

TEST REPORT

CERTIFICATE OF CONFORMITY

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

Report No.: RFBBQZ-WTW-P22060724-1

FCC ID: PY322100561

Product: AX1600 WiFi Router

Brand: NETGEAR

Model No.: RAX5

Received Date: 2022/7/7

Test Date: 2022/7/22 ~ 2022/9/28

Issued Date: 2022/10/06

Applicant and Manufacturer: NETGEAR, INC

Address: 350 East Plumeria Drive San Jose, CA 95134

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

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

Test Location: No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kewi Shan Dist., Taoyuan City 33383, Taiwan

FCC Registration / 788550 / TW0003

Designation Number:

Approved by: _____

Jeremy Lin

Jeremy Lin / Project Engineer

, Date: _____

2022/10/06

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Prepared by : Polly Chien / Specialist



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Release Control Record

Issue No.	Description	Date Issued
RFBBQZ-WTW-P22060724-1	Original release.	2022/10/06

1 Certificate

Product: AX1600 WiFi Router

Brand: NETGEAR

Test Model: RAX5

Sample Status: Engineering sample

Applicant and Manufacturer: NETGEAR, INC.

Test Date: 2022/7/22 ~ 2022/9/28

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

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

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

2 Summary of Test Results

47 CFR FCC Part 15, Subpart E (Section 15.407)			
Clause	Test Item	Result	Remark
15.407(a)(1/2/3)	RF Output Power	Pass	Meet the requirement of limit.
15.407(a)(1/2/3)	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 -8.59 dB at 0.44529 MHz
15.407(b)(9)	Unwanted Emissions below 1 GHz	Pass	Minimum passing margin is -5.5 dB at 59.10 MHz
15.407(b)(1/2/3/4(i)/10)	Unwanted Emissions above 1 GHz	Pass	Minimum passing margin is -0.1 dB at 10400.00 MHz, 5148.30 MHz, 5149.30 MHz
15.203	Antenna Requirement	Pass	Antenna connector is IPEX 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:

Measurement	Specification	Expanded Uncertainty (k=2) (±)
AC Power Conducted Emissions	9 kHz ~ 30 MHz	2.79 dB
Unwanted Emissions below 1 GHz	9 kHz ~ 30 MHz	3.59 dB
	30 MHz ~ 1 GHz	3.64 dB
Unwanted Emissions above 1 GHz	1 GHz ~ 18 GHz	2.29 dB
	18 GHz ~ 40 GHz	2.29 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	AX1600 WiFi Router
Brand	NETGEAR
Test Model	RAX5
Status of EUT	Engineering sample
Power Supply Rating	12 Vdc (adapter)
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: 54/48/36/24/18/12/9/6 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	5180 ~ 5240 MHz: 802.11a, 802.11n (HT20), 802.11ac (VHT20), 802.11ax (HE20): 4 802.11n (HT40), 802.11ac (VHT40), 802.11ax (HE40): 2 802.11ac (VHT80), 802.11ax (HE80): 1 5745 ~ 5825 MHz: 802.11a, 802.11n (HT20), 802.11ac (VHT20), 802.11ax (HE20): 5 802.11n (HT40), 802.11ac (VHT40), 802.11ax (HE40): 2 802.11ac (VHT80), 802.11ax (HE80): 1
Output Power	CDD Mode: 5.18 GHz ~ 5.24 GHz : 370.046 mW (25.68 dBm) 5.745 GHz ~ 5.825 GHz : 436.207 mW (26.40 dBm) Beamforming Mode: 5.18 GHz ~ 5.24 GHz : 345.835 mW (25.39 dBm) 5.745 GHz ~ 5.825 GHz : 436.207 mW (26.40 dBm)
EUT Category	Indoor Access Point

Note:

1. The EUT uses following accessories.

AC Adapter 1			
Brand	Model	Part Number	Specification
Honor	ADS-18FQ-12 12018EPCU-L, ADS-18FQ-12 12018EPC-L	332-11523-02	AC Input: 100-120V, ~60Hz Max, 0.7A DC Output: 12Vdc, 1.5A DC Output Cable: 1.8M / 0core
AC Adapter 2			
Brand	Model	Part Number	Specification
Channel Well Technology Co., Ltd.	2AAJ018F 1	332-11572-01	AC Input: 100-120V ~50/60Hz, 0.6A DC Output: 12Vdc, 1.5A, 18.0W DC Output Cable: 1.8M / 0core
RJ-45			
Specification			
Signal Line : 1.95M			

2. The EUT supports Full RU only.

3. There are WLAN (2.4 GHz), WLAN (5 GHz) and WLAN (5.9 GHz) technology used for the EUT.

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

3.2 Antenna Description of EUT

1. The antenna information is listed as below.

ANT. No.	Type	Connector	Frequency Range	Ant 0 (dBi)	Ant 1 (dBi)	Directional Gain (dBi)
2.4	PIFA	IPEX	2400~2483.5MHz	1.44	1.47	4.47
5G	PIFA	IPEX	5150~5250MHz	1.84	1.57	4.72
			5725~5850MHz	2.61	2.60	5.62
5.9G	PIFA	IPEX	5850~5895MHz	2.53	2.60	5.58

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

2. The EUT incorporates a MIMO function:

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

Note:

1. All of modulation mode support beamforming function except 802.11a modulation mode.
2. The EUT support Beamforming and CDD mode, therefore both mode were investigated and the worst case scenario was identified. The worst case data were presented in test report.
3. The modulation and bandwidth are similar for 802.11n mode for 20 MHz / 40 MHz, 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) and 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) and 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	5210MHz

FOR 5745 ~ 5825 MHz:

5 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20) and 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) and 802.11ax (HE40):

Channel	Frequency	Channel	Frequency
151	5755 MHz	159	5795 MHz

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

Channel	Frequency
155	5775 MHz

3.4 Test Mode Applicability and Tested Channel Detail

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

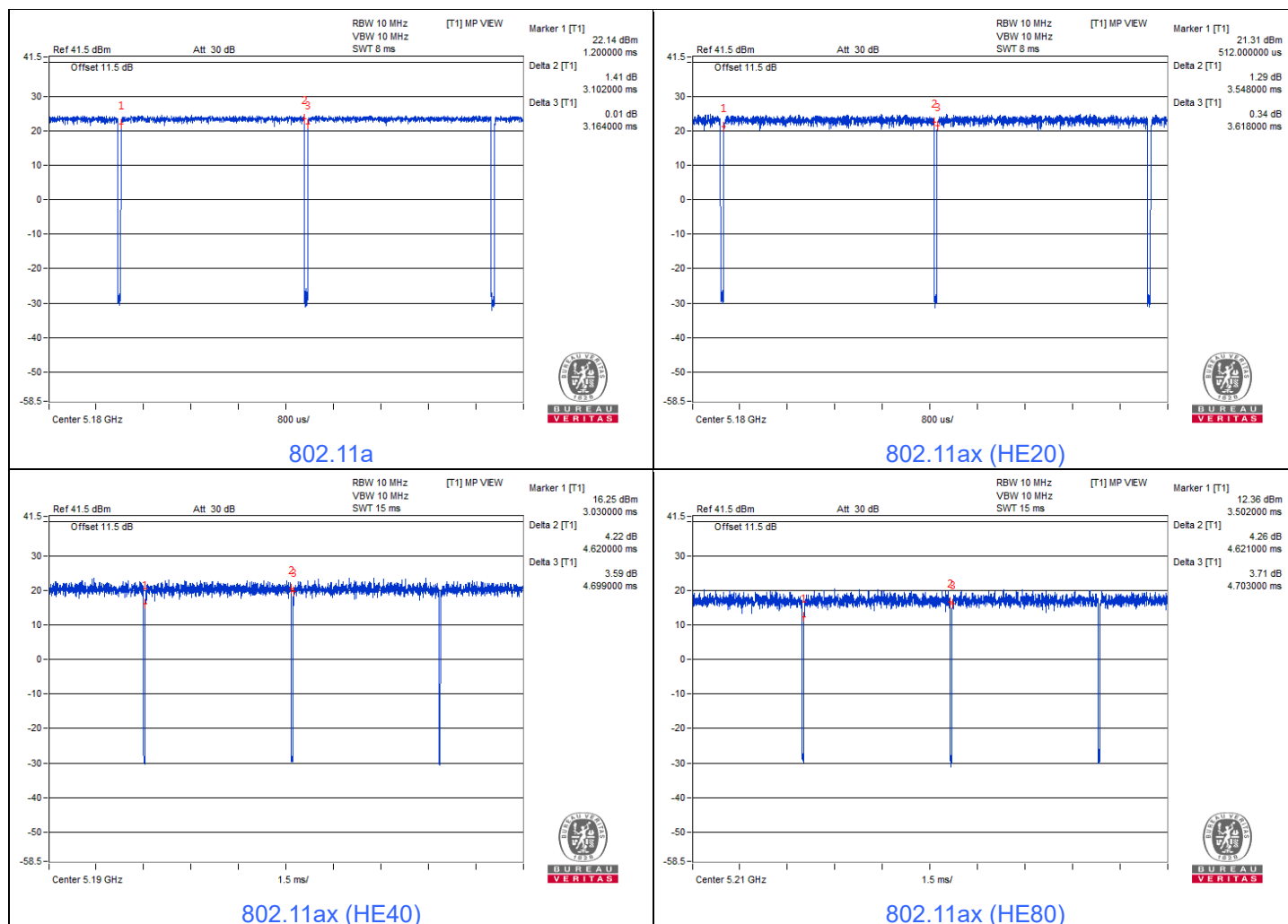
Test Item	EUT Configure Mode	Mode	Signal Mode	Tested Channel	Modulation	Data Rate Parameter
RF Output Power	A	802.11a	CDD	36, 40, 48, 149, 157, 165	BPSK	6Mb/s
		802.11ax (HE20)	CDD & Beamforming	36, 40, 48, 149, 157, 165	BPSK	MCS0
		802.11ax (HE40)	CDD & Beamforming	38, 46, 151, 159	BPSK	MCS0
		802.11ax (HE80)	CDD & Beamforming	42, 155	BPSK	MCS0
6 dB Bandwidth	A	802.11a	CDD	149, 157, 165	BPSK	6Mb/s
		802.11ax (HE20)	CDD	149, 157, 165	BPSK	MCS0
		802.11ax (HE40)	CDD	151, 159	BPSK	MCS0
		802.11ax (HE80)	CDD	155	BPSK	MCS0
Occupied Bandwidth/ Power Spectral Density	A	802.11a	CDD	36, 40, 48, 149, 157, 165	BPSK	6Mb/s
		802.11ax (HE20)	CDD	36, 40, 48, 149, 157, 165	BPSK	MCS0
		802.11ax (HE40)	CDD	38, 46, 151, 159	BPSK	MCS0
		802.11ax (HE80)	CDD	42, 155	BPSK	MCS0
Frequency Stability	A	802.11a	CDD	36	-	-
AC Power Conducted Emissions	A, B	802.11ax (HE20)	CDD	157	BPSK	MCS0
Unwanted Emissions below 1 GHz	A, B	802.11ax (HE20)	CDD	157	BPSK	MCS0
Unwanted Emissions above 1 GHz	A	802.11a	CDD	36, 40, 48, 149, 157, 165	BPSK	6Mb/s
		802.11ax (HE20)	CDD	36, 40, 48, 149, 157, 165	BPSK	MCS0
		802.11ax (HE40)	CDD	38, 46, 54, 151, 159	BPSK	MCS0
		802.11ax (HE80)	CDD	42, 155	BPSK	MCS0
EUT Configure Mode:	A	Powered by adapter 1				
	B	Powered by adapter 2				

Note: The EUT is designed to be positioned on the z-plane only.

3.5 Duty Cycle of Test Signal

Duty cycle of test signal is $\geq 98\%$, duty factor is not required.
Duty cycle of test signal is $< 98\%$, duty factor shall be considered.

802.11a: Duty cycle = $3.102 \text{ ms} / 3.164 \text{ ms} \times 100\% = 98.0\%$
802.11ax (HE20): Duty cycle = $3.548 \text{ ms} / 3.618 \text{ ms} \times 100\% = 98.1\%$
802.11ax (HE40): Duty cycle = $4.62 \text{ ms} / 4.699 \text{ ms} \times 100\% = 98.3\%$
802.11ax (HE80): Duty cycle = $4.621 \text{ ms} / 4.703 \text{ ms} \times 100\% = 98.3\%$

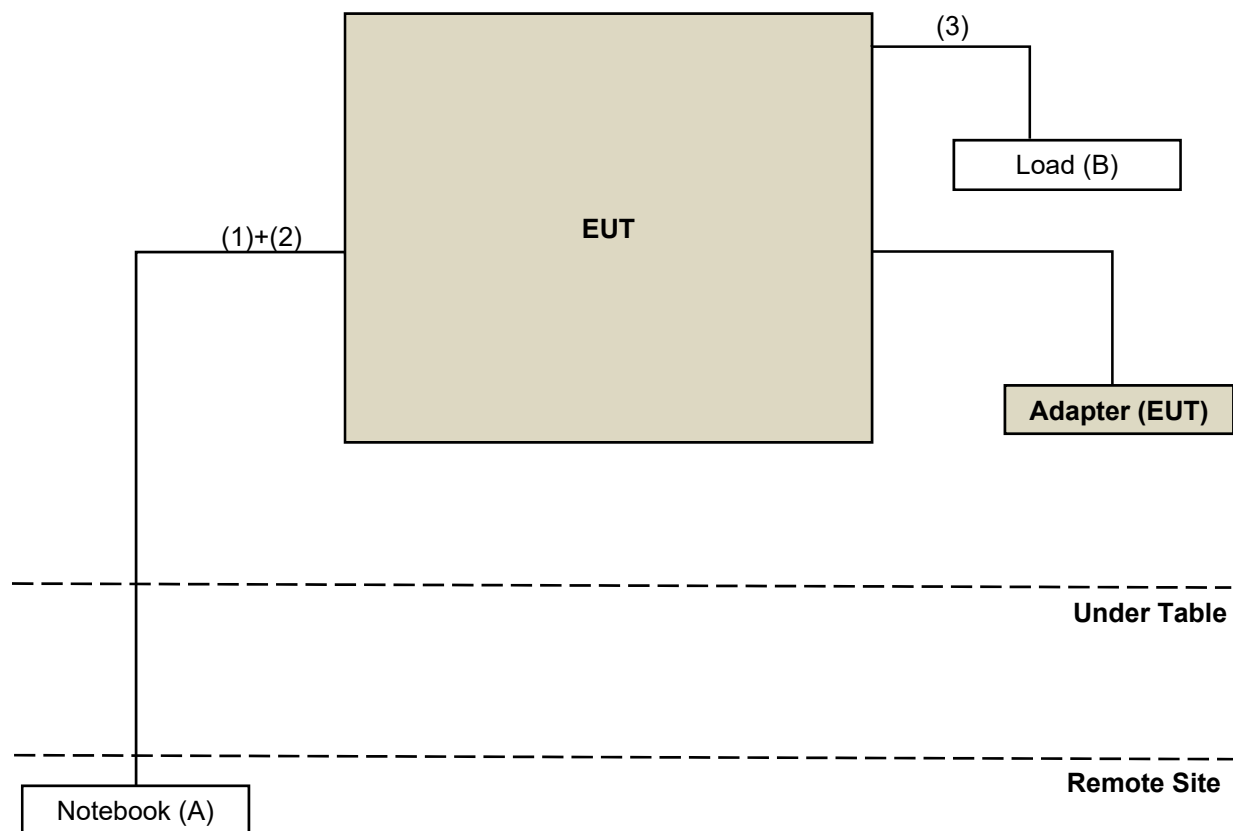


3.6 Test Program Used and Operation Descriptions

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

3.7 Connection Diagram of EUT and Peripheral Devices

Test Mode A, B



3.8 Configuration of Peripheral Devices and Cable Connections

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A	Notebook	DELL	E5430	2RL3YW1	N/A	Provided by Lab
B	Load	N/A	N/A	N/A	N/A	Provided by Lab

ID	Cable Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1	RJ-45 Cable	1	10	N/A	0	Provided by Lab
2	RJ-45 Cable	1	1.95	N/A	0	Accessory of EUT
3	RJ-45 Cable	4	1.5	N/A	0	Provided by Lab

4 Test Instruments

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

4.1 RF Output Power

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Peak Power Analyzer KEYSIGHT	8990B	MY51000485	2022/1/18	2023/1/17
Power sensor Keysight	U2021XA	MY55380009	2022/3/23	2023/3/22
Wideband Power Sensor(N1923A) KEYSIGHT	N1923A	MY58020002	2022/1/17	2023/1/16

Notes:

1. The test was performed in Oven room.
2. Tested Date: 2022/9/28

4.2 Power Spectral Density

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Software BV	ADT_RF Test Software V6.6.5.4	N/A	N/A	N/A
Spectrum Analyzer R&S	FSV40	100979	2022/3/25	2023/3/24

Notes:

1. The test was performed in Oven room.
2. Tested Date: 2022/9/28

4.3 6 dB Bandwidth

Refer to section 4.2 to get information of the instruments.

4.4 Occupied Bandwidth

Refer to section 4.2 to get information of the instruments.

