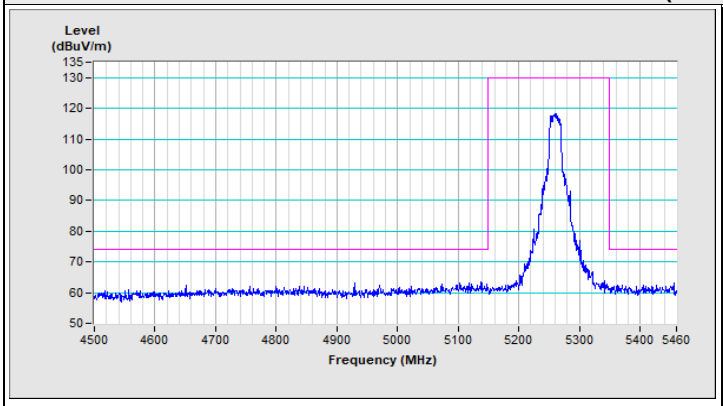


Vertical (Peak)

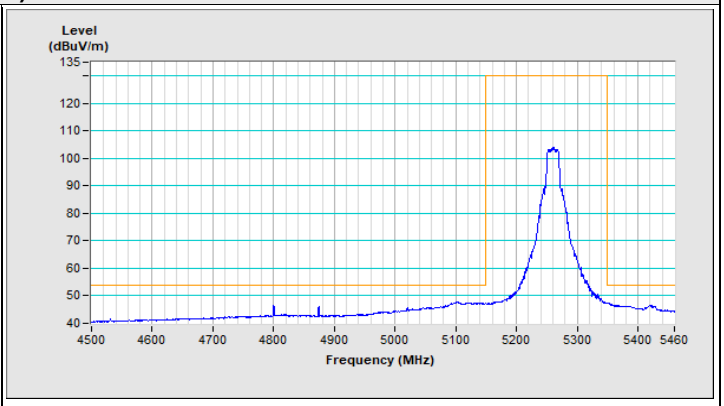


Vertical (Average)

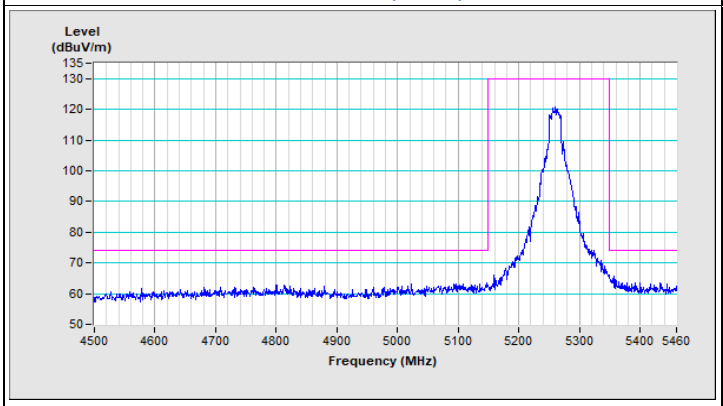
802.11ax (HE20) Channel 52



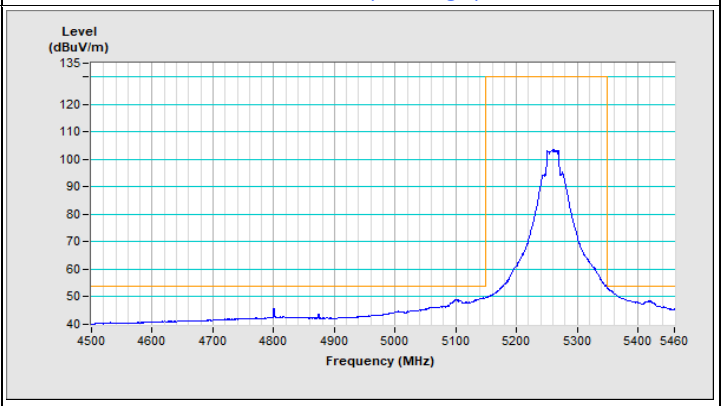
Horizontal (Peak)



Horizontal (Average)

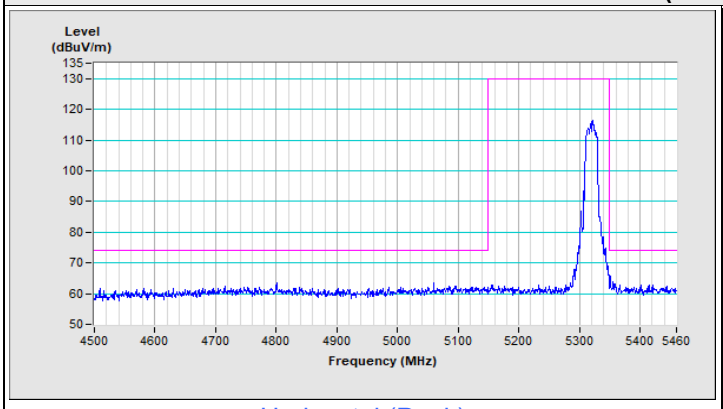


Vertical (Peak)

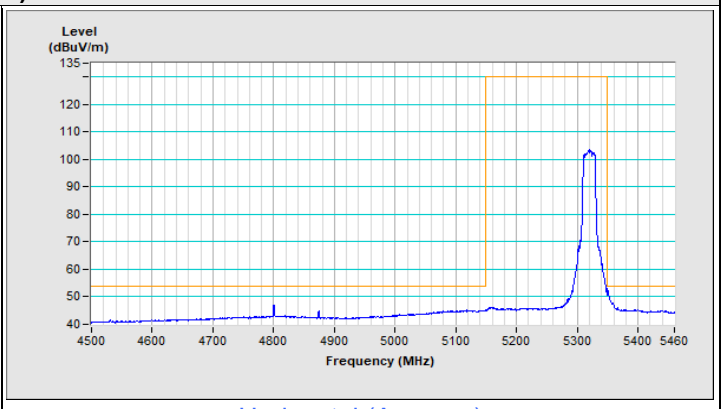


Vertical (Average)

