

TEST REPORT

CERTIFICATE OF CONFORMITY

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

Report No.: RFBCKS-WTW-P25030148-1

FCC ID: 2AWHPR251

Product: Starlink Router

Brand: SPACEX, *SPACEX*, *X*, STARLINK

Model No.: UTR-251

Received Date: 2025/2/13

Test Date: 2025/2/22 ~ 2025/3/28

Issued Date: 2025/4/2

Applicant: Space Exploration Technologies Corp. (SPACEX)

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FCC Registration / 788550 / TW0003

Designation Number: 281270 / TW0032

Approved by:

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, **Date:**

2025/4/2

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Prepared by : Lena Wang / Specialist

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Release Control Record

Issue No.	Description	Date Issued
RFBCKS-WTW-P25030148-1	Original release.	2025/4/2

1 Certificate

Product: Starlink Router

Brand: SPACEX, *SPACEX*, *X*, STARLINK

Test Model: UTR-251

Sample Status: Engineering sample

Applicant: Space Exploration Technologies Corp. (SPACEX)

Test Date: 2025/2/22 ~ 2025/3/28

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

Measurement procedure: ANSI C63.10-2013
KDB 789033 D02 General UNII Test Procedure New Rules v02r01
KDB 662911 D01 Multiple Transmitter Output v02r01

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

2 Summary of Test Results

47 CFR FCC Part 15, Subpart E (Section 15.407)			
Clause	Test Item	Result	Remark
15.407(a)(1) 15.407(a)(3)	RF Output Power	Pass	Meet the requirement of limit.
15.407(a)(1) 15.407(a)(3)	Power Spectral Density	Pass	Meet the requirement of limit.
15.407(e)	6 dB Bandwidth	Pass	Meet the requirement of limit. (U-NII-3 Band only)
---	Occupied Bandwidth	-	Reference only.
15.407(b)(9)	AC Power Conducted Emissions	Pass	Minimum passing margin is -10.33 dB at 0.63800 MHz
15.407(b)(9)	Unwanted Emissions below 1 GHz	Pass	Minimum passing margin is -2.9 dB at 66.86 MHz
15.407(b) (1/10) 15.407(b) (4(i)/10)	Unwanted Emissions above 1 GHz	Pass	Minimum passing margin is -0.2 dB at 5641.60 MHz
15.203	Antenna Requirement	Pass	Antenna connector is ipex(MHF) not a standard connector.

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

2.1 Measurement Uncertainty

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

Measurement	Specification	Expanded Uncertainty (k=2) (±)
RF Output Power	-	1.371 dB
Power Spectral Density	-	1.017 dB
6 dB Bandwidth	-	206.5 Hz
Occupied Bandwidth	-	72 Hz
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	Starlink Router
Brand	SPACE X, <i>SPACE X</i> , <i>X</i> , STARLINK
Test Model	UTR-251
Status of EUT	Engineering sample
Power Supply Rating	Refer to note
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	802.11a: up to 54 Mbps 802.11n: up to 450 Mbps 802.11ac: up to 1300 Mbps 802.11ax: up to 1801.5 Mbps
Operating Frequency	5.18 GHz ~ 5.25 GHz 5.745 GHz ~ 5.825 GHz
Number of Channel	802.11a, 802.11n (HT20), 802.11ac (VHT20), 802.11ax (HE20): 9 802.11n (HT40), 802.11ac (VHT40), 802.11ax (HE40): 4 802.11ac (VHT80), 802.11ax (HE80): 2
Output Power	5.18 GHz ~ 5.24 GHz : 658.54 mW (28.19 dBm) 5.745 GHz ~ 5.825 GHz : 831.36 mW (29.2 dBm)
EUT Category	Indoor Access Point

Note:

1. The EUT uses following accessories.

Item	Brand	Model	Part Number	Specification
AC Adapter	Starlink	UTP-251L	39005000-501/A	AC Input : 100-240V, 0.6A, 50/60Hz DC Output : 9.0V, 1.6A DC Output Cable : 1.55M

2. There are WLAN (2.4 GHz & 5 GHz & 5.9 GHz) technology used for the EUT.

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

3.2 Antenna Description of EUT

1. The antenna information is listed as below.

Antenna NO.	RF Chain NO.	Antenna Net Gain(dBi)	Frequency range	Antenna Type	Connector Type
0	0	2.07	2.4 GHz ~ 2.4835 GHz	PCB	ipex(MHF)
1	1	2.02	2.4 GHz ~ 2.4835 GHz	PCB	ipex(MHF)
0	0	3.13	5.15 GHz ~ 5.25 GHz	PCB	ipex(MHF)
		3.25	5.725 GHz ~ 5.85 GHz	PCB	ipex(MHF)
		2.7	5.85 GHz ~ 5.895 GHz	PCB	ipex(MHF)
1	1	3.66	5.15 GHz ~ 5.25 GHz	PCB	ipex(MHF)
		3.54	5.725 GHz ~ 5.85 GHz	PCB	ipex(MHF)
		3.08	5.85 GHz ~ 5.895 GHz	PCB	ipex(MHF)
2	2	1.08	5.15 GHz ~ 5.25 GHz	PCB	ipex(MHF)
		2.23	5.725 GHz ~ 5.85 GHz	PCB	ipex(MHF)
		2.86	5.85 GHz ~ 5.895 GHz	PCB	ipex(MHF)

* 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	3TX	3RX
802.11n (HT20)	3TX	3RX
802.11n (HT40)	3TX	3RX
802.11ac (VHT20)	3TX	3RX
802.11ac (VHT40)	3TX	3RX
802.11ac (VHT80)	3TX	3RX
802.11ax (HE20)	3TX	3RX
802.11ax (HE40)	3TX	3RX
802.11ax (HE80)	3TX	3RX

Note:

1. All of modulation mode support beamforming function except 802.11a modulation mode.
2. The EUT support Beamforming and CDD mode, therefore both mode were investigated and the worst case scenario was identified. The worst case data were presented in test report.
3. The modulation and bandwidth are similar for 802.11n mode for 20 MHz (40 MHz), 802.11ac mode for 20 MHz (40 MHz, 80 MHz) and 802.11ax mode for 20 MHz (40 MHz, 80 MHz). Therefore the investigated worst case is the representative mode in test report.

3.3 Channel List

FOR 5180 ~ 5240 MHz

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

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

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

Channel	Frequency	Channel	Frequency
38	5190 MHz	46	5230 MHz

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

Channel	Frequency
42	5210 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

Pre-Scan:	1. Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
Worst Case:	The EUT is designed to be positioned on the z-plane 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
RF Output Power	802.11a	CDD	36, 40, 48, 149, 157, 165	BPSK	6Mb/s
	802.11ax (HE20)	CDD & Beamforming	36, 40, 48, 149, 157, 165	BPSK	MCS0
	802.11ax (HE40)	CDD & Beamforming	38, 46, 151, 159	BPSK	MCS0
	802.11ax (HE80)	CDD & Beamforming	42, 155	BPSK	MCS0
Power Spectral Density	802.11a	CDD	36, 40, 48, 149, 157, 165	BPSK	6Mb/s
	802.11ax (HE20)	CDD	36, 40, 48, 149, 157, 165	BPSK	MCS0
	802.11ax (HE40)	CDD	38, 46, 151, 159	BPSK	MCS0
	802.11ax (HE80)	CDD	42, 155	BPSK	MCS0
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, 149, 157, 165	BPSK	6Mb/s
	802.11ax (HE20)	CDD	36, 40, 48, 149, 157, 165	BPSK	MCS0
	802.11ax (HE40)	CDD	38, 46, 151, 159	BPSK	MCS0
	802.11ax (HE80)	CDD	42, 155	BPSK	MCS0
AC Power Conducted Emissions	802.11a	CDD	165	BPSK	6Mb/s
Unwanted Emissions below 1 GHz	802.11a	CDD	165	BPSK	6Mb/s
Unwanted Emissions above 1 GHz	802.11a	CDD	36, 40, 48, 149, 157, 165	BPSK	6Mb/s
	802.11ax (HE20)	CDD	36, 40, 48, 149, 157, 165	BPSK	MCS0
	802.11ax (HE40)	CDD	38, 46, 151, 159	BPSK	MCS0
	802.11ax (HE80)	CDD	42, 155	BPSK	MCS0

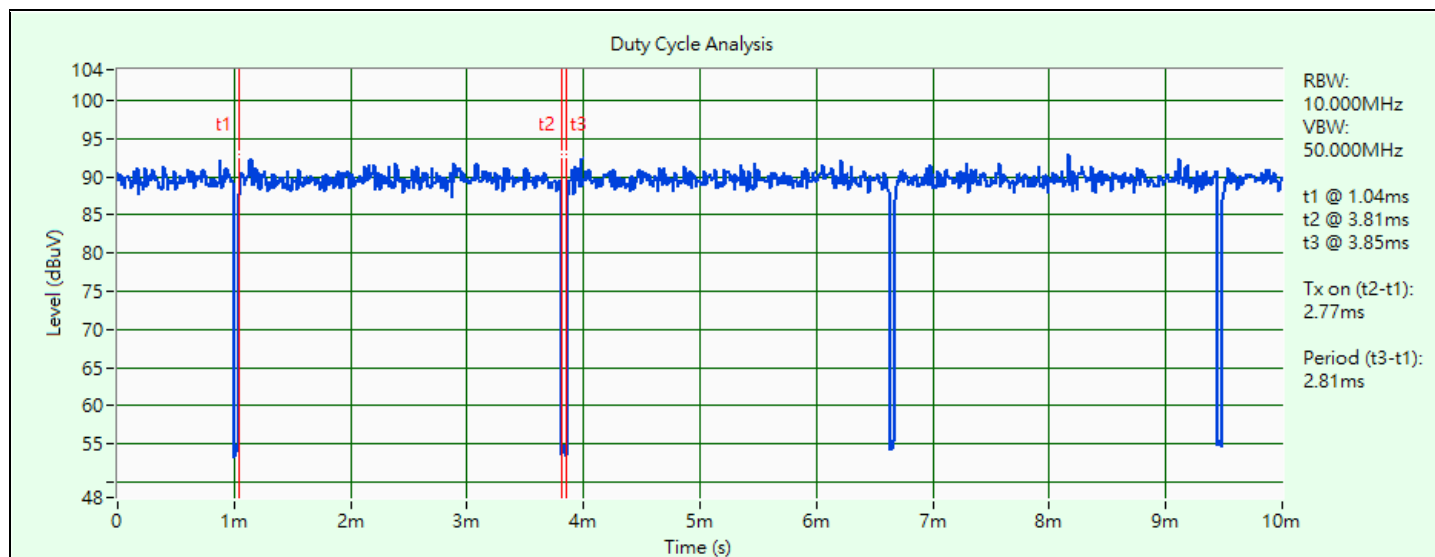
3.5 Duty Cycle of Test Signal

802.11a: Duty cycle = 2.77 ms / 2.81 ms x 100% = 98.6%

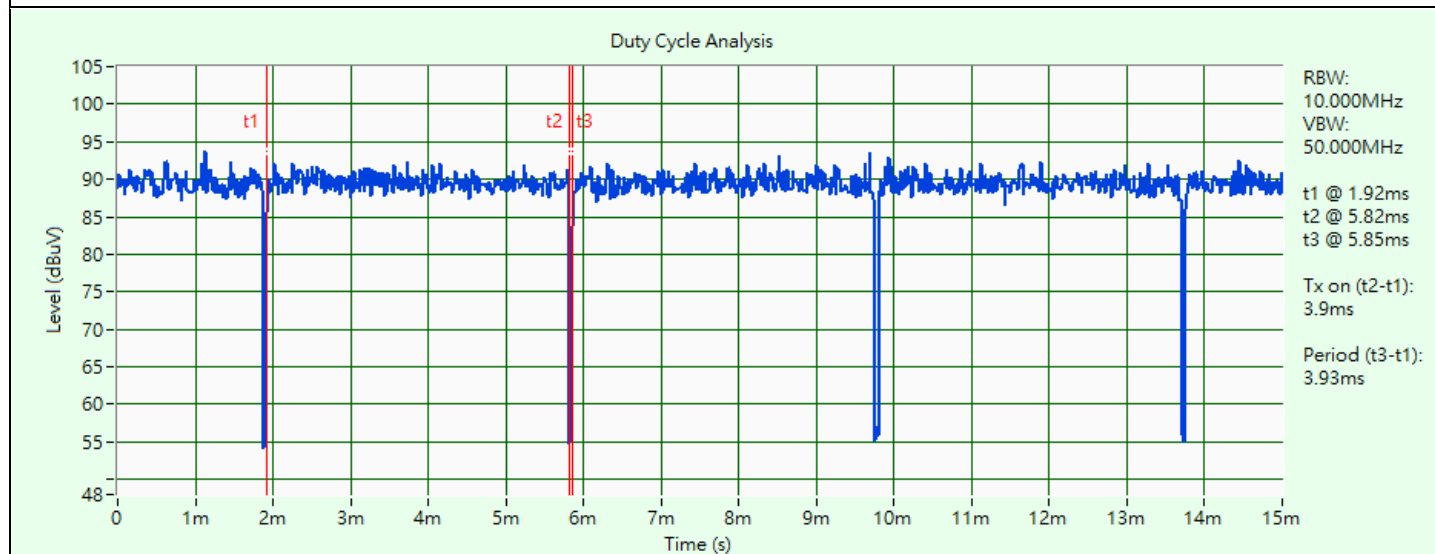
802.11ax (HE20): Duty cycle = 3.9 ms / 3.93 ms x 100% = 99.2%

802.11ax (HE40): Duty cycle = 3.9 ms / 3.93 ms x 100% = 99.2%

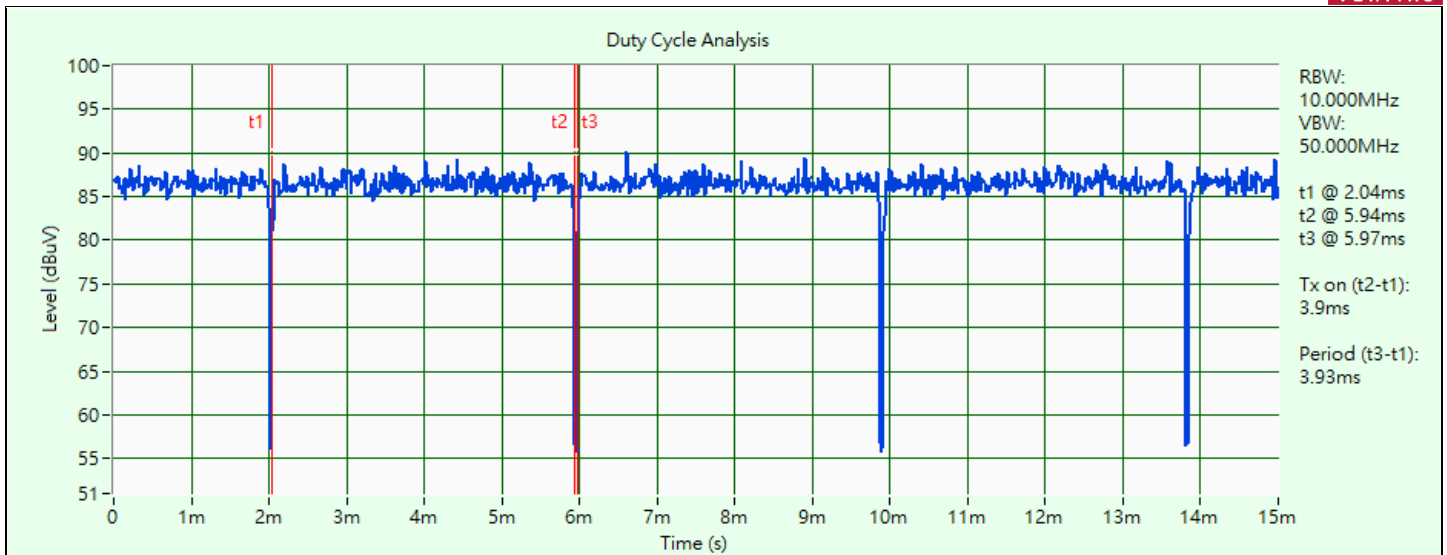
802.11ax (HE80): Duty cycle = 3.735 ms / 3.75 ms x 100% = 99.6%



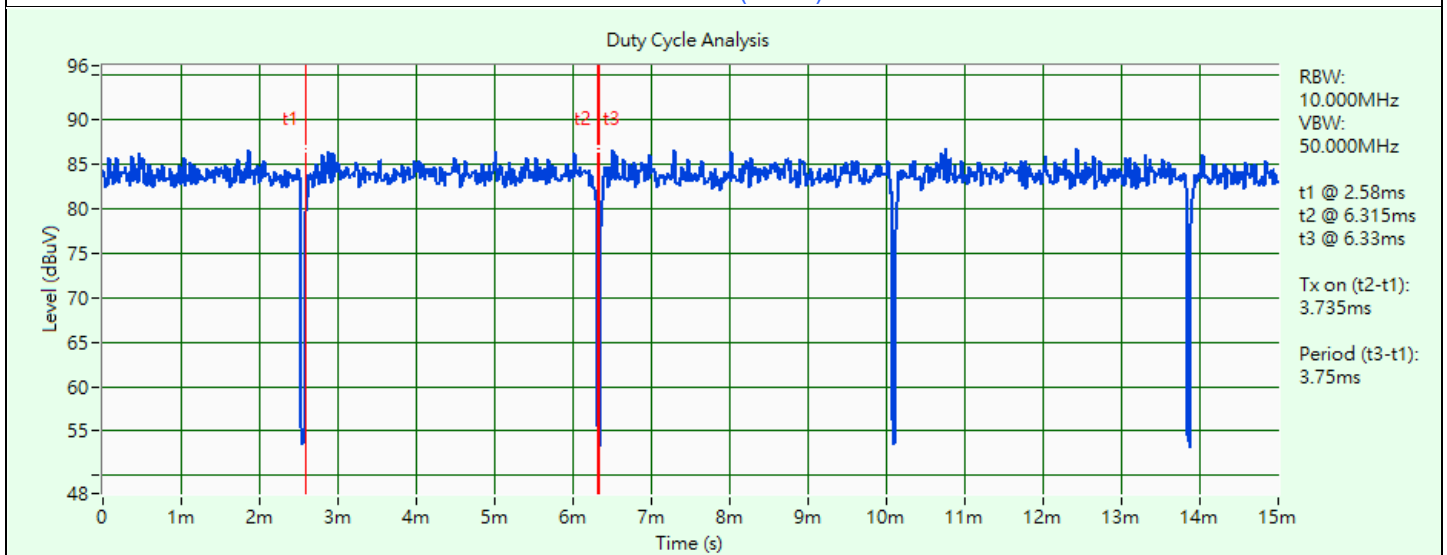
802.11a



802.11ax (HE20)



802.11ax (HE40)

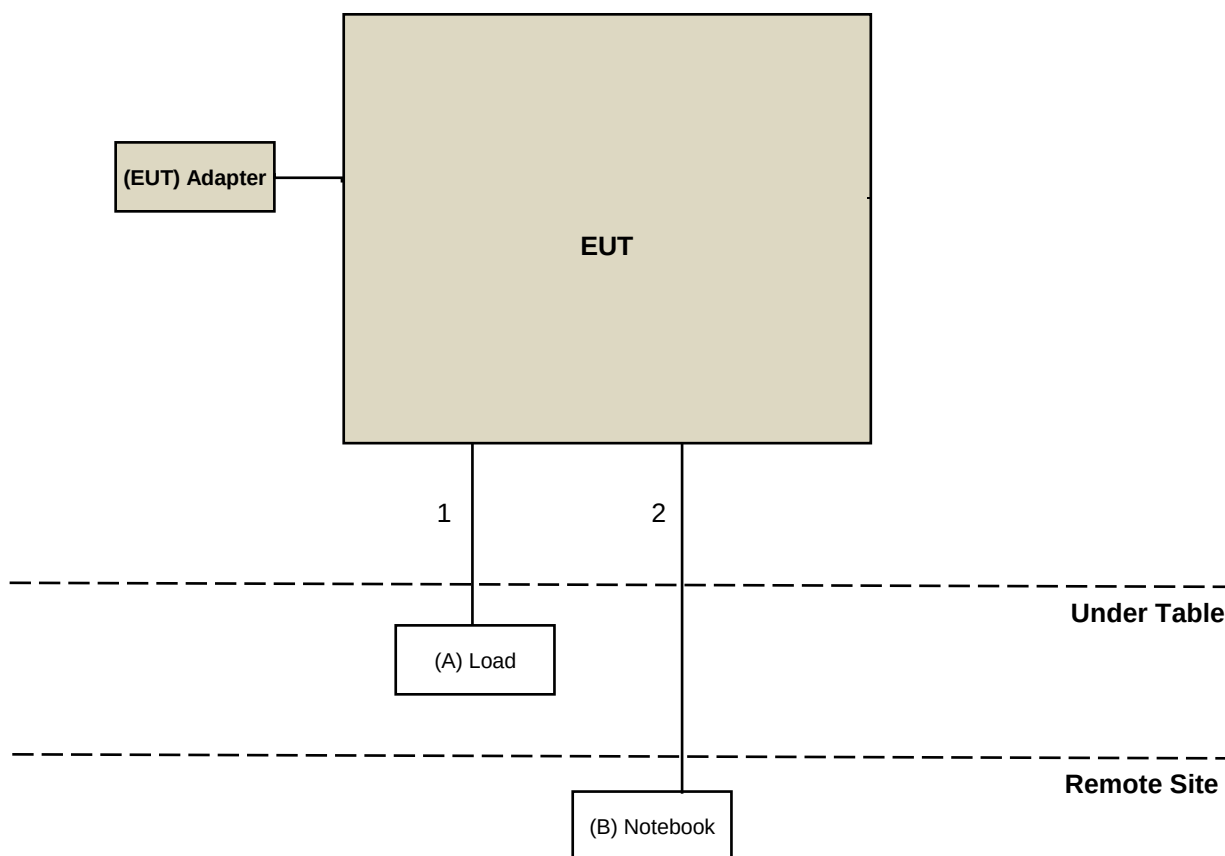


802.11ax (HE80)

3.6 Test Program Used and Operation Descriptions

Controlling software MT7981 QA Tool V0.0.2.78 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	Load	N/A	N/A	N/A	N/A	Provided by Lab
B	Notebook	Lenovo	L440	R9-0GFJJK	N/A	Provided by Lab

ID	Cable Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1	RJ-45 Cable	1	1.5	N0	0	Provided by Lab
2	RJ-45 Cable	1	10	N0	0	Provided by Lab

4 Test Instruments

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

4.1 RF Output Power

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Peak Power Analyzer Keysight	8990B	MY51000538	2024/4/29	2025/4/28
Wideband Power Sensor Keysight	N1923A	MY58200003	2024/6/17	2025/6/16

Notes:

1. The test was performed in Oven room.
2. Tested Date: 2025/3/14 ~ 2025/3/28

4.2 Power Spectral Density

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Signal & Spectrum Analyzer R&S	FSV3044	101105	2025/2/25	2026/2/24
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: 2025/3/14 ~ 2025/3/28

4.3 6 dB Bandwidth

Refer to section 4.2 to get the tested date and information of the instruments.