4.5 Frequency Stability

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
AC Power Source ExTech	CFW-105	E000603	N/A	N/A
Digital Multimeter Fluke	87-III	70360742	2022/6/23	2023/6/22
Software BV	ADT_RF Test Software V6.6.5.4	N/A	N/A	N/A
Spectrum Analyzer R&S	FSV40	100979	2022/3/25	2023/3/24
Temperature & Humidity Chamber TERCHY	HRM-120RF	931022	2022/1/3	2023/1/2

Notes:

1. The test was performed in Oven room.
2. Tested Date: 2022/9/28

4.6 AC Power Conducted Emissions

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
DC-LISN SCHWARZBECK MESS- ELETRONIK	NNBM 8126G	8126G-069	2021/11/10	2022/11/9
LISN R&S	ESH3-Z5	100220	2021/11/25	2022/11/24
LISN ROHDE & SCHWARZ	ENV216	101826	2022/3/14	2023/3/13
RF Coaxial Cable WOKEN	5D-FB	Cable-cond1-01	2022/1/15	2023/1/14
Software BVADT	BVADT_Conf_ V7.3.7.4	N/A	N/A	N/A
Test Receiver Rohde&Schwarz	ESCI	100613	2021/12/3	2022/12/2
V-LISN Schwarzbeck	NNBL 8226-2	8226-142	2022/8/31	2023/8/30

Notes:

1. The test was performed in HY - Conduction 1.
2. Tested Date: 2022/9/7 ~ 2022/9/27

4.7 Unwanted Emissions below 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Antenna Tower inn-co GmbH	MA 4000	010303	N/A	N/A
Bi_Log Antenna Schwarzbeck	VULB9168	9168-155	2021/11/1	2022/10/31
Loop Antenna TESEQ	HLA 6121	45745	2022/7/27	2023/7/26
Pre_Amplifier Agilent	8447D	2944A10631	2022/5/14	2023/5/13
RF Coaxial Cable EMCI	5D-NM-BM	140903+140902	2022/1/15	2023/1/14
	EMC102-KM-KM-600	150928	2022/7/9	2023/7/8
	EMC102-KM-KM-3000	150929	2022/7/9	2023/7/8
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	N/A	N/A	N/A
Spectrum Analyzer R&S	FSW43	101582	2022/4/13	2023/4/12
Test Receiver R&S	ESCI	100424	2021/12/30	2022/12/29
Turn Table BV ADT	TT100	TT93021705	N/A	N/A
Turn Table Controller BV ADT	SC100	SC93021705	N/A	N/A

Notes:

1. The test was performed in HY - 966 chamber 3.
2. Tested Date: 2022/9/27

4.8 Unwanted Emissions above 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Antenna Tower inn-co GmbH	MA 4000	010303	N/A	N/A
Boresight antenna tower fixture BV	BAF-02	5	N/A	N/A
Horn Antenna Schwarzbeck	BBHA 9170	BBHA9170241	2021/10/26	2022/10/25
Pre-Amplifier EMCI	EMC 184045	980116	2021/10/5	2022/10/4
Pre_Amplifier KEYSIGHT	83017A	MY53270295	2022/5/14	2023/5/13
RF cable HUBER+SUHNER	Sucoflex 104	MY 13380+295012/04	2022/5/14	2023/5/13
RF Coaxial Cable HUBER+SUHNER	SUCOFLEX 104	Cable-CH4-03(250724)	2022/5/14	2023/5/13
		CABLE-CH9-(250795/4)	2022/1/15	2023/1/14
RF Coaxial Cable HUBER+SUHNER&EMCI	SUCOFLEX 104& EMC104-SM-SM8000	CABLE-CH9-02 (248780+171006)	2022/1/15	2023/1/14
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	N/A	N/A	N/A
Spectrum Analyzer R&S	FSW43	101582	2022/4/13	2023/4/12
Test Receiver R&S	ESCI	100424	2021/12/30	2022/12/29
Turn Table BV ADT	TT100	TT93021705	N/A	N/A
Turn Table Controller BV ADT	SC100	SC93021705	N/A	N/A

Notes:

1. The test was performed in HY - 966 chamber 3.
2. Tested Date: 2022/7/22 ~ 2022/9/6

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	250 mW (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)
Frequency Band	Applicable To	EIRP Limit	Equivalent Field Strength at 3 m
5150~5250 MHz	15.407(b)(1)	PK: -27 (dBm/MHz)	PK: 68.2 (dBμV/m)
5250~5350 MHz	15.407(b)(2)		
5470~5725 MHz	15.407(b)(3)		
5725~5850 MHz	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. ^{*3} below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above.		^{*2} below the band edge increasing linearly to 10 dBm/MHz at 25 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.	

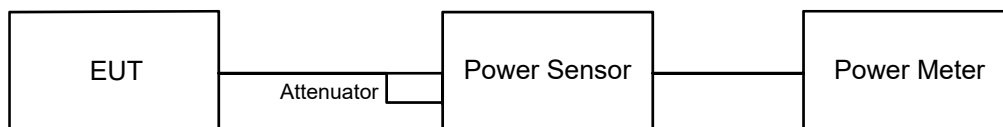
Note: The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength:

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

6 Test Arrangements

6.1 RF Output Power

6.1.1 Test Setup

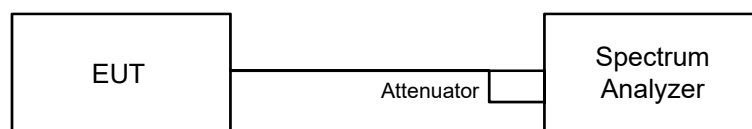


6.1.2 Test Procedure

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

6.2 Power Spectral Density

6.2.1 Test Setup



6.2.2 Test Procedure

For specified measurement bandwidth 1 MHz:

Method SA-1

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

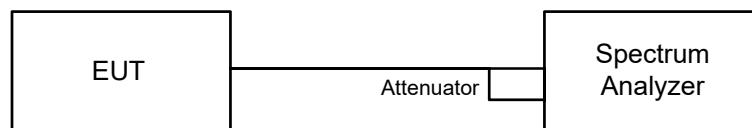
For specified measurement bandwidth 500 kHz:

Method SA-1

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

6.3 6 dB Bandwidth

6.3.1 Test Setup

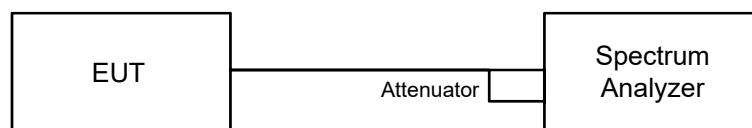


6.3.2 Test Procedure

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

6.4 Occupied Bandwidth

6.4.1 Test Setup

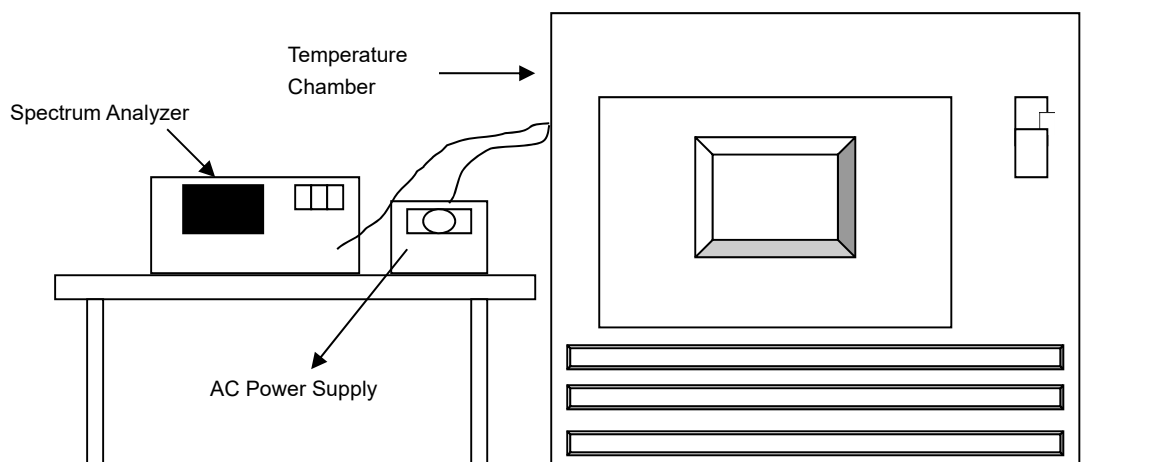


6.4.2 Test Procedure

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

6.5 Frequency Stability

6.5.1 Test Setup

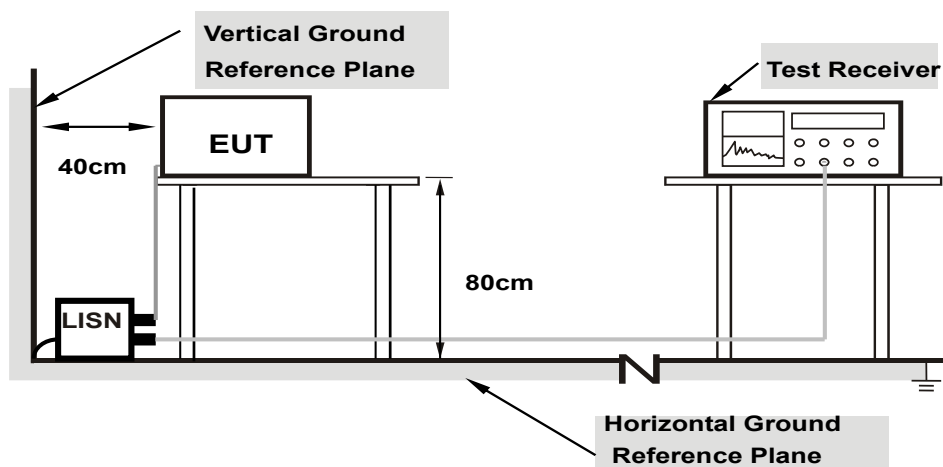


6.5.2 Test Procedure

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

6.6 AC Power Conducted Emissions

6.6.1 Test Setup



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

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

6.6.2 Test Procedure

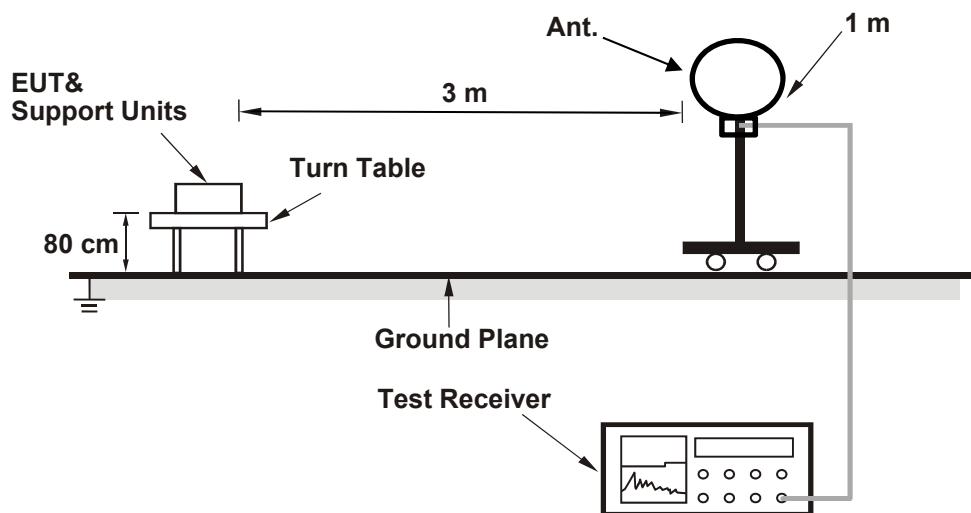
- The EUT was placed on a 0.8 meter to the top of table and placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The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

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

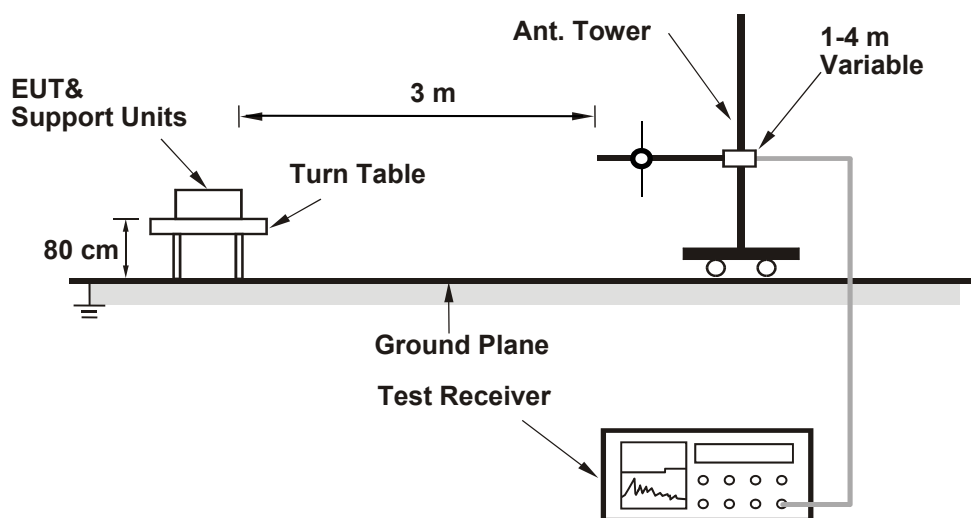
6.7 Unwanted Emissions below 1 GHz

6.7.1 Test Setup

For Radiated emission below 30 MHz



For Radiated emission above 30 MHz



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

6.7.2 Test Procedure

For Radiated emission below 30 MHz

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

Notes:

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

For Radiated emission above 30 MHz

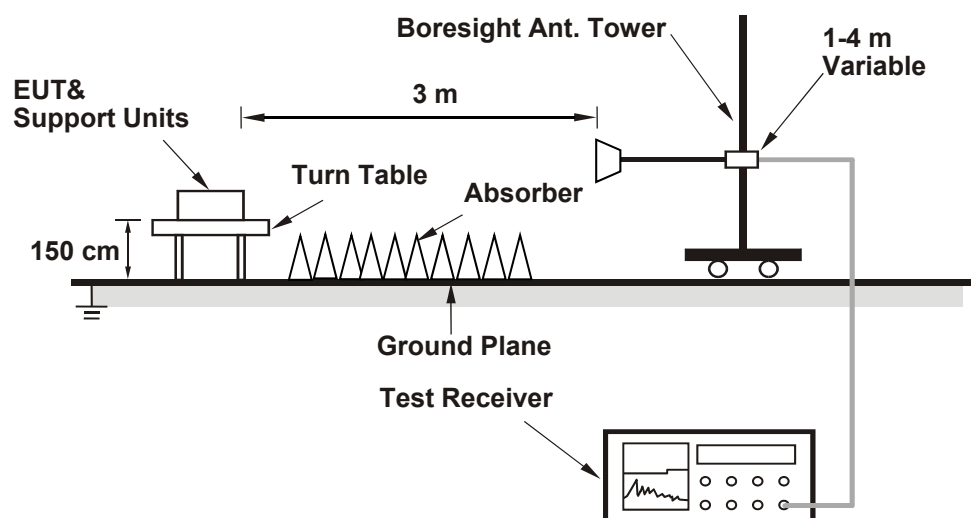
- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the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

Notes:

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

6.8 Unwanted Emissions above 1 GHz

6.8.1 Test Setup



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

6.8.2 Test Procedure

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

Notes:

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

7 Test Results of Test Item

7.1 RF Output Power

Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 60% RH	Tested By:	Wayne Lin
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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	20.93	21.69	271.450	24.34	30	Pass
40	5200	22.44	22.72	362.456	25.59	30	Pass
48	5240	22.53	22.81	370.046	25.68	30	Pass
149	5745	22.81	23.27	403.310	26.06	30	Pass
157	5785	23.38	23.10	421.945	26.25	30	Pass
165	5825	22.93	23.39	414.609	26.18	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-1, the maximum gain is 1.84 dBi < 6 dBi, so the output power limit shall not be reduced.
3. For U-NII-3, the maximum gain is 2.61 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	20.63	21.48	256.216	24.09	30	Pass
40	5200	21.81	22.77	340.939	25.33	30	Pass
48	5240	21.76	22.65	334.046	25.24	30	Pass
149	5745	23.07	23.58	430.802	26.34	30	Pass
157	5785	23.14	23.62	436.207	26.40	30	Pass
165	5825	22.87	23.33	408.920	26.12	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-1, the maximum gain is 1.84 dBi < 6 dBi, so the output power limit shall not be reduced.
3. For U-NII-3, the maximum gain is 2.61 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	18.61	19.78	167.671	22.24	30	Pass
46	5230	22.10	22.64	345.835	25.39	30	Pass
151	5755	23.18	23.33	423.248	26.27	30	Pass
159	5795	22.75	22.61	370.754	25.69	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-1, the maximum gain is 1.84 dBi < 6 dBi, so the output power limit shall not be reduced.
3. For U-NII-3, the maximum gain is 2.61 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	17.73	18.92	137.276	21.38	30	Pass
155	5775	21.44	21.51	280.895	24.49	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-1, the maximum gain is 1.84 dBi < 6 dBi, so the output power limit shall not be reduced.
3. For U-NII-3, the maximum gain is 2.61 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	20.63	21.48	256.216	24.09	30	Pass
40	5200	21.81	22.77	340.939	25.33	30	Pass
48	5240	21.76	22.65	334.046	25.24	30	Pass
149	5745	23.07	23.58	430.802	26.34	30	Pass
157	5785	23.14	23.62	436.207	26.40	30	Pass
165	5825	22.87	23.33	408.920	26.12	30	Pass

Notes:

1. Directional gain = $10 \log[(10^{\text{Chain0/20}} + 10^{\text{Chain1/20}})^2 / 2]$
2. For U-NII-1, the directional gain is 4.72 dBi < 6 dBi, so the output power limit shall not be reduced.
3. For U-NII-3, the directional gain is 5.62 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	18.61	19.78	167.671	22.24	30	Pass
46	5230	22.10	22.64	345.835	25.39	30	Pass
151	5755	23.18	23.33	423.248	26.27	30	Pass
159	5795	22.75	22.61	370.754	25.69	30	Pass

Notes:

1. Directional gain = $10 \log[(10^{\text{Chain0/20}} + 10^{\text{Chain1/20}})^2 / 2]$
2. For U-NII-1, the directional gain is 4.72 dBi < 6 dBi, so the output power limit shall not be reduced.
3. For U-NII-3, the directional gain is 5.62 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	17.73	18.92	137.276	21.38	30	Pass
155	5775	21.44	21.51	280.895	24.49	30	Pass

Notes:

1. Directional gain = $10 \log[(10^{\text{Chain0/20}} + 10^{\text{Chain1/20}})^2 / 2]$
2. For U-NII-1, the directional gain is 4.72 dBi < 6 dBi, so the output power limit shall not be reduced.
3. For U-NII-3, the directional gain is 5.62 dBi < 6 dBi, so the output power limit shall not be reduced.

