

TEST REPORT

CERTIFICATE OF CONFORMITY

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

Report No.: RFBGSN-WTW-P24070273-1

FCC ID: I4L-GUAX18N

Product: AX1800 Nano WiFi USB Adapter

Brand: msi

Model No.: GUAX18N

Received Date: 2024/07/10

Test Date: 2024/7/17 ~ 2024/8/7

Issued Date: 2024/9/6

Applicant: Micro-Star International Co., Ltd.

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Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
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FCC Registration / 788550 / TW0003 for Test Location(1)

Designation Number: 281270 / TW0032 for Test Location(2)

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, Date:

2024/9/6

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Release Control Record

Issue No.	Description	Date Issued
RFBGSN-WTW-P24070273-1	Original release.	2024/9/6

1 Certificate

Product: AX1800 Nano WiFi USB Adapter

Brand: msi

Test Model: GUAX18N

Sample Status: Engineering sample

Applicant: Micro-Star International Co., Ltd.

Test Date: 2024/7/17 ~ 2024/8/7

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

Measurement ANSI C63.10-2013

procedure: KDB 789033 D02 General UNII Test Procedure New Rules v02r01

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	-	For U-NII-2A U-NII-2C 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.
---	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 -18.60 dB at 1.62200 MHz
15.407(b)(9)	Unwanted Emissions below 1 GHz	Pass	Minimum passing margin is -12.3 dB at 943.74 MHz
15.407(b) (1/10) 15.407(b) (2/10)	Unwanted Emissions above 1 GHz	Pass	Minimum passing margin is -6.5 dB at 10600.00 MHz
15.203	Antenna Requirement	Pass	No antenna connector is used.

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) (±)
26 dB Bandwidth	-	206.5 Hz
RF Output Power	-	1.371 dB
Power Spectral Density	-	1.017 dB
Occupied Bandwidth	-	72 Hz
Frequency Stability	-	0.176 ppm
AC Power Conducted Emissions	9 kHz ~ 30 MHz	2.90 dB
Unwanted Emissions below 1 GHz	9 kHz ~ 30 MHz	3 dB
	30 MHz ~ 1 GHz	2.93 dB
Unwanted Emissions above 1 GHz	1 GHz ~ 18 GHz	1.76 dB
	18 GHz ~ 40 GHz	1.77 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	AX1800 Nano WiFi USB Adapter
Brand	msi
Test Model	GUAX18N
Status of EUT	Engineering sample
Power Supply Rating	5Vdc from host equipment
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 ~ 5.32 GHz
Number of Channel	5180 ~ 5320MHz: 802.11a, 802.11n (HT20), 802.11ac (VHT20), 802.11ax (HE20): 8 802.11n (HT40), 802.11ac (VHT40), 802.11ax (HE40): 4 802.11ac (VHT80), 802.11ax (HE80): 2
Output Power	5.18 GHz ~ 5.24 GHz : 11.017 mW (10.42 dBm) 5.26 GHz ~ 5.32 GHz : 10.741 mW (10.31 dBm)
EUT Category	Client device

Note:

1. There is no simultaneous transmission configuration in this device.
2. 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 Type	PIFA			
Antenna Connector	None(like solder)			
Antenna No.	Gain (dBi)			
	2.4~2.4835GHz	5.15~5.35GHz	5.47~5.725GHz	5.725~5.85GHz
Ant.1	-0.6	0.4	1.8	2.6
Ant.2	-0.9	0.5	2.8	3.0

*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:

- The modulation and bandwidth are similar for 802.11n mode for 20 MHz (40 MHz), 802.11ac mode for 20 MHz (40 MHz, 80 MHz) and 802.11ax mode for 20 MHz (40 MHz, 80 MHz) therefore the manufacturer will control the power for 802.11n/ac mode is same as the 802.11ax mode or lower than it and investigated worst case to representative mode in test report.

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

3.4 Test Mode Applicability and Tested Channel Detail

Pre-Scan:	1. EUT can be used in the following ways: X-axis/ Y-axis/ Z-axis. Pre-scan these ways and find the worst case as a representative test condition.
Worst Case:	1. X-axis/ Y-axis/ Z-axis Worst Condition: Z-axis

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

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

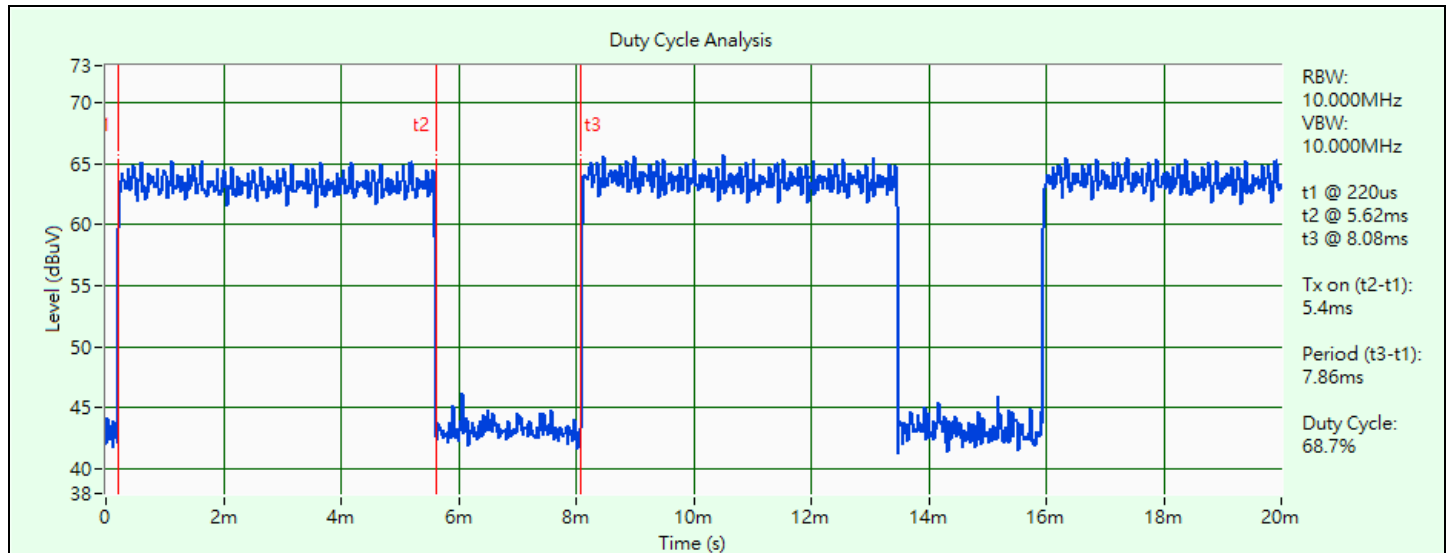
3.5 Duty Cycle of Test Signal

802.11a: Duty cycle = 5.4 ms / 7.86 ms x 100% = 68.7%, duty factor = $10 \cdot \log(1/\text{Duty cycle}) = 1.63$ dB

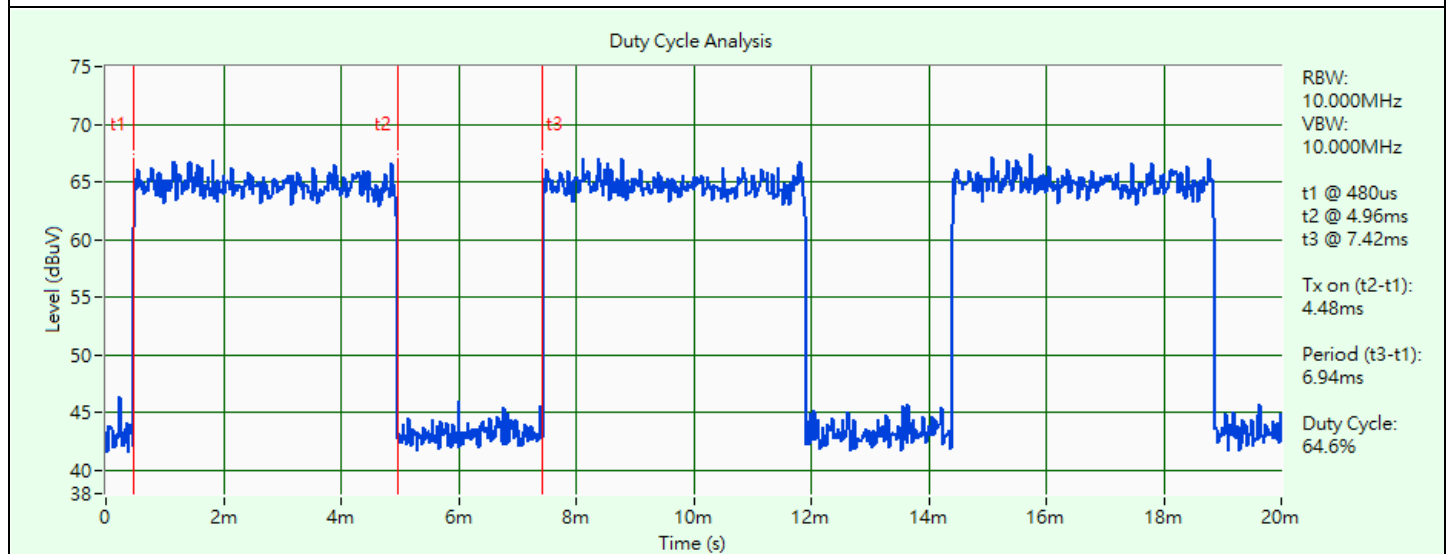
802.11ax (HE20): Duty cycle = 4.48 ms / 6.94 ms x 100% = 64.6%, duty factor = $10 \cdot \log(1/\text{Duty cycle}) = 1.90$ dB

802.11ax (HE40): Duty cycle = 2.28 ms / 4.76 ms x 100% = 47.9%, duty factor = $10 \cdot \log(1/\text{Duty cycle}) = 3.20$ dB

802.11ax (HE80): Duty cycle = 4.92 ms / 7.38 ms x 100% = 66.7%, duty factor = $10 \cdot \log(1/\text{Duty cycle}) = 1.76$ dB

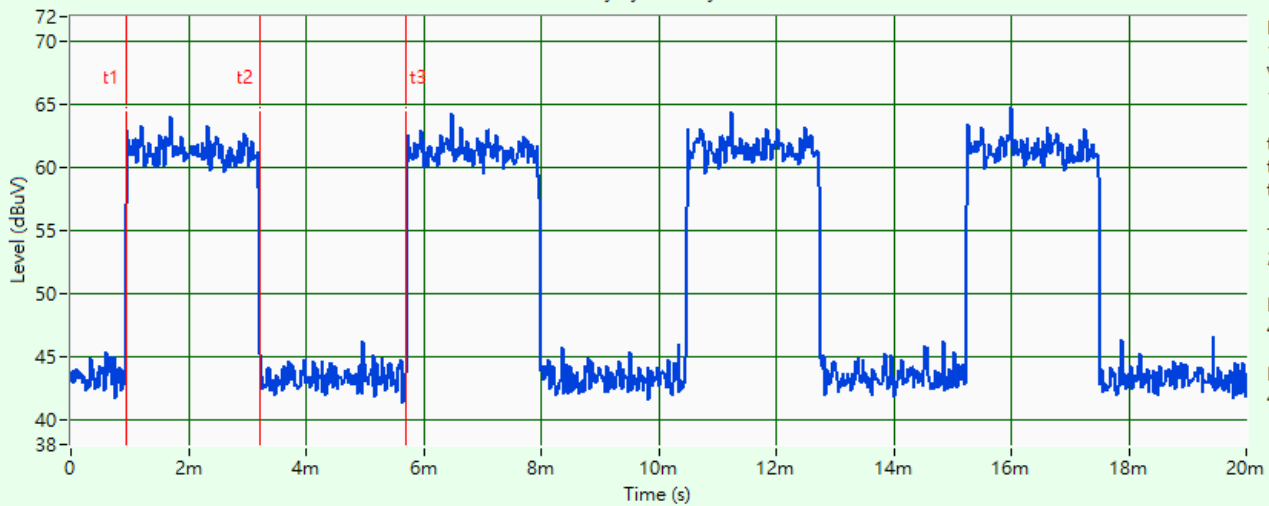


802.11a



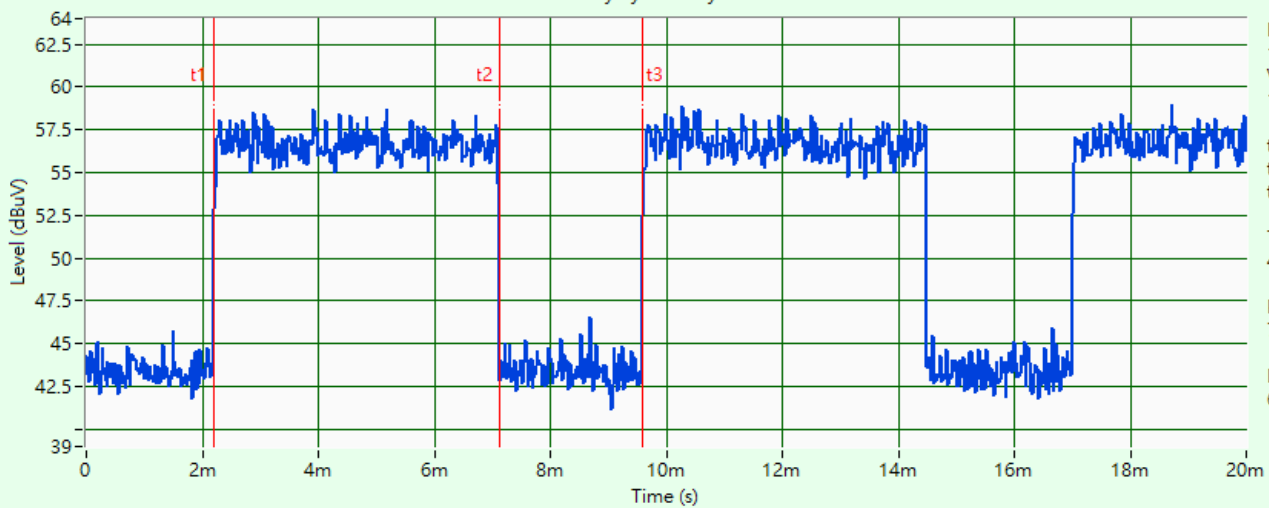
802.11ax (HE20)

Duty Cycle Analysis



802.11ax (HE40)

Duty Cycle Analysis

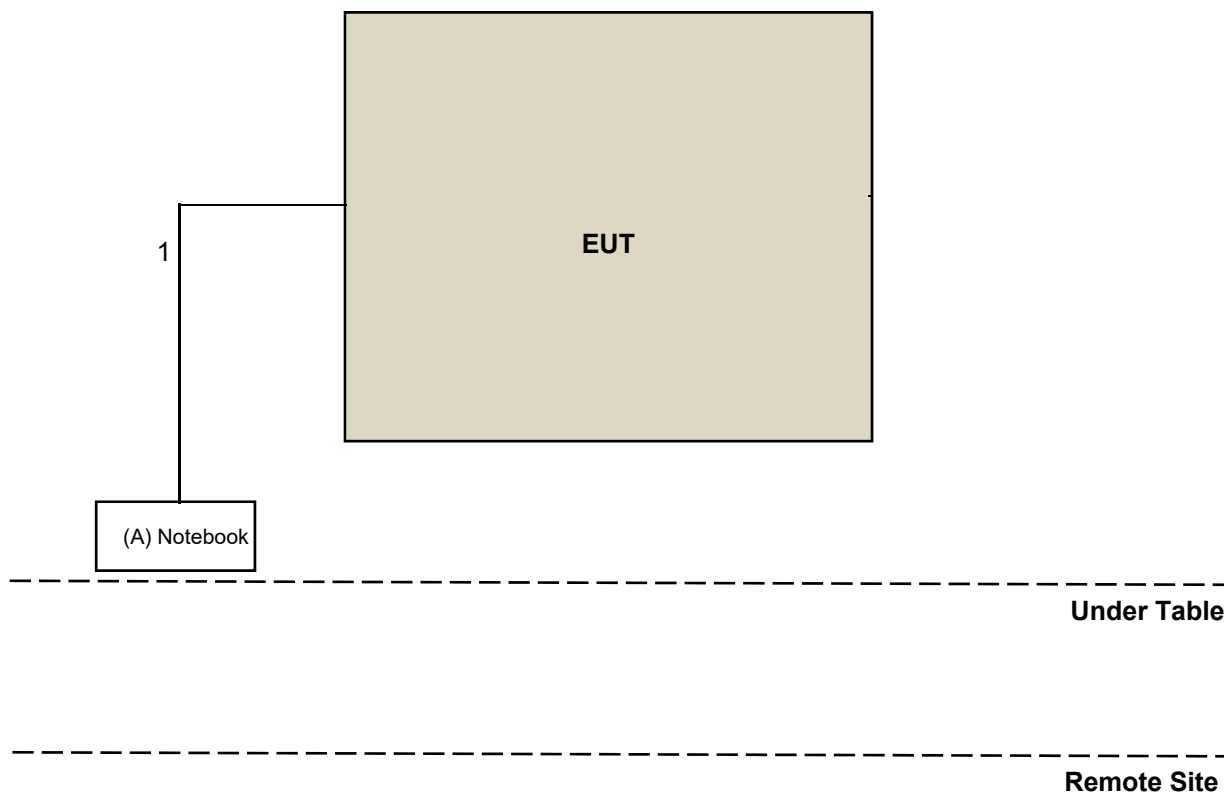


802.11ax (HE80)

3.6 Test Program Used and Operation Descriptions

Controlling software RTL8852B_USB_MP_Package_ALPHA_v1.0.45 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	Notebook	Lenovo	L470	N/A	N/A	Provided by Lab

ID	Cable Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1	USB Cable	1	1.5	Yes	N/A	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	2024/2/27	2025/2/26
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: 2024/7/17 ~ 2024/8/7

4.2 RF Output Power

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Peak Power Analyzer Keysight	8990B	MY51000485	2024/1/21	2025/1/20
Wideband Power Sensor Keysight	N1923A	MY58020002	2024/1/18	2025/1/17
		MY58140009	2024/1/18	2025/1/17

Notes:

1. The test was performed in Oven room.
2. Tested Date: 2024/7/17 ~ 2024/8/7

4.3 Power Spectral Density

Refer to section 4.1 to get the tested date and information of the instruments.