4.4 Occupied Bandwidth

Refer to section 4.2 to get the tested date and information of the instruments.

4.5 AC Power Conducted Emissions

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
50 ohm terminal resistance	E1-011279	04	2024/11/28	2025/11/27
	E1-011280	05	2024/11/28	2025/11/27
	E1-011311	09	2024/11/28	2025/11/27
DC-LISN Schwarzbeck	NNBM 8126G	8126G-069	2024/11/5	2025/11/4
EMI Test Receiver R&S	ESCI	100613	2024/11/25	2025/11/24
Fixed Attenuator Mini-Circuits	HAT-10+	PAD-COND1-01	2025/1/5	2026/1/4
LISN R&S	ENV216	101826	2024/3/25	2025/3/24
	ESH3-Z5	100311	2024/9/5	2025/9/4
RF Coaxial Cable Woken	5D-FB	Cable-cond1-01	2025/1/5	2026/1/4
Software BVADT	BVADT_Cond_ V7.4.1.0	N/A	N/A	N/A
V-LISN Schwarzbeck	NNBL 8226-2	8226-142	2024/8/28	2025/8/27

Notes:

1. The test was performed in HY - Conduction 1.
2. Tested Date: 2025/3/18

4.6 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	2024/10/14	2025/10/13
EXA Signal Analyzer Agilent	N9010A	MY52220207	2024/12/30	2025/12/29
Loop Antenna TESEQ	HLA 6121	45745	2024/8/21	2025/8/20
MXE EMI Receiver Keysight	N9038B	MY60180019	2025/1/15	2026/1/14
Preamplifier EMCI	EMC330N	980782	2025/1/14	2026/1/13
RF Coaxial Cable EMCI	EMCCFD400-NM-NM-500	201233	2025/1/14	2026/1/13
	EMCCFD400-NM-NM-3000	201235	2025/1/14	2026/1/13
	EMCCFD400-NM-NM-9000	201236(with PAD)	2025/1/14	2026/1/13
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: 2025/3/13

4.7 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
EXA Signal Analyzer Agilent	N9010A	MY52220207	2024/12/30	2025/12/29
Horn Antenna RFSPIN	DRH18-E	210103A18E	2024/11/10	2025/11/9
Horn Antenna Schwarzbeck	BBHA 9170	9170-1049	2024/11/10	2025/11/9
MXE EMI Receiver Keysight	N9038B	MY60180019	2025/1/15	2026/1/14
Preamplifier EMCI	EMC118A45SE	980808	2024/12/26	2025/12/25
	EMC184045SE	980788	2025/1/14	2026/1/13
RF Coaxial Cable EMCI	EMC101G-KM-KM-2000	201254	2025/1/14	2026/1/13
	EMC101G-KM-KM-3000	201258	2025/1/14	2026/1/13
	EMC101G-KM-KM-5000	201261	2025/1/14	2026/1/13
	EMC104-SM-SM-1000	210102	2025/1/14	2026/1/13
	EMC104-SM-SM-3000	201231	2025/1/14	2026/1/13
	EMC104-SM-SM-9000	201243	2025/1/14	2026/1/13
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: 2025/2/22 ~ 2025/3/19

5 Limits of Test Items

5.1 RF Output Power

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

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

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

Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$;

Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{ANT} ;

Array Gain = $5 \log(N_{ANT}/N_{SS})$ dB or 3 dB, whichever is less, for 20-MHz channel widths with $N_{ANT} \geq 5$.

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

5.2 Power Spectral Density

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

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

5.3 6 dB Bandwidth

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

5.4 Occupied Bandwidth

The results are for reference only.

5.5 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.

5.6 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).

5.7 Unwanted Emissions above 1 GHz

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

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

Notes:

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

Limits of unwanted emission out of the restricted bands

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

For transmitters operating in the 5.15-5.25 GHz band:

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

For transmitters operating in the 5.725-5.850 GHz band:

Applicable To	EIRP Limit	Equivalent Field Strength at 3 m
15.407(b)(4)(i)	PK: -27 (dBm/MHz) ^{*1} PK: 10 (dBm/MHz) ^{*2} PK: 15.6 (dBm/MHz) ^{*3} PK: 27 (dBm/MHz) ^{*4}	PK: 68.2 (dBμV/m) ^{*1} PK: 105.2 (dBμV/m) ^{*2} PK: 110.8 (dBμV/m) ^{*3} PK: 122.2 (dBμV/m) ^{*4}
^{*1} beyond 75 MHz or more above of the band edge. ^{*2} below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above. ^{*3} below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above. ^{*4} from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.		

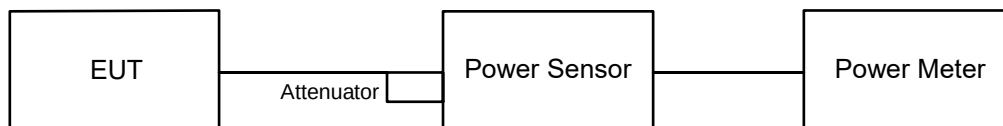
Note: The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength:

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

6 Test Arrangements

6.1 RF Output Power

6.1.1 Test Setup

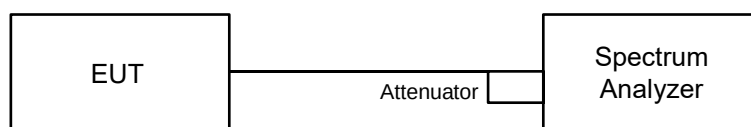


6.1.2 Test Procedure

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

6.2 Power Spectral Density

6.2.1 Test Setup



6.2.2 Test Procedure

For specified measurement bandwidth 1 MHz:

Method SA-1

- 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.
- Record the max value

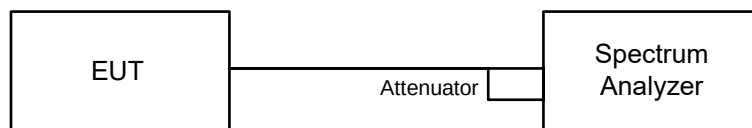
For specified measurement bandwidth 500 kHz:

Method SA-1

- 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.
- Record the max value

6.3 6 dB Bandwidth

6.3.1 Test Setup

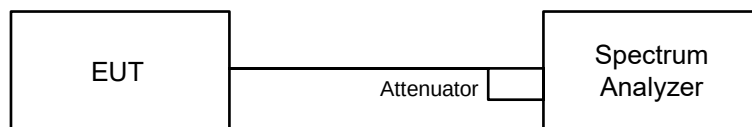


6.3.2 Test Procedure

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

6.4 Occupied Bandwidth

6.4.1 Test Setup

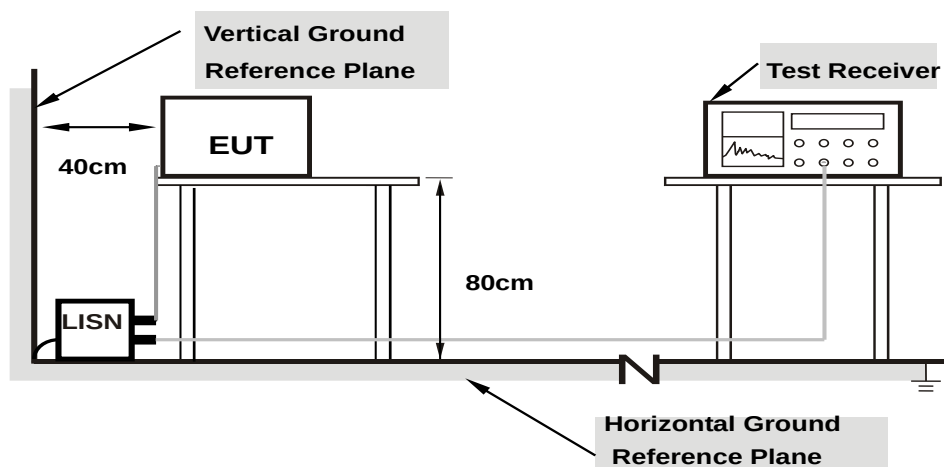


6.4.2 Test Procedure

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

6.5 AC Power Conducted Emissions

6.5.1 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).

6.5.2 Test Procedure

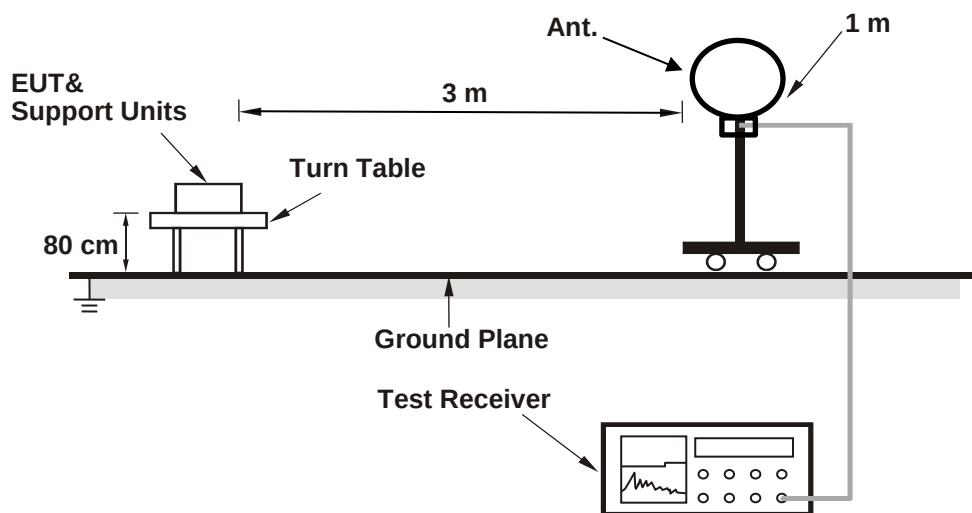
- The EUT was placed on a 0.8 meter to the top of table and placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The 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.

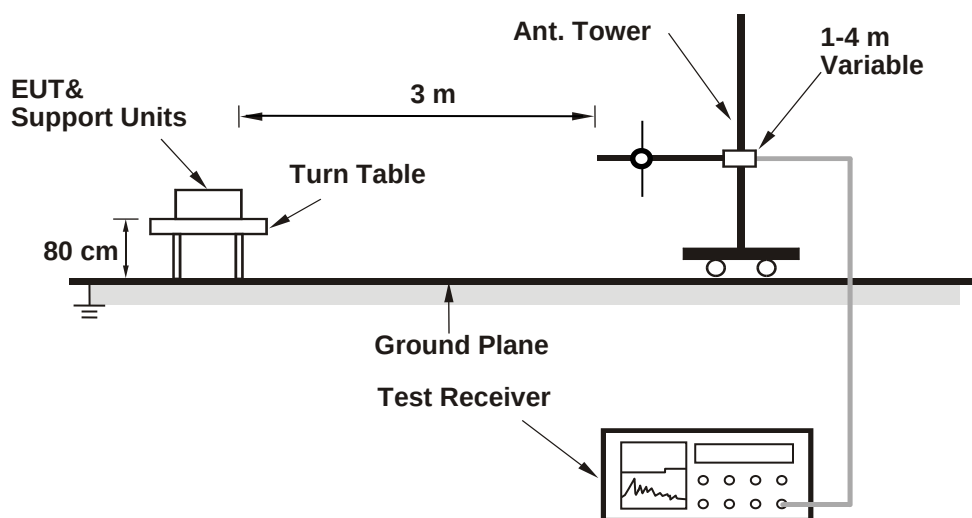
6.6 Unwanted Emissions below 1 GHz

6.6.1 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).

6.6.2 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

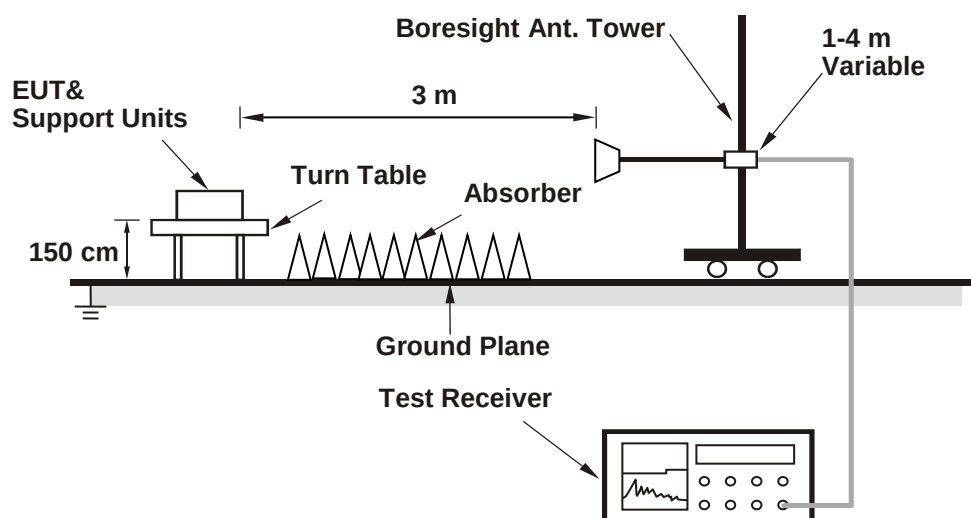
- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the 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.
3. All modes of operation were investigated and the worst-case emissions are reported.

6.7 Unwanted Emissions above 1 GHz

6.7.1 Test Setup



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

6.7.2 Test Procedure

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

Notes:

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

7 Test Results of Test Item

7.1 RF Output Power

Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 60% RH	Tested By:	Wayne 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	Chain 2				
36	5180	20.91	21.49	21.75	413.863	26.17	30	Pass
40	5200	23.37	22.94	22.64	597.713	27.76	30	Pass
48	5240	23.56	23.36	23.32	658.54	28.19	30	Pass
149	5745	23.97	24.12	24.45	786.298	28.96	30	Pass
157	5785	23.94	24.06	24.69	796.867	29.01	30	Pass
165	5825	24.27	24.34	24.66	831.36	29.20	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-1, the maximum gain is 3.66 dBi < 6 dBi, so the output power limit shall not be reduced.
3. For U-NII-3, the maximum gain is 3.54 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	Chain 2				
36	5180	20.35	20.22	20.52	326.309	25.14	30	Pass
40	5200	21.92	21.94	21.65	458.129	26.61	30	Pass
48	5240	22.97	22.81	23.11	593.782	27.74	30	Pass
149	5745	22.85	22.98	23.55	617.826	27.91	30	Pass
157	5785	22.91	23.23	23.72	641.317	28.07	30	Pass
165	5825	23.25	23.46	23.67	665.978	28.23	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-1, the maximum gain is 3.66 dBi < 6 dBi, so the output power limit shall not be reduced.
3. For U-NII-3, the maximum gain is 3.54 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	Chain 2				
38	5190	19.36	19.00	19.16	248.144	23.95	30	Pass
46	5230	21.01	20.59	20.55	354.235	25.49	30	Pass
151	5755	21.57	21.93	22.38	472.486	26.74	30	Pass
159	5795	21.61	21.87	22.45	474.485	26.76	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-1, the maximum gain is 3.66 dBi < 6 dBi, so the output power limit shall not be reduced.
3. For U-NII-3, the maximum gain is 3.54 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	Chain 2				
42	5210	15.93	15.55	15.68	112.049	20.49	30	Pass
155	5775	18.76	19.10	18.38	225.311	23.53	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-1, the maximum gain is 3.66 dBi < 6 dBi, so the output power limit shall not be reduced.
3. For U-NII-3, the maximum gain is 3.54 dBi < 6 dBi, so the output power limit shall not be reduced.

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	Chain 2				
36	5180	20.35	20.22	20.52	326.309	25.14	30	Pass
40	5200	21.92	21.94	21.65	458.129	26.61	30	Pass
48	5240	22.97	22.81	23.11	593.782	27.74	30	Pass
149	5745	22.85	22.98	23.55	617.826	27.91	29.48	Pass
157	5785	22.91	23.23	23.72	641.317	28.07	29.48	Pass
165	5825	23.25	23.46	23.67	665.978	28.23	29.48	Pass

Notes:

1. Directional gain is the measured value according to KDB 662911 D03 Method of MIMO Antenna Gain Measurement.
2. For U-NII-1, the directional gain is 5.5 dBi < 6 dBi, so the output power limit shall not be reduced.
3. For U-NII-3, the directional gain is 6.52 dBi > 6 dBi, so the output power limit shall be reduced to 30-(6.52-6) = 29.48 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	Chain 2				
38	5190	19.36	19.00	19.16	248.144	23.95	30	Pass
46	5230	21.01	20.59	20.55	354.235	25.49	30	Pass
151	5755	21.57	21.93	22.38	472.486	26.74	29.48	Pass
159	5795	21.61	21.87	22.45	474.485	26.76	29.48	Pass

Notes:

1. Directional gain is the measured value according to KDB 662911 D03 Method of MIMO Antenna Gain Measurement.
2. For U-NII-1, the directional gain is 5.5 dBi < 6 dBi, so the output power limit shall not be reduced.
3. For U-NII-3, the directional gain is 6.52 dBi > 6 dBi, so the output power limit shall be reduced to $30 - (6.52 - 6) = 29.48$ 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	Chain 2				
42	5210	15.93	15.55	15.68	112.049	20.49	30	Pass
155	5775	18.76	19.10	18.38	225.311	23.53	29.48	Pass

Notes:

1. Directional gain is the measured value according to KDB 662911 D03 Method of MIMO Antenna Gain Measurement.
2. For U-NII-1, the directional gain is 5.5 dBi < 6 dBi, so the output power limit shall not be reduced.
3. For U-NII-3, the directional gain is 6.52 dBi > 6 dBi, so the output power limit shall be reduced to $30 - (6.52 - 6) = 29.48$ dBm.

7.2 Power Spectral Density

Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 60% RH	Tested By:	Wayne Lin
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802.11a

Chan.	Chan. Freq. (MHz)	PSD (dBm/MHz)			Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Test Result
		Chain 0	Chain 1	Chain 2			
36	5180	7.48	8.02	8.35	12.74	17	Pass
40	5200	9.84	9.51	9.19	14.29	17	Pass
48	5240	10.07	9.93	9.90	14.74	17	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 is the measured value according to KDB 662911 D03 Method of MIMO Antenna Gain Measurement.
3. For U-NII-1, the directional gain is 5.5 dBi < 6dBi, so the power density limit shall not be reduced.

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	Chain 2			
36	5180	6.98	6.58	7.59	11.84	17	Pass
40	5200	8.54	8.44	8.63	13.31	17	Pass
48	5240	9.55	9.44	9.72	14.34	17	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 is the measured value according to KDB 662911 D03 Method of MIMO Antenna Gain Measurement.
3. For U-NII-1, the directional gain is 5.5 dBi < 6dBi, so the power density limit shall not be reduced.

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	Chain 2			
38	5190	2.93	2.63	2.59	7.49	17	Pass
46	5230	4.68	4.21	4.07	9.10	17	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 is the measured value according to KDB 662911 D03 Method of MIMO Antenna Gain Measurement.
3. For U-NII-1, the directional gain is 5.5 dBi < 6dBi, so the power density limit shall not be reduced.

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	Chain 2			
42	5210	-3.43	-3.92	-3.81	1.06	17	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 is the measured value according to KDB 662911 D03 Method of MIMO Antenna Gain Measurement.
3. For U-NII-1, the directional gain is 5.5 dBi < 6dBi, so the power density limit shall not be reduced.

