

TEST REPORT

CERTIFICATE OF CONFORMITY

Standard: 47 CFR FCC Part 15, Subpart E (Section 15.407)
Report No.: RFBCMA-WTW-P23040055-1
FCC ID: RAXWR3210
Product: Standalone Router
Brand: Hughes
Model No.: HL1120W-IDU
Received Date: 2023/3/27
Test Date: 2023/4/28 ~ 2023/5/29
Issued Date: 2023/7/3

Applicant: Arcadyan Technology Corporation
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Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
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FCC Registration / 723255 / TW2022

Designation Number:

Approved by: _____



, Date: _____

2023/7/3

May Chen / Manager

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Prepared by : Vito Lung / Specialist



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Release Control Record

Issue No.	Description	Date Issued
RFBCMA-WTW-P23040055-1	Original release.	2023/7/3

1 Certificate

Product: Standalone Router

Brand: Hughes

Test Model: HL1120W-IDU

Sample Status: Engineering sample

Applicant: Arcadyan Technology Corporation

Test Date: 2023/4/28 ~ 2023/5/29

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

Measurement ANSI C63.10-2013

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

KDB 662911 D01 Multiple Transmitter Output v02r01

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

2 Summary of Test Results

47 CFR FCC Part 15, Subpart E (Section 15.407)			
Clause	Test Item	Result	Remark
15.407(a)(1) 15.407(a)(3)	RF Output Power	Pass	Meet the requirement of limit.
15.407(a)(1) 15.407(a)(3)	Power Spectral Density	Pass	Meet the requirement of limit.
15.407(e)	6 dB Bandwidth	Pass	Meet the requirement of limit. (U-NII-3 Band only)
---	Occupied Bandwidth	-	Reference only.
15.407(g)	Frequency Stability	Pass	Meet the requirement of limit.
15.407(b)(9)	AC Power Conducted Emissions	Pass	Minimum passing margin is -20.36 dB at 0.96641 MHz
15.407(b)(9)	Unwanted Emissions below 1 GHz	Pass	Minimum passing margin is -5.6 dB at 41.19 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 5350.00 MHz
15.203	Antenna Requirement	Pass	Antenna connector is ipex(MHF) not a standard connector.

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

2.1 Measurement Uncertainty

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

Parameter	Specification	Uncertainty (±)
AC Power Conducted Emissions	150 kHz ~ 30 MHz	1.9 dB
Unwanted Emissions below 1 GHz	9 kHz ~ 30 MHz	3.1 dB
	30 MHz ~ 1 GHz	5.1 dB
Unwanted Emissions above 1 GHz	1 GHz ~ 18 GHz	5.1 dB
	18 GHz ~ 40 GHz	5.3 dB

The other instruments specified are routine verified to remain within the calibrated levels, no measurement uncertainty is required to be calculated.

2.2 Supplementary Information

There is not any deviation from the test standards for the test method, and no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	Standalone Router
Brand	Hughes
Test Model	HL1120W-IDU
Status of EUT	Engineering sample
Power Supply Rating	12 Vdc from host equipment
Modulation Type	64QAM, 16QAM, QPSK, BPSK for OFDM 256QAM for OFDM in 11ac mode 1024QAM for OFDMA in 11ax HE mode
Modulation Technology	OFDM, OFDMA
Transfer Rate	802.11a: up to 54 Mbps 802.11n: up to 300 Mbps 802.11ac: up to 866.7 Mbps 802.11ax: up to 1201.0 Mbps
Operating Frequency	5.18 GHz ~ 5.24 GHz 5.745 GHz ~ 5.825 GHz
Number of Channel	802.11a, 802.11n (HT20), 802.11ac (VHT20), 802.11ax (HE20): 9 802.11n (HT40), 802.11ac (VHT40), 802.11ax (HE40): 4 802.11ac (VHT80), 802.11ax (HE80): 2
Output Power	CDD Mode: 5.18 GHz ~ 5.24 GHz : 985.219 mW (29.94 dBm) 5.745 GHz ~ 5.825 GHz : 936.822 mW (29.72 dBm) Beamforming Mode: 5.18 GHz ~ 5.24 GHz : 932.32 mW (29.70 dBm) 5.745 GHz ~ 5.825 GHz : 888.409 mW (29.49 dBm)
EUT Category	Indoor Access Point

Note:

1. The EUT has below radios as following table:

Radio 1	Radio 2
WLAN (2.4GHz)	WLAN (5GHz)

2. Simultaneously transmission condition.

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

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

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

3.2 Antenna Description of EUT

4. The antenna information is listed as below.

Antenna NO.	RF Chain NO.	Brand	Model	Antenna Net Gain (dBi)	Frequency range (GHz)	Antenna Type	Connector Type	Cable Length(mm)
1	0	PSA	RFPCA370706IMAB303	1.86	2.4~2.4835	Dipole	ipex(MHF)	60
2	1	PSA	RFPCA330707IMAB301	1.94	2.4~2.4835	Dipole	ipex(MHF)	70
3	0	PSA	RFPCA220904IM5B301	2.26	5.15~5.85	Dipole	ipex(MHF)	40
4	1	PSA	RFPCA220904IM5B305	2.91	5.15~5.85	Dipole	ipex(MHF)	41

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

5. The EUT incorporates a MIMO function:

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

Note:

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

3.3 Channel List

FOR 5180 ~ 5240 MHz

4 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20), 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. EUT's Antenna can be used in the following ways: X-axis/ Y-axis/ Z-axis. Pre-scan these ways and find the worst case as a representative test condition. 2. 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:	1. Antenna X-axis/ Y-axis/ Z-axis Worst Condition:Z-Axis

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

Test Item	Mode	Signal Mode	Tested Channel	Modulation	Data Rate
RF Output Power	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
6 dB Bandwidth	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
Power Spectral Density / Occupied Bandwidth	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
Frequency Stability	11a	-	36	un-modulation	-
AC Power Conducted Emissions	802.11ax (HE20)	CDD	48	BPSK	MCS0
Unwanted Emissions below 1 GHz	802.11ax (HE20)	CDD	48	BPSK	MCS0
Unwanted Emissions above 1 GHz	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

Note:
Partial RU (resource unit) reduction mechanisms are not supported.

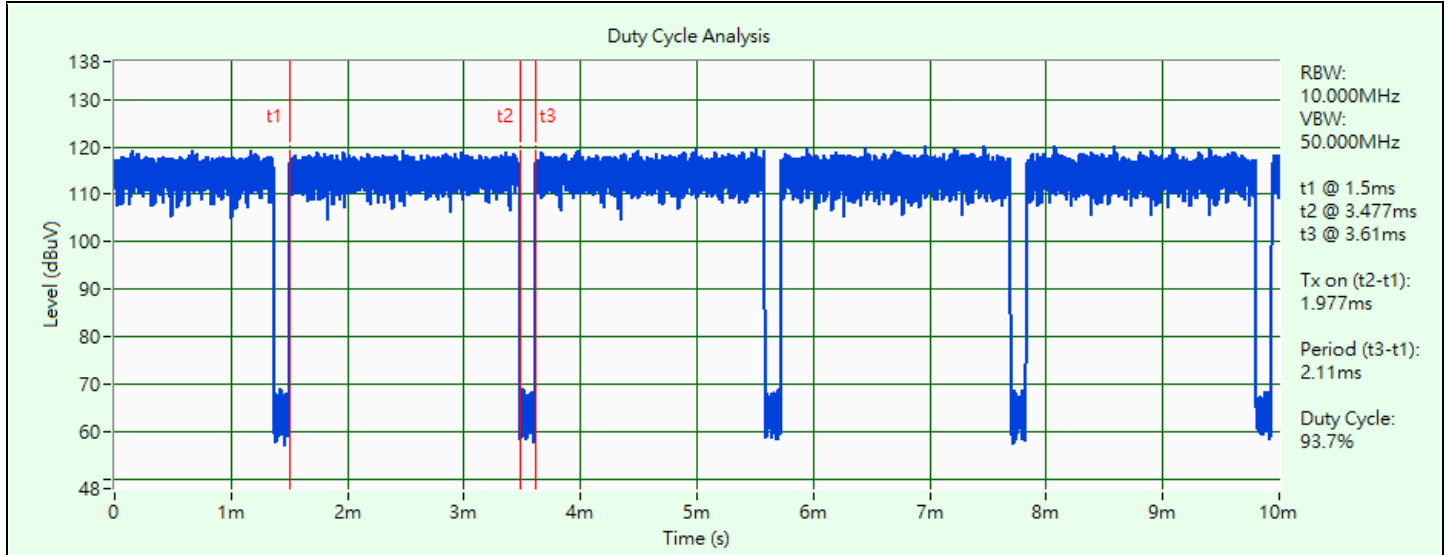
3.5 Duty Cycle of Test Signal

802.11a: Duty cycle = 1.977 ms / 2.11 ms x 100% = 93.7%, duty factor = $10 * \log (1/\text{Duty cycle}) = 0.28 \text{ dB}$

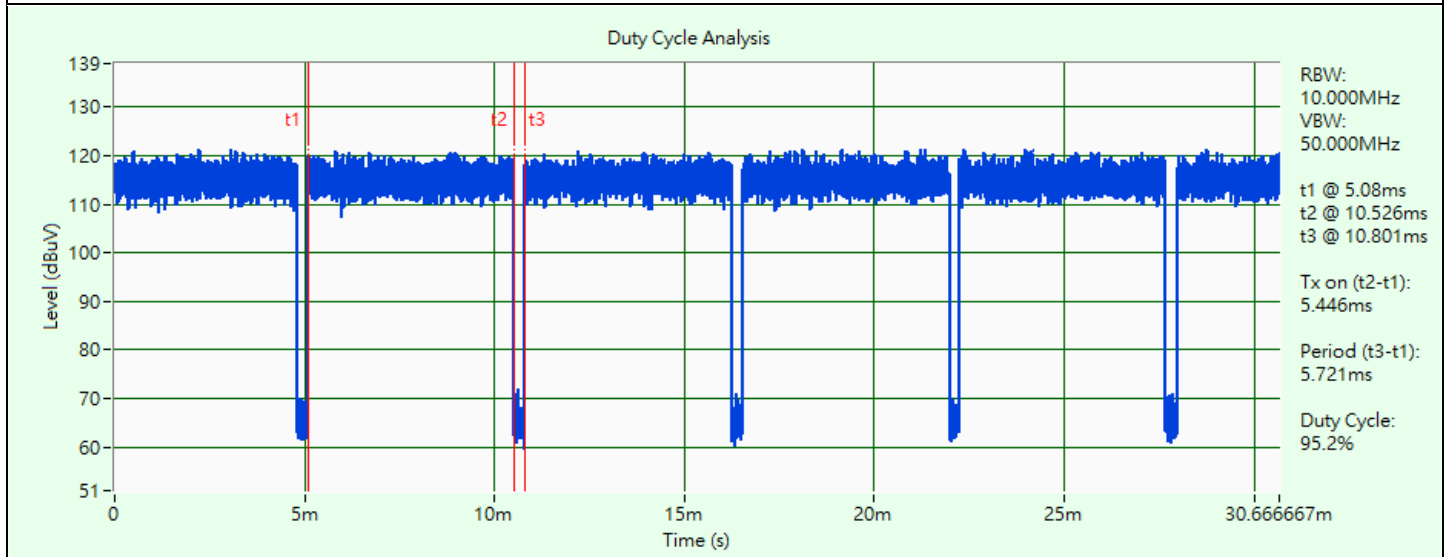
802.11ax (HE20): Duty cycle = 5.446 ms / 5.721 ms x 100% = 95.2%, duty factor = $10 * \log (1/\text{Duty cycle}) = 0.21 \text{ dB}$

802.11ax (HE40): Duty cycle = 5.447 ms / 5.784 ms x 100% = 94.2%, duty factor = $10 * \log (1/\text{Duty cycle}) = 0.26 \text{ dB}$

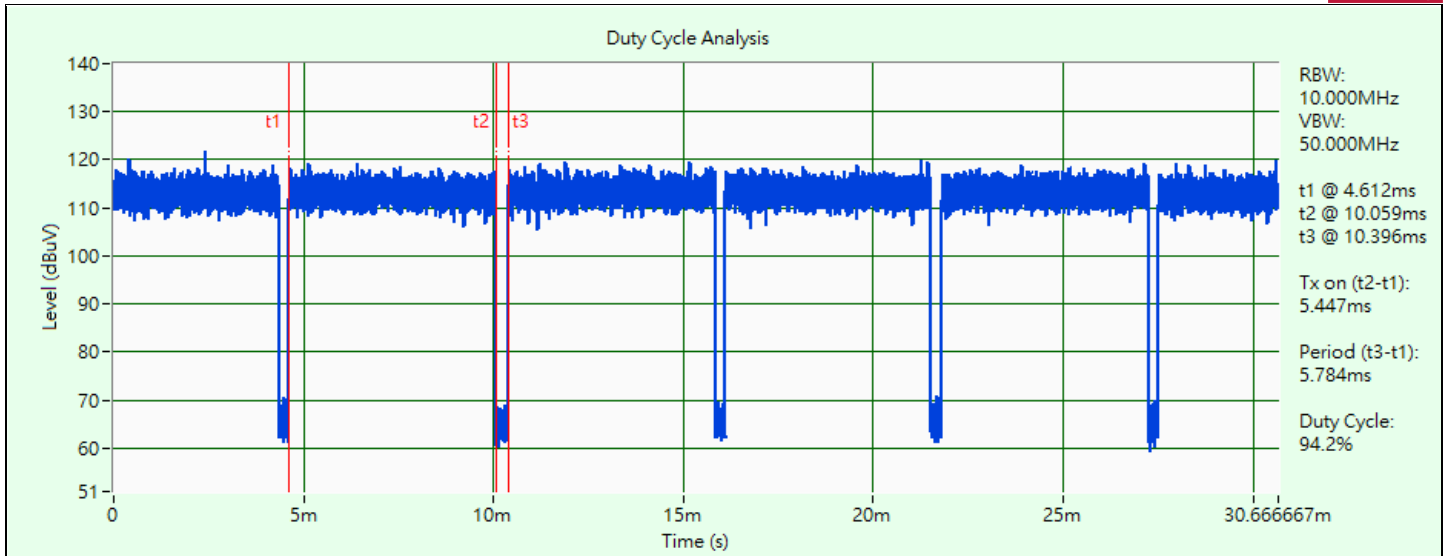
802.11ax (HE80): Duty cycle = 5.446 ms / 5.738 ms x 100% = 94.9%, duty factor = $10 * \log (1/\text{Duty cycle}) = 0.23 \text{ dB}$



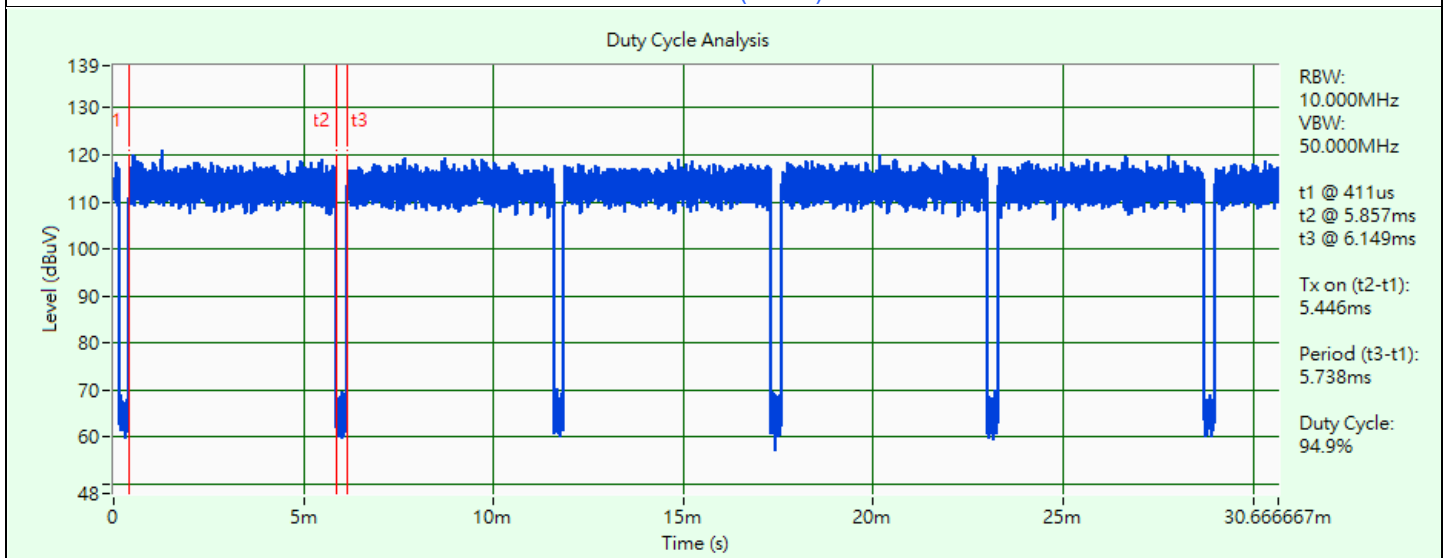
802.11a



802.11ax (HE20)



802.11ax (HE40)



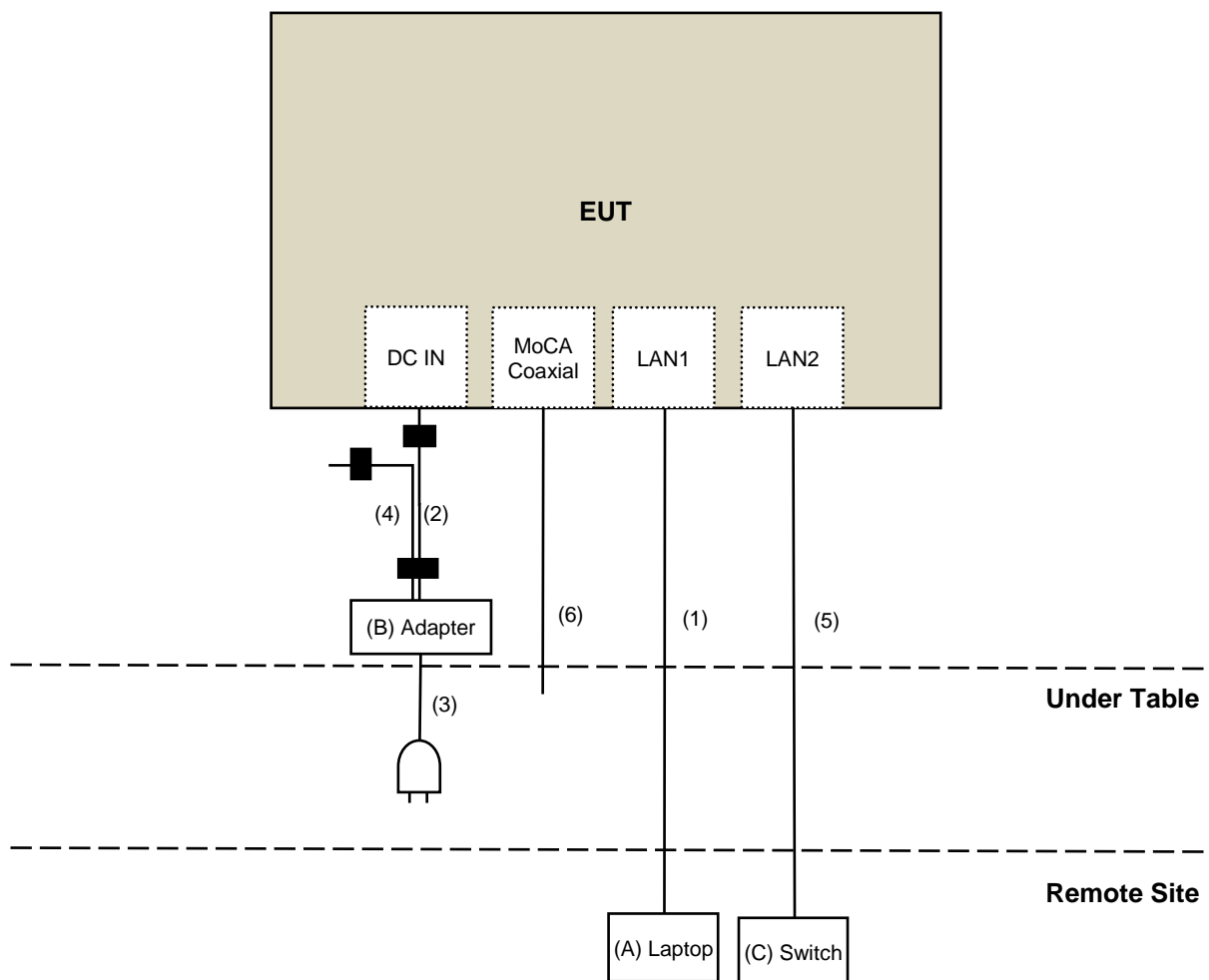
802.11ax (HE80)

3.6 Test Program Used and Operation Descriptions

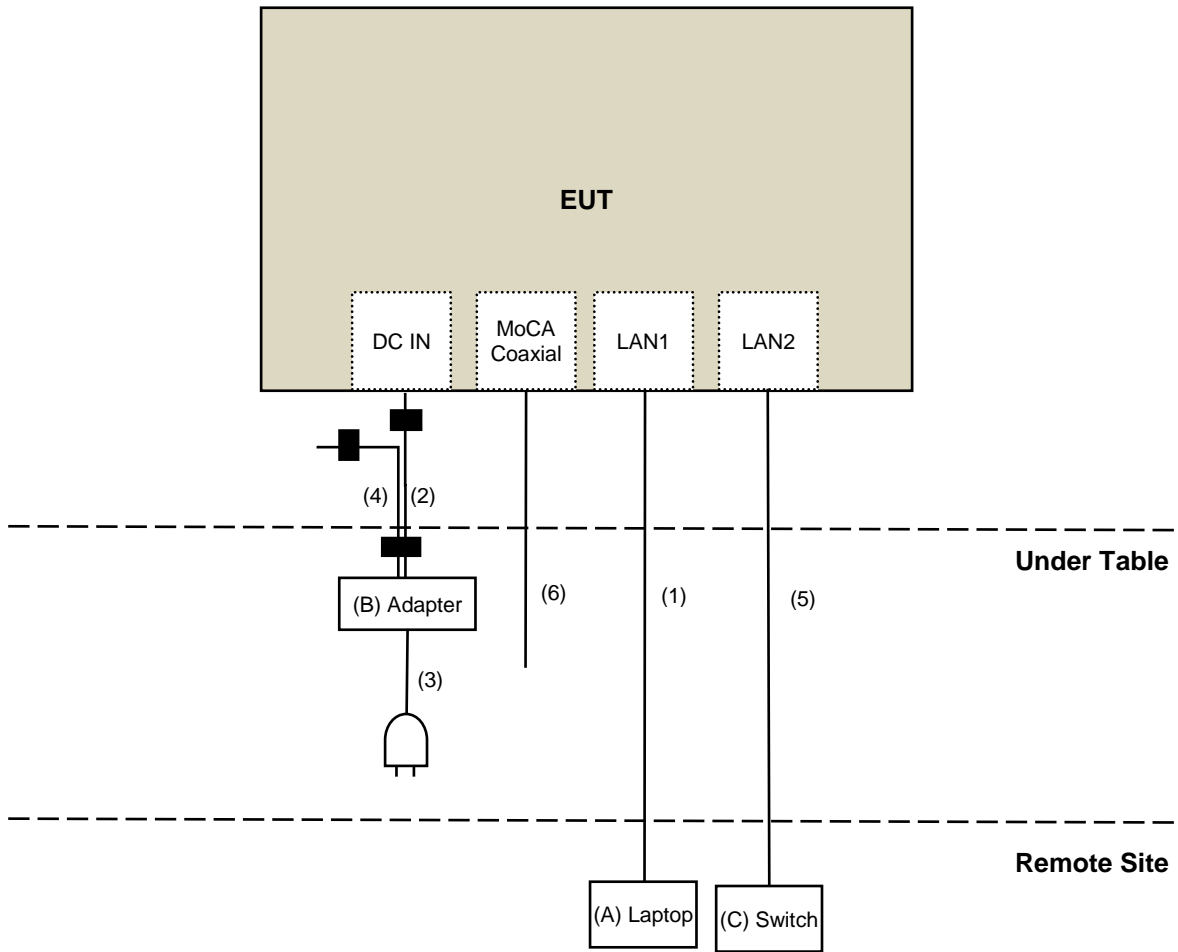
Controlling software (QRCT 4.0.00177.0) has been activated to set the EUT under transmission condition continuously at specific channel frequency.

3.7 Connection Diagram of EUT and Peripheral Devices

For AC Power Conducted Emission test



For Unwanted Emission test



3.8 Configuration of Peripheral Devices and Cable Connections

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A	Laptop	Lenovo	20U5S01X00 L14	PF-1ANPYA	N/A	Provided by Lab
B	Adapter	HUGHES	BM500-232A-R	N/A	N/A	Supplied by applicant
C	Switch	D-Link	DGS-1005D	DR8WC92000523	N/A	Provided by Lab

ID	Cable Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1	RJ-45 Cable	1	10	No	0	Provided by Lab
2	DC Cable	1	1.2	No	2	Supplied by applicant
3	AC Cable	1	1.8	No	0	Supplied by applicant
4	DC Cable	1	1.2	No	2	Supplied by applicant
5	RJ-45 Cable	1	10	No	0	Provided by Lab
6	Coaxial Cable	1	10	Yes	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
Fixed Attenuator WOKEN	MDCS18N-10	MDCS18N-10-01	2023/3/27	2024/3/26
MXA Signal Analyzer Keysight	N9020B	MY60112409	2023/2/18	2024/2/17
Power Meter Anritsu	ML2495A	1529002	2022/6/22	2023/6/21
Pulse Power Sensor Anritsu	MA2411B	1726434	2022/6/22	2023/6/21
Software	ADT_RF Test Software V6.6.5.4	N/A	N/A	N/A

Notes:

1. The test was performed in Oven room 2.
2. Tested Date: 2023/5/5

4.2 Power Spectral Density

Refer to section 4.1 to get information of the instruments.