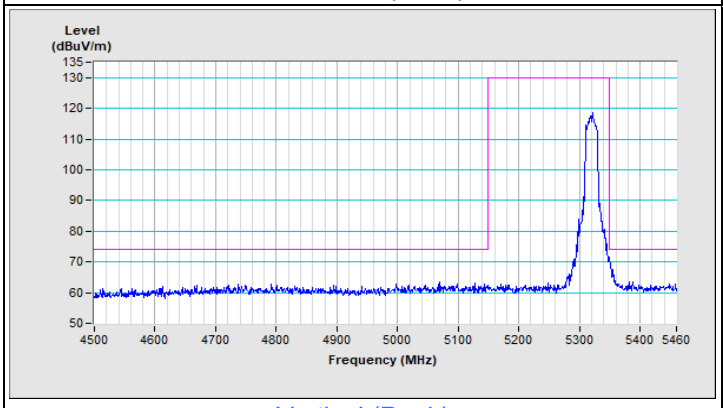
802.11ax (HE20) Channel 64



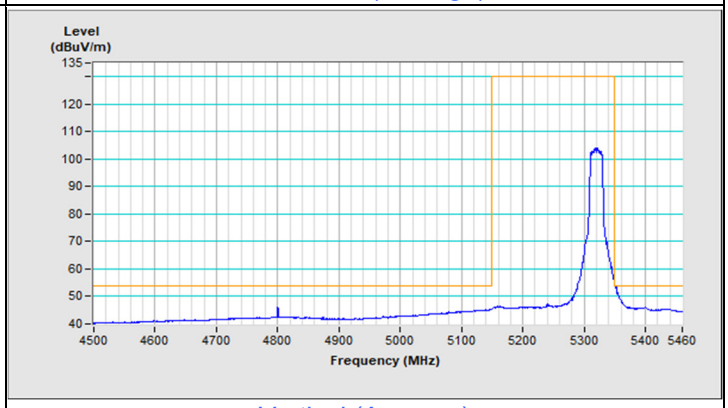
Horizontal (Peak)



Horizontal (Average)



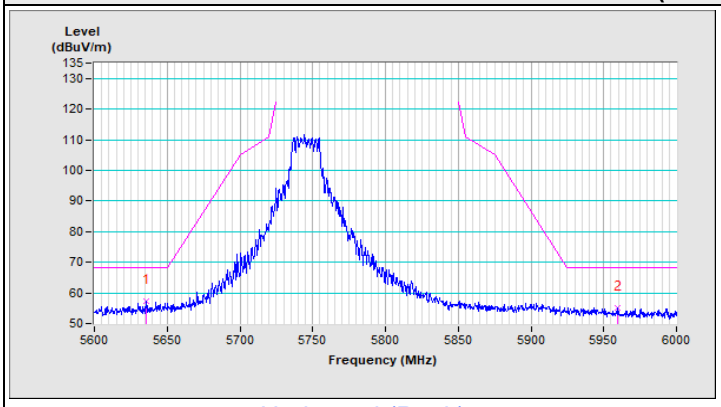
Vertical (Peak)



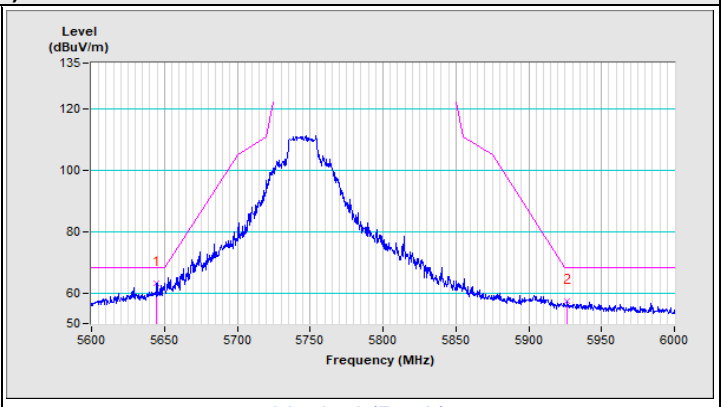
Vertical (Average)

Frequency Range	5.55 GHz ~ 6.025 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak

802.11ax (HE20) Channel 149

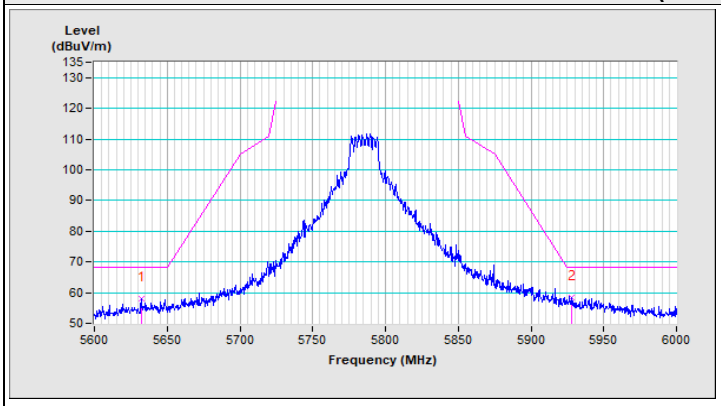


Horizontal (Peak)