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	Chain 2				
149	5745	-0.07	0.07	0.37	4.9	7.12	29.48	Pass
157	5785	-0.18	0.02	0.66	4.95	7.17	29.48	Pass
165	5825	0.16	0.29	0.62	5.13	7.35	29.48	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 is the measured value according to KDB 662911 D03 Method of MIMO Antenna Gain Measurement.
3. For U-NII-3, the directional gain is 6.52 dBi > 6 dBi, so the power density limit shall be reduced to $30 - (6.52 - 6) = 29.48$ 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	Chain 2				
149	5745	-1.60	-1.50	-0.88	3.46	5.68	29.48	Pass
157	5785	-1.53	-1.19	-0.70	3.64	5.86	29.48	Pass
165	5825	-1.23	-0.91	-0.78	3.8	6.02	29.48	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 is the measured value according to KDB 662911 D03 Method of MIMO Antenna Gain Measurement.
3. For U-NII-3, the directional gain is 6.52 dBi > 6 dBi, so the power density limit shall be reduced to $30 - (6.52 - 6) = 29.48$ 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	Chain 2				
151	5755	-6.01	-5.63	-5.15	-0.81	1.41	29.48	Pass
159	5795	-5.96	-5.57	-5.01	-0.72	1.50	29.48	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 is the measured value according to KDB 662911 D03 Method of MIMO Antenna Gain Measurement.
3. For U-NII-3, the directional gain is 6.52 dBi > 6 dBi, so the power density limit shall be reduced to $30 - (6.52 - 6) = 29.48$ dBm/500kHz.

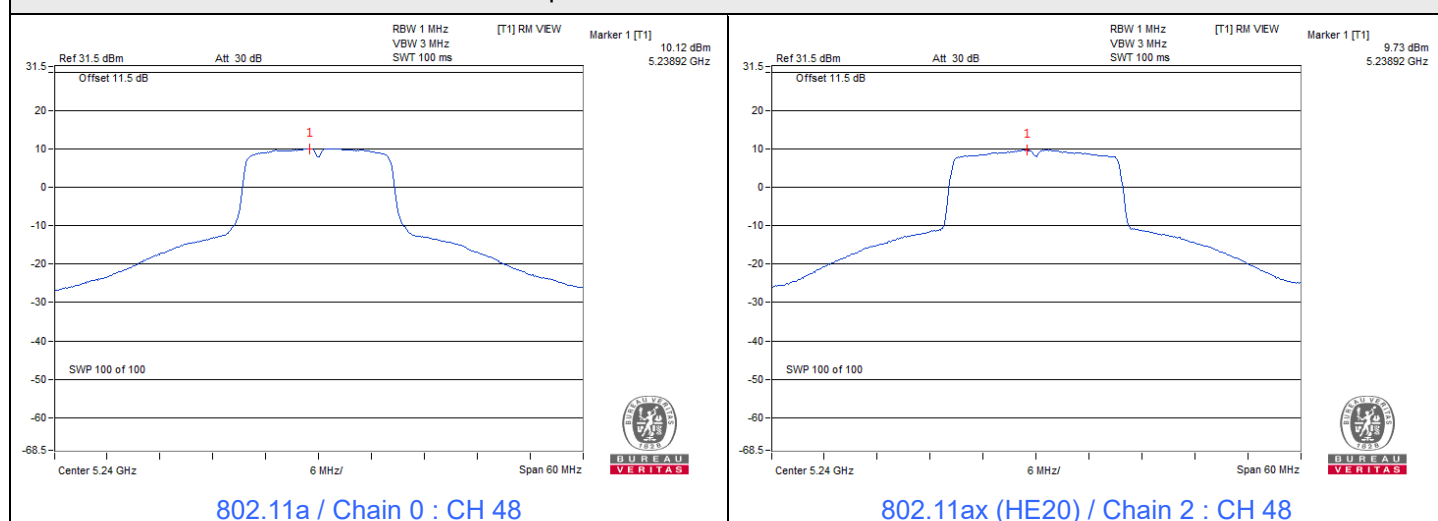
802.11ax (HE80)

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	Chain 2				
155	5775	-11.57	-11.27	-11.98	-6.83	-4.61	29.48	Pass

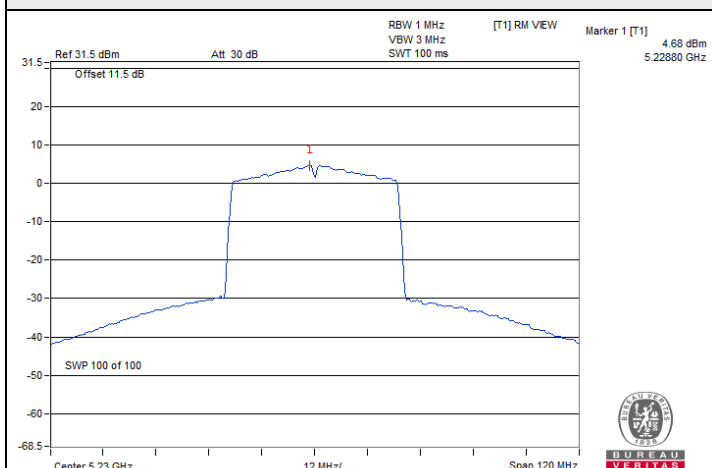
Notes:

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 is the measured value according to KDB 662911 D03 Method of MIMO Antenna Gain Measurement.
3. For U-NII-3, the directional gain is 6.52 dBi > 6 dBi, so the power density limit shall be reduced to $30 - (6.52 - 6) = 29.48$ dBm/500kHz.

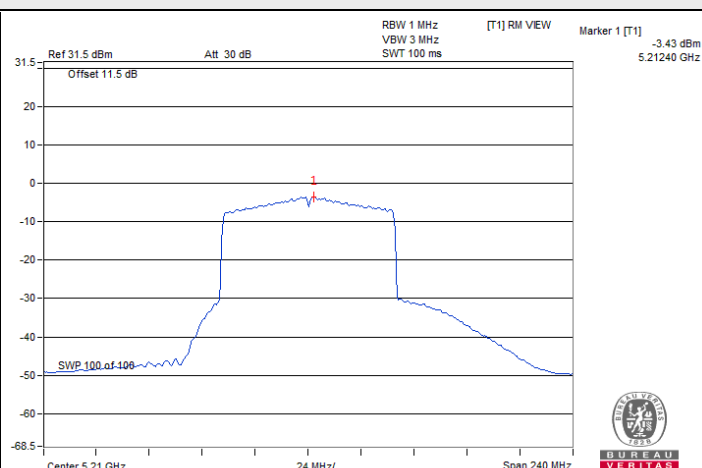
Spectrum Plot of Maximum Value



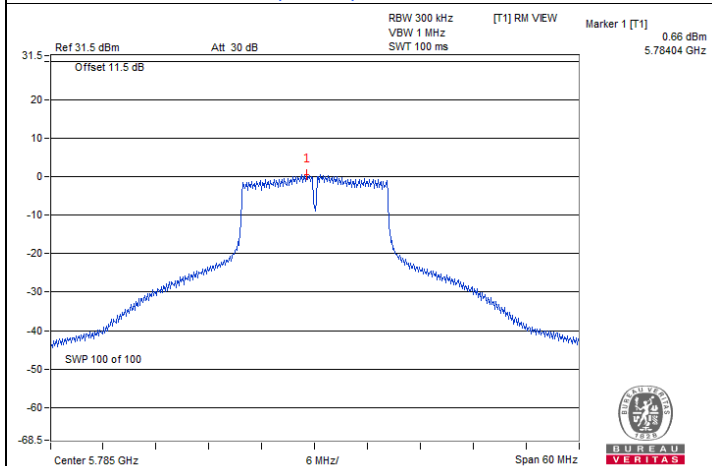
Spectrum Plot of Maximum Value



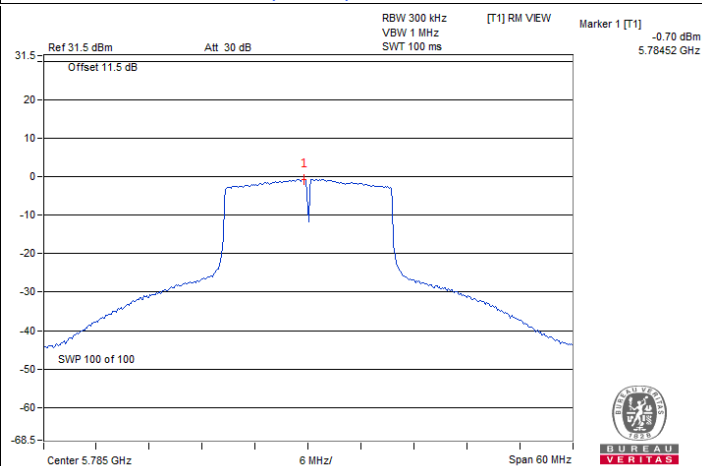
802.11ax (HE40) / Chain 0 : CH 46



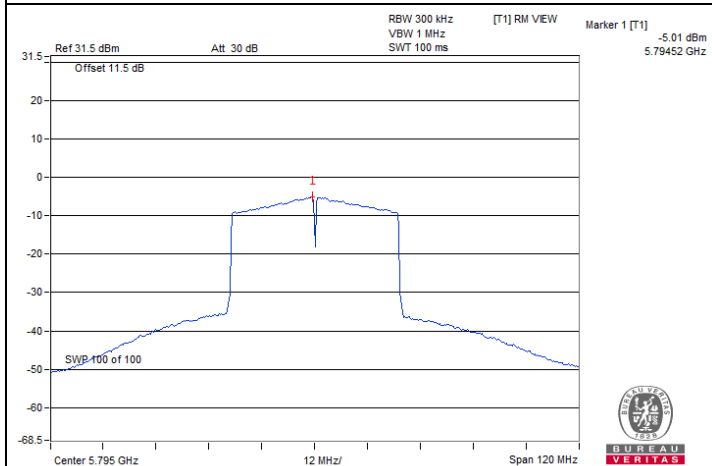
802.11ax (HE80) / Chain 0 : CH 42



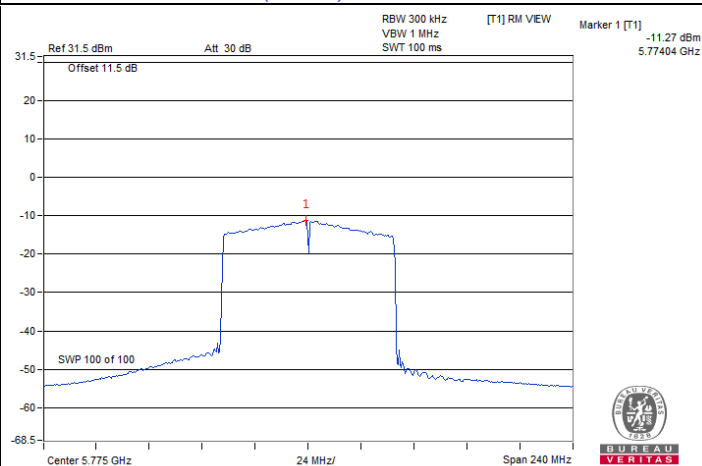
802.11a / Chain 2 : CH 157



802.11ax (HE20) / Chain 2 : CH 157



802.11ax (HE40) / Chain 2 : CH 159



802.11ax (HE80) / Chain 1 : CH 155

7.3 6 dB Bandwidth

Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 60% RH	Tested By:	Wayne Lin
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802.11a

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)			Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1	Chain 2		
149	5745	16.32	16.36	16.36	0.5	Pass
157	5785	16.33	16.34	16.36	0.5	Pass
165	5825	16.36	16.37	16.38	0.5	Pass

802.11ax (HE20)

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)			Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1	Chain 2		
149	5745	18.82	18.73	18.90	0.5	Pass
157	5785	18.83	18.75	18.79	0.5	Pass
165	5825	18.91	18.82	18.75	0.5	Pass

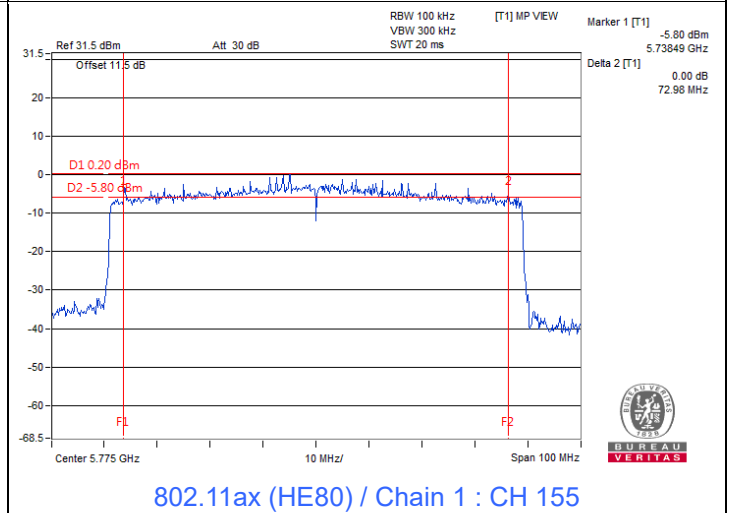
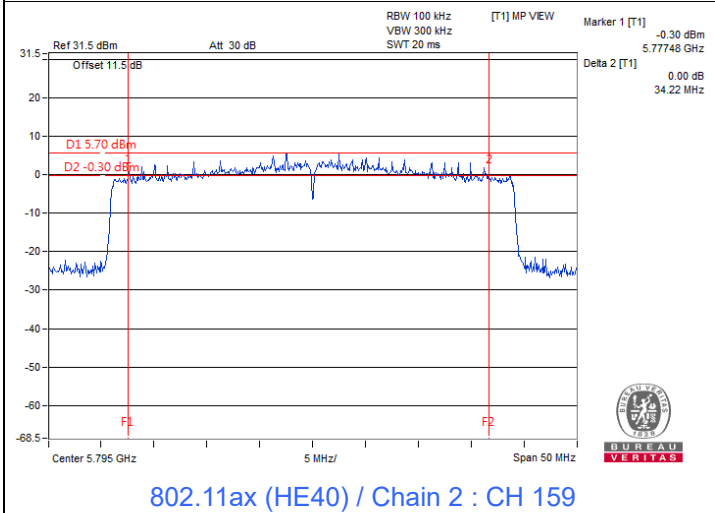
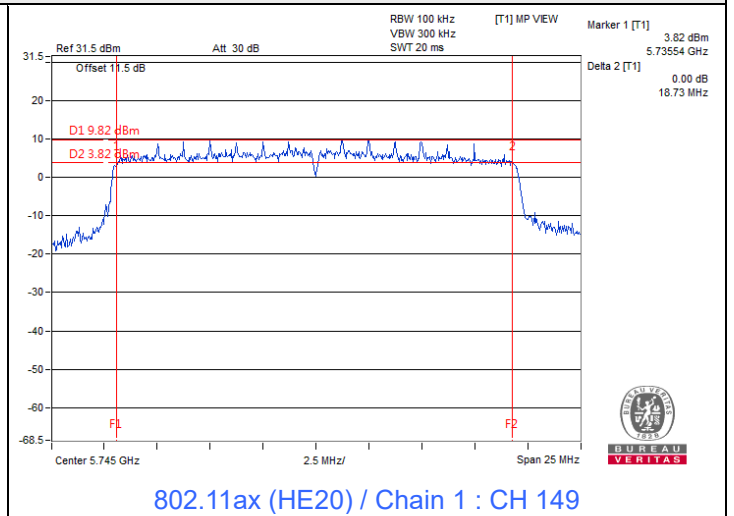
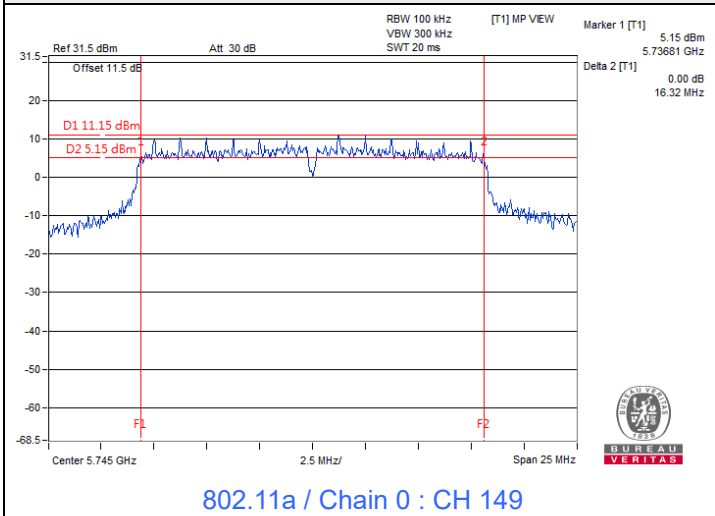
802.11ax (HE40)

....	Frequency (MHz)	6 dB Bandwidth (MHz)			Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1	Chain 2		
151	5755	35.54	35.91	35.38	0.5	Pass
159	5795	36.96	35.39	34.22	0.5	Pass

802.11ax (HE80)

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)			Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1	Chain 2		
155	5775	74.43	72.98	75.75	0.5	Pass

Spectrum Plot of Minimum Value



7.4 Occupied Bandwidth

Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 60% RH	Tested By:	Wayne Lin
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802.11a

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)		
		Chain 0	Chain 1	Chain 2
36	5180	16.80	16.80	18.84
40	5200	17.28	17.16	17.16
48	5240	18.72	17.88	18.84
149	5745	20.00	19.91	18.37
157	5785	19.61	19.90	18.46
165	5825	19.90	18.84	19.04

802.11ax (HE20)

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)		
		Chain 0	Chain 1	Chain 2
36	5180	19.14	19.08	19.08
40	5200	19.23	19.08	19.20
48	5240	19.33	19.20	19.32
149	5745	19.33	19.33	19.24
157	5785	19.14	19.43	19.23
165	5825	19.23	19.23	19.23

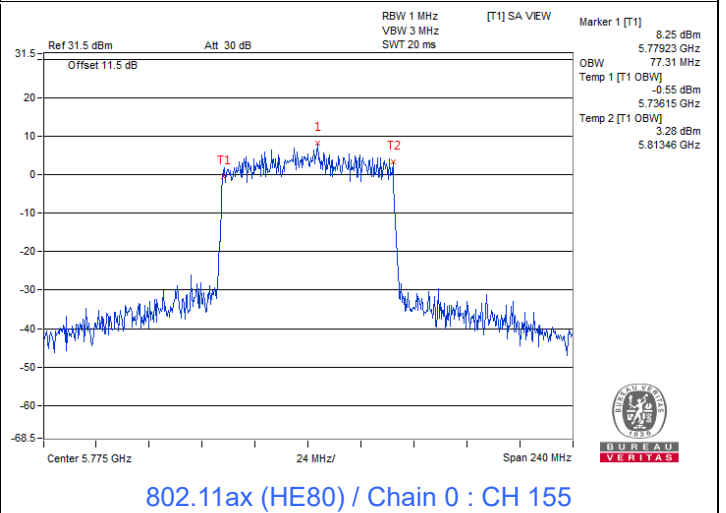
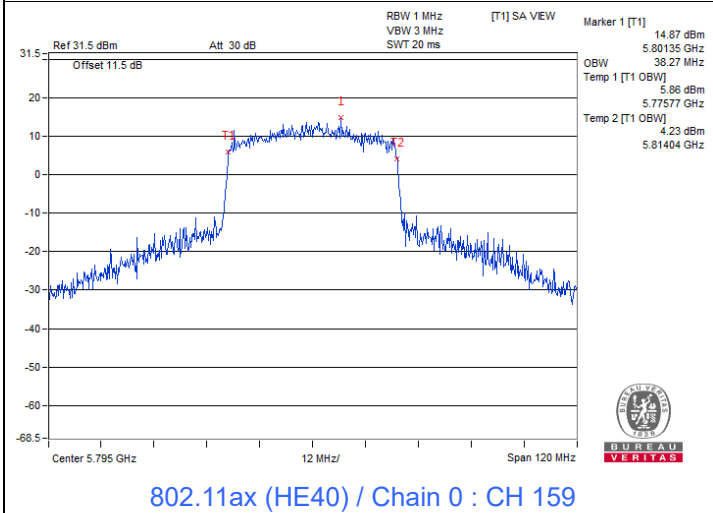
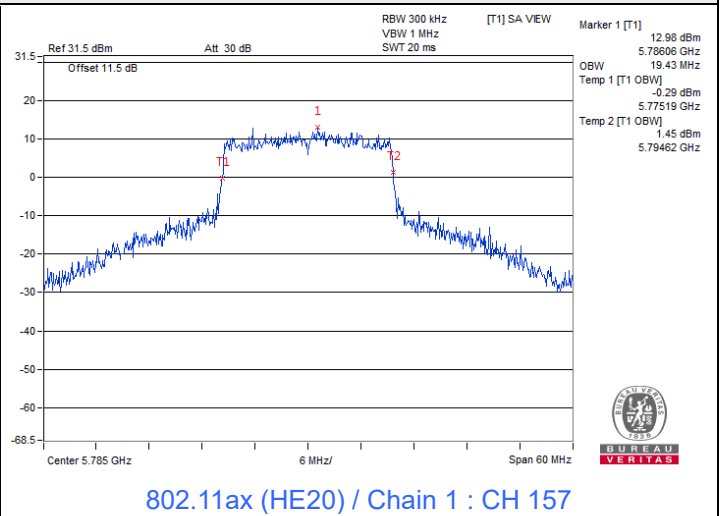
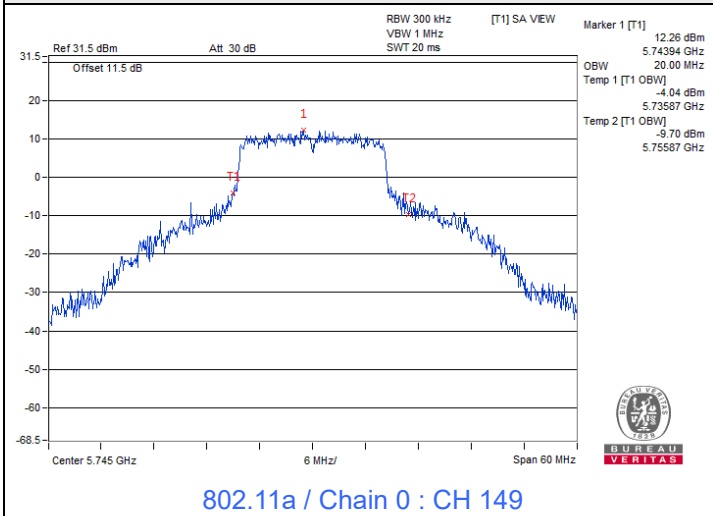
802.11ax (HE40)