7.2 Power Spectral Density

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

Chan.	Chan. Freq. (MHz)	PSD (dBm/MHz)		Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Test Result
		Chain 0	Chain 1			
36	5180	7.76	8.42	11.11	17.00	Pass
40	5200	9.19	9.43	12.32	17.00	Pass
48	5240	9.30	9.49	12.41	17.00	Pass

Notes:

1. Method E) 2) a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20})^2 / 2]$
3. For U-NII-1, the directional gain is 4.72 dBi < 6dBi, so the power density limit shall not be reduced.

802.11ax (HE20)

Chan.	Chan. Freq. (MHz)	PSD (dBm/MHz)		Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Test Result
		Chain 0	Chain 1			
36	5180	7.48	8.14	10.83	17.00	Pass
40	5200	8.44	9.51	12.02	17.00	Pass
48	5240	8.54	9.30	11.95	17.00	Pass

Notes:

1. Method E) 2) a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20})^2 / 2]$
3. For U-NII-1, the directional gain is 4.72 dBi < 6dBi, so the power density limit shall not be reduced.

802.11ax (HE40)

Chan.	Chan. Freq. (MHz)	PSD (dBm/MHz)		Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Test Result
		Chain 0	Chain 1			
38	5190	2.34	3.47	5.95	17.00	Pass
46	5230	5.83	6.32	9.09	17.00	Pass

Notes:

1. Method E) 2) a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20})^2 / 2]$
3. For U-NII-1, the directional gain is 4.72 dBi < 6dBi, so the power density limit shall not be reduced.

802.11ax (HE80)

Chan.	Chan. Freq. (MHz)	PSD (dBm/MHz)		Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Test Result
		Chain 0	Chain 1			
42	5210	-1.91	-0.78	1.70	17.00	Pass

Notes:

1. Method E) 2) a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20})^2 / 2]$
3. For U-NII-1, the directional gain is 4.72 dBi < 6dBi, so the power density limit shall not be reduced.

802.11a

Chan.	Chan. Freq. (MHz)	PSD (dBm/300kHz)		Total PSD (dBm/300kHz)	Total PSD (dBm/500kHz)	PSD Limit (dBm/500kHz)	Test Result
		Chain 0	Chain 1				
149	5745	3.12	3.57	6.36	8.58	30	Pass
157	5785	3.71	3.44	6.59	8.81	30	Pass
165	5825	3.25	3.77	6.53	8.75	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 5.62 dBi < 6 dBi, so the power density limit shall not be reduced.

802.11ax (HE20)

Chan.	Chan. Freq. (MHz)	PSD (dBm/300kHz)		Total PSD (dBm/300kHz)	Total PSD (dBm/500kHz)	PSD Limit (dBm/500kHz)	Test Result
		Chain 0	Chain 1				
149	5745	3.40	3.90	6.67	8.89	30	Pass
157	5785	3.53	3.98	6.77	8.99	30	Pass
165	5825	3.25	3.63	6.45	8.67	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 5.62 dBi < 6 dBi, so the power density limit shall not be reduced.

802.11ax (HE40)

Chan.	Chan. Freq. (MHz)	PSD (dBm/300kHz)		Total PSD (dBm/300kHz)	Total PSD (dBm/500kHz)	PSD Limit (dBm/500kHz)	Test Result
		Chain 0	Chain 1				
151	5755	-0.60	-0.48	2.47	4.69	30	Pass
159	5795	-1.03	-1.18	1.91	4.13	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 5.62 dBi < 6 dBi, so the power density limit shall not be reduced.

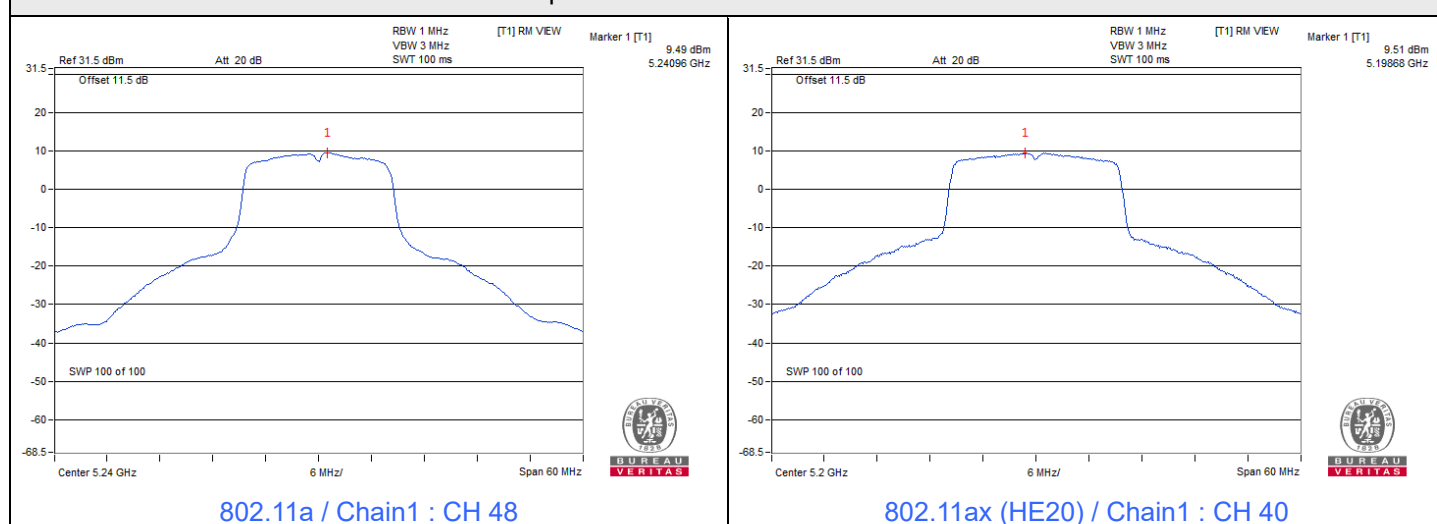
802.11ax (HE80)

Chan.	Chan. Freq. (MHz)	PSD (dBm/300kHz)		Total PSD (dBm/300kHz)	Total PSD (dBm/500kHz)	PSD Limit (dBm/500kHz)	Test Result
		Chain 0	Chain 1				
155	5775	-5.46	-5.36	-2.4	-0.18	30	Pass

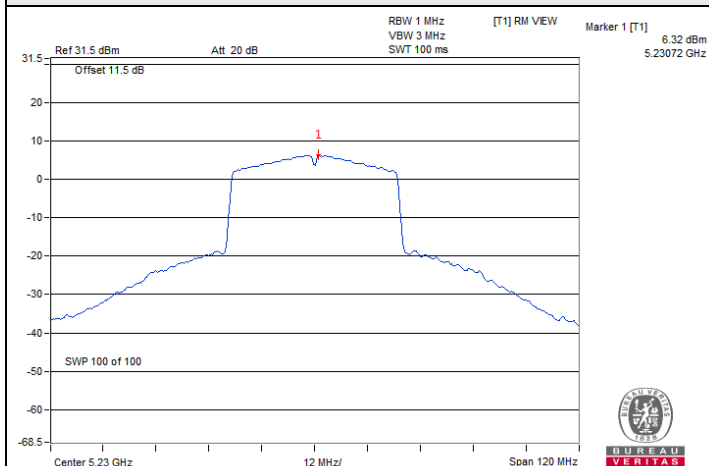
Notes:

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 5.62 dBi < 6 dBi, so the power density limit shall not be reduced.

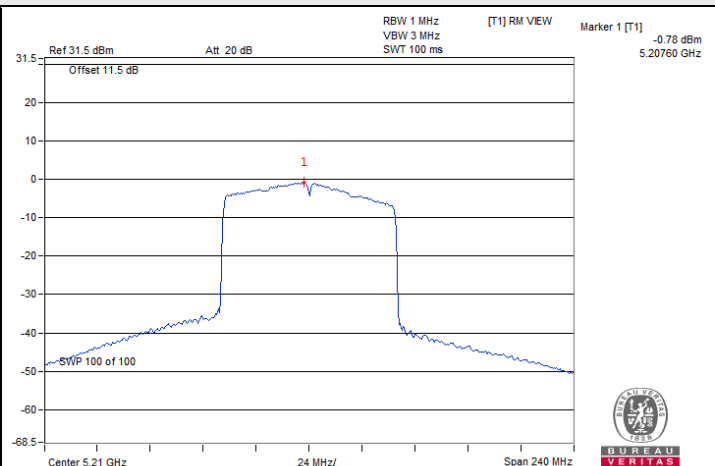
Spectrum Plot of Maximum Value



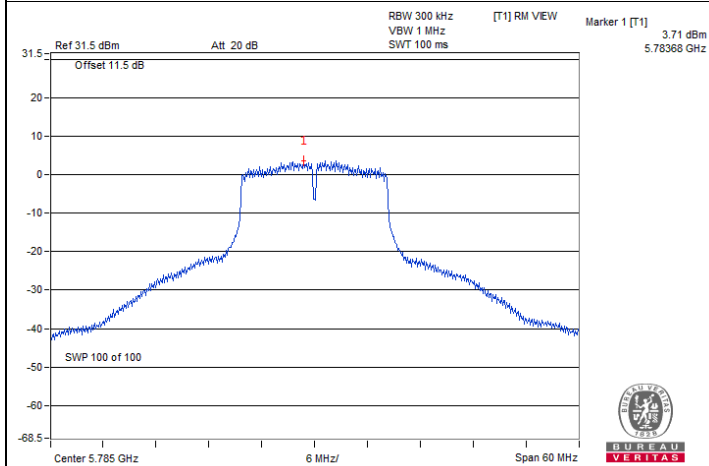
Spectrum Plot of Maximum Value



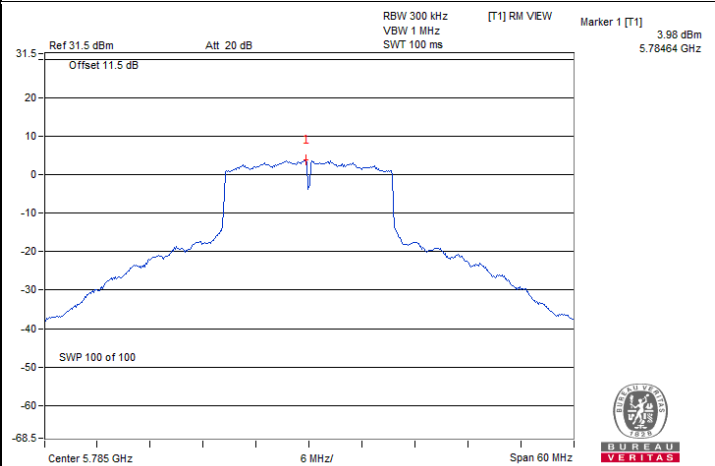
802.11ax (HE40) / Chain1 : CH 46



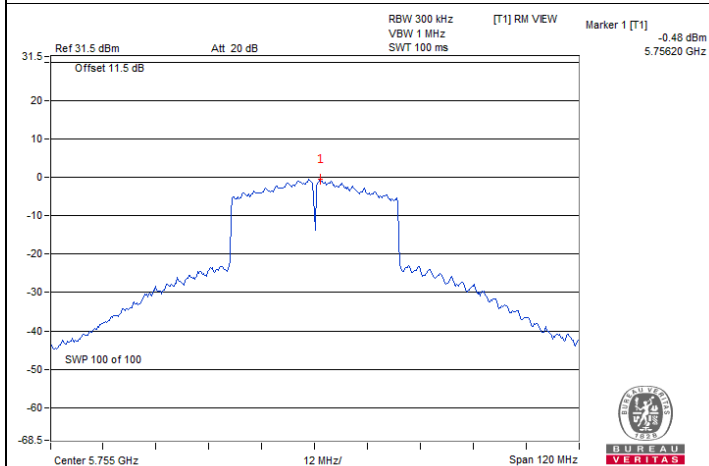
802.11ax (HE80) / Chain1 : CH 42



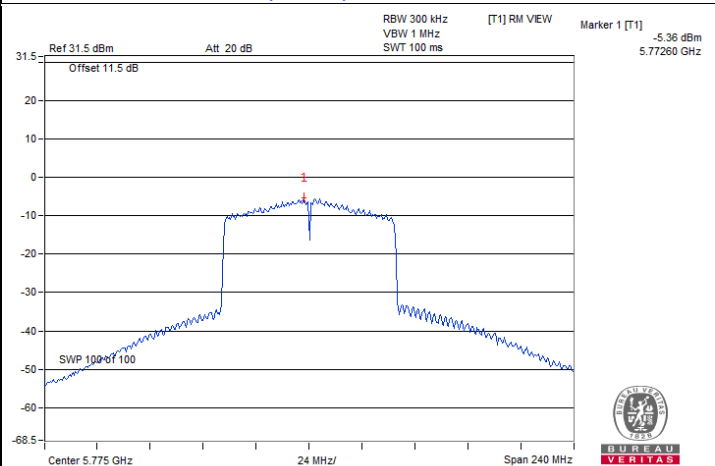
802.11a / Chain0 : CH 157



802.11ax (HE20) / Chain1 : CH 157



802.11ax (HE40) / Chain1 : CH 151



802.11ax (HE80) / Chain1 : CH 155

7.3 6 dB Bandwidth

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

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
149	5745	15.18	15.19	0.5	Pass
157	5785	15.19	15.95	0.5	Pass
165	5825	15.18	15.73	0.5	Pass

802.11ax (HE20)

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
149	5745	18.45	18.79	0.5	Pass
157	5785	18.63	18.87	0.5	Pass
165	5825	18.39	18.40	0.5	Pass

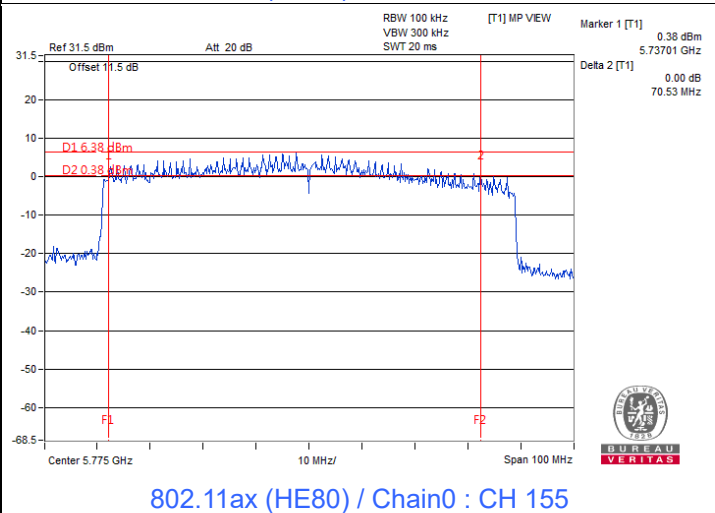
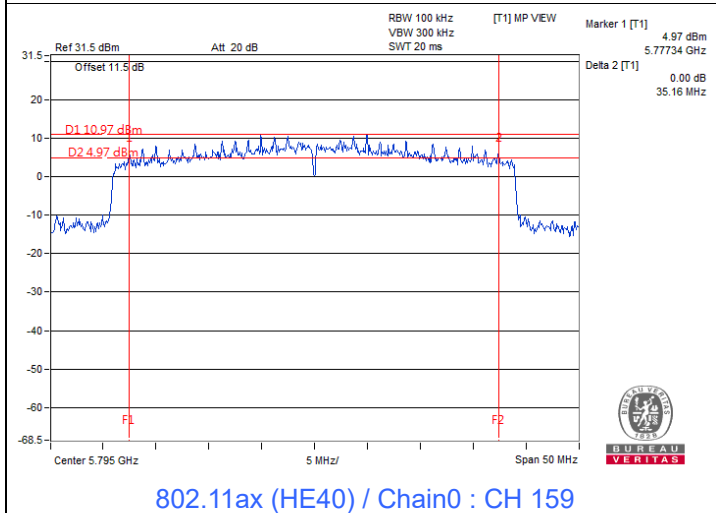
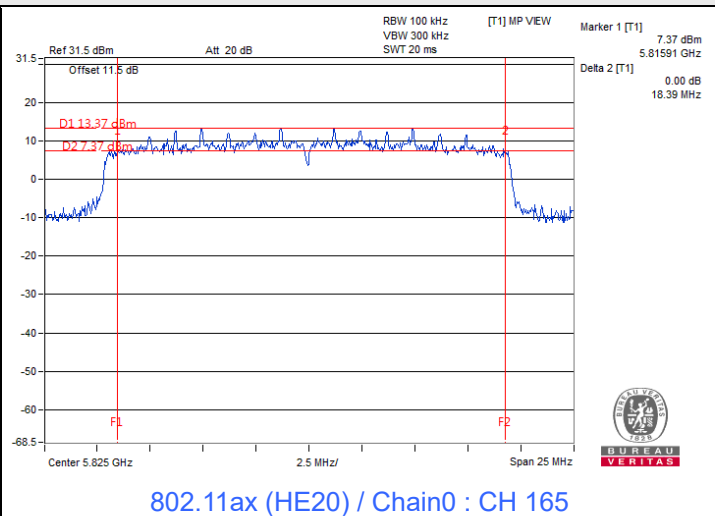
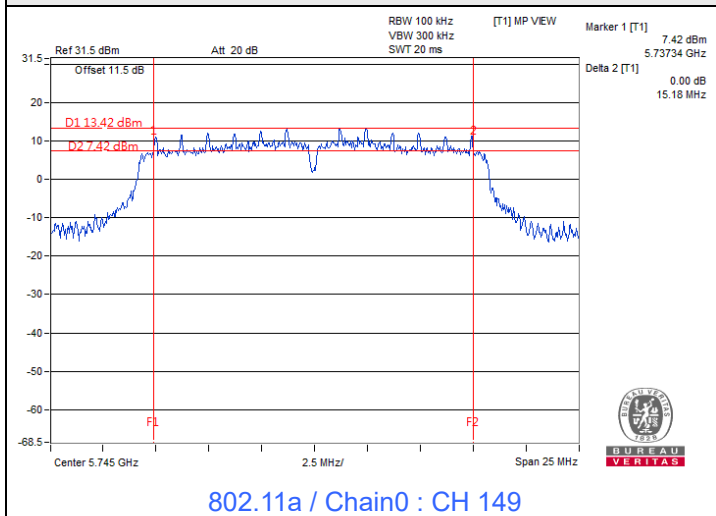
802.11ax (HE40)