4.3 6 dB Bandwidth

Refer to section 4.1 to get information of the instruments.

4.4 Occupied Bandwidth

Refer to section 4.1 to get information of the instruments.

4.5 Frequency Stability

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
DC POWER SUPPLY Topward	6603D	795558	N/A	N/A
Fixed Attenuator WOKEN	MDCS18N-10	MDCS18N-10-01	2023/3/27	2024/3/26
MXA Signal Analyzer Keysight	N9020B	MY60112409	2023/2/18	2024/2/17
Software	ADT_RF Test Software V6.6.5.4	N/A	N/A	N/A
Temperature & Humidity Chamber Giant Force	GTH-150-40-SP-AR	MAA0812-008	2022/12/26	2023/12/25
True RMS Clamp Meter Fluke	325	31130711WS	2022/6/9	2023/6/8

Notes:

1. The test was performed in Oven room 2.
2. Tested Date: 2023/5/5

4.6 AC Power Conducted Emissions

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
50 ohm terminal resistance	N/A	EMC-01	2022/9/27	2023/9/26
EMI Test Receiver R&S	ESCS 30	847124/029	2022/10/14	2023/10/13
Fixed Attenuator STI	STI02-2200-10	005	2022/8/24	2023/8/23
LISN R&S	ESH3-Z5	848773/004	2022/10/18	2023/10/17
RF Coaxial Cable JYEBO	5D-FB	COCCAB-001	2022/8/24	2023/8/23
Software BVADT	BVADT_Cond_V7.3.7.4	N/A	N/A	N/A

Notes:

1. The test was performed in Conduction 1
2. Tested Date: 2023/5/29

4.7 Unwanted Emissions below 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Bi_Log Antenna Schwarzbeck	VULB 9168	9168-0842	2022/10/24	2023/10/23
Boresight Antenna Tower & Turn Table Max-Full	MF-7802BS	MF780208530	N/A	N/A
EMI Test Receiver R&S	ESR3	102528	2023/2/10	2024/2/9
Fixed Attenuator Mini-Circuits	UNAT-5+	PAD-ATT5-02	2022/12/28	2023/12/27
Loop Antenna Electro-Metrics	EM-6879	264	2023/2/21	2024/2/20
MXA Signal Analyzer Keysight	N9020B	MY60112410	2023/3/6	2024/3/5
Preamplifier Agilent	8447D	2944A10636	2023/3/12	2024/3/11
Preamplifier EMCI	EMC330N	980538	2023/4/6	2024/4/5
PXA Signal Analyzer KEYSIGHT	N9030B	MY57141948	2022/5/13	2023/5/12
RF Coaxial Cable COMMATE/PEWC	8D	966-5-1	2023/4/6	2024/4/5
		966-5-2	2023/4/6	2024/4/5
		966-5-3	2023/4/6	2024/4/5
RF Coaxial Cable JYEBO	5D-FB	LOOPCAB-001	2022/12/19	2023/12/18
		LOOPCAB-002	2022/12/19	2023/12/18
Software	ADT_Radiated_V8.7.08	N/A	N/A	N/A

Notes:

1. The test was performed in 966 Chamber No. 5.
2. Tested Date: 2023/5/2

4.8 Unwanted Emissions above 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Boresight Antenna Tower & Turn Table Max-Full	MF-7802BS	MF780208530	N/A	N/A
EMI Test Receiver R&S	ESR3	102528	2023/2/10	2024/2/9
Horn Antenna Schwarzbeck	BBHA 9120D	9120D-1819	2022/11/13	2023/11/12
	BBHA 9170	9170-739	2022/11/13	2023/11/12
MXA Signal Analyzer Keysight	N9020B	MY60112410	2023/3/6	2024/3/5
Preamplifier EMCI	EMC12630SE	980509	2023/4/7	2024/4/6
	EMC184045SE	980387	2022/12/28	2023/12/27
RF Coaxial Cable EMCI	EMC-KM-KM-4000	200214	2023/2/20	2024/2/19
	EMC102-KM-KM-1200	160924	2022/12/28	2023/12/27
	EMC104-SM-SM-1500	180503	2023/4/7	2024/4/6
	EMC104-SM-SM-2000	180501	2023/4/7	2024/4/6
	EMC104-SM-SM-6000	180506	2023/4/7	2024/4/6
Software	ADT_Radiated_V8.7.08	N/A	N/A	N/A

Notes:

1. The test was performed in 966 Chamber No. 5.
2. Tested Date: 2023/4/28 ~ 2023/4/29

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 Frequency Stability

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

5.6 AC Power Conducted Emissions

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

Notes:

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

5.7 Unwanted Emissions below 1 GHz

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

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

Notes:

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

5.8 Unwanted Emissions above 1 GHz

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

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

Notes:

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

Limits of unwanted emission out of the restricted bands

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

For transmitters operating in the 5.15-5.25 GHz band:

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

For transmitters operating in the 5.725-5.850 GHz band:

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

^{*1} beyond 75 MHz or more above of the band edge.

^{*2} below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above.

^{*3} below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above.

^{*4} from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

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

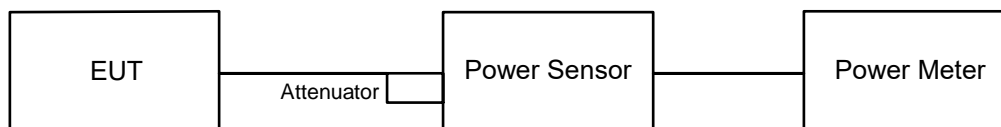
$$E = \frac{1000000\sqrt{30P}}{3} \mu\text{V/m, where P is the eirp (Watts).$$

6 Test Arrangements

6.1 RF Output Power

6.1.1 Test Setup

Conducted Measurement Method



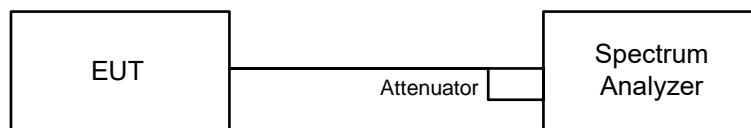
6.1.2 Test Procedure

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

Conducted Measurement Method



6.2.2 Test Procedure

Conducted Measurement Method

For specified measurement bandwidth 1 MHz:

Method SA-2

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

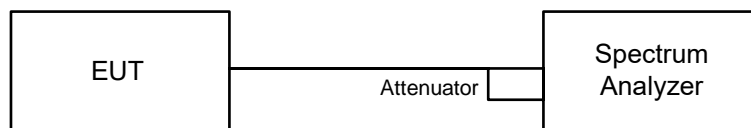
For specified measurement bandwidth 500 kHz:

Method SA-2

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

6.3 6 dB Bandwidth

6.3.1 Test Setup

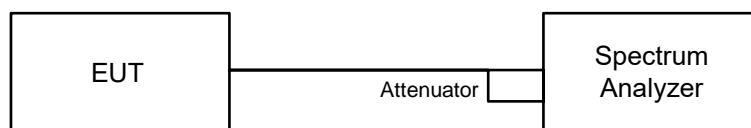


6.3.2 Test Procedure

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

6.4 Occupied Bandwidth

6.4.1 Test Setup

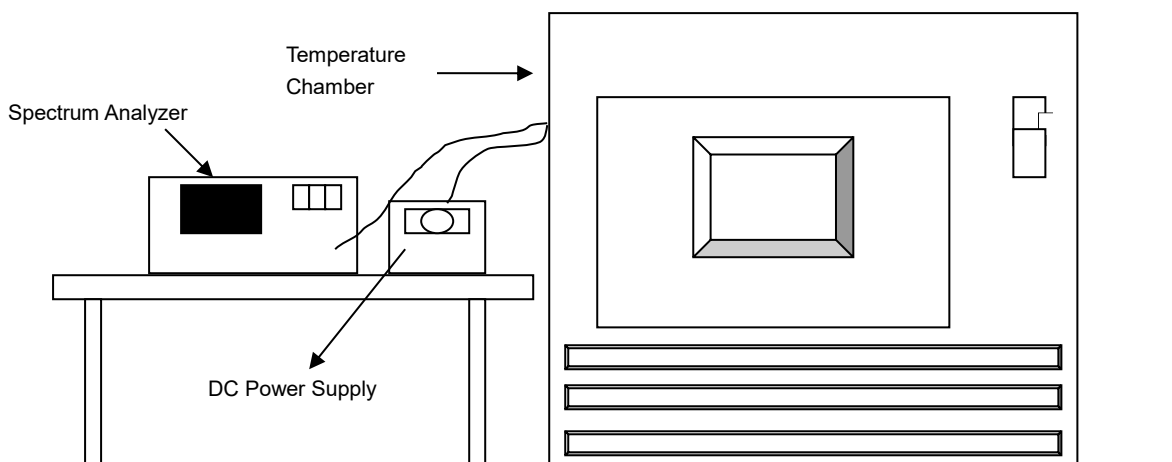


6.4.2 Test Procedure

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

6.5 Frequency Stability

6.5.1 Test Setup

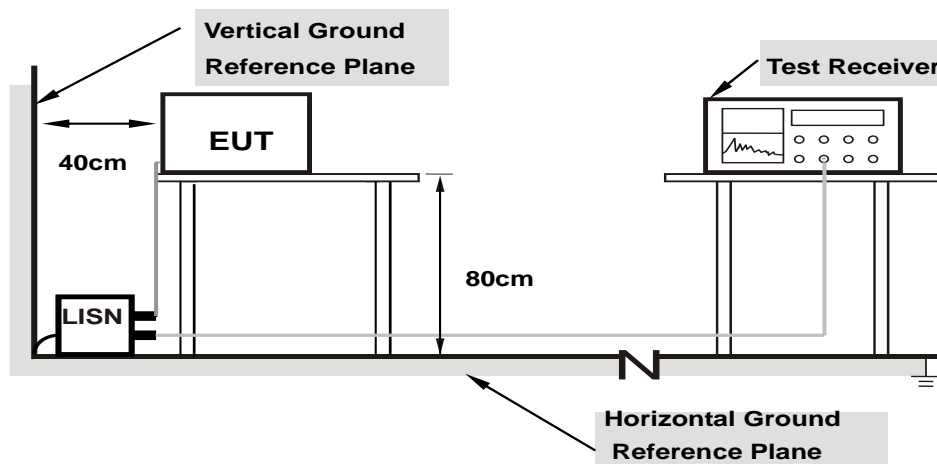


6.5.2 Test Procedure

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

6.6 AC Power Conducted Emissions

6.6.1 Test Setup



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

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

6.6.2 Test Procedure

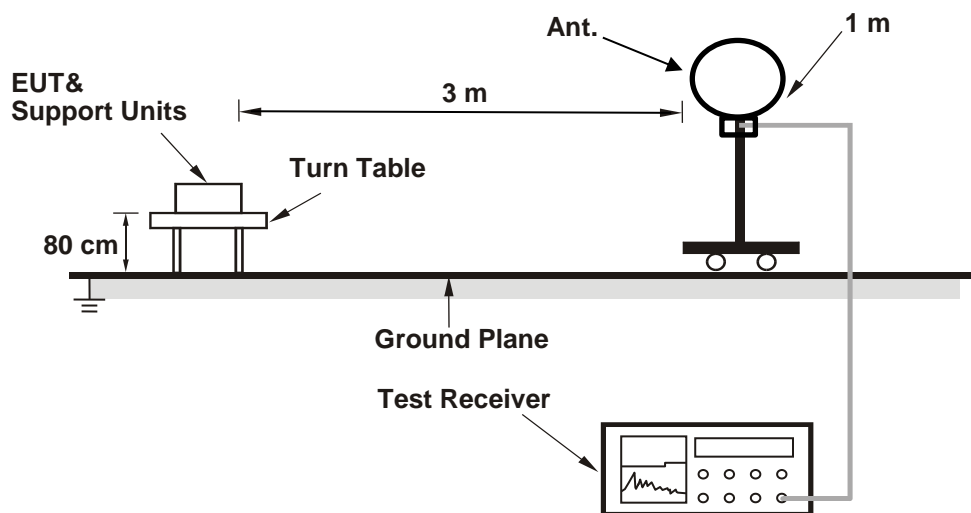
- The EUT was placed on a 0.8 meter to the top of table and placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The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

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

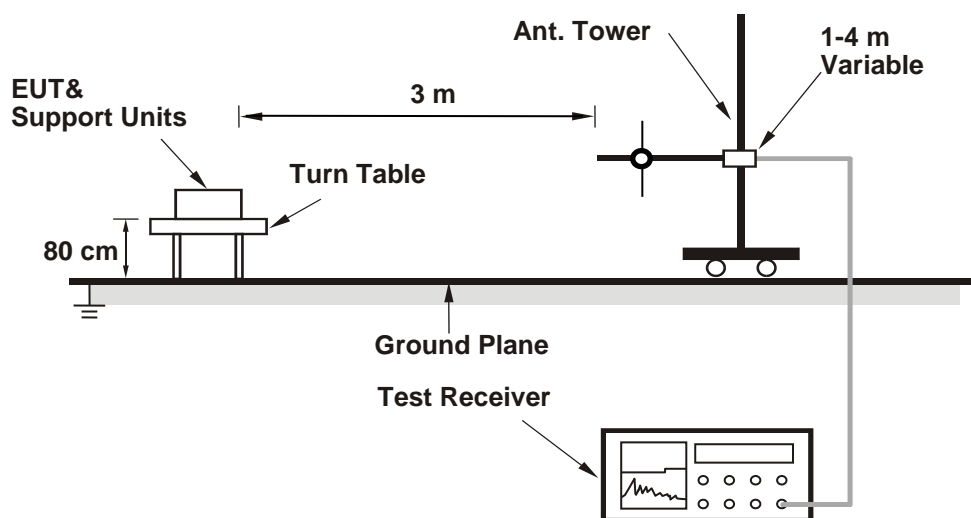
6.7 Unwanted Emissions below 1 GHz

6.7.1 Test Setup

For Radiated emission below 30 MHz



For Radiated emission above 30 MHz



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

6.7.2 Test Procedure

For Radiated emission below 30 MHz

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

Notes:

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

For Radiated emission above 30 MHz

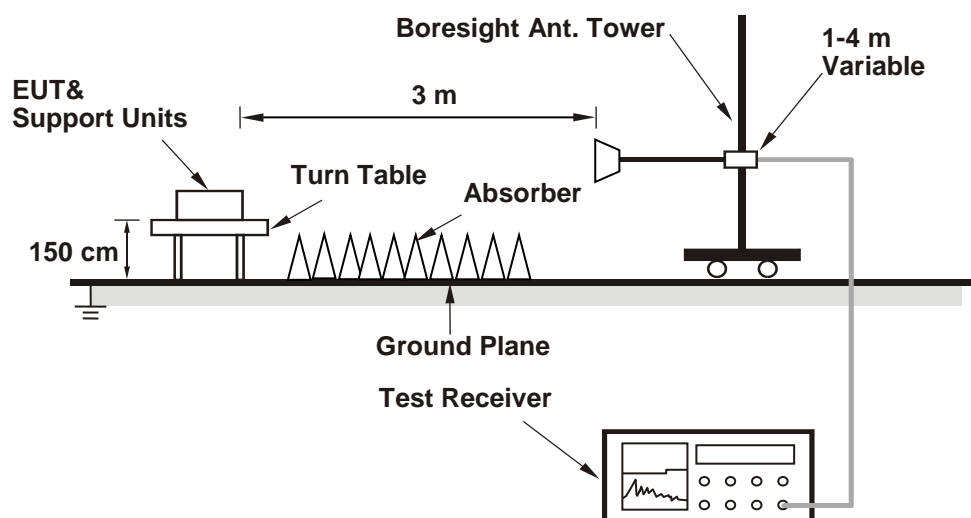
- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Quasi-peak(QP) detect function, Average(AV) detect function, Peak(PK) 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), Average detection (AV), Peak detection (PK) at frequency (30MHz to 1 GHz).
2. All modes of operation were investigated and the worst-case emissions are reported.

6.8 Unwanted Emissions above 1 GHz

6.8.1 Test Setup



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

6.8.2 Test Procedure

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

Notes:

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

7 Test Results of Test Item

7.1 RF Output Power

Input Power:	12 Vdc	Environmental Conditions:	25°C, 60% RH	Tested By:	Louis Yang
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802.11a CDD

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
36	5180	23.37	23.83	458.816	26.62	30	Pass
40	5200	26.63	26.10	867.637	29.38	30	Pass
48	5240	26.70	26.35	899.254	29.54	30	Pass
149	5745	26.83	26.16	894.995	29.52	30	Pass
157	5785	26.79	26.05	880.246	29.45	30	Pass
165	5825	26.50	26.32	875.232	29.42	30	Pass

Notes:

- * : Test was performed in accordance with measurement follow FCC KDB 789033 UNII test procedure Method SA-2 and use spectrum analyzer test , the duty factor was included in the total power.
- Directional gain is the maximum gain of antennas.
- For U-NII-1, the maximum gain is 2.91 dBi < 6 dBi, so the output power limit shall not be reduced.
- For U-NII-3, the maximum gain is 2.91 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ax (HE20) CDD

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
36	5180	23.56	23.46	448.806	26.52	30	Pass
40	5200	26.95	26.87	981.857	29.92	30	Pass
48	5240	26.94	26.91	985.219	29.94	30	Pass
149	5745	26.60	26.81	936.822	29.72	30	Pass
157	5785	26.43	26.32	868.09	29.39	30	Pass
165	5825	26.20	26.36	849.383	29.29	30	Pass

Notes:

- * : Test was performed in accordance with measurement follow FCC KDB 789033 UNII test procedure Method SA-2 and use spectrum analyzer test , the duty factor was included in the total power.
- Directional gain is the maximum gain of antennas.
- For U-NII-1, the maximum gain is 2.91 dBi < 6 dBi, so the output power limit shall not be reduced.
- For U-NII-3, the maximum gain is 2.91 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ax (HE40) CDD

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
38	5190	21.31	21.54	277.768	24.44	30	Pass
46	5230	25.94	26.18	807.599	29.07	30	Pass
151	5755	25.63	26.06	769.24	28.86	30	Pass
159	5795	25.62	25.56	724.503	28.60	30	Pass

Notes:

- * : Test was performed in accordance with measurement follow FCC KDB 789033 UNII test procedure Method SA-2 and use spectrum analyzer test , the duty factor was included in the total power.
- Directional gain is the maximum gain of antennas.
- For U-NII-1, the maximum gain is 2.91 dBi < 6 dBi, so the output power limit shall not be reduced.
- For U-NII-3, the maximum gain is 2.91 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ax (HE80) CDD

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
42	5210	19.54	19.66	182.42	22.61	30	Pass
155	5775	23.86	23.77	481.452	26.83	30	Pass

Notes:

- * : Test was performed in accordance with measurement follow FCC KDB 789033 UNII test procedure Method SA-2 and use spectrum analyzer test , the duty factor was included in the total power.
- Directional gain is the maximum gain of antennas.
- For U-NII-1, the maximum gain is 2.91 dBi < 6 dBi, so the output power limit shall not be reduced.
- For U-NII-3, the maximum gain is 2.91 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				
36	5180	23.33	23.24	426.141	26.30	30	Pass
40	5200	26.74	26.63	932.32	29.70	30	Pass
48	5240	26.70	26.63	927.992	29.68	30	Pass
149	5745	26.39	26.56	888.409	29.49	30	Pass
157	5785	26.14	26.06	814.795	29.11	30	Pass
165	5825	25.97	26.07	799.943	29.03	30	Pass

Notes:

- * : Test was performed in accordance with measurement follow FCC KDB 789033 UNII test procedure Method SA-2 and use spectrum analyzer test , the duty factor was included in the total power.
- Directional gain = $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20})^2 / 2]$
- For U-NII-1, the directional gain is 5.6 dBi < 6 dBi, so the output power limit shall not be reduced.
- For U-NII-3, the directional gain is 5.6 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ax (HE40) Beamforming

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
38	5190	21.06	21.30	262.54	24.19	30	Pass
46	5230	25.67	25.98	765.256	28.84	30	Pass
151	5755	25.41	25.80	727.726	28.62	30	Pass
159	5795	25.39	25.34	687.919	28.38	30	Pass

Notes:

- * : Test was performed in accordance with measurement follow FCC KDB 789033 UNII test procedure Method SA-2 and use spectrum analyzer test , the duty factor was included in the total power.
- Directional gain = $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20})^2 / 2]$
- For U-NII-1, the directional gain is 5.6 dBi < 6 dBi, so the output power limit shall not be reduced.
- For U-NII-3, the directional gain is 5.6 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11ax (HE80) Beamforming

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
42	5210	19.30	19.37	171.611	22.35	30	Pass
155	5775	23.57	23.55	453.974	26.57	30	Pass

Notes:

- * : Test was performed in accordance with measurement follow FCC KDB 789033 UNII test procedure Method SA-2 and use spectrum analyzer test , the duty factor was included in the total power.
- Directional gain = $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20})^2 / 2]$
- For U-NII-1, the directional gain is 5.6 dBi < 6 dBi, so the output power limit shall not be reduced.
- For U-NII-3, the directional gain is 5.6 dBi < 6 dBi, so the output power limit shall not be reduced.

7.2 Power Spectral Density

Input Power:	12 Vdc	Environmental Conditions:	25°C, 60% RH	Tested By:	Louis Yang
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802.11a

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)		Duty Factor (dB)	Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Test Result
		Chain 0	Chain 1				
36	5180	11.24	10.30	0.28	14.09	17	Pass
40	5200	13.84	13.21	0.28	16.83	17	Pass
48	5240	13.82	13.58	0.28	16.99	17	Pass

Notes:

- 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.
- Directional gain = $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20})^2 / 2]$
- For U-NII-1, the directional gain is 5.6 dBi < 6dBi, so the power density limit shall not be reduced.

802.11ax (HE20)

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)		Duty Factor (dB)	Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Test Result
		Chain 0	Chain 1				
36	5180	10.27	9.50	0.21	13.12	17	Pass
40	5200	12.87	12.39	0.21	15.86	17	Pass
48	5240	13.78	13.75	0.21	16.99	17	Pass

Notes:

- 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.
- Directional gain = $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20})^2 / 2]$
- For U-NII-1, the directional gain is 5.6 dBi < 6dBi, so the power density limit shall not be reduced.

802.11ax (HE40)

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)		Duty Factor (dB)	Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Test Result
		Chain 0	Chain 1				
38	5190	3.22	2.98	0.26	6.37	17	Pass
46	5230	9.94	9.65	0.26	13.07	17	Pass

Notes:

- 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.
- Directional gain = $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20})^2 / 2]$
- For U-NII-1, the directional gain is 5.6 dBi < 6dBi, so the power density limit shall not be reduced.

802.11ax (HE80)

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)		Duty Factor (dB)	Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Test Result
		Chain 0	Chain 1				
42	5210	-0.33	-0.16	0.23	3.00	17	Pass

Notes:

- 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.
- Directional gain = $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20})^2 / 2]$
- For U-NII-1, the directional gain is 5.6 dBi < 6dBi, so the power density limit shall not be reduced.

802.11a

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/300kHz)		Total PSD w/o Duty Factor (dBm/300kHz)	Duty Factor (dB)	Total PSD (dBm/500kHz)	PSD Limit (dBm/500kHz)	Test Result
		Chain 0	Chain 1					
149	5745	9.29	8.45	11.9	0.28	14.40	30	Pass
157	5785	9.04	8.68	11.87	0.28	14.37	30	Pass
165	5825	8.90	8.57	11.75	0.28	14.25	30	Pass

Notes:

- Method E) 2) b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
- Directional gain = $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20})^2 / 2]$
- For U-NII-3, the directional gain is 5.6 dBi < 6 dBi, so the power density limit shall not be reduced.

802.11ax (HE20)

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/300kHz)		Total PSD w/o Duty Factor (dBm/300kHz)	Duty Factor (dB)	Total PSD (dBm/500kHz)	PSD Limit (dBm/500kHz)	Test Result
		Chain 0	Chain 1					
149	5745	7.84	8.31	11.09	0.21	13.52	30	Pass
157	5785	7.61	7.69	10.66	0.21	13.09	30	Pass
165	5825	7.72	7.71	10.73	0.21	13.16	30	Pass

Notes:

- Method E) 2) b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
- Directional gain = $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20})^2 / 2]$
- For U-NII-3, the directional gain is 5.6 dBi < 6 dBi, so the power density limit shall not be reduced.

802.11ax (HE40)

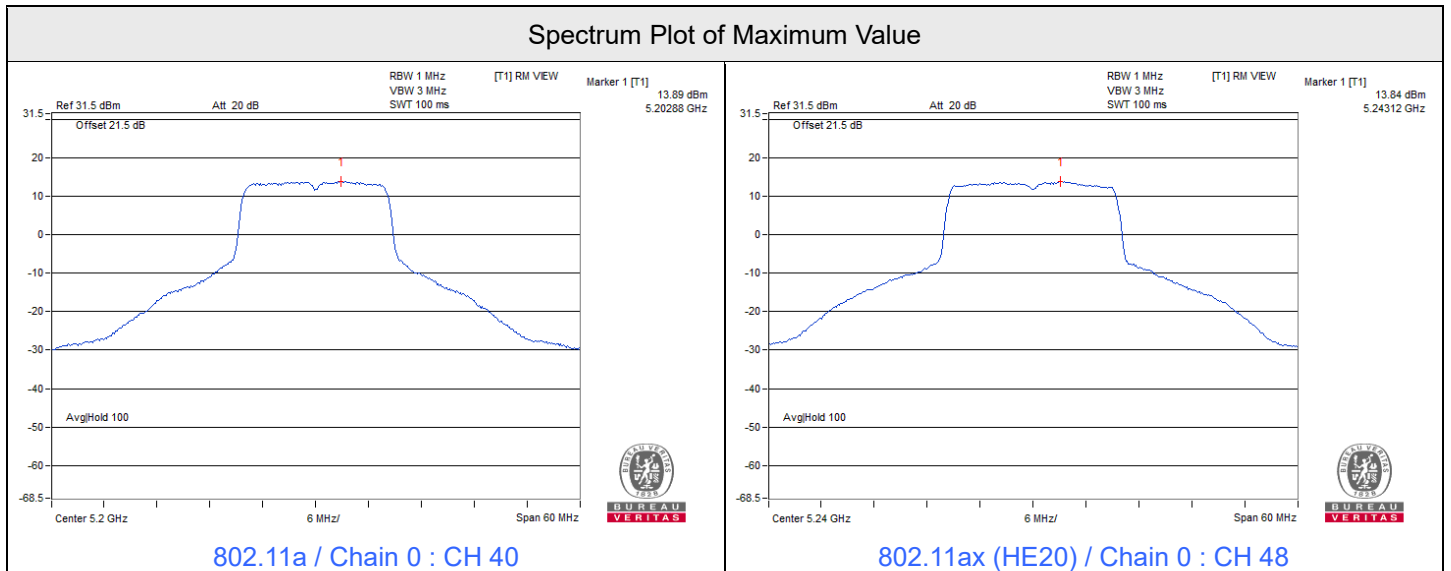
Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/300kHz)		Total PSD w/o Duty Factor (dBm/300kHz)	Duty Factor (dB)	Total PSD (dBm/500kHz)	PSD Limit (dBm/500kHz)	Test Result
		Chain 0	Chain 1					
151	5755	4.12	4.69	7.42	0.26	9.90	30	Pass
159	5795	3.94	4.07	7.02	0.26	9.50	30	Pass

- Notes:
1. Method E) 2) b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
 2. Directional gain = $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20})^2 / 2]$
 3. For U-NII-3, the directional gain is 5.6 dBi < 6 dBi, so the power density limit shall not be reduced.