4.4 Occupied Bandwidth

Refer to section 4.1 to get the tested date and information of the instruments.

4.5 Frequency Stability

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
3-channel DC power supply JIN YIH Technology	ODP3033	ODP30332128138	N/A	N/A
Digital Multimeter Fluke	8050A	4660081	2024/6/14	2025/6/13
Signal & Spectrum Analyzer R&S	FSV3044	101105	2024/2/27	2025/2/26
Software BV	ADT_RF Test Software V7.6.5.4	N/A	N/A	N/A
Temperature & Humidity Chamber Terchy	HRM-120RF	931022	2023/12/19	2024/12/18

Notes:

1. The test was performed in Oven room.
2. Tested Date: 2024/7/17 ~ 2024/8/7

4.6 AC Power Conducted Emissions

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
50 ohm terminal resistance HUBER+SUHNER	E1-011315	13	2023/11/22	2024/11/21
50 ohm terminal resistance	E1-011279	04	2023/11/22	2024/11/21
	E1-011280	05	2023/11/22	2024/11/21
DC-LISN Schwarzbeck	NNBM 8126G	8126G-069	2023/11/7	2024/11/6
EMI Test Receiver R&S	ESCI	100613	2023/12/4	2024/12/3
Fixed Attenuator Mini-Circuits	HAT-10+	PAD-COND1-01	2024/1/6	2025/1/5
LISN R&S	ENV216	101826	2024/3/25	2025/3/24
	ESH3-Z5	100311	2023/9/6	2024/9/5
RF Coaxial Cable Woken	5D-FB	Cable-cond1-01	2024/1/6	2025/1/5
Software BVADT	BVADT_Cond_ V7.4.1.0	N/A	N/A	N/A
V-LISN Schwarzbeck	NNBL 8226-2	8226-142	2023/8/31	2024/8/30

Notes:

1. The test was performed in HY - Conduction 1.
2. Tested Date: 2024/8/1

4.7 Unwanted Emissions below 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Antenna Tower Max-Full	MFT-151SS-0.5T	N/A	N/A	N/A
Bi_Log Antenna Schwarzbeck	VULB 9168	9168-1213	2023/10/13	2024/10/12
EMI Test Receiver R&S	ESR3	102782	2023/12/7	2024/12/6
Loop Antenna Electro-Metrics	EM-6879	269	2023/9/23	2024/9/22
Loop Antenna TESEQ	HLA 6121	45745	2023/8/8	2024/8/7
MXA Signal Analyzer Keysight	N9020B	MY60110513	2023/12/22	2024/12/21
Preamplifier EMCI	EMC330N	980782	2024/1/15	2025/1/14
	EMC001340	980201	2023/9/27	2024/9/26
RF Coaxial Cable EMCI	EMCCFD400-NM-NM-500	201233	2024/1/15	2025/1/14
	EMCCFD400-NM-NM-3000	201235	2024/1/15	2025/1/14
	EMCCFD400-NM-NM-9000	201236(with PAD)	2024/1/15	2025/1/14
Software BV ADT	ADT_Radiated_V7.6.15.9.5	N/A	N/A	N/A
Turn Table Max-Full	MF-7802BS	N/A	N/A	N/A
Turn Table Controller Max-Full	MF-7802BS	MF780208674	N/A	N/A

Notes:

1. The test was performed in WM - 966 chamber 8.
2. Tested Date: 2024/8/1

4.8 Unwanted Emissions above 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Antenna Tower Max-Full	MFT-151SS-0.5T	N/A	N/A	N/A
EMI Test Receiver R&S	ESR3	102782	2023/12/7	2024/12/6
Horn Antenna RFSPIN	DRH18-E	210103A18E	2023/11/12	2024/11/11
Horn Antenna Schwarzbeck	BBHA 9170	9170-1049	2023/11/12	2024/11/11
MXA Signal Analyzer Keysight	N9020B	MY60110513	2023/12/22	2024/12/21
Preamplifier EMCI	EMC118A45SE	980808	2023/12/28	2024/12/27
	EMC184045SE	980788	2024/1/15	2025/1/14
RF Coaxial Cable EMCI	EMC101G-KM-KM-2000	201254	2024/1/15	2025/1/14
	EMC101G-KM-KM-3000	201258	2024/1/15	2025/1/14
	EMC101G-KM-KM-5000	201261	2024/1/15	2025/1/14
	EMC104-SM-SM-1000	210102	2024/1/15	2025/1/14
	EMC104-SM-SM-3000	201231	2024/1/15	2025/1/14
	EMC104-SM-SM-9000	201243	2024/1/15	2025/1/14
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	N/A	N/A	N/A
Turn Table Max-Full	MF-7802BS	N/A	N/A	N/A
Turn Table Controller Max-Full	MF-7802BS	MF780208674	N/A	N/A

Notes:

1. The test was performed in WM - 966 chamber 8.
2. Tested Date: 2024/7/31 ~ 2024/8/2

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 $\leq$ 125mW(21 dBm) at any elevation angle above 30 degrees as measured from the horizon)
	Fixed point-to-point Access Point	1 Watt (30 dBm)
	Indoor Access Point	1 Watt (30 dBm)
	Mobile and Portable client device	250mW (24 dBm)

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

*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

5.4 Occupied Bandwidth

The results are for reference only.

5.5 Frequency Stability

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

5.6 AC Power Conducted Emissions

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

Notes:

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

5.7 Unwanted Emissions below 1 GHz

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

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

Notes:

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

5.8 Unwanted Emissions above 1 GHz

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

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

Notes:

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

Limits of unwanted emission out of the restricted bands

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

For transmitters operating in the 5.15-5.25 GHz band:

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

For transmitters operating in the 5.25-5.35 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)

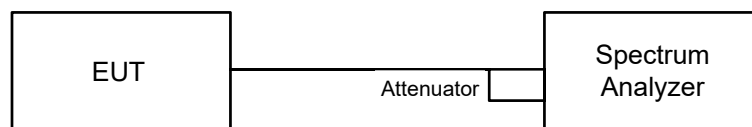
Note: The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength:

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

6 Test Arrangements

6.1 26 dB Bandwidth

6.1.1 Test Setup

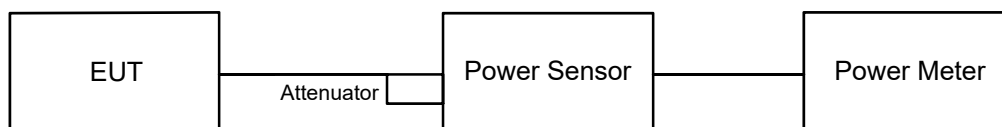


6.1.2 Test Procedure

- Set RBW = approximately 1% of the emission bandwidth.
- Set the VBW > RBW.
- Detector = Peak.
- Trace mode = max hold.
- 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

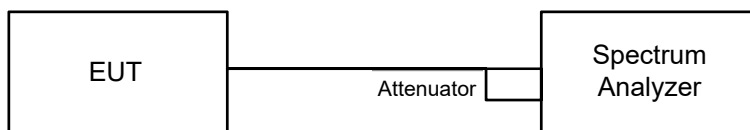


6.2.2 Test Procedure

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-2

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

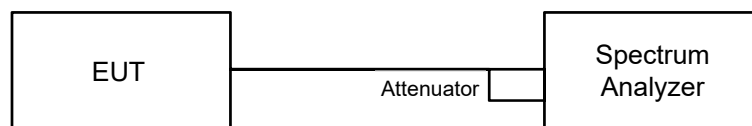
For specified measurement bandwidth 500 kHz:

Method SA-2

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

6.4 Occupied Bandwidth

6.4.1 Test Setup

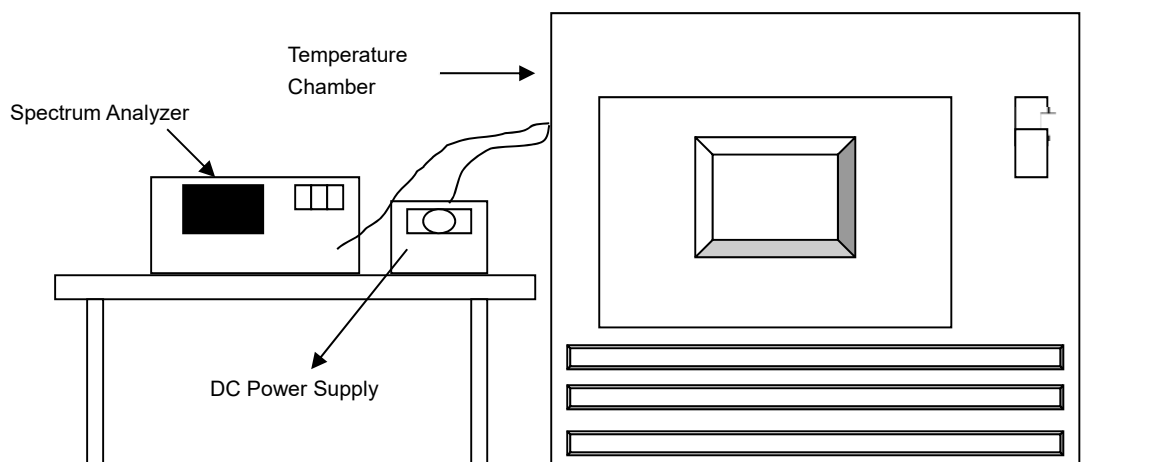


6.4.2 Test Procedure

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

6.5 Frequency Stability

6.5.1 Test Setup

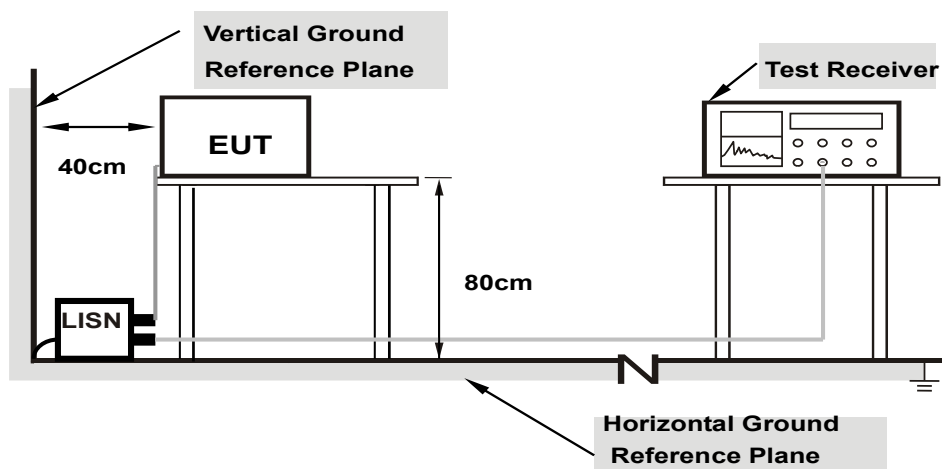


6.5.2 Test Procedure

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

6.6 AC Power Conducted Emissions

6.6.1 Test Setup



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

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

6.6.2 Test Procedure

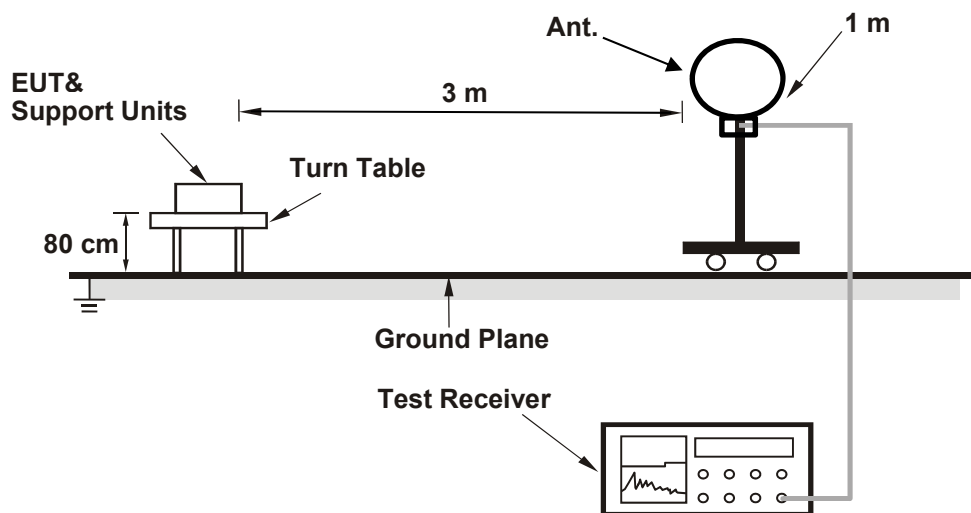
- The EUT was placed on a 0.8 meter to the top of table and placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The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

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

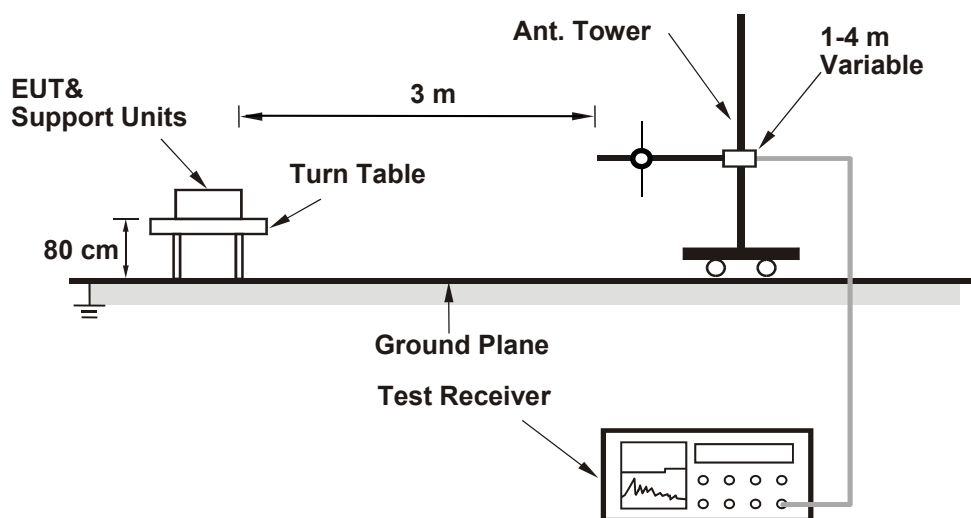
6.7 Unwanted Emissions below 1 GHz

6.7.1 Test Setup

For Radiated emission below 30 MHz



For Radiated emission above 30 MHz



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

6.7.2 Test Procedure

For Radiated emission below 30 MHz

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. Parallel, perpendicular, and ground-parallel orientations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Quasi-Peak Detect Function and Specified Bandwidth with Maximum Hold Mode, except for the frequency band (9 kHz to 90 kHz and 110 kHz to 490 kHz) set to average detect function and peak detect function.

Notes:

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

For Radiated emission above 30 MHz

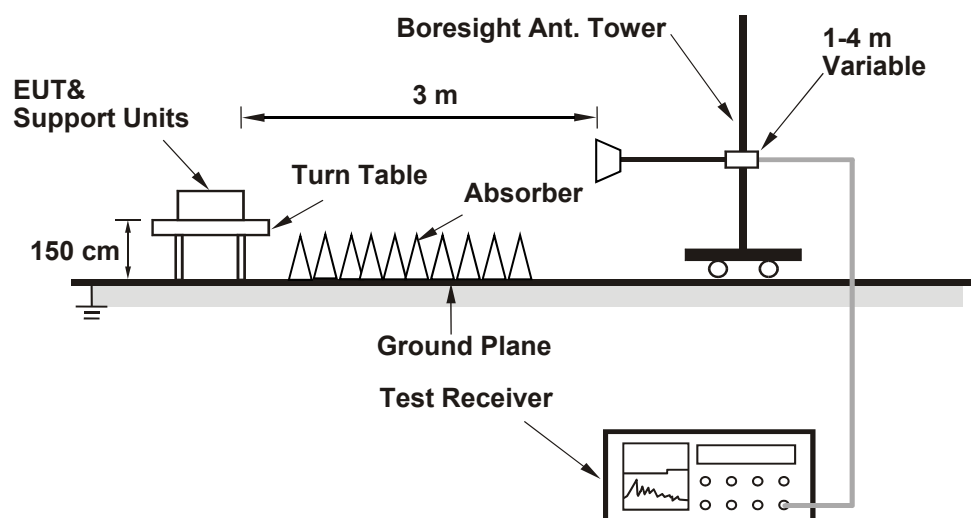
- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.