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
151	5755	35.52	35.97	0.5	Pass
159	5795	35.16	35.16	0.5	Pass

802.11ax (HE80)

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
155	5775	70.53	75.17	0.5	Pass

Spectrum Plot of Minimum Value



7.4 Occupied Bandwidth

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

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
36	5180	16.73	16.93
40	5200	16.73	17.41
48	5240	16.80	17.28
149	5745	17.21	18.18
157	5785	17.21	17.88
165	5825	17.21	17.31

802.11ax (HE20)

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
36	5180	19.04	19.33
40	5200	19.23	19.71
48	5240	18.96	19.20
149	5745	19.42	23.27
157	5785	20.58	21.73
165	5825	19.90	20.77

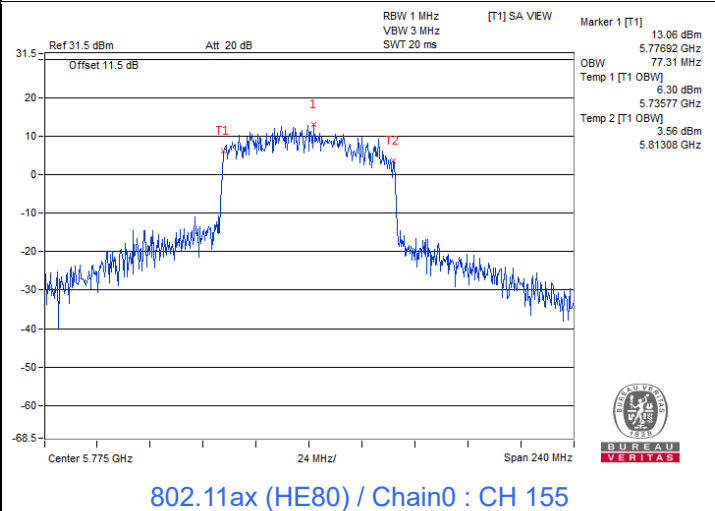
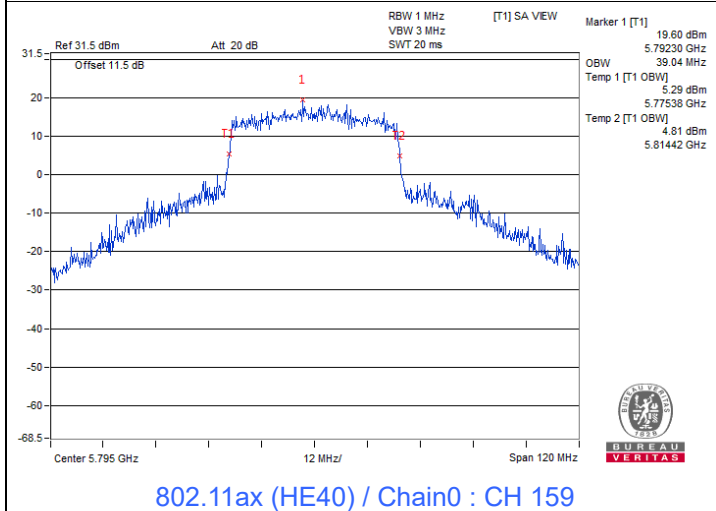
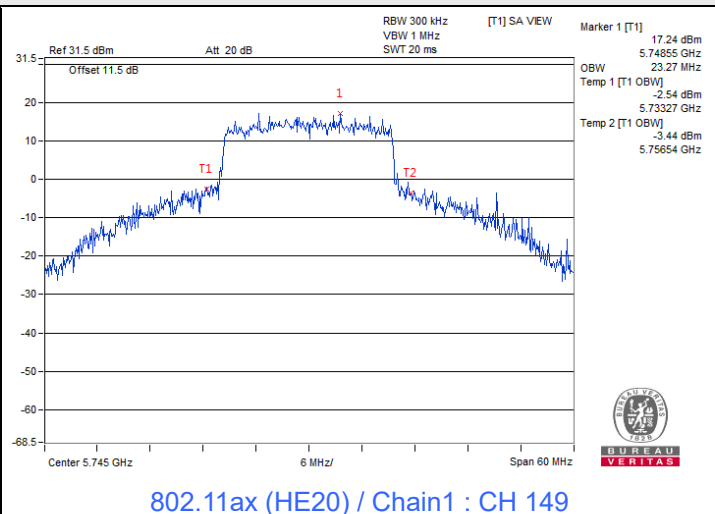
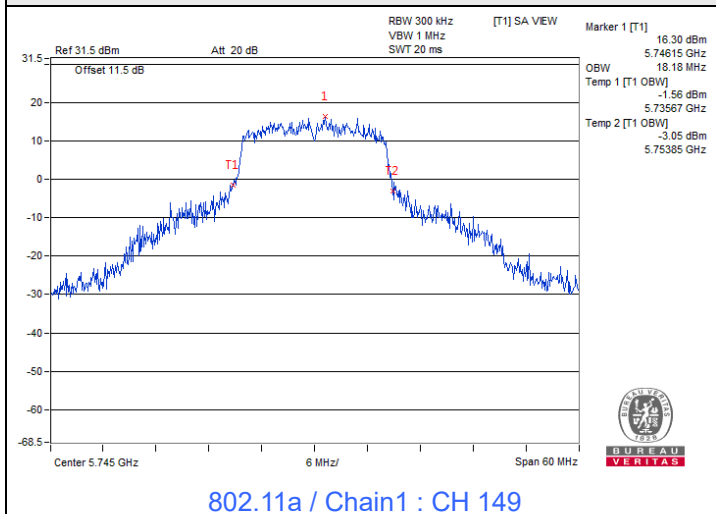
802.11ax (HE40)

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
38	5190	37.92	37.92
46	5230	38.16	38.40
151	5755	38.46	38.85
159	5795	39.04	38.85

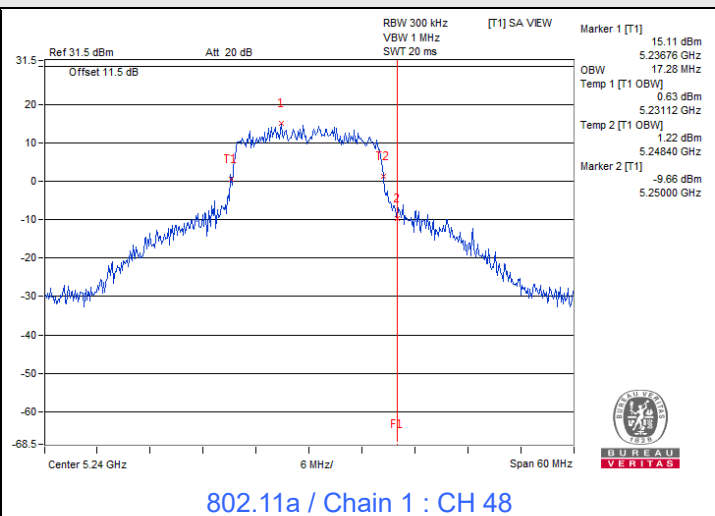
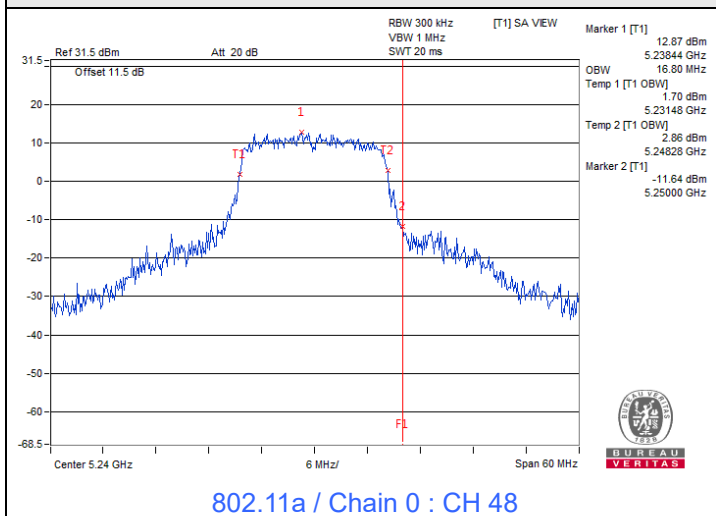
802.11ax (HE80)

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

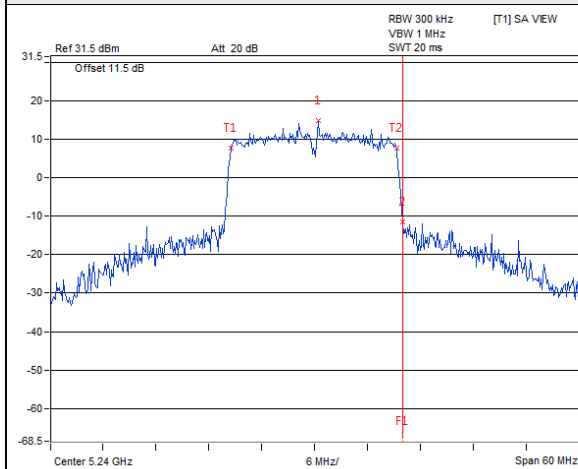
Spectrum Plot of Maximum Value



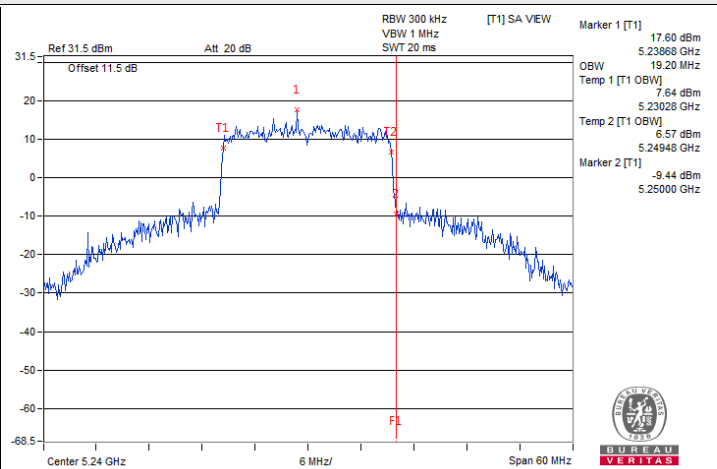
Spectrum Plot for nearby DFS band (DFS is required, if 99% OCP straddle into U-NII-2A band)



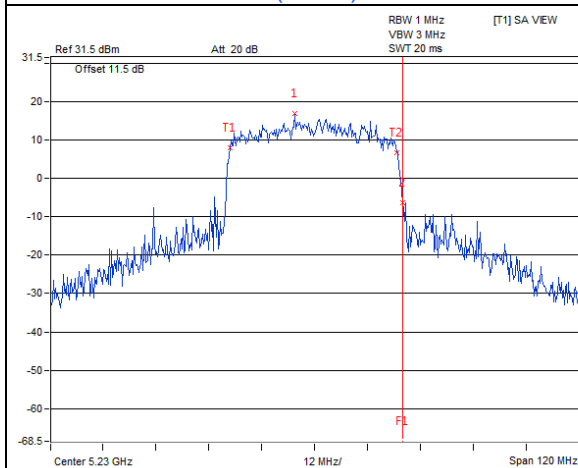
Spectrum Plot for nearby DFS band (DFS is required, if 99% OCP straddle into U-NII-2A band)