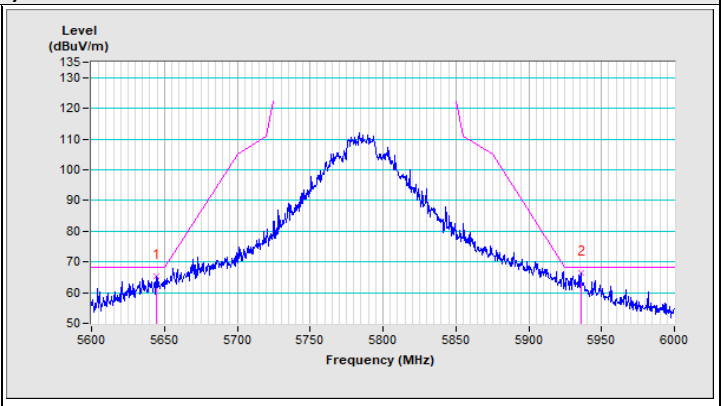


Vertical (Peak)

802.11ax (HE20) Channel 157

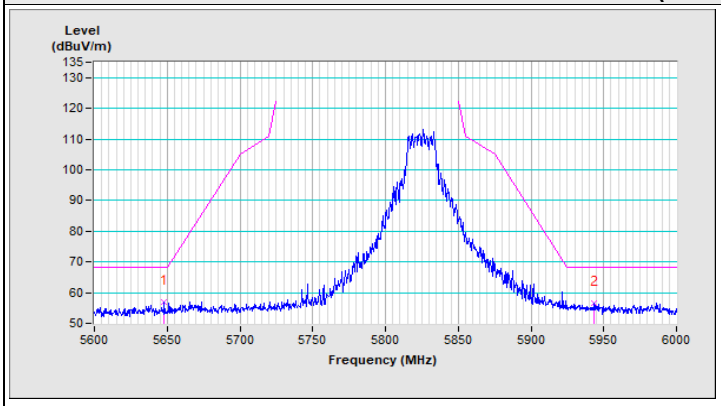


Horizontal (Peak)

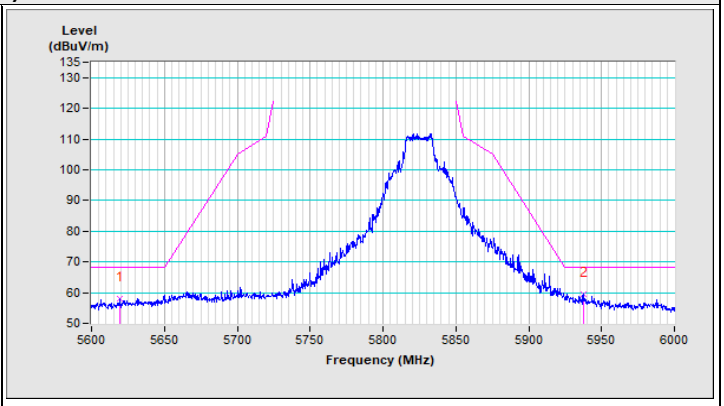


Vertical (Peak)

802.11ax (HE20) Channel 165



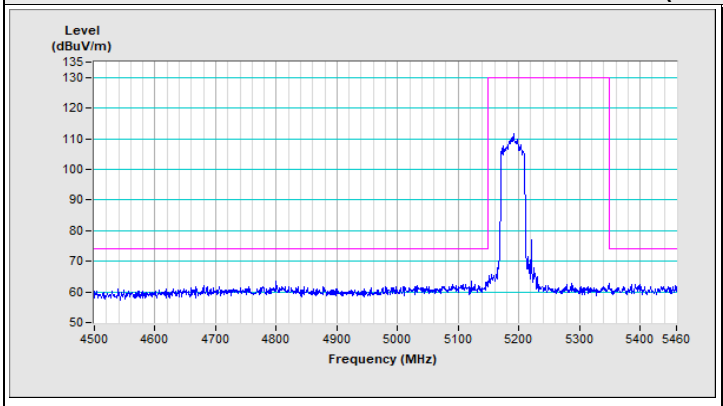
Horizontal (Peak)



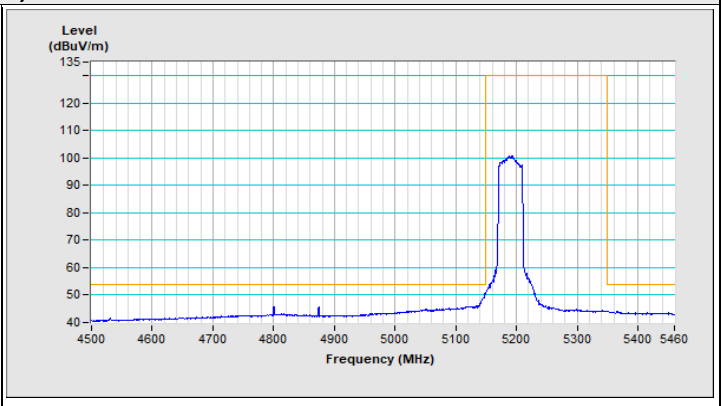
Vertical (Peak)