Notes:

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

6.8 Unwanted Emissions above 1 GHz

6.8.1 Test Setup



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

6.8.2 Test Procedure

- The EUT was placed on the top of a rotating table 1.5 meters above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- The test-receiver system was set to peak and average detects function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

Notes:

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

7 Test Results of Test Item

7.1 26 dB Bandwidth

Input Power:	5 Vdc	Environmental Conditions:	25°C, 60% RH	Tested By:	Chris Lin
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802.11a

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	
		Chain 0	Chain 1
52	5260	18.57	18.56
60	5300	18.54	18.53
64	5320	18.54	18.56

Determined Output Power Limit			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Power Limit (dBm)
52	5260	18.56	23.68 < 24
60	5300	18.53	23.67 < 24
64	5320	18.54	23.68 < 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	20.70	20.56
60	5300	20.71	20.57
64	5320	20.67	20.55

Determined Output Power Limit			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Power Limit (dBm)
52	5260	20.56	24.13 > 24
60	5300	20.57	24.13 > 24
64	5320	20.55	24.12 > 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	40.69	40.38
62	5310	40.60	40.63

Determined Output Power Limit			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Power Limit (dBm)
54	5270	40.38	27.06 > 24
62	5310	40.60	27.08 > 24

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

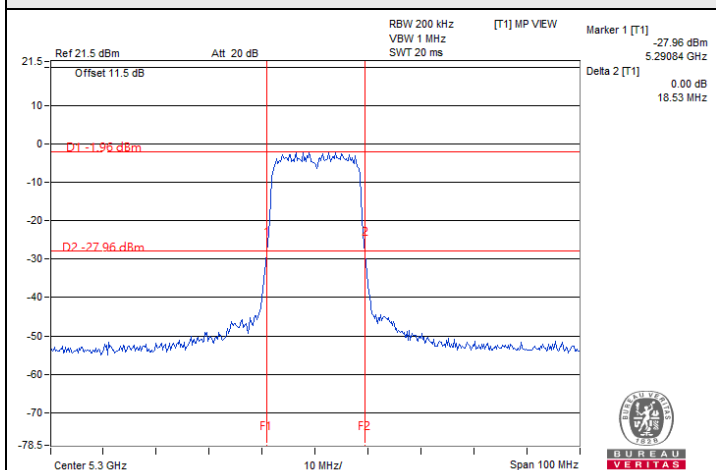
802.11ax (HE80)

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)	
		Chain 0	Chain 1
58	5290	82.77	82.59

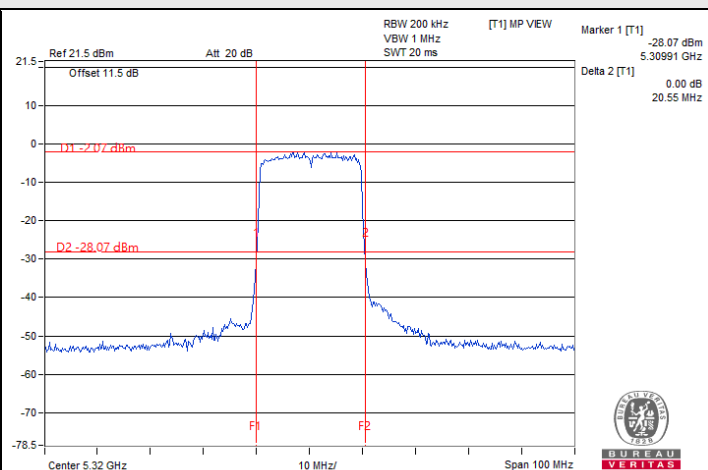
Determined Output Power Limit			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Power Limit (dBm)
58	5290	82.59	30.16 > 24

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

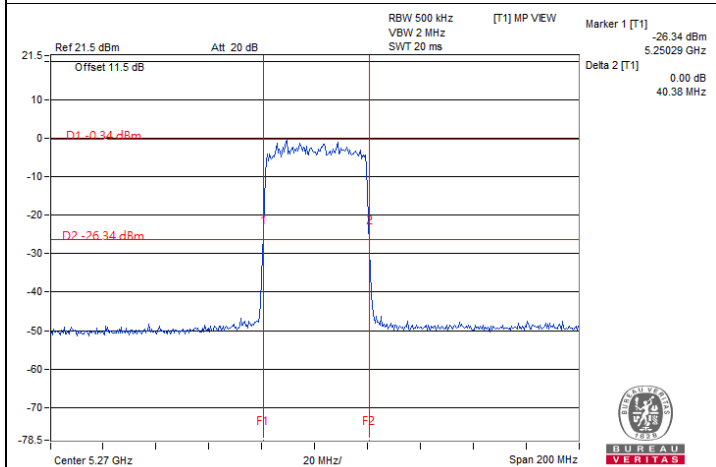
Spectrum Plot of Minimum Value



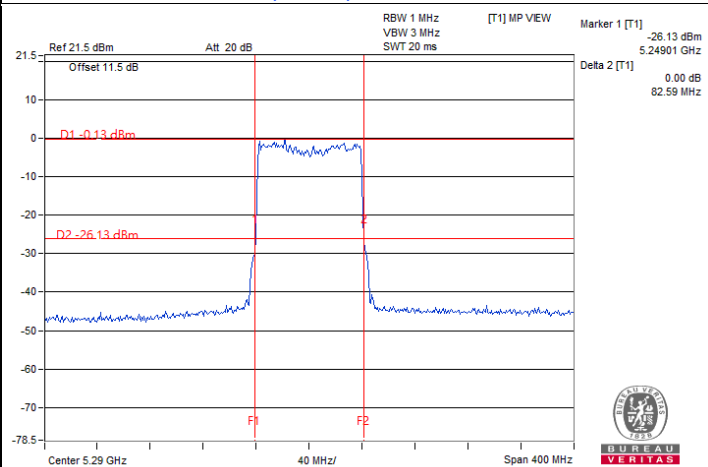
802.11a / Chain 1 : CH 60



802.11ax (HE20) / Chain 1 : CH 64



802.11ax (HE40) / Chain 1 : CH 54



802.11ax (HE80) / Chain 1 : CH 58

7.2 RF Output Power

Input Power:	5 Vdc	Environmental Conditions:	25°C, 60% RH	Tested By:	Chris Lin
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802.11a

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
36	5180	7.32	7.20	10.643	10.27	24	Pass
40	5200	7.35	7.21	10.693	10.29	24	Pass
48	5240	7.45	7.37	11.017	10.42	24	Pass
52	5260	7.25	7.12	10.461	10.20	23.68	Pass
60	5300	7.29	7.25	10.667	10.28	23.67	Pass
64	5320	7.32	7.22	10.667	10.28	23.68	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-1, the maximum gain is 0.5 dBi < 6 dBi, so the output power limit shall not be reduced.
3. For U-NII-2A, the maximum gain is 0.5 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ax (HE20)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
36	5180	7.38	7.32	10.865	10.36	24	Pass
40	5200	7.19	7.15	10.424	10.18	24	Pass
48	5240	7.38	7.30	10.84	10.35	24	Pass
52	5260	7.28	7.25	10.654	10.28	24	Pass
60	5300	7.27	7.22	10.606	10.26	24	Pass
64	5320	7.32	7.28	10.741	10.31	24	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-1, the maximum gain is 0.5 dBi < 6 dBi, so the output power limit shall not be reduced.
3. For U-NII-2A, the maximum gain is 0.5 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ax (HE40)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
38	5190	7.36	7.22	10.717	10.30	24	Pass
46	5230	7.19	7.15	10.424	10.18	24	Pass
54	5270	7.12	7.25	10.461	10.20	24	Pass
62	5310	7.12	7.15	10.34	10.15	24	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-1, the maximum gain is 0.5 dBi < 6 dBi, so the output power limit shall not be reduced.
3. For U-NII-2A, the maximum gain is 0.5 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ax (HE80)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
42	5210	7.25	7.39	10.792	10.33	24	Pass
58	5290	7.19	7.38	10.706	10.30	24	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-1, the maximum gain is 0.5 dBi < 6 dBi, so the output power limit shall not be reduced.
3. For U-NII-2A, the maximum gain is 0.5 dBi < 6 dBi, so the output power limit shall not be reduced.

7.3 Power Spectral Density

Input Power:	5 Vdc	Environmental Conditions:	25°C, 60% RH	Tested By:	Chris Lin
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802.11a

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)		Duty Factor (dB)	Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Test Result
		Chain 0	Chain 1				
36	5180	-5.94	-5.87	1.63	-1.26	11	Pass
40	5200	-5.91	-6.00	1.63	-1.31	11	Pass
48	5240	-5.43	-5.42	1.63	-0.78	11	Pass
52	5260	-6.07	-6.08	1.63	-1.43	11	Pass
60	5300	-5.17	-5.09	1.63	-0.49	11	Pass
64	5320	-5.04	-5.07	1.63	-0.41	11	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 = $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20})^2 / 2]$
3. For U-NII-1, the directional gain is 3.46 dBi < 6dBi, so the power density limit shall not be reduced.
4. For U-NII-2A, the directional gain is 3.46 dBi < 6 dBi, so the power density limit shall not be reduced.

802.11ax (HE20)

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)		Duty Factor (dB)	Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Test Result
		Chain 0	Chain 1				
36	5180	-6.33	-6.49	1.90	-1.50	11	Pass
40	5200	-6.40	-6.56	1.90	-1.57	11	Pass
48	5240	-5.84	-5.93	1.90	-0.97	11	Pass
52	5260	-6.49	-6.61	1.90	-1.64	11	Pass
60	5300	-5.42	-5.56	1.90	-0.58	11	Pass
64	5320	-5.50	-5.54	1.90	-0.61	11	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 = $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20})^2 / 2]$
3. For U-NII-1, the directional gain is 3.46 dBi < 6dBi, so the power density limit shall not be reduced.
4. For U-NII-2A, the directional gain is 3.46 dBi < 6 dBi, so the power density limit shall not be reduced.

802.11ax (HE40)

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)		Duty Factor (dB)	Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Test Result
		Chain 0	Chain 1				
38	5190	-9.28	-9.20	3.20	-3.03	11	Pass
46	5230	-8.62	-8.98	3.20	-2.59	11	Pass
54	5270	-9.46	-9.67	3.20	-3.35	11	Pass
62	5310	-8.37	-9.37	3.20	-2.63	11	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 = $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20})^2 / 2]$
3. For U-NII-1, the directional gain is 3.46 dBi < 6dBi, so the power density limit shall not be reduced.
4. For U-NII-2A, the directional gain is 3.46 dBi < 6 dBi, so the power density limit shall not be reduced.

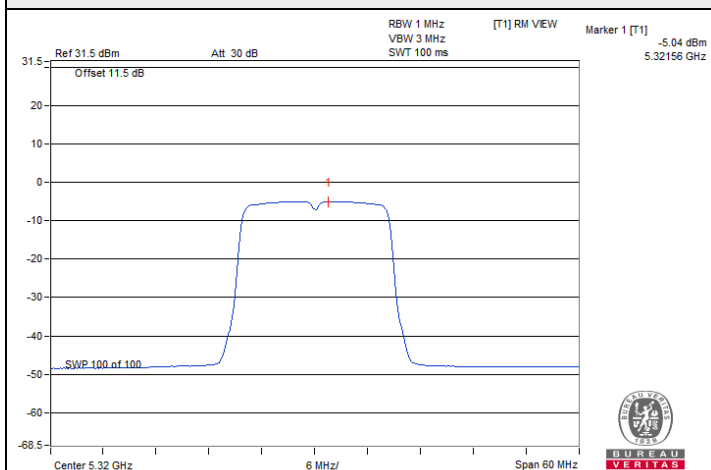
802.11ax (HE80)

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)		Duty Factor (dB)	Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Test Result
		Chain 0	Chain 1				
42	5210	-12.84	-12.57	1.76	-7.93	11	Pass
58	5290	-12.58	-12.63	1.76	-7.83	11	Pass

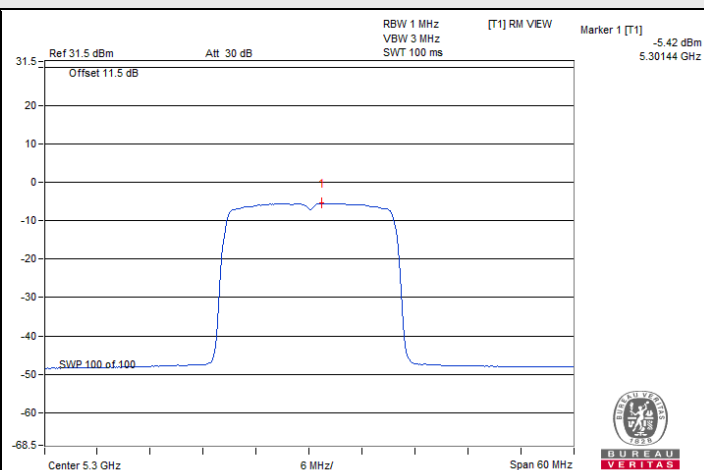
Notes:

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 = $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20})^2 / 2]$
3. For U-NII-1, the directional gain is 3.46 dBi < 6dBi, so the power density limit shall not be reduced.
4. For U-NII-2A, the directional gain is 3.46 dBi < 6 dBi, so the power density limit shall not be reduced.

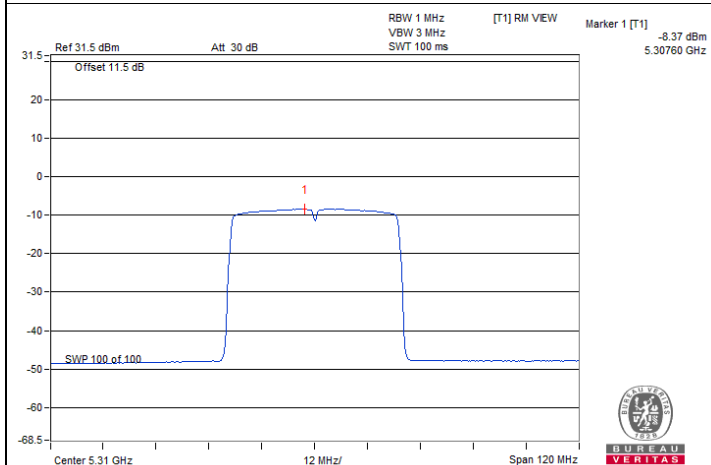
Spectrum Plot of Maximum Value



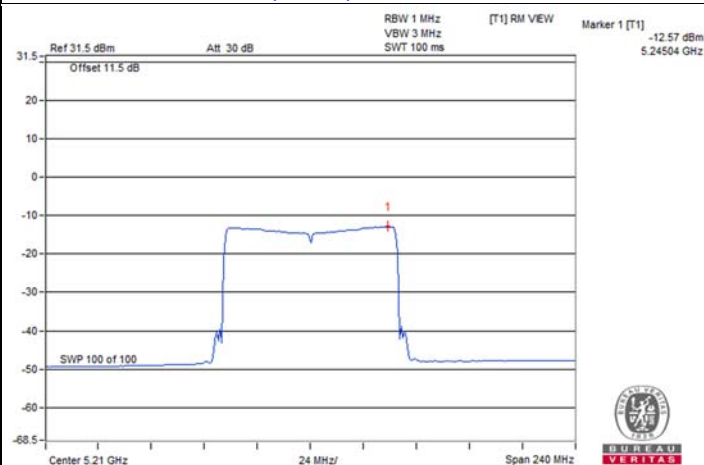
802.11a / Chain 0 : CH 64



802.11ax (HE20) / Chain 0 : CH 60



802.11ax (HE40) / Chain 0 : CH 62



802.11ax (HE80) / Chain 1 : CH 42

7.4 Occupied Bandwidth

Input Power:	5 Vdc	Environmental Conditions:	25°C, 60% RH	Tested By:	Chris Lin
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802.11a

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
36	5180	16.44	16.44
40	5200	16.44	16.44
48	5240	16.32	16.44
52	5260	16.32	16.44
60	5300	16.44	16.44
64	5320	16.44	16.44

802.11ax (HE20)

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
36	5180	18.84	18.96
40	5200	18.84	18.84
48	5240	18.84	18.84
52	5260	18.96	18.84
60	5300	18.84	18.84
64	5320	18.84	18.96

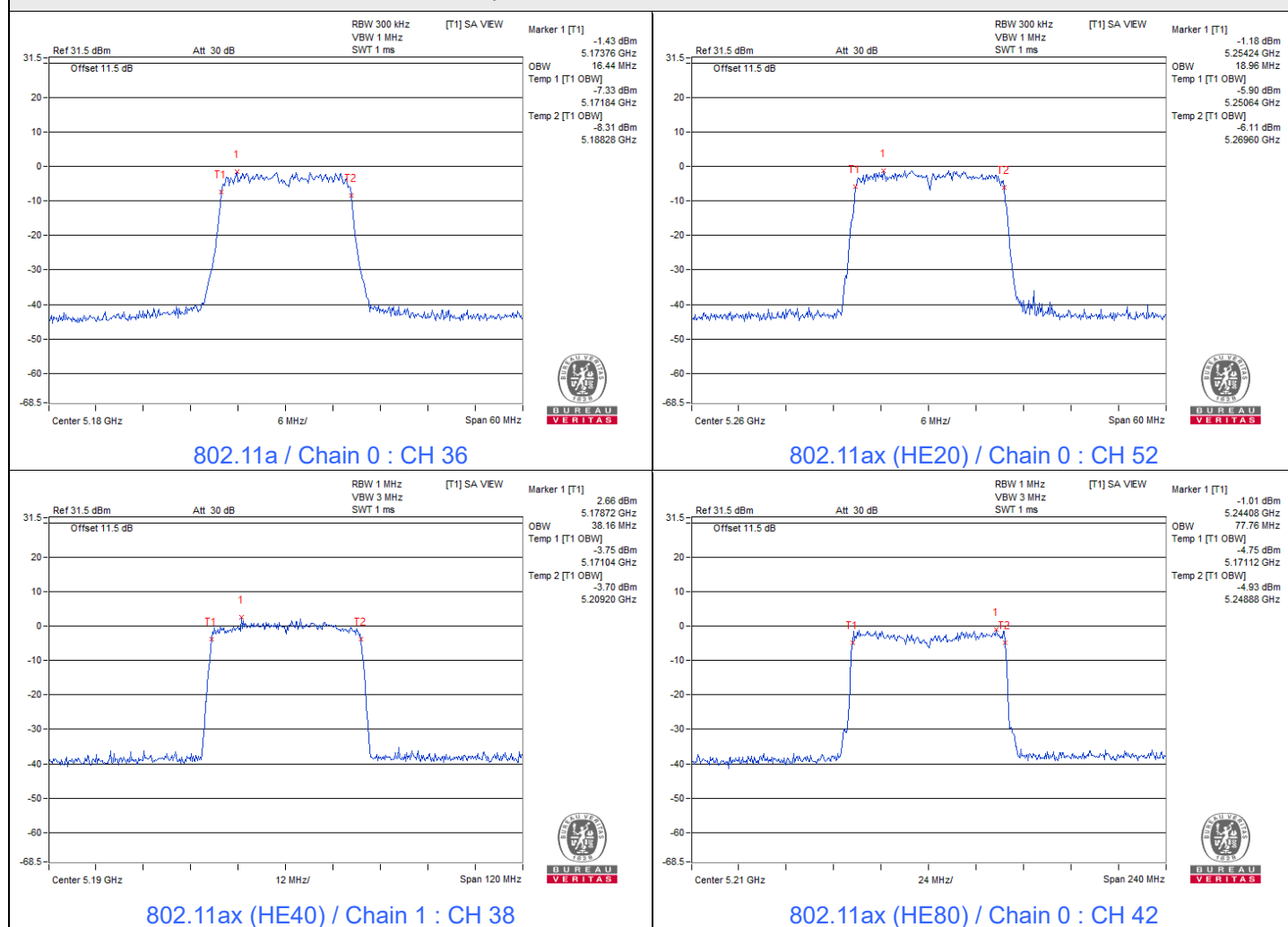
802.11ax (HE40)