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)		
		Chain 0	Chain 1	Chain 2
38	5190	37.92	38.16	38.16
46	5230	38.08	38.16	38.16
151	5755	38.08	38.08	37.89
159	5795	38.27	38.08	37.89

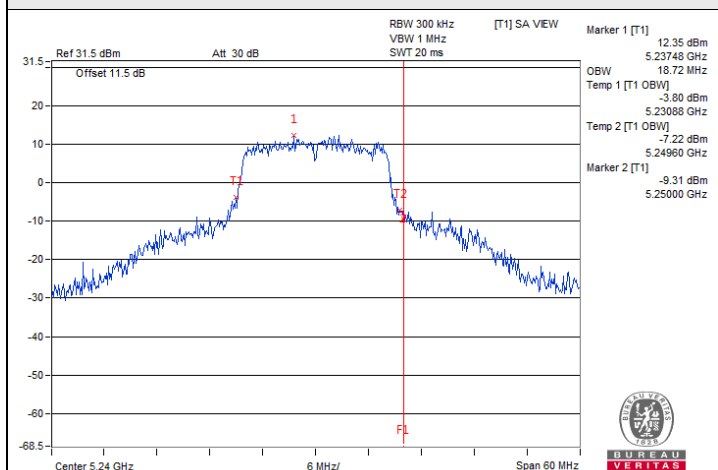
802.11ax (HE80)

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)		
		Chain 0	Chain 1	Chain 2
42	5210	77.28	76.80	77.28
155	5775	77.31	76.92	76.92

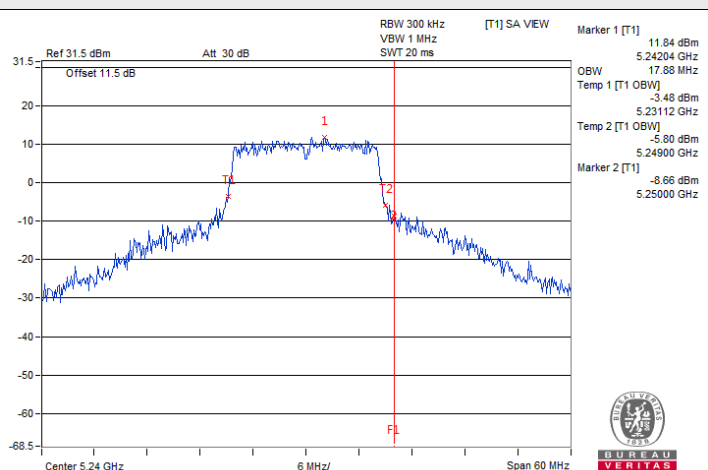
Spectrum Plot of Maximum Value



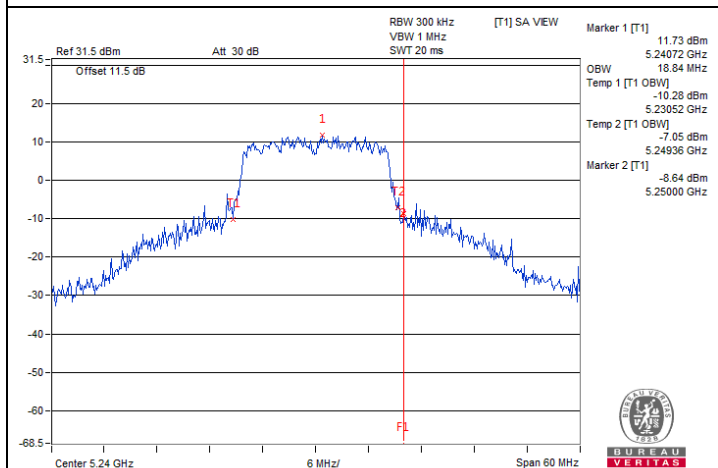
Spectrum Plot for nearby DFS band (DFS is required, if 99% OCP straddle into U-NII-2A)



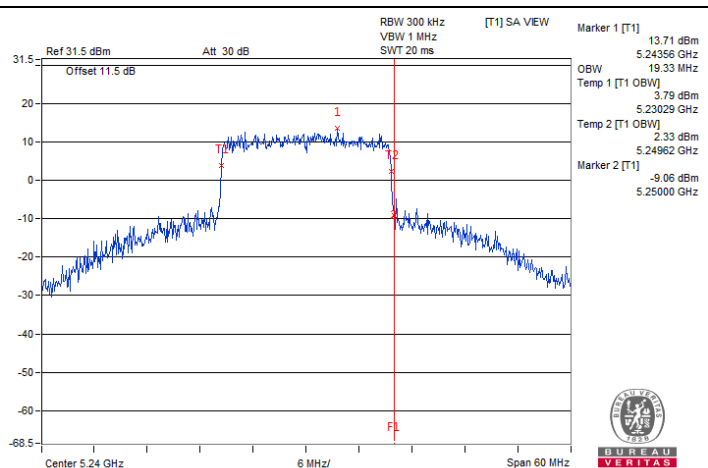
802.11a / Chain 0 : CH 48



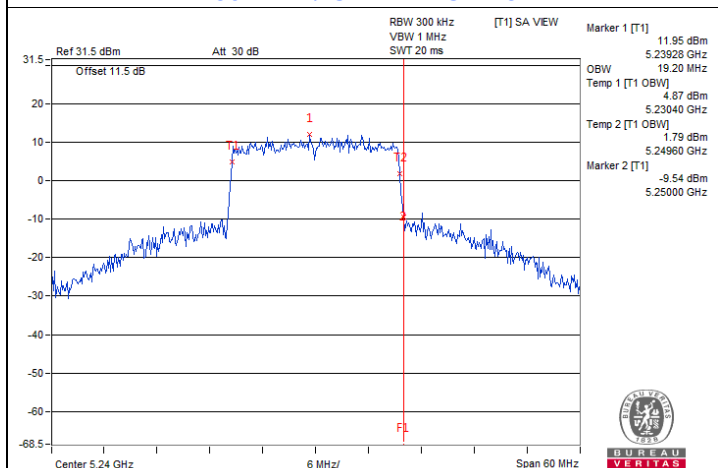
802.11a / Chain 1 : CH 48



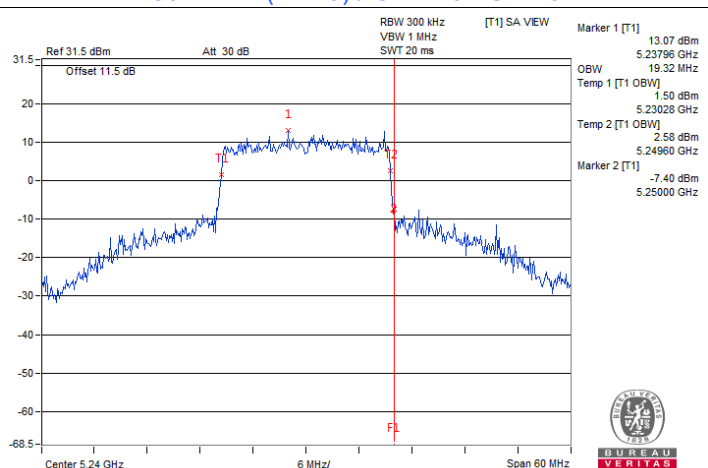
802.11a / Chain 2 : CH 48



802.11ax (HE20) / Chain 0 : CH 48

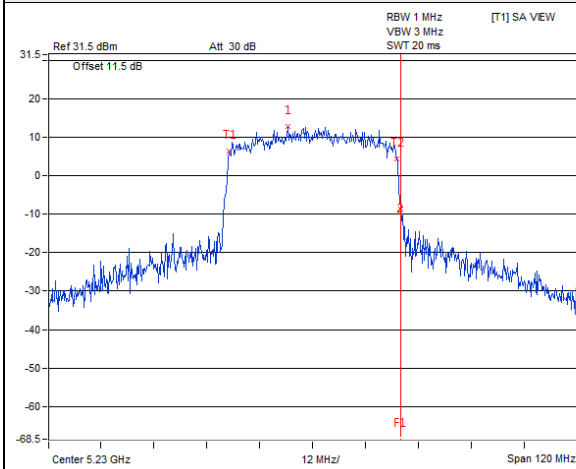


802.11ax (HE20) / Chain 1 : CH 48

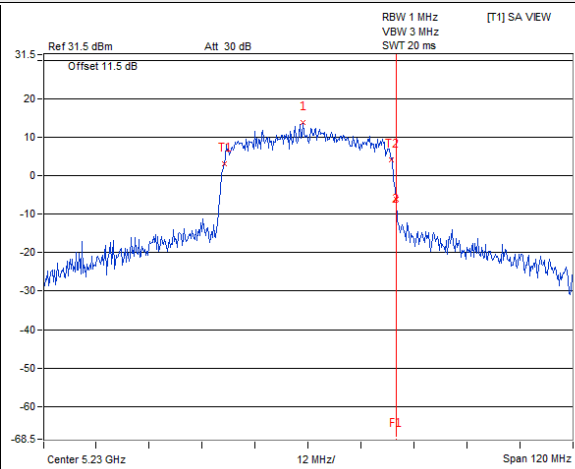


802.11ax (HE20) / Chain 2 : CH 48

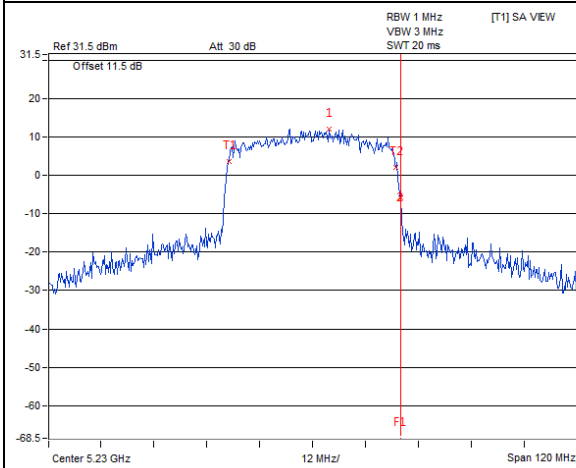
Spectrum Plot for nearby DFS band (DFS is required, if 99% OCP straddle into U-NII-2A)



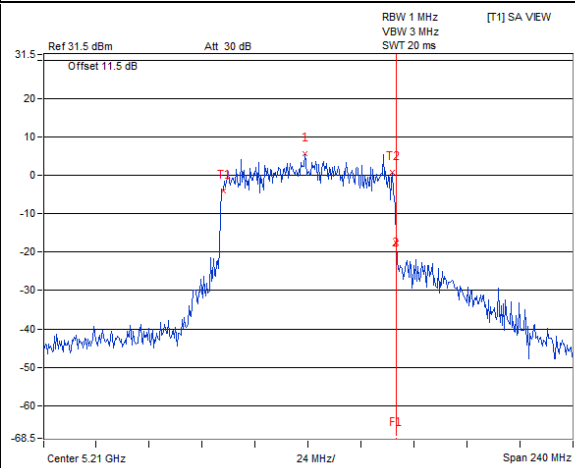
802.11ax (HE40) / Chain 0 : CH 46



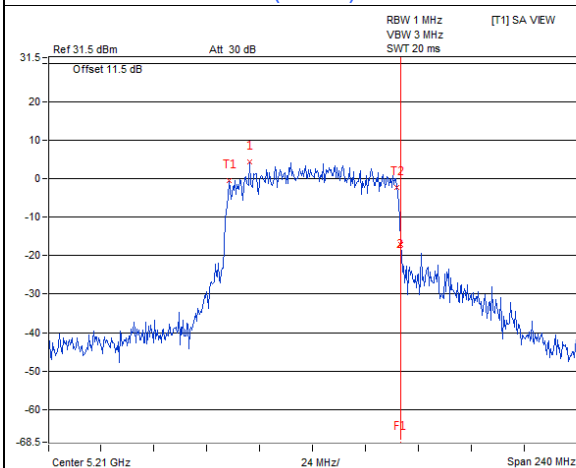
802.11ax (HE40) / Chain 1 : CH 46



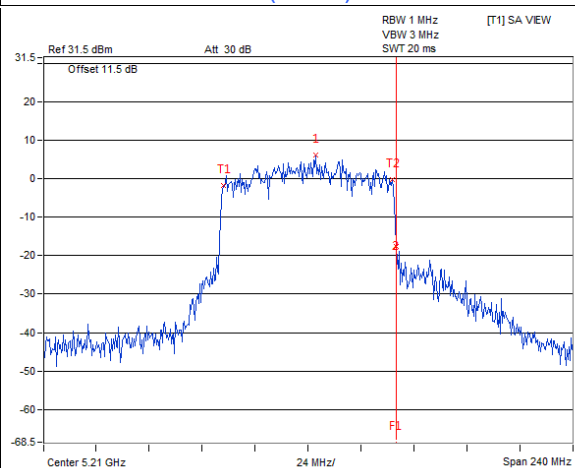
802.11ax (HE40) / Chain 2 : CH 46



802.11ax (HE80) / Chain 0 : CH 42

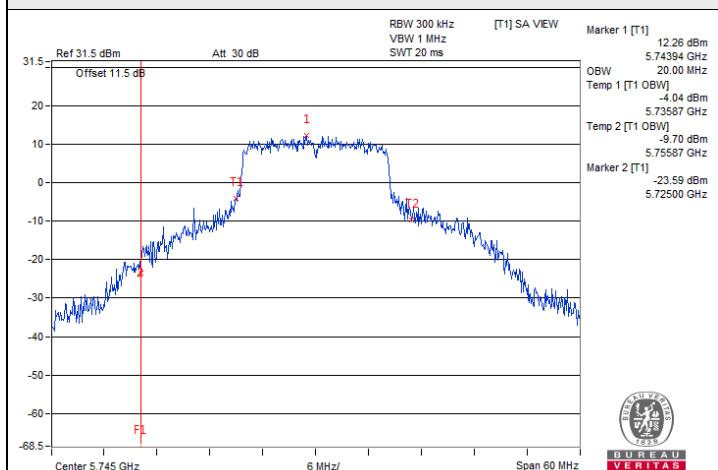


802.11ax (HE80) / Chain 1 : CH 42

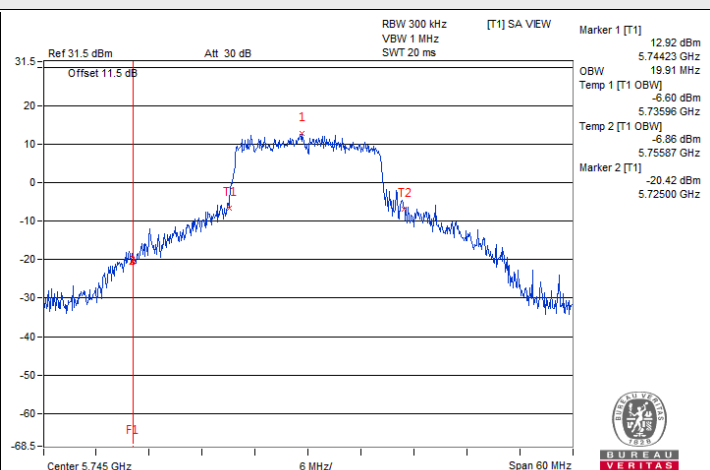


802.11ax (HE80) / Chain 2 : CH 42

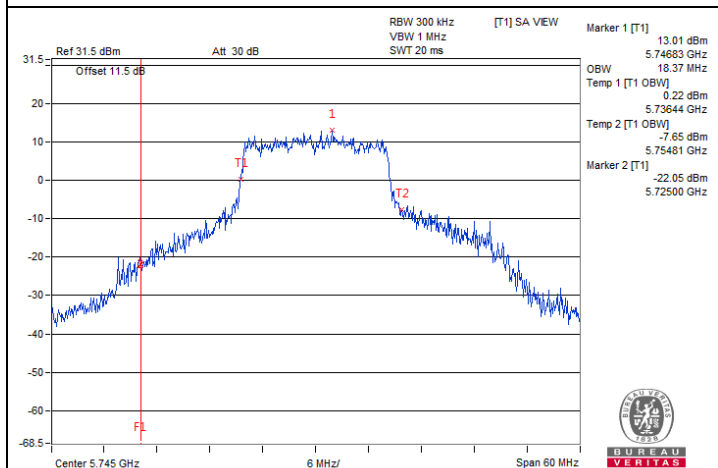
Spectrum Plot for nearby DFS band (DFS is required, if 99% OCP straddle into U-NII-2C)



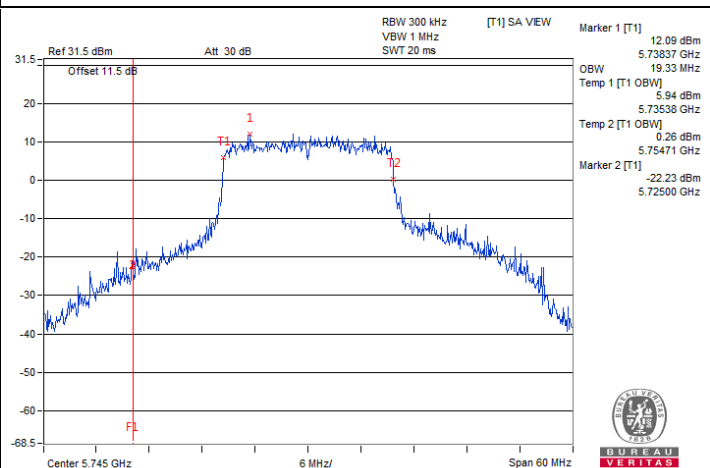
802.11a / Chain 0 : CH 149



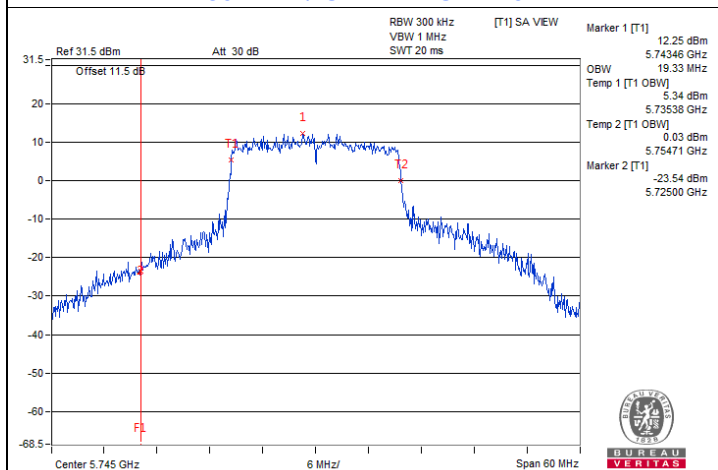
802.11a / Chain 1 : CH 149



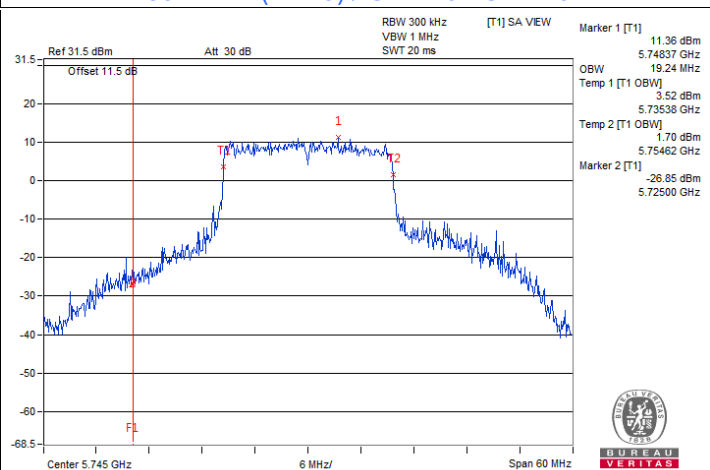
802.11a / Chain 2 : CH 149



802.11ax (HE20) / Chain 0 : CH 149

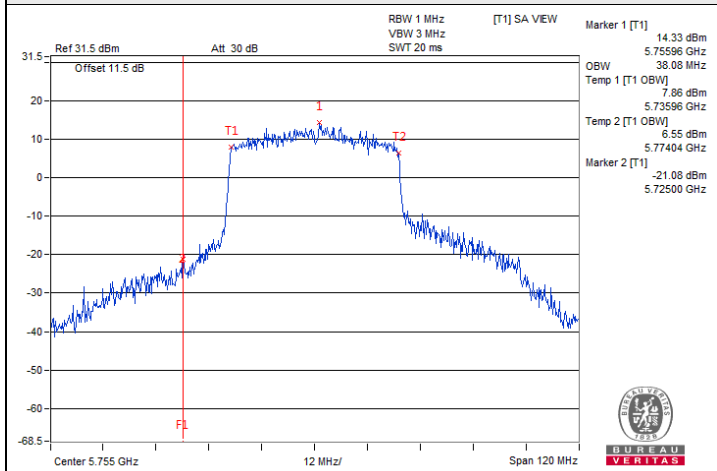


802.11ax (HE20) / Chain 1 : CH 149

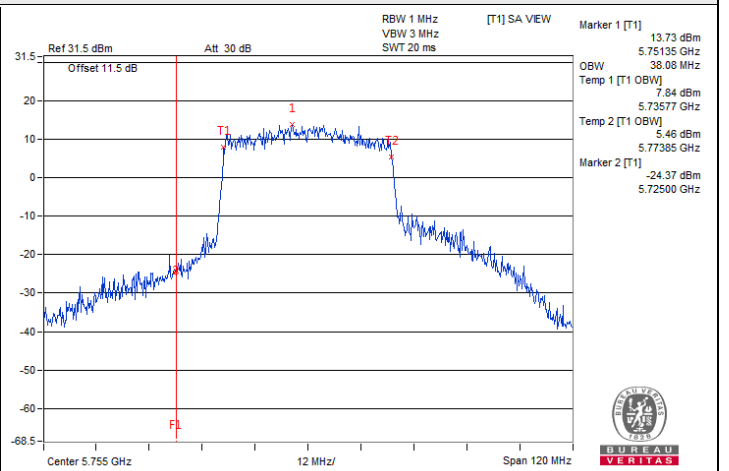


802.11ax (HE20) / Chain 2 : CH 149

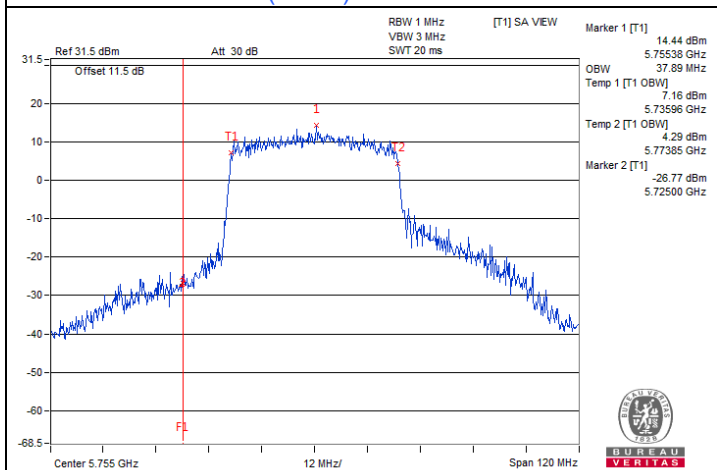
Spectrum Plot for nearby DFS band (DFS is required, if 99% OCP straddle into U-NII-2C)