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=10 Hz, DET=Peak

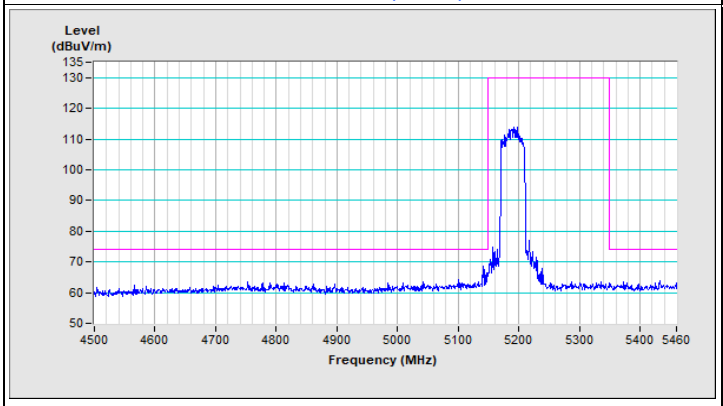
802.11ax (HE40) Channel 38



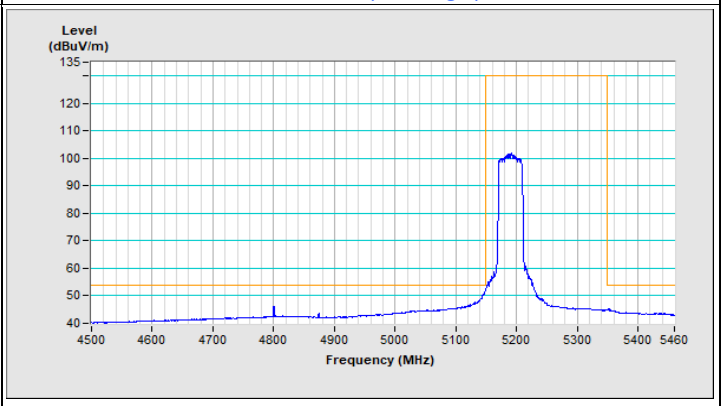
Horizontal (Peak)



Horizontal (Average)

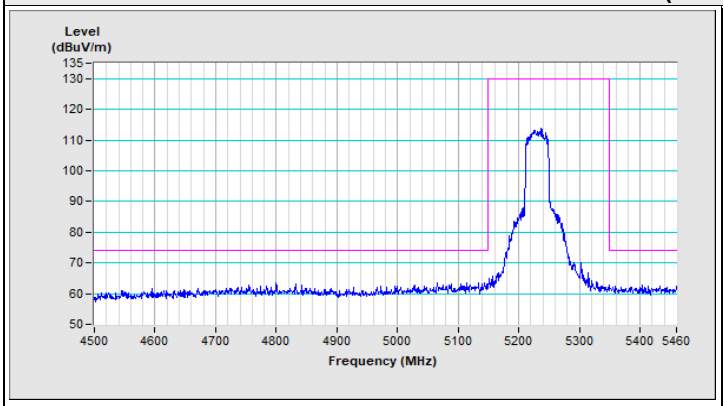


Vertical (Peak)

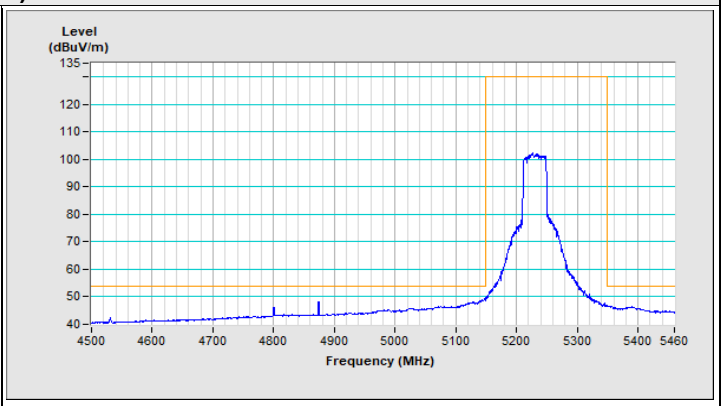


Vertical (Average)

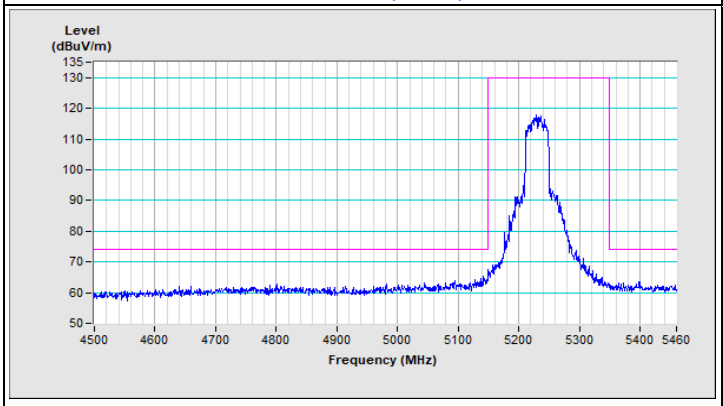
802.11ax (HE40) Channel 46



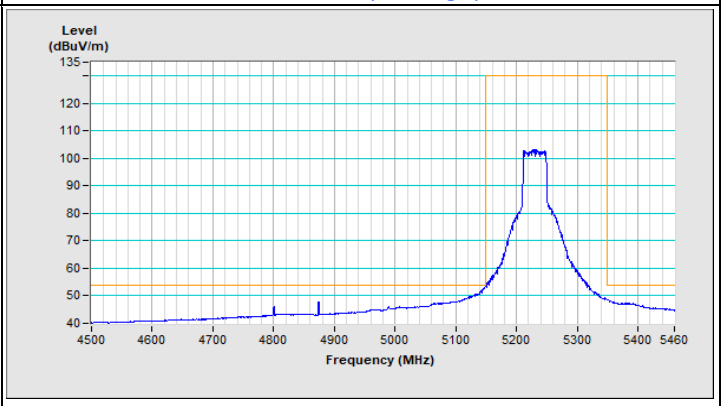
Horizontal (Peak)



Horizontal (Average)