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
38	5190	37.92	38.16
46	5230	37.92	37.92
54	5270	37.92	38.16
62	5310	37.92	37.92

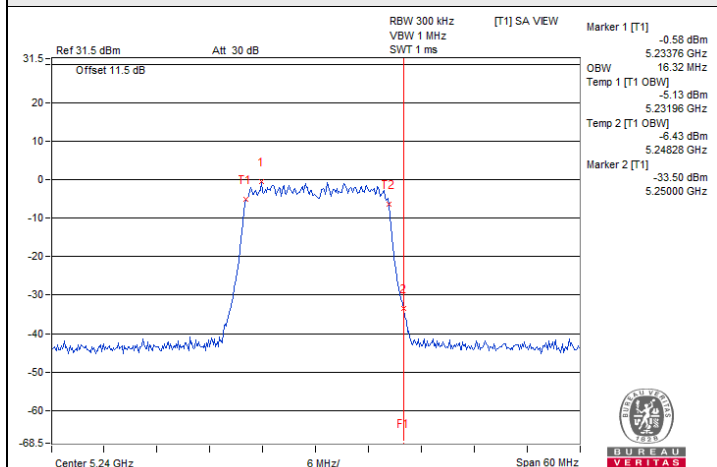
802.11ax (HE80)

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
42	5210	77.76	77.76
58	5290	77.76	77.76

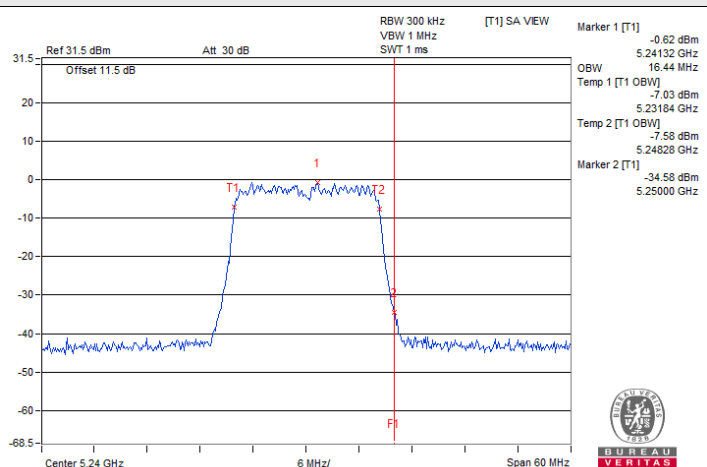
Spectrum Plot of Maximum Value



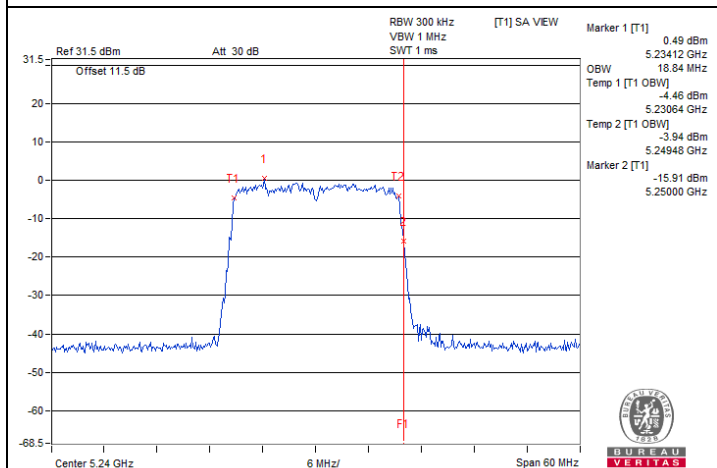
Spectrum Plot for nearby DFS band (DFS is required, if 99% OCP straddle into U-NII-2A)



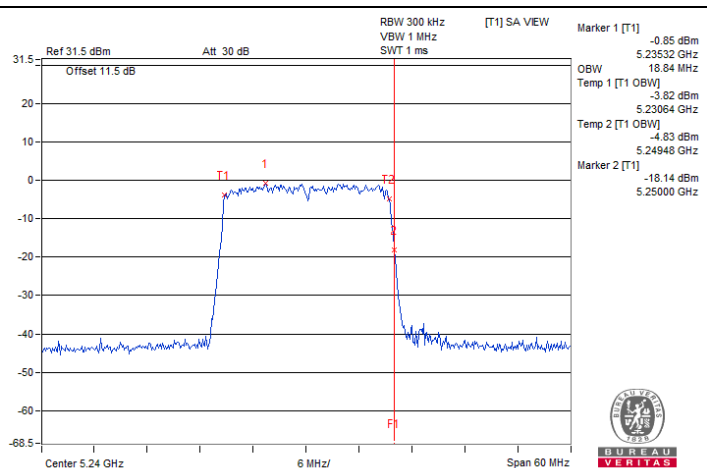
802.11a / Chain 0 : CH 48



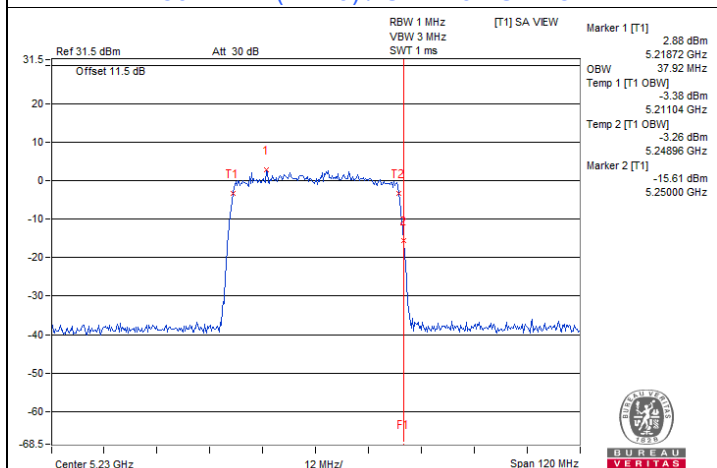
802.11a / Chain 1 : CH 48



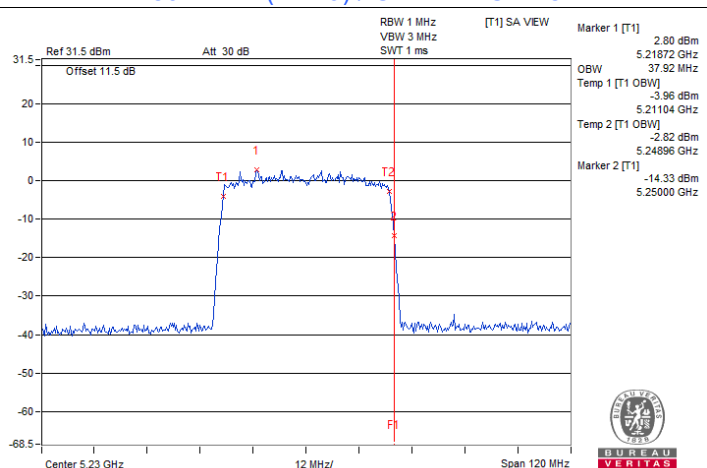
802.11ax (HE20) / Chain 0 : CH 48



802.11ax (HE20) / Chain 1 : CH 48

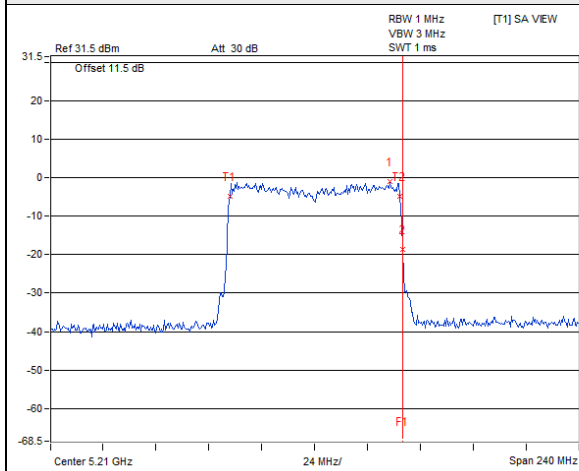


802.11ax (HE40) / Chain 0 : CH 46

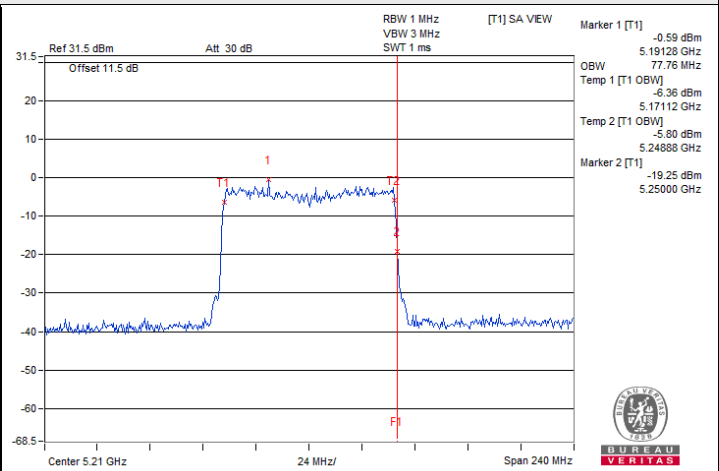


802.11ax (HE40) / Chain 1 : CH 46

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

7.5 Frequency Stability

Input Power:	5 Vdc	Environmental Conditions:	25°C, 60% RH	Tested By:	Chris Lin
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Frequency Stability Versus Temperature									
Operating Frequency: 5180 MHz									
Temp. (°C)	Power Supply (Vac)	0 Minute		2 Minutes		5 Minutes		10 Minutes	
		Measured Frequency (MHz)	Test Result	Measured Frequency (MHz)	Test Result	Measured Frequency (MHz)	Test Result	Measured Frequency (MHz)	Test Result
40	5	5180.0181	Pass	5180.0169	Pass	5180.019	Pass	5180.018	Pass
30	5	5180.0045	Pass	5180.0003	Pass	5180.0038	Pass	5180.0037	Pass
20	5	5179.995	Pass	5179.9977	Pass	5179.9948	Pass	5179.996	Pass
10	5	5180.0063	Pass	5180.008	Pass	5180.0066	Pass	5180.007	Pass
0	5	5180.0231	Pass	5180.0229	Pass	5180.0215	Pass	5180.0234	Pass

Frequency Stability Versus Voltage									
Operating Frequency: 5180 MHz									
Temp. (°C)	Power Supply (Vac)	0 Minute		2 Minutes		5 Minutes		10 Minutes	
		Measured Frequency (MHz)	Test Result	Measured Frequency (MHz)	Test Result	Measured Frequency (MHz)	Test Result	Measured Frequency (MHz)	Test Result
20	5.75	5179.997	Pass	5179.9991	Pass	5179.9964	Pass	5179.997	Pass
	5	5179.995	Pass	5179.9977	Pass	5179.9948	Pass	5179.996	Pass
	4.25	5179.9847	Pass	5179.985	Pass	5179.9865	Pass	5179.9834	Pass

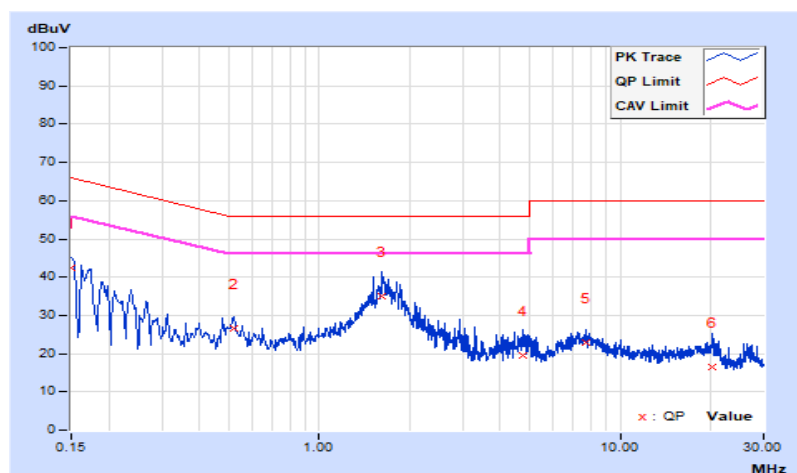
7.6 AC Power Conducted Emissions

RF Mode	802.11a	Channel	CH 48 : 5240 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	23 °C, 63 % RH
Tested By	Karl Li		

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	9.72	32.81	15.98	42.53	25.70	66.00	56.00	-23.47	-30.30
2	0.51800	9.84	16.64	11.76	26.48	21.60	56.00	46.00	-29.52	-24.40
3	1.62200	9.93	25.21	17.47	35.14	27.40	56.00	46.00	-20.86	-18.60
4	4.77000	10.05	9.64	3.16	19.69	13.21	56.00	46.00	-36.31	-32.79
5	7.69000	10.10	12.81	8.01	22.91	18.11	60.00	50.00	-37.09	-31.89
6	20.25800	10.41	6.05	0.83	16.46	11.24	60.00	50.00	-43.54	-38.76

Remarks:

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

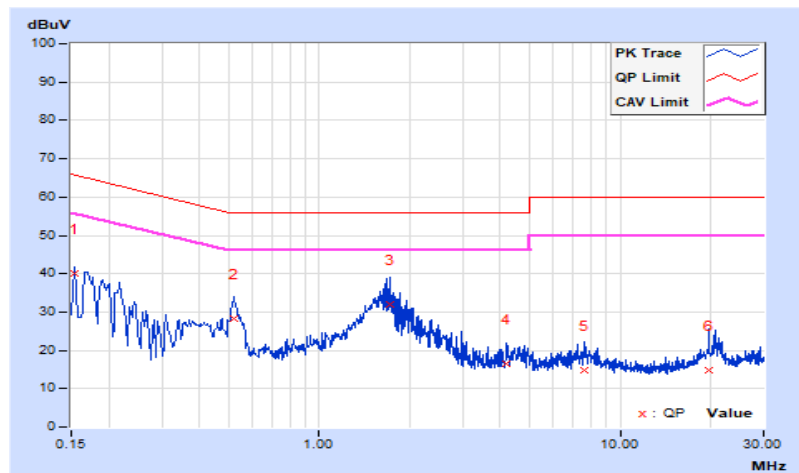


RF Mode	802.11a	Channel	CH 48 : 5240 MHz
Frequency Range	150 kHz ~ 30 MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	23 °C, 63 % RH
Tested By	Karl Li		

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	0.15400	9.69	30.34	15.87	40.03	25.56	65.78	55.78	-25.75	-30.22
2	0.52200	9.88	18.48	12.76	28.36	22.64	56.00	46.00	-27.64	-23.36
3	1.71800	9.96	22.03	13.07	31.99	23.03	56.00	46.00	-24.01	-22.97
4	4.20200	10.05	6.50	0.91	16.55	10.96	56.00	46.00	-39.45	-35.04
5	7.61400	10.15	4.71	0.63	14.86	10.78	60.00	50.00	-45.14	-39.22
6	19.70200	10.54	4.25	0.67	14.79	11.21	60.00	50.00	-45.21	-38.79

Remarks:

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



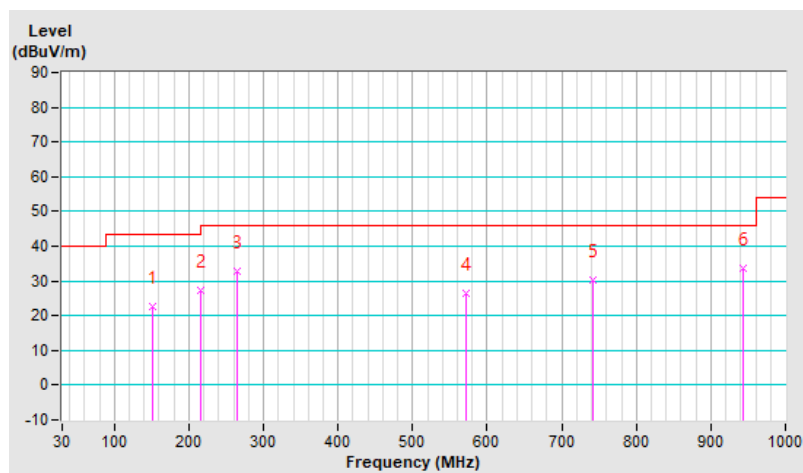
7.7 Unwanted Emissions below 1 GHz

RF Mode	802.11a	Channel	CH 48 : 5240 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	QP: RB=120kHz, DET=Quasi-Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	25 °C, 64 % RH
Tested By	Charles Hsiao		

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	150.28	22.5 QP	43.5	-21.0	1.28 H	88	35.2	-12.7
2	216.24	27.5 QP	46.0	-18.5	1.05 H	216	44.0	-16.5
3	263.77	32.8 QP	46.0	-13.2	1.36 H	66	46.4	-13.6
4	571.26	26.6 QP	46.0	-19.4	1.47 H	154	32.5	-5.9
5	741.98	30.4 QP	46.0	-15.6	1.04 H	100	32.9	-2.5
6	943.74	33.7 QP	46.0	-12.3	1.67 H	118	33.7	0.0

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.