802.11ax (HE80)

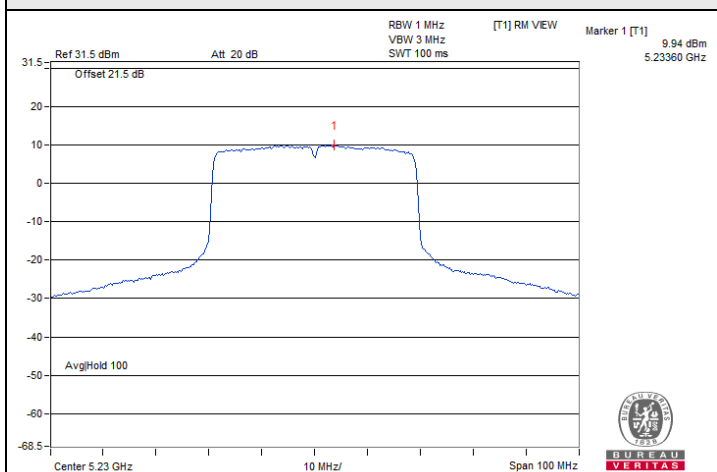
Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/300kHz)		Total PSD w/o Duty Factor (dBm/300kHz)	Duty Factor (dB)	Total PSD (dBm/500kHz)	PSD Limit (dBm/500kHz)	Test Result
		Chain 0	Chain 1					
155	5775	-0.18	-0.41	2.72	0.23	5.17	30	Pass

- Notes:
1. Method E) 2) b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
 2. Directional gain = $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20})^2 / 2]$
 3. For U-NII-3, the directional gain is 5.6 dBi < 6 dBi, so the power density limit shall not be reduced.

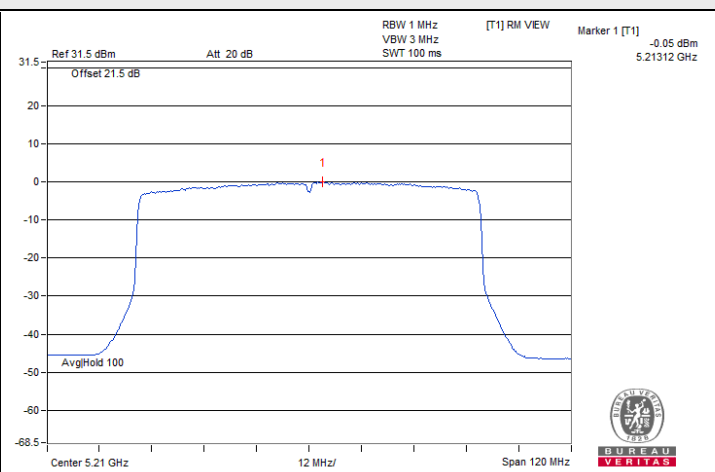




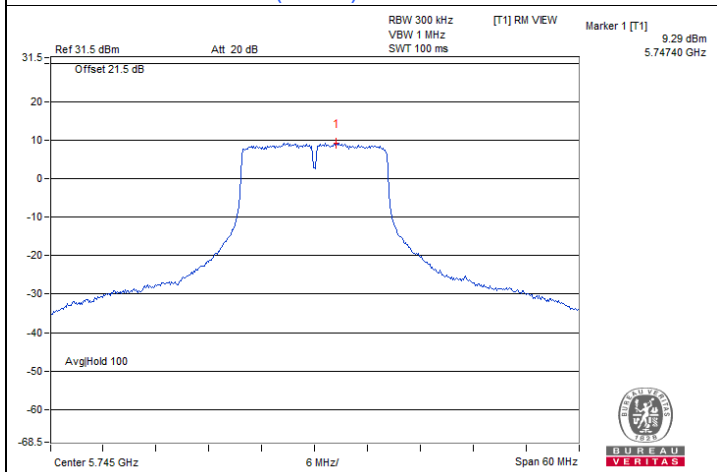
Spectrum Plot of Maximum Value



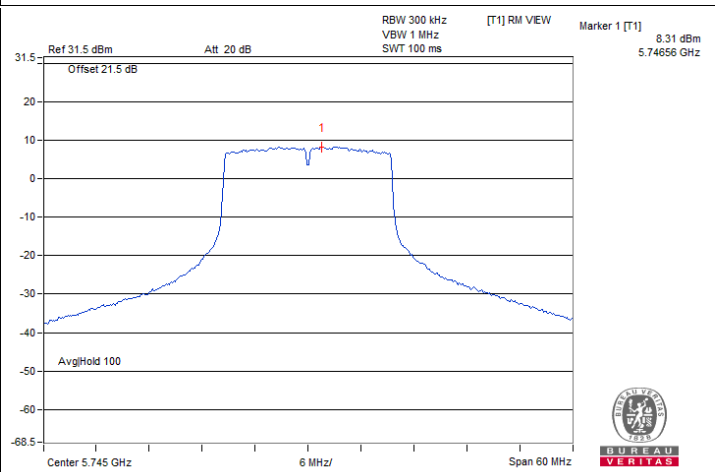
802.11ax (HE40) / Chain 0 : CH 46



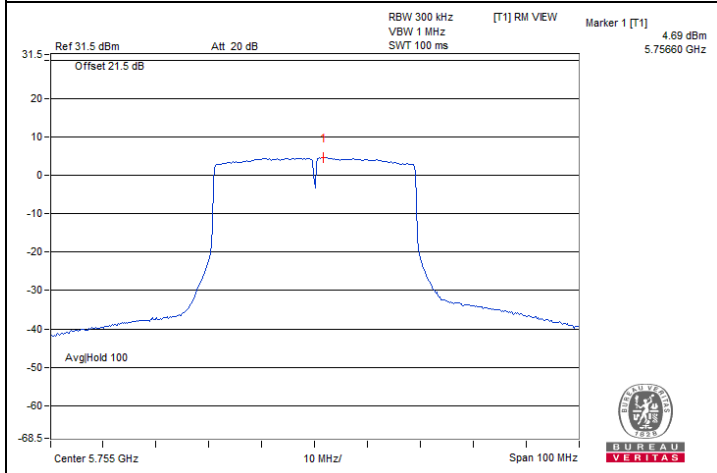
802.11ax (HE80) / Chain 1 : CH 42



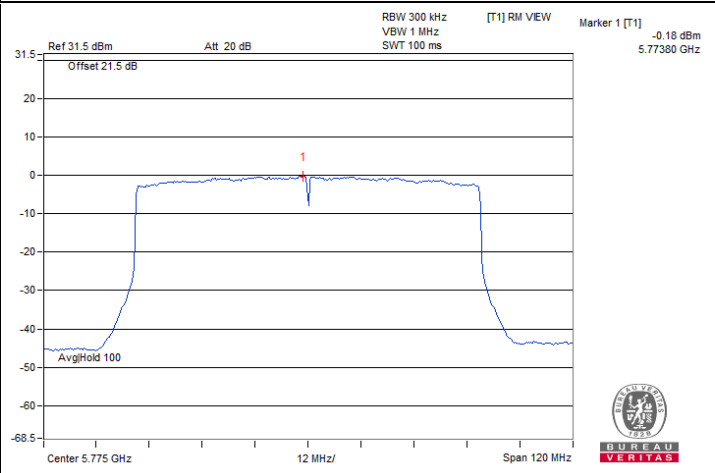
802.11a / Chain 0 : CH 149



802.11ax (HE20) / Chain 1 : CH 149



802.11ax (HE40) / Chain 1 : CH 151



802.11ax (HE80) / Chain 0 : CH 155

7.3 6 dB Bandwidth

Input Power:	12 Vdc	Environmental Conditions:	25°C, 60% RH	Tested By:	Louis Yang
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802.11a

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
149	5745	16.28	15.90	0.5	Pass
157	5785	16.27	15.46	0.5	Pass
165	5825	16.31	15.88	0.5	Pass

802.11ax (HE20)

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
149	5745	18.36	18.33	0.5	Pass
157	5785	18.04	16.52	0.5	Pass
165	5825	17.50	17.82	0.5	Pass

802.11ax (HE40)

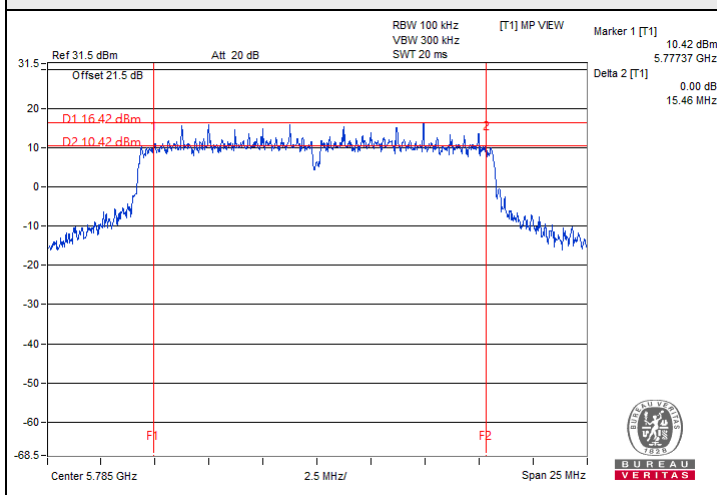
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
151	5755	37.28	37.58	0.5	Pass
159	5795	36.97	37.35	0.5	Pass

802.11ax (HE80)

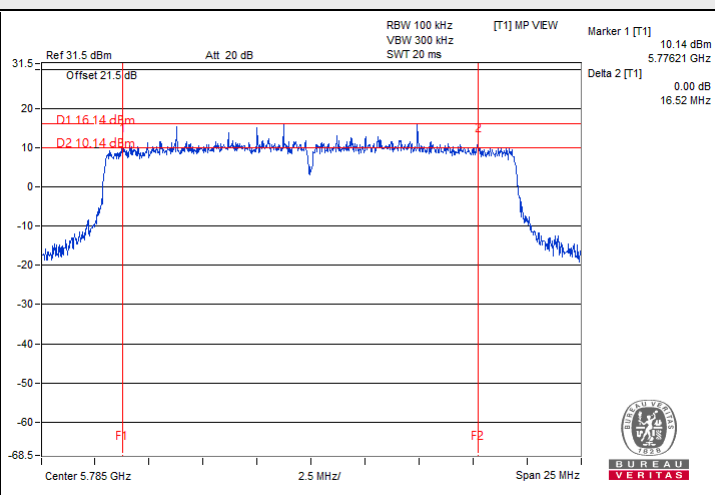
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
155	5775	71.56	78.07	0.5	Pass



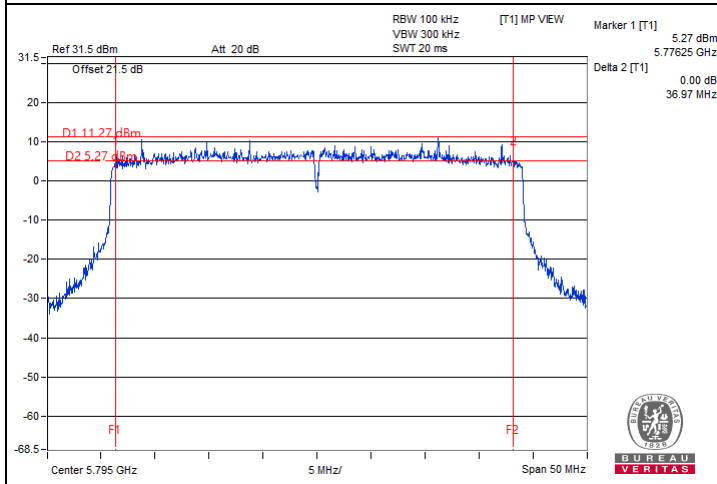
Spectrum Plot of Minimum Value



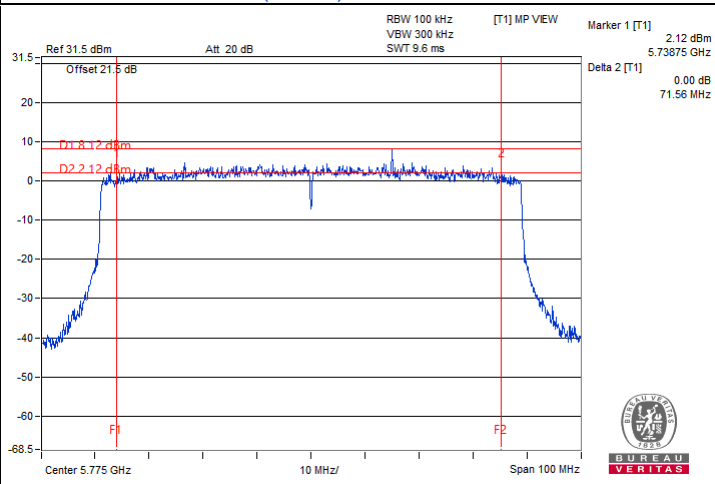
802.11a / Chain 1 : CH 157



802.11ax (HE20) / Chain 1 : CH 157



802.11ax (HE40) / Chain 0 : CH 159



802.11ax (HE80) / Chain 0 : CH 155

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

7.4 Occupied Bandwidth

Input Power:	12 Vdc	Environmental Conditions:	25°C, 60% RH	Tested By:	Louis Yang
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802.11a

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
36	5180	16.44	16.44
40	5200	19.20	16.74
48	5240	16.74	16.80
149	5745	16.50	16.50
157	5785	16.50	16.62
165	5825	16.62	16.74

802.11ax (HE20)

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
36	5180	19.02	18.90
40	5200	19.32	25.50
48	5240	19.20	19.20
149	5745	18.96	19.02
157	5785	18.96	18.96
165	5825	18.96	19.02

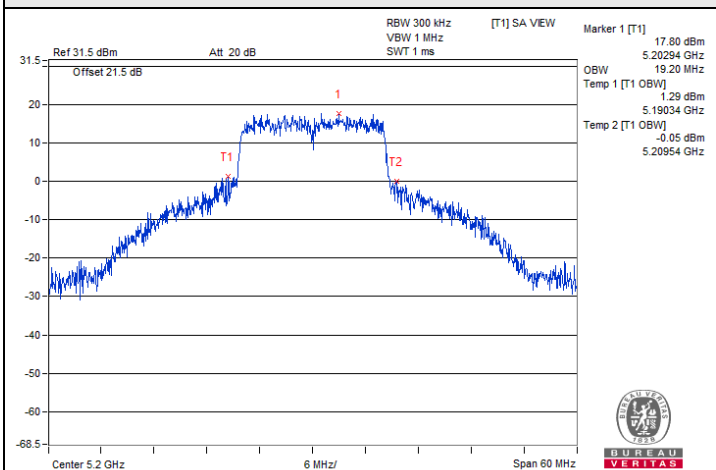
802.11ax (HE40)

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
38	5190	37.68	38.16
46	5230	38.04	38.16
151	5755	37.80	37.80
159	5795	38.04	37.80

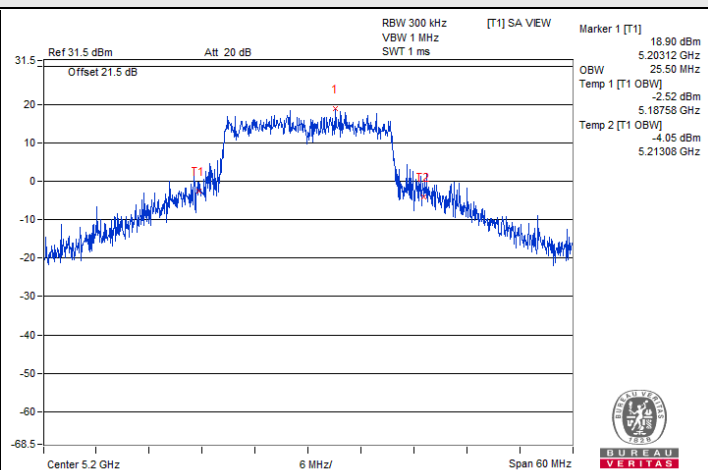
802.11ax (HE80)

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
42	5210	77.28	77.04
155	5775	77.28	77.28

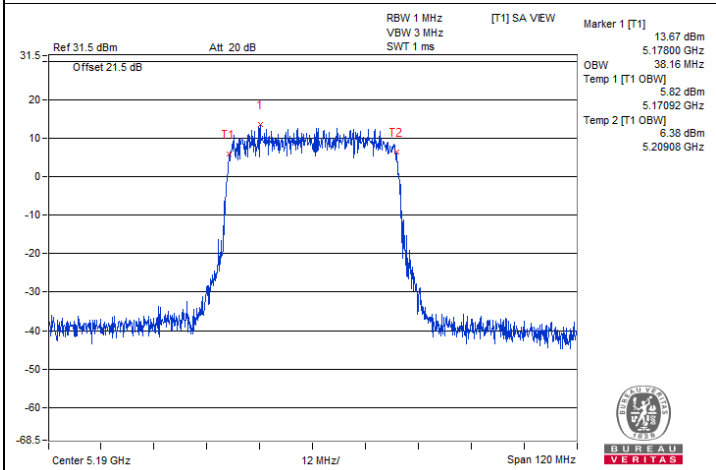
Spectrum Plot of Maximum Value



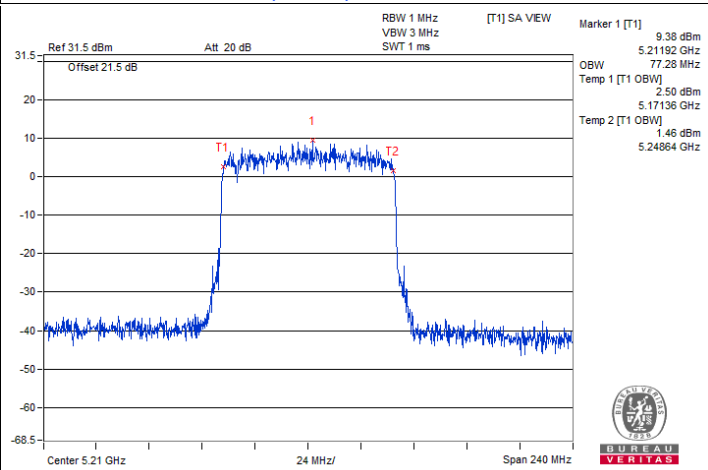
802.11a / Chain 0 : CH 40



802.11ax (HE20) / Chain 1 : CH 40

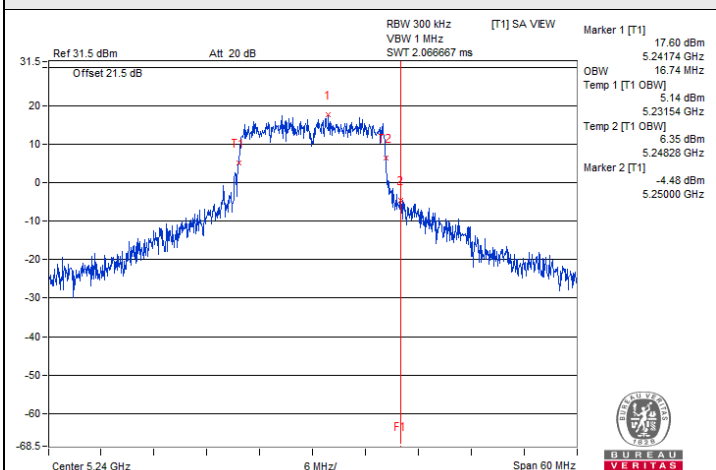


802.11ax (HE40) / Chain 1 : CH 38

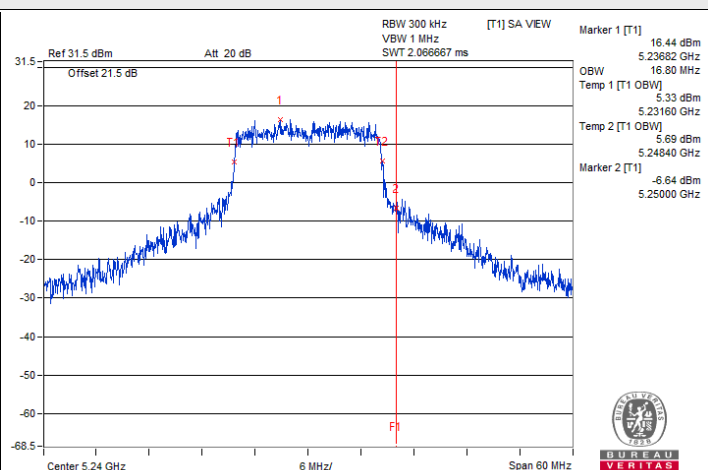


802.11ax (HE80) / Chain 0 : CH 42

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



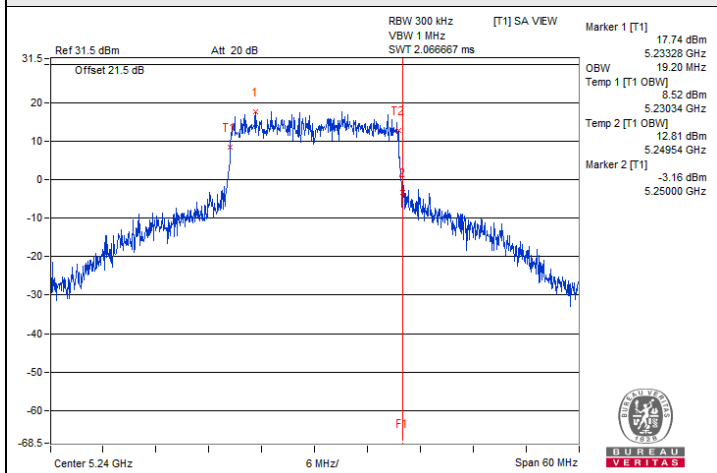
802.11a / Chain 0 : CH 48



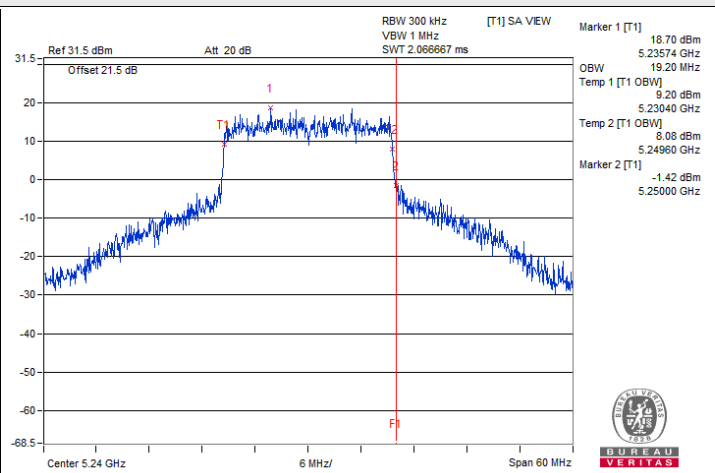
802.11a / Chain 1 : CH 48



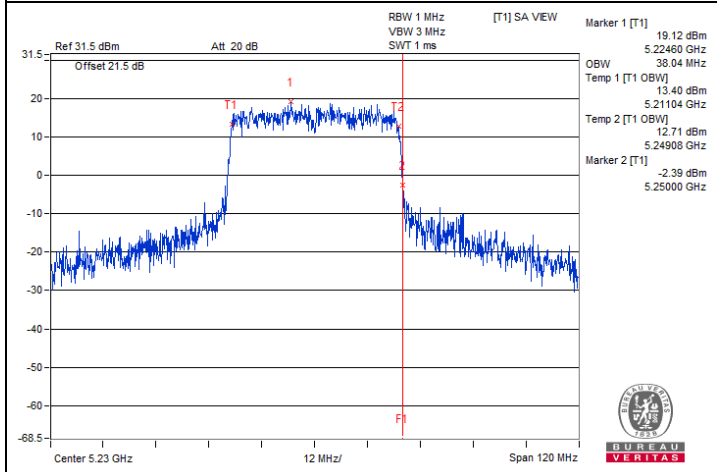
Spectrum Plot for nearby DFS band (DFS is required, if 99% OCP straddle into U-NII-2A)