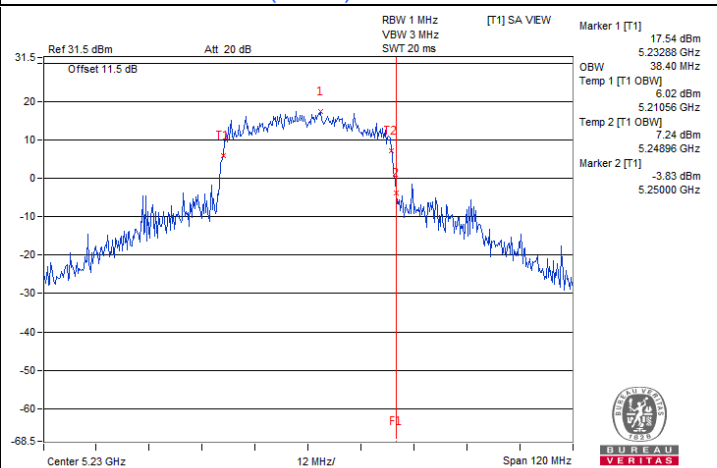
802.11ax (HE20) / Chain 0 : CH 48



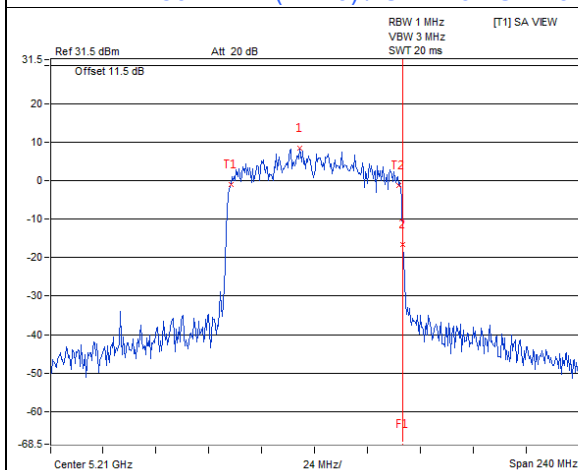
802.11ax (HE20) / Chain 1 : CH 48



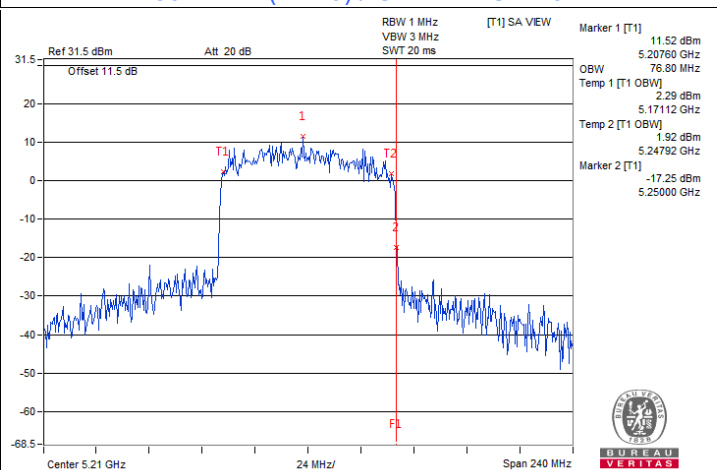
802.11ax (HE40) / Chain 0 : CH 46



802.11ax (HE40) / Chain 1 : CH 46

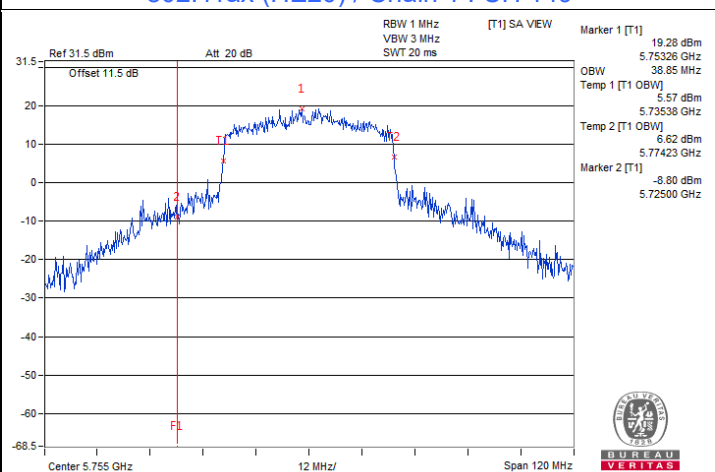
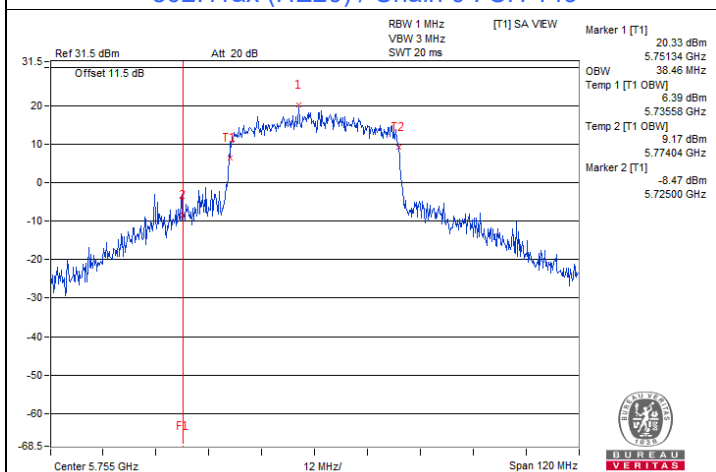
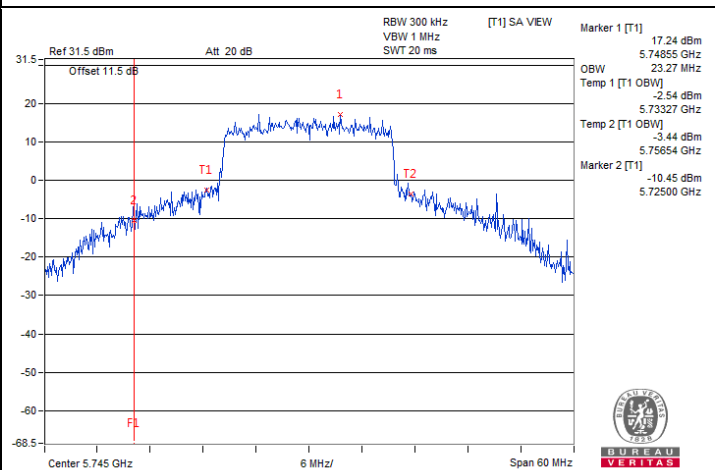
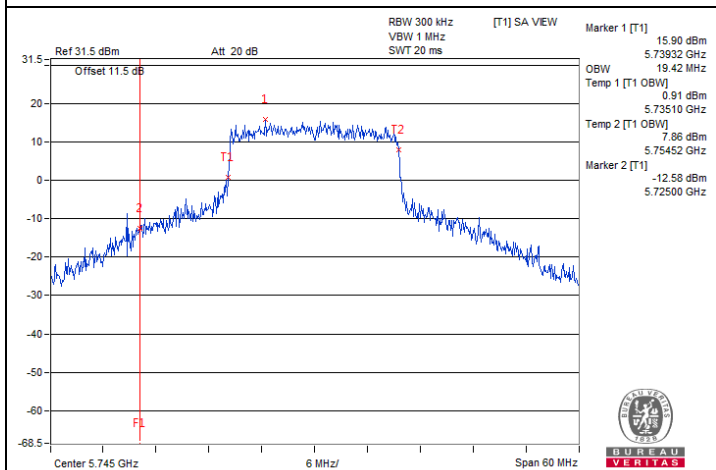
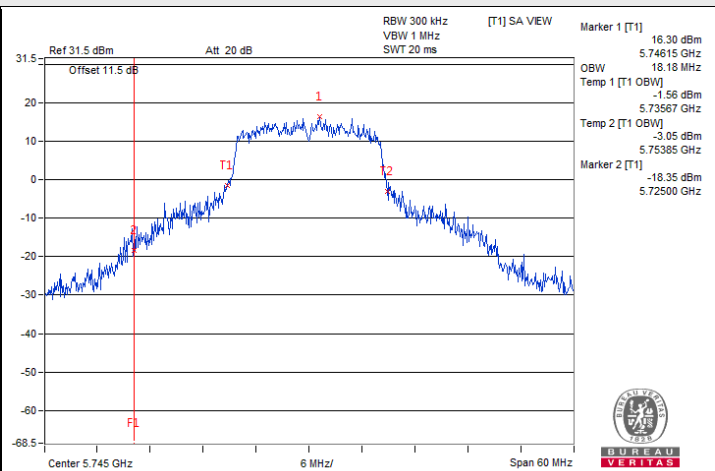
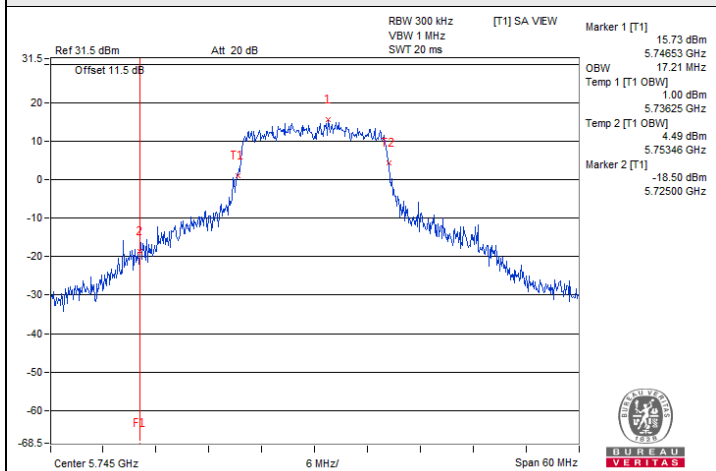


802.11ax (HE80) / Chain 0 : CH 42

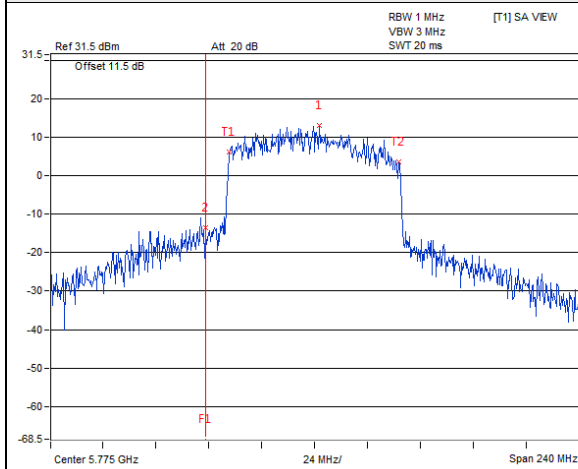


802.11ax (HE80) / Chain 1 : CH 42

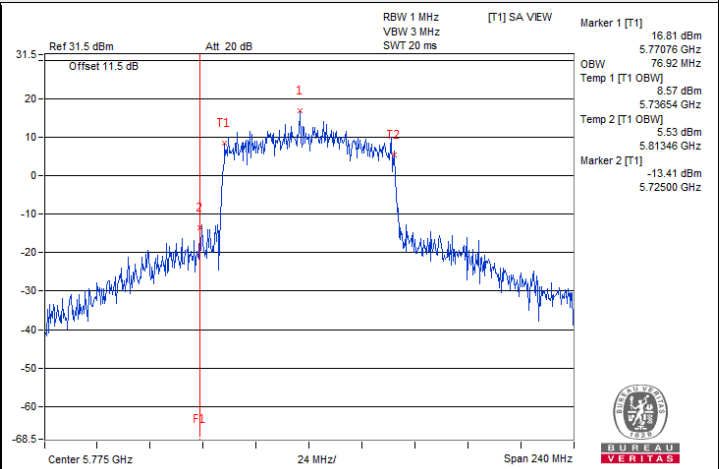
Spectrum Plot for nearby DFS band (DFS is required, if 99% OCP straddle into U-NII-2C band)



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



802.11ax (HE80) / Chain 0 : CH 155



802.11ax (HE80) / Chain 1 : CH 155

7.5 Frequency Stability

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

Frequency Stability Versus Temperature									
Operating Frequency: 5180 MHz									
Temp. (°C)	Power Supply (Vac)	0 Minute		2 Minutes		5 Minutes		10 Minutes	
		Measured Frequency (MHz)	Test Result	Measured Frequency (MHz)	Test Result	Measured Frequency (MHz)	Test Result	Measured Frequency (MHz)	Test Result
40	120	5180.0033	Pass	5180.0022	Pass	5180.0042	Pass	5180.0033	Pass
30	120	5180.0049	Pass	5180.0007	Pass	5180.0042	Pass	5180.0042	Pass
20	120	5179.9954	Pass	5179.9982	Pass	5179.9952	Pass	5179.9975	Pass
10	120	5180.0183	Pass	5180.02	Pass	5180.0186	Pass	5180.019	Pass
0	120	5179.9833	Pass	5179.9831	Pass	5179.9825	Pass	5179.9805	Pass

Frequency Stability Versus Voltage									
Operating Frequency: 5180 MHz									
Temp. (°C)	Power Supply (Vac)	0 Minute		2 Minutes		5 Minutes		10 Minutes	
		Measured Frequency (MHz)	Test Result	Measured Frequency (MHz)	Test Result	Measured Frequency (MHz)	Test Result	Measured Frequency (MHz)	Test Result
20	138	5179.9925	Pass	5179.9895	Pass	5179.992	Pass	5179.9926	Pass
	120	5179.9954	Pass	5179.9982	Pass	5179.9952	Pass	5179.9975	Pass
	102	5180.0011	Pass	5179.9973	Pass	5179.9987	Pass	5180.0009	Pass

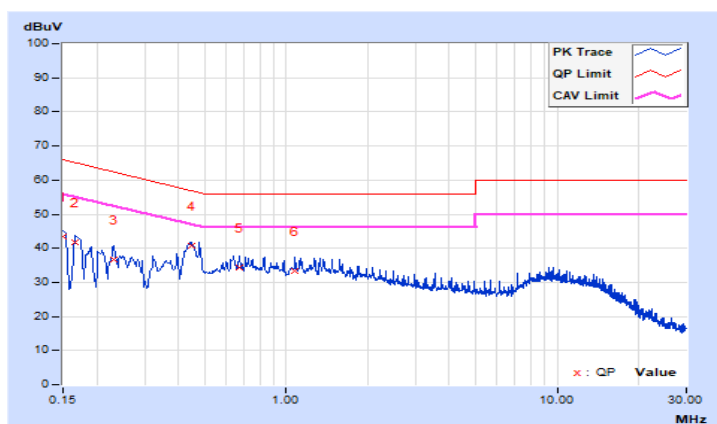
7.6 AC Power Conducted Emissions

RF Mode	TX 802.11ax (HE20)	Channel	CH 157 : 5785 MHz
Frequency Range	150 kHz ~ 30 MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 66% RH
Tested By	Titan HSU	Test Mode	A

Phase Of Power : Line (L)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	9.68	33.59	21.07	43.27	30.75	66.00	56.00	-22.73	-25.25
2	0.16600	9.69	31.94	20.45	41.63	30.14	65.16	55.16	-23.53	-25.02
3	0.22985	9.73	26.89	20.29	36.62	30.02	62.46	52.46	-25.84	-22.44
4	0.44529	9.80	31.04	28.57	40.84	38.37	56.96	46.96	-16.12	-8.59
5	0.66987	9.82	24.48	19.11	34.30	28.93	56.00	46.00	-21.70	-17.07
6	1.07800	9.84	23.33	20.57	33.17	30.41	56.00	46.00	-22.83	-15.59

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

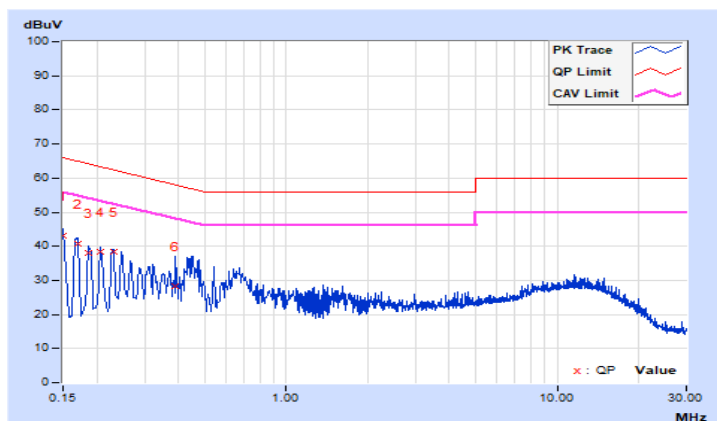


RF Mode	TX 802.11ax (HE20)	Channel	CH 157 : 5785 MHz
Frequency Range	150 kHz ~ 30 MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 66% RH
Tested By	Titan HSU	Test Mode	A

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	0.15000	9.68	33.46	18.52	43.14	28.20	66.00	56.00	-22.86	-27.80
2	0.16932	9.70	30.89	16.41	40.59	26.11	64.99	54.99	-24.40	-28.88
3	0.18600	9.71	28.46	14.67	38.17	24.38	64.21	54.21	-26.04	-29.83
4	0.20600	9.72	28.51	21.38	38.23	31.10	63.37	53.37	-25.14	-22.27
5	0.22985	9.73	28.54	21.80	38.27	31.53	62.46	52.46	-24.19	-20.93
6	0.39000	9.81	18.37	8.41	28.18	18.22	58.06	48.06	-29.88	-29.84

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

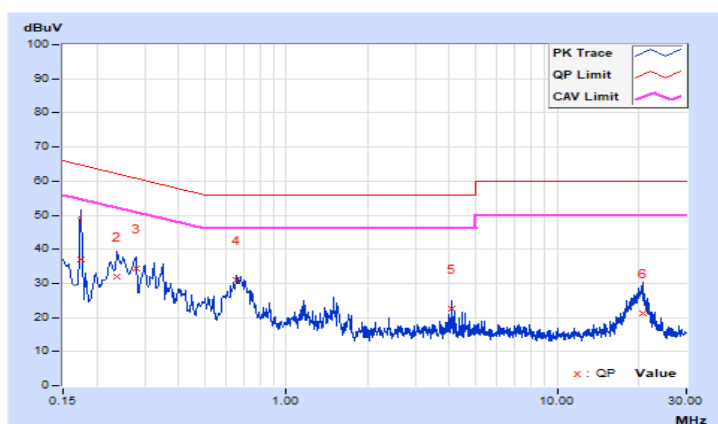


RF Mode	TX 802.11ax (HE20)	Channel	CH 157 : 5785 MHz
Frequency Range	150 kHz ~ 30 MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 66% RH
Tested By	Titan HSU	Test Mode	B

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	0.17400	9.70	27.27	11.62	36.97	21.32	64.77	54.77	-27.80	-33.45
2	0.23786	9.74	22.23	8.96	31.97	18.70	62.17	52.17	-30.20	-33.47
3	0.27800	9.75	24.53	17.95	34.28	27.70	60.88	50.88	-26.60	-23.18
4	0.65400	9.82	21.19	13.93	31.01	23.75	56.00	46.00	-24.99	-22.25
5	4.06200	9.95	12.68	3.56	22.63	13.51	56.00	46.00	-33.37	-32.49
6	20.70200	10.16	11.17	4.52	21.33	14.68	60.00	50.00	-38.67	-35.32

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

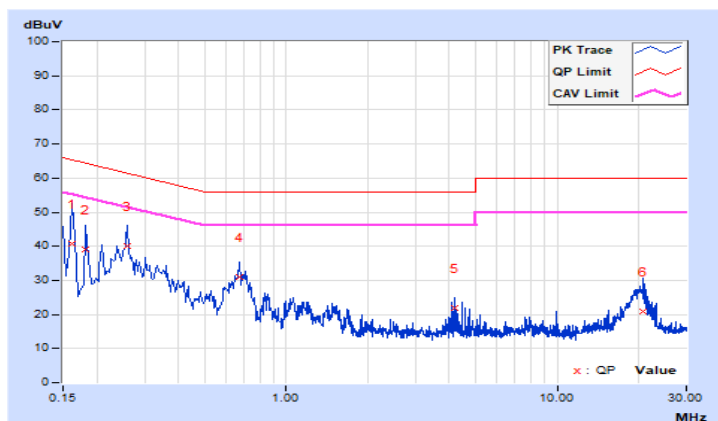


RF Mode	TX 802.11ax (HE20)	Channel	CH 157 : 5785 MHz
Frequency Range	150 kHz ~ 30 MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 66% RH
Tested By	Titan HSU	Test Mode	B

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	0.16200	9.69	31.11	8.83	40.80	18.52	65.36	55.36	-24.56	-36.84
2	0.18200	9.71	29.41	10.19	39.12	19.90	64.39	54.39	-25.27	-34.49
3	0.25800	9.75	30.22	8.71	39.97	18.46	61.50	51.50	-21.53	-33.04
4	0.66987	9.83	21.14	14.35	30.97	24.18	56.00	46.00	-25.03	-21.82
5	4.16600	9.97	11.95	0.54	21.92	10.51	56.00	46.00	-34.08	-35.49
6	20.88200	10.20	10.82	4.50	21.02	14.70	60.00	50.00	-38.98	-35.30

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



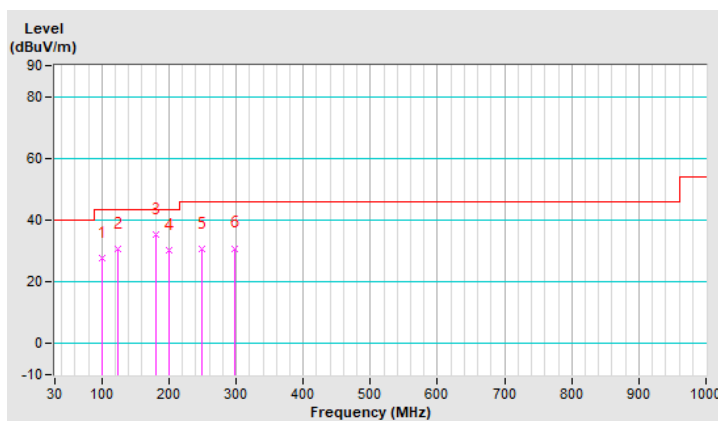
7.7 Unwanted Emissions below 1 GHz

RF Mode	TX 802.11ax (HE20)	Channel	CH 157 : 5785 MHz
Frequency Range	9 kHz ~ 1 GHz	Detector Function & Bandwidth	(QP) RB = 120kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	21°C, 68% RH
Tested By	Luis Lee	Test Mode	A

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	99.84	27.9 QP	43.5	-15.6	1.00 H	297	41.2	-13.3
2	123.12	30.8 QP	43.5	-12.7	1.00 H	133	41.3	-10.5
3	181.32	35.2 QP	43.5	-8.3	1.00 H	133	45.3	-10.1
4	200.72	30.2 QP	43.5	-13.3	1.49 H	260	41.6	-11.4
5	249.22	30.5 QP	46.0	-15.5	1.00 H	124	39.6	-9.1
6	297.72	30.9 QP	46.0	-15.1	1.00 H	299	38.5	-7.6

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The 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.