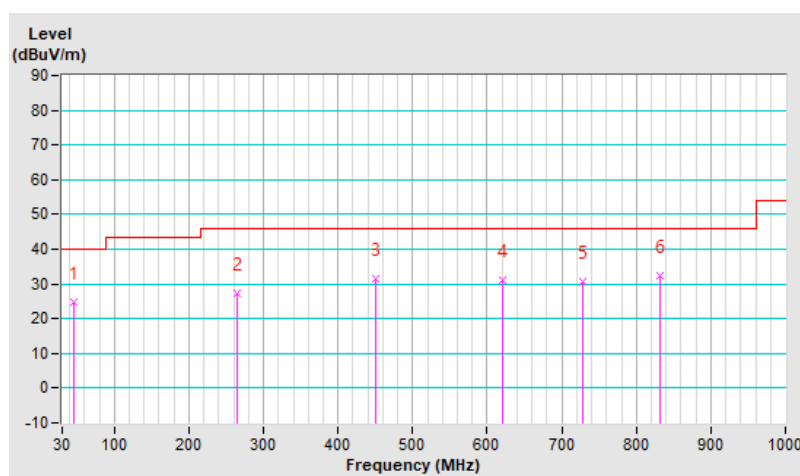


RF Mode	802.11a	Channel	CH 48 : 5240 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	QP: RB=120kHz, DET=Quasi-Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	25 °C, 64 % RH
Tested By	Charles Hsiao		

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	46.49	24.9 QP	40.0	-15.1	1.27 V	44	37.8	-12.9
2	263.77	27.3 QP	46.0	-18.7	1.07 V	77	40.9	-13.6
3	450.98	31.5 QP	46.0	-14.5	1.00 V	250	39.8	-8.3
4	620.73	31.0 QP	46.0	-15.0	1.57 V	162	35.6	-4.6
5	727.43	30.7 QP	46.0	-15.3	1.12 V	228	33.8	-3.1
6	832.19	32.3 QP	46.0	-13.7	1.37 V	119	34.2	-1.9

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



7.8 Unwanted Emissions above 1 GHz

RF Mode	802.11a	Channel	CH 36 : 5180 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=1 kHz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	25 °C, 64 % RH
Tested By	Charles Hsiao		

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	59.5 PK	74.0	-14.5	1.24 H	207	56.7	2.8
2	5150.00	46.5 AV	54.0	-7.5	1.24 H	207	43.7	2.8
3	*5180.00	102.2 PK			2.04 H	127	61.8	40.4
4	*5180.00	91.6 AV			2.04 H	127	51.2	40.4
5	#10360.00	60.4 PK	68.2	-7.8	2.24 H	89	51.1	9.3
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	59.3 PK	74.0	-14.7	1.00 V	169	56.5	2.8
2	5150.00	46.1 AV	54.0	-7.9	1.00 V	169	43.3	2.8
3	*5180.00	103.5 PK			1.00 V	169	63.1	40.4
4	*5180.00	93.6 AV			1.00 V	169	53.2	40.4
5	#10360.00	60.1 PK	68.2	-8.1	1.11 V	42	50.8	9.3

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 40 : 5200 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=1 kHz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	25 °C, 64 % RH
Tested By	Charles Hsiao		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5200.00	101.8 PK			1.27 H	207	61.5	40.3
2	*5200.00	91.2 AV			1.27 H	207	50.9	40.3
3	#10400.00	60.6 PK	68.2	-7.6	1.74 H	115	51.3	9.3
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	*5200.00	103.1 PK			1.00 V	164	62.8	40.3
2	*5200.00	93.2 AV			1.00 V	164	52.9	40.3
3	#10400.00	60.2 PK	68.2	-8.0	1.23 V	38	50.9	9.3

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=1 kHz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	25 °C, 64 % RH
Tested By	Charles Hsiao		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5240.00	102.3 PK			1.32 H	212	61.9	40.4
2	*5240.00	91.7 AV			1.32 H	212	51.3	40.4
3	5350.00	59.0 PK	74.0	-15.0	1.32 H	212	56.4	2.6
4	5350.00	45.4 AV	54.0	-8.6	1.32 H	212	42.8	2.6
5	#10480.00	60.0 PK	68.2	-8.2	2.33 H	107	50.7	9.3
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	*5240.00	104.0 PK			1.09 V	165	63.6	40.4
2	*5240.00	93.9 AV			1.09 V	165	53.5	40.4
3	5350.00	57.7 PK	74.0	-16.3	1.09 V	165	55.1	2.6
4	5350.00	45.3 AV	54.0	-8.7	1.09 V	165	42.7	2.6
5	#10480.00	59.7 PK	68.2	-8.5	1.59 V	178	50.4	9.3

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 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=1 kHz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	25 °C, 64 % RH
Tested By	Charles Hsiao		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	64.2 PK	74.0	-9.8	1.32 H	214	61.4	2.8
2	5150.00	45.5 AV	54.0	-8.5	1.32 H	214	42.7	2.8
3	*5260.00	101.5 PK			1.32 H	214	61.2	40.3
4	*5260.00	91.7 AV			1.32 H	214	51.4	40.3
5	#10520.00	60.1 PK	68.2	-8.1	1.66 H	57	50.8	9.3
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	58.5 PK	74.0	-15.5	1.09 V	165	55.7	2.8
2	5150.00	45.7 AV	54.0	-8.3	1.09 V	165	42.9	2.8
3	*5260.00	103.4 PK			1.09 V	165	63.1	40.3
4	*5260.00	93.8 AV			1.09 V	165	53.5	40.3
5	#10520.00	60.7 PK	68.2	-7.5	1.28 V	241	51.4	9.3

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 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=1 kHz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	25 °C, 64 % RH
Tested By	Charles Hsiao		

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	102.0 PK			1.32 H	208	61.6	40.4
2	*5300.00	92.2 AV			1.32 H	208	51.8	40.4
3	10600.00	60.8 PK	74.0	-13.2	2.74 H	109	51.4	9.4
4	10600.00	47.5 AV	54.0	-6.5	2.74 H	109	38.1	9.4
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	*5300.00	103.8 PK			1.14 V	167	63.4	40.4
2	*5300.00	94.3 AV			1.14 V	167	53.9	40.4
3	10600.00	60.3 PK	74.0	-13.7	2.58 V	114	50.9	9.4
4	10600.00	47.0 AV	54.0	-7.0	2.58 V	114	37.6	9.4

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.

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=1 kHz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	25 °C, 64 % RH
Tested By	Charles Hsiao		

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	103.3 PK			1.24 H	227	63.0	40.3
2	*5320.00	93.2 AV			1.24 H	227	52.9	40.3
3	5350.00	57.8 PK	74.0	-16.2	1.24 H	227	55.2	2.6
4	5350.00	45.3 AV	54.0	-8.7	1.24 H	227	42.7	2.6
5	10640.00	59.7 PK	74.0	-14.3	1.28 H	236	50.6	9.1
6	10640.00	46.5 AV	54.0	-7.5	1.28 H	236	37.4	9.1
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	*5320.00	105.2 PK			1.18 V	169	64.9	40.3
2	*5320.00	95.3 AV			1.18 V	169	55.0	40.3
3	5350.00	58.2 PK	74.0	-15.8	1.18 V	169	55.6	2.6
4	5350.00	45.4 AV	54.0	-8.6	1.18 V	169	42.8	2.6
5	10640.00	60.5 PK	74.0	-13.5	1.30 V	248	51.4	9.1
6	10640.00	47.2 AV	54.0	-6.8	1.30 V	248	38.1	9.1

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.

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=1 kHz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	25 °C, 64 % RH
Tested By	Charles Hsiao		

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	59.1 PK	74.0	-14.9	1.24 H	207	56.3	2.8
2	5150.00	45.8 AV	54.0	-8.2	1.24 H	207	43.0	2.8
3	*5180.00	103.0 PK			1.24 H	207	62.6	40.4
4	*5180.00	90.7 AV			1.24 H	207	50.3	40.4
5	#10360.00	60.5 PK	68.2	-7.7	2.22 H	142	51.2	9.3
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	58.3 PK	74.0	-15.7	1.00 V	169	55.5	2.8
2	5150.00	45.7 AV	54.0	-8.3	1.00 V	169	42.9	2.8
3	*5180.00	105.3 PK			1.00 V	169	64.9	40.4
4	*5180.00	92.8 AV			1.00 V	169	52.4	40.4
5	#10360.00	60.3 PK	68.2	-7.9	1.08 V	241	51.0	9.3

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 40 : 5200 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=1 kHz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	25 °C, 64 % RH
Tested By	Charles Hsiao		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5200.00	102.6 PK			1.27 H	207	62.3	40.3
2	*5200.00	90.3 AV			1.27 H	207	50.0	40.3
3	#10400.00	60.7 PK	68.2	-7.5	1.83 H	115	51.4	9.3
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	*5200.00	104.8 PK			1.00 V	164	64.5	40.3
2	*5200.00	92.4 AV			1.00 V	164	52.1	40.3
3	#10400.00	60.1 PK	68.2	-8.1	1.72 V	151	50.8	9.3

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=1 kHz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	25 °C, 64 % RH
Tested By	Charles Hsiao		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5240.00	103.5 PK			1.32 H	212	63.1	40.4
2	*5240.00	90.6 AV			1.32 H	212	50.2	40.4
3	5350.00	58.2 PK	74.0	-15.8	1.32 H	212	55.6	2.6
4	5350.00	45.3 AV	54.0	-8.7	1.32 H	212	42.7	2.6
5	#10480.00	60.4 PK	68.2	-7.8	1.85 H	32	51.1	9.3
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	*5240.00	106.5 PK			1.09 V	165	66.1	40.4
2	*5240.00	93.8 AV			1.09 V	165	53.4	40.4
3	5350.00	58.7 PK	74.0	-15.3	1.09 V	165	56.1	2.6
4	5350.00	45.1 AV	54.0	-8.9	1.09 V	165	42.5	2.6
5	#10480.00	60.5 PK	68.2	-7.7	1.43 V	258	51.2	9.3

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 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=1 kHz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	25 °C, 64 % RH
Tested By	Charles Hsiao		

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	58.7 PK	74.0	-15.3	1.32 H	214	55.9	2.8
2	5150.00	45.6 AV	54.0	-8.4	1.32 H	214	42.8	2.8
3	*5260.00	102.9 PK			1.32 H	214	62.6	40.3
4	*5260.00	90.7 AV			1.32 H	214	50.4	40.3
5	#10520.00	60.1 PK	68.2	-8.1	1.66 H	352	50.8	9.3
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	58.7 PK	74.0	-15.3	1.09 V	165	55.9	2.8
2	5150.00	45.5 AV	54.0	-8.5	1.09 V	165	42.7	2.8
3	*5260.00	106.5 PK			1.09 V	165	66.2	40.3
4	*5260.00	93.7 AV			1.09 V	165	53.4	40.3
5	#10520.00	60.5 PK	68.2	-7.7	1.72 V	180	51.2	9.3

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 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=1 kHz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	25 °C, 64 % RH
Tested By	Charles Hsiao		

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	103.3 PK			1.32 H	208	62.9	40.4
2	*5300.00	91.1 AV			1.32 H	208	50.7	40.4
3	10600.00	60.0 PK	74.0	-14.0	1.85 H	151	50.6	9.4
4	10600.00	46.8 AV	54.0	-7.2	1.85 H	151	37.4	9.4
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	*5300.00	107.0 PK			1.14 V	167	66.6	40.4
2	*5300.00	94.2 AV			1.14 V	167	53.8	40.4
3	10600.00	60.6 PK	74.0	-13.4	1.26 V	59	51.2	9.4
4	10600.00	47.4 AV	54.0	-6.6	1.26 V	59	38.0	9.4

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.

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=1 kHz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	25 °C, 64 % RH
Tested By	Charles Hsiao		

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	105.7 PK			1.24 H	227	65.4	40.3
2	*5320.00	93.2 AV			1.24 H	227	52.9	40.3
3	5350.00	57.8 PK	74.0	-16.2	1.24 H	227	55.2	2.6
4	5350.00	44.7 AV	54.0	-9.3	1.24 H	227	42.1	2.6
5	10640.00	59.9 PK	74.0	-14.1	1.20 H	243	50.8	9.1
6	10640.00	46.6 AV	54.0	-7.4	1.20 H	243	37.5	9.1
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	*5320.00	108.0 PK			1.18 V	169	67.7	40.3
2	*5320.00	95.6 AV			1.18 V	169	55.3	40.3
3	5350.00	57.9 PK	74.0	-16.1	1.18 V	169	55.3	2.6
4	5350.00	45.4 AV	54.0	-8.6	1.18 V	169	42.8	2.6
5	10640.00	60.0 PK	74.0	-14.0	1.28 V	339	50.9	9.1
6	10640.00	46.8 AV	54.0	-7.2	1.28 V	339	37.7	9.1

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.

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=1 kHz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	25 °C, 64 % RH
Tested By	Charles Hsiao		

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	59.0 PK	74.0	-15.0	1.24 H	204	56.2	2.8
2	5150.00	45.6 AV	54.0	-8.4	1.24 H	204	42.8	2.8
3	*5190.00	101.2 PK			1.24 H	204	60.8	40.4
4	*5190.00	87.9 AV			1.24 H	204	47.5	40.4
5	5350.00	58.7 PK	74.0	-15.3	1.24 H	204	56.1	2.6
6	5350.00	45.1 AV	54.0	-8.9	1.24 H	204	42.5	2.6
7	#10380.00	59.9 PK	68.2	-8.3	1.35 H	62	50.5	9.4
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	5150.00	58.7 PK	74.0	-15.3	1.00 V	170	55.9	2.8
2	5150.00	45.5 AV	54.0	-8.5	1.00 V	170	42.7	2.8
3	*5190.00	102.9 PK			1.00 V	170	62.5	40.4
4	*5190.00	90.1 AV			1.00 V	170	49.7	40.4
5	5350.00	58.3 PK	74.0	-15.7	1.00 V	170	55.7	2.6
6	5350.00	46.9 AV	54.0	-7.1	1.00 V	170	44.3	2.6
7	#10380.00	60.6 PK	68.2	-7.6	1.57 V	114	51.2	9.4

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 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=1 kHz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	25 °C, 64 % RH
Tested By	Charles Hsiao		

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	58.6 PK	74.0	-15.4	1.27 H	211	55.8	2.8
2	5150.00	45.7 AV	54.0	-8.3	1.27 H	211	42.9	2.8
3	*5230.00	102.7 PK			1.27 H	211	62.3	40.4
4	*5230.00	89.1 AV			1.27 H	211	48.7	40.4
5	5350.00	57.9 PK	74.0	-16.1	1.27 H	211	55.3	2.6
6	5350.00	45.2 AV	54.0	-8.8	1.27 H	211	42.6	2.6
7	#10460.00	60.0 PK	68.2	-8.2	1.29 H	322	50.7	9.3
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	58.5 PK	74.0	-15.5	1.11 V	168	55.7	2.8
2	5150.00	45.6 AV	54.0	-8.4	1.11 V	168	42.8	2.8
3	*5230.00	105.2 PK			1.11 V	168	64.8	40.4
4	*5230.00	91.3 AV			1.11 V	168	50.9	40.4
5	5350.00	58.9 PK	74.0	-15.1	1.11 V	168	56.3	2.6
6	5350.00	45.3 AV	54.0	-8.7	1.11 V	168	42.7	2.6
7	#10460.00	60.5 PK	68.2	-7.7	1.77 V	123	51.2	9.3

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 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=1 kHz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	25 °C, 64 % RH
Tested By	Charles Hsiao		

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	58.9 PK	74.0	-15.1	1.32 H	214	56.1	2.8
2	5150.00	45.6 AV	54.0	-8.4	1.32 H	214	42.8	2.8
3	*5270.00	102.8 PK			1.32 H	214	62.5	40.3
4	*5270.00	89.1 AV			1.32 H	214	48.8	40.3
5	5350.00	58.3 PK	74.0	-15.7	1.32 H	214	55.7	2.6
6	5350.00	45.2 AV	54.0	-8.8	1.32 H	214	42.6	2.6
7	#10540.00	59.9 PK	68.2	-8.3	1.48 H	228	50.6	9.3
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	58.7 PK	74.0	-15.3	1.09 V	165	55.9	2.8
2	5150.00	45.5 AV	54.0	-8.5	1.09 V	165	42.7	2.8
3	*5270.00	104.6 PK			1.09 V	165	64.3	40.3
4	*5270.00	91.1 AV			1.09 V	165	50.8	40.3
5	5350.00	59.0 PK	74.0	-15.0	1.09 V	165	56.4	2.6
6	5350.00	45.2 AV	54.0	-8.8	1.09 V	165	42.6	2.6
7	#10540.00	60.6 PK	68.2	-7.6	1.58 V	105	51.3	9.3

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 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=1 kHz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	25 °C, 64 % RH
Tested By	Charles Hsiao		

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	59.3 PK	74.0	-14.7	1.29 H	210	56.5	2.8
2	5150.00	45.6 AV	54.0	-8.4	1.29 H	210	42.8	2.8
3	*5310.00	103.6 PK			1.29 H	210	63.3	40.3
4	*5310.00	89.8 AV			1.29 H	210	49.5	40.3
5	5350.00	57.9 PK	74.0	-16.1	1.29 H	210	55.3	2.6
6	5350.00	45.2 AV	54.0	-8.8	1.29 H	210	42.6	2.6
7	10620.00	60.4 PK	74.0	-13.6	1.88 H	136	51.2	9.2
8	10620.00	47.1 AV	54.0	-6.9	1.88 H	136	37.9	9.2
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	58.9 PK	74.0	-15.1	1.09 V	165	56.1	2.8
2	5150.00	45.6 AV	54.0	-8.4	1.09 V	165	42.8	2.8
3	*5310.00	105.5 PK			1.09 V	165	65.2	40.3
4	*5310.00	91.9 AV			1.09 V	165	51.6	40.3
5	5350.00	58.5 PK	74.0	-15.5	1.09 V	165	55.9	2.6
6	5350.00	45.5 AV	54.0	-8.5	1.09 V	165	42.9	2.6
7	10620.00	60.6 PK	74.0	-13.4	1.59 V	201	51.4	9.2
8	10620.00	47.3 AV	54.0	-6.7	1.59 V	201	38.1	9.2

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 (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=1 kHz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	25 °C, 64 % RH
Tested By	Charles Hsiao		

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	59.6 PK	74.0	-14.4	1.31 H	208	56.8	2.8
2	5150.00	45.9 AV	54.0	-8.1	1.31 H	208	43.1	2.8
3	*5210.00	98.3 PK			1.31 H	208	58.0	40.3
4	*5210.00	85.6 AV			1.31 H	208	45.3	40.3
5	5350.00	57.9 PK	74.0	-16.1	1.31 H	208	55.3	2.6
6	5350.00	45.5 AV	54.0	-8.5	1.31 H	208	42.9	2.6
7	#10420.00	60.0 PK	68.2	-8.2	1.53 H	94	50.6	9.4
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	5150.00	58.9 PK	74.0	-15.1	1.09 V	170	56.1	2.8
2	5150.00	45.6 AV	54.0	-8.4	1.09 V	170	42.8	2.8
3	*5210.00	100.5 PK			1.09 V	170	60.2	40.3
4	*5210.00	88.1 AV			1.09 V	170	47.8	40.3
5	5350.00	58.5 PK	74.0	-15.5	1.09 V	170	55.9	2.6
6	5350.00	44.8 AV	54.0	-9.2	1.09 V	170	42.2	2.6
7	#10420.00	60.7 PK	68.2	-7.5	1.21 V	281	51.3	9.4