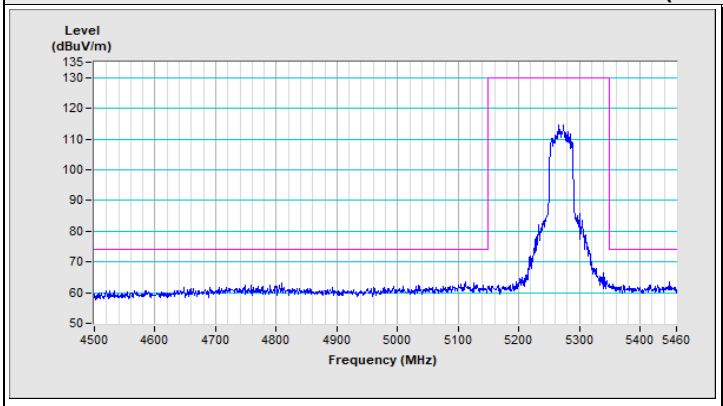


Vertical (Peak)

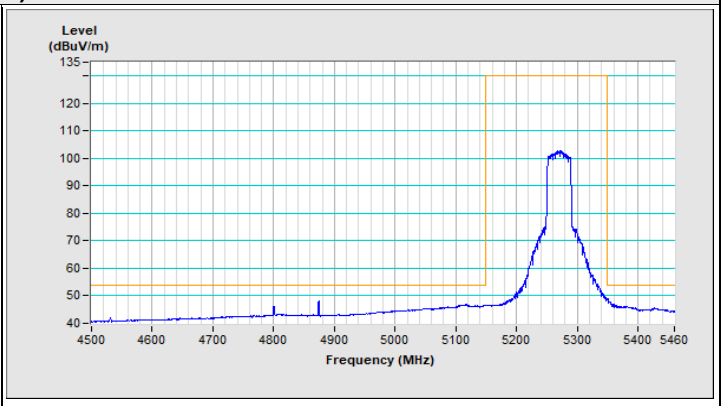


Vertical (Average)

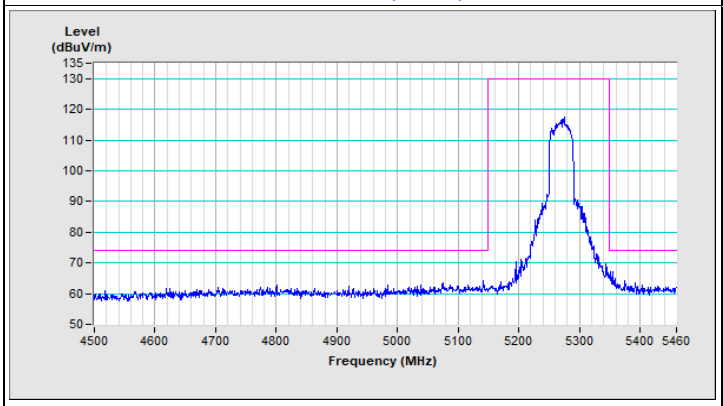
802.11ax (HE40) Channel 54



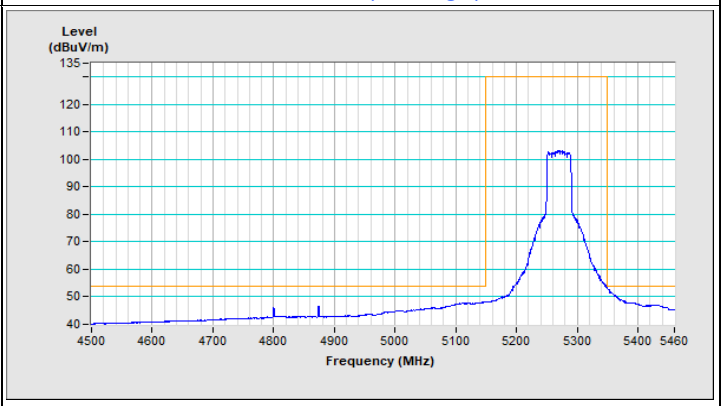
Horizontal (Peak)



Horizontal (Average)

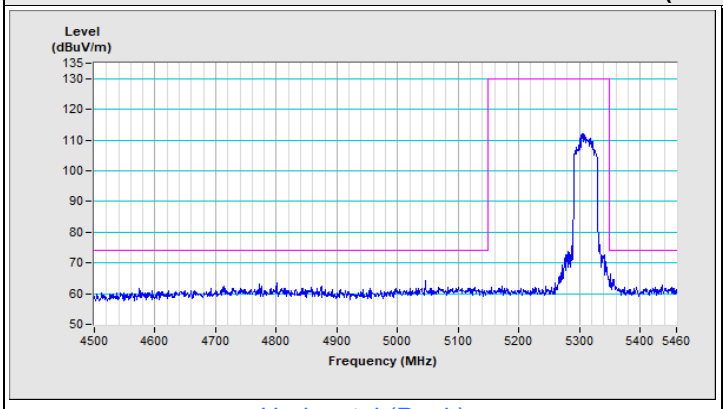


Vertical (Peak)

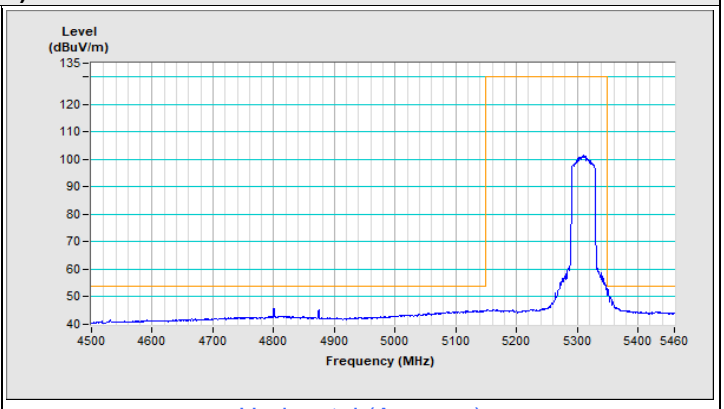


Vertical (Average)