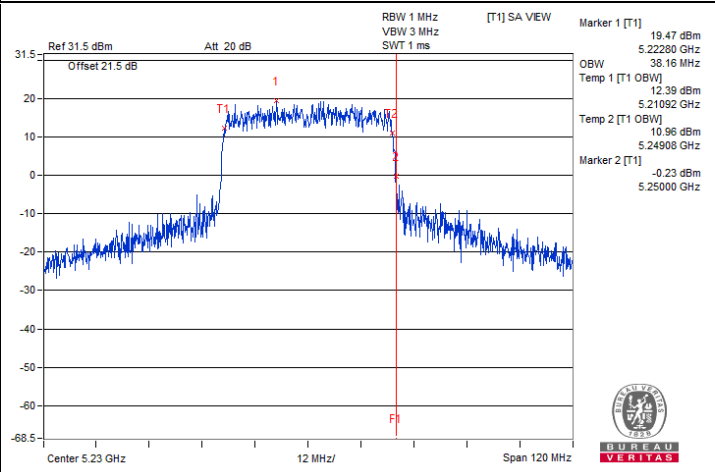
802.11ax (HE20) / Chain 0 : CH 48



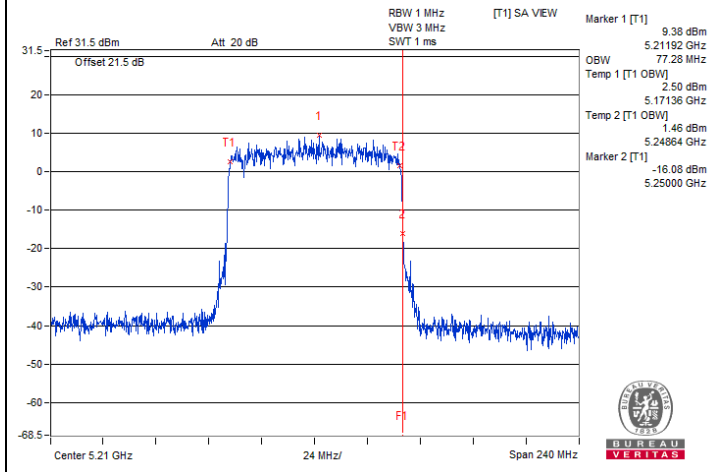
802.11ax (HE20) / Chain 1 : CH 48



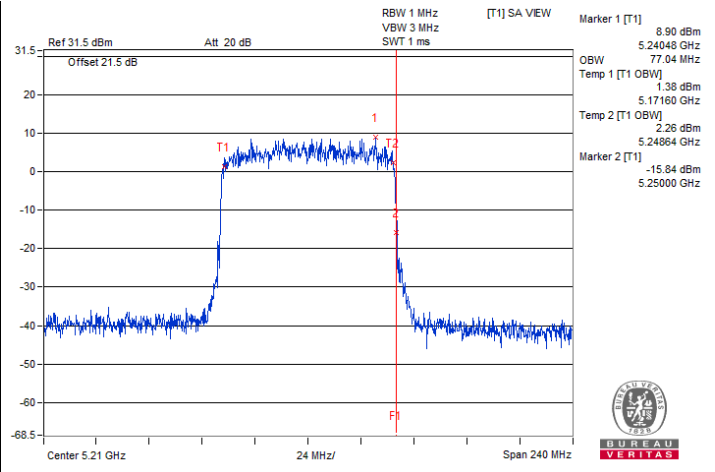
802.11ax (HE40) / Chain 0 : CH 46



802.11ax (HE40) / Chain 1 : CH 46

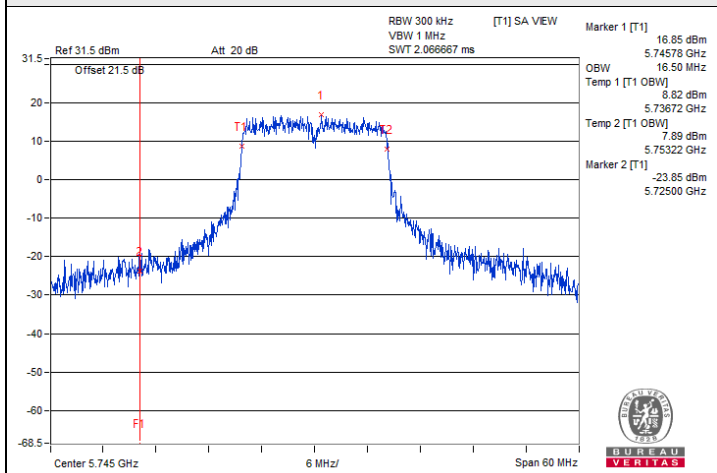


802.11ax (HE80) / Chain 0 : CH 42

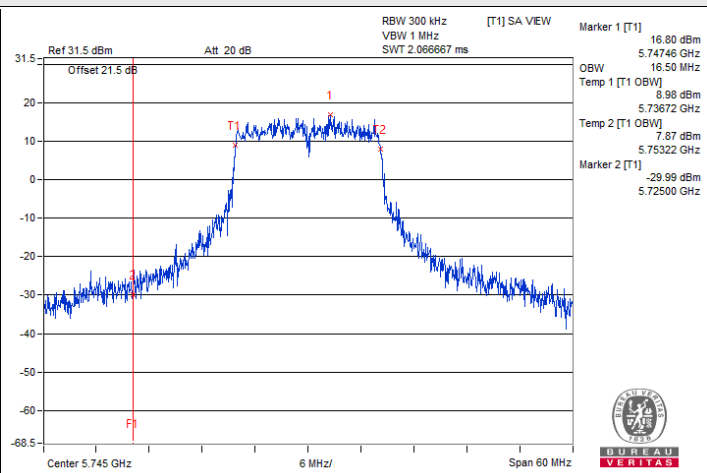


802.11ax (HE80) / Chain 1 : CH 42

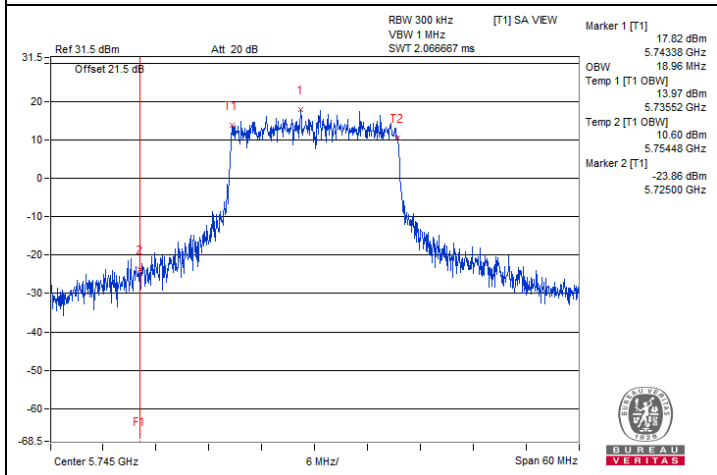
Spectrum Plot for nearby DFS band (DFS is required, if 99% OCP straddle into U-NII-2C)



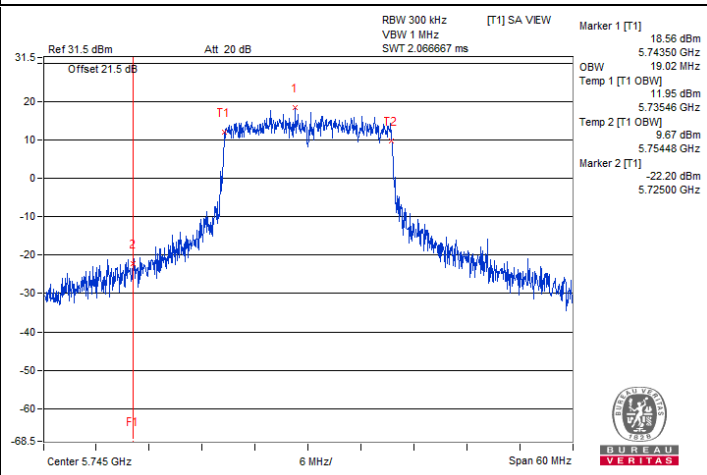
802.11a / Chain 0 : CH 149



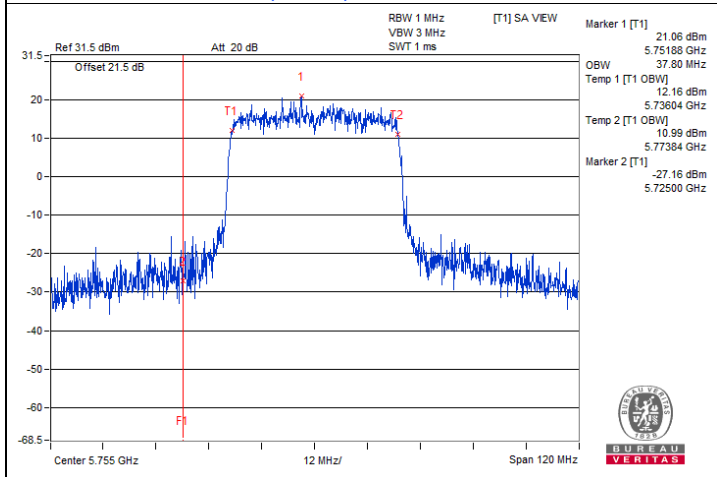
802.11a / Chain 1 : CH 149



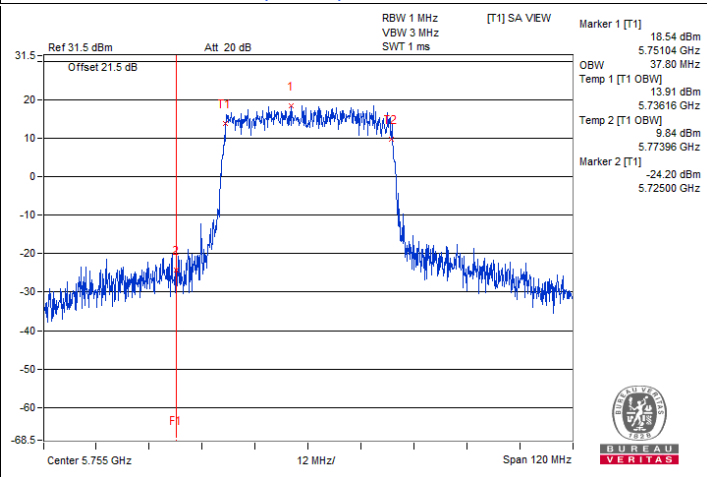
802.11ax (HE20) / Chain 0 : CH 149



802.11ax (HE20) / Chain 1 : CH 149

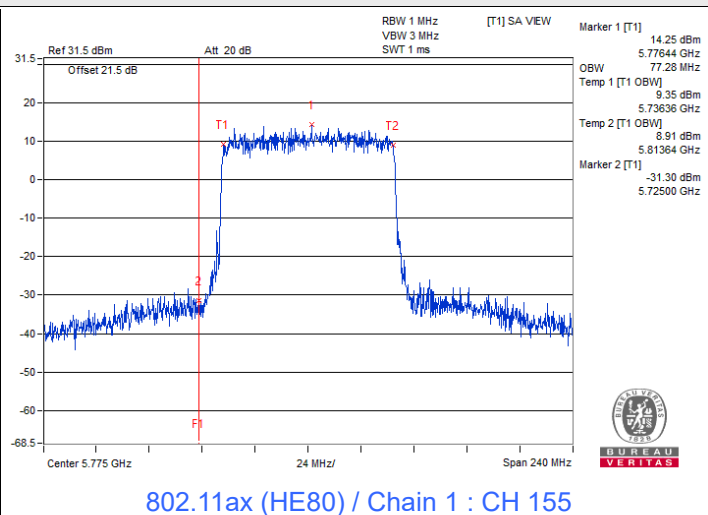
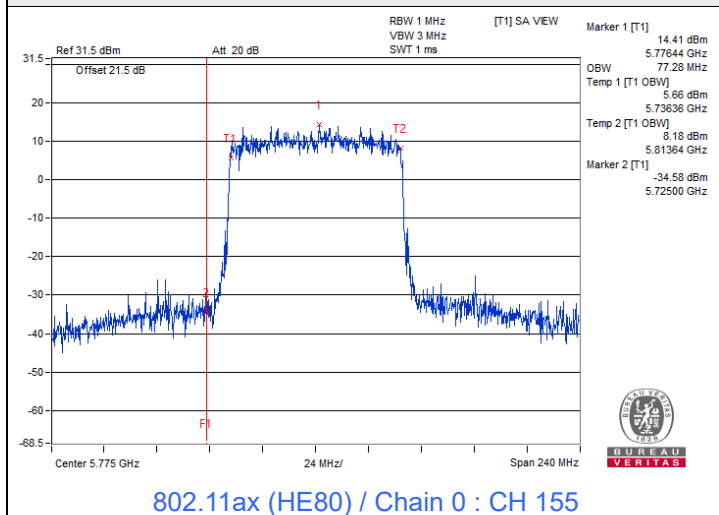


802.11ax (HE40) / Chain 0 : CH 151



802.11ax (HE40) / Chain 1 : CH 151

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



7.5 Frequency Stability

Input Power:	12 Vdc	Environmental Conditions:	25°C, 60% RH	Tested By:	Louis Yang
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802.11a

Frequency Stability Versus Temperature									
Operating Frequency: 5180 MHz									
Temp. (°C)	Power Supply (Vdc)	0 Minute		2 Minutes		5 Minutes		10 Minutes	
		Measured Frequency (MHz)	Test Result	Measured Frequency (MHz)	Test Result	Measured Frequency (MHz)	Test Result	Measured Frequency (MHz)	Test Result
40	12	5179.9775	Pass	5179.9815	Pass	5179.9784	Pass	5179.9774	Pass
30	12	5180.0156	Pass	5180.0159	Pass	5180.0193	Pass	5180.0193	Pass
20	12	5180.0033	Pass	5180.006	Pass	5180.003	Pass	5180.0043	Pass
10	12	5180.0146	Pass	5180.0164	Pass	5180.015	Pass	5180.0154	Pass
0	12	5179.9797	Pass	5179.9781	Pass	5179.9774	Pass	5179.9793	Pass

Frequency Stability Versus Voltage									
Operating Frequency: 5180 MHz									
Temp. (°C)	Power Supply (Vdc)	0 Minute		2 Minutes		5 Minutes		10 Minutes	
		Measured Frequency (MHz)	Test Result	Measured Frequency (MHz)	Test Result	Measured Frequency (MHz)	Test Result	Measured Frequency (MHz)	Test Result
20	13.8	5180.0058	Pass	5180.0079	Pass	5180.0052	Pass	5180.0058	Pass
	12	5180.0033	Pass	5180.006	Pass	5180.003	Pass	5180.0043	Pass
	10.2	5179.9935	Pass	5179.9938	Pass	5179.9939	Pass	5179.996	Pass

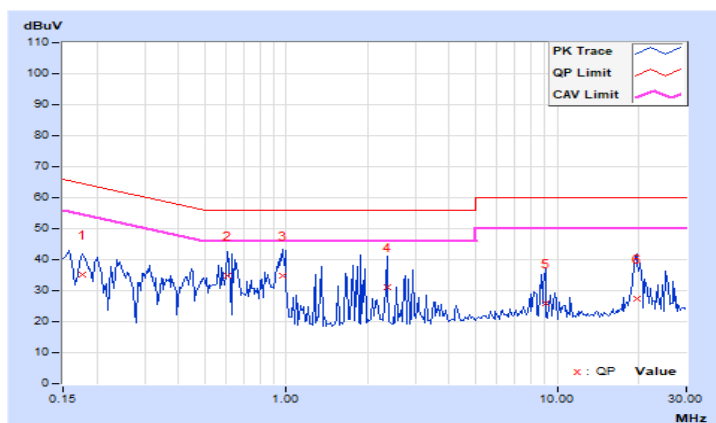
7.6 AC Power Conducted Emissions

RF Mode	802.11ax (HE20)	Channel	CH 48 : 5240 MHz
Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power (System)	120 Vac, 60Hz	Environmental Conditions	25°C, 68% RH
Tested By	Tom Yang		

Phase Of Power : Line (L)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.17734	9.97	25.21	11.68	35.18	21.65	64.61	54.61	-29.43	-32.96
2	0.60703	9.99	24.81	-4.32	34.80	5.67	56.00	46.00	-21.20	-40.33
3	0.96641	10.01	24.81	1.84	34.82	11.85	56.00	46.00	-21.18	-34.15
4	2.35547	10.08	20.97	-3.58	31.05	6.50	56.00	46.00	-24.95	-39.50
5	9.09375	10.43	15.49	-9.94	25.92	0.49	60.00	50.00	-34.08	-49.51
6	19.62500	10.98	16.47	0.40	27.45	11.38	60.00	50.00	-32.55	-38.62

Remarks:

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

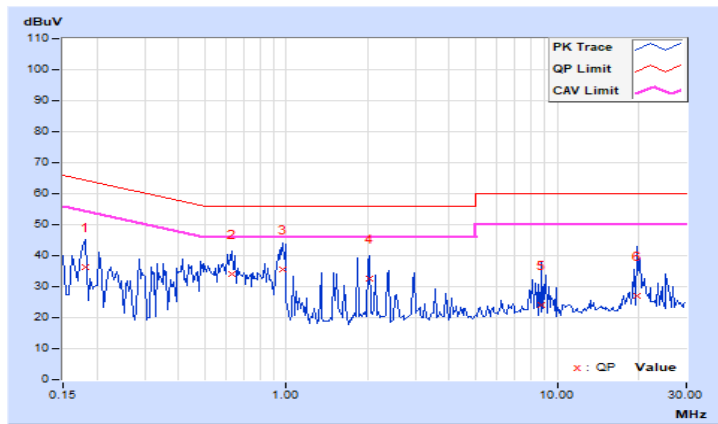


RF Mode	802.11ax (HE20)	Channel	CH 48 : 5240 MHz
Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power (System)	120 Vac, 60Hz	Environmental Conditions	25°C, 68% RH
Tested By	Tom Yang		

Phase Of Power : Neutral (N)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.18125	10.02	26.35	8.53	36.37	18.55	64.43	54.43	-28.06	-35.88
2	0.62656	10.04	24.08	-1.92	34.12	8.12	56.00	46.00	-21.88	-37.88
3	0.96641	10.06	25.58	2.90	35.64	12.96	56.00	46.00	-20.36	-33.04
4	2.02344	10.11	22.33	-4.36	32.44	5.75	56.00	46.00	-23.56	-40.25
5	8.71484	10.41	13.55	-8.19	23.96	2.22	60.00	50.00	-36.04	-47.78
6	19.71484	10.79	16.25	0.86	27.04	11.65	60.00	50.00	-32.96	-38.35

Remarks:

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



7.7 Unwanted Emissions below 1 GHz

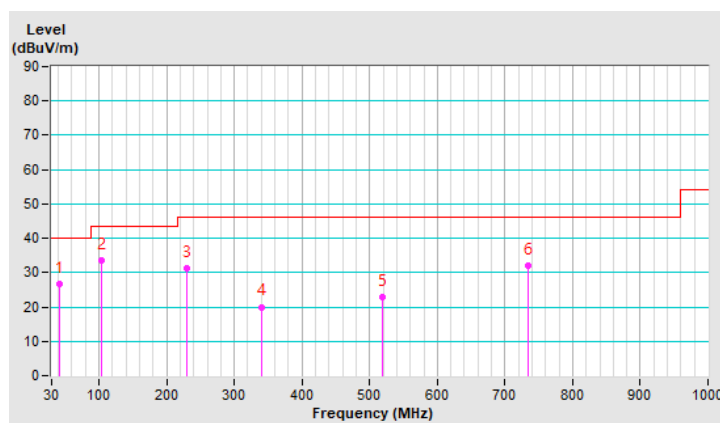
RF Mode	802.11ax (HE20)	Channel	CH 48 : 5240 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	(QP) RB = 120kHz
Input Power (System)	120 Vac, 60Hz	Environmental Conditions	30°C, 76% RH
Tested By	Louis Yang		

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	40.73	26.7 QP	40.0	-13.3	2.00 H	292	39.8	-13.1
2	103.50	33.7 QP	43.5	-9.8	2.00 H	74	50.5	-16.8
3	229.56	31.4 QP	46.0	-14.6	1.50 H	299	46.8	-15.4
4	339.66	20.0 QP	46.0	-26.0	1.00 H	1	31.1	-11.1
5	518.88	23.0 QP	46.0	-23.0	2.00 H	107	29.9	-6.9
6	734.27	31.9 QP	46.0	-14.1	2.00 H	22	34.8	-2.9

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The emission levels were very low against the limit of frequency range 9 kHz ~ 30 MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

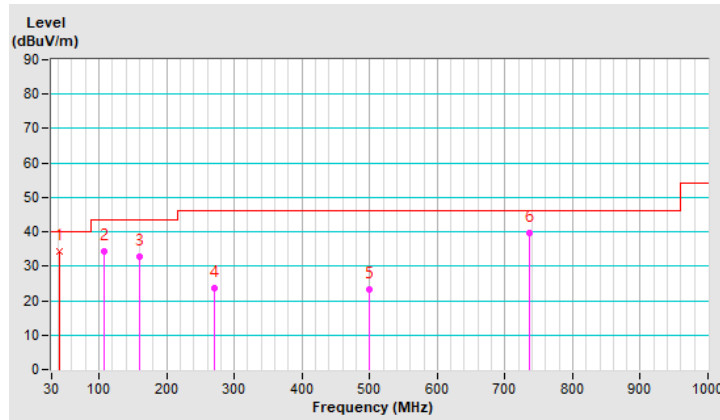


RF Mode	802.11ax (HE20)	Channel	CH 48 : 5240 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	(QP) RB = 120kHz
Input Power (System)	120 Vac, 60Hz	Environmental Conditions	30°C, 76% RH
Tested By	Louis Yang		

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	41.19	34.4 QP	40.0	-5.6	1.50 V	92	47.4	-13.0
2	108.15	34.4 QP	43.5	-9.1	1.50 V	188	50.4	-16.0
3	159.71	32.7 QP	43.5	-10.8	1.00 V	15	45.3	-12.6
4	269.89	23.7 QP	46.0	-22.3	1.50 V	64	36.9	-13.2
5	499.99	23.3 QP	46.0	-22.7	1.00 V	288	30.8	-7.5
6	735.73	39.8 QP	46.0	-6.2	1.50 V	360	42.7	-2.9

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The emission levels were very low against the limit of frequency range 9 kHz ~ 30 MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.



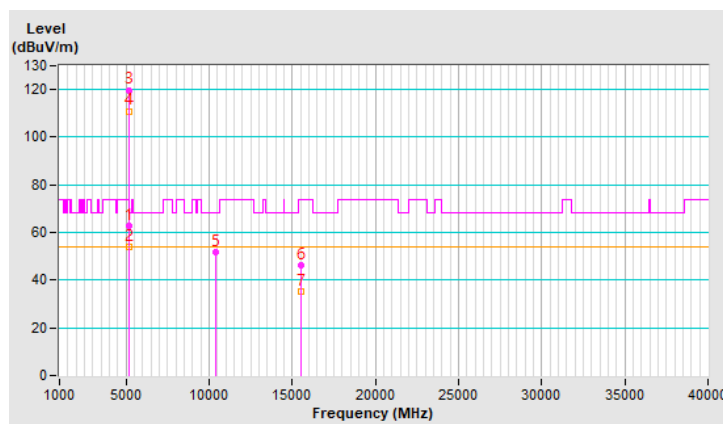
7.8 Unwanted Emissions above 1 GHz

RF Mode	802.11a	Channel	CH 36 : 5180 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 510 Hz
Input Power (System)	120 Vac, 60Hz	Environmental Conditions	28°C, 75% RH
Tested By	Louis Yang		

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	62.7 PK	74.0	-11.3	1.32 H	360	60.5	2.2
2	5150.00	53.7 AV	54.0	-0.3	1.32 H	360	51.5	2.2
3	*5180.00	119.8 PK			1.32 H	360	117.7	2.1
4	*5180.00	111.0 AV			1.32 H	360	108.9	2.1
5	#10360.00	51.6 PK	68.2	-16.6	1.24 H	173	39.9	11.7
6	15540.00	46.2 PK	74.0	-27.8	2.62 H	313	34.5	11.7
7	15540.00	35.2 AV	54.0	-18.8	2.62 H	313	23.5	11.7

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.

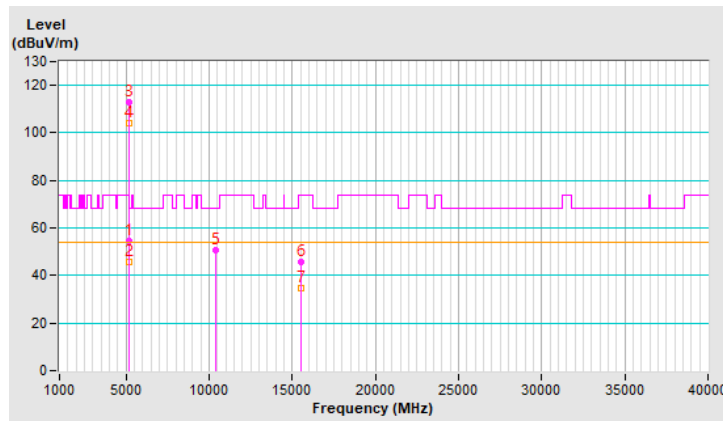


RF Mode	802.11a	Channel	CH 36 : 5180 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 510 Hz
Input Power (System)	120 Vac, 60Hz	Environmental Conditions	28°C, 75% RH
Tested By	Louis Yang		

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	54.4 PK	74.0	-19.6	3.97 V	300	52.2	2.2
2	5150.00	45.5 AV	54.0	-8.5	3.97 V	300	43.3	2.2
3	*5180.00	113.1 PK			3.97 V	300	111.0	2.1
4	*5180.00	104.3 AV			3.97 V	300	102.2	2.1
5	#10360.00	50.9 PK	68.2	-17.3	1.31 V	183	39.2	11.7
6	15540.00	45.9 PK	74.0	-28.1	2.53 V	307	34.2	11.7
7	15540.00	34.9 AV	54.0	-19.1	2.53 V	307	23.2	11.7

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.