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 (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=1 kHz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	25 °C, 64 % RH
Tested By	Charles Hsiao		

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	58.6 PK	74.0	-15.4	1.27 H	221	55.8	2.8
2	5150.00	45.6 AV	54.0	-8.4	1.27 H	221	42.8	2.8
3	*5290.00	100.3 PK			1.27 H	221	59.9	40.4
4	*5290.00	88.0 AV			1.27 H	221	47.6	40.4
5	5350.00	58.5 PK	74.0	-15.5	1.27 H	221	55.9	2.6
6	5350.00	45.5 AV	54.0	-8.5	1.27 H	221	42.9	2.6
7	#10580.00	60.2 PK	68.2	-8.0	1.85 H	340	50.9	9.3
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	58.9 PK	74.0	-15.1	1.18 V	169	56.1	2.8
2	5150.00	45.7 AV	54.0	-8.3	1.18 V	169	42.9	2.8
3	*5290.00	102.4 PK			1.18 V	169	62.0	40.4
4	*5290.00	90.0 AV			1.18 V	169	49.6	40.4
5	5350.00	58.8 PK	74.0	-15.2	1.18 V	169	56.2	2.6
6	5350.00	45.7 AV	54.0	-8.3	1.18 V	169	43.1	2.6
7	#10580.00	60.7 PK	68.2	-7.5	1.79 V	158	51.4	9.3

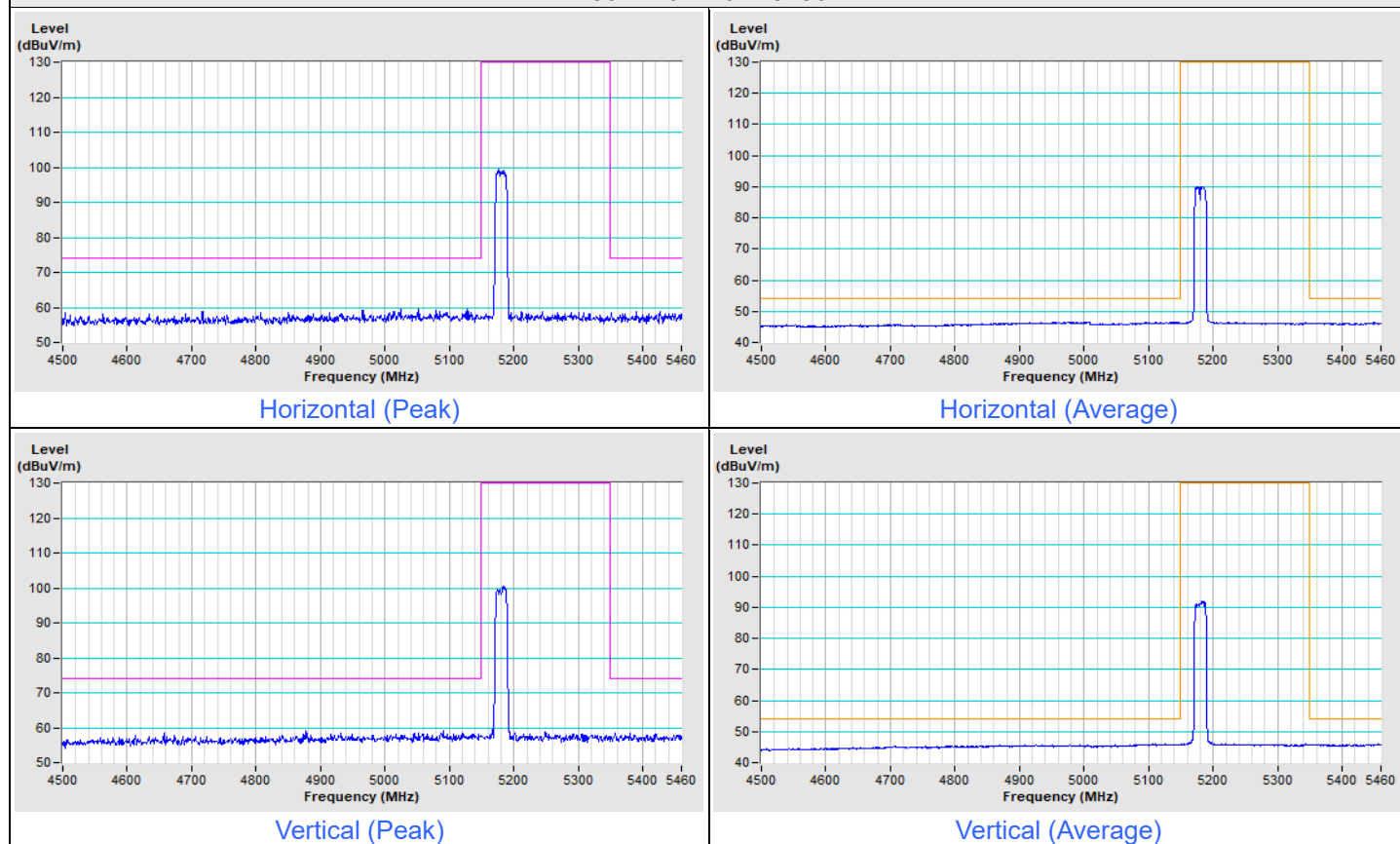
Remarks:

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.

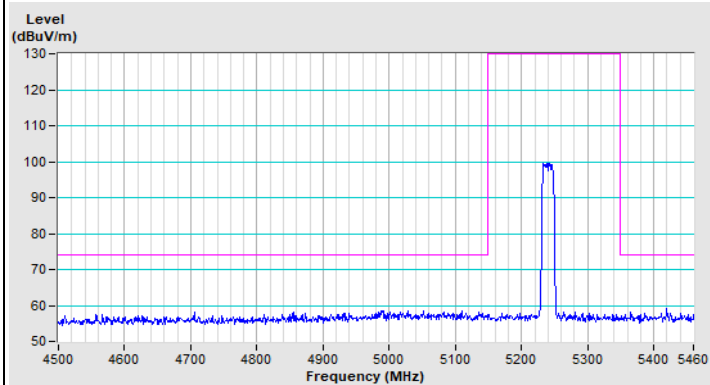
Plot of Band Edge

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=1 kHz, DET=Peak
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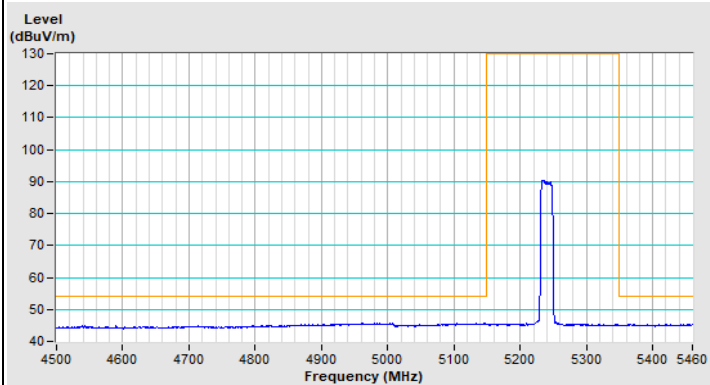
802.11a Channel 36



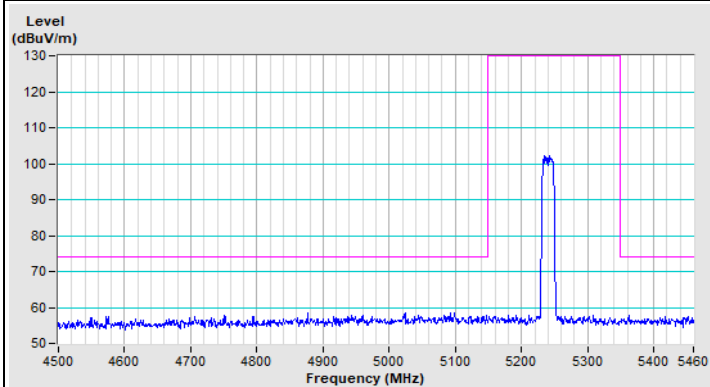
802.11a Channel 48



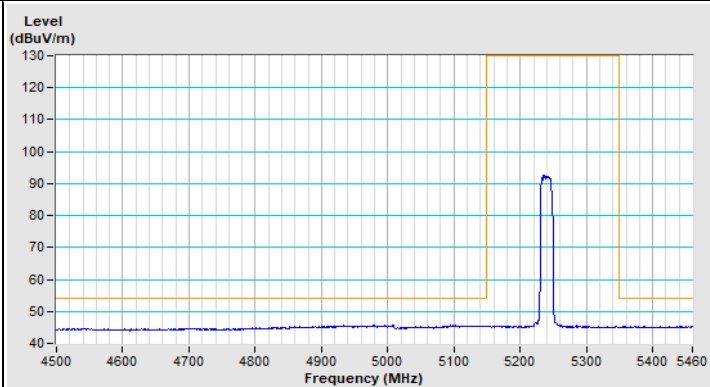
Horizontal (Peak)



Horizontal (Average)

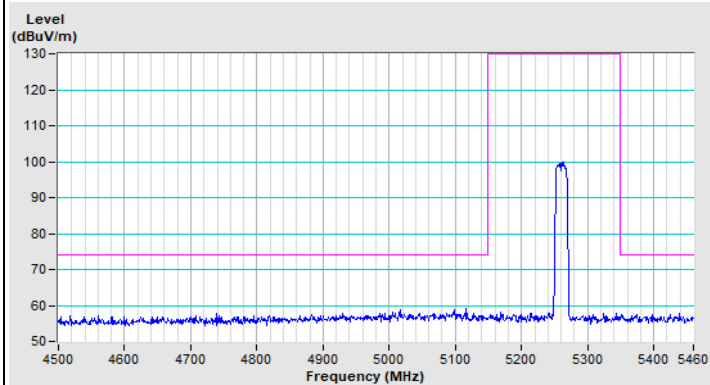


Vertical (Peak)

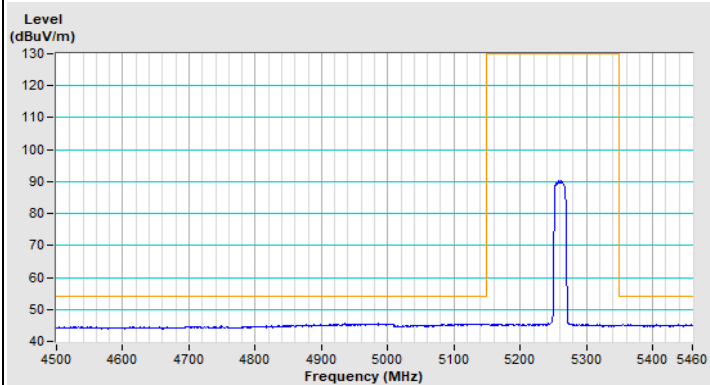


Vertical (Average)

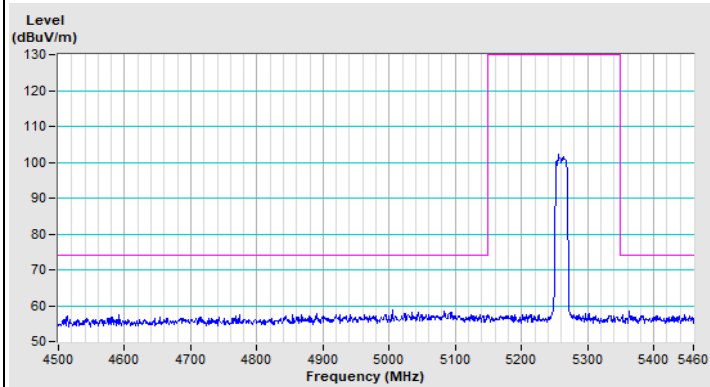
802.11a Channel 52



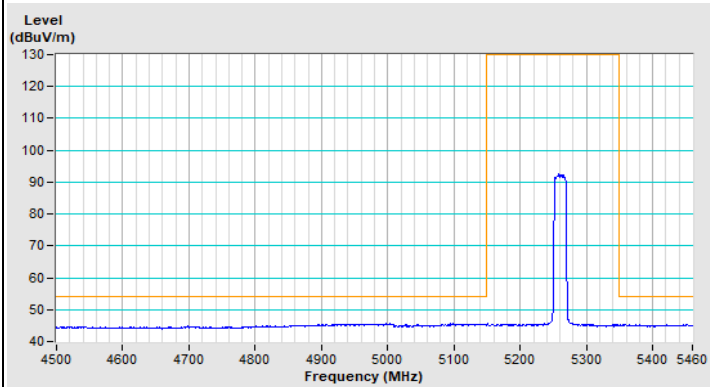
Horizontal (Peak)



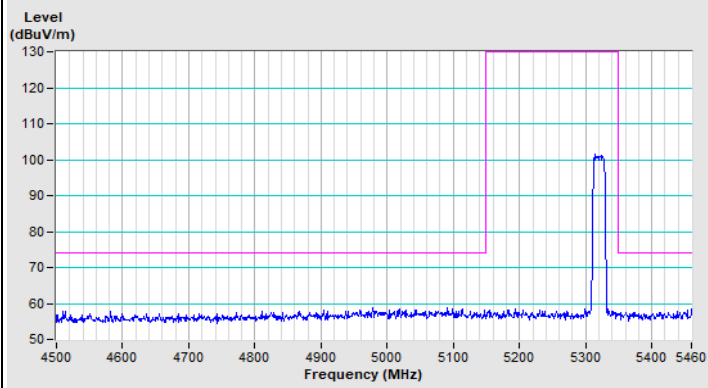
Horizontal (Average)



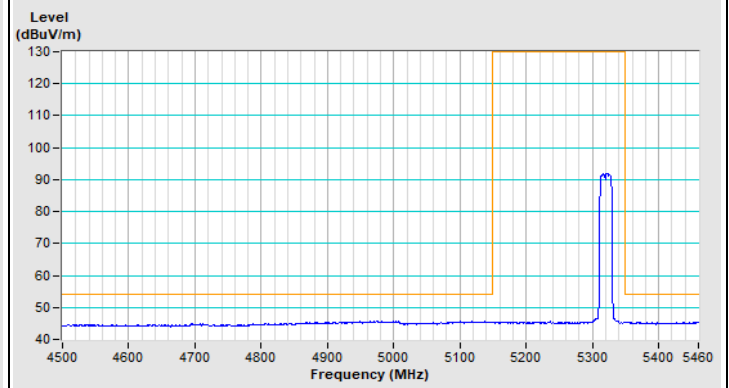
Vertical (Peak)



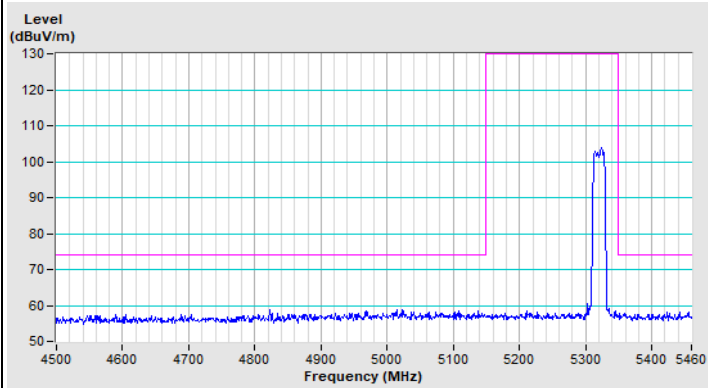
Vertical (Average)

802.11a Channel 64

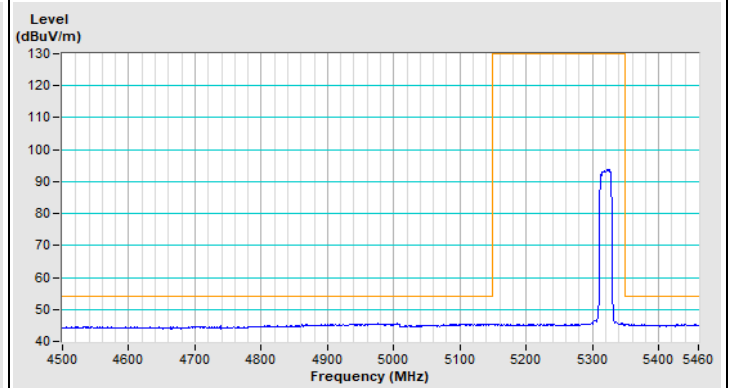
Horizontal (Peak)



Horizontal (Average)