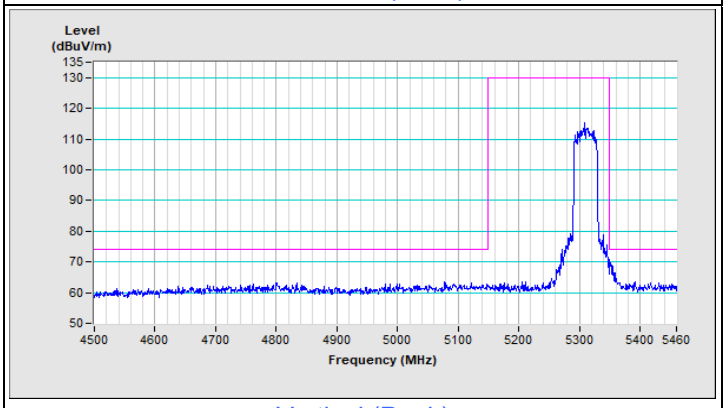
802.11ax (HE40) Channel 62



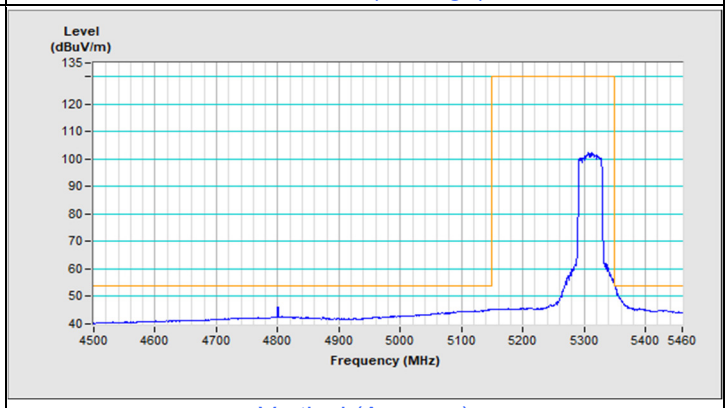
Horizontal (Peak)



Horizontal (Average)



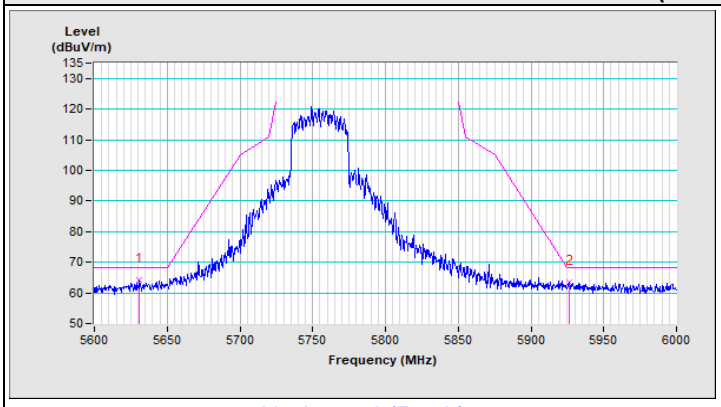
Vertical (Peak)



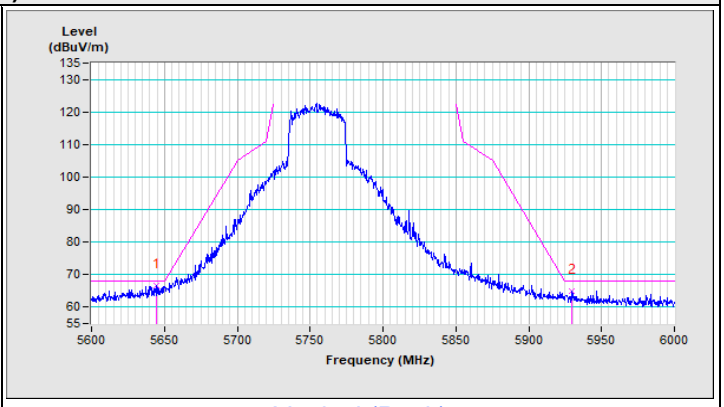
Vertical (Average)

Frequency Range	5.55 GHz ~ 6.025 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak

802.11ax (HE40) Channel 151

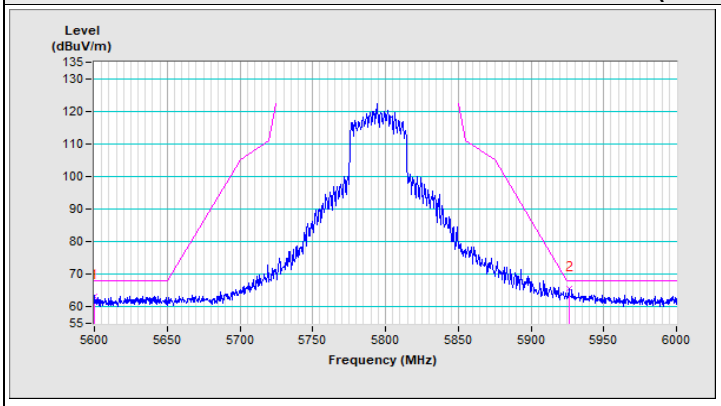


Horizontal (Peak)