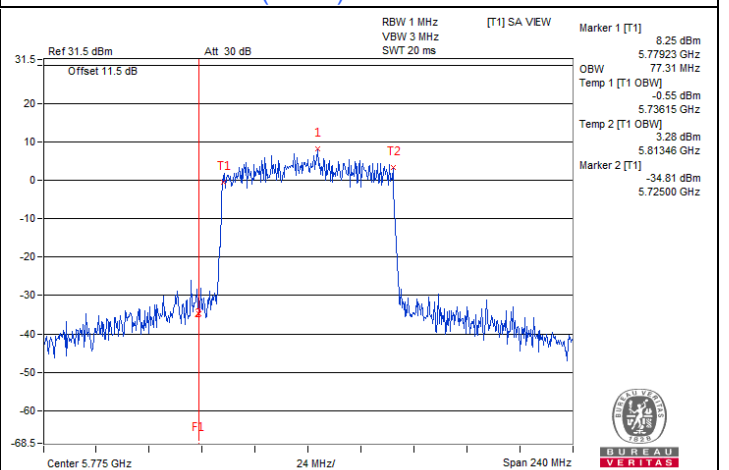
802.11ax (HE40) / Chain 0 : CH 151



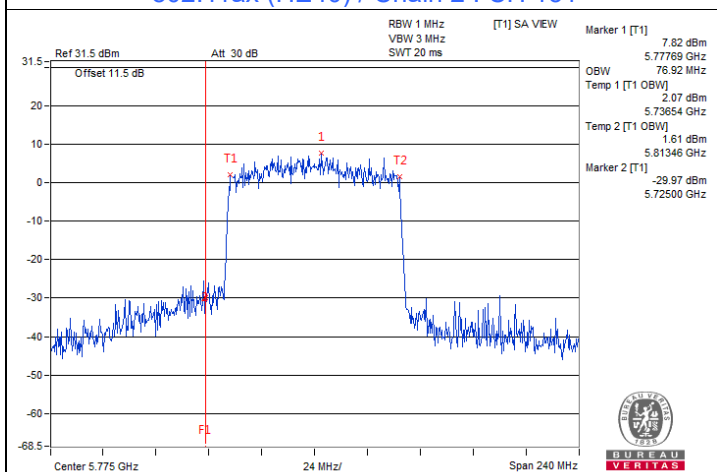
802.11ax (HE40) / Chain 1 : CH 151



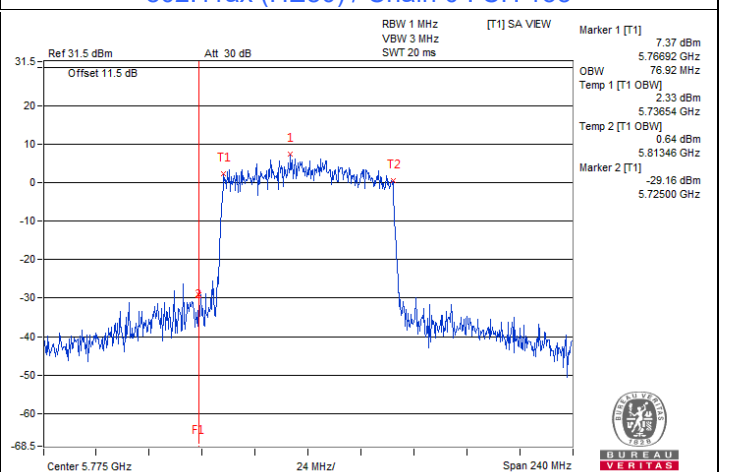
802.11ax (HE40) / Chain 2 : CH 151



802.11ax (HE80) / Chain 0 : CH 155



802.11ax (HE80) / Chain 1 : CH 155



802.11ax (HE80) / Chain 2 : CH 155

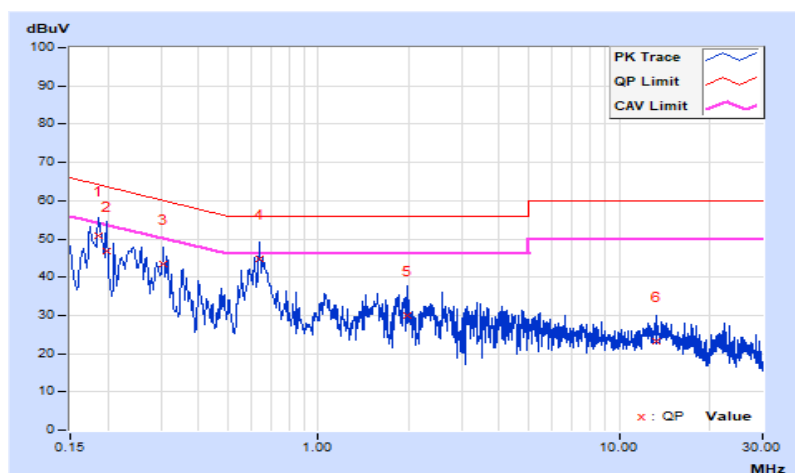
7.5 AC Power Conducted Emissions

RF Mode	802.11a	Channel	CH 165 : 5825 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	Charles Hsiao		

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	0.18600	9.76	41.08	31.62	50.84	41.38	64.21	54.21	-13.37	-12.83
2	0.19800	9.76	36.89	23.75	46.65	33.51	63.69	53.69	-17.04	-20.18
3	0.30600	9.82	33.50	23.21	43.32	33.03	60.08	50.08	-16.76	-17.05
4	0.63800	9.92	34.93	25.75	44.85	35.67	56.00	46.00	-11.15	-10.33
5	1.98200	10.04	19.77	11.78	29.81	21.82	56.00	46.00	-26.19	-24.18
6	13.24200	10.54	12.79	7.01	23.33	17.55	60.00	50.00	-36.67	-32.45

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

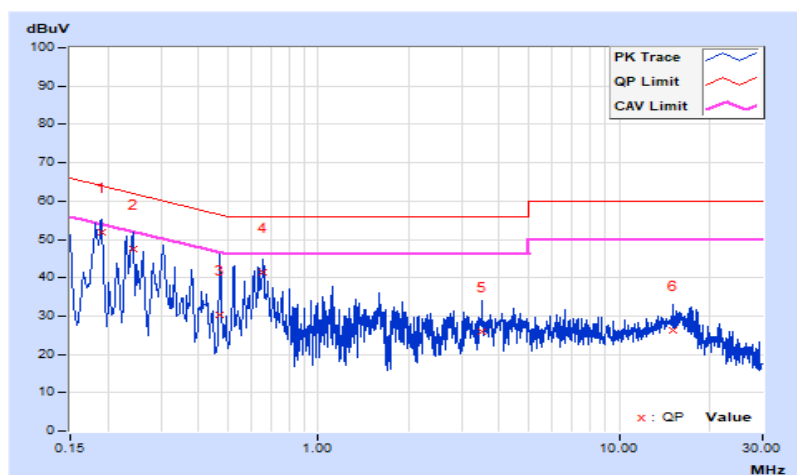


RF Mode	802.11a	Channel	CH 165 : 5825 MHz
Frequency Range	150 kHz ~ 30 MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25 °C, 75 % RH
Tested By	Charles Hsiao		

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	0.19000	9.73	42.24	29.92	51.97	39.65	64.04	54.04	-12.07	-14.39
2	0.24200	9.77	37.58	28.21	47.35	37.98	62.03	52.03	-14.68	-14.05
3	0.47000	9.92	20.40	12.30	30.32	22.22	56.51	46.51	-26.19	-24.29
4	0.65763	9.96	31.61	22.46	41.57	32.42	56.00	46.00	-14.43	-13.58
5	3.50600	10.24	15.60	9.00	25.84	19.24	56.00	46.00	-30.16	-26.76
6	15.17000	10.77	15.36	10.18	26.13	20.95	60.00	50.00	-33.87	-29.05

Remarks:

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



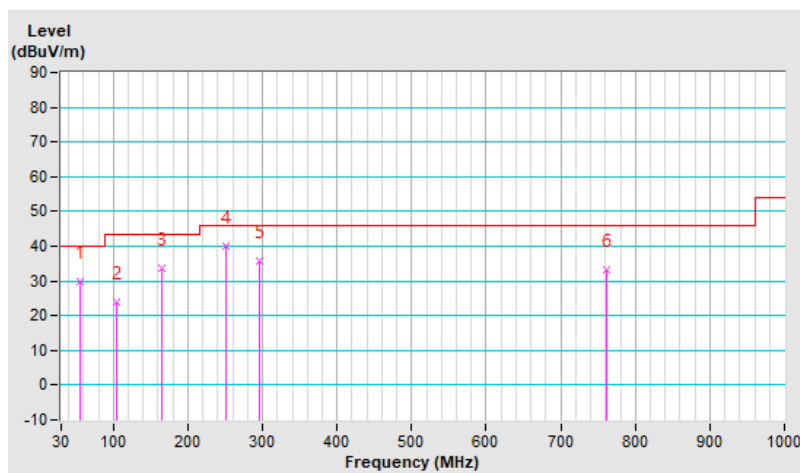
7.6 Unwanted Emissions below 1 GHz

RF Mode	802.11a	Channel	CH 165 : 5825 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	QP: RB=120kHz, DET=Quasi-Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23 °C, 67 % RH
Tested By	Karl Lee		

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	56.19	29.7 QP	40.0	-10.3	1.99 H	88	43.1	-13.4
2	103.72	24.1 QP	43.5	-19.4	1.99 H	317	40.9	-16.8
3	164.83	33.7 QP	43.5	-9.8	1.49 H	282	46.5	-12.8
4	250.19	40.1 QP	46.0	-5.9	1.49 H	31	54.0	-13.9
5	296.75	35.6 QP	46.0	-10.4	1.00 H	56	47.9	-12.3
6	762.35	33.1 QP	46.0	-12.9	1.49 H	18	34.8	-1.7

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.

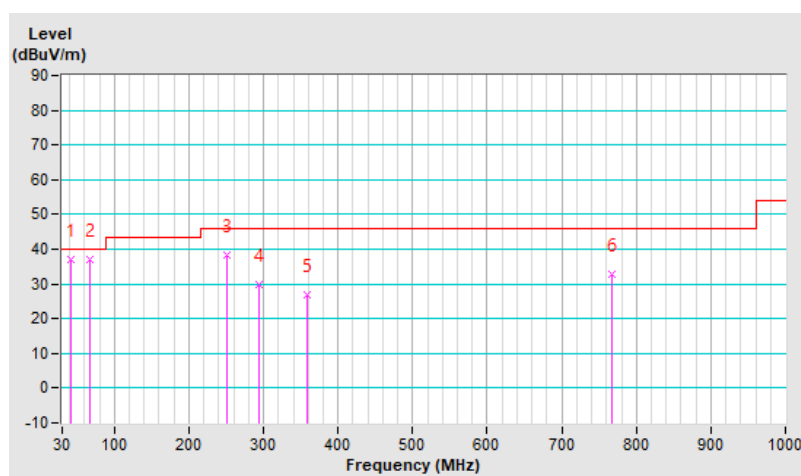


RF Mode	802.11a	Channel	CH 165 : 5825 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	QP: RB=120kHz, DET=Quasi-Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23 °C, 67 % RH
Tested By	Karl Lee		

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	41.64	36.9 QP	40.0	-3.1	1.01 V	77	50.1	-13.2
2	66.86	37.1 QP	40.0	-2.9	1.01 V	18	51.8	-14.7
3	250.19	38.2 QP	46.0	-7.8	1.01 V	281	52.1	-13.9
4	294.81	29.7 QP	46.0	-16.3	1.51 V	179	42.1	-12.4
5	357.86	26.9 QP	46.0	-19.1	1.01 V	237	37.5	-10.6
6	767.20	32.7 QP	46.0	-13.3	1.01 V	124	34.3	-1.6

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 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.



7.7 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	21 °C, 69 % 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	5150.00	62.8 PK	74.0	-11.2	1.51 H	0	60.2	2.6
2	5150.00	49.3 AV	54.0	-4.7	1.51 H	0	46.7	2.6
3	*5180.00	115.4 PK			1.51 H	0	75.2	40.2
4	*5180.00	105.7 AV			1.51 H	0	65.5	40.2
5	#10360.00	59.8 PK	68.2	-8.4	1.50 H	26	51.0	8.8
Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	70.9 PK	74.0	-3.1	1.02 V	118	68.3	2.6
2	5150.00	53.6 AV	54.0	-0.4	1.02 V	118	51.0	2.6
3	*5180.00	121.4 PK			1.02 V	118	81.2	40.2
4	*5180.00	111.6 AV			1.02 V	118	71.4	40.2
5	#10360.00	60.0 PK	68.2	-8.2	2.20 V	15	51.2	8.8

Remarks:

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

RF Mode	802.11a	Channel	CH 40 : 5200 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	21 °C, 69 % 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	5150.00	66.4 PK	74.0	-7.6	1.00 H	0	63.8	2.6
2	5150.00	50.5 AV	54.0	-3.5	1.00 H	0	47.9	2.6
3	*5200.00	117.1 PK			1.00 H	0	76.9	40.2
4	*5200.00	108.3 AV			1.00 H	0	68.1	40.2
5	#10400.00	59.9 PK	68.2	-8.3	1.75 H	66	51.0	8.9
Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5119.00	71.9 PK	74.0	-2.1	1.00 V	112	69.4	2.5
2	5119.00	53.6 AV	54.0	-0.4	1.00 V	112	51.1	2.5
3	*5200.00	122.8 PK			1.00 V	112	82.6	40.2
4	*5200.00	113.1 AV			1.00 V	112	72.9	40.2
5	#10400.00	62.1 PK	68.2	-6.1	2.19 V	16	53.2	8.9

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 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	21 °C, 69 % 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	5150.00	60.0 PK	74.0	-14.0	1.02 H	0	57.4	2.6
2	5150.00	47.6 AV	54.0	-6.4	1.02 H	0	45.0	2.6
3	*5240.00	117.4 PK			1.02 H	0	77.3	40.1
4	*5240.00	107.6 AV			1.02 H	0	67.5	40.1
5	#10480.00	61.0 PK	68.2	-7.2	2.41 H	315	52.0	9.0
6	15720.00	65.5 PK	74.0	-8.5	2.07 H	243	54.6	10.9
7	15720.00	52.8 AV	54.0	-1.2	2.07 H	243	41.9	10.9
Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	65.1 PK	74.0	-8.9	1.02 V	116	62.5	2.6
2	5150.00	49.2 AV	54.0	-4.8	1.02 V	116	46.6	2.6
3	*5240.00	125.2 PK			1.02 V	116	85.1	40.1
4	*5240.00	115.3 AV			1.02 V	116	75.2	40.1
5	#10480.00	61.3 PK	68.2	-6.9	2.01 V	32	52.3	9.0
6	15720.00	66.0 PK	74.0	-8.0	2.06 V	194	55.1	10.9
7	15720.00	53.0 AV	54.0	-1.0	2.06 V	194	42.1	10.9

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 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	23 °C, 67 % 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	#5634.40	59.8 PK	68.2	-8.4	1.01 H	21	56.2	3.6
2	*5745.00	117.2 PK			1.01 H	21	75.6	41.6
3	*5745.00	107.8 AV			1.01 H	21	66.2	41.6
4	#5987.20	60.5 PK	68.2	-7.7	1.01 H	21	56.1	4.4
5	11490.00	57.0 PK	74.0	-17.0	1.56 H	329	46.9	10.1
6	11490.00	45.8 AV	54.0	-8.2	1.56 H	329	35.7	10.1
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	62.8 PK	68.2	-5.4	1.00 V	70	59.2	3.6
2	*5745.00	126.7 PK			1.00 V	70	85.1	41.6
3	*5745.00	116.8 AV			1.00 V	70	75.2	41.6
4	#5991.60	61.0 PK	68.2	-7.2	1.00 V	70	56.6	4.4
5	11490.00	57.4 PK	74.0	-16.6	2.26 V	45	47.3	10.1
6	11490.00	47.5 AV	54.0	-6.5	2.26 V	45	37.4	10.1

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	802.11a	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	23 °C, 67 % 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	#5628.00	59.4 PK	68.2	-8.8	1.00 H	21	55.8	3.6
2	*5785.00	117.8 PK			1.00 H	21	76.0	41.8
3	*5785.00	107.6 AV			1.00 H	21	65.8	41.8
4	#5964.80	61.9 PK	68.2	-6.3	1.00 H	21	57.7	4.2
5	11570.00	56.4 PK	74.0	-17.6	1.67 H	229	46.5	9.9
6	11570.00	45.7 AV	54.0	-8.3	1.67 H	229	35.8	9.9
Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5622.00	63.1 PK	68.2	-5.1	1.02 V	69	59.7	3.4
2	*5785.00	127.3 PK			1.02 V	69	85.5	41.8
3	*5785.00	117.5 AV			1.02 V	69	75.7	41.8
4	#5941.60	63.9 PK	68.2	-4.3	1.02 V	69	59.7	4.2
5	11570.00	57.3 PK	74.0	-16.7	2.26 V	47	47.4	9.9
6	11570.00	47.3 AV	54.0	-6.7	2.26 V	47	37.4	9.9

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	23 °C, 67 % 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	#5605.20	59.7 PK	68.2	-8.5	1.00 H	20	56.3	3.4
2	*5825.00	117.2 PK			1.00 H	20	75.4	41.8
3	*5825.00	107.6 AV			1.00 H	20	65.8	41.8
4	#5992.00	60.5 PK	68.2	-7.7	1.00 H	20	56.1	4.4
5	11650.00	56.6 PK	74.0	-17.4	1.67 H	111	46.9	9.7
6	11650.00	45.2 AV	54.0	-8.8	1.67 H	111	35.5	9.7
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	#5640.40	60.1 PK	68.2	-8.1	1.00 V	69	56.5	3.6
2	*5825.00	126.2 PK			1.00 V	69	84.4	41.8
3	*5825.00	116.5 AV			1.00 V	69	74.7	41.8
4	#5982.00	63.3 PK	68.2	-4.9	1.00 V	69	59.0	4.3
5	11650.00	57.1 PK	74.0	-16.9	2.28 V	45	47.4	9.7
6	11650.00	46.9 AV	54.0	-7.1	2.28 V	45	37.2	9.7

Remarks:

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

RF Mode	802.11ax (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	21 °C, 69 % 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	5150.00	62.2 PK	74.0	-11.8	1.02 H	0	59.6	2.6
2	5150.00	48.7 AV	54.0	-5.3	1.02 H	0	46.1	2.6
3	*5180.00	114.0 PK			1.02 H	0	73.8	40.2
4	*5180.00	102.3 AV			1.02 H	0	62.1	40.2
5	#10360.00	61.5 PK	68.2	-6.7	1.50 H	26	52.7	8.8
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	5147.80	68.3 PK	74.0	-5.7	1.03 V	66	65.7	2.6
2	5147.80	53.5 AV	54.0	-0.5	1.03 V	66	50.9	2.6
3	*5180.00	122.8 PK			1.13 V	66	82.6	40.2
4	*5180.00	110.7 AV			1.13 V	66	70.5	40.2
5	#10360.00	62.6 PK	68.2	-5.6	1.44 V	157	53.8	8.8

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 (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	21 °C, 69 % 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	5150.00	62.2 PK	74.0	-11.8	1.02 H	1	59.6	2.6
2	5150.00	50.0 AV	54.0	-4.0	1.02 H	1	47.4	2.6
3	*5200.00	116.2 PK			1.02 H	1	76.0	40.2
4	*5200.00	105.4 AV			1.02 H	1	65.2	40.2
5	#10400.00	59.7 PK	68.2	-8.5	1.64 H	331	50.8	8.9
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	5123.00	68.2 PK	74.0	-5.8	1.20 V	67	65.6	2.6
2	5123.00	53.4 AV	54.0	-0.6	1.20 V	67	50.8	2.6
3	*5200.00	124.8 PK			1.20 V	67	84.6	40.2
4	*5200.00	112.1 AV			1.20 V	67	71.9	40.2
5	#10400.00	61.3 PK	68.2	-6.9	1.67 V	77	52.4	8.9

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 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	21 °C, 69 % 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	5150.00	59.1 PK	74.0	-14.9	1.02 H	2	56.5	2.6
2	5150.00	46.6 AV	54.0	-7.4	1.02 H	2	44.0	2.6
3	*5240.00	116.3 PK			1.02 H	2	76.2	40.1
4	*5240.00	105.2 AV			1.02 H	2	65.1	40.1
5	#10480.00	59.8 PK	68.2	-8.4	1.45 H	1	50.8	9.0
6	15720.00	64.1 PK	74.0	-9.9	1.59 H	228	53.2	10.9
7	15720.00	51.1 AV	54.0	-2.9	1.59 H	228	40.2	10.9
Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	65.8 PK	74.0	-8.2	1.00 V	116	63.2	2.6
2	5150.00	49.3 AV	54.0	-4.7	1.00 V	116	46.7	2.6
3	*5240.00	120.7 PK			1.00 V	116	80.6	40.1
4	*5240.00	113.9 AV			1.00 V	116	73.8	40.1
5	#10480.00	60.9 PK	68.2	-7.3	2.08 V	33	51.9	9.0
6	15720.00	65.1 PK	74.0	-8.9	1.90 V	198	54.2	10.9
7	15720.00	52.5 AV	54.0	-1.5	1.90 V	198	41.6	10.9

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 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	23 °C, 67 % 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	#5634.00	57.4 PK	68.2	-10.8	1.00 H	21	53.8	3.6
2	*5745.00	118.7 PK			1.00 H	21	77.1	41.6
3	*5745.00	105.6 AV			1.00 H	21	64.0	41.6
4	#5939.20	59.9 PK	68.2	-8.3	1.00 H	21	55.7	4.2
5	11490.00	57.0 PK	74.0	-17.0	1.56 H	309	46.9	10.1
6	11490.00	45.9 AV	54.0	-8.1	1.56 H	309	35.8	10.1
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	#5626.00	61.5 PK	68.2	-6.7	1.03 V	93	58.1	3.4
2	*5745.00	128.4 PK			1.03 V	93	86.8	41.6
3	*5745.00	115.3 AV			1.03 V	93	73.7	41.6
4	#5987.20	61.3 PK	68.2	-6.9	1.03 V	93	56.9	4.4
5	11490.00	57.6 PK	74.0	-16.4	2.18 V	43	47.5	10.1
6	11490.00	47.5 AV	54.0	-6.5	2.18 V	43	37.4	10.1

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 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	23 °C, 67 % 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	#5633.60	59.0 PK	68.2	-9.2	1.00 H	21	55.4	3.6
2	*5785.00	119.6 PK			1.00 H	21	77.8	41.8
3	*5785.00	107.1 AV			1.00 H	21	65.3	41.8
4	#5990.80	59.3 PK	68.2	-8.9	1.00 H	21	54.9	4.4
5	11570.00	57.0 PK	74.0	-17.0	1.99 H	208	47.1	9.9
6	11570.00	46.1 AV	54.0	-7.9	1.99 H	208	36.2	9.9
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	#5621.60	63.3 PK	68.2	-4.9	1.01 V	91	59.9	3.4
2	*5785.00	129.0 PK			1.01 V	91	87.2	41.8
3	*5785.00	116.2 AV			1.01 V	91	74.4	41.8
4	#5946.80	62.7 PK	68.2	-5.5	1.01 V	91	58.5	4.2
5	11570.00	57.4 PK	74.0	-16.6	2.28 V	42	47.5	9.9
6	11570.00	47.3 AV	54.0	-6.7	2.28 V	42	37.4	9.9

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	23 °C, 67 % 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	#5642.80	58.9 PK	68.2	-9.3	1.00 H	21	55.3	3.6
2	*5825.00	118.4 PK			1.00 H	21	76.6	41.8
3	*5825.00	106.3 AV			1.00 H	21	64.5	41.8
4	#5986.00	60.8 PK	68.2	-7.4	1.00 H	21	56.4	4.4
5	11650.00	56.4 PK	74.0	-17.6	1.53 H	229	46.7	9.7
6	11650.00	45.9 AV	54.0	-8.1	1.53 H	229	36.2	9.7
Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5647.20	61.2 PK	68.2	-7.0	1.02 V	71	57.6	3.6
2	*5825.00	128.2 PK			1.02 V	71	86.4	41.8
3	*5825.00	115.2 AV			1.02 V	71	73.4	41.8
4	#5987.20	63.3 PK	68.2	-4.9	1.02 V	71	58.9	4.4
5	11650.00	57.2 PK	74.0	-16.8	2.21 V	35	47.5	9.7
6	11650.00	47.1 AV	54.0	-6.9	2.21 V	35	37.4	9.7

Remarks:

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

RF Mode	802.11ax (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	21 °C, 69 % 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	5150.00	62.2 PK	74.0	-11.8	1.01 H	1	59.6	2.6
2	5150.00	49.6 AV	54.0	-4.4	1.01 H	1	47.0	2.6
3	*5190.00	112.2 PK			1.01 H	1	71.9	40.3
4	*5190.00	101.4 AV			1.01 H	1	61.1	40.3
5	#10380.00	58.8 PK	68.2	-9.4	1.44 H	147	50.0	8.8
Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	65.0 PK	74.0	-9.0	1.78 V	172	62.4	2.6
2	5150.00	52.2 AV	54.0	-1.8	1.78 V	172	49.6	2.6
3	*5190.00	119.3 PK			1.78 V	172	79.0	40.3
4	*5190.00	104.9 AV			1.78 V	172	64.6	40.3
5	#10380.00	58.4 PK	68.2	-9.8	2.04 V	159	49.6	8.8

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 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	21 °C, 69 % 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	5150.00	64.4 PK	74.0	-9.6	1.05 H	5	61.8	2.6
2	5150.00	50.3 AV	54.0	-3.7	1.05 H	5	47.7	2.6
3	*5230.00	115.4 PK			1.05 H	5	75.3	40.1
4	*5230.00	103.6 AV			1.05 H	5	63.5	40.1
5	#10460.00	58.7 PK	68.2	-9.5	1.75 H	1	49.7	9.0
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	68.1 PK	74.0	-5.9	1.78 V	174	65.5	2.6
2	5150.00	53.3 AV	54.0	-0.7	1.78 V	174	50.7	2.6
3	*5230.00	122.8 PK			1.78 V	174	82.7	40.1
4	*5230.00	109.6 AV			1.78 V	174	69.5	40.1
5	#10460.00	58.8 PK	68.2	-9.4	2.07 V	163	49.8	9.0

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 (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	23 °C, 67 % 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	#5615.60	59.7 PK	68.2	-8.5	1.00 H	21	56.3	3.4
2	*5755.00	115.5 PK			1.00 H	21	73.8	41.7
3	*5755.00	102.7 AV			1.00 H	21	61.0	41.7
4	#5990.40	60.2 PK	68.2	-8.0	1.00 H	21	55.8	4.4
5	11510.00	56.6 PK	74.0	-17.4	1.75 H	101	46.5	10.1
6	11510.00	45.7 AV	54.0	-8.3	1.75 H	101	35.6	10.1
Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5647.20	67.7 PK	68.2	-0.5	1.00 V	69	64.1	3.6
2	*5755.00	125.8 PK			1.00 V	69	84.1	41.7
3	*5755.00	112.9 AV			1.00 V	69	71.2	41.7
4	#5952.40	61.1 PK	68.2	-7.1	1.00 V	69	56.9	4.2
5	11510.00	57.3 PK	74.0	-16.7	2.29 V	44	47.2	10.1
6	11510.00	47.2 AV	54.0	-6.8	2.29 V	44	37.1	10.1

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 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	23 °C, 67 % 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	#5628.00	60.1 PK	68.2	-8.1	1.00 H	21	56.5	3.6
2	*5795.00	115.5 PK			1.00 H	21	73.7	41.8
3	*5795.00	102.3 AV			1.00 H	21	60.5	41.8
4	#5966.40	60.4 PK	68.2	-7.8	1.00 H	21	56.2	4.2
5	11590.00	56.3 PK	74.0	-17.7	1.45 H	4	46.4	9.9
6	11590.00	45.2 AV	54.0	-8.8	1.45 H	4	35.3	9.9
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	#5641.60	67.3 PK	68.2	-0.9	1.00 V	69	63.7	3.6
2	*5795.00	125.4 PK			1.00 V	69	83.6	41.8
3	*5795.00	112.3 AV			1.00 V	69	70.5	41.8
4	#5927.20	66.2 PK	68.2	-2.0	1.00 V	69	62.0	4.2
5	11590.00	57.2 PK	74.0	-16.8	2.29 V	46	47.3	9.9
6	11590.00	46.9 AV	54.0	-7.1	2.29 V	46	37.0	9.9

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	21 °C, 69 % 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	5150.00	61.4 PK	74.0	-12.6	1.00 H	0	58.8	2.6
2	5150.00	50.7 AV	54.0	-3.3	1.00 H	0	48.1	2.6
3	*5210.00	106.4 PK			1.00 H	0	66.2	40.2
4	*5210.00	94.8 AV			1.00 H	0	54.6	40.2
5	#10420.00	58.8 PK	68.2	-9.4	1.15 H	154	49.9	8.9
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	5137.50	66.3 PK	74.0	-7.7	1.12 V	65	63.7	2.6
2	5137.50	53.7 AV	54.0	-0.3	1.12 V	65	51.1	2.6
3	*5210.00	113.7 PK			1.12 V	65	73.5	40.2
4	*5210.00	101.6 AV			1.12 V	65	61.4	40.2
5	#10420.00	58.9 PK	68.2	-9.3	1.67 V	229	50.0	8.9

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 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	23 °C, 67 % RH
Tested By	Charles Hsiao		

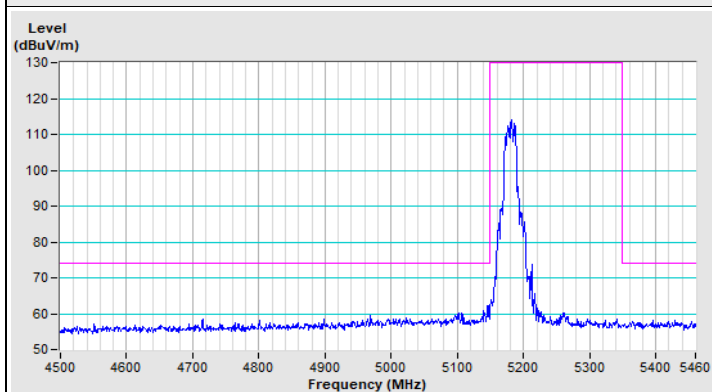
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5648.80	59.6 PK	68.2	-8.6	1.00 H	20	56.0	3.6
2	*5775.00	110.0 PK			1.00 H	20	68.2	41.8
3	*5775.00	97.4 AV			1.00 H	20	55.6	41.8
4	#5957.60	59.3 PK	68.2	-8.9	1.00 H	20	55.1	4.2
5	11550.00	56.3 PK	74.0	-17.7	1.57 H	200	46.3	10.0
6	11550.00	45.5 AV	54.0	-8.5	1.57 H	200	35.5	10.0
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	#5641.60	68.0 PK	68.2	-0.2	1.78 V	174	64.4	3.6
2	*5775.00	119.5 PK			1.78 V	174	77.7	41.8
3	*5775.00	106.0 AV			1.78 V	174	64.2	41.8
4	#5926.40	64.0 PK	68.2	-4.2	1.78 V	174	59.8	4.2
5	11550.00	56.4 PK	74.0	-17.6	1.93 V	155	46.4	10.0
6	11550.00	46.6 AV	54.0	-7.4	1.93 V	155	36.6	10.0

Remarks:

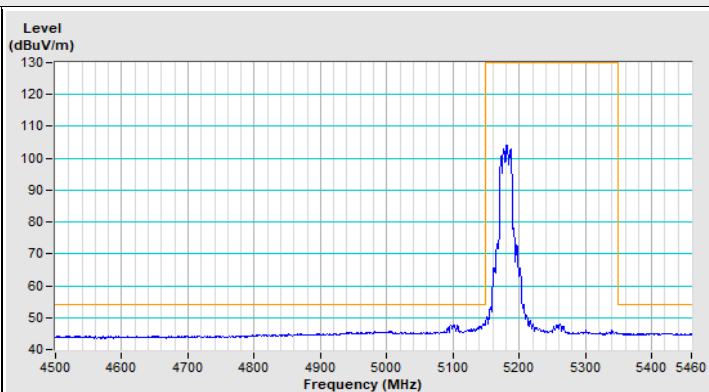
1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency,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

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
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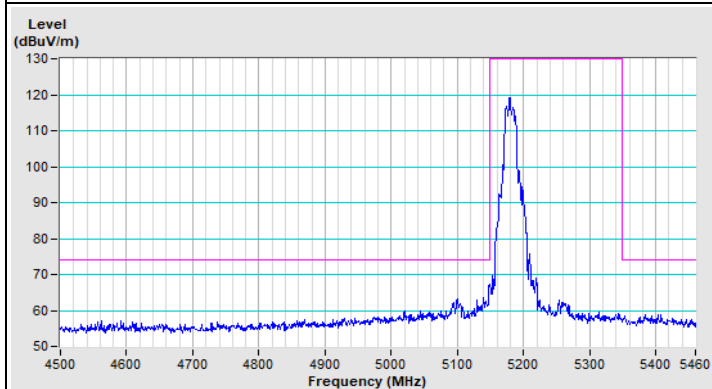
802.11a Channel 36



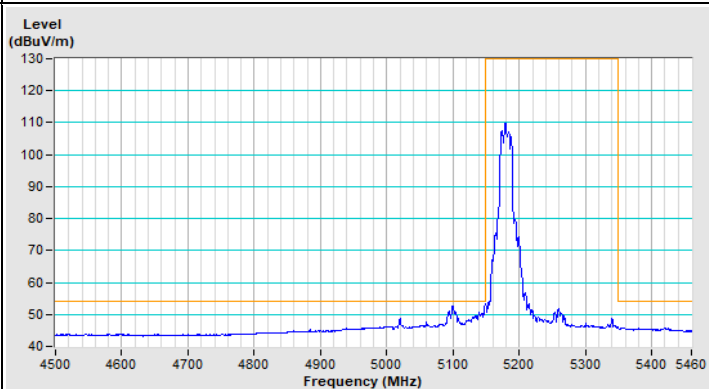
Vertical (Peak)



Vertical (Average)

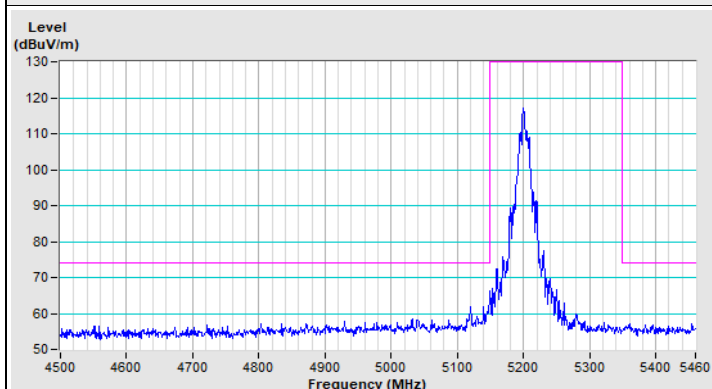


Horizontal (Peak)

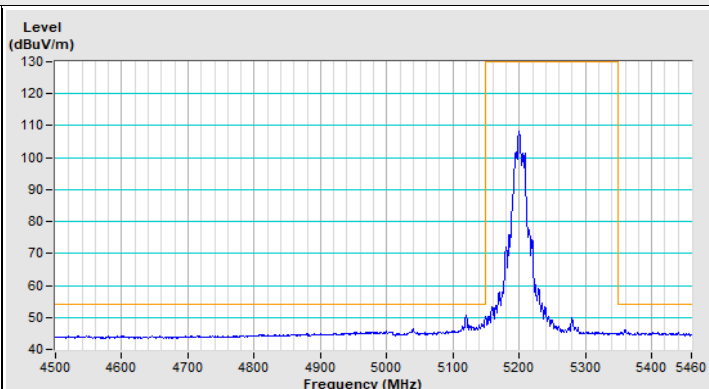


Horizontal (Average)

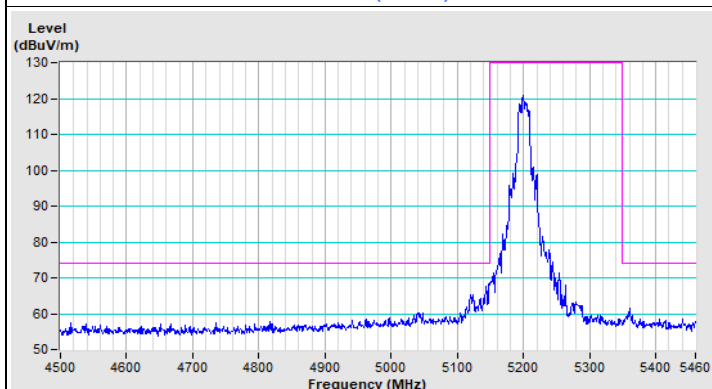
802.11a Channel 40



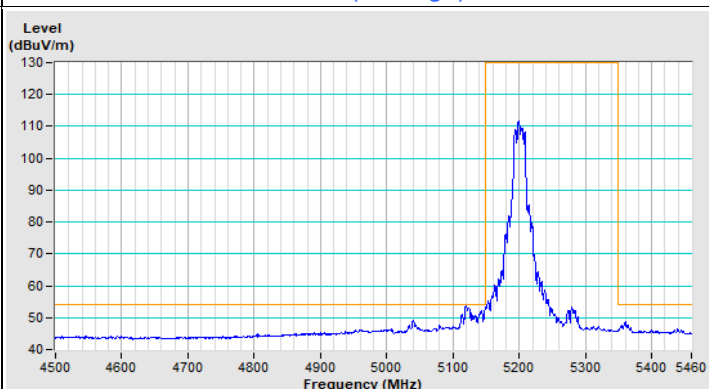
Vertical (Peak)



Vertical (Average)

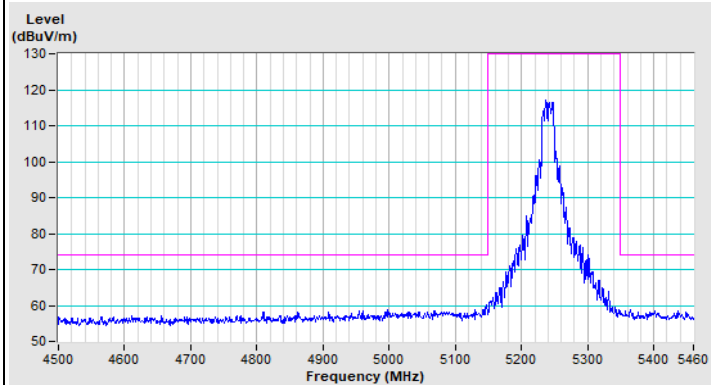


Horizontal (Peak)

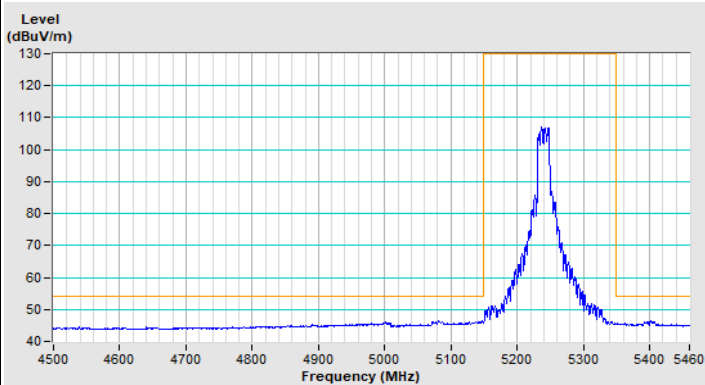


Horizontal (Average)