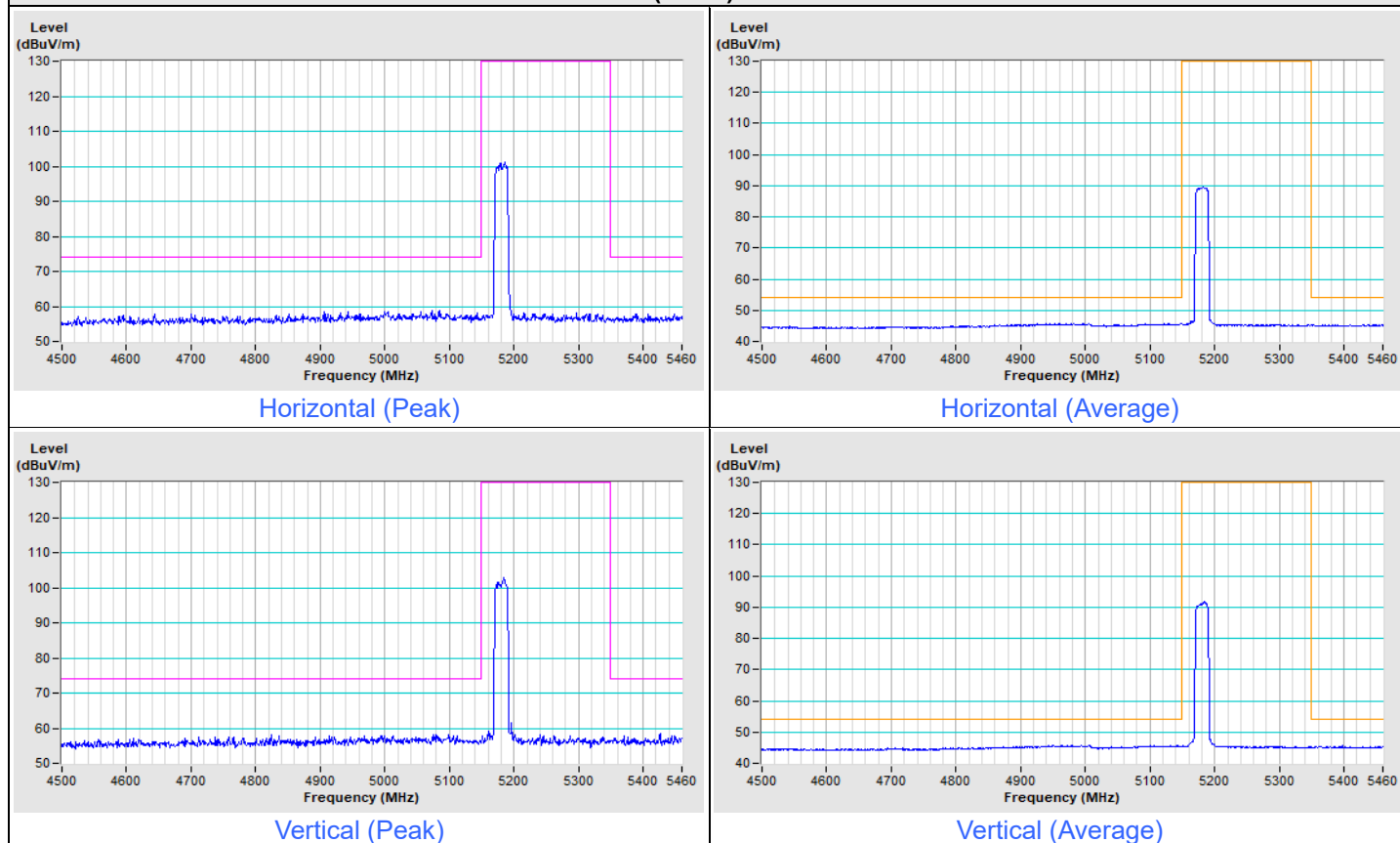
Vertical (Peak)



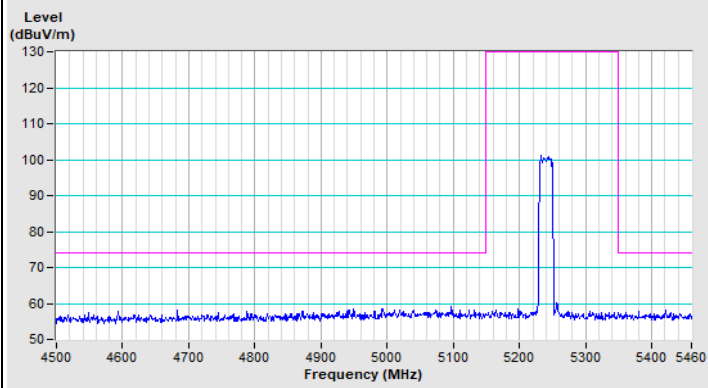
Vertical (Average)

Frequency Range	4.5 GHz ~ 5.46 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=1 kHz, DET=Peak
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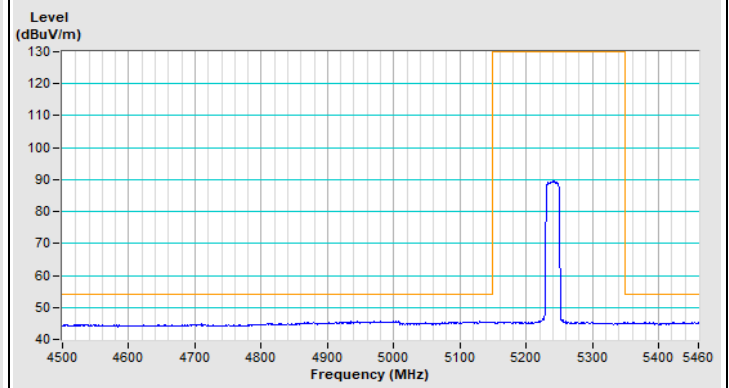
802.11ax (HE20) Channel 36



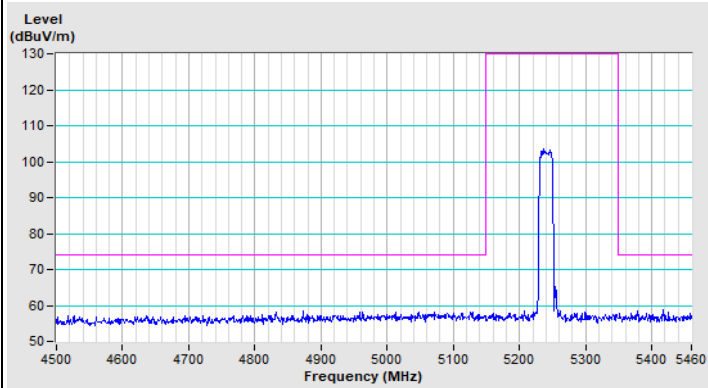
802.11ax (HE20) Channel 48



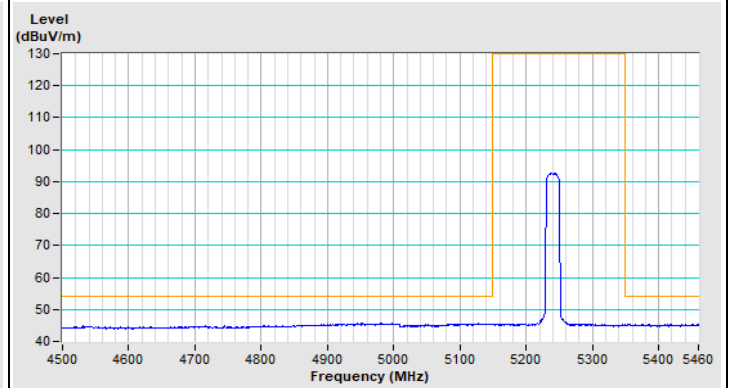
Horizontal (Peak)



Horizontal (Average)

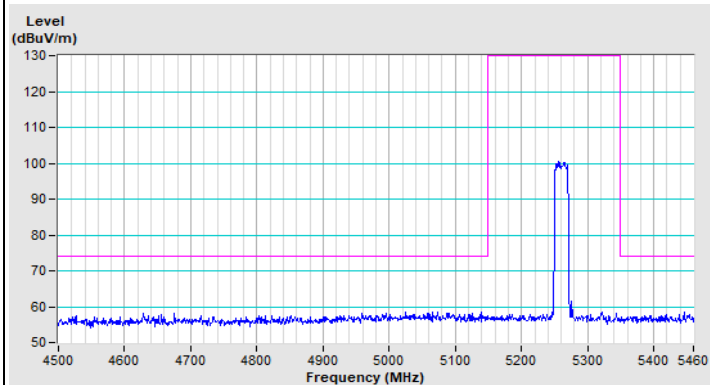


Vertical (Peak)

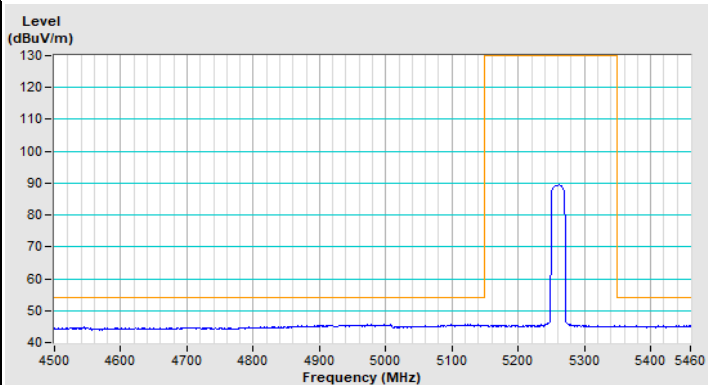


Vertical (Average)

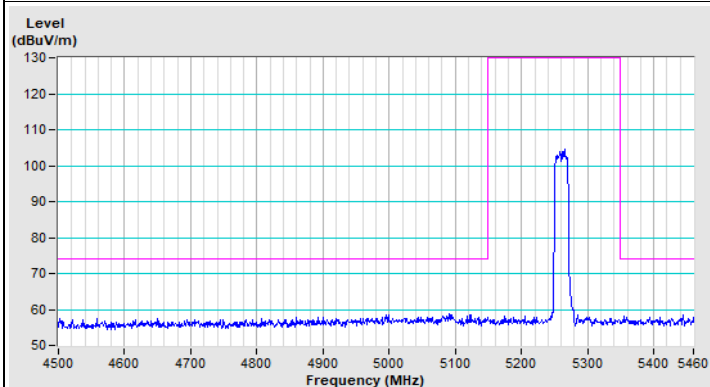
802.11ax (HE20) Channel 52



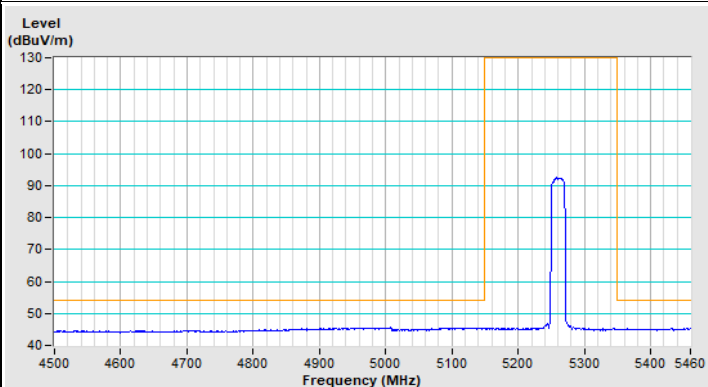
Horizontal (Peak)



Horizontal (Average)

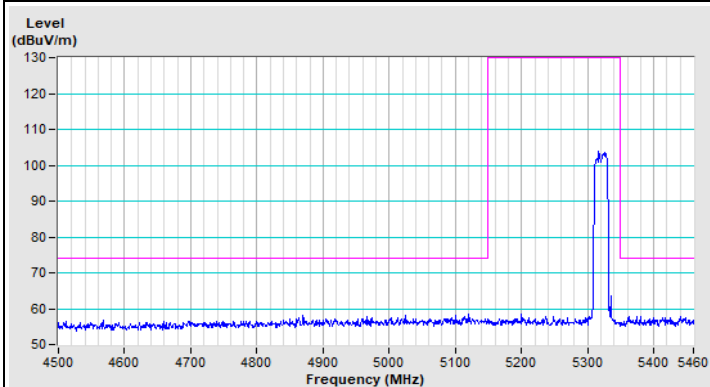


Vertical (Peak)

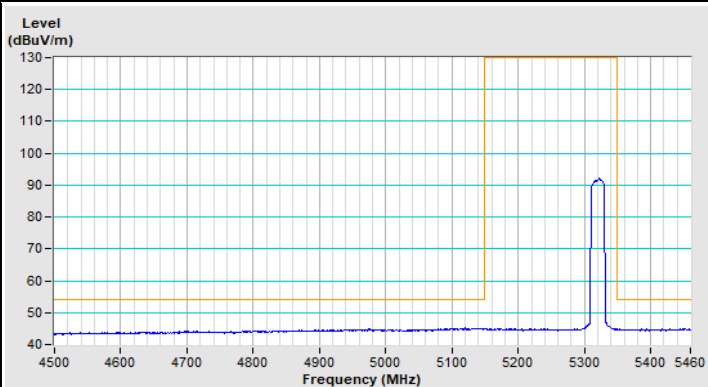


Vertical (Average)

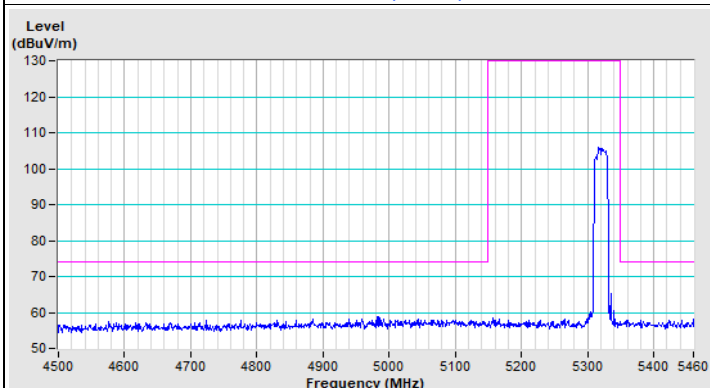
802.11ax (HE20) Channel 64



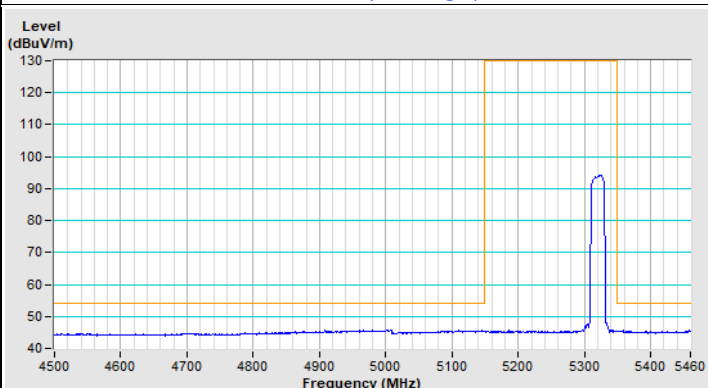
Horizontal (Peak)



Horizontal (Average)



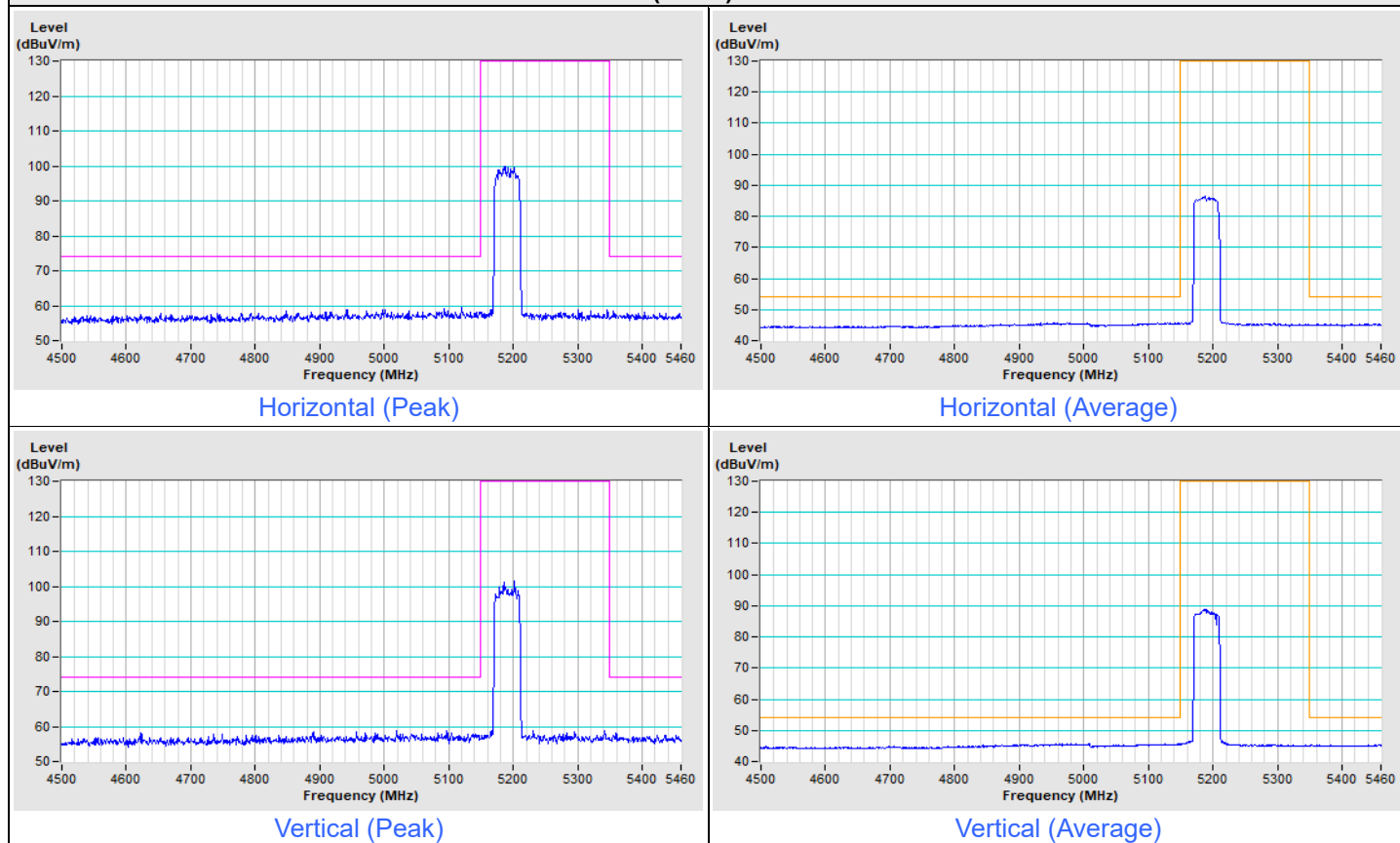
Vertical (Peak)



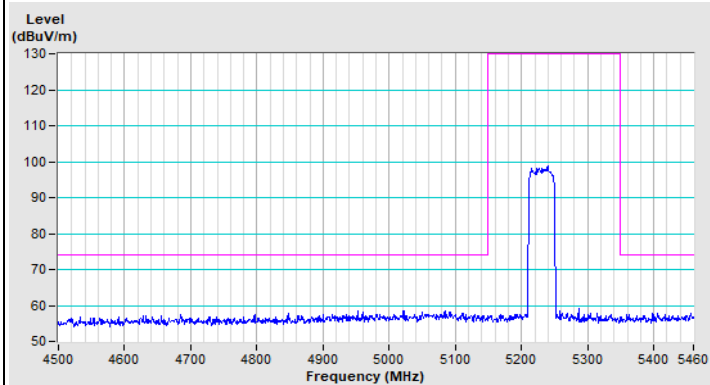
Vertical (Average)