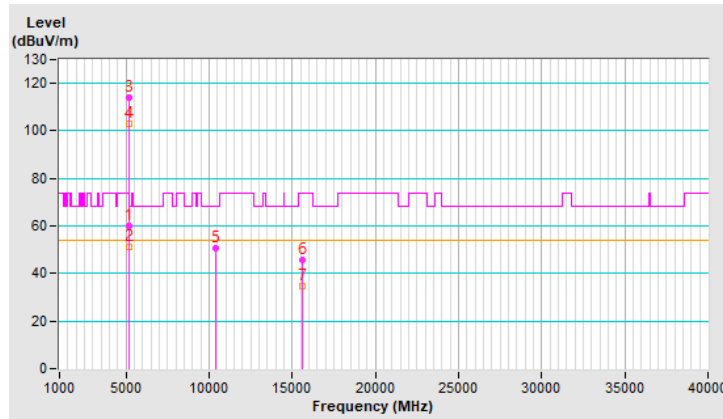
RF Mode	802.11a	Channel	CH 40 : 5200 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 510 Hz
Input Power (System)	120 Vac, 60Hz	Environmental Conditions	28°C, 75% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	60.1 PK	74.0	-13.9	1.38 H	360	57.9	2.2
2	5150.00	51.1 AV	54.0	-2.9	1.38 H	360	48.9	2.2
3	*5200.00	113.8 PK			1.38 H	360	111.8	2.0
4	*5200.00	103.1 AV			1.38 H	360	101.1	2.0
5	#10400.00	50.5 PK	68.2	-17.7	1.37 H	162	38.6	11.9
6	15600.00	45.6 PK	74.0	-28.4	2.50 H	312	34.1	11.5
7	15600.00	34.6 AV	54.0	-19.4	2.50 H	312	23.1	11.5

Remarks:

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

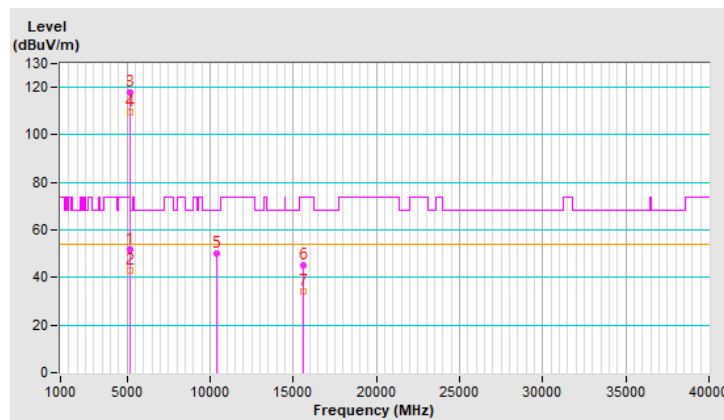


RF Mode	802.11a	Channel	CH 40 : 5200 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 510 Hz
Input Power (System)	120 Vac, 60Hz	Environmental Conditions	28°C, 75% RH
Tested By	Louis Yang		

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	51.6 PK	74.0	-22.4	3.94 V	294	49.4	2.2
2	5150.00	42.7 AV	54.0	-11.3	3.94 V	294	40.5	2.2
3	*5200.00	118.1 PK			3.94 V	294	116.1	2.0
4	*5200.00	109.7 AV			3.94 V	294	107.7	2.0
5	#10400.00	50.3 PK	68.2	-17.9	1.41 V	154	38.4	11.9
6	15600.00	45.4 PK	74.0	-28.6	2.50 V	302	33.9	11.5
7	15600.00	34.1 AV	54.0	-19.9	2.50 V	302	22.6	11.5

Remarks:

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

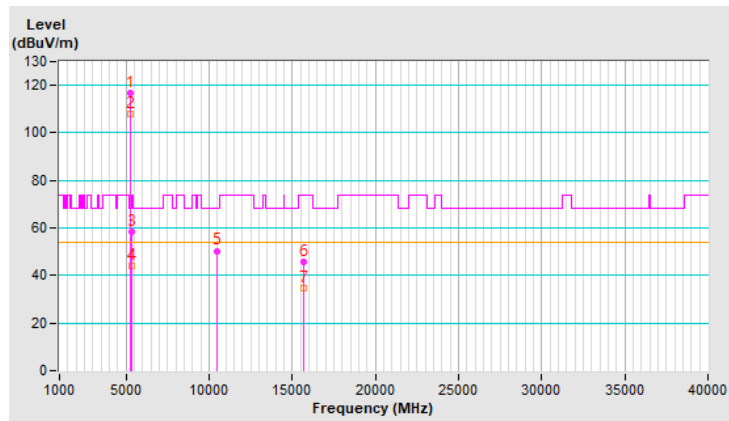


RF Mode	802.11a	Channel	CH 48 : 5240 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 510 Hz
Input Power (System)	120 Vac, 60Hz	Environmental Conditions	28°C, 75% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5240.00	116.9 PK			1.40 H	360	115.0	1.9
2	*5240.00	108.0 AV			1.40 H	360	106.1	1.9
3	5350.00	58.4 PK	74.0	-15.6	1.40 H	360	56.4	2.0
4	5350.00	43.9 AV	54.0	-10.1	1.40 H	360	41.9	2.0
5	#10480.00	50.4 PK	68.2	-17.8	1.36 H	161	38.5	11.9
6	15720.00	45.8 PK	74.0	-28.2	2.51 H	315	34.2	11.6
7	15720.00	34.6 AV	54.0	-19.4	2.51 H	315	23.0	11.6

Remarks:

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

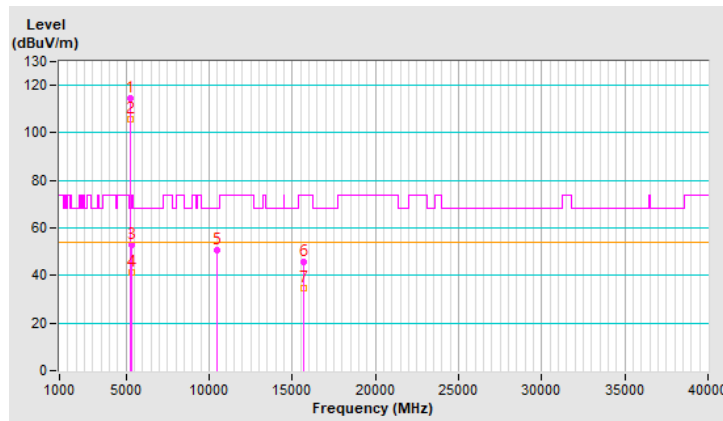


RF Mode	802.11a	Channel	CH 48 : 5240 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 510 Hz
Input Power (System)	120 Vac, 60Hz	Environmental Conditions	28°C, 75% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5240.00	114.5 PK			3.96 V	297	112.6	1.9
2	*5240.00	105.8 AV			3.96 V	297	103.9	1.9
3	5350.00	52.9 PK	74.0	-21.1	3.96 V	297	50.9	2.0
4	5350.00	41.5 AV	54.0	-12.5	3.96 V	297	39.5	2.0
5	#10480.00	50.7 PK	68.2	-17.5	1.33 V	180	38.8	11.9
6	15720.00	45.7 PK	74.0	-28.3	2.58 V	309	34.1	11.6
7	15720.00	34.7 AV	54.0	-19.3	2.58 V	309	23.1	11.6

Remarks:

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

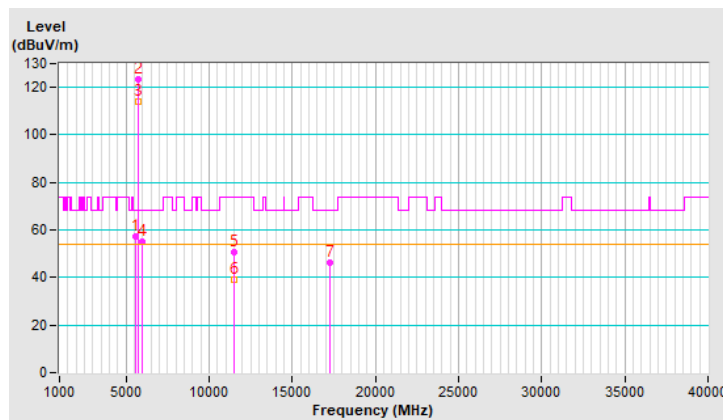


RF Mode	802.11a	Channel	CH 149 : 5745 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 510 Hz
Input Power (System)	120 Vac, 60Hz	Environmental Conditions	28°C, 75% RH
Tested By	Louis Yang		

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	#5558.38	57.2 PK	68.2	-11.0	1.01 H	357	55.1	2.1
2	*5745.00	123.5 PK			1.01 H	357	121.1	2.4
3	*5745.00	113.8 AV			1.01 H	357	111.4	2.4
4	#6001.64	54.9 PK	68.2	-13.3	1.01 H	357	51.9	3.0
5	11490.00	50.8 PK	74.0	-23.2	1.42 H	159	38.4	12.4
6	11490.00	38.9 AV	54.0	-15.1	1.42 H	159	26.5	12.4
7	#17235.00	46.0 PK	68.2	-22.2	2.45 H	315	29.6	16.4

Remarks:

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

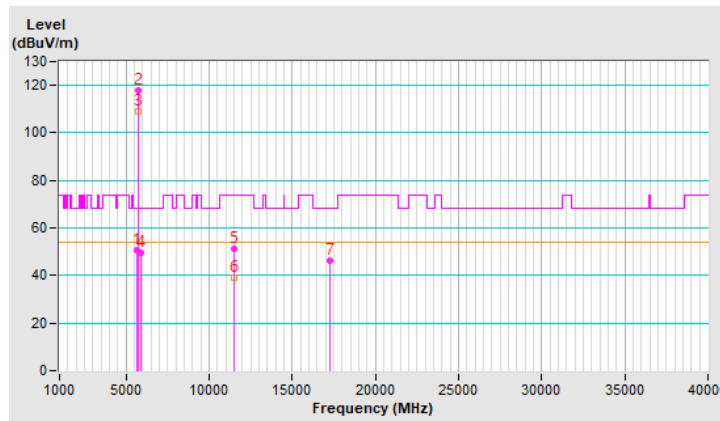


RF Mode	802.11a	Channel	CH 149 : 5745 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 510 Hz
Input Power (System)	120 Vac, 60Hz	Environmental Conditions	28°C, 75% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5647.36	50.5 PK	68.2	-17.7	4.00 V	284	48.1	2.4
2	*5745.00	117.6 PK			4.00 V	284	115.2	2.4
3	*5745.00	109.1 AV			4.00 V	284	106.7	2.4
4	#5929.00	49.8 PK	68.2	-18.4	4.00 V	284	46.9	2.9
5	11490.00	51.1 PK	74.0	-22.9	1.32 V	196	38.7	12.4
6	11490.00	38.9 AV	54.0	-15.1	1.32 V	196	26.5	12.4
7	#17235.00	46.2 PK	68.2	-22.0	2.52 V	298	29.8	16.4

Remarks:

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

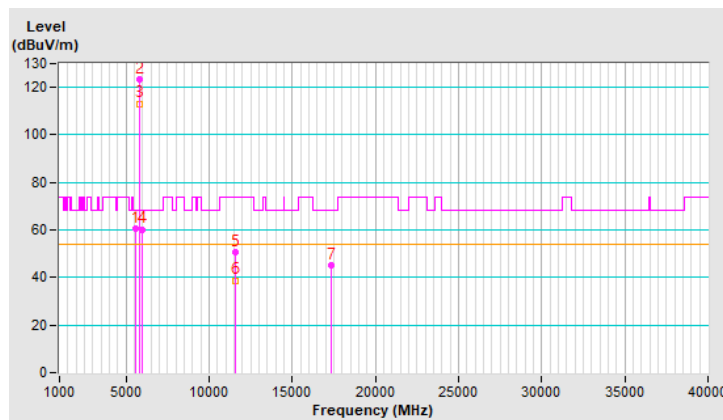


RF Mode	802.11a	Channel	CH 157 : 5785 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 510 Hz
Input Power (System)	120 Vac, 60Hz	Environmental Conditions	28°C, 75% RH
Tested By	Louis Yang		

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	#5609.05	60.4 PK	68.2	-7.8	1.02 H	354	58.2	2.2
2	*5785.00	123.6 PK			1.02 H	354	121.1	2.5
3	*5785.00	113.2 AV			1.02 H	354	110.7	2.5
4	#5966.99	60.3 PK	68.2	-7.9	1.02 H	354	57.3	3.0
5	11570.00	50.9 PK	74.0	-23.1	1.36 H	147	38.7	12.2
6	11570.00	38.8 AV	54.0	-15.2	1.36 H	147	26.6	12.2
7	#17355.00	45.4 PK	68.2	-22.8	2.50 H	305	28.1	17.3

Remarks:

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

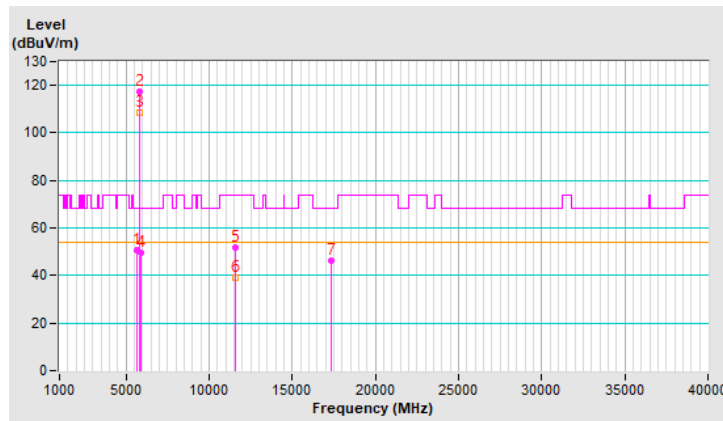


RF Mode	802.11a	Channel	CH 157 : 5785 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 510 Hz
Input Power (System)	120 Vac, 60Hz	Environmental Conditions	28°C, 75% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5644.06	50.6 PK	68.2	-17.6	3.98 V	300	48.3	2.3
2	*5785.00	117.5 PK			3.98 V	300	115.0	2.5
3	*5785.00	108.7 AV			3.98 V	300	106.2	2.5
4	#5926.90	49.7 PK	68.2	-18.5	3.98 V	300	46.8	2.9
5	11570.00	51.6 PK	74.0	-22.4	1.31 V	201	39.4	12.2
6	11570.00	39.1 AV	54.0	-14.9	1.31 V	201	26.9	12.2
7	#17355.00	46.4 PK	68.2	-21.8	2.61 V	303	29.1	17.3

Remarks:

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

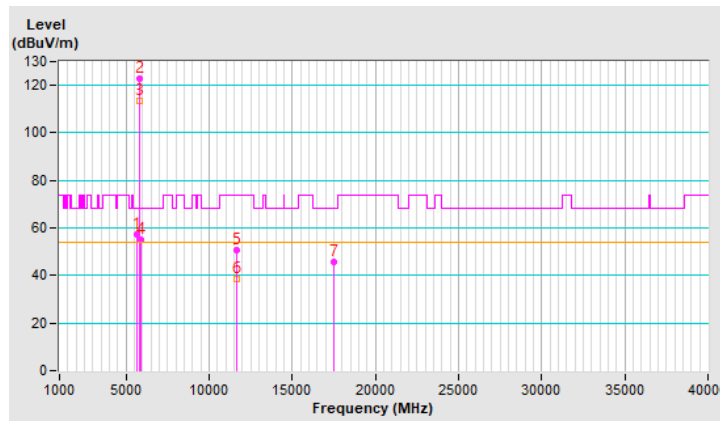


RF Mode	802.11a	Channel	CH 165 : 5825 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 510 Hz
Input Power (System)	120 Vac, 60Hz	Environmental Conditions	28°C, 75% RH
Tested By	Louis Yang		

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	#5626.19	57.4 PK	68.2	-10.8	1.01 H	352	55.1	2.3
2	*5825.00	123.0 PK			1.01 H	352	120.3	2.7
3	*5825.00	113.6 AV			1.01 H	352	110.9	2.7
4	#5925.55	55.1 PK	68.2	-13.1	1.01 H	352	52.2	2.9
5	11650.00	50.6 PK	74.0	-23.4	1.31 H	166	38.8	11.8
6	11650.00	38.6 AV	54.0	-15.4	1.31 H	166	26.8	11.8
7	#17475.00	45.9 PK	68.2	-22.3	2.46 H	298	27.5	18.4

Remarks:

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

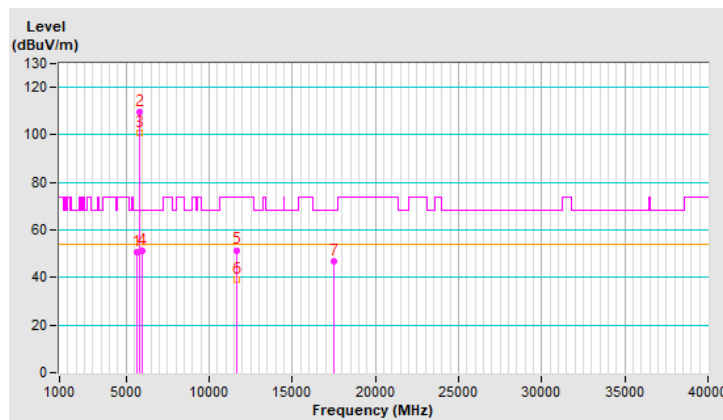


RF Mode	802.11a	Channel	CH 165 : 5825 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 510 Hz
Input Power (System)	120 Vac, 60Hz	Environmental Conditions	28°C, 75% RH
Tested By	Louis Yang		

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	#5636.53	50.9 PK	68.2	-17.3	3.96 V	276	48.6	2.3
2	*5825.00	109.8 PK			3.96 V	276	107.1	2.7
3	*5825.00	100.9 AV			3.96 V	276	98.2	2.7
4	#5934.76	51.1 PK	68.2	-17.1	3.96 V	276	48.2	2.9
5	11650.00	51.5 PK	74.0	-22.5	1.27 V	198	39.7	11.8
6	11650.00	39.0 AV	54.0	-15.0	1.27 V	198	27.2	11.8
7	#17475.00	46.7 PK	68.2	-21.5	2.51 V	325	28.3	18.4

Remarks:

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

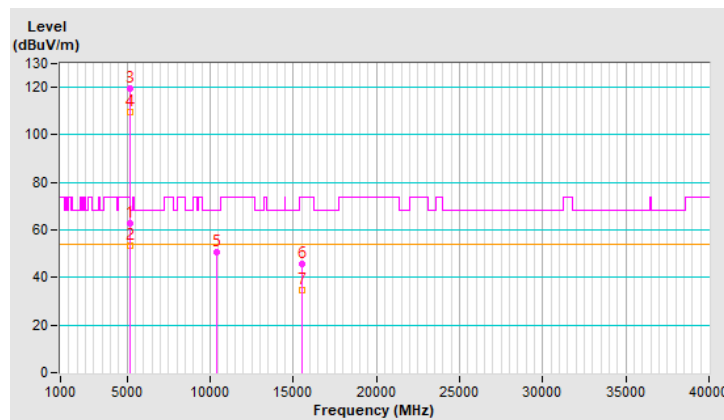


RF Mode	802.11ax (HE20)	Channel	CH 36 : 5180 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 200 Hz
Input Power (System)	120 Vac, 60Hz	Environmental Conditions	28°C, 75% RH
Tested By	Louis Yang		

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	62.9 PK	74.0	-11.1	1.15 H	360	60.7	2.2
2	5150.00	53.6 AV	54.0	-0.4	1.15 H	360	51.4	2.2
3	*5180.00	119.5 PK			1.15 H	360	117.4	2.1
4	*5180.00	109.7 AV			1.15 H	360	107.6	2.1
5	#10360.00	50.6 PK	68.2	-17.6	1.40 H	159	38.9	11.7
6	15540.00	45.6 PK	74.0	-28.4	2.50 H	323	33.9	11.7
7	15540.00	34.7 AV	54.0	-19.3	2.50 H	323	23.0	11.7

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.

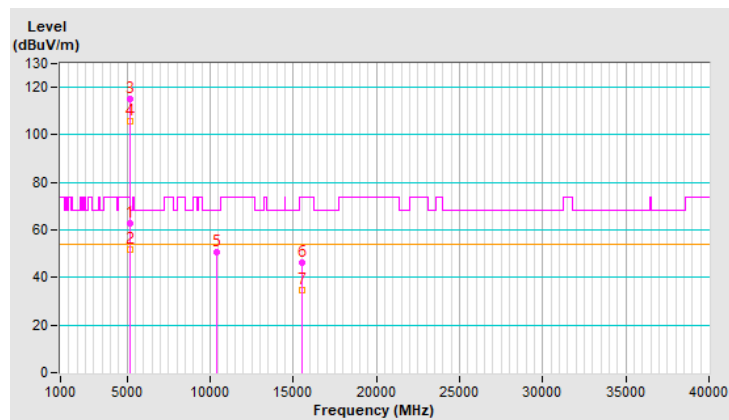


RF Mode	802.11ax (HE20)	Channel	CH 36 : 5180 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 200 Hz
Input Power (System)	120 Vac, 60Hz	Environmental Conditions	28°C, 75% RH
Tested By	Louis Yang		

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	62.7 PK	74.0	-11.3	3.98 V	295	60.5	2.2
2	5150.00	52.0 AV	54.0	-2.0	3.98 V	295	49.8	2.2
3	*5180.00	115.0 PK			3.98 V	295	112.9	2.1
4	*5180.00	105.6 AV			3.98 V	295	103.5	2.1
5	#10360.00	50.7 PK	68.2	-17.5	1.27 V	195	39.0	11.7
6	15540.00	46.1 PK	74.0	-27.9	2.61 V	306	34.4	11.7
7	15540.00	34.9 AV	54.0	-19.1	2.61 V	306	23.2	11.7

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.

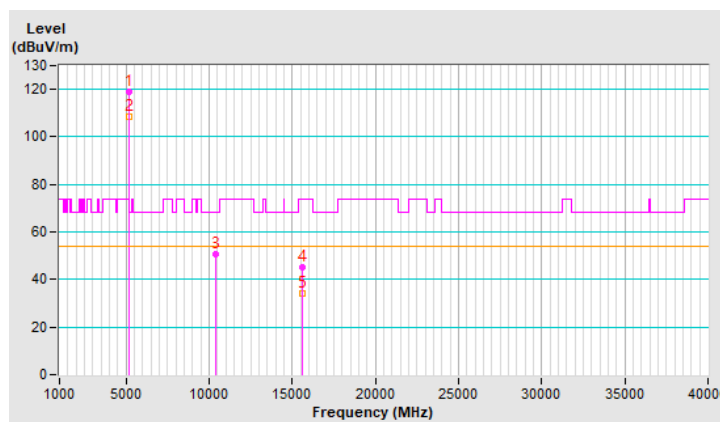


RF Mode	802.11ax (HE20)	Channel	CH 40 : 5200 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 200 Hz
Input Power (System)	120 Vac, 60Hz	Environmental Conditions	28°C, 75% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5200.00	119.1 PK			1.02 H	360	117.1	2.0
2	*5200.00	108.4 AV			1.02 H	360	106.4	2.0
3	#10400.00	50.8 PK	68.2	-17.4	1.38 H	151	38.9	11.9
4	15600.00	45.2 PK	74.0	-28.8	2.56 H	322	33.7	11.5
5	15600.00	34.2 AV	54.0	-19.8	2.56 H	322	22.7	11.5

Remarks:

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

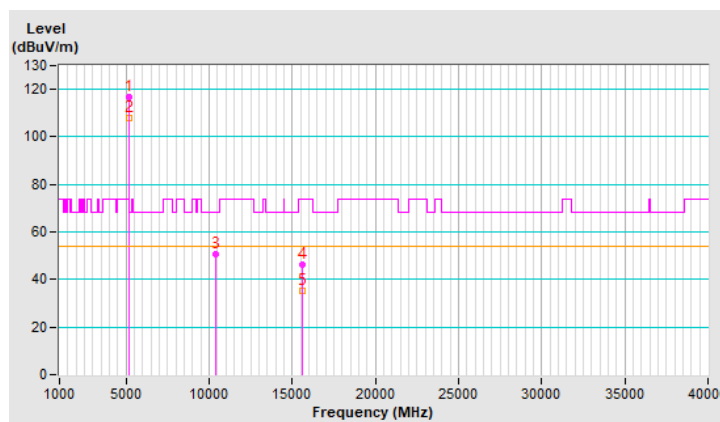


RF Mode	802.11ax (HE20)	Channel	CH 40 : 5200 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 200 Hz
Input Power (System)	120 Vac, 60Hz	Environmental Conditions	28°C, 75% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5200.00	117.0 PK			3.95 V	295	115.0	2.0
2	*5200.00	108.1 AV			3.95 V	295	106.1	2.0
3	#10400.00	50.9 PK	68.2	-17.3	1.31 V	200	39.0	11.9
4	15600.00	46.0 PK	74.0	-28.0	2.57 V	298	34.5	11.5
5	15600.00	35.0 AV	54.0	-19.0	2.57 V	298	23.5	11.5

Remarks:

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

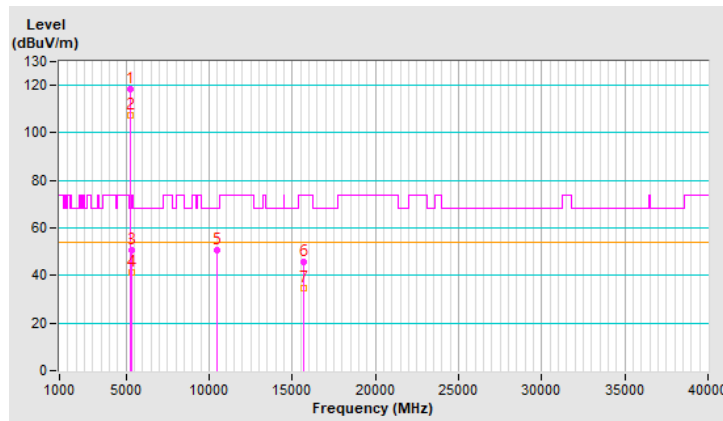


RF Mode	802.11ax (HE20)	Channel	CH 48 : 5240 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 200 Hz
Input Power (System)	120 Vac, 60Hz	Environmental Conditions	28°C, 75% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5240.00	118.2 PK			1.06 H	360	116.3	1.9
2	*5240.00	107.6 AV			1.06 H	360	105.7	1.9
3	5350.00	50.6 PK	74.0	-23.4	1.06 H	360	48.6	2.0
4	5350.00	41.5 AV	54.0	-12.5	1.06 H	360	39.5	2.0
5	#10480.00	50.8 PK	68.2	-17.4	1.32 H	176	38.9	11.9
6	15720.00	45.8 PK	74.0	-28.2	2.55 H	316	34.2	11.6
7	15720.00	34.7 AV	54.0	-19.3	2.55 H	316	23.1	11.6