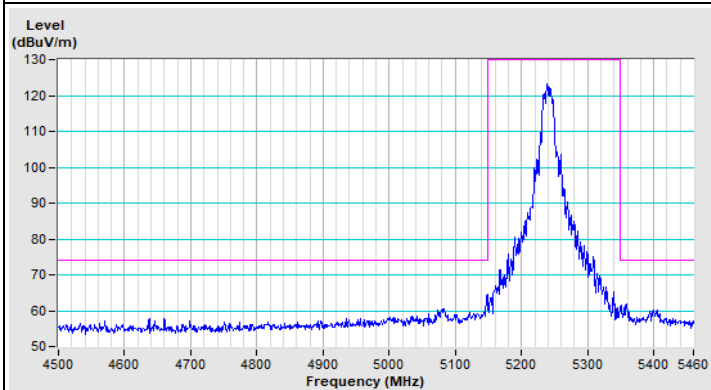
802.11a Channel 48



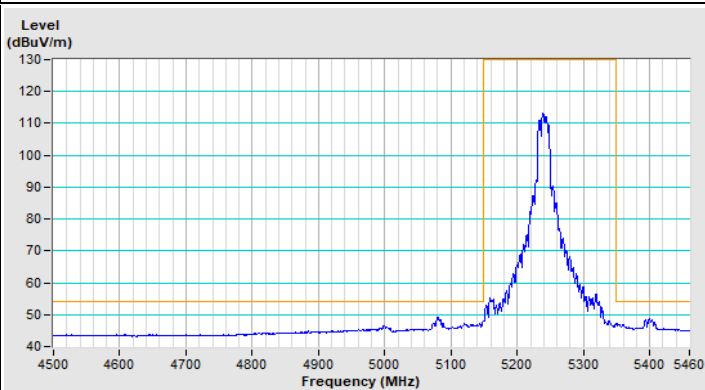
Vertical (Peak)



Vertical (Average)



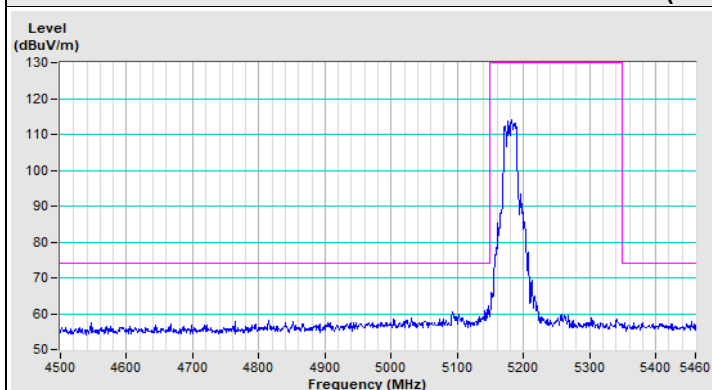
Horizontal (Peak)



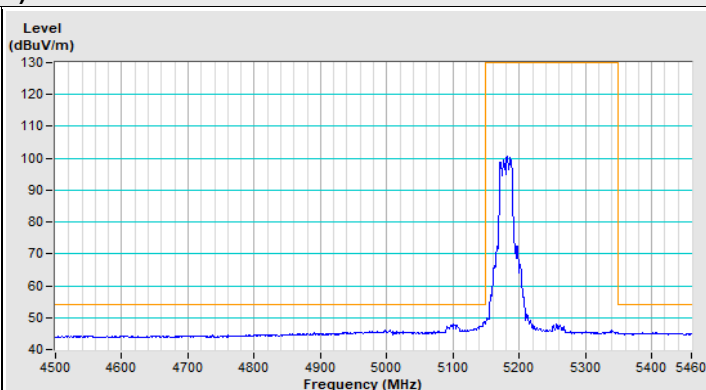
Horizontal (Average)

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=10 Hz, DET=Peak
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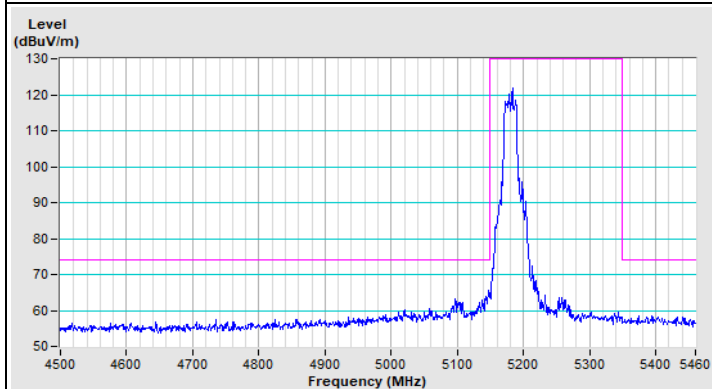
802.11ax (HE20) Channel 36



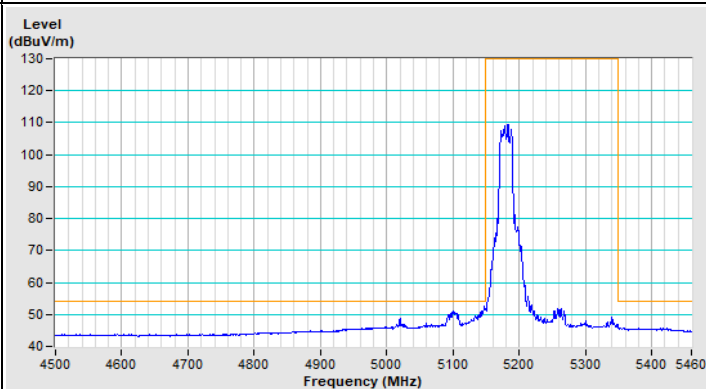
Vertical (Peak)



Vertical (Average)

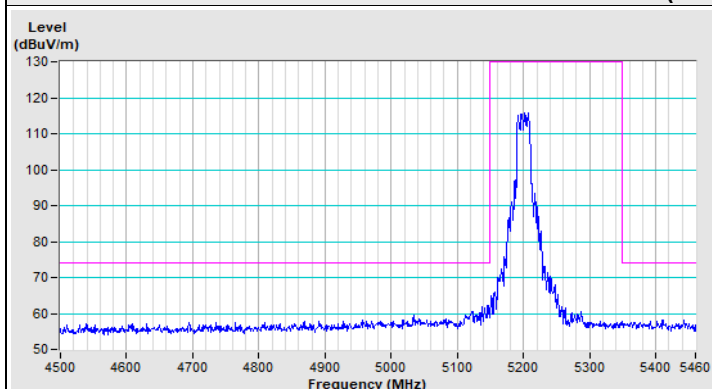


Horizontal (Peak)

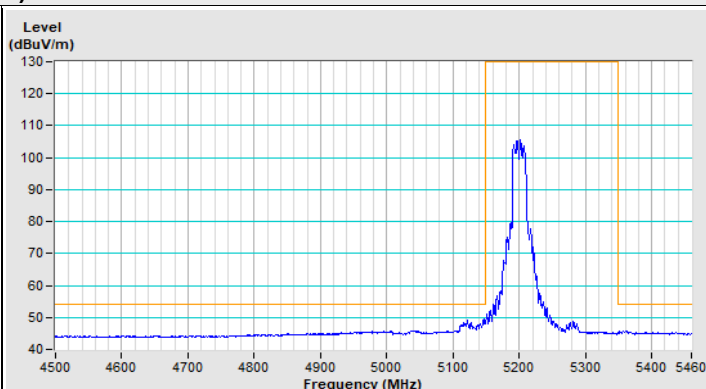


Horizontal (Average)

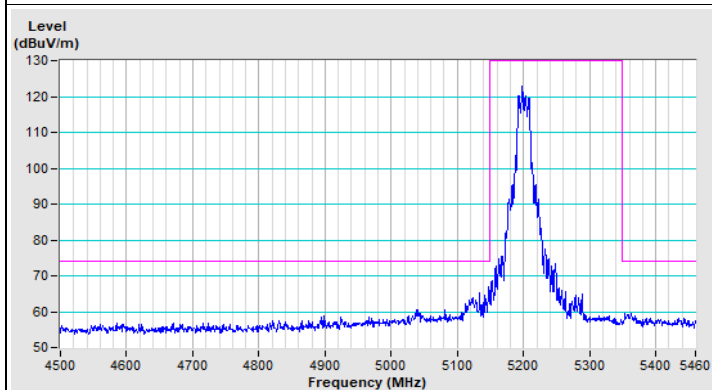
802.11ax (HE20) Channel 40



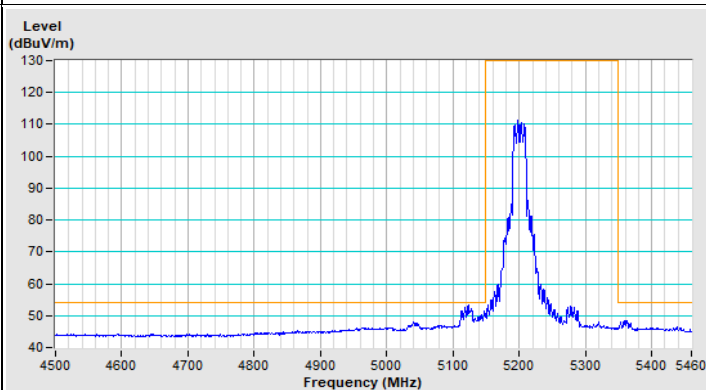
Vertical (Peak)



Vertical (Average)

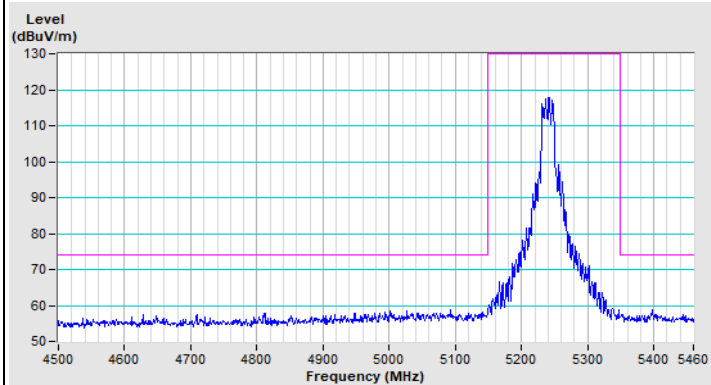


Horizontal (Peak)

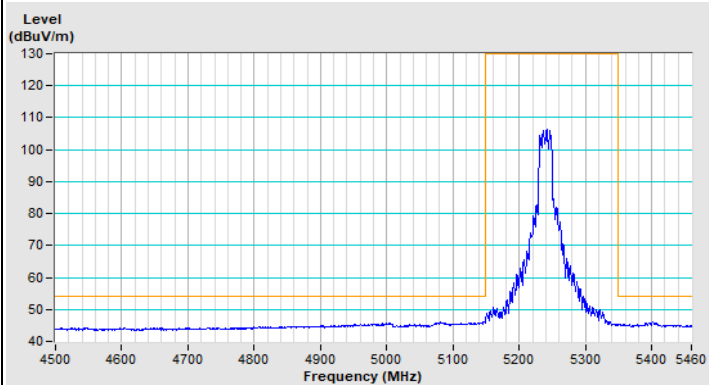


Horizontal (Average)

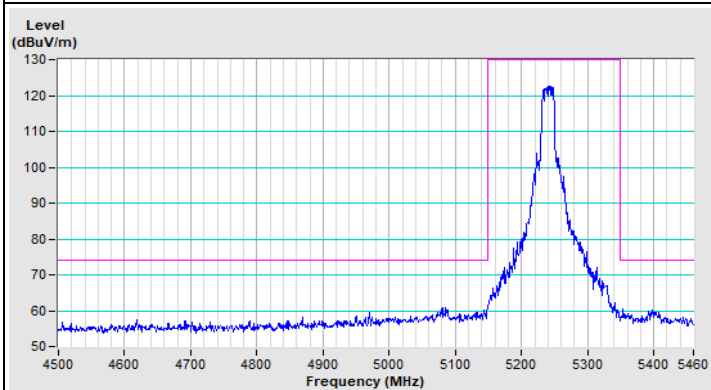
802.11ax (HE20) Channel 48



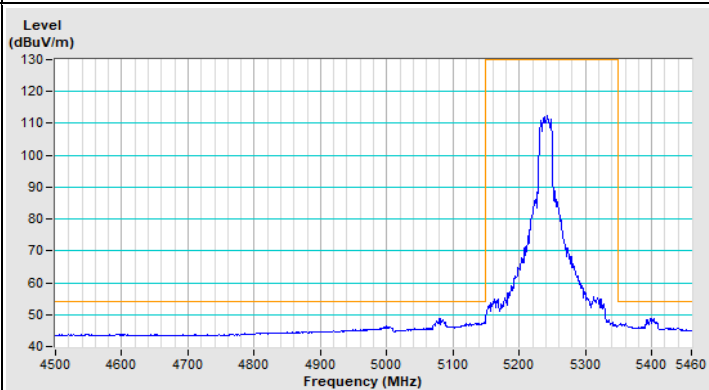
Vertical (Peak)



Vertical (Average)



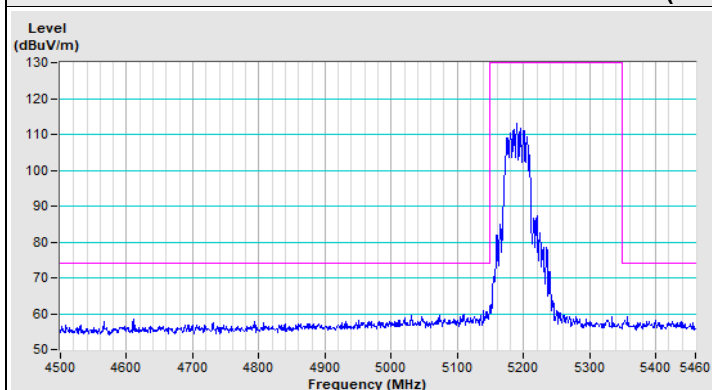
Horizontal (Peak)



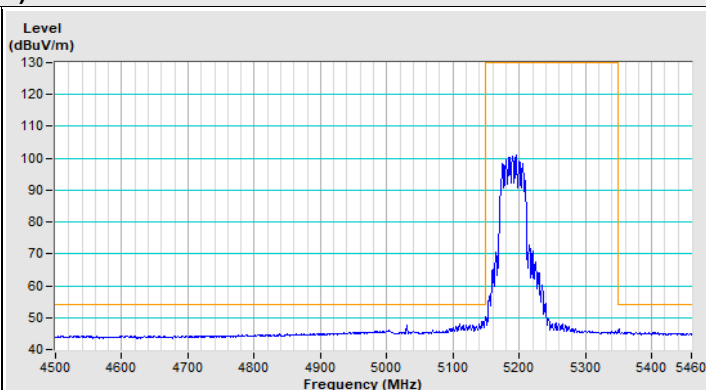
Horizontal (Average)

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=10 Hz, DET=Peak
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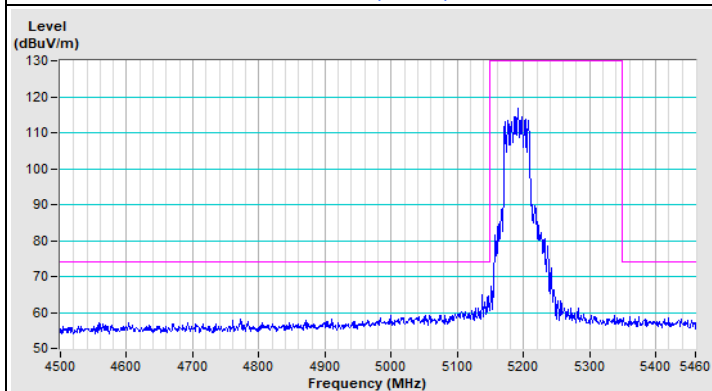
802.11ax (HE40) Channel 38



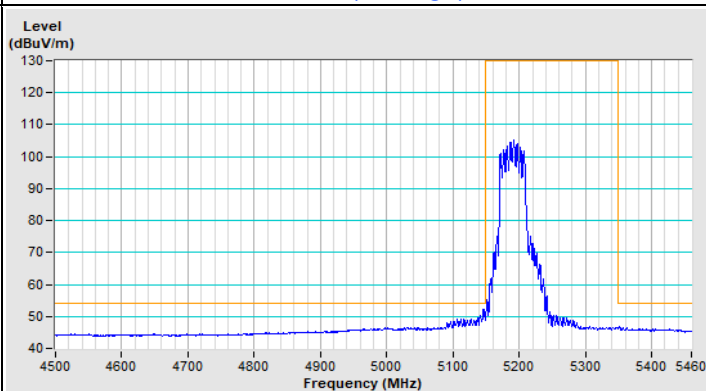
Vertical (Peak)



Vertical (Average)

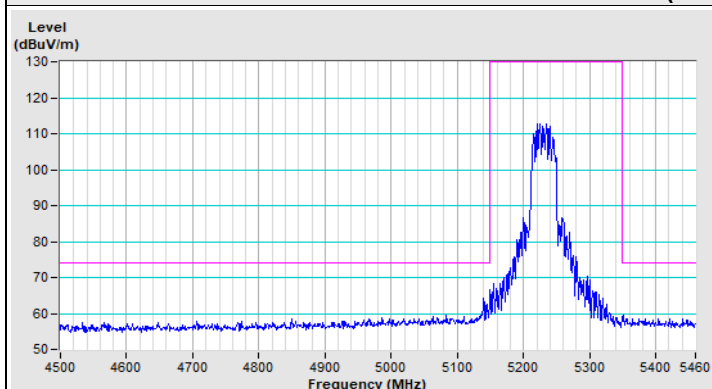


Horizontal (Peak)

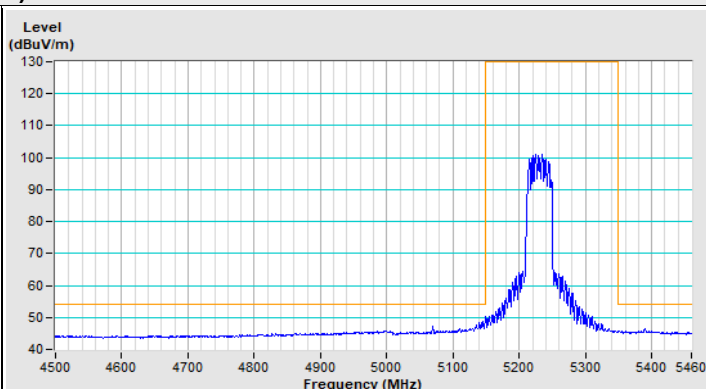


Horizontal (Average)

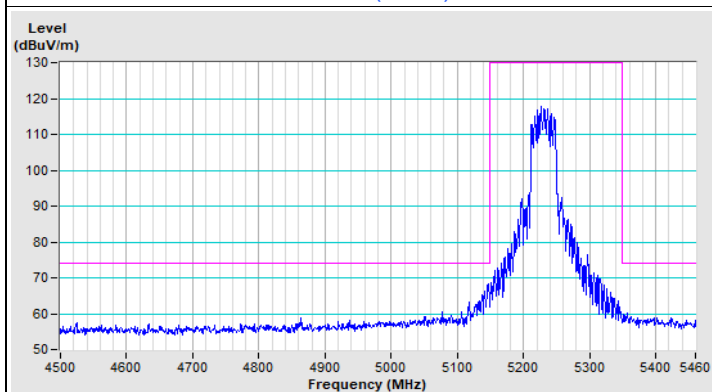
802.11ax (HE40) Channel 46



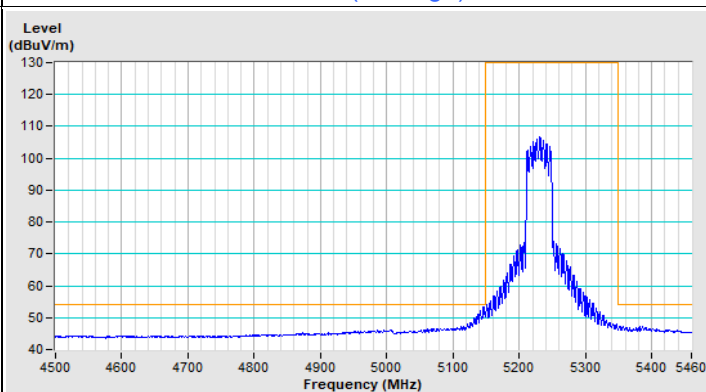
Vertical (Peak)



Vertical (Average)