Frequency Range	4.5 GHz ~ 5.46 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=1 kHz, DET=Peak
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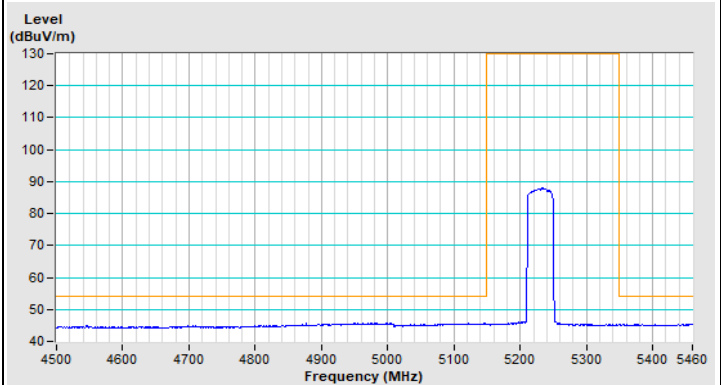
802.11ax (HE40) Channel 38



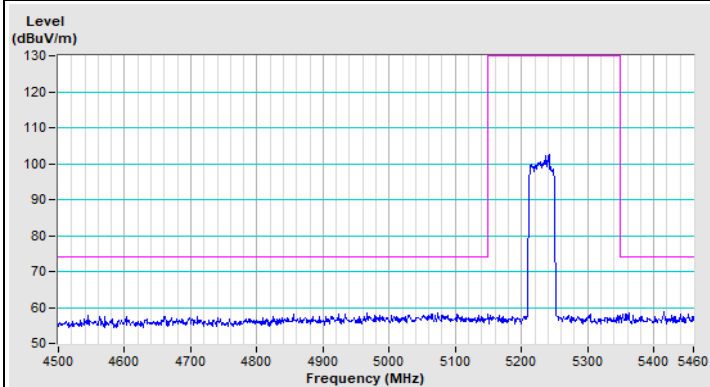
802.11ax (HE40) Channel 46



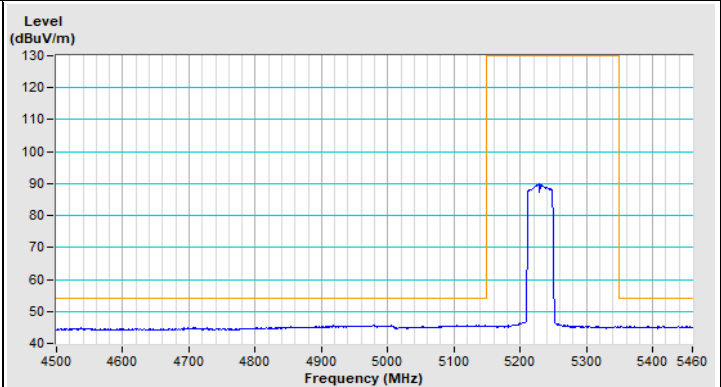
Horizontal (Peak)



Horizontal (Average)

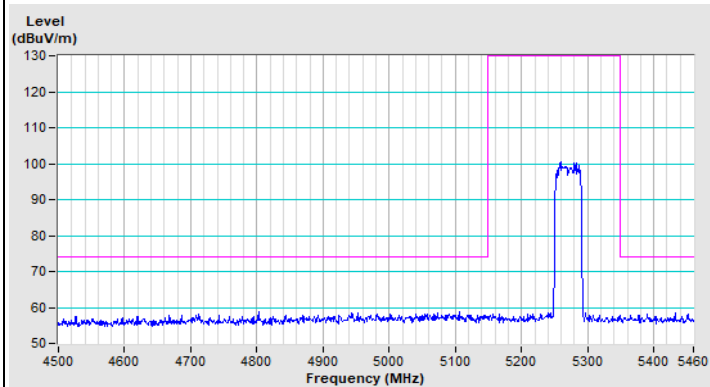


Vertical (Peak)

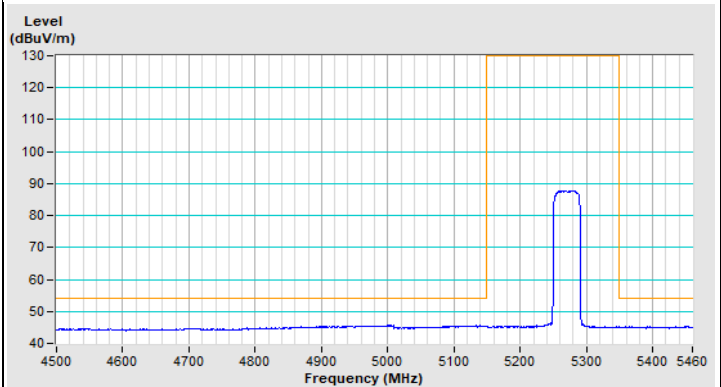


Vertical (Average)

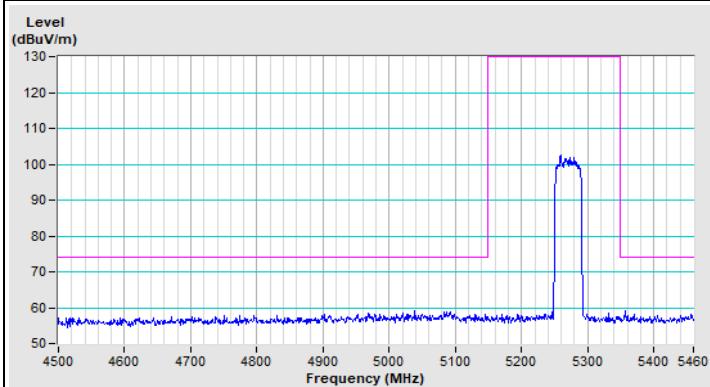
802.11ax (HE40) Channel 54



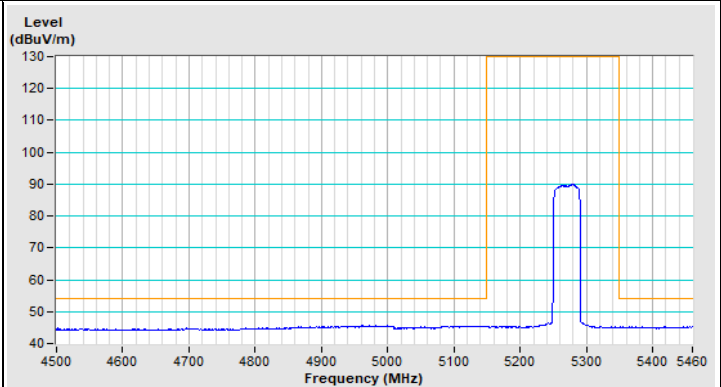
Horizontal (Peak)



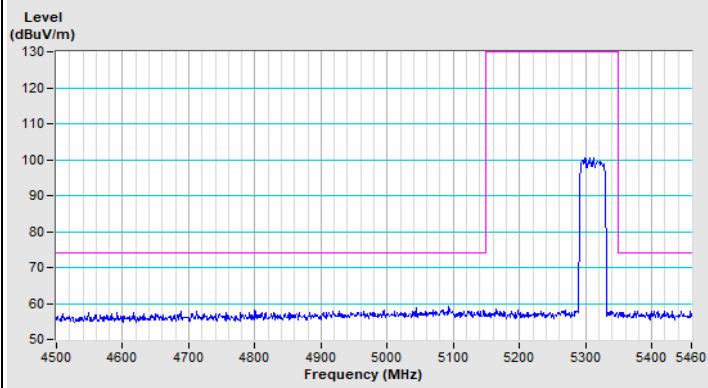
Horizontal (Average)



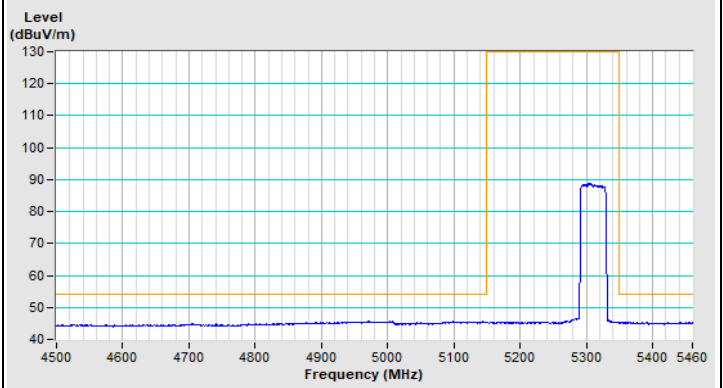
Vertical (Peak)



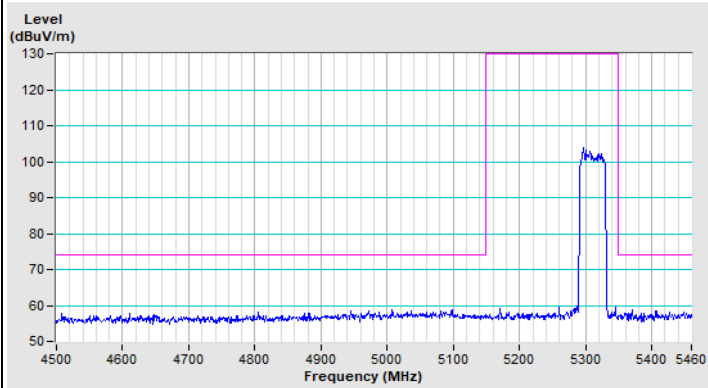
Vertical (Average)

802.11ax (HE40) Channel 62

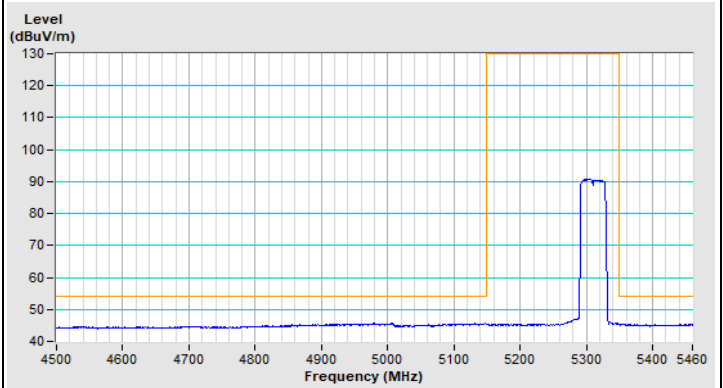
Horizontal (Peak)



Horizontal (Average)



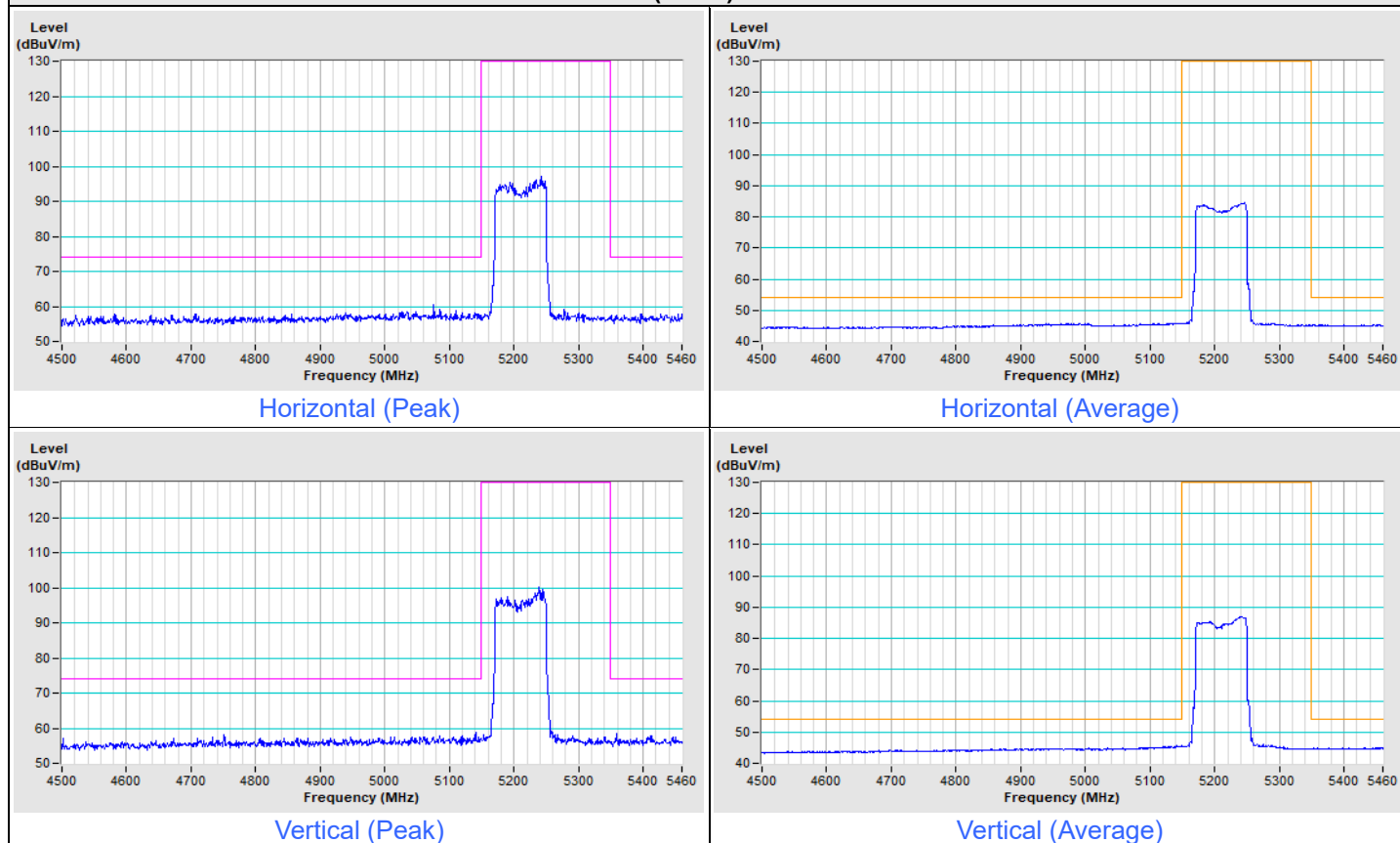
Vertical (Peak)

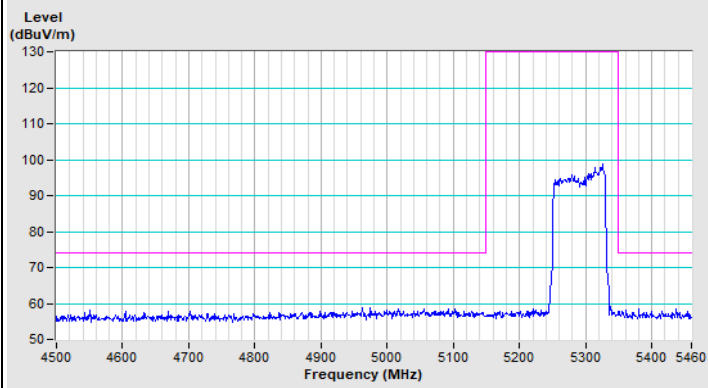


Vertical (Average)

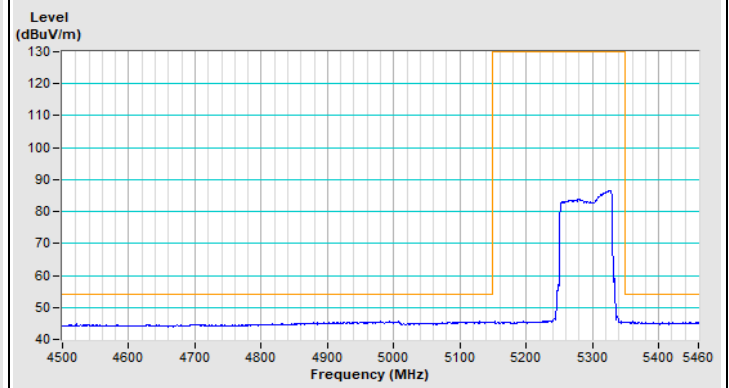
Frequency Range	4.5 GHz ~ 5.46 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=1 kHz, DET=Peak
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802.11ax (HE80) Channel 42

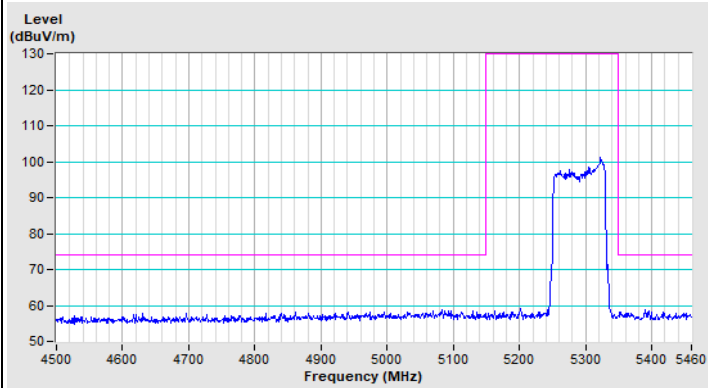


802.11ax (HE80) Channel 58

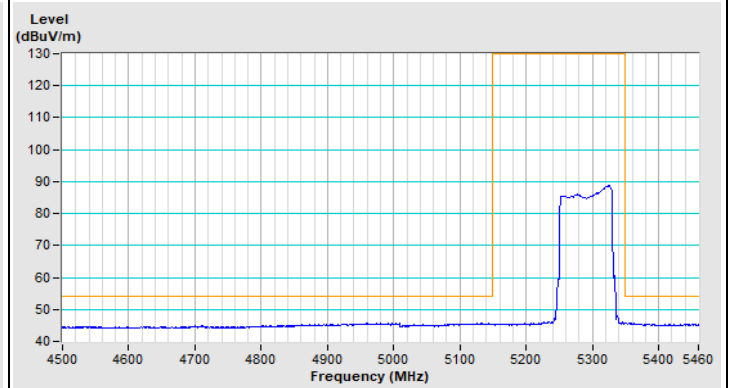
Horizontal (Peak)



Horizontal (Average)



Vertical (Peak)



Vertical (Average)

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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Email: service.adt@bureauveritas.com

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

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

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