Remarks:

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

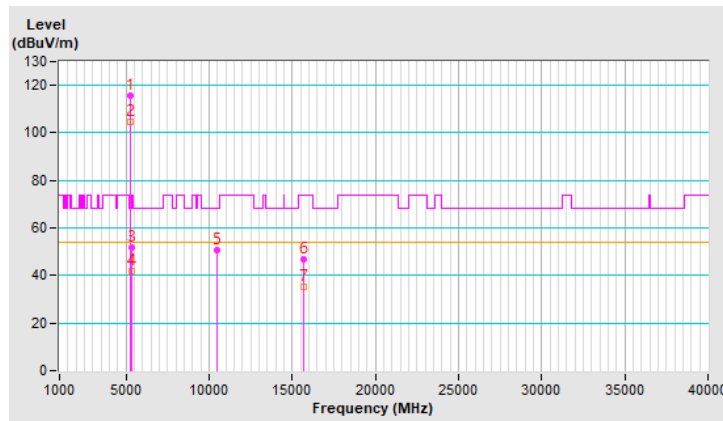


RF Mode	802.11ax (HE20)	Channel	CH 48 : 5240 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 200 Hz
Input Power (System)	120 Vac, 60Hz	Environmental Conditions	28°C, 75% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5240.00	115.5 PK			3.98 V	302	113.6	1.9
2	*5240.00	104.8 AV			3.98 V	302	102.9	1.9
3	5350.00	51.6 PK	74.0	-22.4	3.98 V	302	49.6	2.0
4	5350.00	42.0 AV	54.0	-12.0	3.98 V	302	40.0	2.0
5	#10480.00	50.9 PK	68.2	-17.3	1.29 V	191	39.0	11.9
6	15720.00	46.6 PK	74.0	-27.4	2.56 V	311	35.0	11.6
7	15720.00	35.1 AV	54.0	-18.9	2.56 V	311	23.5	11.6

Remarks:

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

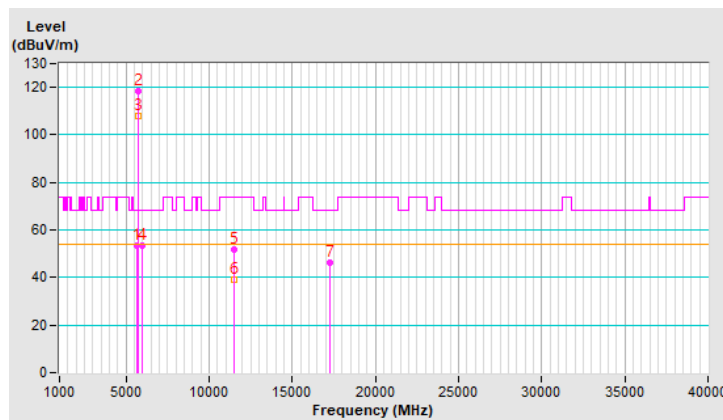


RF Mode	802.11ax (HE20)	Channel	CH 149 : 5745 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 200 Hz
Input Power (System)	120 Vac, 60Hz	Environmental Conditions	28°C, 75% RH
Tested By	Louis Yang		

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	#5632.72	53.6 PK	68.2	-14.6	1.32 H	360	51.3	2.3
2	*5745.00	118.4 PK			1.32 H	360	116.0	2.4
3	*5745.00	108.0 AV			1.32 H	360	105.6	2.4
4	#5966.93	53.4 PK	68.2	-14.8	1.32 H	360	50.4	3.0
5	11490.00	51.6 PK	74.0	-22.4	1.30 H	202	39.2	12.4
6	11490.00	38.9 AV	54.0	-15.1	1.30 H	202	26.5	12.4
7	#17235.00	46.3 PK	68.2	-21.9	2.55 H	313	29.9	16.4

Remarks:

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

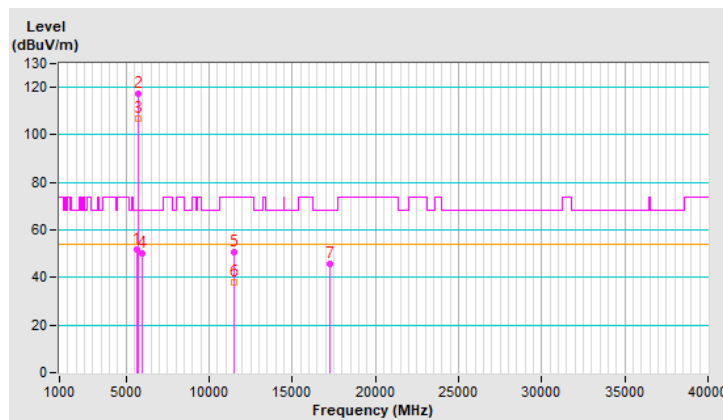


RF Mode	802.11ax (HE20)	Channel	CH 149 : 5745 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 200 Hz
Input Power (System)	120 Vac, 60Hz	Environmental Conditions	28°C, 75% RH
Tested By	Louis Yang		

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	#5648.84	51.7 PK	68.2	-16.5	3.99 V	287	49.3	2.4
2	*5745.00	117.2 PK			3.99 V	287	114.8	2.4
3	*5745.00	106.8 AV			3.99 V	287	104.4	2.4
4	#5951.83	50.1 PK	68.2	-18.1	3.99 V	287	47.1	3.0
5	11490.00	50.6 PK	74.0	-23.4	1.30 V	192	38.2	12.4
6	11490.00	38.1 AV	54.0	-15.9	1.30 V	192	25.7	12.4
7	#17235.00	45.8 PK	68.2	-22.4	2.62 V	306	29.4	16.4

Remarks:

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

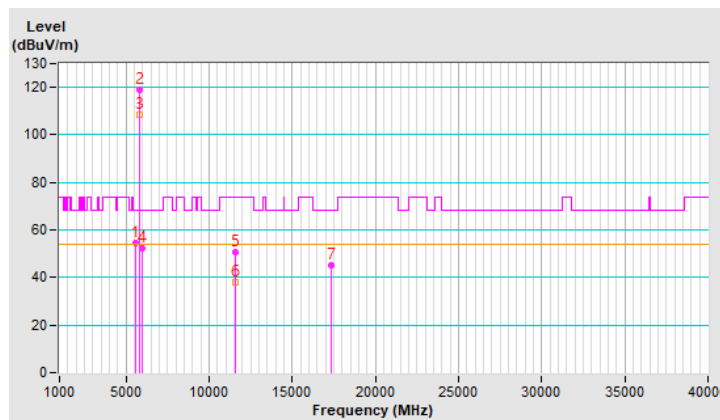


RF Mode	802.11ax (HE20)	Channel	CH 157 : 5785 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 200 Hz
Input Power (System)	120 Vac, 60Hz	Environmental Conditions	28°C, 75% RH
Tested By	Louis Yang		

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	#5591.03	54.3 PK	68.2	-13.9	1.28 H	360	52.2	2.1
2	*5785.00	118.8 PK			1.28 H	360	116.3	2.5
3	*5785.00	108.6 AV			1.28 H	360	106.1	2.5
4	#5971.68	52.3 PK	68.2	-15.9	1.28 H	360	49.3	3.0
5	11570.00	50.5 PK	74.0	-23.5	1.27 H	194	38.3	12.2
6	11570.00	38.2 AV	54.0	-15.8	1.27 H	194	26.0	12.2
7	#17355.00	45.4 PK	68.2	-22.8	2.52 H	306	28.1	17.3

Remarks:

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

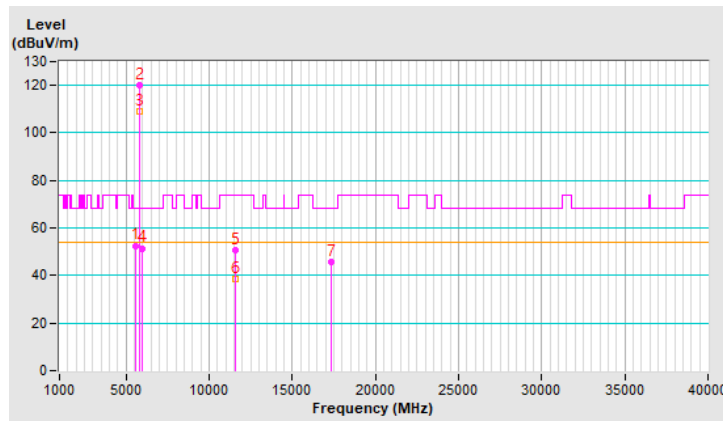


RF Mode	802.11ax (HE20)	Channel	CH 157 : 5785 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 200 Hz
Input Power (System)	120 Vac, 60Hz	Environmental Conditions	28°C, 75% RH
Tested By	Louis Yang		

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	#5589.77	52.6 PK	68.2	-15.6	3.85 V	293	50.5	2.1
2	*5785.00	120.0 PK			3.85 V	293	117.5	2.5
3	*5785.00	109.1 AV			3.85 V	293	106.6	2.5
4	#5935.87	51.5 PK	68.2	-16.7	3.85 V	293	48.6	2.9
5	11570.00	50.9 PK	74.0	-23.1	1.30 V	175	38.7	12.2
6	11570.00	38.3 AV	54.0	-15.7	1.30 V	175	26.1	12.2
7	#17355.00	45.5 PK	68.2	-22.7	2.54 V	328	28.2	17.3

Remarks:

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

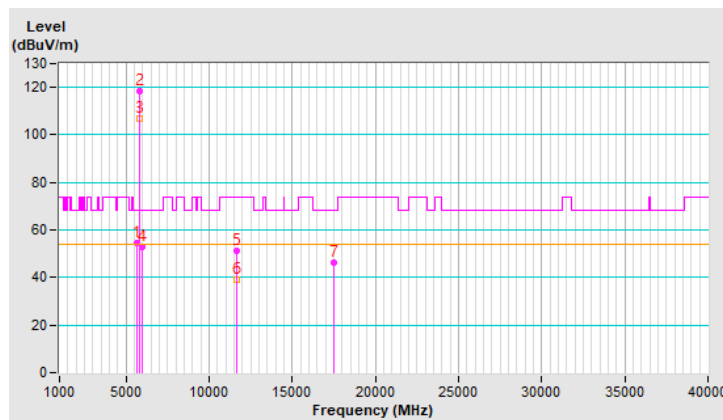


RF Mode	802.11ax (HE20)	Channel	CH 165 : 5825 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 200 Hz
Input Power (System)	120 Vac, 60Hz	Environmental Conditions	28°C, 75% RH
Tested By	Louis Yang		

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	#5633.97	54.7 PK	68.2	-13.5	1.37 H	360	52.4	2.3
2	*5825.00	118.2 PK			1.37 H	360	115.5	2.7
3	*5825.00	107.0 AV			1.37 H	360	104.3	2.7
4	#5952.06	52.9 PK	68.2	-15.3	1.37 H	360	49.9	3.0
5	11650.00	51.2 PK	74.0	-22.8	1.34 H	176	39.4	11.8
6	11650.00	39.0 AV	54.0	-15.0	1.34 H	176	27.2	11.8
7	#17475.00	46.5 PK	68.2	-21.7	2.55 H	313	28.1	18.4

Remarks:

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

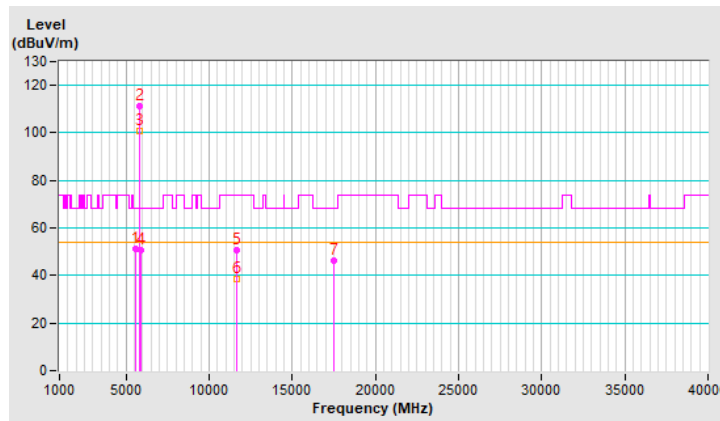


RF Mode	802.11ax (HE20)	Channel	CH 165 : 5825 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 200 Hz
Input Power (System)	120 Vac, 60Hz	Environmental Conditions	28°C, 75% RH
Tested By	Louis Yang		

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	#5589.25	51.1 PK	68.2	-17.1	3.90 V	299	49.0	2.1
2	*5825.00	111.0 PK			3.90 V	299	108.3	2.7
3	*5825.00	100.8 AV			3.90 V	299	98.1	2.7
4	#5926.69	50.6 PK	68.2	-17.6	3.90 V	299	47.7	2.9
5	11650.00	50.5 PK	74.0	-23.5	1.31 V	188	38.7	11.8
6	11650.00	38.3 AV	54.0	-15.7	1.31 V	188	26.5	11.8
7	#17475.00	46.0 PK	68.2	-22.2	2.54 V	305	27.6	18.4

Remarks:

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

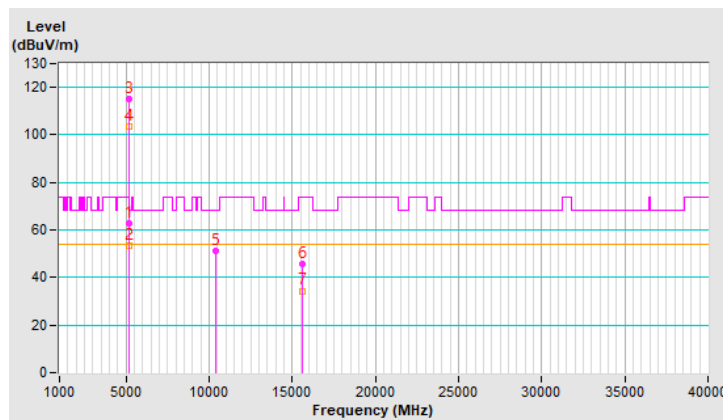


RF Mode	802.11ax (HE40)	Channel	CH 38 : 5190 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 200 Hz
Input Power (System)	120 Vac, 60Hz	Environmental Conditions	28°C, 75% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	63.0 PK	74.0	-11.0	1.06 H	360	60.8	2.2
2	5150.00	53.6 AV	54.0	-0.4	1.06 H	360	51.4	2.2
3	*5190.00	115.3 PK			1.06 H	360	113.2	2.1
4	*5190.00	103.6 AV			1.06 H	360	101.5	2.1
5	#10380.00	51.0 PK	68.2	-17.2	1.25 H	176	39.1	11.9
6	15570.00	45.7 PK	74.0	-28.3	2.61 H	311	34.0	11.7
7	15570.00	34.4 AV	54.0	-19.6	2.61 H	311	22.7	11.7

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.

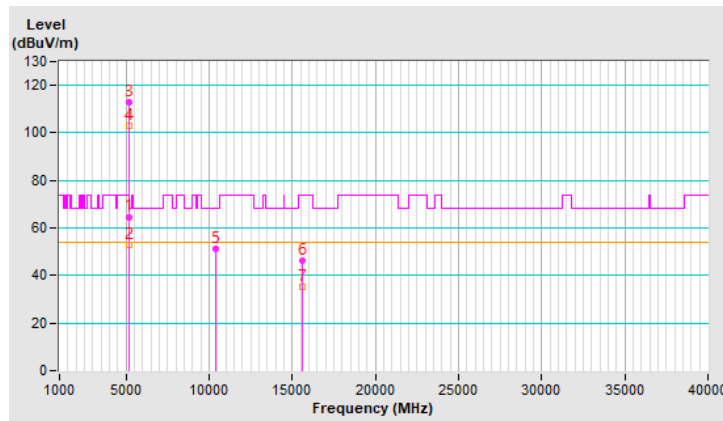


RF Mode	802.11ax (HE40)	Channel	CH 38 : 5190 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 200 Hz
Input Power (System)	120 Vac, 60Hz	Environmental Conditions	28°C, 75% RH
Tested By	Louis Yang		

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	64.7 PK	74.0	-9.3	3.95 V	296	62.5	2.2
2	5150.00	52.9 AV	54.0	-1.1	3.95 V	296	50.7	2.2
3	*5190.00	112.7 PK			3.95 V	296	110.6	2.1
4	*5190.00	103.0 AV			3.95 V	296	100.9	2.1
5	#10380.00	51.4 PK	68.2	-16.8	1.24 V	179	39.5	11.9
6	15570.00	46.1 PK	74.0	-27.9	2.53 V	304	34.4	11.7
7	15570.00	35.0 AV	54.0	-19.0	2.53 V	304	23.3	11.7

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.

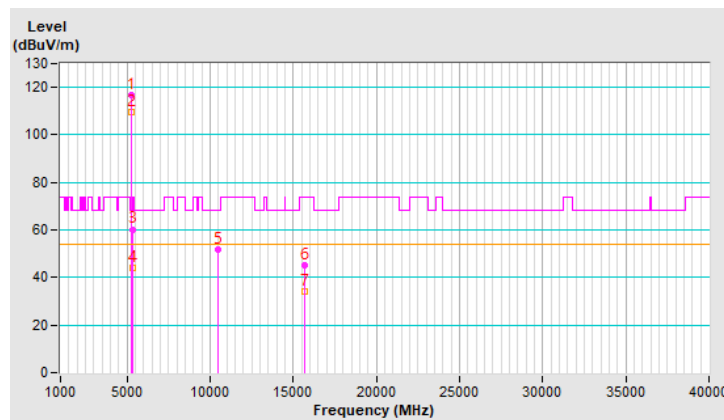


RF Mode	802.11ax (HE40)	Channel	CH 46 : 5230 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 200 Hz
Input Power (System)	120 Vac, 60Hz	Environmental Conditions	28°C, 75% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5230.00	116.8 PK			1.11 H	355	114.9	1.9
2	*5230.00	109.4 AV			1.11 H	355	107.5	1.9
3	5350.00	60.3 PK	74.0	-13.7	1.11 H	355	58.3	2.0
4	5350.00	44.3 AV	54.0	-9.7	1.11 H	355	42.3	2.0
5	#10460.00	51.7 PK	68.2	-16.5	1.24 H	194	39.8	11.9
6	15690.00	45.3 PK	74.0	-28.7	2.61 H	312	33.6	11.7
7	15690.00	34.3 AV	54.0	-19.7	2.61 H	312	22.6	11.7

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.

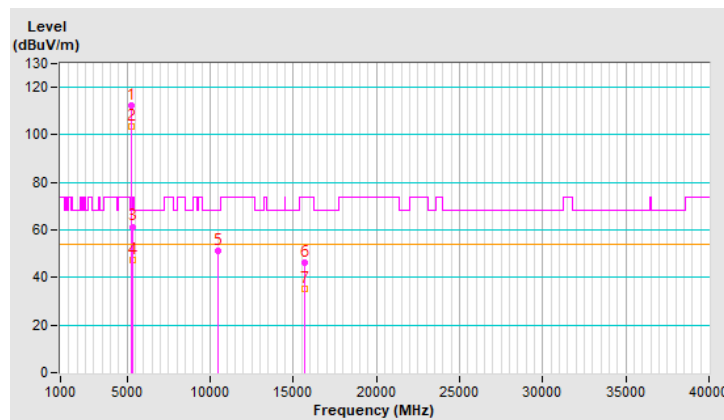


RF Mode	802.11ax (HE40)	Channel	CH 46 : 5230 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 200 Hz
Input Power (System)	120 Vac, 60Hz	Environmental Conditions	28°C, 75% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5230.00	112.5 PK			3.87 V	300	110.6	1.9
2	*5230.00	103.5 AV			3.87 V	300	101.6	1.9
3	5350.00	61.4 PK	74.0	-12.6	3.87 V	300	59.4	2.0
4	5350.00	47.3 AV	54.0	-6.7	3.87 V	300	45.3	2.0
5	#10460.00	51.4 PK	68.2	-16.8	1.24 V	177	39.5	11.9
6	15690.00	46.2 PK	74.0	-27.8	2.51 V	301	34.5	11.7
7	15690.00	35.1 AV	54.0	-18.9	2.51 V	301	23.4	11.7

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.

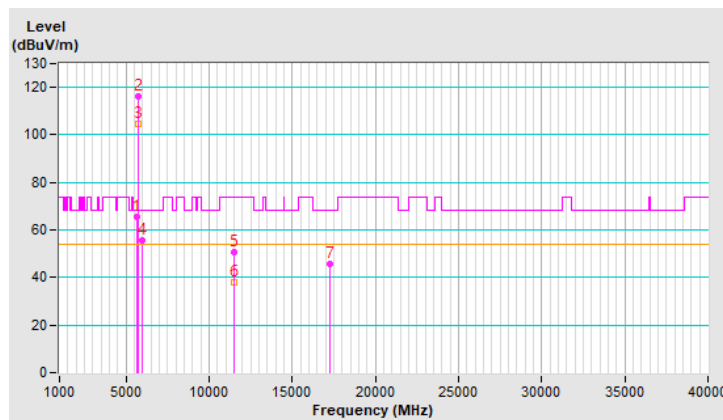


RF Mode	802.11ax (HE40)	Channel	CH 151 : 5755 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 200 Hz
Input Power (System)	120 Vac, 60Hz	Environmental Conditions	28°C, 75% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5649.41	65.4 PK	68.2	-2.8	1.18 H	360	63.0	2.4
2	*5755.00	116.3 PK			1.18 H	360	113.9	2.4
3	*5755.00	104.5 AV			1.18 H	360	102.1	2.4
4	#5977.10	55.8 PK	68.2	-12.4	1.18 H	360	52.8	3.0
5	11510.00	50.6 PK	74.0	-23.4	1.25 H	190	38.2	12.4
6	11510.00	38.2 AV	54.0	-15.8	1.25 H	190	25.8	12.4
7	#17265.00	45.9 PK	68.2	-22.3	2.55 H	313	29.4	16.5

Remarks:

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

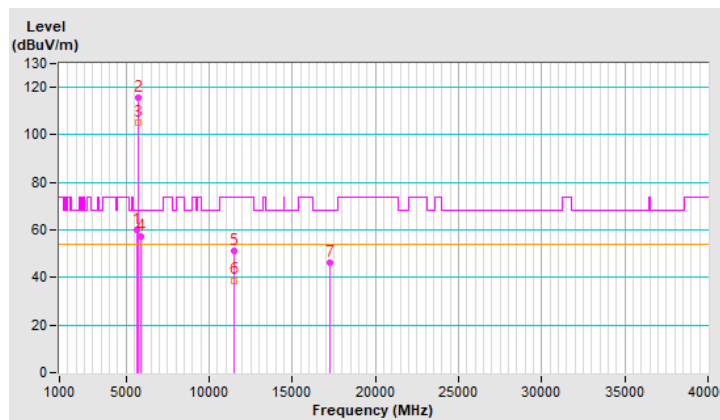


RF Mode	802.11ax (HE40)	Channel	CH 151 : 5755 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 200 Hz
Input Power (System)	120 Vac, 60Hz	Environmental Conditions	28°C, 75% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5644.24	60.0 PK	68.2	-8.2	3.99 V	287	57.7	2.3
2	*5755.00	115.8 PK			3.99 V	287	113.4	2.4
3	*5755.00	105.0 AV			3.99 V	287	102.6	2.4
4	#5931.60	57.2 PK	68.2	-11.0	3.99 V	287	54.3	2.9
5	11510.00	51.0 PK	74.0	-23.0	1.28 V	195	38.6	12.4
6	11510.00	38.8 AV	54.0	-15.2	1.28 V	195	26.4	12.4
7	#17265.00	46.4 PK	68.2	-21.8	2.60 V	311	29.9	16.5

Remarks:

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

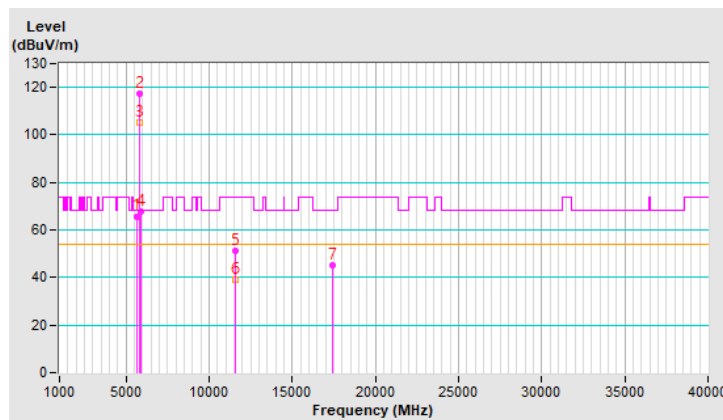


RF Mode	802.11ax (HE40)	Channel	CH 159 : 5795 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 200 Hz
Input Power (System)	120 Vac, 60Hz	Environmental Conditions	28°C, 75% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5649.98	65.8 PK	68.2	-2.4	1.20 H	360	63.4	2.4
2	*5795.00	117.1 PK			1.20 H	360	114.5	2.6
3	*5795.00	105.4 AV			1.20 H	360	102.8	2.6
4	#5925.55	67.6 PK	68.2	-0.6	1.20 H	360	64.7	2.9
5	11590.00	51.1 PK	74.0	-22.9	1.35 H	192	38.9	12.2
6	11590.00	39.0 AV	54.0	-15.0	1.35 H	192	26.8	12.2
7	#17385.00	45.3 PK	68.2	-22.9	2.52 H	308	27.8	17.5

Remarks:

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

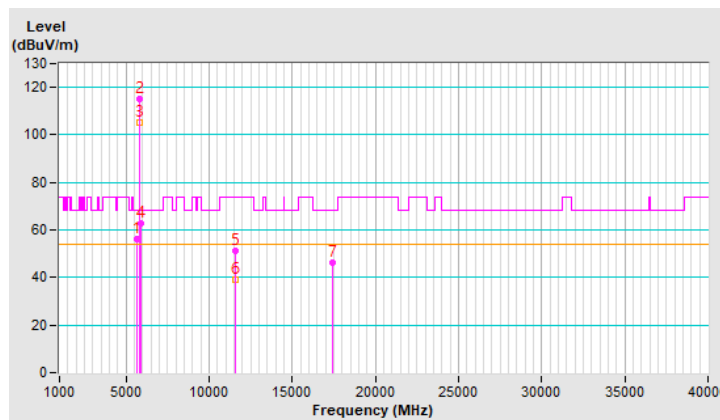


RF Mode	802.11ax (HE40)	Channel	CH 159 : 5795 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 200 Hz
Input Power (System)	120 Vac, 60Hz	Environmental Conditions	28°C, 75% RH
Tested By	Louis Yang		

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	#5637.19	56.0 PK	68.2	-12.2	4.00 V	300	53.7	2.3
2	*5795.00	115.3 PK			4.00 V	300	112.7	2.6
3	*5795.00	105.3 AV			4.00 V	300	102.7	2.6
4	#5927.90	63.0 PK	68.2	-5.2	4.00 V	300	60.1	2.9
5	11590.00	51.4 PK	74.0	-22.6	1.33 V	171	39.2	12.2
6	11590.00	39.1 AV	54.0	-14.9	1.33 V	171	26.9	12.2
7	#17385.00	46.5 PK	68.2	-21.7	2.56 V	300	29.0	17.5

Remarks:

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

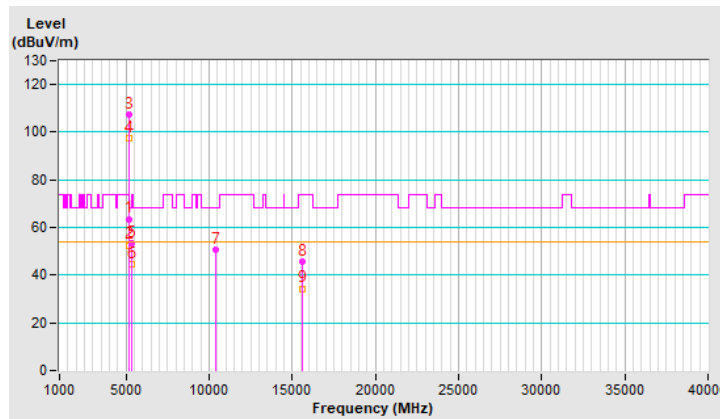


RF Mode	802.11ax (HE80)	Channel	CH 42 : 5210 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 200 Hz
Input Power (System)	120 Vac, 60Hz	Environmental Conditions	28°C, 75% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	63.6 PK	74.0	-10.4	1.00 H	360	61.4	2.2
2	5150.00	52.6 AV	54.0	-1.4	1.00 H	360	50.4	2.2
3	*5210.00	107.6 PK			1.00 H	360	105.6	2.0
4	*5210.00	97.5 AV			1.00 H	360	95.5	2.0
5	5350.00	53.2 PK	74.0	-20.8	1.00 H	360	51.2	2.0
6	5350.00	44.7 AV	54.0	-9.3	1.00 H	360	42.7	2.0
7	#10420.00	50.9 PK	68.2	-17.3	1.27 H	171	38.9	12.0
8	15630.00	45.5 PK	74.0	-28.5	2.55 H	308	33.9	11.6
9	15630.00	34.4 AV	54.0	-19.6	2.55 H	308	22.8	11.6

Remarks:

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

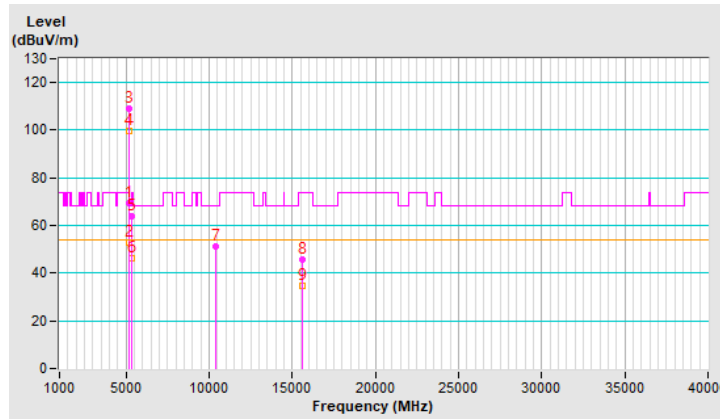


RF Mode	802.11ax (HE80)	Channel	CH 42 : 5210 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 200 Hz
Input Power (System)	120 Vac, 60Hz	Environmental Conditions	28°C, 75% RH
Tested By	Louis Yang		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	69.6 PK	74.0	-4.4	3.94 V	295	67.4	2.2
2	5150.00	53.0 AV	54.0	-1.0	3.94 V	295	50.8	2.2
3	*5210.00	108.9 PK			3.94 V	295	106.9	2.0
4	*5210.00	99.6 AV			3.94 V	295	97.6	2.0
5	5350.00	64.0 PK	74.0	-10.0	3.94 V	295	62.0	2.0
6	5350.00	46.2 AV	54.0	-7.8	3.94 V	295	44.2	2.0
7	#10420.00	51.4 PK	68.2	-16.8	1.24 V	202	39.4	12.0
8	15630.00	45.6 PK	74.0	-28.4	2.58 V	296	34.0	11.6
9	15630.00	34.6 AV	54.0	-19.4	2.58 V	296	23.0	11.6

Remarks:

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

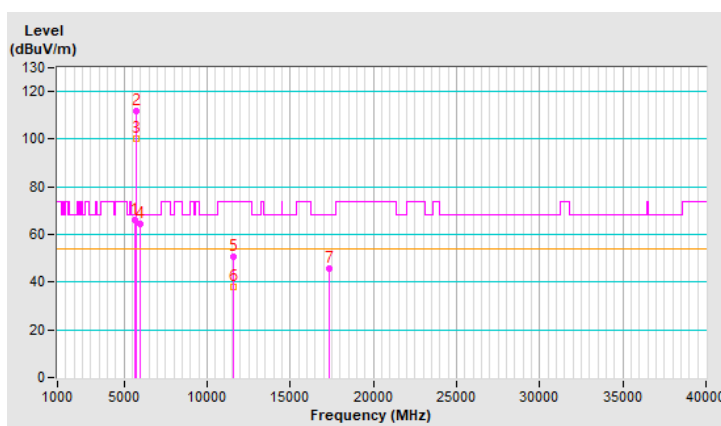


RF Mode	802.11ax (HE80)	Channel	CH 155 : 5775 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 200 Hz
Input Power (System)	120 Vac, 60Hz	Environmental Conditions	28°C, 75% RH
Tested By	Louis Yang		

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	#5634.10	65.9 PK	68.2	-2.3	1.15 H	354	63.6	2.3
2	*5775.00	111.8 PK			1.15 H	354	109.3	2.5
3	*5775.00	100.2 AV			1.15 H	354	97.7	2.5
4	#5943.90	64.5 PK	68.2	-3.7	1.15 H	354	61.5	3.0
5	11550.00	50.7 PK	74.0	-23.3	1.27 H	185	38.5	12.2
6	11550.00	38.1 AV	54.0	-15.9	1.27 H	185	25.9	12.2
7	#17325.00	45.8 PK	68.2	-22.4	2.60 H	315	28.9	16.9

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.

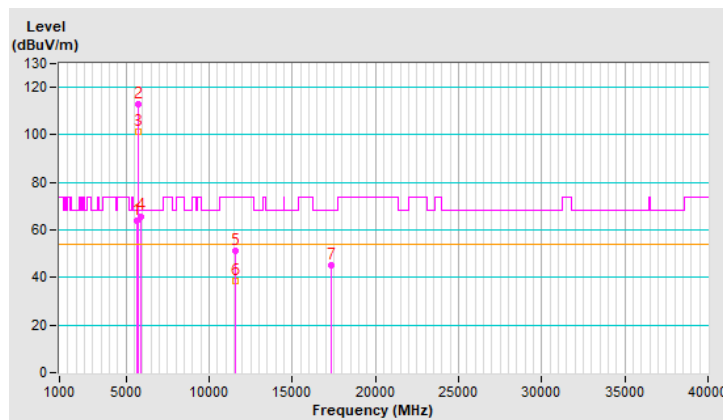


RF Mode	802.11ax (HE80)	Channel	CH 155 : 5775 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 200 Hz
Input Power (System)	120 Vac, 60Hz	Environmental Conditions	28°C, 75% RH
Tested By	Louis Yang		

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	#5650.06	64.0 PK	68.2	-4.2	3.98 V	288	61.6	2.4
2	*5775.00	112.9 PK			3.98 V	288	110.4	2.5
3	*5775.00	101.5 AV			3.98 V	288	99.0	2.5
4	#5930.74	65.8 PK	68.2	-2.4	3.98 V	288	62.9	2.9
5	11550.00	51.2 PK	74.0	-22.8	1.33 V	181	39.0	12.2
6	11550.00	38.5 AV	54.0	-15.5	1.33 V	181	26.3	12.2
7	#17325.00	45.4 PK	68.2	-22.8	2.52 V	304	28.5	16.9

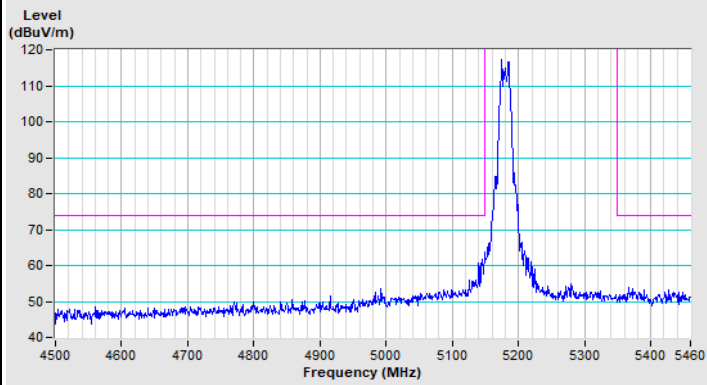
Remarks:

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.

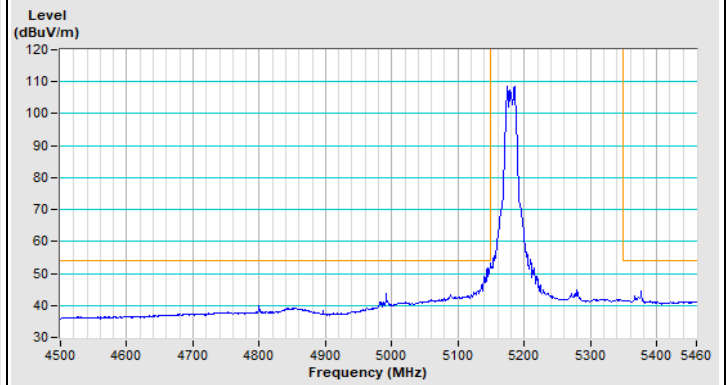


Plot of Band Edge

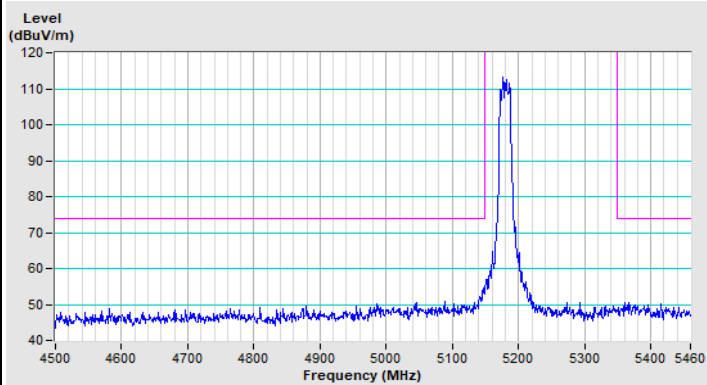
802.11a Channel 36



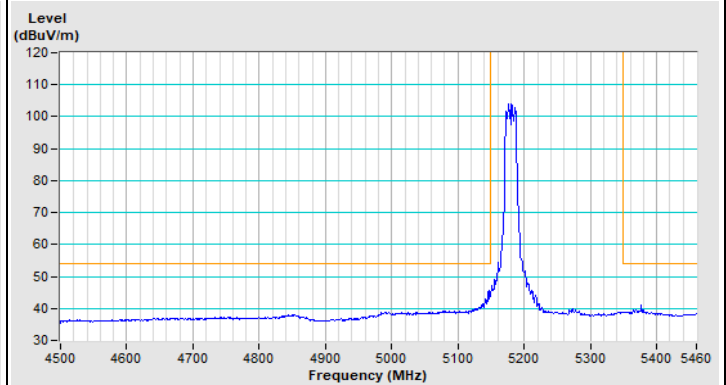
Horizontal (Peak)



Horizontal (Average)

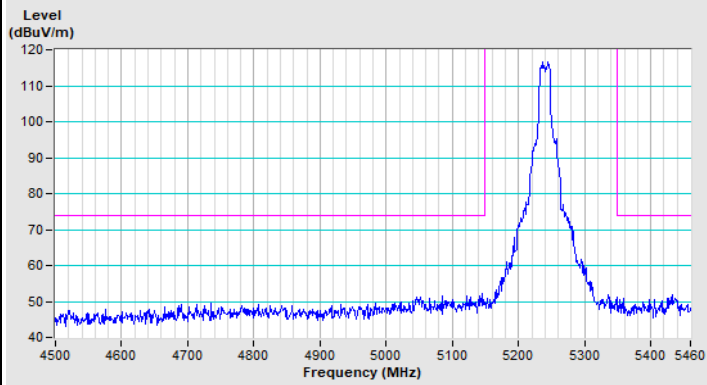


Vertical (Peak)

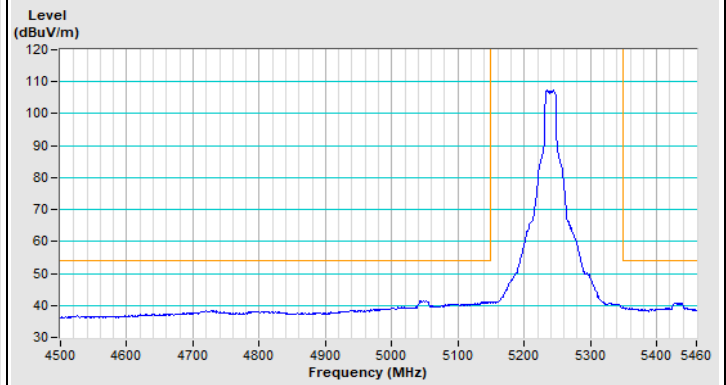


Vertical (Average)

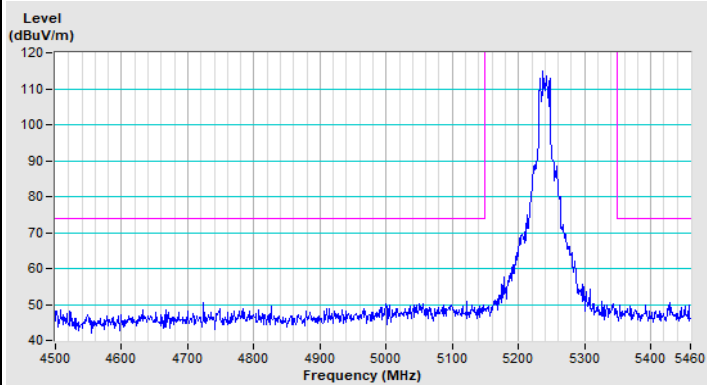
802.11a Channel 48



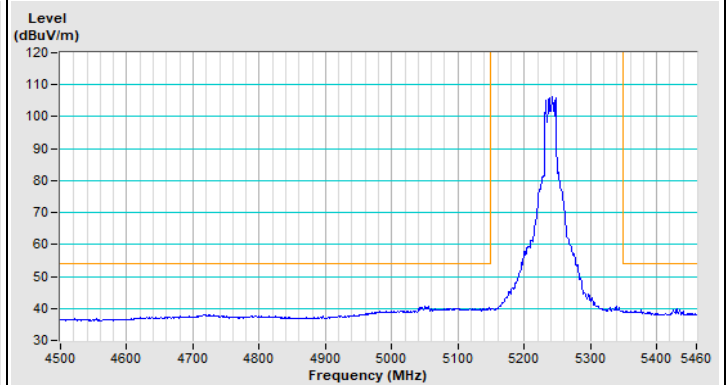
Horizontal (Peak)



Horizontal (Average)

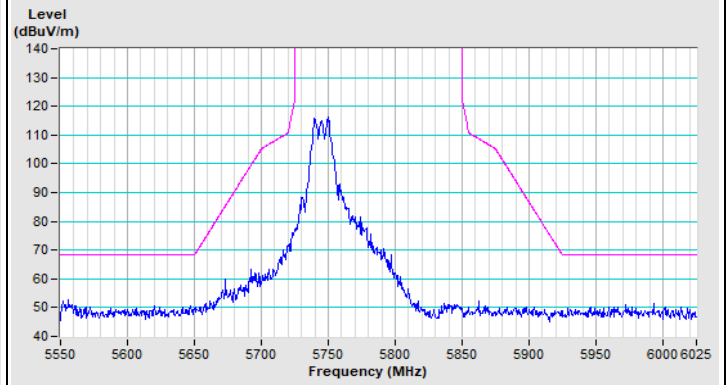
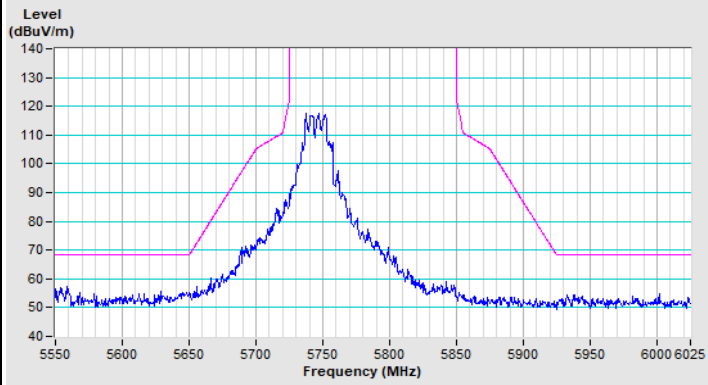


Vertical (Peak)

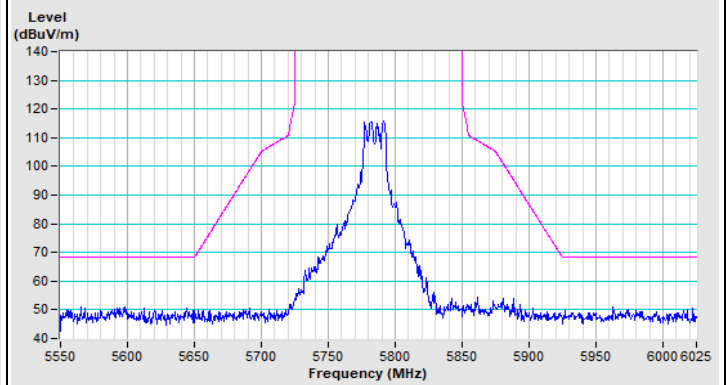
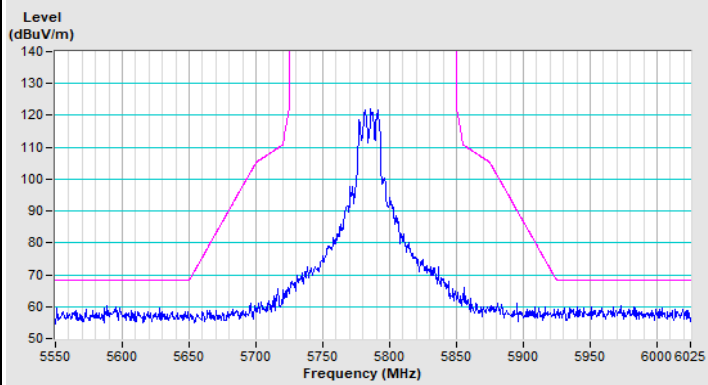


Vertical (Average)

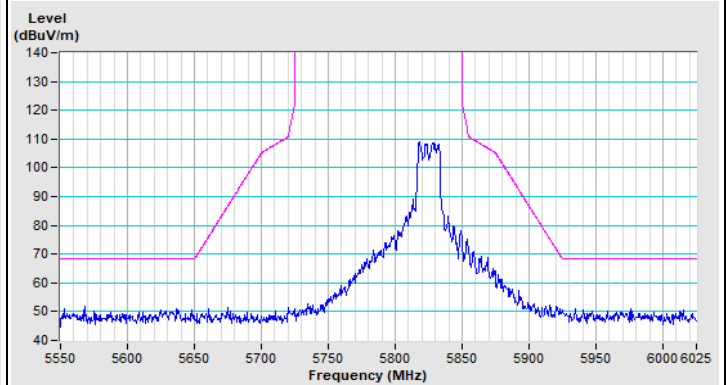
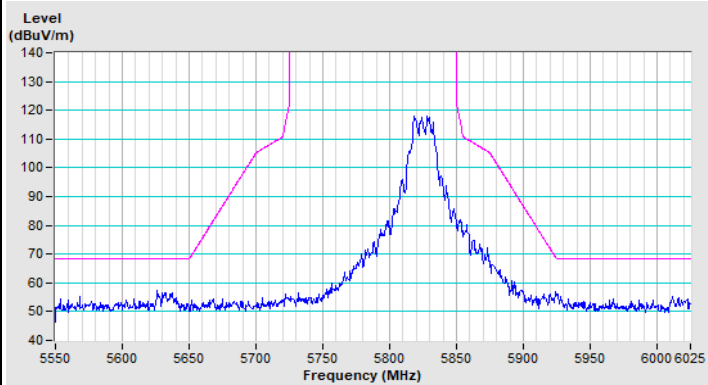
802.11a Channel 149



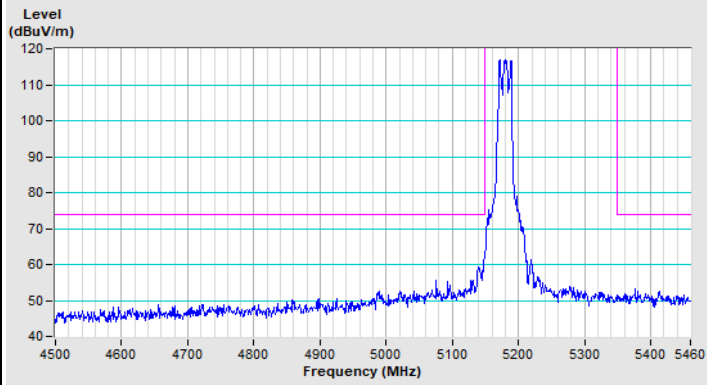
802.11a Channel 157



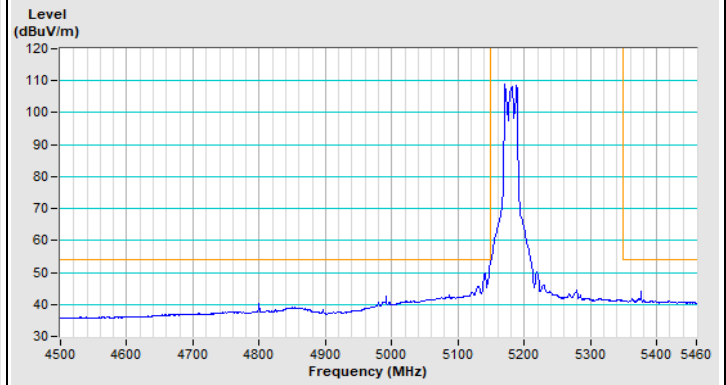
802.11a Channel 165



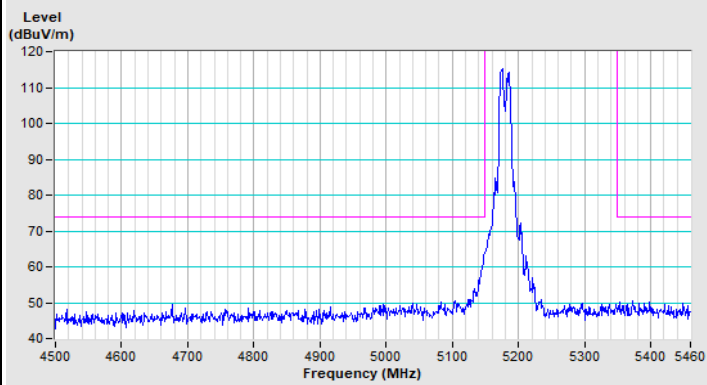
802.11ax (HE20) Channel 36



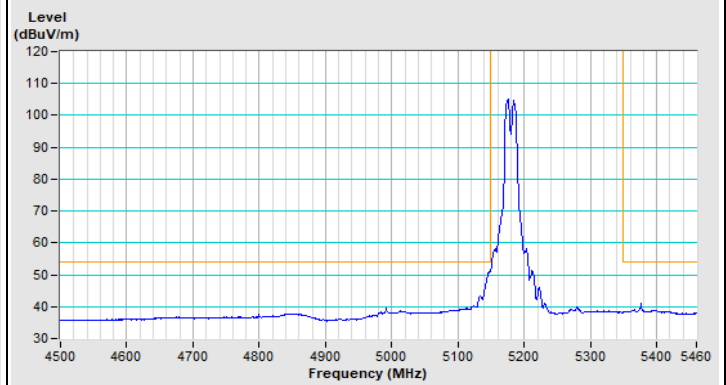
Horizontal (Peak)



Horizontal (Average)

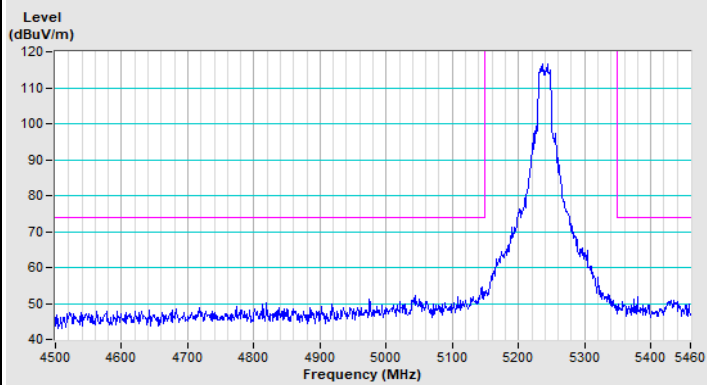


Vertical (Peak)