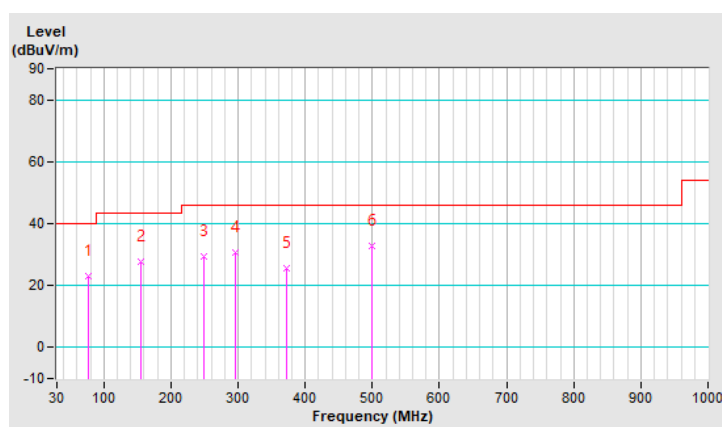


RF Mode	TX 802.11ax (HE20)	Channel	CH 157 : 5785 MHz
Frequency Range	9 kHz ~ 1 GHz	Detector Function & Bandwidth	(QP) RB = 120kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	21°C, 68% RH
Tested By	Luis Lee	Test Mode	A

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	76.56	23.0 QP	40.0	-17.0	1.50 V	25	35.1	-12.1
2	156.10	27.9 QP	43.5	-15.6	1.50 V	102	36.4	-8.5
3	249.22	29.5 QP	46.0	-16.5	1.01 V	132	38.6	-9.1
4	295.78	30.5 QP	46.0	-15.5	1.01 V	324	38.2	-7.7
5	371.44	25.5 QP	46.0	-20.5	1.01 V	324	31.6	-6.1
6	499.48	32.6 QP	46.0	-13.4	1.50 V	137	36.8	-4.2

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit 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.

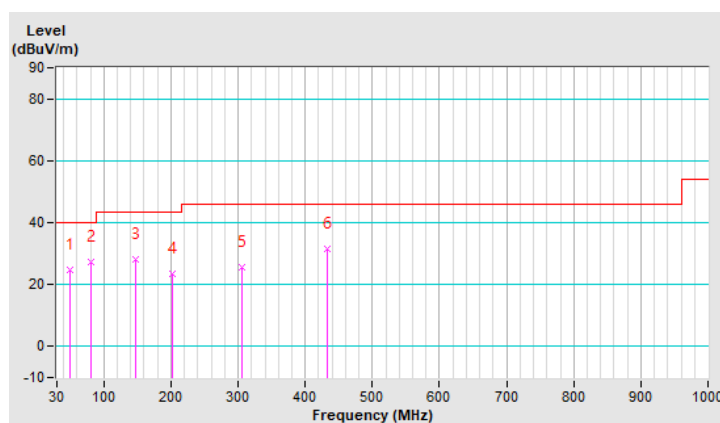


RF Mode	TX 802.11ax (HE20)	Channel	CH 157 : 5785 MHz
Frequency Range	9 kHz ~ 1 GHz	Detector Function & Bandwidth	(QP) RB = 120kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	21°C, 68% RH
Tested By	Luis Lee	Test Mode	B

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	49.40	24.6 QP	40.0	-15.4	1.50 H	343	33.4	-8.8
2	80.44	27.1 QP	40.0	-12.9	1.01 H	16	40.2	-13.1
3	146.40	28.3 QP	43.5	-15.2	1.50 H	245	36.9	-8.6
4	202.66	23.6 QP	43.5	-19.9	1.50 H	135	35.0	-11.4
5	305.48	25.6 QP	46.0	-20.4	1.50 H	204	32.8	-7.2
6	433.52	31.5 QP	46.0	-14.5	1.50 H	346	36.5	-5.0

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The 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.

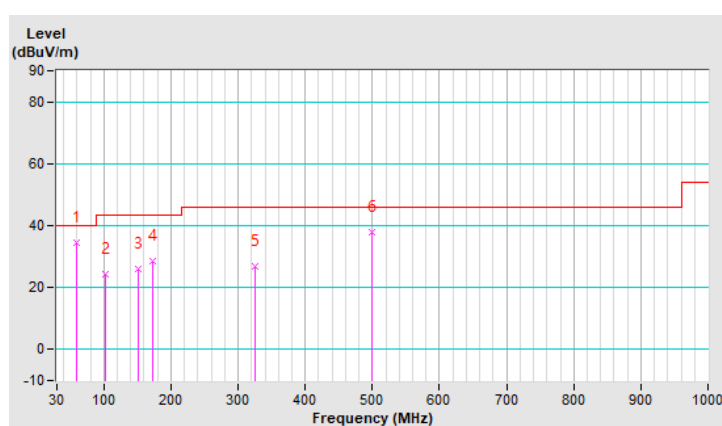


RF Mode	TX 802.11ax (HE20)	Channel	CH 157 : 5785 MHz
Frequency Range	9 kHz ~ 1 GHz	Detector Function & Bandwidth	(QP) RB = 120kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	21°C, 68% RH
Tested By	Luis Lee	Test Mode	B

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	59.10	34.5 QP	40.0	-5.5	1.49 V	271	43.5	-9.0
2	101.78	24.2 QP	43.5	-19.3	1.49 V	16	37.2	-13.0
3	152.22	25.9 QP	43.5	-17.6	1.49 V	67	34.4	-8.5
4	173.56	28.5 QP	43.5	-15.0	1.00 V	107	37.7	-9.2
5	324.88	26.8 QP	46.0	-19.2	1.00 V	340	33.6	-6.8
6	499.48	37.9 QP	46.0	-8.1	1.49 V	141	42.1	-4.2

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit 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	TX 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 = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	24°C, 68% RH
Tested By	Luis Lee		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5148.00	71.8 PK	74.0	-2.2	1.83 H	256	59.2	12.6
2	5148.00	53.7 AV	54.0	-0.3	1.83 H	256	41.1	12.6
3	*5180.00	116.0 PK			1.83 H	256	73.3	42.7
4	*5180.00	106.3 AV			1.83 H	256	63.6	42.7
5	#10360.00	67.7 PK	68.2	-0.5	1.93 H	246	45.2	22.5
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	71.6 PK	74.0	-2.4	2.30 V	250	59.0	12.6
2	5150.00	52.4 AV	54.0	-1.6	2.30 V	250	39.8	12.6
3	*5180.00	115.7 PK			2.30 V	250	73.0	42.7
4	*5180.00	106.0 AV			2.30 V	250	63.3	42.7
5	#10360.00	65.7 PK	68.2	-2.5	2.41 V	122	43.2	22.5

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	TX 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 = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	22°C, 70% RH
Tested By	Luis Lee		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	71.8 PK	74.0	-2.2	1.84 H	262	59.2	12.6
2	5150.00	53.5 AV	54.0	-0.5	1.84 H	262	40.9	12.6
3	*5200.00	119.6 PK			1.84 H	260	77.1	42.5
4	*5200.00	109.8 AV			1.84 H	260	67.3	42.5
5	#10400.00	68.1 PK	68.2	-0.1	1.67 H	253	45.4	22.7
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	70.9 PK	74.0	-3.1	2.35 V	252	58.3	12.6
2	5150.00	53.0 AV	54.0	-1.0	2.35 V	252	40.4	12.6
3	*5200.00	118.3 PK			2.35 V	252	75.8	42.5
4	*5200.00	108.6 AV			2.35 V	252	66.1	42.5
5	#10400.00	66.1 PK	68.2	-2.1	2.43 V	127	43.4	22.7

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	TX 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 = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	22°C, 70% RH
Tested By	Luis Lee		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5240.00	119.5 PK			1.77 H	261	77.1	42.4
2	*5240.00	109.9 AV			1.77 H	261	67.5	42.4
3	5350.00	60.8 PK	74.0	-13.2	1.77 H	261	48.4	12.4
4	5350.00	48.9 AV	54.0	-5.1	1.77 H	261	36.5	12.4
5	#10480.00	67.3 PK	68.2	-0.9	1.68 H	241	44.7	22.6
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5240.00	118.0 PK			2.38 V	257	75.6	42.4
2	*5240.00	108.2 AV			2.38 V	257	65.8	42.4
3	5350.00	60.3 PK	74.0	-13.7	2.38 V	257	47.9	12.4
4	5350.00	48.3 AV	54.0	-5.7	2.38 V	257	35.9	12.4
5	#10480.00	66.0 PK	68.2	-2.2	2.43 V	131	43.4	22.6

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	TX 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 = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	22°C, 70% RH
Tested By	Luis Lee		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5646.80	67.7 PK	68.2	-0.5	1.77 H	264	55.0	12.7
2	*5745.00	122.5 PK			1.77 H	264	78.9	43.6
3	*5745.00	112.6 AV			1.77 H	264	69.0	43.6
4	#5998.00	64.2 PK	68.2	-4.0	1.77 H	264	50.5	13.7
5	11490.00	68.2 PK	74.0	-5.8	1.54 H	295	44.2	24.0
6	11490.00	53.4 AV	54.0	-0.6	1.54 H	295	29.4	24.0
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5649.20	64.9 PK	68.2	-3.3	1.63 V	271	52.2	12.7
2	*5745.00	121.4 PK			1.63 V	271	77.8	43.6
3	*5745.00	111.5 AV			1.63 V	271	67.9	43.6
4	#5938.80	64.4 PK	68.2	-3.8	1.63 V	271	50.6	13.8
5	11490.00	65.5 PK	74.0	-8.5	1.45 V	283	41.5	24.0
6	11490.00	51.6 AV	54.0	-2.4	1.45 V	283	27.6	24.0

Remarks:

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

RF Mode	TX 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 = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	22°C, 70% RH
Tested By	Luis Lee		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5645.60	63.1 PK	68.2	-5.1	1.66 H	269	50.4	12.7
2	*5785.00	122.4 PK			1.66 H	269	78.6	43.8
3	*5785.00	112.5 AV			1.66 H	269	68.7	43.8
4	#5964.00	64.1 PK	68.2	-4.1	1.66 H	269	50.3	13.8
5	11570.00	67.9 PK	74.0	-6.1	1.68 H	291	44.1	23.8
6	11570.00	53.8 AV	54.0	-0.2	1.68 H	291	30.0	23.8
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5636.80	63.2 PK	68.2	-5.0	1.69 V	276	50.5	12.7
2	*5785.00	121.4 PK			1.69 V	276	77.6	43.8
3	*5785.00	111.6 AV			1.69 V	276	67.8	43.8
4	#5928.40	64.5 PK	68.2	-3.7	1.69 V	276	50.7	13.8
5	11570.00	65.2 PK	74.0	-8.8	1.53 V	292	41.4	23.8
6	11570.00	51.3 AV	54.0	-2.7	1.53 V	292	27.5	23.8

Remarks:

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

RF Mode	TX 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 = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	22°C, 70% RH
Tested By	Luis Lee		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5608.40	63.3 PK	68.2	-4.9	1.78 H	285	50.7	12.6
2	*5825.00	122.8 PK			1.78 H	285	78.8	44.0
3	*5825.00	113.0 AV			1.78 H	285	69.0	44.0
4	#5930.80	67.0 PK	68.2	-1.2	1.78 H	285	53.2	13.8
5	11650.00	67.7 PK	74.0	-6.3	1.66 H	294	44.4	23.3
6	11650.00	53.5 AV	54.0	-0.5	1.66 H	294	30.2	23.3
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5647.20	62.3 PK	68.2	-5.9	1.65 V	277	49.6	12.7
2	*5825.00	121.7 PK			1.65 V	277	77.7	44.0
3	*5825.00	111.8 AV			1.65 V	277	67.8	44.0
4	#5934.40	64.7 PK	68.2	-3.5	1.65 V	277	50.9	13.8
5	11650.00	65.0 PK	74.0	-9.0	1.43 V	287	41.7	23.3
6	11650.00	51.0 AV	54.0	-3.0	1.43 V	287	27.7	23.3

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	TX 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 = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	24°C, 68% RH
Tested By	Luis Lee		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5148.30	71.6 PK	74.0	-2.4	1.75 H	247	59.0	12.6
2	5148.30	53.9 AV	54.0	-0.1	1.75 H	247	41.3	12.6
3	*5180.00	117.3 PK			1.75 H	247	74.6	42.7
4	*5180.00	105.0 AV			1.75 H	247	62.3	42.7
5	#10360.00	64.9 PK	68.2	-3.3	1.68 H	272	42.4	22.5
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	72.6 PK	74.0	-1.4	1.77 V	263	60.0	12.6
2	5150.00	53.8 AV	54.0	-0.2	1.77 V	263	41.2	12.6
3	*5180.00	116.9 PK			1.77 V	263	74.2	42.7
4	*5180.00	104.8 AV			1.77 V	263	62.1	42.7
5	#10360.00	66.7 PK	68.2	-1.5	2.02 V	248	44.2	22.5

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	TX 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 = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	24°C, 68% RH
Tested By	Luis Lee		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	70.0 PK	74.0	-4.0	1.77 H	262	57.4	12.6
2	5150.00	53.6 AV	54.0	-0.4	1.77 H	262	41.0	12.6
3	*5200.00	119.1 PK			1.77 H	262	76.6	42.5
4	*5200.00	107.4 AV			1.77 H	262	64.9	42.5
5	#10400.00	67.9 PK	68.2	-0.3	2.22 H	48	45.2	22.7
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	68.1 PK	74.0	-5.9	2.02 V	245	55.5	12.6
2	5150.00	52.6 AV	54.0	-1.4	2.02 V	245	40.0	12.6
3	*5200.00	118.1 PK			2.02 V	245	75.6	42.5
4	*5200.00	105.9 AV			2.02 V	245	63.4	42.5
5	#10400.00	66.6 PK	68.2	-1.6	2.41 V	124	43.9	22.7

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	TX 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 = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	22°C, 70% RH
Tested By	Luis Lee		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5240.00	121.9 PK			1.86 H	259	79.5	42.4
2	*5240.00	109.3 AV			1.86 H	259	66.9	42.4
3	5350.00	61.5 PK	74.0	-12.5	1.86 H	259	49.1	12.4
4	5350.00	48.3 AV	54.0	-5.7	1.86 H	259	35.9	12.4
5	#10480.00	66.2 PK	68.2	-2.0	1.66 H	252	43.6	22.6
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5240.00	120.3 PK			2.36 V	250	77.9	42.4
2	*5240.00	107.6 AV			2.36 V	250	65.2	42.4
3	5350.00	61.2 PK	74.0	-12.8	2.36 V	250	48.8	12.4
4	5350.00	47.9 AV	54.0	-6.1	2.36 V	250	35.5	12.4
5	#10480.00	66.0 PK	68.2	-2.2	2.37 V	119	43.4	22.6

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	TX 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 = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	22°C, 70% RH
Tested By	Luis Lee		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5647.60	66.2 PK	68.2	-2.0	1.79 H	274	53.5	12.7
2	*5745.00	124.1 PK			1.79 H	274	80.5	43.6
3	*5745.00	111.2 AV			1.79 H	274	67.6	43.6
4	#5946.40	64.0 PK	68.2	-4.2	1.79 H	274	50.2	13.8
5	11490.00	67.3 PK	74.0	-6.7	1.55 H	294	43.3	24.0
6	11490.00	53.7 AV	54.0	-0.3	1.55 H	294	29.7	24.0
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5646.40	64.2 PK	68.2	-4.0	1.64 V	273	51.5	12.7
2	*5745.00	122.8 PK			1.64 V	273	79.2	43.6
3	*5745.00	110.2 AV			1.64 V	273	66.6	43.6
4	#5969.60	63.9 PK	68.2	-4.3	1.64 V	273	50.1	13.8
5	11490.00	65.5 PK	74.0	-8.5	1.52 V	287	41.5	24.0
6	11490.00	51.5 AV	54.0	-2.5	1.52 V	287	27.5	24.0

Remarks:

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

RF Mode	TX 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 = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	22°C, 70% RH
Tested By	Luis Lee		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5644.00	63.4 PK	68.2	-4.8	1.76 H	275	50.7	12.7
2	*5785.00	124.4 PK			1.76 H	275	80.6	43.8
3	*5785.00	111.8 AV			1.76 H	275	68.0	43.8
4	#5940.00	64.1 PK	68.2	-4.1	1.76 H	275	50.3	13.8
5	11570.00	68.1 PK	74.0	-5.9	1.61 H	293	44.3	23.8
6	11570.00	53.5 AV	54.0	-0.5	1.61 H	293	29.7	23.8
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5639.60	63.6 PK	68.2	-4.6	1.66 V	272	50.9	12.7
2	*5785.00	123.3 PK			1.66 V	272	79.5	43.8
3	*5785.00	110.7 AV			1.66 V	272	66.9	43.8
4	#5993.20	64.9 PK	68.2	-3.3	1.66 V	272	51.2	13.7
5	11570.00	65.4 PK	74.0	-8.6	1.43 V	288	41.6	23.8
6	11570.00	51.3 AV	54.0	-2.7	1.43 V	288	27.5	23.8

Remarks:

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

RF Mode	TX 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 = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	22°C, 70% RH
Tested By	Luis Lee		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5628.00	63.2 PK	68.2	-5.0	1.76 H	286	50.5	12.7
2	*5825.00	124.1 PK			1.76 H	286	80.1	44.0
3	*5825.00	111.5 AV			1.76 H	286	67.5	44.0
4	#5931.60	67.7 PK	68.2	-0.5	1.76 H	286	53.9	13.8
5	11650.00	67.9 PK	74.0	-6.1	1.66 H	294	44.6	23.3
6	11650.00	53.5 AV	54.0	-0.5	1.66 H	294	30.2	23.3
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5628.00	63.2 PK	68.2	-5.0	1.67 V	276	50.5	12.7
2	*5825.00	123.1 PK			1.67 V	276	79.1	44.0
3	*5825.00	110.5 AV			1.67 V	276	66.5	44.0
4	#5925.20	64.7 PK	68.2	-3.5	1.67 V	276	50.9	13.8
5	11650.00	64.7 PK	74.0	-9.3	1.54 V	291	41.4	23.3
6	11650.00	50.6 AV	54.0	-3.4	1.54 V	291	27.3	23.3