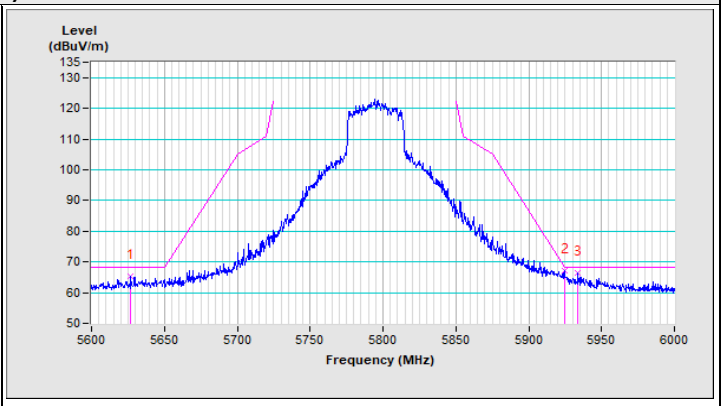


Vertical (Peak)

802.11ax (HE40) Channel 159



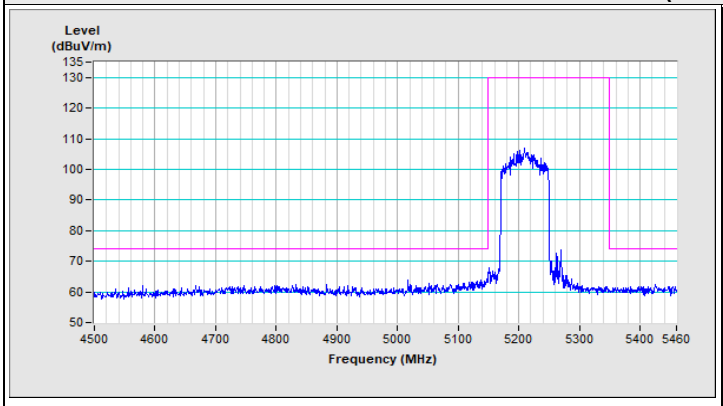
Horizontal (Peak)



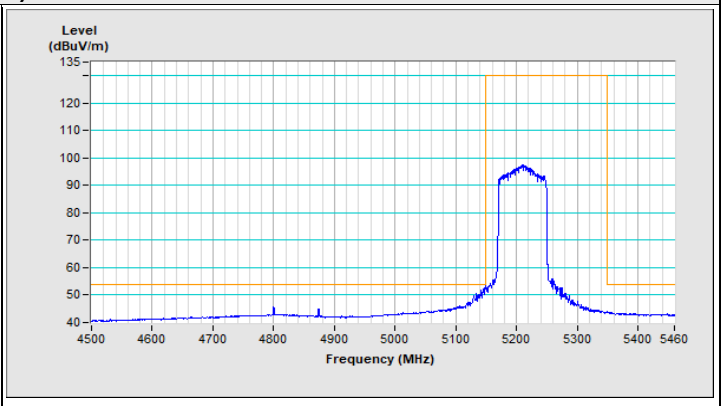
Vertical (Peak)

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=10 Hz, DET=Peak

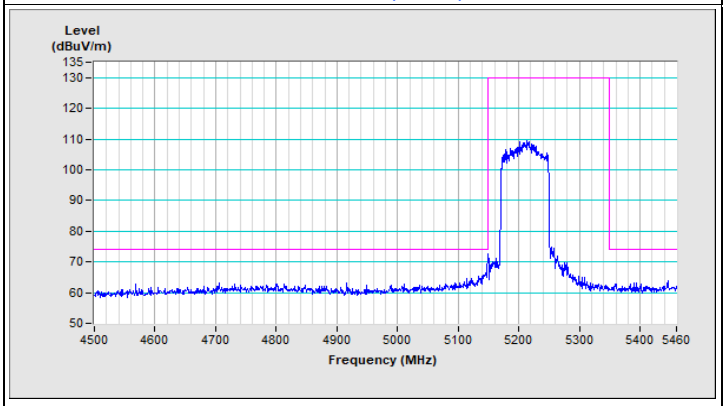
802.11ax (HE80) Channel 42



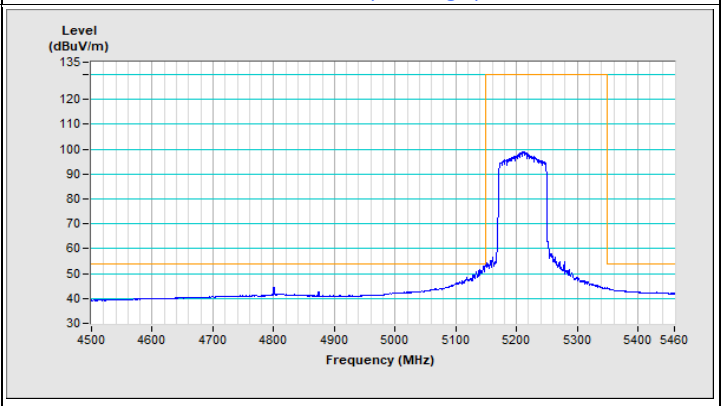
Horizontal (Peak)



Horizontal (Average)

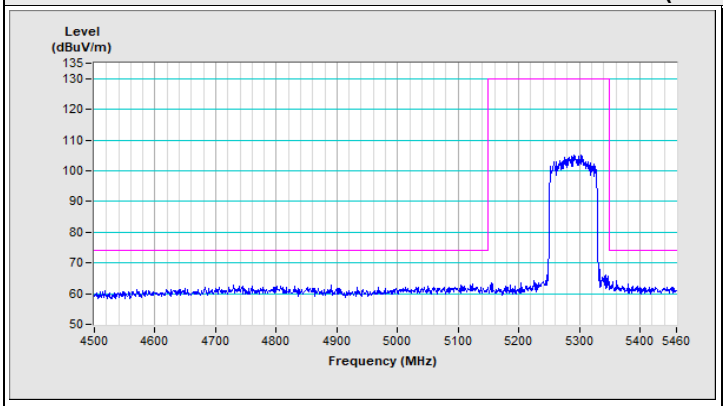


Vertical (Peak)