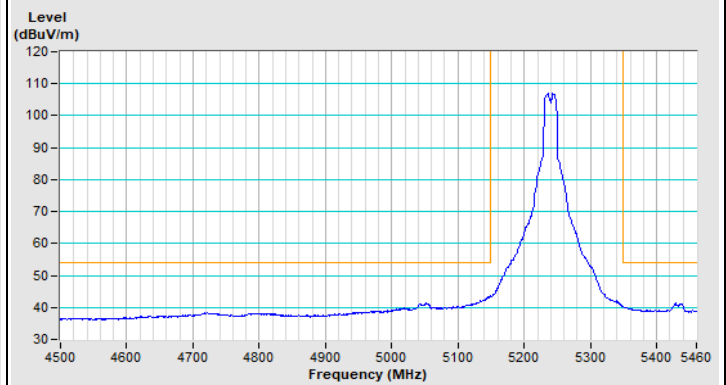


Vertical (Average)

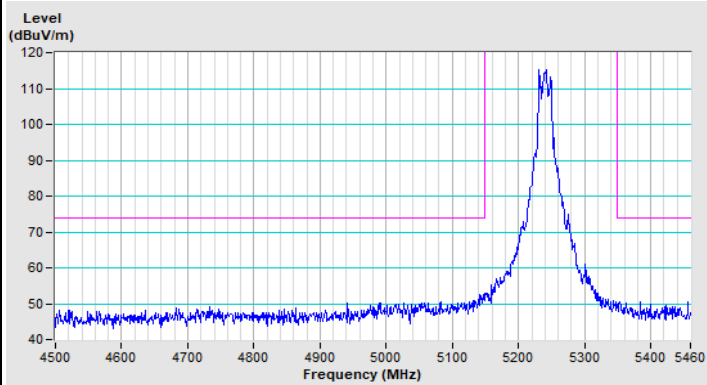
802.11ax (HE20) Channel 48



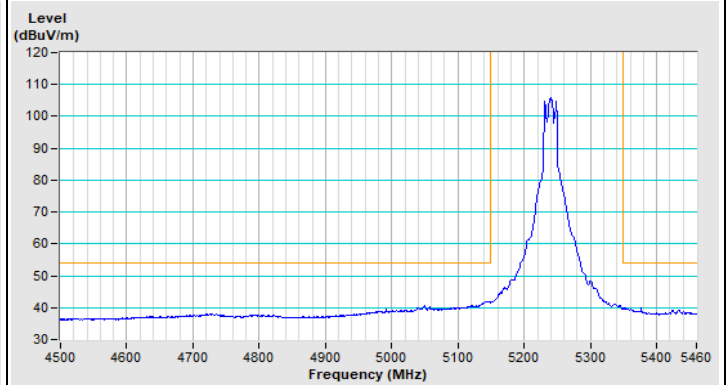
Horizontal (Peak)



Horizontal (Average)

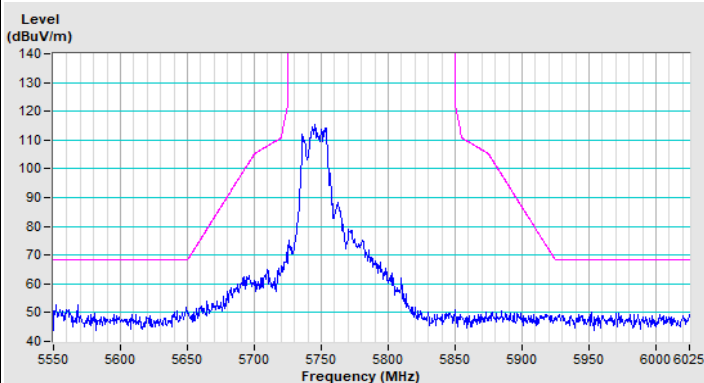
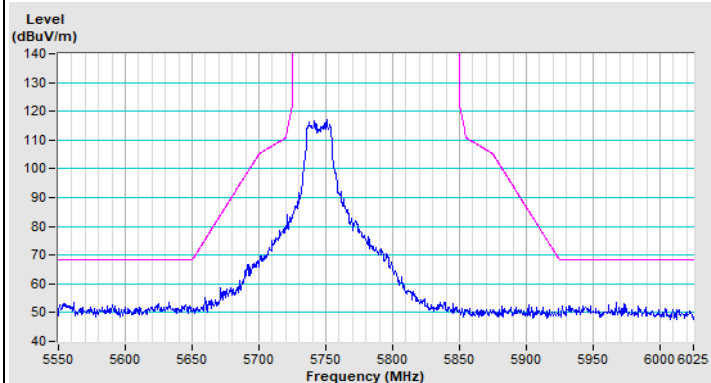


Vertical (Peak)

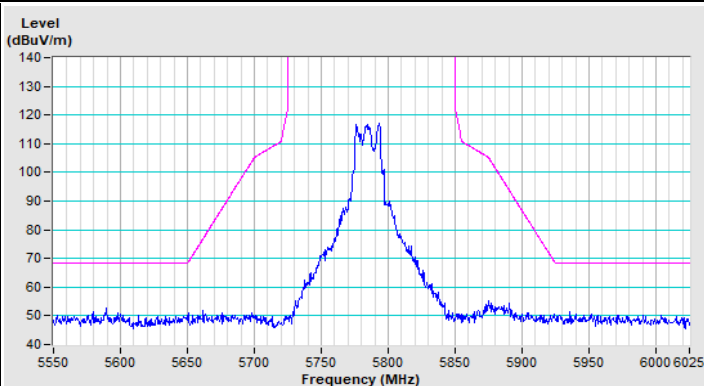
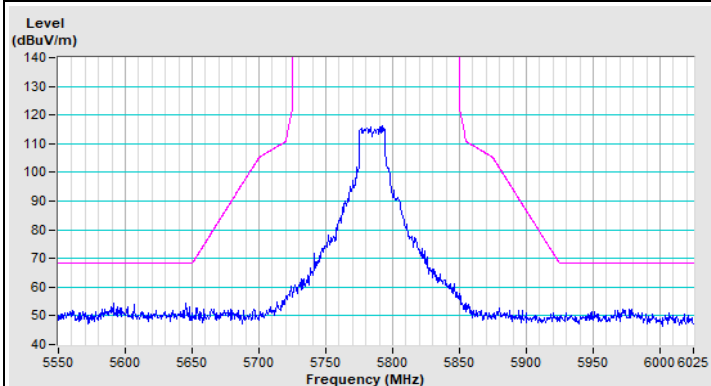


Vertical (Average)

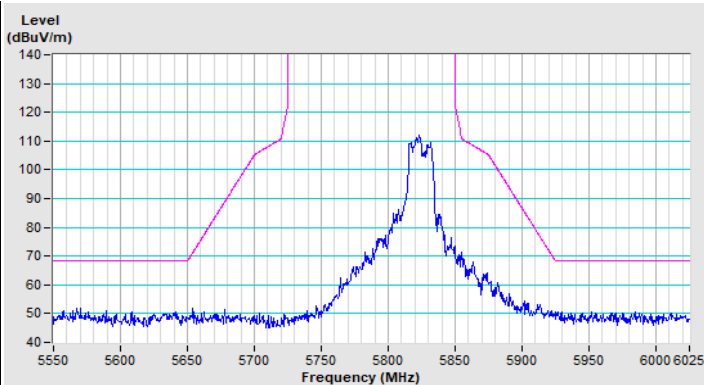
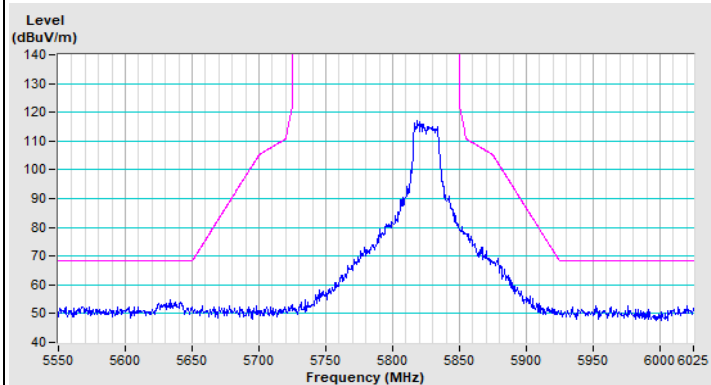
802.11ax (HE20) Channel 149



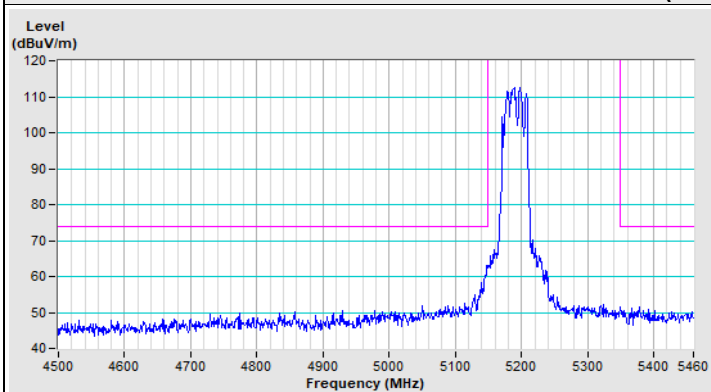
802.11ax (HE20) Channel 157



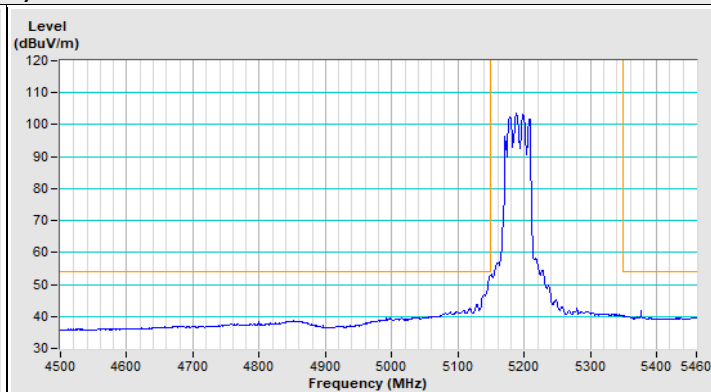
802.11ax (HE20) Channel 165



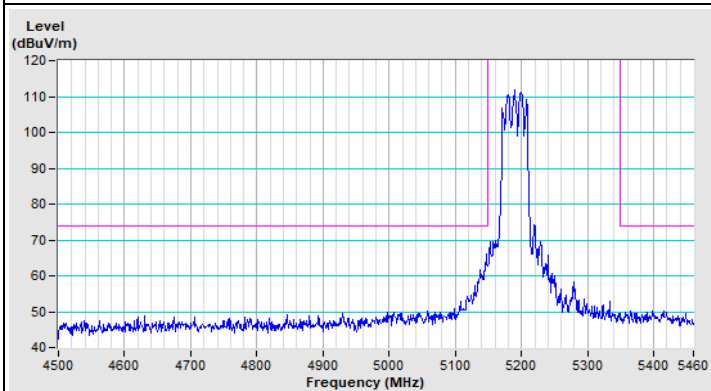
802.11ax (HE40) Channel 38



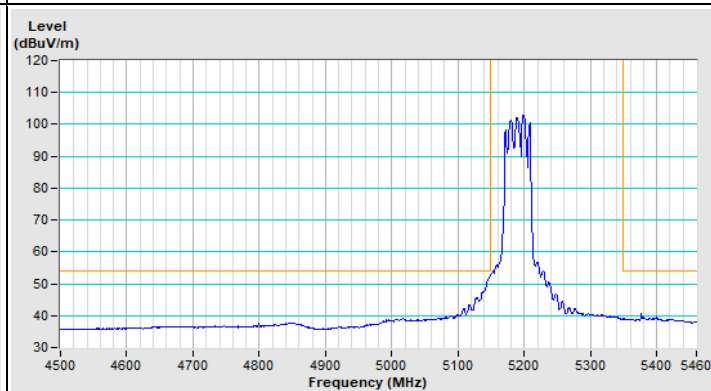
Horizontal (Peak)



Horizontal (Average)

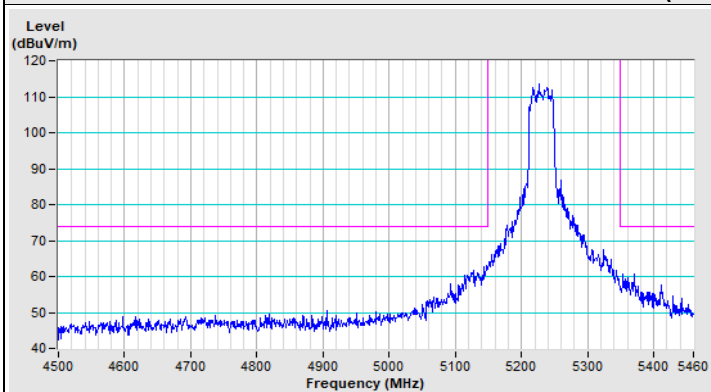


Vertical (Peak)

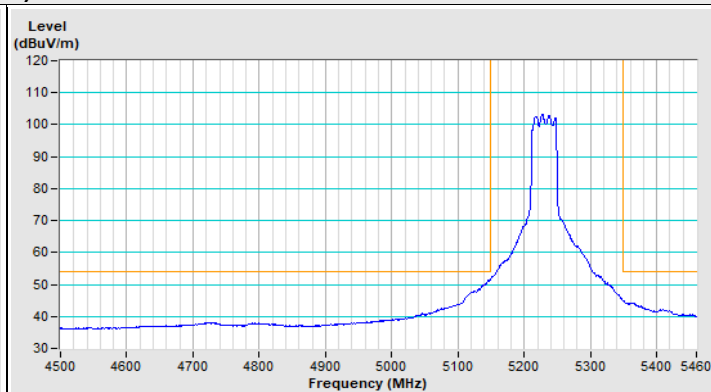


Vertical (Average)

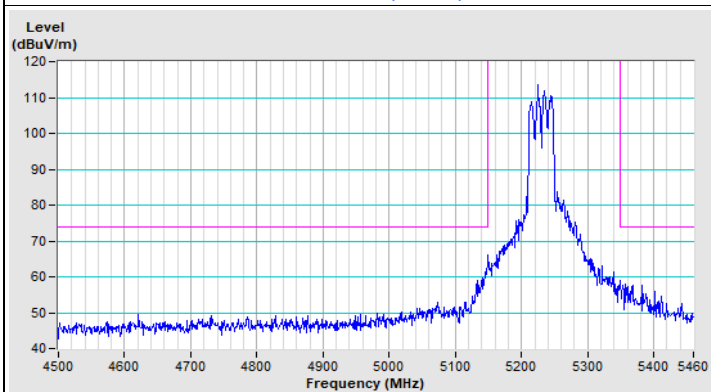
802.11ax (HE40) Channel 46



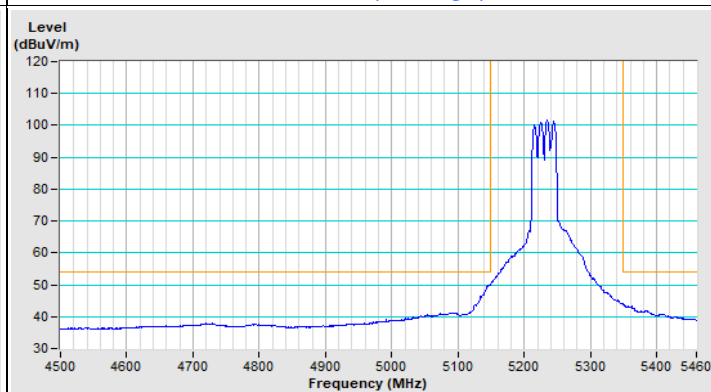
Horizontal (Peak)



Horizontal (Average)

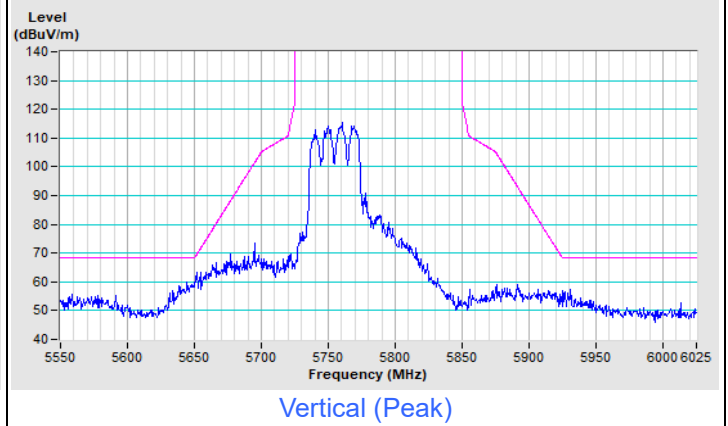
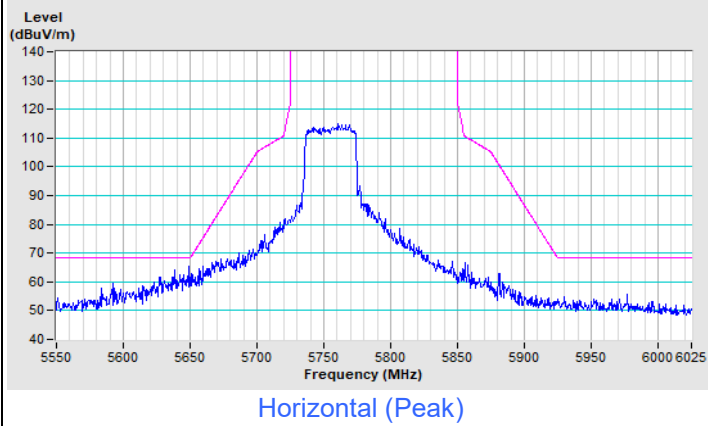


Vertical (Peak)

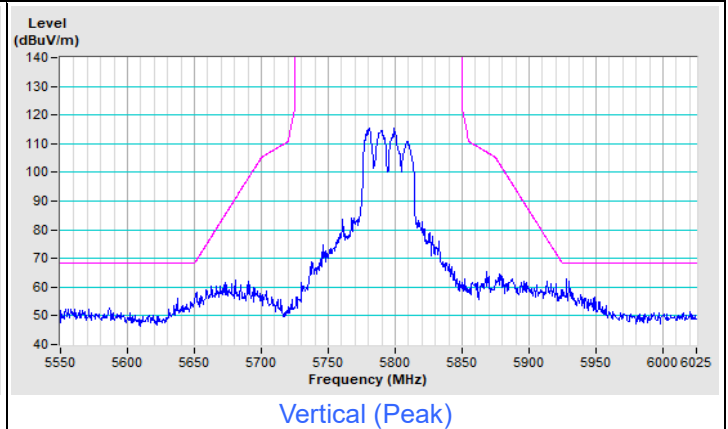
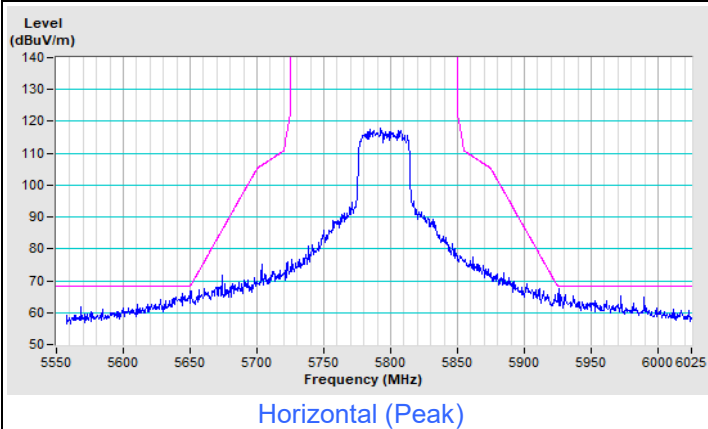


Vertical (Average)

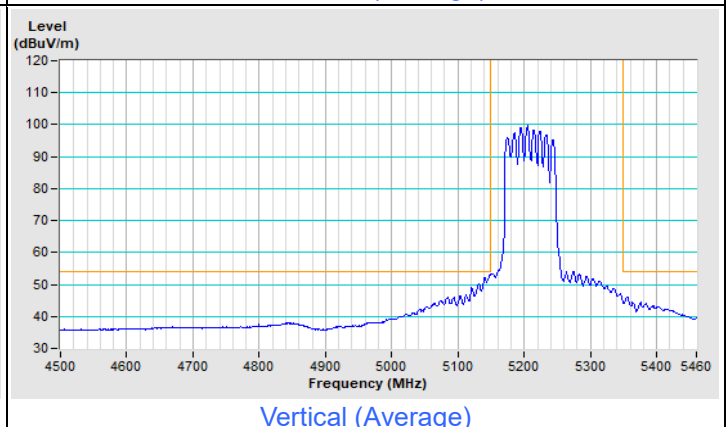
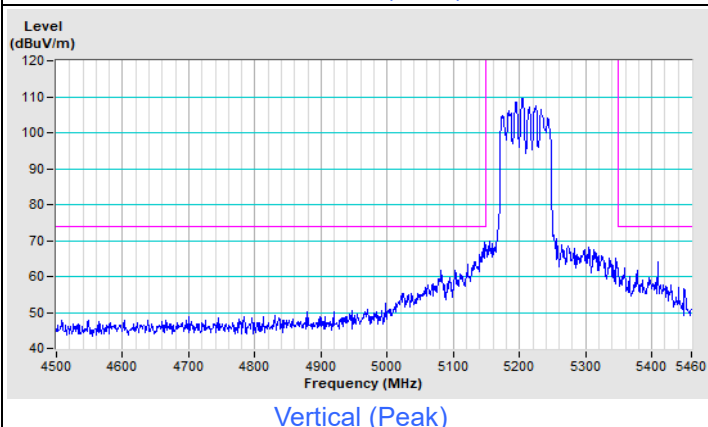
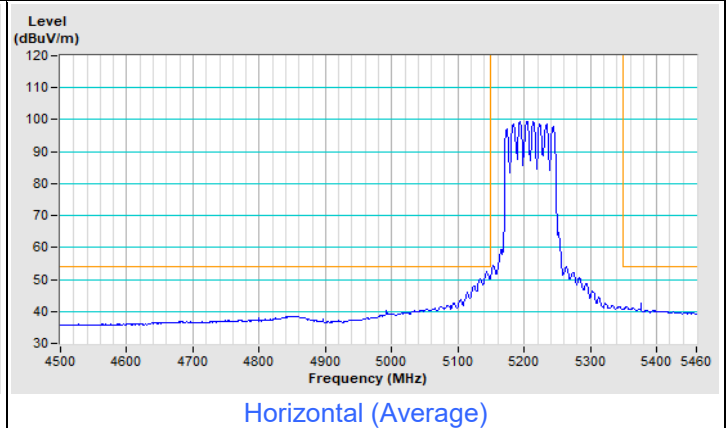
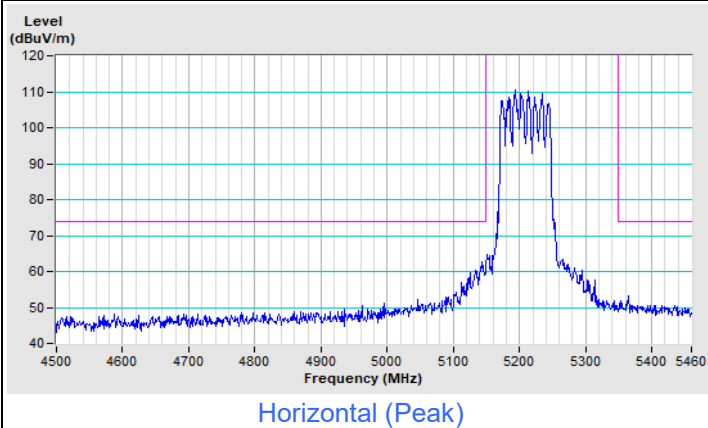
802.11ax (HE40) Channel 151



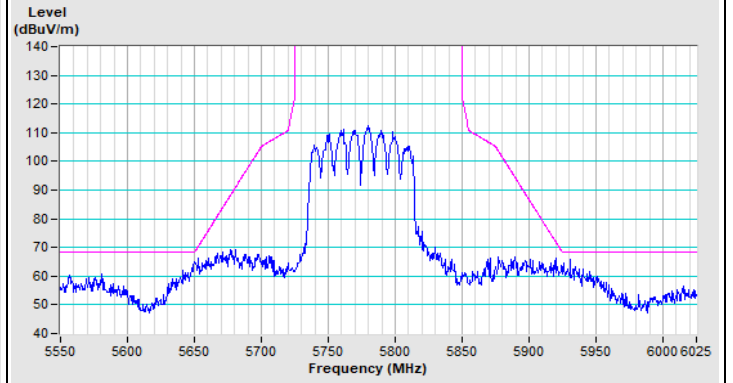
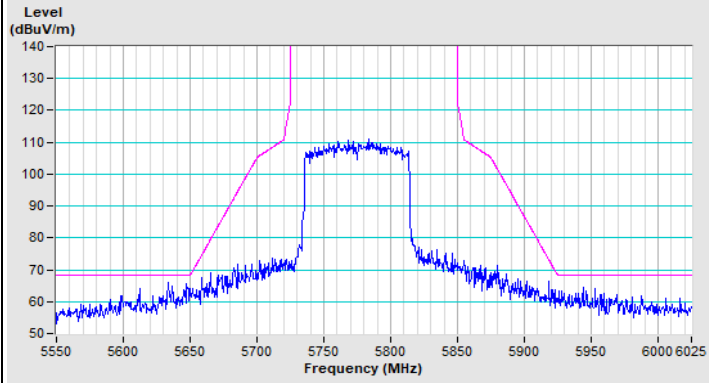
802.11ax (HE40) Channel 159



802.11ax (HE80) Channel 42



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.

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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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