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	TX 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 = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	24°C, 68% RH
Tested By	Luis Lee		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5149.30	71.4 PK	74.0	-2.6	1.77 H	256	58.8	12.6
2	5149.30	53.9 AV	54.0	-0.1	1.77 H	256	41.3	12.6
3	*5190.00	113.5 PK			1.77 H	256	70.9	42.6
4	*5190.00	101.0 AV			1.77 H	256	58.4	42.6
5	#10380.00	63.1 PK	68.2	-5.1	2.00 H	242	40.6	22.5
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	71.4 PK	74.0	-2.6	1.75 V	244	58.8	12.6
2	5150.00	53.6 AV	54.0	-0.4	1.75 V	244	41.0	12.6
3	*5190.00	112.4 PK			1.75 V	244	69.8	42.6
4	*5190.00	100.2 AV			1.75 V	244	57.6	42.6
5	#10380.00	62.9 PK	68.2	-5.3	1.69 V	270	40.4	22.5

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	TX 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 = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	24°C, 68% RH
Tested By	Luis Lee		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5148.70	68.2 PK	74.0	-5.8	1.84 H	254	55.6	12.6
2	5148.70	53.7 AV	54.0	-0.3	1.84 H	254	41.1	12.6
3	*5230.00	116.6 PK			1.84 H	254	74.2	42.4
4	*5230.00	104.7 AV			1.84 H	254	62.3	42.4
5	#10460.00	65.7 PK	68.2	-2.5	1.79 H	248	43.1	22.6
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5149.20	67.7 PK	74.0	-6.3	1.86 V	241	55.1	12.6
2	5149.20	52.8 AV	54.0	-1.2	1.86 V	241	40.2	12.6
3	*5230.00	116.4 PK			1.86 V	241	74.0	42.4
4	*5230.00	104.3 AV			1.86 V	241	61.9	42.4
5	#10460.00	65.3 PK	68.2	-2.9	2.49 V	128	42.7	22.6

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	TX 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 = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	24°C, 68% RH
Tested By	Luis Lee		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5648.00	67.6 PK	68.2	-0.6	1.69 H	277	54.9	12.7
2	*5755.00	118.7 PK			1.69 H	277	75.1	43.6
3	*5755.00	106.4 AV			1.69 H	277	62.8	43.6
4	#5930.80	61.8 PK	68.2	-6.4	1.69 H	277	48.0	13.8
5	11510.00	64.5 PK	74.0	-9.5	2.18 H	242	40.6	23.9
6	11510.00	52.3 AV	54.0	-1.7	2.18 H	242	28.4	23.9
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5646.80	67.0 PK	68.2	-1.2	1.62 V	267	54.3	12.7
2	*5755.00	118.1 PK			1.62 V	267	74.5	43.6
3	*5755.00	105.9 AV			1.62 V	267	62.3	43.6
4	#5954.00	64.3 PK	68.2	-3.9	1.62 V	267	50.5	13.8
5	11510.00	65.1 PK	74.0	-8.9	1.47 V	293	41.2	23.9
6	11510.00	51.1 AV	54.0	-2.9	1.47 V	293	27.2	23.9

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.

RF Mode	TX 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 = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	24°C, 68% RH
Tested By	Luis Lee		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5646.80	63.1 PK	68.2	-5.1	1.78 H	277	50.4	12.7
2	*5795.00	118.2 PK			1.78 H	277	74.3	43.9
3	*5795.00	107.1 AV			1.78 H	277	63.2	43.9
4	#5932.80	67.4 PK	68.2	-0.8	1.78 H	277	53.6	13.8
5	11590.00	65.6 PK	74.0	-8.4	1.69 H	301	41.8	23.8
6	11590.00	52.7 AV	54.0	-1.3	1.69 H	301	28.9	23.8
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5648.00	62.8 PK	68.2	-5.4	1.83 V	274	50.1	12.7
2	*5795.00	117.9 PK			1.83 V	274	74.0	43.9
3	*5795.00	106.2 AV			1.83 V	274	62.3	43.9
4	#5927.60	65.7 PK	68.2	-2.5	1.83 V	274	51.9	13.8
5	11590.00	65.0 PK	74.0	-9.0	1.55 V	241	41.2	23.8
6	11590.00	51.9 AV	54.0	-2.1	1.55 V	241	28.1	23.8

Remarks:

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

RF Mode	TX 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 = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	24°C, 70% RH
Tested By	Luis Lee		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5148.40	72.3 PK	74.0	-1.7	1.81 H	259	59.7	12.6
2	5148.40	53.6 AV	54.0	-0.4	1.81 H	259	41.0	12.6
3	*5210.00	110.8 PK			1.81 H	259	68.3	42.5
4	*5210.00	98.5 AV			1.81 H	259	56.0	42.5
5	#10420.00	65.1 PK	68.2	-3.1	1.64 H	243	42.5	22.6
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	70.1 PK	74.0	-3.9	2.30 V	251	57.5	12.6
2	5150.00	52.6 AV	54.0	-1.4	2.30 V	251	40.0	12.6
3	*5210.00	108.7 PK			2.30 V	251	66.2	42.5
4	*5210.00	96.6 AV			2.30 V	251	54.1	42.5
5	#10420.00	65.5 PK	68.2	-2.7	2.37 V	128	42.9	22.6

Remarks:

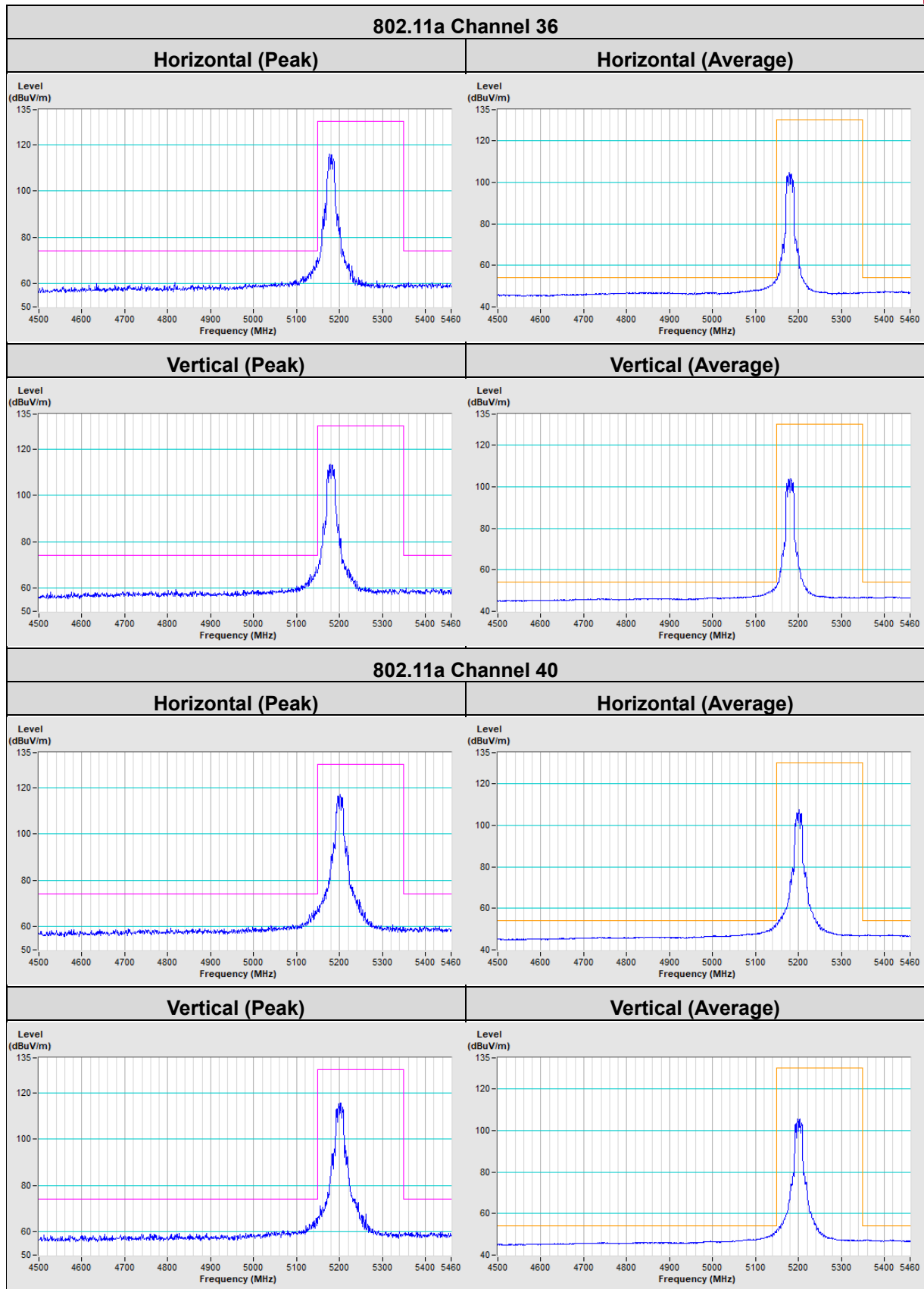
1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency,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

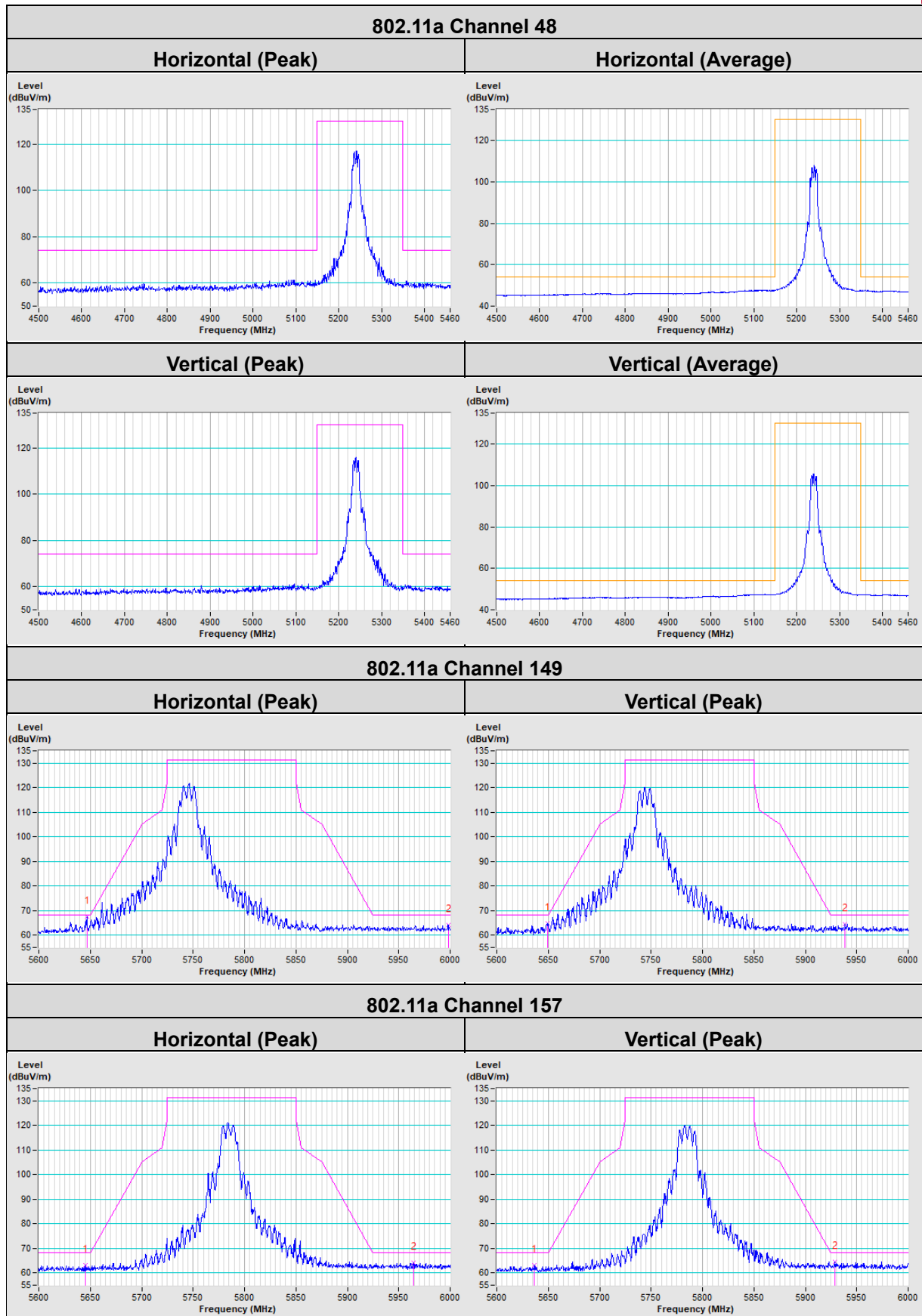
RF Mode	TX 802.11ax (HE80)	Channel	CH 155 : 5775 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	24°C, 70% RH
Tested By	Luis Lee		

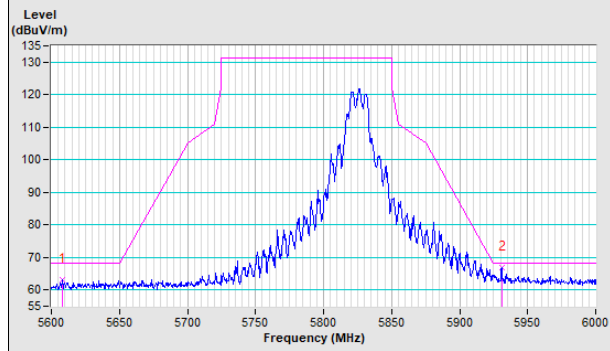
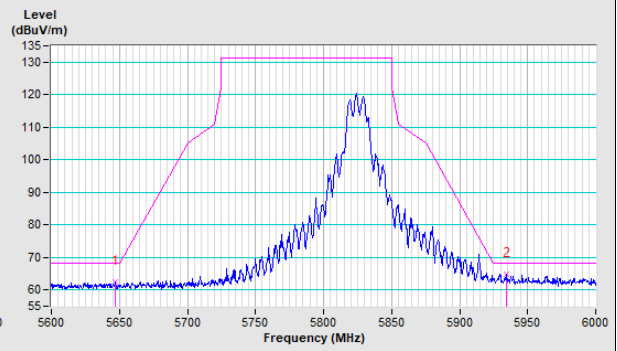
Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5644.00	66.8 PK	68.2	-1.4	1.81 H	278	54.1	12.7
2	*5775.00	116.7 PK			1.81 H	278	72.9	43.8
3	*5775.00	103.2 AV			1.81 H	278	59.4	43.8
4	#5926.80	67.5 PK	68.2	-0.7	1.81 H	278	53.7	13.8
5	11550.00	66.2 PK	74.0	-7.8	1.72 H	253	42.3	23.9
6	11550.00	52.4 AV	54.0	-1.6	1.72 H	253	28.5	23.9
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5647.20	66.9 PK	68.2	-1.3	1.64 V	274	54.2	12.7
2	*5775.00	115.3 PK			1.64 V	279	71.5	43.8
3	*5775.00	102.6 AV			1.64 V	279	58.8	43.8
4	#5925.20	67.5 PK	68.2	-0.7	1.64 V	274	53.7	13.8
5	11550.00	64.8 PK	74.0	-9.2	1.53 V	287	40.9	23.9
6	11550.00	51.1 AV	54.0	-2.9	1.53 V	287	27.2	23.9