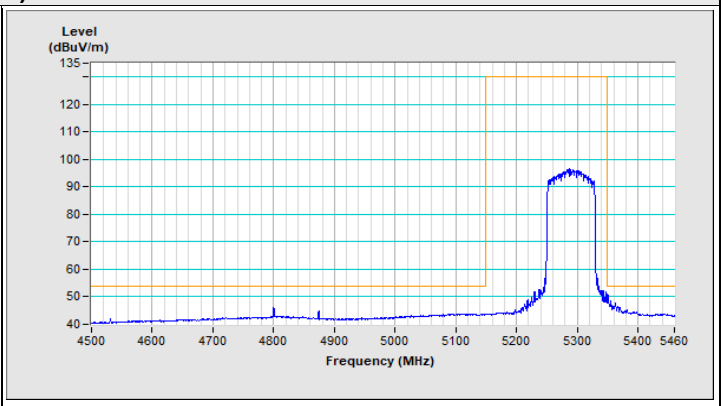


Vertical (Average)

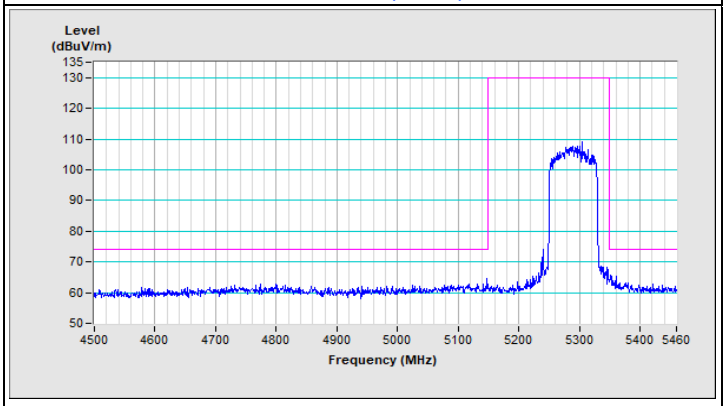
802.11ax (HE80) Channel 58



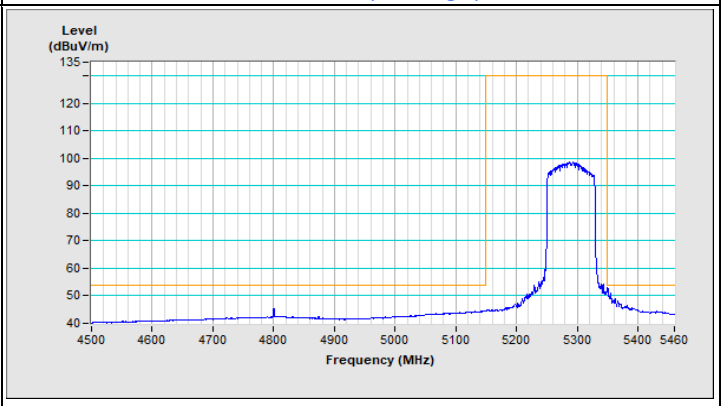
Horizontal (Peak)



Horizontal (Average)



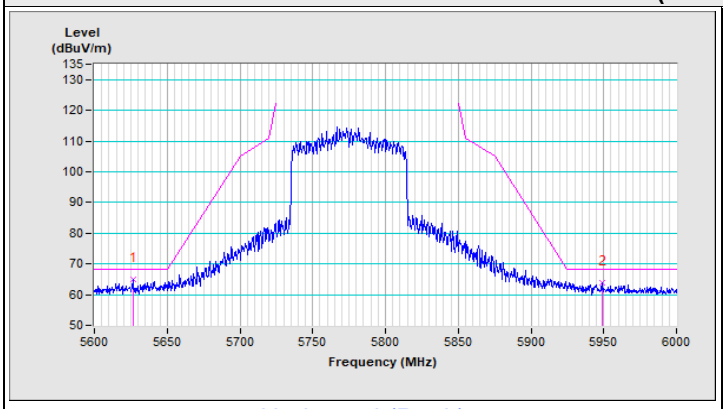
Vertical (Peak)



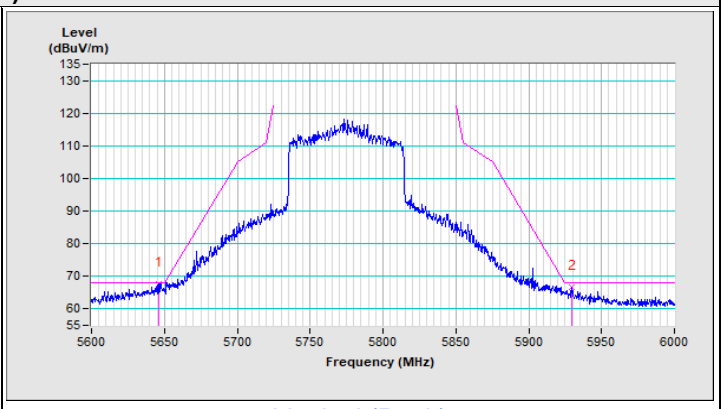
Vertical (Average)

Frequency Range	5.55 GHz ~ 6.025 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak

802.11ax (HE80) Channel 155



Horizontal (Peak)



Vertical (Peak)

8 Pictures of Test Arrangements

Please refer to the attached file (Test Setup Photo)

9 Information of the Testing Laboratories

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

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

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

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