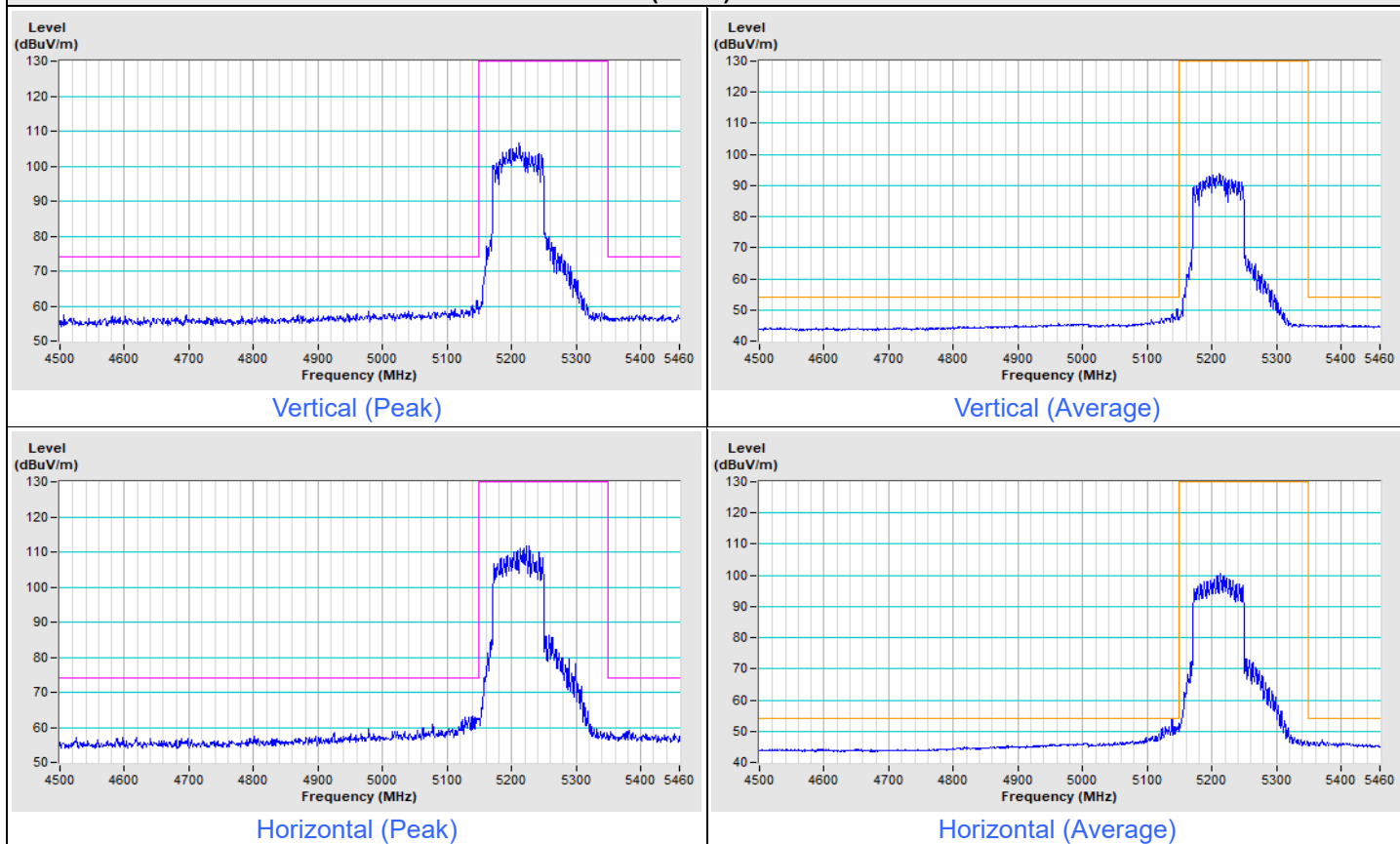
Horizontal (Peak)



Horizontal (Average)

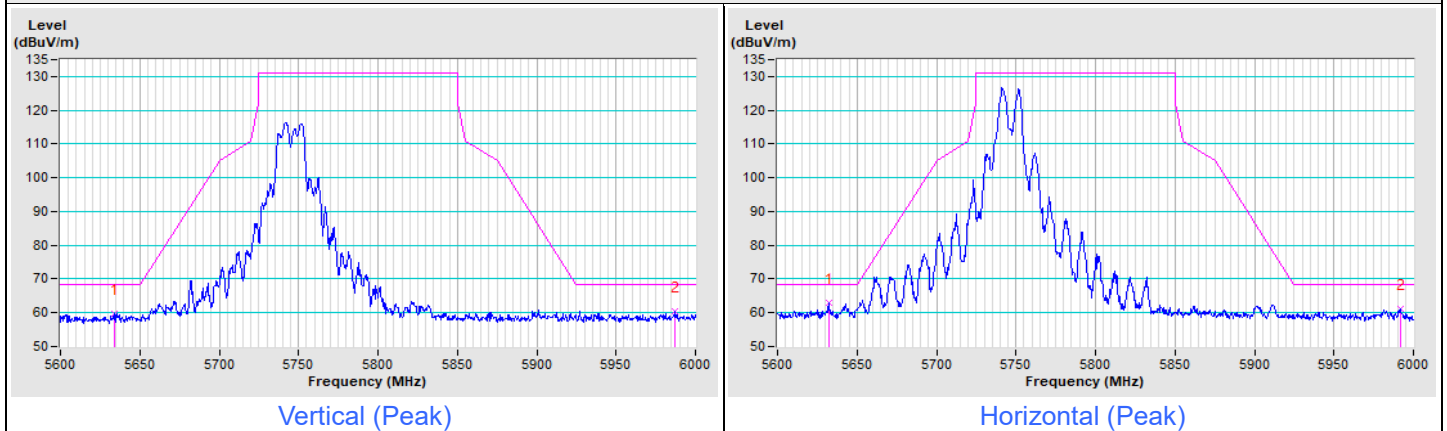
Frequency Range	4.5 GHz ~ 5.46 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
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802.11ax (HE80) Channel 42

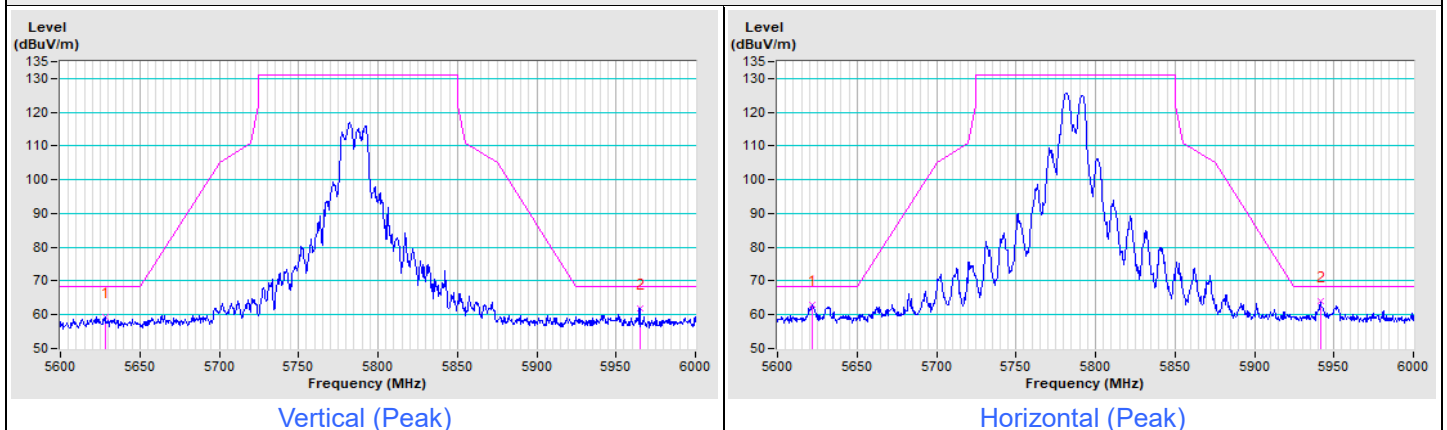


Frequency Range	5.6 GHz ~ 6 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak
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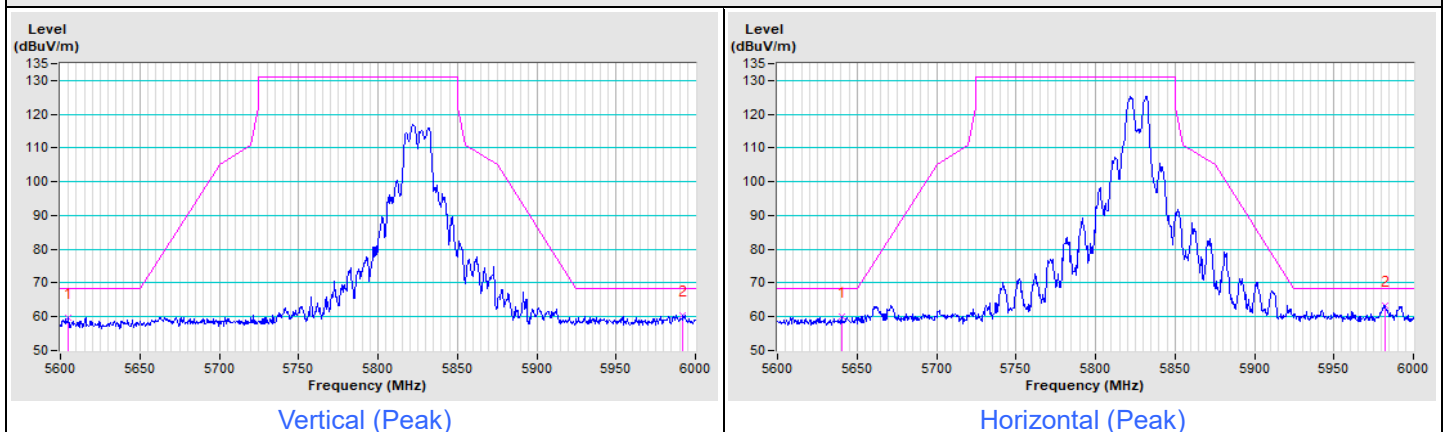
802.11a Channel 149



802.11a Channel 157

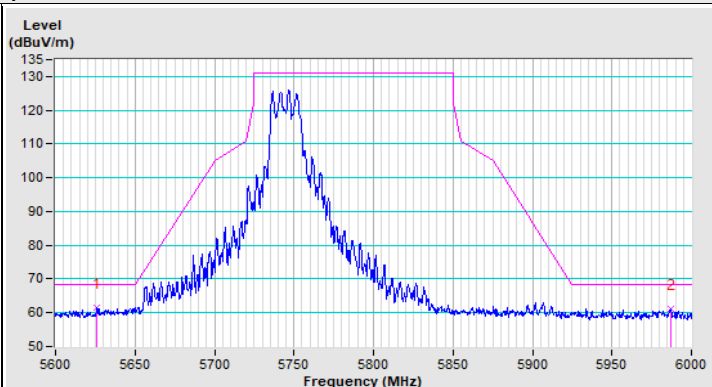
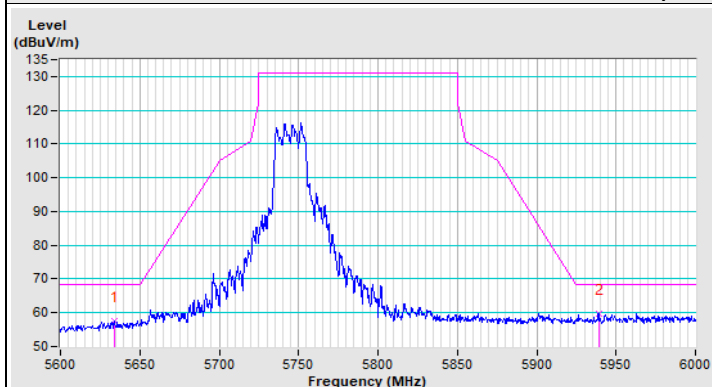


802.11a Channel 165

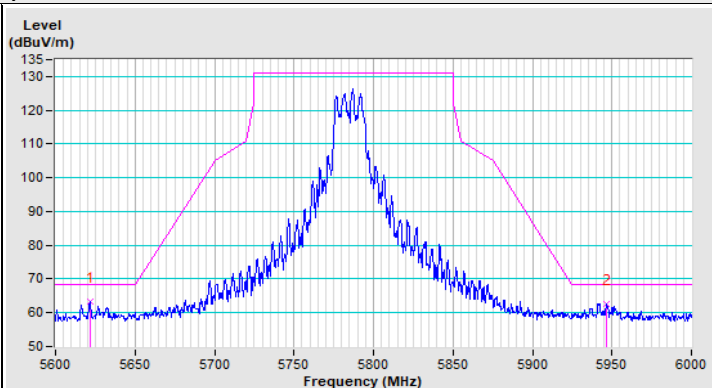
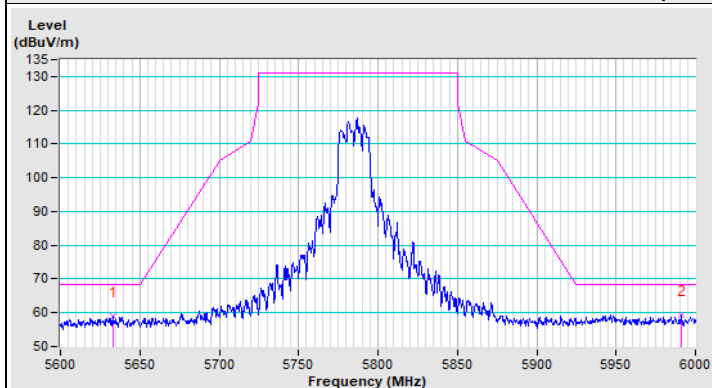


Frequency Range	5.6 GHz ~ 6 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak
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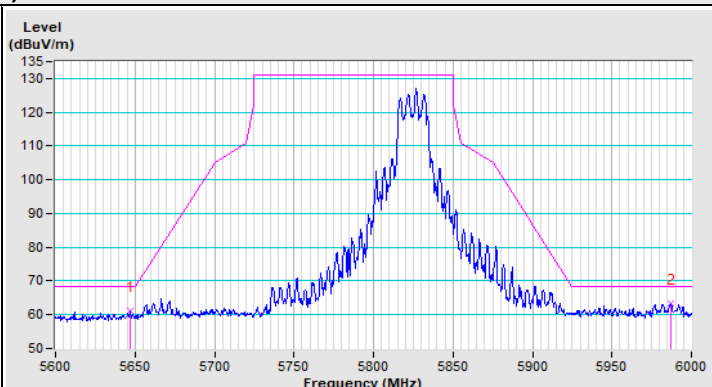
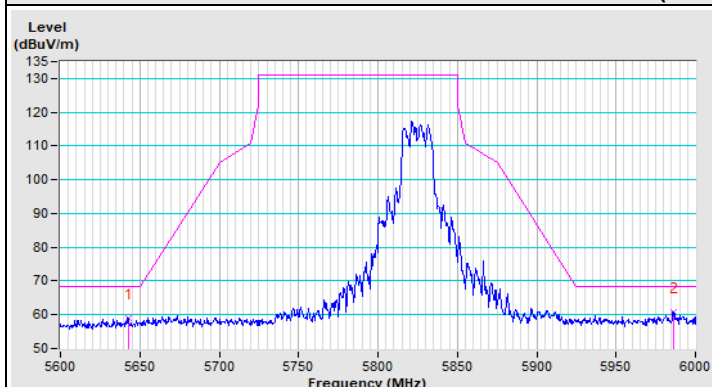
802.11ax (HE20) Channel 149



802.11ax (HE20) Channel 157

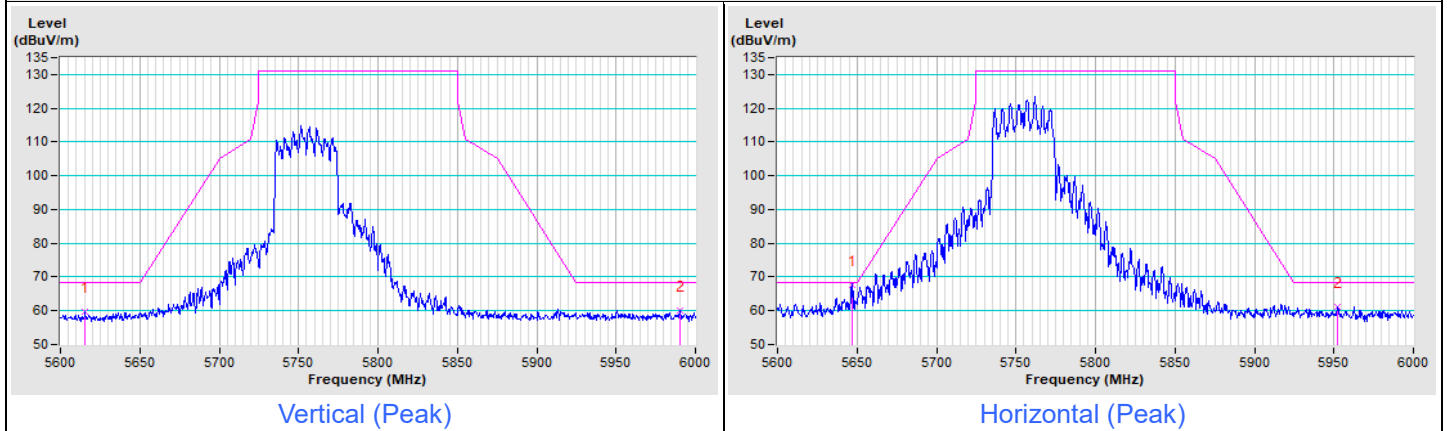


802.11ax (HE20) Channel 165

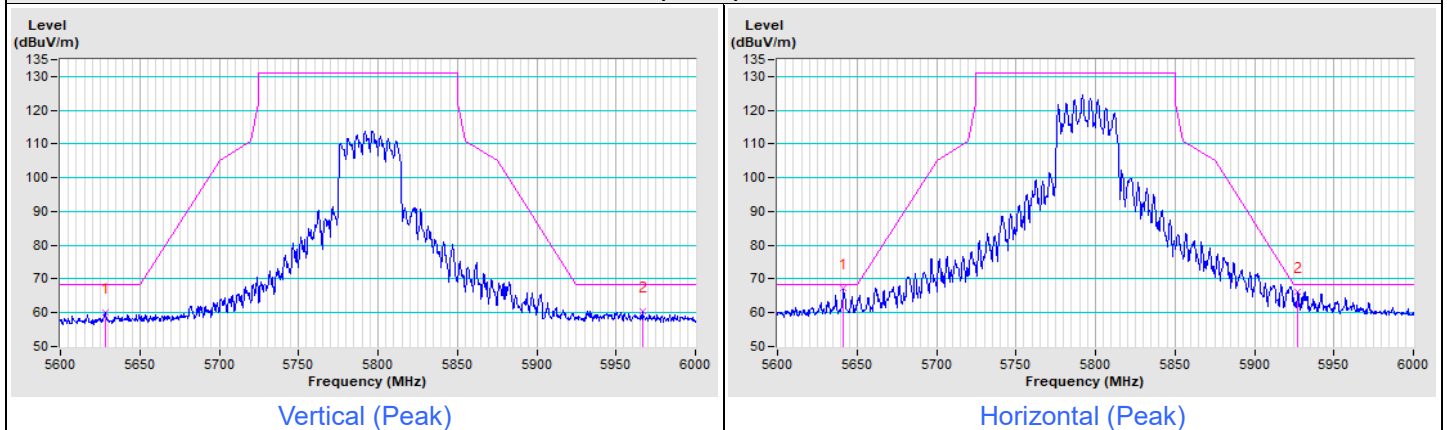


Frequency Range	5.6 GHz ~ 6 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak
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802.11ax (HE40) Channel 151

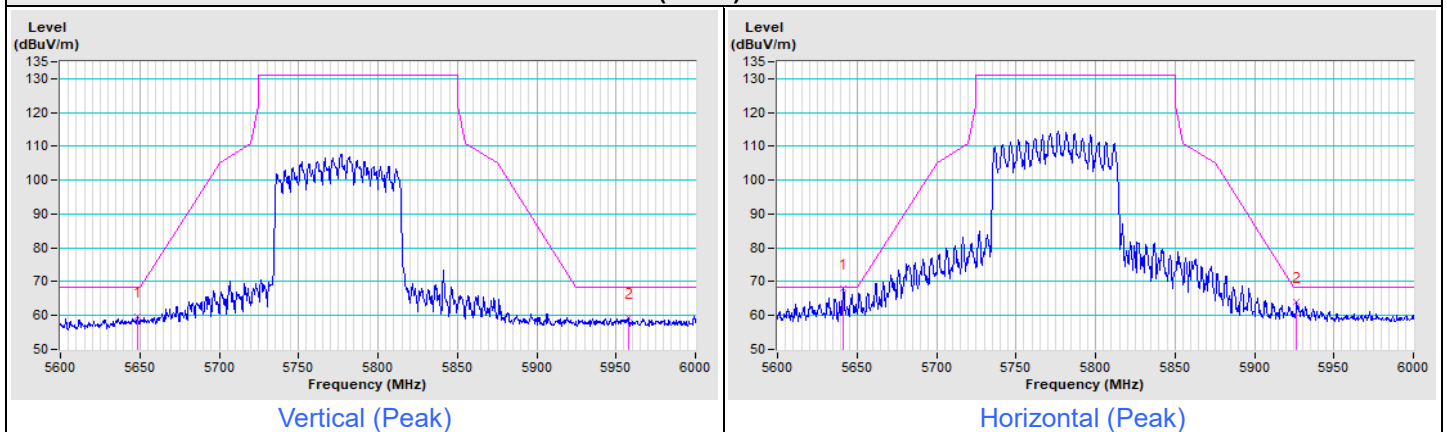


802.11ax (HE40) Channel 159



Frequency Range	5.6 GHz ~ 6 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak
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802.11ax (HE80) Channel 155



8 Pictures of Test Arrangements

Please refer to the attached file (Test Setup Photo)

9 Information of the Testing Laboratories

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

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

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

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

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