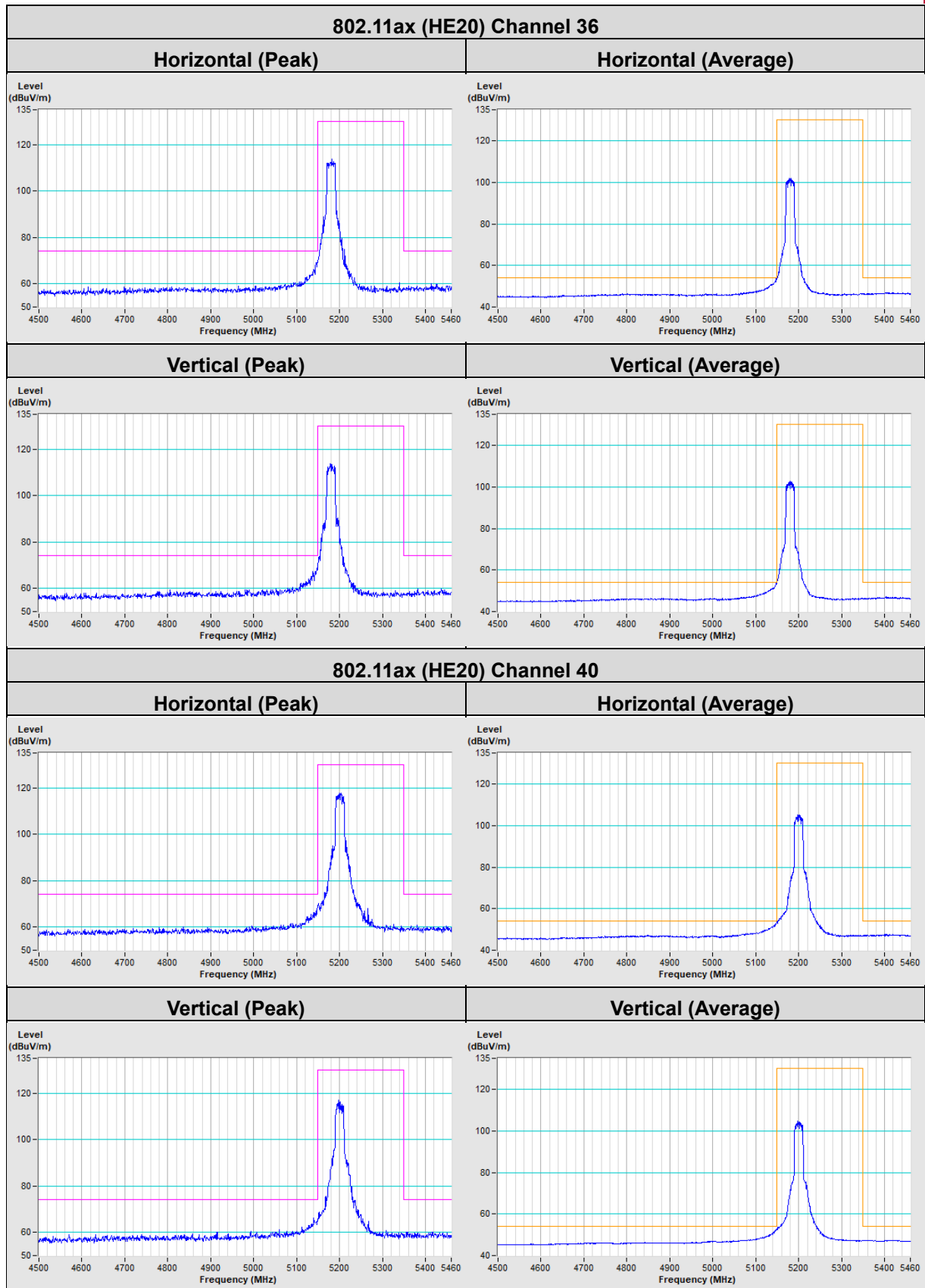
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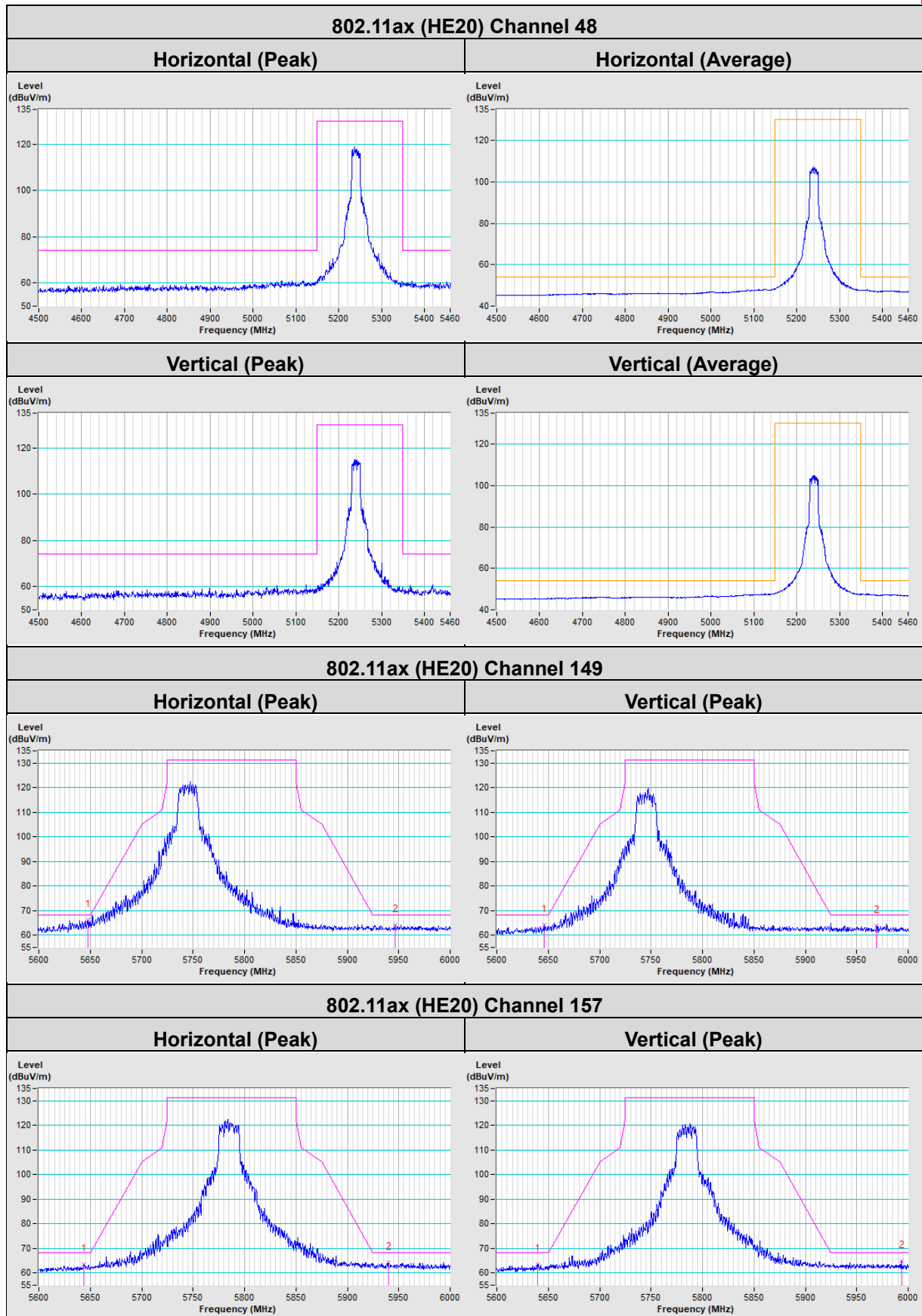
1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency,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

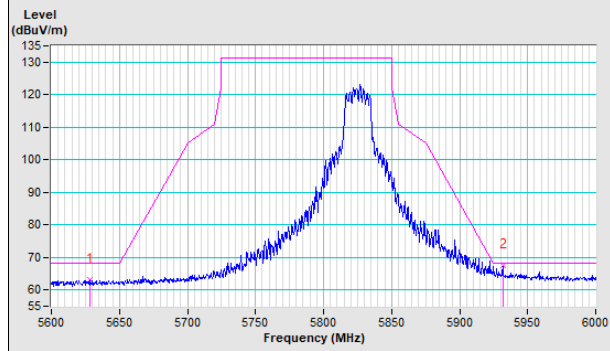
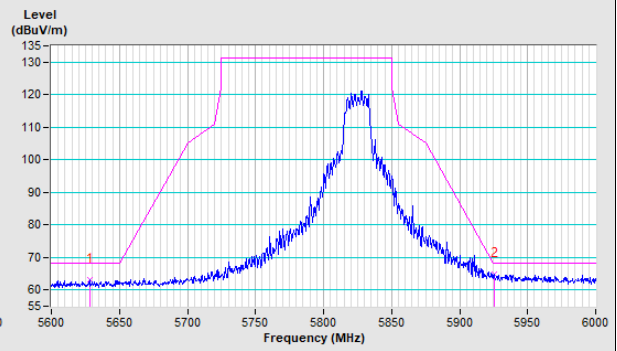


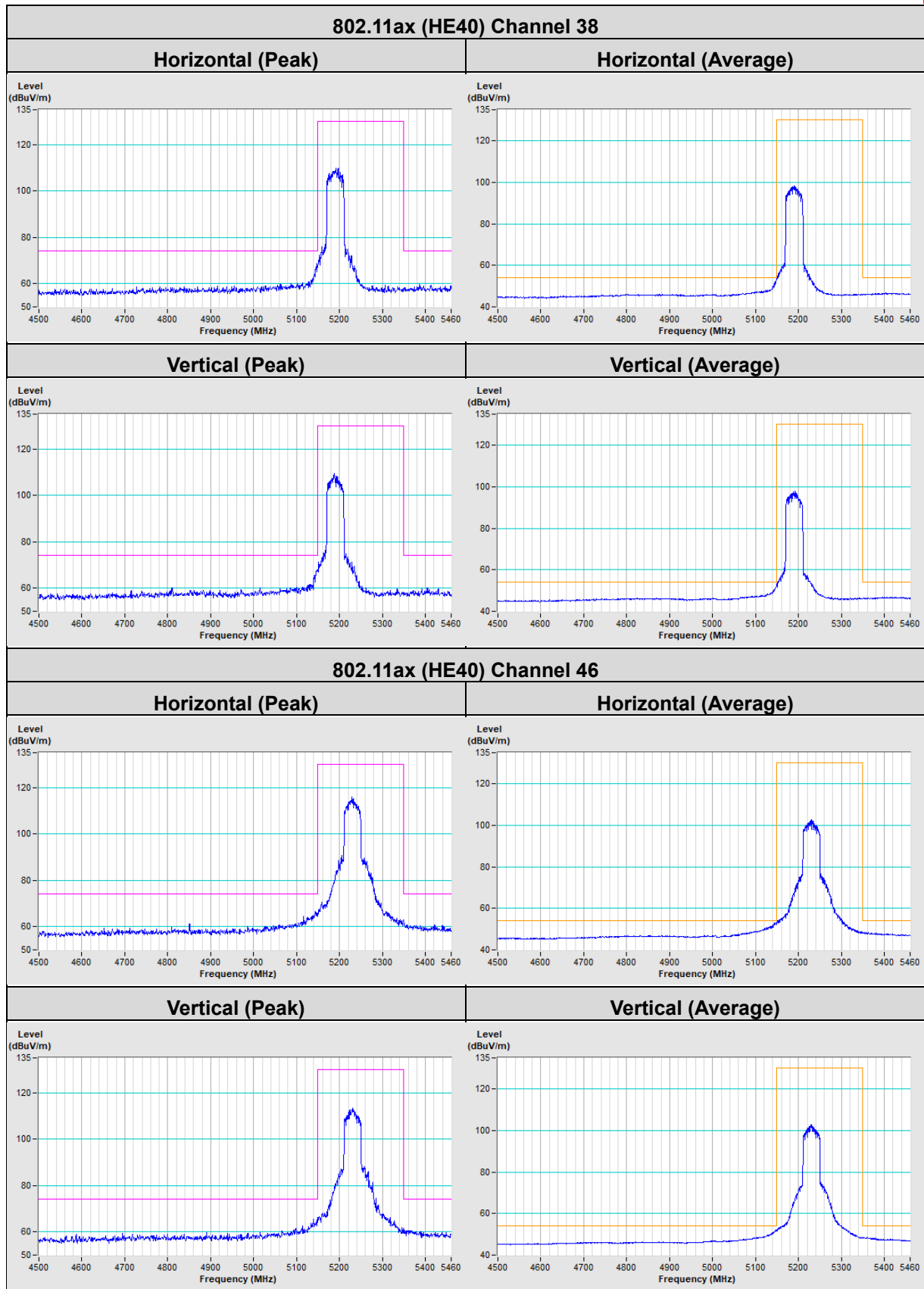


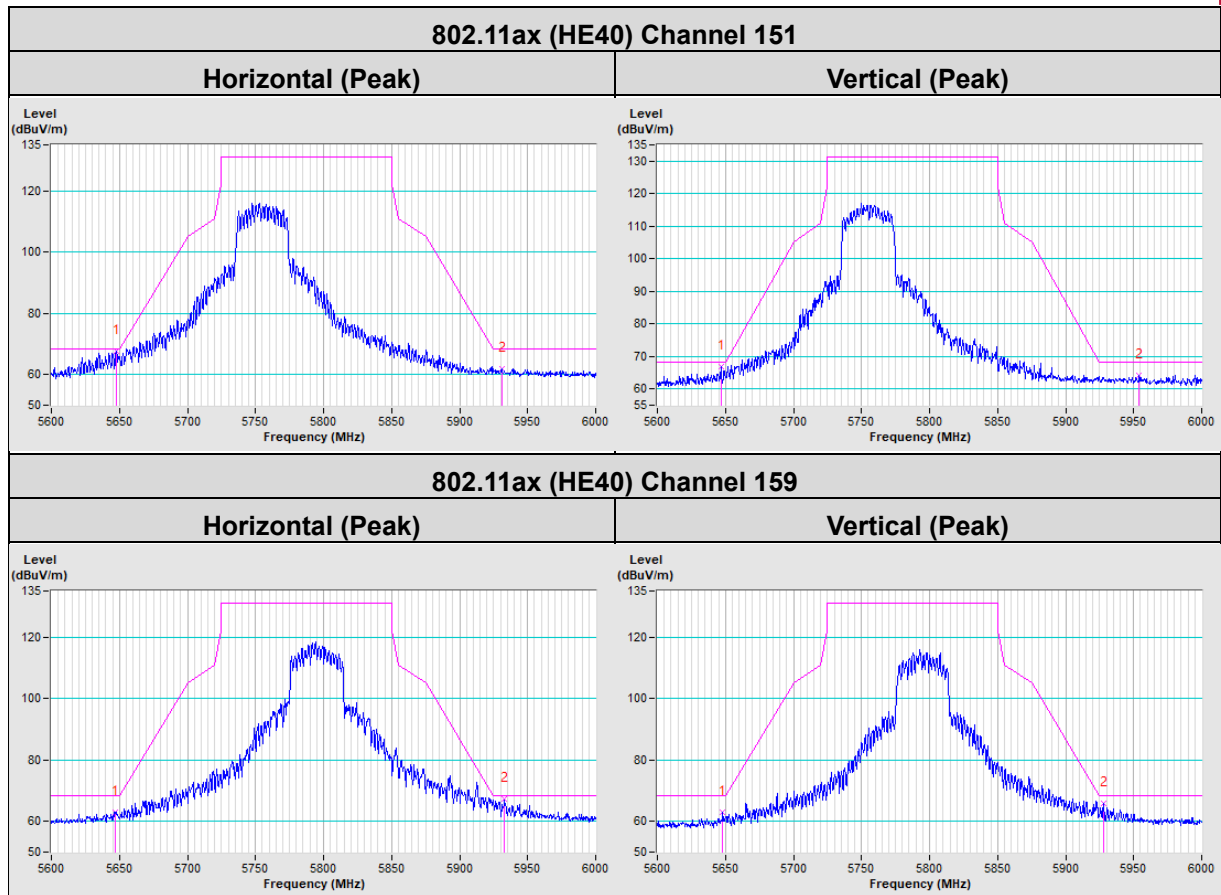
802.11a Channel 165**Horizontal (Peak)****Vertical (Peak)**

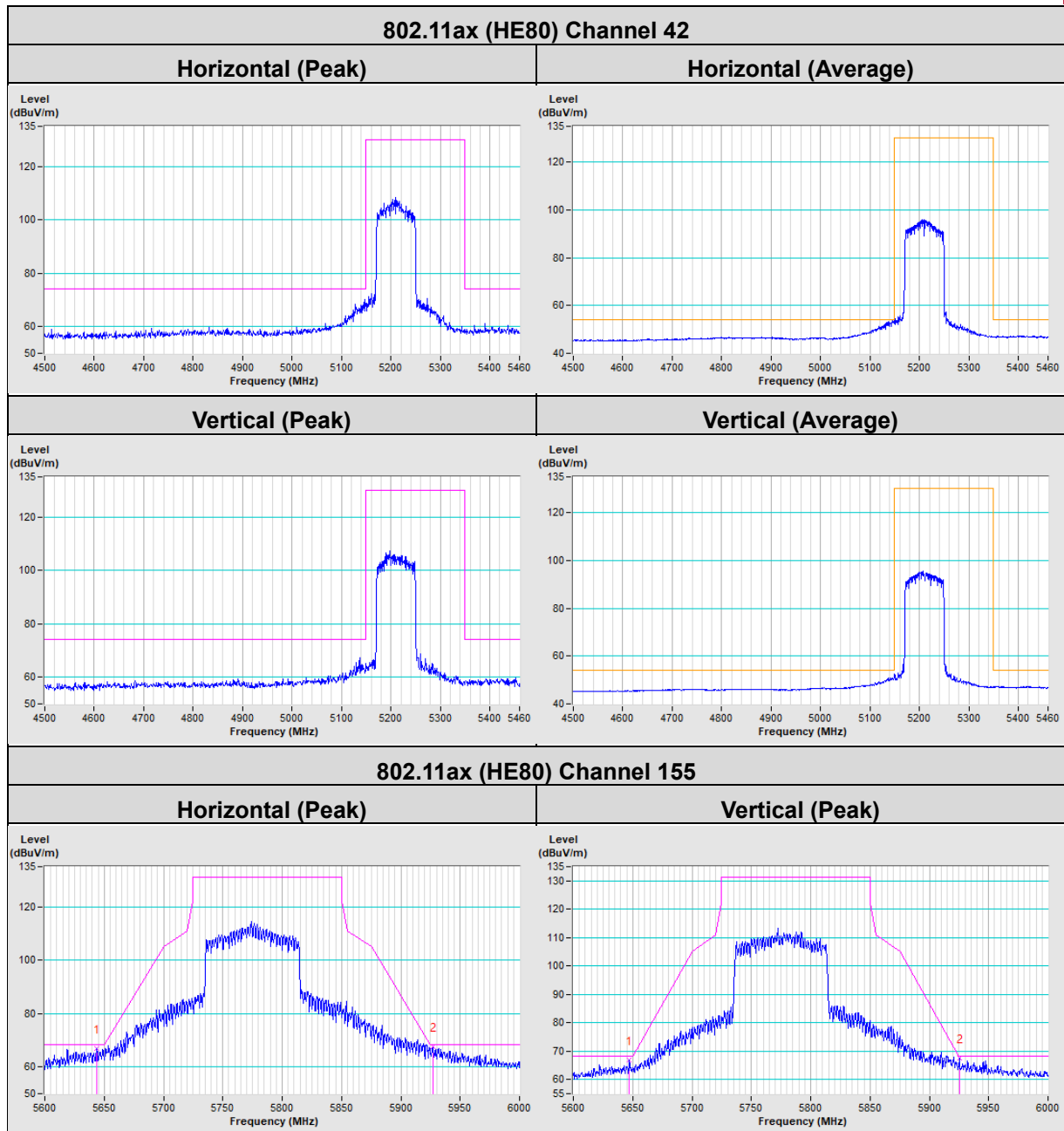




802.11ax (HE20) Channel 165**Horizontal (Peak)****Vertical (Peak)**







8 Pictures of Test Arrangements

Please refer to the attached file (Test Setup Photo)

9 Information of the Testing Laboratories

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

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

Lin Kou EMC/RF Lab

Tel: 886-2-26052180

Fax: 886-2-26051924

Hsin Chu EMC/RF/Telecom Lab

Tel: 886-3-6668565

Fax: 886-3-6668323

Hwa Ya EMC/RF/Safety Lab

Tel: 886-3-3183232

Fax: 886-3-3270892

Email: service.adt@bureauveritas.com

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

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

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